

# IPv6 READY Logo Phase 2

Session Initiation Protocol

Test item priority  
Registrar Server

Version 2.0.0

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*IPv6 Forum*  
*Converged Test Specification*  
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# Modification Record

|               |               |                                                                                                 |
|---------------|---------------|-------------------------------------------------------------------------------------------------|
| Version 0.1   | Jan. 16, 2007 | - First release                                                                                 |
| Ver.0.1.01    | Mar. 15, 2007 | - Adjusted the layout of tables.                                                                |
| Version 1.0.0 | Apr. 27, 2007 | Version 1.0.0 release.                                                                          |
| Version 1.0.1 | May. 30, 2008 | Version 1.0.1 release<br>TS-3-1-3 removed from Test Profile.                                    |
| Ver.1.1.0     | Dec. 12, 2008 | Major revision up. (No modification)                                                            |
| Ver.2.0.0     | Nov.27, 2009  | - Separated from Server Test item priority.<br>- Modified contents for the new test categories. |



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- IPv6 Promotion Council  
Certification Working Group  
SIP IPv6 Sub Working Group
- Commentators:



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# 1. Overview

This document describes the SIP IPv6 functions and the functional classifications for SIP IPv6 Server (Proxy and Registrar) on the basis of the classifications given in section 2.

**Table 1-1 The description of Test item priority Table**

| Item                     | Explanation                                                                                                                       |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| No                       | The name of RFC, section number, sequence number in the section.                                                                  |
| RFC Section              | The number of the section in the RFC where the sentence is described.                                                             |
| RFC Section Title        | The title of section where the sentence is described.                                                                             |
| Functional Specification | The whole sentence that include a keyword, such as 'MUST', 'SHOULD', 'RECOMMENDED', 'MUST NOT', 'SHOULD NOT', 'NOT RECOMMENDED.'  |
| RFC Status               | The keyword that the sentence includes: 'MUST', 'SHOULD', 'RECOMMENDED', 'MUST NOT', 'SHOULD NOT', 'NOT RECOMMENDED.'             |
| Test Priority            | The priority based on the importance of interoperability. There are four categories: BASIC, ADVANCED, NOT REQUIRED, OUT OF SCOPE. |
| Test Profile             | The test profile that is referred to in the test.                                                                                 |



## 2. Reference Standards

- (1) RFC3261: SIP: Session Initiation Protocol (<http://www.ietf.org/rfc/rfc3261.txt>)
- (2) RFC3264: An Offer/Answer Model with Session Description Protocol  
(<http://www.ietf.org/rfc/rfc3264.txt>)
- (3) RFC4566: SDP: Session Description Protocol (<http://www.ietf.org/rfc/rfc4566.txt>)
- (4) RFC2617: HTTP Authentication: Basic and Digest Access Authentication  
(<http://www.ietf.org/rfc/rfc2617.txt>)
- (5) RFC3665: SIP Basic Call Flow Examples (<http://www.ietf.org/rfc/rfc3665.txt>)
- (6) IPv6 Ready Logo Phase 2 Policy
- (7) SIP IPv6 Test Scope



### 3. Test item priority for SIP Registrar Server

This section described the Test item priority for SIP Registrar Server.

| No          | RFC Section | RFC Section Title   | Functional Specification                                                                                                                                                                                                                                    | RFC Status  | Test Priority | Test Profile              |
|-------------|-------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|---------------------------|
| RFC3261-7-1 | 7           | SIP Messages        | The start-line, each message-header line, and the empty line <b>MUST</b> be terminated by a carriage-return line-feed sequence (CRLF).                                                                                                                      | MUST        | BASIC         | generic_message           |
| RFC3261-7-2 |             |                     | Note that the empty line <b>MUST</b> be present even if the message-body is not.                                                                                                                                                                            | MUST        | BASIC         | generic_message           |
| RFC3261-7-3 | 7.1         | Requests            | The Request-URI <b>MUST NOT</b> contain unescaped spaces or control characters and <b>MUST NOT</b> be enclosed in "<>".                                                                                                                                     | MUST NOT    | NOT REQUIRED  | [UA test]                 |
| RFC3261-7-4 |             |                     |                                                                                                                                                                                                                                                             | MUST NOT    | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-7-5 |             |                     | To be compliant with this specification, applications sending SIP messages <b>MUST</b> include a SIP-Version of "SIP/2.0".                                                                                                                                  | MUST        | BASIC         | generic_message           |
| RFC3261-7-6 |             |                     | The SIP-Version string is case-insensitive, but implementations <b>MUST</b> send upper-case.                                                                                                                                                                | MUST        | BASIC         | generic_message           |
| RFC3261-7-7 | 7.3.1       | Header Field Format | However, it is <b>RECOMMENDED</b> that header fields which are needed for proxy processing (Via, Route, Record-Route, Proxy-Require, Max-Forwards, and Proxy-Authorization, for example) appear towards the top of the message to facilitate rapid parsing. | RECOMMENDED | BASIC         | generic_message           |
| RFC3261-7-8 |             |                     | It <b>MUST</b> be possible to combine the multiple header field rows into one "field-name: field-value" pair, without changing the semantics of the message, by appending each subsequent field-value to the first, each separated by a comma.              | MUST        | OUT OF SCOPE  |                           |



| No           | RFC Section | RFC Section Title           | Functional Specification                                                                                                                                                                                                  | RFC Status | Test Priority | Test Profile              |
|--------------|-------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|---------------------------|
| RFC3261-7-9  |             |                             | Multiple header field rows with these names MAY be present in a message, but since their grammar does not follow the general form listed in Section 7.3, they <b>MUST NOT</b> be combined into a single header field row. | MUST NOT   | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-7-10 |             |                             | Implementations <b>MUST</b> be able to process multiple header field rows with the same name in any combination of the single-value-per-line or comma-separated value forms.                                              | MUST       | OUT OF SCOPE  |                           |
| RFC3261-7-11 |             |                             | Even though an arbitrary number of parameter pairs may be attached to a header field value, any given parameter-name <b>MUST NOT</b> appear more than once.                                                               | MUST NOT   | OUT OF SCOPE  |                           |
| RFC3261-7-12 | 7.3.2       | Header Field Classification | If a header field appears in a message not matching its category (such as a request header field in a response), it <b>MUST</b> be ignored.                                                                               | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-7-13 | 7.3.3       | Compact Form                | Implementations <b>MUST</b> accept both the long and short forms of each header name.                                                                                                                                     | MUST       | NOT REQUIRED  |                           |
| RFC3261-7-14 | 7.4.1       | Message Body Type           | The Internet media type of the message body <b>MUST</b> be given by the Content-Type header field.                                                                                                                        | MUST       | NOT REQUIRED  | [UA test]                 |
| RFC3261-7-15 |             |                             | If the body has undergone any encoding such as compression, then this <b>MUST</b> be indicated by the Content-Encoding header field; otherwise, Content-Encoding <b>MUST</b> be omitted.                                  | MUST       | NOT REQUIRED  |                           |
| RFC3261-7-16 |             |                             |                                                                                                                                                                                                                           | MUST       | NOT REQUIRED  |                           |

| No           | RFC Section | RFC Section Title      | Functional Specification                                                                                                                                                                                                                                      | RFC Status  | Test Priority | Test Profile              |
|--------------|-------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|---------------------------|
| RFC3261-7-17 |             |                        | Implementations that send requests containing multipart message bodies <b>MUST</b> send a session description as a non-multipart message body if the remote implementation requests this through an Accept header field that does not contain multipart.      | MUST        | NOT REQUIRED  |                           |
| RFC3261-7-18 | 7.4.2       | Message Body Length    | The "chunked" transfer encoding of HTTP/1.1 <b>MUST NOT</b> be used for SIP.                                                                                                                                                                                  | MUST NOT    | OUT OF SCOPE  |                           |
| RFC3261-7-19 | 7.5         | Framing SIP Messages   | Implementations processing SIP messages over stream-oriented transports <b>MUST</b> ignore any CRLF appearing before the start-line [H4.1].                                                                                                                   | MUST        | NOT REQUIRED  |                           |
| RFC3261-8-1  | 8.1.1       | Generating the Request | A valid SIP request formulated by a UAC <b>MUST</b> , at a minimum, contain the following header fields: To, From, CSeq, Call-ID, Max-Forwards, and Via; all of these header fields are mandatory in all SIP requests.                                        | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-2  | 8.1.1.1     | Request-URI            | The initial Request-URI of the message <b>SHOULD</b> be set to the value of the URI in the To field.                                                                                                                                                          | SHOULD      | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-3  |             |                        | When a provider wishes to configure a UA with an outbound proxy, it is <b>RECOMMENDED</b> that this be done by providing it with a pre-existing route set with a single URI, that of the outbound proxy.                                                      | RECOMMENDED | NOT REQUIRED  |                           |
| RFC3261-8-4  |             |                        | When a pre-existing route set is present, the procedures for populating the Request-URI and Route header field detailed in Section 12.2.1.1 <b>MUST</b> be followed (even though there is no dialog), using the desired Request-URI as the remote target URI. | MUST        | NOT REQUIRED  |                           |
| RFC3261-8-5  | 8.1.1.2     | To                     | All SIP implementations <b>MUST</b> support the SIP URI scheme.                                                                                                                                                                                               | MUST        | BASIC         | [tester]                  |

| No           | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                | RFC Status  | Test Priority | Test Profile              |
|--------------|-------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|---------------------------|
| RFC3261-8-6  |             |                   | Any implementation that supports TLS <b>MUST</b> support the SIPS URI scheme.                                                                                                                                           | MUST        | NOT REQUIRED  |                           |
| RFC3261-8-7  |             |                   | A request outside of a dialog <b>MUST NOT</b> contain a To tag; the tag in the To field of a request identifies the peer of the dialog.                                                                                 | MUST NOT    | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-8  | 8.1.1.3     | From              | A UAC <b>SHOULD</b> use the display name "Anonymous", along with a syntactically correct, but otherwise meaningless URI (like sip:thisis@anonymous.invalid), if the identity of the client is to remain hidden.         | SHOULD      | NOT REQUIRED  |                           |
| RFC3261-8-9  |             |                   | The From field <b>MUST</b> contain a new "tag" parameter, chosen by the UAC.                                                                                                                                            | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-10 | 8.1.1.4     | Call-ID           | It <b>MUST</b> be the same for all requests and responses sent by either UA in a dialog.                                                                                                                                | MUST        | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-11 |             |                   | It <b>SHOULD</b> be the same in each registration from a UA.                                                                                                                                                            | SHOULD      | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-12 |             |                   | In a new request created by a UAC outside of any dialog, the Call-ID header field <b>MUST</b> be selected by the UAC as a globally unique identifier over space and time unless overridden by method-specific behavior. | MUST        | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-13 |             |                   | Use of cryptographically random identifiers (RFC 1750 [12]) in the generation of Call-IDs is <b>RECOMMENDED</b> .                                                                                                       | RECOMMENDED | OUT OF SCOPE  |                           |

| No           | RFC Section | RFC Section Title | Functional Specification                                                                                                    | RFC Status | Test Priority | Test Profile              |
|--------------|-------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------|------------|---------------|---------------------------|
| RFC3261-8-14 | 8.1.1.5     | CSeq              | The method <b>MUST</b> match that of the request.                                                                           | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-15 |             |                   | The sequence number value <b>MUST</b> be expressible as a 32-bit unsigned integer and <b>MUST</b> be less than $2^{*}31$ .  | MUST       | NOT REQUIRED  |                           |
| RFC3261-8-16 |             |                   |                                                                                                                             | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-17 | 8.1.1.6     | Max-Forwards      | A UAC <b>MUST</b> insert a Max-Forwards header field into each request it originates with a value that <b>SHOULD</b> be 70. | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-18 |             |                   |                                                                                                                             | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-8-19 | 8.1.1.7     | Via               | When the UAC creates a request, it <b>MUST</b> insert a Via into that request.                                              | MUST       | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-20 |             |                   | The protocol name and protocol version in the header field <b>MUST</b> be SIP and 2.0, respectively.                        | MUST       | NOT REQUIRED  | [UA test]                 |

| No           | RFC Section | RFC Section Title     | Functional Specification                                                                                                                                                                                                    | RFC Status | Test Priority | Test Profile                            |
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| RFC3261-8-21 |             |                       | The Via header field value <b>MUST</b> contain a branch parameter.                                                                                                                                                          | MUST       | BASIC         | generic_status<br>generic_make_response |
| RFC3261-8-22 |             |                       | The branch parameter value <b>MUST</b> be unique across space and time for all requests sent by the UA.                                                                                                                     | MUST       | BASIC         | generic_forward_request                 |
| RFC3261-8-23 |             |                       | The branch ID inserted by an element compliant with this specification <b>MUST</b> always begin with the characters "z9hG4bK".                                                                                              | MUST       | BASIC         | generic_forward_request                 |
| RFC3261-8-24 | 8.1.1.8     | Contact               | The Contact header field <b>MUST</b> be present and contain exactly one SIP or SIPS URI in any request that can result in the establishment of a dialog.                                                                    | MUST       | NOT REQUIRED  | [UA test]                               |
| RFC3261-8-25 |             |                       | That is, the Contact header field value contains the URI at which the UA would like to receive requests, and this URI <b>MUST</b> be valid even if used in subsequent requests outside of any dialogs.                      | MUST       | OUT OF SCOPE  |                                         |
| RFC3261-8-26 |             |                       | If the Request-URI or top Route header field value contains a SIPS URI, the Contact header field <b>MUST</b> contain a SIPS URI as well.                                                                                    | MUST       | NOT REQUIRED  |                                         |
| RFC3261-8-27 | 8.1.1.9     | Supported and Require | If the UAC supports extensions to SIP that can be applied by the server to the response, the UAC <b>SHOULD</b> include a Supported header field in the request listing the option tags (Section 19.2) for those extensions. | SHOULD     | NOT REQUIRED  |                                         |

| No           | RFC Section | RFC Section Title   | Functional Specification                                                                                                                                                                                                                        | RFC Status | Test Priority | Test Profile              |
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| RFC3261-8-28 |             |                     | The option tags listed <b>MUST</b> only refer to extensions defined in standards-track RFCs.                                                                                                                                                    | MUST       | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-29 |             |                     | If the UAC wishes to insist that a UAS understand an extension that the UAC will apply to the request in order to process the request, it <b>MUST</b> insert a Require header field into the request listing the option tag for that extension. | MUST       | NOT REQUIRED  |                           |
| RFC3261-8-30 |             |                     | If the UAC wishes to apply an extension to the request and insist that any proxies that are traversed understand that extension, it <b>MUST</b> insert a Proxy-Require header field into the request listing the option tag for that extension. | MUST       | NOT REQUIRED  |                           |
| RFC3261-8-31 |             |                     | As with the Supported header field, the option tags in the Require and Proxy-Require header fields <b>MUST</b> only refer to extensions defined in standards-track RFCs.                                                                        | MUST       | NOT REQUIRED  |                           |
| RFC3261-8-32 | 8.1.2       | Sending the Request | Unless there is local policy specifying otherwise, the destination <b>MUST</b> be determined by applying the DNS procedures described in [4] as follows.                                                                                        | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-33 |             |                     | If the first element in the route set indicated a strict router (resulting in forming the request as described in Section 12.2.1.1), the procedures <b>MUST</b> be applied to the Request-URI of the request.                                   | MUST       | OUT OF SCOPE  | [UA test]<br>[Proxy test] |
| RFC3261-8-34 |             |                     | Independent of which URI is used as input to the procedures of [4], if the Request-URI specifies a SIPS resource, the UAC <b>MUST</b> follow the procedures of [4] as if the input URI were a SIPS URI.                                         | MUST       | NOT REQUIRED  |                           |
| RFC3261-8-35 |             |                     | If the Request-URI contains a SIPS URI, any alternate destinations <b>MUST</b> be contacted with TLS.                                                                                                                                           | MUST       | NOT REQUIRED  |                           |

| No           | RFC Section | RFC Section Title        | Functional Specification                                                                                                                                                                                                                                                                                 | RFC Status  | Test Priority | Test Profile              |
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| RFC3261-8-36 |             |                          | However, that approach for configuring an outbound proxy is <b>NOT RECOMMENDED</b> ; a pre-existing route set with a single URI <b>SHOULD</b> be used instead.                                                                                                                                           | RECOMMENDED | NOT REQUIRED  |                           |
| RFC3261-8-37 |             |                          |                                                                                                                                                                                                                                                                                                          | SHOULD      | NOT REQUIRED  |                           |
| RFC3261-8-38 |             |                          | If the request contains a Route header field, the request <b>SHOULD</b> be sent to the locations derived from its topmost value, but <b>MAY</b> be sent to any server that the UA is certain will honor the Route and Request-URI policies specified in this document (as opposed to those in RFC 2543). | SHOULD      | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-39 |             |                          | In particular, a UAC configured with an outbound proxy <b>SHOULD</b> attempt to send the request to the location indicated in the first Route header field value instead of adopting the policy of sending all messages to the outbound proxy.                                                           | SHOULD      | NOT REQUIRED  |                           |
| RFC3261-8-40 |             |                          | The UAC <b>SHOULD</b> follow the procedures defined in [4] for stateful elements, trying each address until a server is contacted.                                                                                                                                                                       | SHOULD      | NOT REQUIRED  |                           |
| RFC3261-8-41 | 8.1.3.1     | Transaction Layer Errors | When a timeout error is received from the transaction layer, it <b>MUST</b> be treated as if a 408 (Request Timeout) status code has been received.                                                                                                                                                      | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-42 |             |                          | If a fatal transport error is reported by the transport layer (generally, due to fatal ICMP errors in UDP or connection failures in TCP), the condition <b>MUST</b> be treated as a 503 (Service Unavailable) status code.                                                                               | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-43 | 8.1.3.2     | Unrecognized Responses   | A UAC <b>MUST</b> treat any final response it does not recognize as being equivalent to the x00 response code of that class, and <b>MUST</b> be able to process the x00 response code for all classes.                                                                                                   | MUST        | NOT REQUIRED  | [UA test]                 |

| No           | RFC Section | RFC Section Title        | Functional Specification                                                                                                                                                                                                  | RFC Status | Test Priority | Test Profile |
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| RFC3261-8-44 |             |                          |                                                                                                                                                                                                                           | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-8-45 |             |                          | A UAC <b>MUST</b> treat any provisional response different than 100 that it does not recognize as 183 (Session Progress).                                                                                                 | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-8-46 |             |                          | A UAC <b>MUST</b> be able to process 100 and 183 responses.                                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-8-47 | 8.1.3.3     | Vias                     | If more than one Via header field value is present in a response, the UAC <b>SHOULD</b> discard the message.                                                                                                              | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-8-48 | 8.1.3.4     | Processing 3xx Responses | Upon receipt of a redirection response (for example, a 301 response status code), clients <b>SHOULD</b> use the URI(s) in the Contact header field to formulate one or more new requests based on the redirected request. | SHOULD     | NOT REQUIRED  |              |
| RFC3261-8-49 |             |                          | As with proxy recursion, a client processing 3xx class responses <b>MUST NOT</b> add any given URI to the target set more than once.                                                                                      | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-8-50 |             |                          | If the original request had a SIPS URI in the Request-URI, the client <b>MAY</b> choose to recurse to a non-SIPS URI, but <b>SHOULD</b> inform the user of the redirection to an insecure URI.                            | SHOULD     | NOT REQUIRED  |              |
| RFC3261-8-51 |             |                          | Failures <b>SHOULD</b> be detected through failure response codes (codes greater than 399); for network errors the client transaction will report any transport layer failures to the transaction user.                   | SHOULD     | NOT REQUIRED  |              |



| No           | RFC Section | RFC Section Title        | Functional Specification                                                                                                                                                                                                                                                                 | RFC Status  | Test Priority | Test Profile              |
|--------------|-------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------|---------------------------|
| RFC3261-8-52 |             |                          | When a failure for a particular contact address is received, the client <b>SHOULD</b> try the next contact address.                                                                                                                                                                      | SHOULD      | NOT REQUIRED  |                           |
| RFC3261-8-53 |             |                          | In order to create a request based on a contact address in a 3xx response, a UAC <b>MUST</b> copy the entire URI from the target set into the Request-URI, except for the "method-param" and "header" URI parameters (see Section 19.1.1 for a definition of these parameters).          | MUST        | NOT REQUIRED  |                           |
| RFC3261-8-54 |             |                          | It is <b>RECOMMENDED</b> that the UAC reuse the same To, From, and Call-ID used in the original redirected request, but the UAC <b>MAY</b> also choose to update the Call-ID header field value for new requests, for example.                                                           | RECOMMENDED | NOT REQUIRED  |                           |
| RFC3261-8-55 |             |                          | Finally, once the new request has been constructed, it is sent using a new client transaction, and therefore <b>MUST</b> have a new branch ID in the top Via field as discussed in Section 8.1.1.7.                                                                                      | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-56 |             |                          | In all other respects, requests sent upon receipt of a redirect response <b>SHOULD</b> re-use the header fields and bodies of the original request.                                                                                                                                      | SHOULD      | NOT REQUIRED  |                           |
| RFC3261-8-57 | 8.1.3.5     | Processing 4xx Responses | If a 401 (Unauthorized) or 407 (Proxy Authentication Required) response is received, the UAC <b>SHOULD</b> follow the authorization procedures of Section 22.2 and Section 22.3 to retry the request with credentials.                                                                   | SHOULD      | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-58 |             |                          | If possible, the UAC <b>SHOULD</b> retry the request, either omitting the body or using one of a smaller length.                                                                                                                                                                         | SHOULD      | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-59 |             |                          | The UAC <b>SHOULD</b> retry sending the request, this time only using content with types listed in the Accept header field in the response, with encodings listed in the Accept-Encoding header field in the response, and with languages listed in the Accept-Language in the response. | SHOULD      | OUT OF SCOPE  |                           |

| No           | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                  | RFC Status | Test Priority | Test Profile |
|--------------|-------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|--------------|
| RFC3261-8-60 |             |                   | The client <b>SHOULD</b> retry the request, this time, using a SIP URI.                                                                                                                                                                   | SHOULD     | NOT REQUIRED  |              |
| RFC3261-8-61 |             |                   | The UAC <b>SHOULD</b> retry the request, this time omitting any extensions listed in the Unsupported header field in the response.                                                                                                        | SHOULD     | NOT REQUIRED  |              |
| RFC3261-8-62 |             |                   | This new request constitutes a new transaction and <b>SHOULD</b> have the same value of the Call-ID, To, and From of the previous request, but the CSeq <b>should</b> contain a new sequence number that is one higher than the previous. | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-8-63 | 8.2         | UAS Behavior      | If a request is accepted, all state changes associated with it <b>MUST</b> be performed.                                                                                                                                                  | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-8-64 |             |                   | If it is rejected, all state changes <b>MUST NOT</b> be performed.                                                                                                                                                                        | MUST NOT   | NOT REQUIRED  | [UA test]    |
| RFC3261-8-65 |             |                   | UASs <b>SHOULD</b> process the requests in the order of the steps that follow in this section (that is, starting with authentication, then inspecting the method, the header fields, and so on throughout the remainder of this section). | SHOULD     | NOT REQUIRED  |              |
| RFC3261-8-66 | 8.2.1       | Method Inspection | Once a request is authenticated (or authentication is skipped), the UAS <b>MUST</b> inspect the method of the request.                                                                                                                    | MUST       | NOT REQUIRED  |              |
| RFC3261-8-67 |             |                   | If the UAS recognizes but does not support the method of a request, it <b>MUST</b> generate a 405 (Method Not Allowed) response.                                                                                                          | MUST       | NOT REQUIRED  |              |

| No           | RFC Section | RFC Section Title  | Functional Specification                                                                                                                                                                                                                      | RFC Status  | Test Priority | Test Profile |
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| RFC3261-8-68 |             |                    | The UAS <b>MUST</b> also add an Allow header field to the 405 (Method Not Allowed) response.                                                                                                                                                  | MUST        | NOT REQUIRED  |              |
| RFC3261-8-69 |             |                    | The Allow header field <b>MUST</b> list the set of methods supported by the UAS generating the message.                                                                                                                                       | MUST        | NOT REQUIRED  |              |
| RFC3261-8-70 | 8.2.2       | Header Inspection  | If a UAS does not understand a header field in a request (that is, the header field is not defined in this specification or in any supported extension), the server <b>MUST</b> ignore that header field and continue processing the message. | MUST        | BASIC         | RG-4-1-1     |
| RFC3261-8-71 |             |                    | A UAS <b>SHOULD</b> ignore any malformed header fields that are not necessary for processing requests.                                                                                                                                        | SHOULD      | BASIC         | RG-4-1-1     |
| RFC3261-8-72 | 8.2.2.1     | To and Request-URI | However, it is <b>RECOMMENDED</b> that a UAS accept requests even if they do not recognize the URI scheme (for example, a tel: URI) in the To header field, or if the To header field does not address a known or current user of this UAS.   | RECOMMENDED | NOT REQUIRED  |              |
| RFC3261-8-73 |             |                    | If, on the other hand, the UAS decides to reject the request, it <b>SHOULD</b> generate a response with a 403 (Forbidden) status code and pass it to the server transaction for transmission.                                                 | SHOULD      | NOT REQUIRED  |              |
| RFC3261-8-74 |             |                    | If the Request-URI uses a scheme not supported by the UAS, it <b>SHOULD</b> reject the request with a 416 (Unsupported URI Scheme) response.                                                                                                  | SHOULD      | NOT REQUIRED  |              |
| RFC3261-8-75 |             |                    | If the Request-URI does not identify an address that the UAS is willing to accept requests for, it <b>SHOULD</b> reject the request with a 404 (Not Found) response.                                                                          | SHOULD      | NOT REQUIRED  |              |

| No           | RFC Section | RFC Section Title  | Functional Specification                                                                                                                                                                                                                                                                                                                             | RFC Status | Test Priority | Test Profile              |
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| RFC3261-8-76 | 8.2.2.2     | Merged Requests    | If the request has no tag in the To header field, the UAS core <b>MUST</b> check the request against ongoing transactions.                                                                                                                                                                                                                           | MUST       | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-77 |             |                    | If the From tag, Call-ID, and CSeq exactly match those associated with an ongoing transaction, but the request does not match that transaction (based on the matching rules in Section 17.2.3), the UAS core <b>SHOULD</b> generate a 482 (Loop Detected) response and pass it to the server transaction.                                            | SHOULD     | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-78 | 8.2.2.3     | Require            | If a UAS does not understand an option-tag listed in a Require header field, it <b>MUST</b> respond by generating a response with status code 420 (Bad Extension).                                                                                                                                                                                   | MUST       | BASIC         | RG-4-1-2                  |
| RFC3261-8-79 |             |                    | The UAS <b>MUST</b> add an Unsupported header field, and list in it those options it does not understand amongst those in the Require header field of the request.                                                                                                                                                                                   | MUST       | BASIC         | RG-4-1-2                  |
| RFC3261-8-80 |             |                    | Note that Require and Proxy-Require <b>MUST NOT</b> be used in a SIP CANCEL request, or in an ACK request sent for a non-2xx response.                                                                                                                                                                                                               | MUST NOT   | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-8-81 |             |                    | These header fields <b>MUST</b> be ignored if they are present in these requests.                                                                                                                                                                                                                                                                    | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-8-82 |             |                    | An ACK request for a 2xx response <b>MUST</b> contain only those Require and Proxy-Require values that were present in the initial request.                                                                                                                                                                                                          | MUST       | NOT REQUIRED  | [UA test]                 |
| RFC3261-8-83 | 8.2.3       | Content Processing | If there are any bodies whose type (indicated by the Content-Type), language (indicated by the Content-Language) or encoding (indicated by the Content-Encoding) are not understood, and that body part is not optional (as indicated by the Content-Disposition header field), the UAS <b>MUST</b> reject the request with a 415 (Unsupported Media | MUST       | NOT REQUIRED  | [UA test]                 |

| No           | RFC Section | RFC Section Title   | Functional Specification                                                                                                                                                                    | RFC Status      | Test Priority | Test Profile |
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| RFC3261-8-84 |             |                     | The response <b>MUST</b> contain an Accept header field listing the types of all bodies it understands, in the event the request contained bodies of types not supported by the UAS.        | MUST            | NOT REQUIRED  | [UA test]    |
| RFC3261-8-85 |             |                     | If the request contained content encodings not understood by the UAS, the response <b>MUST</b> contain an Accept-Encoding header field listing the encodings understood by the UAS.         | MUST            | NOT REQUIRED  | [UA test]    |
| RFC3261-8-86 |             |                     | If the request contained content with languages not understood by the UAS, the response <b>MUST</b> contain an Accept-Language header field indicating the languages understood by the UAS. | MUST            | NOT REQUIRED  | [UA test]    |
| RFC3261-8-87 | 8.2.4       | Applying Extensions | A UAS that wishes to apply some extension when generating the response <b>MUST NOT</b> do so unless support for that extension is indicated in the Supported header field in the request.   | MUST NOT        | NOT REQUIRED  |              |
| RFC3261-8-88 |             |                     | If the desired extension is not supported, the server <b>SHOULD</b> rely only on baseline SIP and any other extensions supported by the client.                                             | SHOULD          | NOT REQUIRED  |              |
| RFC3261-8-89 |             |                     | The needed extension(s) <b>MUST</b> be included in a Require header field in the response.                                                                                                  | MUST            | NOT REQUIRED  |              |
| RFC3261-8-90 |             |                     | This behavior is <b>NOT RECOMMENDED</b> , as it will generally break interoperability.                                                                                                      | NOT RECOMMENDED | NOT REQUIRED  |              |
| RFC3261-8-91 |             |                     | Any extensions applied to a non-421 response <b>MUST</b> be listed in a Require header field included in the response.                                                                      | MUST            | NOT REQUIRED  |              |

| No           | RFC Section                                                                                                                                         | RFC Section Title              | Functional Specification                                                                                                                                        | RFC Status   | Test Priority                           | Test Profile                            |
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| RFC3261-8-92 |                                                                                                                                                     |                                | Of course, the server <b>MUST NOT</b> apply extensions not listed in the Supported header field in the request.                                                 | MUST NOT     | NOT REQUIRED                            |                                         |
| RFC3261-8-93 | 8.2.6.1                                                                                                                                             | Sending a Provisional Response | One largely non-method-specific guideline for the generation of responses is that UASs <b>SHOULD NOT</b> issue a provisional response for a non-INVITE request. | SHOULD NOT   | NOT REQUIRED                            | [UA test]                               |
| RFC3261-8-94 | Rather, UASs <b>SHOULD</b> generate a final response to a non-INVITE request as soon as possible.                                                   |                                | SHOULD                                                                                                                                                          | NOT REQUIRED |                                         |                                         |
| RFC3261-8-95 | When a 100 (Trying) response is generated, any Timestamp header field present in the request <b>MUST</b> be copied into this 100 (Trying) response. |                                | MUST                                                                                                                                                            | NOT REQUIRED | [UA test]<br>[Proxy test]               |                                         |
| RFC3261-8-96 | If there is a delay in generating the response, the UAS <b>SHOULD</b> add a delay value into the Timestamp value in the response.                   |                                | SHOULD                                                                                                                                                          | NOT REQUIRED | [UA test]<br>[Proxy test]               |                                         |
| RFC3261-8-97 | This value <b>MUST</b> contain the difference between the time of sending of the response and receipt of the request, measured in seconds.          |                                | MUST                                                                                                                                                            | NOT REQUIRED | [UA test]<br>[Proxy test]               |                                         |
| RFC3261-8-98 | 8.2.6.2                                                                                                                                             | Headers and Tags               | The From field of the response <b>MUST</b> equal the From header field of the request.                                                                          | MUST         | BASIC                                   | generic_status<br>generic_make_response |
| RFC3261-8-99 | The Call-ID header field of the response <b>MUST</b> equal the Call-ID header field of the request.                                                 |                                | MUST                                                                                                                                                            | BASIC        | generic_status<br>generic_make_response |                                         |

| No            | RFC Section | RFC Section Title      | Functional Specification                                                                                                                                                                                                                                                                                                                           | RFC Status | Test Priority | Test Profile                            |
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| RFC3261-8-100 |             |                        | The CSeq header field of the response <b>MUST</b> equal the CSeq field of the request.                                                                                                                                                                                                                                                             | MUST       | BASIC         | generic_status<br>generic_make_response |
| RFC3261-8-101 |             |                        | The Via header field values in the response <b>MUST</b> equal the Via header field values in the request and <b>MUST</b> maintain the same ordering.                                                                                                                                                                                               | MUST       | BASIC         | generic_status<br>generic_make_response |
| RFC3261-8-102 |             |                        |                                                                                                                                                                                                                                                                                                                                                    | MUST       | BASIC         | generic_status<br>generic_make_response |
| RFC3261-8-103 |             |                        | If a request contained a To tag in the request, the To header field in the response <b>MUST</b> equal that of the request.                                                                                                                                                                                                                         | MUST       | BASIC         | generic_status<br>generic_make_response |
| RFC3261-8-104 |             |                        | However, if the To header field in the request did not contain a tag, the URI in the To header field in the response <b>MUST</b> equal the URI in the To header field; additionally, the UAS <b>MUST</b> add a tag to the To header field in the response (with the exception of the 100 (Trying) response, in which a tag <b>MAY</b> be present). | MUST       | BASIC         | generic_status<br>generic_make_response |
| RFC3261-8-105 |             |                        |                                                                                                                                                                                                                                                                                                                                                    | MUST       | BASIC         | generic_status<br>generic_make_response |
| RFC3261-8-106 |             |                        | The same tag <b>MUST</b> be used for all responses to that request, both final and provisional (again excepting the 100 (Trying)).                                                                                                                                                                                                                 | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test]               |
| RFC3261-8-107 | 8.2.7       | Stateless UAS Behavior | A stateless UAS <b>MUST NOT</b> send provisional (1xx) responses.                                                                                                                                                                                                                                                                                  | MUST NOT   | NOT REQUIRED  |                                         |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                | RFC Status | Test Priority | Test Profile |
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| RFC3261-8-108 |             |                   | A stateless UAS <b>MUST NOT</b> retransmit responses.                                                                                                                                                                                                                   | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-8-109 |             |                   | A stateless UAS <b>MUST</b> ignore ACK requests.                                                                                                                                                                                                                        | MUST       | NOT REQUIRED  |              |
| RFC3261-8-110 |             |                   | A stateless UAS <b>MUST</b> ignore CANCEL requests.                                                                                                                                                                                                                     | MUST       | NOT REQUIRED  |              |
| RFC3261-8-111 |             |                   | To header tags <b>MUST</b> be generated for responses in a stateless manner – in a manner that will generate the same tag for the same request consistently.                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-8-112 | 8.3         | Redirect Servers  | For well-formed CANCEL requests, it <b>SHOULD</b> return a 2xx response.                                                                                                                                                                                                | SHOULD     | NOT REQUIRED  |              |
| RFC3261-8-113 |             |                   | However, redirect servers <b>MUST NOT</b> redirect a request to a URI equal to the one in the Request-URI; instead, provided that the URI does not point to itself, the server <b>MAY</b> proxy the request to the destination URI, or <b>MAY</b> reject it with a 404. | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-8-114 |             |                   | Malformed values <b>SHOULD</b> be treated as equivalent to 3600.                                                                                                                                                                                                        | SHOULD     | NOT REQUIRED  |              |
| RFC3261-8-115 |             |                   | Redirect servers <b>MUST</b> ignore features that are not understood (including unrecognized header fields, any unknown option tags in Require, or even method names) and proceed with the redirection of the request in question.                                      | MUST       | NOT REQUIRED  |              |



| No          | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                   | RFC Status | Test Priority | Test Profile              |
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| RFC3261-9-1 | 9.1         | Client Behavior   | A CANCEL request <b>SHOULD NOT</b> be sent to cancel a request other than INVITE.                                                                                                                          | SHOULD NOT | OUT OF SCOPE  |                           |
| RFC3261-9-2 |             |                   | The Request-URI, Call-ID, To, the numeric part of CSeq, and From header fields in the CANCEL request <b>MUST</b> be identical to those in the request being cancelled, including tags.                     | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-9-3 |             |                   | A CANCEL constructed by a client <b>MUST</b> have only a single Via header field value matching the top Via value in the request being cancelled.                                                          | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-9-4 |             |                   | However, the method part of the CSeq header field <b>MUST</b> have a value of CANCEL.                                                                                                                      | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-9-5 |             |                   | If the request being cancelled contains a Route header field, the CANCEL request <b>MUST</b> include that Route header field's values.                                                                     | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-9-6 |             |                   | The CANCEL request <b>MUST NOT</b> contain any Require or Proxy-Require header fields.                                                                                                                     | MUST NOT   | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-9-7 |             |                   | Once the CANCEL is constructed, the client <b>SHOULD</b> check whether it has received any response (provisional or final) for the request being cancelled (herein referred to as the "original request"). | SHOULD     | NOT REQUIRED  | [Proxy test]              |
| RFC3261-9-8 |             |                   | If no provisional response has been received, the CANCEL request <b>MUST NOT</b> be sent; rather, the client <b>MUST</b> wait for the arrival of a provisional response before sending the request.        | MUST NOT   | NOT REQUIRED  | [Proxy test]              |

| No           | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                               | RFC Status | Test Priority | Test Profile              |
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| RFC3261-9-9  |             |                   |                                                                                                                                                                                                                                                                        | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-9-10 |             |                   | If the original request has generated a final response, the CANCEL <b>SHOULD NOT</b> be sent, as it is an effective no-op, since CANCEL has no effect on requests that have already generated a final response.                                                        | SHOULD NOT | NOT REQUIRED  | [Proxy test]              |
| RFC3261-9-11 |             |                   | The destination address, port, and transport for the CANCEL <b>MUST</b> be identical to those used to send the original request.                                                                                                                                       | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-9-12 |             |                   | If there is no final response for the original request in 64*T1 seconds (T1 is defined in Section 17.1.1.1), the client <b>SHOULD</b> then consider the original transaction cancelled and <b>SHOULD</b> destroy the client transaction handling the original request. | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-9-13 |             |                   |                                                                                                                                                                                                                                                                        | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-9-14 | 9.2         | Server Behavior   | If the UAS did not find a matching transaction for the CANCEL according to the procedure above, it <b>SHOULD</b> respond to the CANCEL with a 481 (Call Leg/Transaction Does Not Exist).                                                                               | SHOULD     | NOT REQUIRED  | [UA test]                 |
| RFC3261-9-15 |             |                   | If the original request was an INVITE, the UAS <b>SHOULD</b> immediately respond to the INVITE with a 487 (Request Terminated).                                                                                                                                        | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-9-16 |             |                   | This response is constructed following the procedures described in Section 8.2.6 noting that the To tag of the response to the CANCEL and the To tag in the response to the original request <b>SHOULD</b> be the same.                                                | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No           | RFC Section | RFC Section Title                 | Functional Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | RFC Status | Test Priority | Test Profile         |
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| RFC3261-10-1 | 10.1        | Overview                          | The only requirement is that a registrar for some domain <b>MUST</b> be able to read and write data to the location service, and a proxy or a redirect server for that domain <b>MUST</b> be capable of reading that same data.                                                                                                                                                                                                                                                                                                                               | MUST       | OUT OF SCOPE  |                      |
| RFC3261-10-2 |             |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MUST       | OUT OF SCOPE  |                      |
| RFC3261-10-3 | 10.2        | Constructing the REGISTER Request | The Record-Route header field has no meaning in REGISTER requests or responses, and <b>MUST</b> be ignored if present.<br><br>In particular, the UAC <b>MUST NOT</b> create a new route set based on the presence or absence of a Record-Route header field in any response to a REGISTER request.<br><br>The following header fields, except Contact, <b>MUST</b> be included in a REGISTER request.<br><br>The "userinfo" and "@" components of the SIP URI <b>MUST NOT</b> be present.<br><br>This address-of-record <b>MUST</b> be a SIP URI or SIPS URI. | MUST       | BASIC         | RG-1-1-7<br>RG-2-1-1 |
| RFC3261-10-4 |             |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MUST NOT   | NOT REQUIRED  | [UA test]            |
| RFC3261-10-5 |             |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]            |
| RFC3261-10-6 |             |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MUST NOT   | NOT REQUIRED  | [UA test]            |
| RFC3261-10-7 |             |                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]            |

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| RFC3261-10-8  |             |                   | Call-ID: All registrations from a UAC <b>SHOULD</b> use the same Call-ID header field value for registrations sent to a particular registrar.                                                                                                                       | SHOULD     | NOT REQUIRED  | [UA test]                                                                                                                                                                     |
| RFC3261-10-9  |             |                   | A UA <b>MUST</b> increment the CSeq value by one for each REGISTER request with the same Call-ID.                                                                                                                                                                   | MUST       | NOT REQUIRED  | [UA test]                                                                                                                                                                     |
| RFC3261-10-10 |             |                   | UAs <b>MUST NOT</b> send a new registration (that is, containing new Contact header field values, as opposed to a retransmission) until they have received a final response from the registrar for the previous one or the previous REGISTER request has timed out. | MUST NOT   | NOT REQUIRED  | [UA test]                                                                                                                                                                     |
| RFC3261-10-11 |             |                   | UACs <b>SHOULD NOT</b> use the "action" parameter.                                                                                                                                                                                                                  | SHOULD NOT | NOT REQUIRED  | [UA test]                                                                                                                                                                     |
| RFC3261-10-12 |             |                   | Malformed values <b>SHOULD</b> be treated as equivalent to 3600.                                                                                                                                                                                                    | SHOULD     | NOT REQUIRED  |                                                                                                                                                                               |
| RFC3261-10-13 | 10.2.1      | Adding Bindings   | If the address-of-record in the To header field of a REGISTER request is a SIPS URI, then any Contact header field values in the request <b>SHOULD</b> also be SIPS URIs.                                                                                           | SHOULD     | NOT REQUIRED  | [UA test]                                                                                                                                                                     |
| RFC3261-10-14 | 10.2.2      | Removing Bindings | UAs <b>SHOULD</b> support this mechanism so that bindings can be removed before their expiration interval has passed.                                                                                                                                               | SHOULD     | NOT REQUIRED  | [UA test]                                                                                                                                                                     |
| RFC3261-10-15 |             |                   | The REGISTER-specific Contact header field value of "*" applies to all registrations, but it <b>MUST NOT</b> be used unless the Expires header field is present with a value of "0".                                                                                | MUST NOT   | NOT REQUIRED  | RG-1-1-1, RG-1-1-2<br>RG-1-1-3, RG-1-1-6<br>RG-1-1-7, RG-1-2-1<br>RG-1-2-3, RG-1-2-4<br>RG-2-1-1, RG-2-1-2<br>RG-2-1-3, RG-2-1-4<br>RG-2-1-5, RG-2-2-3<br>RG-3-1-1, RG-4-1-1, |

| No            | RFC Section | RFC Section Title            | Functional Specification                                                                                                                                                                                            | RFC Status | Test Priority | Test Profile                  |
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| RFC3261-10-16 | 10.2.4      | Refreshing Bindings          | A UA <b>SHOULD NOT</b> refresh bindings set up by other UAs.                                                                                                                                                        | SHOULD NOT | OUT OF SCOPE  |                               |
| RFC3261-10-17 |             |                              | A UA <b>SHOULD</b> use the same Call-ID for all registrations during a single boot cycle.                                                                                                                           | SHOULD     | NOT REQUIRED  | [UA test]                     |
| RFC3261-10-18 |             |                              | Registration refreshes <b>SHOULD</b> be sent to the same network address as the original registration, unless redirected.                                                                                           | SHOULD     | NOT REQUIRED  | [UA test]                     |
| RFC3261-10-19 | 10.2.6      | Discovering a Registrar      | If there is no configured registrar address, the UA <b>SHOULD</b> use the host part of the address-of-record as the Request-URI and address the request there, using the normal SIP server location mechanisms [4]. | SHOULD     | NOT REQUIRED  |                               |
| RFC3261-10-20 | 10.2.7      | Transmitting a Request       | If the transaction layer returns a timeout error because the REGISTER yielded no response, the UAC <b>SHOULD NOT</b> immediately re-attempt a registration to the same registrar.                                   | SHOULD NOT | NOT REQUIRED  | [UA test]<br>[Registrar test] |
| RFC3261-10-21 | 10.3        | Processing REGISTER Requests | A registrar <b>MUST</b> not generate 6xx responses.                                                                                                                                                                 | MUST NOT   | OUT OF SCOPE  |                               |
| RFC3261-10-22 |             |                              | Registrars <b>MUST</b> ignore the Record-Route header field if it is included in a REGISTER request.                                                                                                                | MUST       | BASIC         | RG-1-1-7<br>RG-2-1-1          |
| RFC3261-10-23 |             |                              | Registrars <b>MUST NOT</b> include a Record-Route header field in any response to a REGISTER request.                                                                                                               | MUST NOT   | BASIC         | RG-1-1-7<br>RG-2-1-1          |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                   | RFC Status | Test Priority | Test Profile |
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| RFC3261-10-24 |             |                   | REGISTER requests <b>MUST</b> be processed by a registrar in the order that they are received.                                                                                                             | MUST       | BASIC         | RG-1-1-6     |
| RFC3261-10-25 |             |                   | REGISTER requests <b>MUST</b> also be processed atomically, meaning that a particular REGISTER request is either processed completely or not at all.                                                       | MUST       | BASIC         | RG-1-1-6     |
| RFC3261-10-26 |             |                   | Each REGISTER message <b>MUST</b> be processed independently of any other registration or binding changes.                                                                                                 | MUST       | BASIC         | RG-1-1-6     |
| RFC3261-10-27 |             |                   | If not, and if the server also acts as a proxy server, the server <b>SHOULD</b> forward the request to the addressed domain, following the general behavior for proxying messages described in Section 16. | SHOULD     | BASIC         | RG-3-1-1     |
| RFC3261-10-28 |             |                   | 2. To guarantee that the registrar supports any necessary extensions, the registrar <b>MUST</b> process the Require header field values as described for UASs in Section 8.2.2.                            | MUST       | NOT REQUIRED  |              |
| RFC3261-10-29 |             |                   | 3. A registrar <b>SHOULD</b> authenticate the UAC.                                                                                                                                                         | SHOULD     | NOT REQUIRED  |              |
| RFC3261-10-30 |             |                   | 4. The registrar <b>SHOULD</b> determine if the authenticated user is authorized to modify registrations for this address-of-record.                                                                       | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-10-31 |             |                   | If the authenticated user is not authorized to modify bindings, the registrar <b>MUST</b> return a 403 (Forbidden) and skip the remaining steps.                                                           | MUST       | OUT OF SCOPE  |              |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                            | RFC Status | Test Priority | Test Profile                     |
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| RFC3261-10-32 |             |                   | If the address-of-record is not valid for the domain in the Request-URI, the registrar <b>MUST</b> send a 404 (Not Found) response and skip the remaining steps.                                    | MUST       | BASIC         | RG-2-2-1                         |
| RFC3261-10-33 |             |                   | The URI <b>MUST</b> then be converted to a canonical form.                                                                                                                                          | MUST       | BASIC         | RG-2-1-5                         |
| RFC3261-10-34 |             |                   | To do that, all URI parameters <b>MUST</b> be removed (including the user-param), and any escaped characters <b>MUST</b> be converted to their unescaped form.                                      | MUST       | BASIC         | RG-2-1-4                         |
| RFC3261-10-35 |             |                   |                                                                                                                                                                                                     | MUST       | BASIC         | RG-2-1-5                         |
| RFC3261-10-36 |             |                   | If the request has additional Contact fields or an expiration time other than zero, the request is invalid, and the server <b>MUST</b> return a 400 (Invalid Request) and skip the remaining steps. | MUST       | BASIC         | RG-1-2-4<br>RG-2-1-3<br>RG-2-2-2 |
| RFC3261-10-37 |             |                   | If not, it <b>MUST</b> remove the binding.                                                                                                                                                          | MUST       | BASIC         | RG-1-2-4<br>RG-2-1-3             |
| RFC3261-10-38 |             |                   | If it does agree, it <b>MUST</b> remove the binding only if the CSeq in the request is higher than the value stored for that binding.                                                               | MUST       | BASIC         | RG-1-2-4<br>RG-2-1-3             |
| RFC3261-10-39 |             |                   | Otherwise, the update <b>MUST</b> be aborted and the request fails.                                                                                                                                 | MUST       | BASIC         | RG-1-2-4<br>RG-2-1-3             |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                             | RFC Status | Test Priority | Test Profile         |
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| RFC3261-10-40 |             |                   | If the field value has an "expires" parameter, that value <b>MUST</b> be taken as the requested expiration.                                                                          | MUST       | BASIC         | RG-1-1-5             |
| RFC3261-10-41 |             |                   | If there is no such parameter, but the request has an Expires header field, that value <b>MUST</b> be taken as the requested expiration.                                             | MUST       | BASIC         | RG-1-1-5             |
| RFC3261-10-42 |             |                   | If there is neither, a locally-configured default value <b>MUST</b> be taken as the requested expiration.                                                                            | MUST       | BASIC         | RG-1-1-5             |
| RFC3261-10-43 |             |                   | This response <b>MUST</b> contain a Min-Expires header field that states the minimum expiration interval the registrar is willing to honor.                                          | MUST       | BASIC         | RG-1-2-2             |
| RFC3261-10-44 |             |                   | If the Call-ID value in the existing binding differs from the Call-ID value in the request, the binding <b>MUST</b> be removed if the expiration time is zero and updated otherwise. | MUST       | BASIC         | RG-2-1-2             |
| RFC3261-10-45 |             |                   | If the value is higher than that of the existing binding, it <b>MUST</b> update or remove the binding as above.                                                                      | MUST       | BASIC         | RG-1-2-3             |
| RFC3261-10-46 |             |                   | If not, the update <b>MUST</b> be aborted and the request fails.                                                                                                                     | MUST       | BASIC         | RG-1-2-3<br>RG-2-2-3 |
| RFC3261-10-47 |             |                   | The binding updates <b>MUST</b> be committed (that is, made visible to the proxy or redirect server) if and only if all binding updates and additions succeed.                       | MUST       | BASIC         | RG-2-2-3             |



| No            | RFC Section | RFC Section Title         | Functional Specification                                                                                                                                                                                       | RFC Status | Test Priority | Test Profile                                                                                                                                                                                       |
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| RFC3261-10-48 |             |                           | If any one of them fails (for example, because the back-end database commit failed), the request <b>MUST</b> fail with a 500 (Server Error) response and all tentative binding updates <b>MUST</b> be removed. | MUST       | BASIC         | RG-1-2-3<br>RG-2-2-3                                                                                                                                                                               |
| RFC3261-10-49 |             |                           |                                                                                                                                                                                                                | MUST       | BASIC         | RG-2-2-3                                                                                                                                                                                           |
| RFC3261-10-50 |             |                           | The response <b>MUST</b> contain Contact header field values enumerating all current bindings.                                                                                                                 | MUST       | BASIC         | RG-1-1-1, RG-1-1-2<br>RG-1-1-3, RG-1-1-4<br>RG-1-1-5, RG-1-1-6<br>RG-1-1-7, RG-1-2-1<br>RG-1-2-3, RG-1-2-4<br>RG-2-1-1, RG-2-1-2<br>RG-2-1-3, RG-2-1-4<br>RG-2-1-5, RG-2-2-3<br>RG-3-1-1, RG-4-1-1 |
| RFC3261-10-51 |             |                           | Each Contact value <b>MUST</b> feature an "expires" parameter indicating its expiration interval chosen by the registrar.                                                                                      | MUST       | BASIC         | RG-1-1-1, RG-1-1-2<br>RG-1-1-3, RG-1-1-4<br>RG-1-1-5, RG-1-1-6<br>RG-1-1-7, RG-1-2-1<br>RG-1-2-3, RG-1-2-4<br>RG-2-1-1, RG-2-1-2<br>RG-2-1-3, RG-2-1-4<br>RG-2-1-5, RG-2-2-3<br>RG-3-1-1, RG-4-1-1 |
| RFC3261-10-52 |             |                           | The response <b>SHOULD</b> include a Date header field.                                                                                                                                                        | SHOULD     | BASIC         | RG-1-1-1, RG-1-1-2<br>RG-1-1-3, RG-1-1-4<br>RG-1-1-5, RG-1-1-6<br>RG-1-1-7, RG-1-2-1<br>RG-1-2-3, RG-1-2-4<br>RG-2-1-1, RG-2-1-2<br>RG-2-1-3, RG-2-1-4<br>RG-2-1-5, RG-2-2-3<br>RG-3-1-1, RG-4-1-1 |
| RFC3261-11-1  | 11          | Querying for Capabilities | All UAs <b>MUST</b> support the OPTIONS method.                                                                                                                                                                | MUST       | NOT REQUIRED  | [UA test]                                                                                                                                                                                          |

| No           | RFC Section | RFC Section Title               | Functional Specification                                                                                                                            | RFC Status | Test Priority | Test Profile              |
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| RFC3261-11-2 | 11.1        | Construction of OPTIONS Request | An Accept header field <b>SHOULD</b> be included to indicate the type of message body the UAC wishes to receive in the response.                    | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-11-3 | 11.2        | Processing of OPTIONS Request   | The response code chosen <b>MUST</b> be the same that would have been chosen had the request been an INVITE.                                        | MUST       | NOT REQUIRED  | [UA test]                 |
| RFC3261-11-4 |             |                                 | Allow, Accept, Accept-Encoding, Accept-Language, and Supported header fields <b>SHOULD</b> be present in a 200 (OK) response to an OPTIONS request. | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-11-5 |             |                                 | If the response is generated by a proxy, the Allow header field <b>SHOULD</b> be omitted as it is ambiguous since a proxy is method agnostic.       | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-11-6 |             |                                 | If the types include one that can describe media capabilities, the UAS <b>SHOULD</b> include a body in the response for that purpose.               | SHOULD     | NOT REQUIRED  | [UA test]                 |
| RFC3261-12-1 | 12.1        | Creation of a Dialog            | UAs <b>MUST</b> assign values to the dialog ID components as described below.                                                                       | MUST       | OUT OF SCOPE  |                           |

| No           | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                                                                                    | RFC Status | Test Priority | Test Profile |
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| RFC3261-12-2 | 12.1.1      | UAS behavior      | When a UAS responds to a request with a response that establishes a dialog (such as a 2xx to INVITE), the UAS <b>MUST</b> copy all Record-Route header field values from the request into the response (including the URIs, URI parameters, and any Record-Route header field parameters, whether they are known or unknown to the UAS) and <b>MUST</b> maintain the order of those values. | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-3 |             |                   |                                                                                                                                                                                                                                                                                                                                                                                             | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-4 |             |                   | The UAS <b>MUST</b> add a Contact header field to the response.                                                                                                                                                                                                                                                                                                                             | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-5 |             |                   | The URI provided in the Contact header field <b>MUST</b> be a SIP or SIPS URI.                                                                                                                                                                                                                                                                                                              | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-6 |             |                   | If the request that initiated the dialog contained a SIPS URI in the Request-URI or in the top Record-Route header field value, if there was any, or the Contact header field if there was no Record-Route header field, the Contact header field in the response <b>MUST</b> be a SIPS URI.                                                                                                | MUST       | NOT REQUIRED  |              |
| RFC3261-12-7 |             |                   | The URI <b>SHOULD</b> have global scope (that is, the same URI can be used in messages outside this dialog).                                                                                                                                                                                                                                                                                | SHOULD     | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                  | RFC Status | Test Priority | Test Profile |
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| RFC3261-12-8  |             |                   | This state <b>MUST</b> be maintained for the duration of the dialog.                                                                                      | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-9  |             |                   | The route set <b>MUST</b> be set to the list of URIs in the Record-Route header field from the request, taken in order and preserving all URI parameters. | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-10 |             |                   | If no Record-Route header field is present in the request, the route set <b>MUST</b> be set to the empty set.                                             | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-11 |             |                   | The remote target <b>MUST</b> be set to the URI from the Contact header field of the request.                                                             | MUST       | NOT REQUIRED  |              |
| RFC3261-12-12 |             |                   | The remote sequence number <b>MUST</b> be set to the value of the sequence number in the CSeq header field of the request.                                | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-13 |             |                   | The local sequence number <b>MUST</b> be empty.                                                                                                           | MUST       | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                             | RFC Status | Test Priority | Test Profile |
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| RFC3261-12-14 |             |                   | The call identifier component of the dialog ID <b>MUST</b> be set to the value of the Call-ID in the request.                                                                                                                                                        | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-15 |             |                   | The local tag component of the dialog ID <b>MUST</b> be set to the tag in the To field in the response to the request (which always includes a tag), and the remote tag component of the dialog ID <b>MUST</b> be set to the tag from the From field in the request. | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-16 |             |                   |                                                                                                                                                                                                                                                                      | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-17 |             |                   | A UAS <b>MUST</b> be prepared to receive a request without a tag in the From field, in which case the tag is considered to have a value of null.                                                                                                                     | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-18 |             |                   | The remote URI <b>MUST</b> be set to the URI in the From field, and the local URI <b>MUST</b> be set to the URI in the To field.                                                                                                                                     | MUST       | NOT REQUIRED  |              |
| RFC3261-12-19 |             |                   |                                                                                                                                                                                                                                                                      | MUST       | NOT REQUIRED  |              |
| RFC3261-12-20 | 12.1.2      | UAC Behavior      | When a UAC sends a request that can establish a dialog (such as an INVITE) it <b>MUST</b> provide a SIP or SIPS URI with global scope (i.e., the same SIP URI can be used in messages outside this dialog) in the Contact header field of the request.               | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-21 |             |                   | If the request has a Request-URI or a topmost Route header field value with a SIPS URI, the Contact header field <b>MUST</b> contain a SIPS URI.                                                                                                                     | MUST       | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                           | RFC Status | Test Priority | Test Profile |
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| RFC3261-12-22 |             |                   | This state <b>MUST</b> be maintained for the duration of the dialog.                                                                                               | MUST       | NOT REQUIRED  |              |
| RFC3261-12-23 |             |                   | The route set <b>MUST</b> be set to the list of URIs in the Record-Route header field from the response, taken in reverse order and preserving all URI parameters. | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-24 |             |                   | If no Record-Route header field is present in the response, the route set <b>MUST</b> be set to the empty set.                                                     | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-25 |             |                   | The remote target <b>MUST</b> be set to the URI from the Contact header field of the response.                                                                     | MUST       | NOT REQUIRED  |              |
| RFC3261-12-26 |             |                   | The local sequence number <b>MUST</b> be set to the value of the sequence number in the CSeq header field of the request.                                          | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-27 |             |                   | The remote sequence number <b>MUST</b> be empty (it is established when the remote UA sends a request within the dialog).                                          | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-28 |             |                   | The call identifier component of the dialog ID <b>MUST</b> be set to the value of the Call-ID in the request.                                                      | MUST       | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title      | Functional Specification                                                                                                                                                                                              | RFC Status | Test Priority | Test Profile |
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| RFC3261-12-29 |             |                        | The local tag component of the dialog ID <b>MUST</b> be set to the tag in the From field in the request, and the remote tag component of the dialog ID <b>MUST</b> be set to the tag in the To field of the response. | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-30 |             |                        |                                                                                                                                                                                                                       | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-31 |             |                        | A UAC <b>MUST</b> be prepared to receive a response without a tag in the To field, in which case the tag is considered to have a value of null.                                                                       | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-32 |             |                        | The remote URI <b>MUST</b> be set to the URI in the To field, and the local URI <b>MUST</b> be set to the URI in the From field.                                                                                      | MUST       | NOT REQUIRED  |              |
| RFC3261-12-33 |             |                        |                                                                                                                                                                                                                       | MUST       | NOT REQUIRED  |              |
| RFC3261-12-34 | 12.2.1.1    | Generating the Request | The URI in the To field of the request <b>MUST</b> be set to the remote URI from the dialog state.                                                                                                                    | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-35 |             |                        | The tag in the To header field of the request <b>MUST</b> be set to the remote tag of the dialog ID.                                                                                                                  | MUST       | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                          | RFC Status | Test Priority | Test Profile |
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| RFC3261-12-36 |             |                   | The From URI of the request <b>MUST</b> be set to the local URI from the dialog state.                                                                                                                                                                            | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-37 |             |                   | The tag in the From header field of the request <b>MUST</b> be set to the local tag of the dialog ID.                                                                                                                                                             | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-38 |             |                   | If the value of the remote or local tags is null, the tag parameter <b>MUST</b> be omitted from the To or From header fields, respectively.                                                                                                                       | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-39 |             |                   | The Call-ID of the request <b>MUST</b> be set to the Call-ID of the dialog.                                                                                                                                                                                       | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-40 |             |                   | Requests within a dialog <b>MUST</b> contain strictly monotonically increasing and contiguous CSeq sequence numbers (increasing-by-one) in each direction (excepting ACK and CANCEL of course, whose numbers equal the requests being acknowledged or cancelled). | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-41 |             |                   | Therefore, if the local sequence number is not empty, the value of the local sequence number <b>MUST</b> be incremented by one, and this value <b>MUST</b> be placed into the CSeq header field.                                                                  | MUST       | NOT REQUIRED  | [UA test]    |



| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                | RFC Status | Test Priority | Test Profile |
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| RFC3261-12-42 |             |                   |                                                                                                                                                                                                                                                                                                         | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-43 |             |                   | If the local sequence number is empty, an initial value <b>MUST</b> be chosen using the guidelines of Section 8.1.1.5.                                                                                                                                                                                  | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-44 |             |                   | The method field in the CSeq header field value <b>MUST</b> match the method of the request.                                                                                                                                                                                                            | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-45 |             |                   | If the route set is empty, the UAC <b>MUST</b> place the remote target URI into the Request-URI.                                                                                                                                                                                                        | MUST       | NOT REQUIRED  |              |
| RFC3261-12-46 |             |                   | The UAC <b>MUST NOT</b> add a Route header field to the request.                                                                                                                                                                                                                                        | MUST NOT   | NOT REQUIRED  | [UA test]    |
| RFC3261-12-47 |             |                   | If the route set is not empty, and the first URI in the route set contains the lr parameter (see Section 19.1.1), the UAC <b>MUST</b> place the remote target URI into the Request-URI and <b>MUST</b> include a Route header field containing the route set values in order, including all parameters. | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-48 |             |                   |                                                                                                                                                                                                                                                                                                         | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-49 |             |                   | If the route set is not empty, and its first URI does not contain the lr parameter, the UAC <b>MUST</b> place the first URI from the route set into the Request-URI, stripping any parameters that are not allowed in a Request-URI.                                                                    | MUST       | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title        | Functional Specification                                                                                                                                                                                                      | RFC Status | Test Priority | Test Profile |
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| RFC3261-12-50 |             |                          | The UAC <b>MUST</b> add a Route header field containing the remainder of the route set values in order, including all parameters.                                                                                             | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-51 |             |                          | The UAC <b>MUST</b> then place the remote target URI into the Route header field as the last value.                                                                                                                           | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-52 |             |                          | A UAC <b>SHOULD</b> include a Contact header field in any target refresh requests within a dialog, and unless there is a need to change it, the URI <b>SHOULD</b> be the same as used in previous requests within the dialog. | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-12-53 |             |                          |                                                                                                                                                                                                                               | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-12-54 |             |                          | If the "secure" flag is true, that URI <b>MUST</b> be a SIPS URI.                                                                                                                                                             | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-55 | 12.2.1.2    | Processing the Responses | When a UAC receives a 2xx response to a target refresh request, it <b>MUST</b> replace the dialog's remote target URI with the URI from the Contact header field in that response, if present.                                | MUST       | NOT REQUIRED  |              |
| RFC3261-12-56 |             |                          | If the response for a request within a dialog is a 481 (Call/Transaction Does Not Exist) or a 408 (Request Timeout), the UAC <b>SHOULD</b> terminate the dialog.                                                              | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-12-57 |             |                          | A UAC <b>SHOULD</b> also terminate a dialog if no response at all is received for the request (the client transaction would inform the TU about the timeout.)                                                                 | SHOULD     | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title           | Functional Specification                                                                                                                                                                                                           | RFC Status | Test Priority | Test Profile |
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| RFC3261-12-58 | 12.2.2      | UAS Behavior                | If the UAS wishes to reject the request because it does not wish to recreate the dialog, it <b>MUST</b> respond to the request with a 481 (Call/Transaction Does Not Exist) status code and pass that to the server transaction.   | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-59 |             |                             | If the remote sequence number is empty, it <b>MUST</b> be set to the value of the sequence number in the CSeq header field value in the request.                                                                                   | MUST       | BASIC         | RG-1-2-3     |
| RFC3261-12-60 |             |                             | If the remote sequence number was not empty, but the sequence number of the request is lower than the remote sequence number, the request is out of order and <b>MUST</b> be rejected with a 500 (Server Internal Error) response. | MUST       | BASIC         | RG-1-2-3     |
| RFC3261-12-61 |             |                             | This is not an error condition, and a UAS <b>SHOULD</b> be prepared to receive and process requests with CSeq values more than one higher than the previous received request.                                                      | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-12-62 |             |                             | The UAS <b>MUST</b> then set the remote sequence number to the value of the sequence number in the CSeq header field value in the request.                                                                                         | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-12-63 |             |                             | When a UAS receives a target refresh request, it <b>MUST</b> replace the dialog's remote target URI with the URI from the Contact header field in that request, if present.                                                        | MUST       | NOT REQUIRED  |              |
| RFC3261-13-1  | 13.1        | Overview                    | A UA that supports INVITE <b>MUST</b> also support ACK, CANCEL and BYE.                                                                                                                                                            | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-2  | 13.2.1      | Creating the Initial INVITE | An Allow header field (Section 20.5) <b>SHOULD</b> be present in the INVITE.                                                                                                                                                       | SHOULD     | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                       | RFC Status | Test Priority | Test Profile |
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| RFC3261-13-3  |             |                   | For example, a UA capable of receiving INFO requests within a dialog [34] <b>SHOULD</b> include an Allow header field listing the INFO method.                                                                 | SHOULD     | NOT REQUIRED  |              |
| RFC3261-13-4  |             |                   | A Supported header field (Section 20.37) <b>SHOULD</b> be present in the INVITE.                                                                                                                               | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-13-5  |             |                   | If the time indicated in the Expires header field is reached and no final answer for the INVITE has been received, the UAC core <b>SHOULD</b> generate a CANCEL request for the INVITE, as per Section 9.      | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-13-6  |             |                   | The initial offer <b>MUST</b> be in either an INVITE or, if not there, in the first reliable non-failure message from the UAS back to the UAC.                                                                 | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-7  |             |                   | If the initial offer is in an INVITE, the answer <b>MUST</b> be in a reliable non-failure message from UAS back to UAC which is correlated to that INVITE.                                                     | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-8  |             |                   | The UAC <b>MUST</b> treat the first session description it receives as the answer, and <b>MUST</b> ignore any session descriptions in subsequent responses to the initial INVITE.                              | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-9  |             |                   |                                                                                                                                                                                                                | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-10 |             |                   | If the initial offer is in the first reliable non-failure message from the UAS back to UAC, the answer <b>MUST</b> be in the acknowledgement for that message (in this specification, ACK for a 2xx response). | MUST       | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title          | Functional Specification                                                                                                                                                                                                                                                                          | RFC Status | Test Priority | Test Profile |
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| RFC3261-13-11 |             |                            | Once the UAS has sent or received an answer to the initial offer, it <b>MUST NOT</b> generate subsequent offers in any responses to the initial INVITE.                                                                                                                                           | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-13-12 |             |                            | All user agents that support INVITE <b>MUST</b> support these two exchanges.                                                                                                                                                                                                                      | MUST       | NOT REQUIRED  |              |
| RFC3261-13-13 |             |                            | The Session Description Protocol (SDP) (RFC 2327 [1]) <b>MUST</b> be supported by all user agents as a means to describe sessions, and its usage for constructing offers and answers <b>MUST</b> follow the procedures defined in [13].                                                           | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-14 |             |                            |                                                                                                                                                                                                                                                                                                   | MUST       | NOT REQUIRED  |              |
| RFC3261-13-15 | 13.2.2.3    | 4xx, 5xx and 6xx Responses | Subsequent final responses (which would only arrive under error conditions) <b>MUST</b> be ignored.                                                                                                                                                                                               | MUST       | NOT REQUIRED  |              |
| RFC3261-13-16 | 13.2.2.4    | 2xx Responses              | If the dialog identifier in the 2xx response matches the dialog identifier of an existing dialog, the dialog <b>MUST</b> be transitioned to the "confirmed" state, and the route set for the dialog <b>MUST</b> be recomputed based on the 2xx response using the procedures of Section 12.2.1.2. | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-17 |             |                            |                                                                                                                                                                                                                                                                                                   | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-18 |             |                            | Otherwise, a new dialog in the "confirmed" state <b>MUST</b> be constructed using the procedures of Section 12.1.2.                                                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                      | RFC Status | Test Priority | Test Profile |
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| RFC3261-13-19 |             |                   | The UAC core <b>MUST</b> generate an ACK request for each 2xx received from the transaction layer.                                                                                                            | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-20 |             |                   | The sequence number of the CSeq header field <b>MUST</b> be the same as the INVITE being acknowledged, but the CSeq method <b>MUST</b> be ACK.                                                                | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-21 |             |                   |                                                                                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-22 |             |                   | The ACK <b>MUST</b> contain the same credentials as the INVITE.                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-23 |             |                   | If the 2xx contains an offer (based on the rules above), the ACK <b>MUST</b> carry an answer in its body.                                                                                                     | MUST       | NOT REQUIRED  |              |
| RFC3261-13-24 |             |                   | If the offer in the 2xx response is not acceptable, the UAC core <b>MUST</b> generate a valid answer in the ACK and then send a BYE immediately.                                                              | MUST       | NOT REQUIRED  |              |
| RFC3261-13-25 |             |                   | The ACK <b>MUST</b> be passed to the client transport every time a retransmission of the 2xx final response that triggered the ACK arrives.                                                                   | MUST       | NOT REQUIRED  |              |
| RFC3261-13-26 |             |                   | If, after acknowledging any 2xx response to an INVITE, the UAC does not want to continue with that dialog, then the UAC <b>MUST</b> terminate the dialog by sending a BYE request as described in Section 15. | MUST       | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title        | Functional Specification                                                                                                                                                                     | RFC Status | Test Priority | Test Profile |
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| RFC3261-13-27 | 13.3.1      | Processing of the INVITE | If the invitation expires before the UAS has generated a final response, a 487 (Request Terminated) response <b>SHOULD</b> be generated.                                                     | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-13-28 |             |                          | It <b>MUST</b> provide the offer in its first non-failure reliable message back to the UAC.                                                                                                  | MUST       | NOT REQUIRED  |              |
| RFC3261-13-29 | 13.3.1.1    | Progress                 | Each of these <b>MUST</b> indicate the same dialog ID.                                                                                                                                       | MUST       | NOT REQUIRED  |              |
| RFC3261-13-30 |             |                          | To prevent cancellation, the UAS <b>MUST</b> send a non-100 provisional response at every minute, to handle the possibility of lost provisional responses.                                   | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-13-31 | 13.3.1.2    | The INVITE is Redirected | A 300 (Multiple Choices), 301 (Moved Permanently) or 302 (Moved Temporarily) response <b>SHOULD</b> contain a Contact header field containing one or more URIs of new addresses to be tried. | SHOULD     | NOT REQUIRED  |              |
| RFC3261-13-32 | 13.3.1.3    | The INVITE is Rejected   | A 486 (Busy Here) <b>SHOULD</b> be returned in such a scenario.                                                                                                                              | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-13-33 |             |                          | If the UAS knows that no other end system will be able to accept this call, a 600 (Busy Everywhere) response <b>SHOULD</b> be sent instead.                                                  | SHOULD     | NOT REQUIRED  |              |
| RFC3261-13-34 |             |                          | A UAS rejecting an offer contained in an INVITE <b>SHOULD</b> return a 488 (Not Acceptable Here) response.                                                                                   | SHOULD     | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title             | Functional Specification                                                                                                                                              | RFC Status  | Test Priority | Test Profile |
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| RFC3261-13-35 |             |                               | Such a response <b>SHOULD</b> include a Warning header field value explaining why the offer was rejected.                                                             | SHOULD      | NOT REQUIRED  | [UA test]    |
| RFC3261-13-36 | 13.3.1.4    | The INVITE is Accepted        | A 2xx response to an INVITE <b>SHOULD</b> contain the Allow header field and the Supported header field, and MAY contain the Accept header field.                     | SHOULD      | NOT REQUIRED  | [UA test]    |
| RFC3261-13-37 |             |                               | If the INVITE request contained an offer, and the UAS had not yet sent an answer, the 2xx <b>MUST</b> contain an answer.                                              | MUST        | NOT REQUIRED  | [UA test]    |
| RFC3261-13-38 |             |                               | If the INVITE did not contain an offer, the 2xx <b>MUST</b> contain an offer if the UAS had not yet sent an offer.                                                    | MUST        | NOT REQUIRED  |              |
| RFC3261-13-39 |             |                               | If the server retransmits the 2xx response for 64*T1 seconds without receiving an ACK, the dialog is confirmed, but the session <b>SHOULD</b> be terminated.          | SHOULD      | NOT REQUIRED  | [UA test]    |
| RFC3261-14-1  | 14          | Modifying an Existing Session | However, automated generation of re-INVITE or BYE is NOT <b>RECOMMENDED</b> to avoid flooding the network with traffic when there is congestion.                      | RECOMMENDED | NOT REQUIRED  | [UA test]    |
| RFC3261-14-2  |             |                               | In any case, if these messages are sent automatically, they <b>SHOULD</b> be sent after some randomized interval.                                                     | SHOULD      | OUT OF SCOPE  |              |
| RFC3261-14-3  | 14.1        | UAC Behavior                  | If the session description format has the capability for version numbers, the offerer <b>SHOULD</b> indicate that the version of the session description has changed. | SHOULD      | NOT REQUIRED  |              |



| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                                  | RFC Status | Test Priority | Test Profile |
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| RFC3261-14-4  |             |                   | Note that a UAC <b>MUST NOT</b> initiate a new INVITE transaction within a dialog while another INVITE transaction is in progress in either direction.                                                                                                                                                                                    | MUST NOT   | NOT REQUIRED  | [UA test]    |
| RFC3261-14-5  |             |                   | 1. If there is an ongoing INVITE client transaction, the TU <b>MUST</b> wait until the transaction reaches the completed or terminated state before initiating the new INVITE.                                                                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-14-6  |             |                   | 2. If there is an ongoing INVITE server transaction, the TU <b>MUST</b> wait until the transaction reaches the confirmed or terminated state before initiating the new INVITE.                                                                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-14-7  |             |                   | If a UA receives a non-2xx final response to a re-INVITE, the session parameters <b>MUST</b> remain unchanged, as if no re-INVITE had been issued.                                                                                                                                                                                        | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-14-8  |             |                   | If a UAC receives a 491 response to a re-INVITE, it <b>SHOULD</b> start a timer with a value T chosen as follows:                                                                                                                                                                                                                         | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-14-9  |             |                   | When the timer fires, the UAC <b>SHOULD</b> attempt the re-INVITE once more, if it still desires for that session modification to take place.                                                                                                                                                                                             | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-14-10 | 14.2        | UAS Behavior      | A UAS that receives a second INVITE before it sends the final response to a first INVITE with a lower CSeq sequence number on the same dialog <b>MUST</b> return a 500 (Server Internal Error) response to the second INVITE and <b>MUST</b> include a Retry-After header field with a randomly chosen value of between 0 and 10 seconds. | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-14-11 |             |                   |                                                                                                                                                                                                                                                                                                                                           | MUST       | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                | RFC Status | Test Priority | Test Profile |
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| RFC3261-14-12 |             |                   | A UAS that receives an INVITE on a dialog while an INVITE it had sent on that dialog is in progress <b>MUST</b> return a 491 (Request Pending) response to the received INVITE.                                                                                                         | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-14-13 |             |                   | If a UA receives a re-INVITE for an existing dialog, it <b>MUST</b> check any version identifiers in the session description or, if there are no version identifiers, the content of the session description to see if it has changed.                                                  | MUST       | NOT REQUIRED  |              |
| RFC3261-14-14 |             |                   | If the session description has changed, the UAS <b>MUST</b> adjust the session parameters accordingly, possibly after asking the user for confirmation.                                                                                                                                 | MUST       | NOT REQUIRED  |              |
| RFC3261-14-15 |             |                   | This response <b>SHOULD</b> include a Warning header field.                                                                                                                                                                                                                             | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-14-16 |             |                   | If a UAS generates a 2xx response and never receives an ACK, it <b>SHOULD</b> generate a BYE to terminate the dialog.                                                                                                                                                                   | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-14-17 |             |                   | A UAS providing an offer in a 2xx (because the INVITE did not contain an offer) <b>SHOULD</b> construct the offer as if the UAS were making a brand new call, subject to the constraints of sending an offer that updates an existing session, as described in [13] in the case of SDP. | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-14-18 |             |                   | Specifically, this means that it <b>SHOULD</b> include as many media formats and media types that the UA is willing to support.                                                                                                                                                         | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-14-19 |             |                   | The UAS <b>MUST</b> ensure that the session description overlaps with its previous session description in media formats, transports, or other parameters that require support from the peer.                                                                                            | MUST       | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title     | Functional Specification                                                                                                                                                                                                                                                        | RFC Status | Test Priority | Test Profile |
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| RFC3261-14-20 |             |                       | If, however, it is unacceptable to the UAC, the UAC <b>SHOULD</b> generate an answer with a valid session description, and then send a BYE to terminate the session.                                                                                                            | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-15-1  | 15          | Terminating a Session | When a BYE is received on a dialog, any session associated with that dialog <b>SHOULD</b> terminate.                                                                                                                                                                            | SHOULD     | NOT REQUIRED  |              |
| RFC3261-15-2  |             |                       | A UA <b>MUST NOT</b> send a BYE outside of a dialog.                                                                                                                                                                                                                            | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-15-3  |             |                       | The caller's UA <b>MAY</b> send a BYE for either confirmed or early dialogs, and the callee's UA <b>MAY</b> send a BYE on confirmed dialogs, but <b>MUST NOT</b> send a BYE on early dialogs.                                                                                   | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-15-4  |             |                       | However, the callee's UA <b>MUST NOT</b> send a BYE on a confirmed dialog until it has received an ACK for its 2xx response or until the server transaction times out.                                                                                                          | MUST NOT   | NOT REQUIRED  | [UA test]    |
| RFC3261-15-5  | 15.1.1      | UAC Behavior          | The UAC <b>MUST</b> consider the session terminated (and therefore stop sending or listening for media) as soon as the BYE request is passed to the client transaction.                                                                                                         | MUST       | NOT REQUIRED  |              |
| RFC3261-15-6  |             |                       | If the response for the BYE is a 481 (Call/Transaction Does Not Exist) or a 408 (Request Timeout) or no response at all is received for the BYE (that is, a timeout is returned by the client transaction), the UAC <b>MUST</b> consider the session and the dialog terminated. | MUST       | NOT REQUIRED  |              |
| RFC3261-15-7  | 15.1.2      | UAS Behavior          | If the BYE does not match an existing dialog, the UAS core <b>SHOULD</b> generate a 481 (Call/Transaction Does Not Exist) response and pass that to the server transaction.                                                                                                     | SHOULD     | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                    | RFC Status  | Test Priority | Test Profile |
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| RFC3261-15-8  |             |                   | A UAS core receiving a BYE request for an existing dialog <b>MUST</b> follow the procedures of Section 12.2.2 to process the request.                                                       | MUST        | NOT REQUIRED  |              |
| RFC3261-15-9  |             |                   | Once done, the UAS <b>SHOULD</b> terminate the session (and therefore stop sending and listening for media).                                                                                | SHOULD      | NOT REQUIRED  |              |
| RFC3261-15-10 |             |                   | Whether or not it ends its participation on the session, the UAS core <b>MUST</b> generate a 2xx response to the BYE, and <b>MUST</b> pass that to the server transaction for transmission. | MUST        | NOT REQUIRED  | [UA test]    |
| RFC3261-15-11 |             |                   |                                                                                                                                                                                             | MUST        | NOT REQUIRED  | [UA test]    |
| RFC3261-15-12 |             |                   | The UAS <b>MUST</b> still respond to any pending requests received for that dialog.                                                                                                         | MUST        | NOT REQUIRED  |              |
| RFC3261-15-13 |             |                   | It is <b>RECOMMENDED</b> that a 487 (Request Terminated) response be generated to those pending requests.                                                                                   | RECOMMENDED | NOT REQUIRED  |              |
| RFC3261-16-1  | 16.1        | Overview          | When responding directly to a request, the element is playing the role of a UAS and <b>MUST</b> behave as described in Section 8.2.                                                         | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-2  |             |                   | Any request that is forwarded to more than one location <b>MUST</b> be handled statefully.                                                                                                  | MUST        | NOT REQUIRED  | [Proxy test] |

| No            | RFC Section | RFC Section Title  | Functional Specification                                                                                                                                                                                       | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-3  |             |                    | Requests forwarded between different types of transports where the proxy's TU must take an active role in ensuring reliable delivery on one of the transports <b>MUST</b> be forwarded transaction statefully. | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-4  |             |                    | The proxy <b>SHOULD NOT</b> initiate a CANCEL request.                                                                                                                                                         | SHOULD NOT | OUT OF SCOPE  |              |
| RFC3261-16-5  | 16.2        | Stateful Proxy     | The proxy core <b>MUST</b> behave as a UAS with respect to sending an immediate provisional on that server transaction (such as 100 Trying) as described in Section 8.2.6.                                     | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-6  |             |                    | Thus, a stateful proxy <b>SHOULD NOT</b> generate 100 (Trying) responses to non-INVITE requests.                                                                                                               | SHOULD NOT | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-7  |             |                    | For all new requests, including any with unknown methods, an element intending to proxy the request <b>MUST</b> :                                                                                              | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-8  | 16.3        | Request Validation | Before an element can proxy a request, it <b>MUST</b> verify the message's validity.                                                                                                                           | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-9  |             |                    | If any of these checks fail, the element <b>MUST</b> behave as a user agent server (see Section 8.2) and respond with an error code.                                                                           | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-10 |             |                    | Notice that a proxy is not required to detect merged requests and <b>MUST NOT</b> treat merged requests as an error condition.                                                                                 | MUST NOT   | OUT OF SCOPE  |              |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                           | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-11 |             |                   | The request <b>MUST</b> be well-formed enough to be handled with a server transaction.                                                                                                             | MUST       | BASIC         | [tester]     |
| RFC3261-16-12 |             |                   | Any components involved in the remainder of these Request Validation steps or the Request Forwarding section <b>MUST</b> be well-formed.                                                           | MUST       | BASIC         | [tester]     |
| RFC3261-16-13 |             |                   | Any other components, well-formed or not, <b>SHOULD</b> be ignored and remain unchanged when the message is forwarded.                                                                             | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-14 |             |                   | An element <b>MUST NOT</b> refuse to proxy a request because it contains a method or header field it does not know about.                                                                          | MUST NOT   | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-15 |             |                   | If the Request-URI has a URI whose scheme is not understood by the proxy, the proxy <b>SHOULD</b> reject the request with a 416 (Unsupported URI Scheme) response.                                 | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-16 |             |                   | If the request contains a Max-Forwards header field with a field value of zero (0), the element <b>MUST NOT</b> forward the request.                                                               | MUST NOT   | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-17 |             |                   | Otherwise, the element <b>MUST</b> return a 483 (Too many hops) response.                                                                                                                          | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-18 |             |                   | If the request contains a Proxy-Require header field (Section 20.29) with one or more option-tags this element does not understand, the element <b>MUST</b> return a 420 (Bad Extension) response. | MUST       | NOT REQUIRED  | [Proxy test] |

| No            | RFC Section | RFC Section Title               | Functional Specification                                                                                                                                                                                                                                                                                                                                                     | RFC Status | Test Priority | Test Profile                                 |
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| RFC3261-16-19 |             |                                 | The response <b>MUST</b> include an Unsupported (Section 20.40) header field listing those option-tags the element did not understand.                                                                                                                                                                                                                                       | MUST       | NOT REQUIRED  | [Proxy test]                                 |
| RFC3261-16-20 |             |                                 | If an element requires credentials before forwarding a request, the request <b>MUST</b> be inspected as described in Section 22.3.                                                                                                                                                                                                                                           | MUST       | OUT OF SCOPE  |                                              |
| RFC3261-16-21 | 16.4        | Route Information Preprocessing | The proxy <b>MUST</b> inspect the Request-URI of the request.                                                                                                                                                                                                                                                                                                                | MUST       | OUT OF SCOPE  |                                              |
| RFC3261-16-22 |             |                                 | If the Request-URI of the request contains a value this proxy previously placed into a Record-Route header field (see Section 16.6 item 4), the proxy <b>MUST</b> replace the Request-URI in the request with the last value from the Route header field, and remove that value from the Route header field.                                                                 | MUST       | BASIC         | generic_forward_R-URI_non-responsible-domain |
| RFC3261-16-23 |             |                                 | The proxy <b>MUST</b> then proceed as if it received this modified request.                                                                                                                                                                                                                                                                                                  | MUST       | BASIC         | generic_forward_R-URI_non-responsible-domain |
| RFC3261-16-24 |             |                                 | If the Request-URI contains a maddr parameter, the proxy <b>MUST</b> check to see if its value is in the set of addresses or domains the proxy is configured to be responsible for.                                                                                                                                                                                          | MUST       | OUT OF SCOPE  |                                              |
| RFC3261-16-25 |             |                                 | If the Request-URI has a maddr parameter with a value the proxy is responsible for, and the request was received using the port and transport indicated (explicitly or by default) in the Request-URI, the proxy <b>MUST</b> strip the maddr and any non-default port or transport parameter and continue processing as if those values had not been present in the request. | MUST       | OUT OF SCOPE  |                                              |
| RFC3261-16-26 |             |                                 | If the first value in the Route header field indicates this proxy, the proxy <b>MUST</b> remove that value from the request.                                                                                                                                                                                                                                                 | MUST       | BASIC         | generic_forward_request                      |

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| RFC3261-16-27 | 16.5        | Determining Request Targets | If the Request-URI of the request contains an maddr parameter, the Request-URI <b>MUST</b> be placed into the target set as the only target URI, and the proxy <b>MUST</b> proceed to Section 16.6.                                                          | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-28 |             |                             |                                                                                                                                                                                                                                                              | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-29 |             |                             | If the domain of the Request-URI indicates a domain this element is not responsible for, the Request-URI <b>MUST</b> be placed into the target set as the only target, and the element <b>MUST</b> proceed to the task of Request Forwarding (Section 16.6). | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-30 |             |                             |                                                                                                                                                                                                                                                              | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-31 |             |                             | When accessing the location service constructed by a registrar, the Request-URI <b>MUST</b> first be canonicalized as described in Section 10.3 before being used as an index.                                                                               | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-32 |             |                             | If the Request-URI does not provide sufficient information for the proxy to determine the target set, it <b>SHOULD</b> return a 485 (Ambiguous) response.                                                                                                    | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-16-33 |             |                             | This response <b>SHOULD</b> contain a Contact header field containing URIs of new addresses to be tried.                                                                                                                                                     | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-16-34 |             |                             | If a target URI is already present in the set (based on the definition of equality for the URI type), it <b>MUST NOT</b> be added again.                                                                                                                     | MUST NOT   | OUT OF SCOPE  |              |



| No            | RFC Section | RFC Section Title  | Functional Specification                                                                                                                                                                                       | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-35 |             |                    | A proxy <b>MUST NOT</b> add additional targets to the target set if the Request-URI of the original request does not indicate a resource this proxy is responsible for.                                        | MUST NOT   | OUT OF SCOPE  |              |
| RFC3261-16-36 |             |                    | If a proxy uses a dynamic source of information while building the target set (for instance, if it consults a SIP Registrar), it <b>SHOULD</b> monitor that source for the duration of processing the request. | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-16-37 |             |                    | New locations <b>SHOULD</b> be added to the target set as they become available.                                                                                                                               | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-16-38 |             |                    | As above, any given URI <b>MUST NOT</b> be added to the set more than once.                                                                                                                                    | MUST NOT   | OUT OF SCOPE  |              |
| RFC3261-16-39 |             |                    | If the Request-URI indicates a resource at this proxy that does not exist, the proxy <b>MUST</b> return a 404 (Not Found) response.                                                                            | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-40 |             |                    | If the target set remains empty after applying all of the above, the proxy <b>MUST</b> return an error response, which <b>SHOULD</b> be the 480 (Temporarily Unavailable) response.                            | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-41 |             |                    |                                                                                                                                                                                                                | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-42 | 16.6        | Request Forwarding | The copy <b>MUST</b> initially contain all of the header fields from the received request.                                                                                                                     | MUST       | NOT REQUIRED  | [Proxy test] |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                               | RFC Status | Test Priority | Test Profile              |
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| RFC3261-16-43 |             |                   | Fields not detailed in the processing described below <b>MUST NOT</b> be removed.                                                      | MUST NOT   | NOT REQUIRED  | [Proxy test]              |
| RFC3261-16-44 |             |                   | The copy <b>SHOULD</b> maintain the ordering of the header fields as in the received request.                                          | SHOULD     | NOT REQUIRED  | [Proxy test]              |
| RFC3261-16-45 |             |                   | The proxy <b>MUST NOT</b> reorder field values with a common field name (See Section 7.3.1).                                           | MUST NOT   | NOT REQUIRED  | generic_forward_from-UA11 |
| RFC3261-16-46 |             |                   | The proxy <b>MUST NOT</b> add to, modify, or remove the message body.                                                                  | MUST NOT   | NOT REQUIRED  | generic_forward_from-UA11 |
| RFC3261-16-47 |             |                   | The Request-URI in the copy's start line <b>MUST</b> be replaced with the URI for this target.                                         | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-16-48 |             |                   | If the URI contains any parameters not allowed in a Request-URI, they <b>MUST</b> be removed.                                          | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-16-49 |             |                   | If the copy contains a Max-Forwards header field, the proxy <b>MUST</b> decrement its value by one (1).                                | MUST       | NOT REQUIRED  | generic_forward_from-UA11 |
| RFC3261-16-50 |             |                   | If the copy does not contain a Max-Forwards header field, the proxy <b>MUST</b> add one with a field value, which <b>SHOULD</b> be 70. | MUST       | NOT REQUIRED  | [Proxy test]              |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                | RFC Status | Test Priority | Test Profile            |
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| RFC3261-16-51 |             |                   |                                                                                                                                                                                                                                                                                                                         | SHOULD     | NOT REQUIRED  | [Proxy test]            |
| RFC3261-16-52 |             |                   | If this proxy wishes to remain on the path of future requests in a dialog created by this request (assuming the request creates a dialog), it <b>MUST</b> insert a Record-Route header field value into the copy before any existing Record-Route header field values, even if a Route header field is already present. | MUST       | NOT REQUIRED  | generic_forward_request |
| RFC3261-16-53 |             |                   | If this request is already part of a dialog, the proxy <b>SHOULD</b> insert a Record-Route header field value if it wishes to remain on the path of future requests in the dialog.                                                                                                                                      | SHOULD     | NOT REQUIRED  | [Proxy test]            |
| RFC3261-16-54 |             |                   | The URI placed in the Record-Route header field value <b>MUST</b> be a SIP or SIPS URI.                                                                                                                                                                                                                                 | MUST       | NOT REQUIRED  | [Proxy test]            |
| RFC3261-16-55 |             |                   | This URI <b>MUST</b> contain an lr parameter (see Section 19.1.1).                                                                                                                                                                                                                                                      | MUST       | NOT REQUIRED  | generic_forward_request |
| RFC3261-16-56 |             |                   | The URI <b>SHOULD NOT</b> contain the transport parameter unless the proxy has knowledge (such as in a private network) that the next downstream element that will be in the path of subsequent requests supports that transport.                                                                                       | SHOULD NOT | NOT REQUIRED  | generic_forward_request |
| RFC3261-16-57 |             |                   | The URI placed in the Record-Route header field <b>MUST</b> resolve to the element inserting it (or a suitable stand-in) when the server location procedures of [4] are applied to it, so that subsequent requests reach the same SIP element.                                                                          | MUST       | OUT OF SCOPE  |                         |
| RFC3261-16-58 |             |                   | If the Request-URI contains a SIPS URI, or the topmost Route header field value (after the post processing of bullet 6) contains a SIPS URI, the URI placed into the Record-Route header field <b>MUST</b> be a SIPS URI.                                                                                               | MUST       | NOT REQUIRED  | [Proxy test]            |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                          | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-59 |             |                   | Furthermore, if the request was not received over TLS, the proxy <b>MUST</b> insert a Record-Route header field.                                                                                                                                                                  | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-60 |             |                   | In a similar fashion, a proxy that receives a request over TLS, but generates a request without a SIPS URI in the Request-URI or topmost Route header field value (after the post processing of bullet 6), <b>MUST</b> insert a Record-Route header field that is not a SIPS URI. | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-61 |             |                   | If the URI placed in the Record-Route header field needs to be rewritten when it passes back through in a response, the URI <b>MUST</b> be distinct enough to locate at that time.                                                                                                | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-62 |             |                   | If a proxy needs to be in the path of any type of dialog (such as one straddling a firewall), it <b>SHOULD</b> add a Record-Route header field value to every request with a method it does not understand since that method may have dialog semantics.                           | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-63 |             |                   | Endpoints <b>MUST NOT</b> use a URI obtained from a Record-Route header field outside the dialog in which it was provided.                                                                                                                                                        | MUST NOT   | OUT OF SCOPE  |              |
| RFC3261-16-64 |             |                   | A proxy <b>MUST</b> ensure that all such proxies are loose routers.                                                                                                                                                                                                               | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-65 |             |                   | This set <b>MUST</b> be pushed into the Route header field of the copy ahead of any existing values, if present.                                                                                                                                                                  | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-66 |             |                   | If the Route header field is absent, it <b>MUST</b> be added, containing that list of URIs.                                                                                                                                                                                       | MUST       | OUT OF SCOPE  |              |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                 | RFC Status      | Test Priority | Test Profile |
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| RFC3261-16-67 |             |                   | If the request has a Route header field, this alternative <b>MUST NOT</b> be used unless it is known that next hop proxy is a loose router.                                              | MUST NOT        | OUT OF SCOPE  |              |
| RFC3261-16-68 |             |                   | Furthermore, if the Request-URI contains a SIPS URI, TLS <b>MUST</b> be used to communicate with that proxy.                                                                             | MUST            | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-69 |             |                   | If the copy contains a Route header field, the proxy <b>MUST</b> inspect the URI in its first value.                                                                                     | MUST            | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-70 |             |                   | If that URI does not contain an lr parameter, the proxy <b>MUST</b> modify the copy as follows:                                                                                          | MUST            | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-71 |             |                   | The proxy <b>MUST</b> place the Request-URI into the Route header field as the last value.                                                                                               | MUST            | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-72 |             |                   | The proxy <b>MUST</b> then place the first Route header field value into the Request-URI and remove that value from the Route header field.                                              | MUST            | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-73 |             |                   | Such a policy <b>MUST NOT</b> be used if the proxy is not certain that the IP address, port, and transport correspond to a server that is a loose router.                                | MUST NOT        | OUT OF SCOPE  |              |
| RFC3261-16-74 |             |                   | However, this mechanism for sending the request through a specific next hop is <b>NOT RECOMMENDED</b> ; instead a Route header field should be used for that purpose as described above. | NOT RECOMMENDED | OUT OF SCOPE  |              |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                          | RFC Status | Test Priority | Test Profile            |
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| RFC3261-16-75 |             |                   | If the proxy has reformatted the request to send to a strict-routing element as described in step 6 above, the proxy <b>MUST</b> apply those procedures to the Request-URI of the request.                        | MUST       | NOT REQUIRED  | [Proxy test]            |
| RFC3261-16-76 |             |                   | Otherwise, the proxy <b>MUST</b> apply the procedures to the first value in the Route header field, if present, else the Request-URI.                                                                             | MUST       | NOT REQUIRED  | [Proxy test]            |
| RFC3261-16-77 |             |                   | Independently of which URI is being used as input to the procedures of [4], if the Request-URI specifies a SIPS resource, the proxy <b>MUST</b> follow the procedures of [4] as if the input URI were a SIPS URI. | MUST       | NOT REQUIRED  | [Proxy test]            |
| RFC3261-16-78 |             |                   | As described in [4], the proxy <b>MUST</b> attempt to deliver the message to the first tuple in that set, and proceed through the set in order until the delivery attempt succeeds.                               | MUST       | NOT REQUIRED  | [Proxy test]            |
| RFC3261-16-79 |             |                   | For each tuple attempted, the proxy <b>MUST</b> format the message as appropriate for the tuple and send the request using a new client transaction as detailed in steps 8 through 10.                            | MUST       | NOT REQUIRED  | [Proxy test]            |
| RFC3261-16-80 |             |                   | Thus, the branch parameter provided with the Via header field inserted in step 8 <b>MUST</b> be different for each attempt.                                                                                       | MUST       | NOT REQUIRED  | [Proxy test]            |
| RFC3261-16-81 |             |                   | The proxy <b>MUST</b> insert a Via header field value into the copy before the existing Via header field values.                                                                                                  | MUST       | NOT REQUIRED  | generic_forward_request |
| RFC3261-16-82 |             |                   | A proxy choosing to detect loops <b>SHOULD</b> create a branch parameter separable into two parts by the implementation.                                                                                          | SHOULD     | NOT REQUIRED  | [Proxy test]            |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                              | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-83 |             |                   | The first part <b>MUST</b> satisfy the constraints of Section 8.1.1.7 as described above.                                                                                                                                                             | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-84 |             |                   | The value placed in this part of the branch parameter <b>SHOULD</b> reflect all of those fields (including any Route, Proxy-Require and Proxy- Authorization header fields).                                                                          | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-85 |             |                   | If a proxy wishes to detect loops, the "branch" parameter it supplies <b>MUST</b> depend on all information affecting processing of a request, including the incoming Request-URI and any header fields affecting the request's admission or routing. | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-86 |             |                   | The request method <b>MUST NOT</b> be included in the calculation of the branch parameter.                                                                                                                                                            | MUST NOT   | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-87 |             |                   | In particular, CANCEL and ACK requests (for non-2xx responses) <b>MUST</b> have the same branch value as the corresponding request they cancel or acknowledge.                                                                                        | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-88 |             |                   | If the request will be sent to the next hop using a stream- based transport and the copy contains no Content-Length header field, the proxy <b>MUST</b> insert one with the correct value for the body of the request (see Section 20.14).            | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-89 |             |                   | A stateful proxy <b>MUST</b> create a new client transaction for this request as described in Section 17.1 and instructs the transaction to send the request using the address, port and transport determined in step 7.                              | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-90 |             |                   | Timer C <b>MUST</b> be set for each client transaction when an INVITE request is proxied.                                                                                                                                                             | MUST       | NOT REQUIRED  | [Proxy test] |

| No            | RFC Section                                                                                                                                                                                            | RFC Section Title   | Functional Specification                                                                                                                         | RFC Status   | Test Priority | Test Profile |
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| RFC3261-16-91 |                                                                                                                                                                                                        |                     | The timer <b>MUST</b> be larger than 3 minutes.                                                                                                  | MUST         | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-92 | 16.7                                                                                                                                                                                                   | Response Processing | If none is found, the element <b>MUST</b> process the response (even if it is an informational response) as a stateless proxy (described below). | MUST         | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-93 | As client transactions pass responses to the proxy layer, the following processing <b>MUST</b> take place:                                                                                             |                     | MUST                                                                                                                                             | OUT OF SCOPE |               |              |
| RFC3261-16-94 | The following processing <b>MUST</b> be performed on each response that is forwarded.                                                                                                                  |                     | MUST                                                                                                                                             | NOT REQUIRED | [Proxy test]  |              |
| RFC3261-16-95 | For an INVITE transaction, if the response is a provisional response with status codes 101 to 199 inclusive (i.e., anything but 100), the proxy <b>MUST</b> reset timer C for that client transaction. |                     | MUST                                                                                                                                             | NOT REQUIRED | [Proxy test]  |              |
| RFC3261-16-96 | The timer <b>MAY</b> be reset to a different value, but this value <b>MUST</b> be greater than 3 minutes.                                                                                              |                     | MUST                                                                                                                                             | NOT REQUIRED | [Proxy test]  |              |
| RFC3261-16-97 | If no Via header field values remain in the response, the response was meant for this element and <b>MUST NOT</b> be forwarded.                                                                        |                     | MUST NOT                                                                                                                                         | NOT REQUIRED | [Proxy test]  |              |
| RFC3261-16-98 | If the proxy chooses to recurse on any contacts in a 3xx response by adding them to the target set, it <b>MUST</b> remove them from the response before adding the response to the response context.   |                     | MUST                                                                                                                                             | NOT REQUIRED | [Proxy test]  |              |



| No             | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                                      | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-99  |             |                   | However, a proxy <b>SHOULD NOT</b> recurse to a non-SIPS URI if the Request-URI of the original request was a SIPS URI.                                                                                                                                                                                                                       | SHOULD NOT | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-100 |             |                   | If the proxy recurses on all of the contacts in a 3xx response, the proxy <b>SHOULD NOT</b> add the resulting contactless response to the response context.                                                                                                                                                                                   | SHOULD NOT | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-101 |             |                   | If a proxy receives a 416 (Unsupported URI Scheme) response to a request whose Request-URI scheme was not SIP, but the scheme in the original received request was SIP or SIPS (that is, the proxy changed the scheme from SIP or SIPS to something else when it proxied a request), the proxy <b>SHOULD</b> add a new URI to the target set. | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-102 |             |                   | This URI <b>SHOULD</b> be a SIP URI version of the non-SIP URI that was just tried.                                                                                                                                                                                                                                                           | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-103 |             |                   | As with a 3xx response, if a proxy "recurses" on the 416 by trying a SIP or SIPS URI instead, the 416 response <b>SHOULD NOT</b> be added to the response context.                                                                                                                                                                            | SHOULD NOT | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-104 |             |                   | Until a final response has been sent on the server transaction, the following responses <b>MUST</b> be forwarded immediately:                                                                                                                                                                                                                 | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-105 |             |                   | If a 6xx response is received, it is not immediately forwarded, but the stateful proxy <b>SHOULD</b> cancel all client pending transactions as described in Section 10, and it <b>MUST NOT</b> create any new branches in this context.                                                                                                       | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-106 |             |                   |                                                                                                                                                                                                                                                                                                                                               | MUST NOT   | NOT REQUIRED  | [Proxy test] |

| No             | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                          | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-107 |             |                   | After a final response has been sent on the server transaction, the following responses <b>MUST</b> be forwarded immediately:                                                                                                                     | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-108 |             |                   | A stateful proxy <b>MUST NOT</b> immediately forward any other responses.                                                                                                                                                                         | MUST NOT   | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-109 |             |                   | In particular, a stateful proxy <b>MUST NOT</b> forward any 100 (Trying) response.                                                                                                                                                                | MUST NOT   | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-110 |             |                   | Any response chosen for immediate forwarding <b>MUST</b> be processed as described in steps "Aggregate Authorization Header Field Values" through "Record-Route".                                                                                 | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-111 |             |                   | A stateful proxy <b>MUST</b> send a final response to a response context's server transaction if no final responses have been immediately forwarded by the above rules and all client transactions in this response context have been terminated. | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-112 |             |                   | The stateful proxy <b>MUST</b> choose the "best" final response among those received and stored in the response context.                                                                                                                          | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-113 |             |                   | If there are no final responses in the context, the proxy <b>MUST</b> send a 408 (Request Timeout) response to the server transaction.                                                                                                            | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-114 |             |                   | Otherwise, the proxy <b>MUST</b> forward a response from the responses stored in the response context.                                                                                                                                            | MUST       | NOT REQUIRED  | [Proxy test] |

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| RFC3261-16-115 |             |                   | It <b>MUST</b> choose from the 6xx class responses if any exist in the context.                                                                                                                 | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-116 |             |                   | If no 6xx class responses are present, the proxy <b>SHOULD</b> choose from the lowest response class stored in the response context.                                                            | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-117 |             |                   | The proxy <b>SHOULD</b> give preference to responses that provide information affecting resubmission of this request, such as 401, 407, 415, 420, and 484 if the 4xx class is chosen.           | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-16-118 |             |                   | A proxy which receives a 503 (Service Unavailable) response <b>SHOULD NOT</b> forward it upstream unless it can determine that any subsequent requests it might proxy will also generate a 503. | SHOULD NOT | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-119 |             |                   | If the only response that was received is a 503, the proxy <b>SHOULD</b> generate a 500 response and forward that upstream.                                                                     | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-120 |             |                   | The forwarded response <b>MUST</b> be processed as described in steps "Aggregate Authorization Header Field Values" through "Record-Route".                                                     | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-121 |             |                   | A proxy <b>MUST NOT</b> insert a tag into the To header field of a 1xx or 2xx response if the request did not contain one.                                                                      | MUST NOT   | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-122 |             |                   | A proxy <b>MUST NOT</b> modify the tag in the To header field of a 1xx or 2xx response.                                                                                                         | MUST NOT   | NOT REQUIRED  | [Proxy test] |

| No             | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                                        | RFC Status  | Test Priority | Test Profile |
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| RFC3261-16-123 |             |                   | An element <b>SHOULD</b> preserve the To tag when simply forwarding a 3-6xx response to a request that did not contain a To tag.                                                                                                                                                                                                                | SHOULD      | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-124 |             |                   | A proxy <b>MUST NOT</b> modify the To tag in any forwarded response to a request that contains a To tag.                                                                                                                                                                                                                                        | MUST NOT    | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-125 |             |                   | If the selected response is a 401 (Unauthorized) or 407 (Proxy Authentication Required), the proxy <b>MUST</b> collect any WWW-Authenticate and Proxy-Authenticate header field values from all other 401 (Unauthorized) and 407 (Proxy Authentication Required) responses received so far in this <u>response context and add them to this</u> | MUST        | OUT OF SCOPE  |              |
| RFC3261-16-126 |             |                   | If the proxy received the request over TLS, and sent it out over a non-TLS connection, the proxy <b>MUST</b> rewrite the URI in the Record-Route header field to be a SIPS URI.                                                                                                                                                                 | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-127 |             |                   | If the proxy received the request over a non-TLS connection, and sent it out over TLS, the proxy <b>MUST</b> rewrite the URI in the Record-Route header field to be a SIP URI.                                                                                                                                                                  | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-128 |             |                   | The new URI provided by the proxy <b>MUST</b> satisfy the same constraints on URIs placed in Record-Route header fields in requests (see Step 4 of Section 16.6) with the following modifications:                                                                                                                                              | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-129 |             |                   | The URI <b>SHOULD NOT</b> contain the transport parameter unless the proxy has knowledge that the next upstream (as opposed to downstream) element that will be in the path of subsequent requests supports that transport.                                                                                                                     | SHOULD NOT  | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-130 |             |                   | A <b>RECOMMENDED</b> mechanism to achieve this is for the proxy to append a unique identifier for the proxy instance to the user portion of the URI.                                                                                                                                                                                            | RECOMMENDED | NOT REQUIRED  | [Proxy test] |

| No             | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                  | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-131 |             |                   | The proxy <b>MUST NOT</b> add to, modify, or remove the message body.                                                                                                                     | MUST NOT   | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-132 |             |                   | Unless otherwise specified, the proxy <b>MUST NOT</b> remove any header field values other than the Via header field value discussed in Section 16.7 Item 3.                              | MUST NOT   | OUT OF SCOPE  |              |
| RFC3261-16-133 |             |                   | In particular, the proxy <b>MUST NOT</b> remove any "received" parameter it may have added to the next Via header field value while processing the request associated with this response. | MUST NOT   | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-134 |             |                   | The proxy <b>MUST</b> pass the response to the server transaction associated with the response context.                                                                                   | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-135 |             |                   | If the server transaction is no longer available to handle the transmission, the element <b>MUST</b> forward the response statelessly by sending it to the server transport.              | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-136 |             |                   | The proxy <b>MUST</b> maintain the response context until all of its associated transactions have been terminated, even after forwarding a final response.                                | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-137 |             |                   | If the forwarded response was a final response, the proxy <b>MUST</b> generate a CANCEL request for all pending client transactions associated with this response context.                | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-138 |             |                   | A proxy <b>SHOULD</b> also generate a CANCEL request for all pending client transactions associated with this response context when it receives a 6xx response.                           | SHOULD     | NOT REQUIRED  | [Proxy test] |

| No             | RFC Section | RFC Section Title         | Functional Specification                                                                                                                                                                                           | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-139 | 16.8        | Processing Timer C        | If timer C should fire, the proxy <b>MUST</b> either reset the timer with any value it chooses, or terminate the client transaction.                                                                               | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-140 |             |                           | If the client transaction has received a provisional response, the proxy <b>MUST</b> generate a CANCEL request matching that transaction.                                                                          | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-141 |             |                           | If the client transaction has not received a provisional response, the proxy <b>MUST</b> behave as if the transaction received a 408 (Request Timeout) response.                                                   | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-142 | 16.9        | Handling Transport Errors | If the transport layer notifies a proxy of an error when it tries to forward a request (see Section 18.4), the proxy <b>MUST</b> behave as if the forwarded request received a 503 (Service Unavailable) response. | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-143 |             |                           | The proxy <b>SHOULD NOT</b> cancel any outstanding client transactions associated with this response context due to this notification.                                                                             | SHOULD NOT | OUT OF SCOPE  |              |
| RFC3261-16-144 | 16.10       | CANCEL Processing         | A proxy <b>MUST</b> cancel any pending client transactions associated with a response context when it receives a matching CANCEL request.                                                                          | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-145 |             |                           | If a matching response context is found, the element <b>MUST</b> immediately return a 200 (OK) response to the CANCEL request.                                                                                     | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-146 |             |                           | Furthermore, the element <b>MUST</b> generate CANCEL requests for all pending client transactions in the context as described in Section 16.7 step 10.                                                             | MUST       | NOT REQUIRED  | [Proxy test] |

| No             | RFC Section | RFC Section Title | Functional Specification                                                                                                                      | RFC Status | Test Priority | Test Profile |
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| RFC3261-16-147 |             |                   | It <b>MUST</b> statelessly forward the CANCEL request (it may have statelessly forwarded the associated request previously).                  | MUST       | OUT OF SCOPE  |              |
| RFC3261-16-148 | 16.11       | Stateless Proxy   | Furthermore, when handling a request statelessly, an element <b>MUST NOT</b> generate its own 100 (Trying) or any other provisional response. | MUST NOT   | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-149 |             |                   | A stateless proxy <b>MUST</b> validate a request as described in Section 16.3                                                                 | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-150 |             |                   | A stateless proxy <b>MUST</b> follow the request processing steps described in Sections 16.4 through 16.5 with the following exception:       | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-151 |             |                   | A stateless proxy <b>MUST</b> choose one and only one target from the target set.                                                             | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-152 |             |                   | This choice <b>MUST</b> only rely on fields in the message and time-invariant properties of the server.                                       | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-153 |             |                   | In particular, a retransmitted request <b>MUST</b> be forwarded to the same destination each time it is processed.                            | MUST       | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-154 |             |                   | Furthermore, CANCEL and non-Routed ACK requests <b>MUST</b> generate the same choice as their associated INVITE.                              | MUST       | NOT REQUIRED  | [Proxy test] |

| No             | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                           | RFC Status  | Test Priority | Test Profile |
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| RFC3261-16-155 |             |                   | A stateless proxy <b>MUST</b> follow the request processing steps described in Section 16.6 with the following exceptions:                                                         | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-156 |             |                   | Therefore, the component of the branch parameter that makes it unique <b>MUST</b> be the same each time a retransmitted request is forwarded.                                      | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-157 |             |                   | Thus for a stateless proxy, the branch parameter <b>MUST</b> be computed as a combinatoric function of message parameters which are invariant on retransmission.                   | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-158 |             |                   | However, the following procedure is <b>RECOMMENDED</b> .                                                                                                                           | RECOMMENDED | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-159 |             |                   | All other message transformations specified in Section 16.6 <b>MUST</b> result in the same transformation of a retransmitted request.                                              | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-160 |             |                   | In particular, if the proxy inserts a Record-Route value or pushes URIs into the Route header field, it <b>MUST</b> place the same values in retransmissions of the request.       | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-161 |             |                   | As for the Via branch parameter, this implies that the transformations <b>MUST</b> be based on time-invariant configuration or retransmission-invariant properties of the request. | MUST        | NOT REQUIRED  | [Proxy test] |
| RFC3261-16-162 |             |                   | Stateless proxies <b>MUST NOT</b> perform special processing for CANCEL requests.                                                                                                  | MUST NOT    | NOT REQUIRED  | [Proxy test] |



| No             | RFC Section | RFC Section Title  | Functional Specification                                                                                                                                                                                                                                          | RFC Status | Test Priority | Test Profile              |
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| RFC3261-16-163 |             |                    | When a response arrives at a stateless proxy, the proxy <b>MUST</b> inspect the sent-by value in the first (topmost) Via header field value.                                                                                                                      | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-16-164 |             |                    | If that address matches the proxy, (it equals a value this proxy has inserted into previous requests) the proxy <b>MUST</b> remove that header field value from the response and forward the result to the location indicated in the next Via header field value. | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-16-165 |             |                    | The proxy <b>MUST NOT</b> add to, modify, or remove the message body.                                                                                                                                                                                             | MUST NOT   | NOT REQUIRED  | [Proxy test]              |
| RFC3261-16-166 |             |                    | Unless specified otherwise, the proxy <b>MUST NOT</b> remove any other header field values.                                                                                                                                                                       | MUST NOT   | NOT REQUIRED  | [Proxy test]              |
| RFC3261-16-167 |             |                    | If the address does not match the proxy, the message <b>MUST</b> be silently discarded.                                                                                                                                                                           | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-1   | 17.1        | Client Transaction | Because of the non-INVITE transaction's reliance on a two-way handshake, TUs <b>SHOULD</b> respond immediately to non-INVITE requests.                                                                                                                            | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-2   | 17.1.1.2    | Formal Description | The initial state, "calling", <b>MUST</b> be entered when the TU initiates a new client transaction with an INVITE request.                                                                                                                                       | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-3   |             |                    | The client transaction <b>MUST</b> pass the request to the transport layer for transmission (see Section 18).                                                                                                                                                     | MUST       | OUT OF SCOPE  |                           |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                  | RFC Status | Test Priority | Test Profile              |
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| RFC3261-17-4  |             |                   | If an unreliable transport is being used, the client transaction <b>MUST</b> start timer A with a value of T1.                                                            | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-5  |             |                   | If a reliable transport is being used, the client transaction <b>SHOULD NOT</b> start timer A (Timer A controls request retransmissions).                                 | SHOULD NOT | NOT REQUIRED  |                           |
| RFC3261-17-6  |             |                   | For any transport, the client transaction <b>MUST</b> start timer B with a value of 64*T1 seconds (Timer B controls transaction timeouts).                                | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-7  |             |                   | When timer A fires, the client transaction <b>MUST</b> retransmit the request by passing it to the transport layer, and <b>MUST</b> reset the timer with a value of 2*T1. | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-8  |             |                   |                                                                                                                                                                           | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-9  |             |                   | When timer A fires 2*T1 seconds later, the request <b>MUST</b> be retransmitted again (assuming the client transaction is still in this state).                           | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-10 |             |                   | This process <b>MUST</b> continue so that the request is retransmitted with intervals that double after each transmission.                                                | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-11 |             |                   | These retransmissions <b>SHOULD</b> only be done while the client transaction is in the "calling" state.                                                                  | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                        | RFC Status      | Test Priority | Test Profile              |
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| RFC3261-17-12 |             |                   | Elements MAY (though it is NOT <b>RECOMMENDED</b> ) use smaller values of T1 within closed, private networks that do not permit general Internet connection.                                                                                                                                                    | NOT RECOMMENDED | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-13 |             |                   | T1 MAY be chosen larger, and this is <b>RECOMMENDED</b> if it is known in advance (such as on high latency access links) that the RTT is larger.                                                                                                                                                                | RECOMMENDED     | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-14 |             |                   | Whatever the value of T1, the exponential backoffs on retransmissions described in this section <b>MUST</b> be used.                                                                                                                                                                                            | MUST            | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-15 |             |                   | If the client transaction is still in the "Calling" state when timer B fires, the client transaction <b>SHOULD</b> inform the TU that a timeout has occurred.                                                                                                                                                   | SHOULD          | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-16 |             |                   | The client transaction <b>MUST NOT</b> generate an ACK.                                                                                                                                                                                                                                                         | MUST NOT        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-17 |             |                   | If the client transaction receives a provisional response while in the "Calling" state, it transitions to the "Proceeding" state. In the "Proceeding" state, the client transaction <b>SHOULD NOT</b> retransmit the request any longer. Furthermore, the provisional response <b>MUST</b> be passed to the TU. | SHOULD NOT      | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-18 |             |                   |                                                                                                                                                                                                                                                                                                                 | MUST            | OUT OF SCOPE  |                           |
| RFC3261-17-19 |             |                   | Any further provisional responses <b>MUST</b> be passed up to the TU while in the "Proceeding" state.                                                                                                                                                                                                           | MUST            | OUT OF SCOPE  |                           |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                           | RFC Status | Test Priority | Test Profile              |
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| RFC3261-17-20 |             |                   | When in either the "Calling" or "Proceeding" states, reception of a response with status code from 300-699 <b>MUST</b> cause the client transaction to transition to "Completed".                                                                                                                                                  | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-21 |             |                   | The client transaction <b>MUST</b> pass the received response up to the TU, and the client transaction <b>MUST</b> generate an ACK request, even if the transport is reliable (guidelines for constructing the ACK from the response are given in Section 17.1.1.3) and then pass the ACK to the transport layer for transmission. | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-22 |             |                   |                                                                                                                                                                                                                                                                                                                                    | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-23 |             |                   | The ACK <b>MUST</b> be sent to the same address, port, and transport to which the original request was sent.                                                                                                                                                                                                                       | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-24 |             |                   | The client transaction <b>SHOULD</b> start timer D when it enters the "Completed" state, with a value of at least 32 seconds for unreliable transports, and a value of zero seconds for reliable transports.                                                                                                                       | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-25 |             |                   | Any retransmissions of the final response that are received while in the "Completed" state <b>MUST</b> cause the ACK to be re-passed to the transport layer for retransmission, but the newly received response <b>MUST NOT</b> be passed up to the TU.                                                                            | MUST NOT   | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-26 |             |                   |                                                                                                                                                                                                                                                                                                                                    | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-27 |             |                   | If timer D fires while the client transaction is in the "Completed" state, the client transaction <b>MUST</b> move to the terminated state.                                                                                                                                                                                        | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title               | Functional Specification                                                                                                                                                                                                                                                         | RFC Status | Test Priority | Test Profile              |
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| RFC3261-17-28 |             |                                 | When in either the "Calling" or "Proceeding" states, reception of a 2xx response <b>MUST</b> cause the client transaction to enter the "Terminated" state, and the response <b>MUST</b> be passed up to the TU.                                                                  | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-29 |             |                                 |                                                                                                                                                                                                                                                                                  | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-30 |             |                                 | The client transaction <b>MUST</b> be destroyed the instant it enters the "Terminated" state.                                                                                                                                                                                    | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-31 | 17.1.1.3    | Construction of the ACK Request | A UAC core that generates an ACK for 2xx <b>MUST</b> instead follow the rules described in Section 13.                                                                                                                                                                           | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-32 |             |                                 | The ACK request constructed by the client transaction <b>MUST</b> contain values for the Call-ID, From, and Request-URI that are equal to the values of those header fields in the request passed to the transport by the client transaction (call this the "original request"). | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-33 |             |                                 | The To header field in the ACK <b>MUST</b> equal the To header field in the response being acknowledged, and therefore will usually differ from the To header field in the original request by the addition of the tag parameter.                                                | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-34 |             |                                 | The ACK <b>MUST</b> contain a single Via header field, and this <b>MUST</b> be equal to the top Via header field of the original request.                                                                                                                                        | MUST       | NOT REQUIRED  | [UA test]                 |
| RFC3261-17-35 |             |                                 |                                                                                                                                                                                                                                                                                  | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title  | Functional Specification                                                                                                                                                                                           | RFC Status      | Test Priority | Test Profile              |
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| RFC3261-17-36 |             |                    | The CSeq header field in the ACK <b>MUST</b> contain the same value for the sequence number as was present in the original request, but the method parameter <b>MUST</b> be equal to "ACK".                        | MUST            | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-37 |             |                    |                                                                                                                                                                                                                    | MUST            | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-38 |             |                    | If the INVITE request whose response is being acknowledged had Route header fields, those header fields <b>MUST</b> appear in the ACK.                                                                             | MUST            | NOT REQUIRED  |                           |
| RFC3261-17-39 |             |                    | Therefore, placement of bodies in ACK for non-2xx is <b>NOT RECOMMENDED</b> , but if done, the body types are restricted to any that appeared in the INVITE, assuming that the response to the INVITE was not 415. | NOT RECOMMENDED | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-40 | 17.1.2.2    | Formal Description | When entering this state, the client transaction <b>SHOULD</b> set timer F to fire in 64*T1 seconds.                                                                                                               | SHOULD          | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-41 |             |                    | The request <b>MUST</b> be passed to the transport layer for transmission.                                                                                                                                         | MUST            | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-42 |             |                    | If an unreliable transport is in use, the client transaction <b>MUST</b> set timer E to fire in T1 seconds.                                                                                                        | MUST            | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-43 |             |                    | If Timer F fires while the client transaction is still in the "Trying" state, the client transaction <b>SHOULD</b> inform the TU about the timeout, and then it <b>SHOULD</b> enter the "Terminated" state.        | SHOULD          | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                      | RFC Status | Test Priority | Test Profile              |
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| RFC3261-17-44 |             |                   |                                                                                                                                                                                                               | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-45 |             |                   | If a provisional response is received while in the "Trying" state, the response <b>MUST</b> be passed to the TU, and then the client transaction <b>SHOULD</b> move to the "Proceeding" state.                | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-46 |             |                   |                                                                                                                                                                                                               | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-47 |             |                   | If a final response (status codes 200-699) is received while in the "Trying" state, the response <b>MUST</b> be passed to the TU, and the client transaction <b>MUST</b> transition to the "Completed" state. | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-48 |             |                   |                                                                                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-49 |             |                   | If Timer E fires while in the "Proceeding" state, the request <b>MUST</b> be passed to the transport layer for retransmission, and Timer E <b>MUST</b> be reset with a value of T2 seconds.                   | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-50 |             |                   |                                                                                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-51 |             |                   | If timer F fires while in the "Proceeding" state, the TU <b>MUST</b> be informed of a timeout, and the client transaction <b>MUST</b> transition to the terminated state.                                     | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title         | Functional Specification                                                                                                                                                                                          | RFC Status | Test Priority | Test Profile              |
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| RFC3261-17-52 |             |                           |                                                                                                                                                                                                                   | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-53 |             |                           | If a final response (status codes 200-699) is received while in the "Proceeding" state, the response <b>MUST</b> be passed to the TU, and the client transaction <b>MUST</b> transition to the "Completed" state. | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-54 |             |                           |                                                                                                                                                                                                                   | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-55 |             |                           | Once the client transaction enters the "Completed" state, it <b>MUST</b> set Timer K to fire in T4 seconds for unreliable transports, and zero seconds for reliable transports.                                   | MUST       | NOT REQUIRED  |                           |
| RFC3261-17-56 |             |                           | If Timer K fires while in this state, the client transaction <b>MUST</b> transition to the "Terminated" state.                                                                                                    | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-57 |             |                           | Once the transaction is in the terminated state, it <b>MUST</b> be destroyed immediately.                                                                                                                         | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-58 | 17.1.4      | Handling Transport Errors | The client transaction <b>SHOULD</b> inform the TU that a transport failure has occurred, and the client transaction <b>SHOULD</b> transition directly to the "Terminated" state.                                 | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-17-59 |             |                           |                                                                                                                                                                                                                   | SHOULD     | NOT REQUIRED  |                           |



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| RFC3261-17-60 | 17.2.1      | INVITE Server Transaction | The server transaction <b>MUST</b> generate a 100 (Trying) response unless it knows that the TU will generate a provisional or final response within 200 ms, in which case it <b>MAY</b> generate a 100 (Trying) response.                                          | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-61 |             |                           | The 100 (Trying) response is constructed according to the procedures in Section 8.2.6, except that the insertion of tags in the To header field of the response (when none was present in the request) is downgraded from <b>MAY</b> to <b>SHOULD NOT</b> .         | SHOULD NOT | OUT OF SCOPE  |                           |
| RFC3261-17-62 |             |                           | The request <b>MUST</b> be passed to the TU.                                                                                                                                                                                                                        | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-63 |             |                           | So long as the server transaction is in the "Proceeding" state, each of these <b>MUST</b> be passed to the transport layer for transmission.                                                                                                                        | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-64 |             |                           | If a request retransmission is received while in the "Proceeding" state, the most recent provisional response that was received from the TU <b>MUST</b> be passed to the transport layer for retransmission.                                                        | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-65 |             |                           | If, while in the "Proceeding" state, the TU passes a 2xx response to the server transaction, the server transaction <b>MUST</b> pass this response to the transport layer for transmission.                                                                         | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-66 |             |                           | The server transaction <b>MUST</b> then transition to the "Terminated" state.                                                                                                                                                                                       | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-67 |             |                           | While in the "Proceeding" state, if the TU passes a response with status code from 300 to 699 to the server transaction, the response <b>MUST</b> be passed to the transport layer for transmission, and the state machine <b>MUST</b> enter the "Completed" state. | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                              | RFC Status | Test Priority | Test Profile              |
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| RFC3261-17-68 |             |                   |                                                                                                                                                                       | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-69 |             |                   | When the "Completed" state is entered, timer H <b>MUST</b> be set to fire in 64*T1 seconds for all transports.                                                        | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-70 |             |                   | Furthermore, while in the "Completed" state, if a request retransmission is received, the server <b>SHOULD</b> pass the response to the transport for retransmission. | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-71 |             |                   | If an ACK is received while the server transaction is in the "Completed" state, the server transaction <b>MUST</b> transition to the "Confirmed" state.               | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-72 |             |                   | In this case, the server transaction <b>MUST</b> transition to the "Terminated" state, and <b>MUST</b> indicate to the TU that a transaction failure has occurred.    | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-73 |             |                   |                                                                                                                                                                       | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-74 |             |                   | Once timer I fires, the server <b>MUST</b> transition to the "Terminated" state.                                                                                      | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-75 |             |                   | Once the transaction is in the "Terminated" state, it <b>MUST</b> be destroyed immediately.                                                                           | MUST       | OUT OF SCOPE  |                           |

| No            | RFC Section | RFC Section Title             | Functional Specification                                                                                                                                                                                                                         | RFC Status | Test Priority | Test Profile              |
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| RFC3261-17-76 | 17.2.2      | Non-INVITE Server Transaction | While in the "Trying" state, if the TU passes a provisional response to the server transaction, the server transaction <b>MUST</b> enter the "Proceeding" state.                                                                                 | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-77 |             |                               | The response <b>MUST</b> be passed to the transport layer for transmission.                                                                                                                                                                      | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-78 |             |                               | Any further provisional responses that are received from the TU while in the "Proceeding" state <b>MUST</b> be passed to the transport layer for transmission.                                                                                   | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-79 |             |                               | If a retransmission of the request is received while in the "Proceeding" state, the most recently sent provisional response <b>MUST</b> be passed to the transport layer for retransmission.                                                     | MUST       | OUT OF SCOPE  |                           |
| RFC3261-17-80 |             |                               | If the TU passes a final response (status codes 200-699) to the server while in the "Proceeding" state, the transaction <b>MUST</b> enter the "Completed" state, and the response <b>MUST</b> be passed to the transport layer for transmission. | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-81 |             |                               |                                                                                                                                                                                                                                                  | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-82 |             |                               | When the server transaction enters the "Completed" state, it <b>MUST</b> set Timer J to fire in 64*T1 seconds for unreliable transports, and zero seconds for reliable transports.                                                               | MUST       | NOT REQUIRED  | [Proxy test]              |
| RFC3261-17-83 |             |                               | While in the "Completed" state, the server transaction <b>MUST</b> pass the final response to the transport layer for retransmission whenever a retransmission of the request is received.                                                       | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title         | Functional Specification                                                                                                                                                                                   | RFC Status  | Test Priority | Test Profile              |
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| RFC3261-17-84 |             |                           | Any other final responses passed by the TU to the server transaction <b>MUST</b> be discarded while in the "Completed" state.                                                                              | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-85 |             |                           | The server transaction remains in this state until Timer J fires, at which point it <b>MUST</b> transition to the "Terminated" state.                                                                      | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-86 |             |                           | The server transaction <b>MUST</b> be destroyed the instant it enters the "Terminated" state.                                                                                                              | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-17-87 | 17.2.4      | Handling Transport Errors | If those should all fail, based on the definition of failure in [4], the server transaction <b>SHOULD</b> inform the TU that a failure has occurred, and <b>SHOULD</b> transition to the terminated state. | SHOULD      | OUT OF SCOPE  |                           |
| RFC3261-17-88 |             |                           |                                                                                                                                                                                                            | SHOULD      | OUT OF SCOPE  |                           |
| RFC3261-18-1  | 18          | Transport                 | It is <b>RECOMMENDED</b> that connections be kept open for some implementation-defined duration after the last message was sent or received over that connection.                                          | RECOMMENDED | OUT OF SCOPE  |                           |
| RFC3261-18-2  |             |                           | This duration <b>SHOULD</b> at least equal the longest amount of time the element would need in order to bring a transaction from instantiation to the terminated state.                                   | SHOULD      | OUT OF SCOPE  |                           |
| RFC3261-18-3  |             |                           | All SIP elements <b>MUST</b> implement UDP and TCP.                                                                                                                                                        | MUST        | NOT REQUIRED  | [PRq-1]                   |

| No            | RFC Section                                                                                                                                                                                                                                                                                                                | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                                                                  | RFC Status   | Test Priority | Test Profile              |
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| RFC3261-18-4  |                                                                                                                                                                                                                                                                                                                            |                   | It has arisen out of the need to handle larger messages, which <b>MUST</b> use TCP, as discussed below.                                                                                                                                                                                                                                                                   | MUST         | NOT REQUIRED  |                           |
| RFC3261-18-5  | 18.1.1                                                                                                                                                                                                                                                                                                                     | Sending Requests  | If a request is within 200 bytes of the path MTU, or if it is larger than 1300 bytes and the path MTU is unknown, the request <b>MUST</b> be sent using an RFC 2914 [43] congestion controlled transport protocol, such as TCP. If this causes a change in the transport protocol from the one indicated in the top Via, the value in the top Via <b>MUST</b> be changed. | MUST         | NOT REQUIRED  |                           |
| RFC3261-18-6  | MUST                                                                                                                                                                                                                                                                                                                       |                   |                                                                                                                                                                                                                                                                                                                                                                           | NOT REQUIRED |               |                           |
| RFC3261-18-7  | However, implementations <b>MUST</b> be able to handle messages up to the maximum datagram packet size.                                                                                                                                                                                                                    |                   | MUST                                                                                                                                                                                                                                                                                                                                                                      | OUT OF SCOPE |               |                           |
| RFC3261-18-8  | If an element sends a request over TCP because of these message size constraints, and that request would have otherwise been sent over UDP, if the attempt to establish the connection generates either an ICMP Protocol Not Supported, or results in a TCP reset, the element <b>SHOULD</b> retry the request, using UDP. |                   | SHOULD                                                                                                                                                                                                                                                                                                                                                                    | NOT REQUIRED |               |                           |
| RFC3261-18-9  | A client that sends a request to a multicast address <b>MUST</b> add the "maddr" parameter to its Via header field value containing the destination multicast address, and for IPv4, <b>SHOULD</b> add the "ttl" parameter with a value of 1.                                                                              |                   | MUST                                                                                                                                                                                                                                                                                                                                                                      | NOT REQUIRED |               |                           |
| RFC3261-18-10 |                                                                                                                                                                                                                                                                                                                            |                   | SHOULD                                                                                                                                                                                                                                                                                                                                                                    | NOT REQUIRED |               |                           |
| RFC3261-18-11 |                                                                                                                                                                                                                                                                                                                            |                   | Before a request is sent, the client transport <b>MUST</b> insert a value of the "sent-by" field into the Via header field.                                                                                                                                                                                                                                               | MUST         | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                    | RFC Status  | Test Priority | Test Profile            |
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| RFC3261-18-12 |             |                   | The usage of an FQDN is <b>RECOMMENDED</b> .                                                                                                                                                                                                                | RECOMMENDED | NOT REQUIRED  | generic_forward_request |
| RFC3261-18-13 |             |                   | Therefore, the client transport <b>MUST</b> be prepared to receive the response on the same connection used to send the request.                                                                                                                            | MUST        | OUT OF SCOPE  |                         |
| RFC3261-18-14 |             |                   | To handle this case, the transport layer <b>MUST</b> also be prepared to receive an incoming connection on the source IP address from which the request was sent and port number in the "sent-by" field.                                                    | MUST        | OUT OF SCOPE  |                         |
| RFC3261-18-15 |             |                   | It also <b>MUST</b> be prepared to receive incoming connections on any address and port that would be selected by a server based on the procedures described in Section 5 of [4].                                                                           | MUST        | OUT OF SCOPE  |                         |
| RFC3261-18-16 |             |                   | For unreliable unicast transports, the client transport <b>MUST</b> be prepared to receive responses on the source IP address from which the request is sent (as responses are sent back to the source address) and the port number in the "sent-by" field. | MUST        | OUT OF SCOPE  |                         |
| RFC3261-18-17 |             |                   | The client <b>MUST</b> be prepared to receive responses on any address and port that would be selected by a server based on the procedures described in Section 5 of [4].                                                                                   | MUST        | OUT OF SCOPE  |                         |
| RFC3261-18-18 |             |                   | For multicast, the client transport <b>MUST</b> be prepared to receive responses on the same multicast group and port to which the request is sent (that is, it needs to be a member of the multicast group it sent the request to.)                        | MUST        | NOT REQUIRED  |                         |
| RFC3261-18-19 |             |                   | If a request is destined to an IP address, port, and transport to which an existing connection is open, it is <b>RECOMMENDED</b> that this connection be used to send the request, but another connection <b>MAY</b> be opened and used.                    | RECOMMENDED | OUT OF SCOPE  |                         |

| No            | RFC Section | RFC Section Title   | Functional Specification                                                                                                                                                                                                                        | RFC Status  | Test Priority | Test Profile              |
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| RFC3261-18-20 | 18.1.2      | Receiving Responses | If the value of the "sent-by" parameter in that header field value does not correspond to a value that the client transport is configured to insert into requests, the response <b>MUST</b> be silently discarded.                              | MUST        | NOT REQUIRED  | [UA test]                 |
| RFC3261-18-21 |             |                     | If there is a match, the response <b>MUST</b> be passed to that transaction.                                                                                                                                                                    | MUST        | OUT OF SCOPE  |                           |
| RFC3261-18-22 |             |                     | Otherwise, the response <b>MUST</b> be passed to the core (whether it be stateless proxy, stateful proxy, or UA) for further processing.                                                                                                        | MUST        | OUT OF SCOPE  |                           |
| RFC3261-18-23 | 18.2.1      | Receiving Requests  | A server <b>SHOULD</b> be prepared to receive requests on any IP address, port and transport combination that can be the result of a DNS lookup on a SIP or SIPS URI [4] that is handed out for the purposes of communicating with that server. | SHOULD      | OUT OF SCOPE  |                           |
| RFC3261-18-24 |             |                     | It is also <b>RECOMMENDED</b> that a server listen for requests on the default SIP ports (5060 for TCP and UDP, 5061 for TLS over TCP) on all public interfaces.                                                                                | RECOMMENDED | OUT OF SCOPE  |                           |
| RFC3261-18-25 |             |                     | For any port and interface that a server listens on for UDP, it <b>MUST</b> listen on that same port and interface for TCP.                                                                                                                     | MUST        | NOT REQUIRED  |                           |
| RFC3261-18-26 |             |                     | When the server transport receives a request over any transport, it <b>MUST</b> examine the value of the "sent-by" parameter in the top Via header field value.                                                                                 | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                             | RFC Status | Test Priority | Test Profile                                                                                                                                                                                                                                   |
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| RFC3261-18-27 |             |                   | If the host portion of the "sent-by" parameter contains a domain name, or if it contains an IP address that differs from the packet source address, the server <b>MUST</b> add a "received" parameter to that Via header field value.                                | MUST       | BASIC         | RG-1-1-1, RG-1-1-2<br>RG-1-1-3, RG-1-1-4<br>RG-1-1-5, RG-1-1-6<br>RG-1-1-7, RG-1-2-1<br>RG-1-2-2, RG-1-2-3<br>RG-1-2-4, RG-2-1-1<br>RG-2-1-2, RG-2-1-3<br>RG-2-1-4, RG-2-1-5<br>RG-2-2-1, RG-2-2-2<br>RG-2-2-3, RG-3-1-1<br>RG-4-1-1, RG-4-1-2 |
| RFC3261-18-28 |             |                   | This parameter <b>MUST</b> contain the source address from which the packet was received.                                                                                                                                                                            | MUST       | BASIC         | RG-1-1-1, RG-1-1-2<br>RG-1-1-3, RG-1-1-4<br>RG-1-1-5, RG-1-1-6<br>RG-1-1-7, RG-1-2-1<br>RG-1-2-2, RG-1-2-3<br>RG-1-2-4, RG-2-1-1<br>RG-2-1-2, RG-2-1-3<br>RG-2-1-4, RG-2-1-5<br>RG-2-2-1, RG-2-2-2<br>RG-2-2-3, RG-3-1-1<br>RG-4-1-1, RG-4-1-2 |
| RFC3261-18-29 | 18.2.2      | Sending Responses | It <b>MUST</b> follow the following process:                                                                                                                                                                                                                         | MUST       | NOT REQUIRED  | [Proxy test]                                                                                                                                                                                                                                   |
| RFC3261-18-30 |             |                   | If the "sent-protocol" is a reliable transport protocol such as TCP or SCTP, or TLS over those, the response <b>MUST</b> be sent using the existing connection to the source of the original request that created the transaction, if that connection is still open. | MUST       | NOT REQUIRED  |                                                                                                                                                                                                                                                |
| RFC3261-18-31 |             |                   | If that connection is no longer open, the server <b>SHOULD</b> open a connection to the IP address in the "received" parameter, if present, using the port in the "sent-by" value, or the default port for that transport, if no port is specified.                  | SHOULD     | OUT OF SCOPE  |                                                                                                                                                                                                                                                |
| RFC3261-18-32 |             |                   | If that connection attempt fails, the server <b>SHOULD</b> use the procedures in [4] for servers in order to determine the IP address and port to open the connection and send the response to.                                                                      | SHOULD     | NOT REQUIRED  |                                                                                                                                                                                                                                                |



| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                    | RFC Status | Test Priority | Test Profile              |
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| RFC3261-18-33 |             |                   | Otherwise, if the Via header field value contains a "maddr" parameter, the response <b>MUST</b> be forwarded to the address listed there, using the port indicated in "sent-by", or port 5060 if none is present.                                                           | MUST       | NOT REQUIRED  | [UA test]                 |
| RFC3261-18-34 |             |                   | If the address is a multicast address, the response <b>SHOULD</b> be sent using the TTL indicated in the "ttl" parameter, or with a TTL of 1 if that parameter is not present.                                                                                              | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-18-35 |             |                   | Otherwise (for unreliable unicast transports), if the top Via has a "received" parameter, the response <b>MUST</b> be sent to the address in the "received" parameter, using the port indicated in the "sent-by" value, or using port 5060 if none is specified explicitly. | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-18-36 |             |                   | If this fails, for example, elicits an ICMP "port unreachable" response, the procedures of Section 5 of [4] <b>SHOULD</b> be used to determine where to send the response.                                                                                                  | SHOULD     | NOT REQUIRED  | [UA test]                 |
| RFC3261-18-37 |             |                   | Otherwise, if it is not receiver-tagged, the response <b>MUST</b> be sent to the address indicated by the "sent-by" value, using the procedures in Section 5 of [4].                                                                                                        | MUST       | NOT REQUIRED  |                           |
| RFC3261-18-38 | 18.3        | Framing           | If there are additional bytes in the transport packet beyond the end of the body, they <b>MUST</b> be discarded.                                                                                                                                                            | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-18-39 |             |                   | If the message is a response, it <b>MUST</b> be discarded.                                                                                                                                                                                                                  | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-18-40 |             |                   | If the message is a request, the element <b>SHOULD</b> generate a 400 (Bad Request) response.                                                                                                                                                                               | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section                                                                                                                                                                                                                                                         | RFC Section Title           | Functional Specification                                                                                                                                                      | RFC Status   | Test Priority             | Test Profile              |
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| RFC3261-18-41 |                                                                                                                                                                                                                                                                     |                             | The Content-Length header field <b>MUST</b> be used with stream oriented transports.                                                                                          | MUST         | NOT REQUIRED              |                           |
| RFC3261-18-42 | 18.4                                                                                                                                                                                                                                                                | Error Handling              | Host, network, port or protocol unreachable errors, or parameter problem errors <b>SHOULD</b> cause the transport layer to inform the transport user of a failure in sending. | SHOULD       | NOT REQUIRED              | [UA test]<br>[Proxy test] |
| RFC3261-18-43 | Source quench and TTL exceeded ICMP errors <b>SHOULD</b> be ignored.                                                                                                                                                                                                |                             | SHOULD                                                                                                                                                                        | NOT REQUIRED | [Proxy test]              |                           |
| RFC3261-18-44 | If the transport user asks for a request to be sent over a reliable transport, and the result is a connection failure, the transport layer <b>SHOULD</b> inform the transport user of a failure in sending.                                                         |                             | SHOULD                                                                                                                                                                        | NOT REQUIRED |                           |                           |
| RFC3261-19-1  | 19.1.1                                                                                                                                                                                                                                                              | SIP and SIPS URI Components | If the @ sign is present in a SIP or SIPS URI, the user field <b>MUST NOT</b> be empty.                                                                                       | MUST NOT     | NOT REQUIRED              | [UA test]<br>[Proxy test] |
| RFC3261-19-2  | While the SIP and SIPS URI syntax allows this field to be present, its use is <b>NOT RECOMMENDED</b> , because the passing of authentication information in clear text (such as URIs) has proven to be a security risk in almost every case where it has been used. |                             | NOT RECOMMENDED                                                                                                                                                               | NOT REQUIRED |                           |                           |
| RFC3261-19-3  | Using the fully-qualified domain name form is <b>RECOMMENDED</b> whenever possible.                                                                                                                                                                                 |                             | RECOMMENDED                                                                                                                                                                   | NOT REQUIRED | [UA test]<br>[Proxy test] |                           |
| RFC3261-19-4  | Even though an arbitrary number of URI parameters may be included in a URI, any given parameter-name <b>MUST NOT</b> appear more than once.                                                                                                                         |                             | MUST NOT                                                                                                                                                                      | OUT OF SCOPE |                           |                           |

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| RFC3261-19-5  |             |                                 | For a SIPS URI, the transport parameter <b>MUST</b> indicate a reliable transport.                                                                                              | MUST       | NOT REQUIRED  |                           |
| RFC3261-19-6  |             |                                 | The ttl parameter determines the time-to-live value of the UDP multicast packet and <b>MUST</b> only be used if maddr is a multicast address and the transport protocol is UDP. | MUST       | NOT REQUIRED  |                           |
| RFC3261-19-7  |             |                                 | If the user string contains a telephone number formatted as a telephone-subscriber, the user parameter value "phone" <b>SHOULD</b> be present.                                  | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-19-8  |             |                                 | Since the uri-parameter mechanism is extensible, SIP elements <b>MUST</b> silently ignore any uri-parameters that they do not understand.                                       | MUST       | NOT REQUIRED  |                           |
| RFC3261-19-9  |             |                                 | Elements processing URIs <b>SHOULD</b> ignore any disallowed components if they are present.                                                                                    | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-19-10 | 19.1.2      | Character Escaping Requirements | Excluded US-ASCII characters (RFC 2396 [5]), such as space and control characters and characters used as URI delimiters, also <b>MUST</b> be escaped.                           | MUST       | NOT REQUIRED  |                           |
| RFC3261-19-11 |             |                                 | URIs <b>MUST NOT</b> contain unescaped space and control characters.                                                                                                            | MUST NOT   | NOT REQUIRED  | [Proxy test]              |
| RFC3261-19-12 |             |                                 | All other characters <b>MUST</b> be escaped.                                                                                                                                    | MUST       | NOT REQUIRED  | [Proxy test]              |

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| RFC3261-19-13 |             |                             | Expanding the hname and hvalue tokens in Section 25 show that all URI reserved characters in header field names and values <b>MUST</b> be escaped.                                          | MUST       | NOT REQUIRED  |              |
| RFC3261-19-14 |             |                             | Any characters occurring in a telephone-subscriber that do not appear in an expansion of the BNF for the user rule <b>MUST</b> be escaped.                                                  | MUST       | NOT REQUIRED  |              |
| RFC3261-19-15 |             |                             | Current implementations <b>MUST NOT</b> attempt to improve robustness by treating received escaped characters in the host component as literally equivalent to their unescaped counterpart. | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-19-16 | 19.1.4      | URI Comparison              | Any present header component <b>MUST</b> be present in both URIs and match for the URIs to match.                                                                                           | MUST       | OUT OF SCOPE  |              |
| RFC3261-19-17 | 19.1.5      | Forming Requests from a URI | An implementation <b>MUST</b> include any provided transport, maddr, ttl, or user parameter in the Request-URI of the formed request.                                                       | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-19-18 |             |                             | If the URI contains a method parameter, its value <b>MUST</b> be used as the method of the request.                                                                                         | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-19-19 |             |                             | The method parameter <b>MUST NOT</b> be placed in the Request-URI.                                                                                                                          | MUST NOT   | NOT REQUIRED  | [UA test]    |
| RFC3261-19-20 |             |                             | Unknown URI parameters <b>MUST</b> be placed in the message's Request-URI.                                                                                                                  | MUST       | NOT REQUIRED  | [UA test]    |

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| RFC3261-19-21 |             |                   | An implementation <b>SHOULD</b> treat the presence of any headers or body parts in the URI as a desire to include them in the message, and choose to honor the request on a per-component basis.                                     | SHOULD     | NOT REQUIRED  |              |
| RFC3261-19-22 |             |                   | An implementation <b>SHOULD NOT</b> honor these obviously dangerous header fields: From, Call-ID, CSeq, Via, and Record-Route.                                                                                                       | SHOULD NOT | OUT OF SCOPE  |              |
| RFC3261-19-23 |             |                   | An implementation <b>SHOULD NOT</b> honor any requested Route header field values in order to not be used as an unwitting agent in malicious attacks.                                                                                | SHOULD NOT | OUT OF SCOPE  |              |
| RFC3261-19-24 |             |                   | An implementation <b>SHOULD NOT</b> honor requests to include header fields that may cause it to falsely advertise its location or capabilities.                                                                                     | SHOULD NOT | OUT OF SCOPE  |              |
| RFC3261-19-25 |             |                   | An implementation <b>SHOULD</b> verify the accuracy of any requested descriptive header fields, including: Content-Disposition, Content-Encoding, Content-Language, Content-Length, Content-Type, Date, Mime-Version, and Timestamp. | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-19-26 |             |                   | An implementation <b>MUST NOT</b> proceed with transmitting the request.                                                                                                                                                             | MUST NOT   | OUT OF SCOPE  |              |
| RFC3261-19-27 |             |                   | An implementation <b>SHOULD</b> refuse to send these requests rather than modifying them to match their capabilities.                                                                                                                | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-19-28 |             |                   | An implementation <b>MUST NOT</b> send a request requiring an extension that it does not support.                                                                                                                                    | MUST NOT   | OUT OF SCOPE  |              |

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| RFC3261-19-29 | 19.1.6      | Relating SIP URIs and tel URLs | To mitigate this problem, elements constructing telephone-subscriber fields to place in the userinfo part of a SIP or SIPS URI <b>SHOULD</b> fold any case-insensitive portion of telephone-subscriber to lower case, and order the telephone-subscriber parameters lexically by parameter name, excepting isdn-subaddress and post-dial, which occur | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-19-30 | 19.3        | Tags                           | When a tag is generated by a UA for insertion into a request or response, it <b>MUST</b> be globally unique and cryptographically random with at least 32 bits of randomness.                                                                                                                                                                         | MUST       | OUT OF SCOPE  |                           |
| RFC3261-20-1  | 20          | Header Fields                  | m*: The header field <b>SHOULD</b> be sent, but clients/servers need to be prepared to receive messages without that header field.                                                                                                                                                                                                                    | SHOULD     | OUT OF SCOPE  |                           |
| RFC3261-20-2  |             |                                | t: The header field <b>SHOULD</b> be sent, but clients/servers need to be prepared to receive messages without that header field.                                                                                                                                                                                                                     | SHOULD     | OUT OF SCOPE  |                           |
| RFC3261-20-3  |             |                                | If a stream-based protocol (such as TCP) is used as a transport, then the header field <b>MUST</b> be sent.                                                                                                                                                                                                                                           | MUST       | NOT REQUIRED  |                           |
| RFC3261-20-4  |             |                                | A "mandatory" header field <b>MUST</b> be present in a request, and <b>MUST</b> be understood by the UAS receiving the request.                                                                                                                                                                                                                       | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-20-5  |             |                                |                                                                                                                                                                                                                                                                                                                                                       | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-20-6  |             |                                | A mandatory response header field <b>MUST</b> be present in the response, and the header field <b>MUST</b> be understood by the UAC processing the response.                                                                                                                                                                                          | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |

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| RFC3261-20-7  |             |                   |                                                                                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-20-8  |             |                   | "Not applicable" means that the header field <b>MUST NOT</b> be present in a request.                                                                                                                         | MUST NOT   | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-20-9  |             |                   | If one is placed in a request by mistake, it <b>MUST</b> be ignored by the UAS receiving the request.                                                                                                         | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-20-10 |             |                   | Similarly, a header field labeled "not applicable" for a response means that the UAS <b>MUST NOT</b> place the header field in the response, and the UAC <b>MUST</b> ignore the header field in the response. | MUST NOT   | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-20-11 |             |                   |                                                                                                                                                                                                               | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-20-12 |             |                   | A UA <b>SHOULD</b> ignore extension header parameters that are not understood.                                                                                                                                | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-20-13 |             |                   | If the URI contains a comma, question mark or semicolon, the URI <b>MUST</b> be enclosed in angle brackets (< and >).                                                                                         | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-20-14 | 20.1        | Accept            | The semantics are also identical, with the exception that if no Accept header field is present, the server <b>SHOULD</b> assume a default value of application/sdp.                                           | SHOULD     | OUT OF SCOPE  |                           |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                           | RFC Status  | Test Priority | Test Profile |
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| RFC3261-20-15 | 20.2        | Accept-Encoding   | If no Accept-Encoding header field is present, the server <b>SHOULD</b> assume a default value of identity.                                                                                                        | SHOULD      | OUT OF SCOPE  |              |
| RFC3261-20-16 | 20.3        | Accept-Language   | If no Accept-Language header field is present, the server <b>SHOULD</b> assume all languages are acceptable to the client.                                                                                         | SHOULD      | OUT OF SCOPE  |              |
| RFC3261-20-17 | 20.4        | Alert-Info        | In addition, a user <b>SHOULD</b> be able to disable this feature selectively.                                                                                                                                     | SHOULD      | OUT OF SCOPE  |              |
| RFC3261-20-18 | 20.5        | Allow             | All methods, including ACK and CANCEL, understood by the UA <b>MUST</b> be included in the list of methods in the Allow header field, when present.                                                                | MUST        | OUT OF SCOPE  |              |
| RFC3261-20-19 |             |                   | The absence of an Allow header field <b>MUST NOT</b> be interpreted to mean that the UA sending the message supports no methods.                                                                                   | MUST NOT    | NOT REQUIRED  |              |
| RFC3261-20-20 | 20.7        | Authorization     | Although not a comma-separated list, this header field name may be present multiple times, and <b>MUST NOT</b> be combined into a single header line using the usual rules described in Section 7.3.               | MUST NOT    | NOT REQUIRED  | [UA test]    |
| RFC3261-20-21 | 20.9        | Call-Info         | Therefore, it is <b>RECOMMENDED</b> that a UA only render the information in the Call-Info header field if it can verify the authenticity of the element that originated the header field and trusts that element. | RECOMMENDED | NOT REQUIRED  |              |
| RFC3261-20-22 | 20.1        | Contact           | Even if the "display-name" is empty, the "name-addr" form <b>MUST</b> be used if the "addr-spec" contains a comma, semicolon, or question mark.                                                                    | MUST        | NOT REQUIRED  | [UA test]    |



| No            | RFC Section | RFC Section Title   | Functional Specification                                                                                                                                                                                                                        | RFC Status | Test Priority | Test Profile |
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| RFC3261-20-23 | 20.11       | Content-Disposition | For backward-compatibility, if the Content-Disposition header field is missing, the server <b>SHOULD</b> assume bodies of Content-Type application/sdp are the disposition "session", while other content types are "render".                   | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-20-24 |             |                     | If the handling parameter is missing, the value "required" <b>SHOULD</b> be assumed.                                                                                                                                                            | SHOULD     | NOT REQUIRED  |              |
| RFC3261-20-25 | 20.12       | Content-Encoding    | When present, its value indicates what additional content codings have been applied to the entity-body, and thus what decoding mechanisms <b>MUST</b> be applied in order to obtain the media-type referenced by the Content-Type header field. | MUST       | NOT REQUIRED  |              |
| RFC3261-20-26 |             |                     | If multiple encodings have been applied to an entity-body, the content codings <b>MUST</b> be listed in the order in which they were applied.                                                                                                   | MUST       | NOT REQUIRED  |              |
| RFC3261-20-27 |             |                     | The server <b>MUST</b> only use encodings listed in the Accept-Encoding header field in the request.                                                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-20-28 | 20.14       | Content-Length      | Applications <b>SHOULD</b> use this field to indicate the size of the message-body to be transferred, regardless of the media type of the entity.                                                                                               | SHOULD     | NOT REQUIRED  | [UA test]    |
| RFC3261-20-29 |             |                     | If a stream-based protocol (such as TCP) is used as transport, the header field <b>MUST</b> be used.                                                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-20-30 |             |                     | If no body is present in a message, then the Content-Length header field value <b>MUST</b> be set to zero.                                                                                                                                      | MUST       | NOT REQUIRED  | [UA test]    |

| No            | RFC Section | RFC Section Title   | Functional Specification                                                                                                                                                                               | RFC Status  | Test Priority | Test Profile              |
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| RFC3261-20-31 | 20.15       | Content-Type        | The Content-Type header field <b>MUST</b> be present if the body is not empty.                                                                                                                         | MUST        | NOT REQUIRED  | [UA test]                 |
| RFC3261-20-32 | 20.16       | CSeq                | The sequence number <b>MUST</b> be expressible as a 32-bit unsigned integer.                                                                                                                           | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-20-33 | 20.20       | From                | A system <b>SHOULD</b> use the display name "Anonymous" if the identity of the client is to remain hidden.                                                                                             | SHOULD      | NOT REQUIRED  |                           |
| RFC3261-20-34 |             |                     | Even if the "display-name" is empty, the "name-addr" form <b>MUST</b> be used if the "addr-spec" contains a comma, question mark, or semicolon.                                                        | MUST        | NOT REQUIRED  | [UA test]                 |
| RFC3261-20-35 | 20.26       | Priority            | For these decisions, a message containing no Priority header field <b>SHOULD</b> be treated as if it specified a Priority of "normal".                                                                 | SHOULD      | NOT REQUIRED  |                           |
| RFC3261-20-36 |             |                     | It is <b>RECOMMENDED</b> that the value of "emergency" only be used when life, limb, or property are in imminent danger.                                                                               | RECOMMENDED | NOT REQUIRED  |                           |
| RFC3261-20-37 | 20.28       | Proxy-Authorization | Although not a comma-separated list, this header field name may be present multiple times, and <b>MUST NOT</b> be combined into a single header line using the usual rules described in Section 7.3.1. | MUST NOT    | NOT REQUIRED  | [UA test]                 |
| RFC3261-20-38 | 20.31       | Reply-To            | If the user wished to remain anonymous, the header field <b>SHOULD</b> either be omitted from the request or populated in such a way that does not reveal any private information.                     | SHOULD      | NOT REQUIRED  |                           |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                   | RFC Status | Test Priority | Test Profile              |
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| RFC3261-20-39 |             |                   | Even if the "display-name" is empty, the "name-addr" form <b>MUST</b> be used if the "addr-spec" contains a comma, question mark, or semicolon.                            | MUST       | NOT REQUIRED  |                           |
| RFC3261-20-40 | 20.32       | Require           | Although an optional header field, the Require <b>MUST NOT</b> be ignored if it is present.                                                                                | MUST NOT   | NOT REQUIRED  |                           |
| RFC3261-20-41 |             |                   | Each option tag defines a SIP extension that <b>MUST</b> be understood to process the request.                                                                             | MUST       | NOT REQUIRED  |                           |
| RFC3261-20-42 |             |                   | A UAC compliant to this specification <b>MUST</b> only include option tags corresponding to standards-track RFCs.                                                          | MUST       | NOT REQUIRED  |                           |
| RFC3261-20-43 | 20.35       | Server            | Implementers <b>SHOULD</b> make the Server header field a configurable option.                                                                                             | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-20-44 | 20.37       | Supported         | A UA compliant to this specification <b>MUST</b> only include option tags corresponding to standards-track RFCs.                                                           | MUST       | NOT REQUIRED  |                           |
| RFC3261-20-45 | 20.41       | User-Agent        | Implementers <b>SHOULD</b> make the User-Agent header field a configurable option.                                                                                         | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-20-46 | 20.42       | Via               | For implementations compliant to this specification, the value of the branch parameter <b>MUST</b> start with the magic cookie "z9hG4bK", as discussed in Section 8.1.1.7. | MUST       | NOT REQUIRED  | [UA test]<br>[Proxy test] |

| No            | RFC Section | RFC Section Title     | Functional Specification                                                                                                                                                               | RFC Status | Test Priority | Test Profile |
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| RFC3261-20-47 | 20.43       | Warning               | A system receiving this warning <b>MUST NOT</b> take any automated action.                                                                                                             | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-21-1  | 21          | Response Codes        | Other HTTP/1.1 response codes <b>SHOULD NOT</b> be used.                                                                                                                               | SHOULD NOT | OUT OF SCOPE  |              |
| RFC3261-21-2  | 21.3.1      | 300 Multiple Choices  | The choices <b>SHOULD</b> also be listed as Contact fields (Section 20.10).                                                                                                            | SHOULD     | NOT REQUIRED  |              |
| RFC3261-21-3  | 21.3.2      | 301 Moved Permanently | The user can no longer be found at the address in the Request-URI, and the requesting client <b>SHOULD</b> retry at the new address given by the Contact header field (Section 20.10). | SHOULD     | NOT REQUIRED  |              |
| RFC3261-21-4  |             |                       | The requestor <b>SHOULD</b> update any local directories, address books, and user location caches with this new value and redirect future requests to the address(es) listed.          | SHOULD     | NOT REQUIRED  |              |
| RFC3261-21-5  | 21.3.3      | 302 Moved Temporarily | The requesting client <b>SHOULD</b> retry the request at the new address(es) given by the Contact header field (Section 20.10).                                                        | SHOULD     | NOT REQUIRED  |              |
| RFC3261-21-6  |             |                       | If there is no explicit expiration time, the address is <b>only</b> valid once for recursing, and <b>MUST NOT</b> be cached for future transactions.                                   | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-21-7  | 21.3.4      | 305 Use Proxy         | The requested resource <b>MUST</b> be accessed through the proxy given by the Contact field.                                                                                           | MUST       | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title                 | Functional Specification                                                                                                                                                         | RFC Status | Test Priority | Test Profile |
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| RFC3261-21-8  |             |                                   | 305 (Use Proxy) responses <b>MUST</b> only be generated by UASs.                                                                                                                 | MUST       | NOT REQUIRED  |              |
| RFC3261-21-9  | 21.4        | Request Failure 4xx               | The client <b>SHOULD NOT</b> retry the same request without modification (for example, adding appropriate authorization).                                                        | SHOULD NOT | NOT REQUIRED  | [UA test]    |
| RFC3261-21-10 | 21.4.1      | 400 Bad Request                   | The Reason-Phrase <b>SHOULD</b> identify the syntax problem in more detail, for example, "Missing Call-ID header field".                                                         | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-21-11 | 21.4.4      | 403 Forbidden                     | Authorization will not help, and the request <b>SHOULD NOT</b> be repeated.                                                                                                      | SHOULD NOT | NOT REQUIRED  | [UA test]    |
| RFC3261-21-12 | 21.4.6      | 405 Method Not Allowed            | The response <b>MUST</b> include an Allow header field containing a list of valid methods for the indicated address.                                                             | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-21-13 | 21.4.8      | 407 Proxy Authentication Required | This code is similar to 401 (Unauthorized), but indicates that the client <b>MUST</b> first authenticate itself with the proxy.                                                  | MUST       | OUT OF SCOPE  |              |
| RFC3261-21-14 | 21.4.10     | 410 Gone                          | If the server does not know, or has no facility to determine, whether or not the condition is permanent, the status code 404 (Not Found) <b>SHOULD</b> be used instead.          | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-21-15 | 21.4.11     | 413 Request Entity Too Large      | If the condition is temporary, the server <b>SHOULD</b> include a Retry-After header field to indicate that it is temporary and after what time the client <b>MAY</b> try again. | SHOULD     | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title           | Functional Specification                                                                                                                                                                             | RFC Status | Test Priority | Test Profile |
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| RFC3261-21-16 | 21.4.13     | 415 Unsupported Media Type  | The server <b>MUST</b> return a list of acceptable formats using the Accept, Accept-Encoding, or Accept-Language header field, depending on the specific problem with the content.                   | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-21-17 | 21.4.15     | 420 Bad Extension           | The server <b>MUST</b> include a list of the unsupported extensions in an Unsupported header field in the response.                                                                                  | MUST       | NOT REQUIRED  | [UA test]    |
| RFC3261-21-18 | 21.4.16     | 421 Extension Required      | Responses with this status code <b>MUST</b> contain a Require header field listing the required extensions.                                                                                          | MUST       | NOT REQUIRED  |              |
| RFC3261-21-19 |             |                             | A UAS <b>SHOULD NOT</b> use this response unless it truly cannot provide any useful service to the client.                                                                                           | SHOULD NOT | NOT REQUIRED  |              |
| RFC3261-21-20 |             |                             | Instead, if a desirable extension is not listed in the Supported header field, servers <b>SHOULD</b> process the request using baseline SIP capabilities and any extensions supported by the client. | SHOULD     | NOT REQUIRED  |              |
| RFC3261-21-21 | 21.4.18     | 480 Temporarily Unavailable | The reason phrase <b>SHOULD</b> indicate a more precise cause as to why the callee is unavailable.                                                                                                   | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-21-22 |             |                             | This value <b>SHOULD</b> be settable by the UA.                                                                                                                                                      | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-21-23 | 21.4.22     | 484 Address Incomplete      | Additional information <b>SHOULD</b> be provided in the reason phrase.                                                                                                                               | SHOULD     | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title            | Functional Specification                                                                                                                                              | RFC Status | Test Priority | Test Profile              |
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| RFC3261-21-24 | 21.4.23     | 485 Ambiguous                | It <b>MUST</b> be possible to configure a server to respond with status 404 (Not Found) or to suppress the listing of possible choices for ambiguous Request-URIs.    | MUST       | OUT OF SCOPE  |                           |
| RFC3261-21-25 | 21.4.24     | 486 Busy Here                | Status 600 (Busy Everywhere) <b>SHOULD</b> be used if the client knows that no other end system will be able to accept this call.                                     | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-21-26 | 21.5.4      | 503 Service Unavailable      | If no Retry-After is given, the client <b>MUST</b> act as if it had received a 500 (Server Internal Error) response.                                                  | MUST       | OUT OF SCOPE  |                           |
| RFC3261-21-27 |             |                              | A client (proxy or UAC) receiving a 503 (Service Unavailable) <b>SHOULD</b> attempt to forward the request to an alternate server.                                    | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-21-28 |             |                              | It <b>SHOULD NOT</b> forward any other requests to that server for the duration specified in the Retry-After header field, if present.                                | SHOULD NOT | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-22-1  | 22          | Usage of HTTP Authentication | Once the originator has been identified, the recipient of the request <b>SHOULD</b> ascertain whether or not this user is authorized to make the request in question. | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-22-2  |             |                              | Servers <b>MUST NOT</b> accept credentials using the "Basic" authorization scheme, and servers also <b>MUST NOT</b> challenge with "Basic".                           | MUST NOT   | NOT REQUIRED  |                           |
| RFC3261-22-3  |             |                              |                                                                                                                                                                       | MUST NOT   | NOT REQUIRED  |                           |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                 | RFC Status  | Test Priority | Test Profile              |
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| RFC3261-22-4  | 22.1        | Framework         | Additionally, registrars and redirect servers MAY make use of 401 (Unauthorized) responses for authentication, but proxies <b>MUST NOT</b> , and instead MAY use the 407 (Proxy Authentication Required) | MUST NOT    | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-22-5  |             |                   | Operators of user agents or proxy servers that will authenticate received requests <b>MUST</b> adhere to the following guidelines for creation of a realm string for their server:                       | MUST        | OUT OF SCOPE  |                           |
| RFC3261-22-6  |             |                   | Realm strings <b>MUST</b> be globally unique.                                                                                                                                                            | MUST        | OUT OF SCOPE  |                           |
| RFC3261-22-7  |             |                   | It is <b>RECOMMENDED</b> that a realm string contain a hostname or domain name, following the recommendation in Section 3.2.1 of RFC 2617 [17].                                                          | RECOMMENDED | OUT OF SCOPE  |                           |
| RFC3261-22-8  |             |                   | Realm strings <b>SHOULD</b> present a human-readable identifier that can be rendered to a user.                                                                                                          | SHOULD      | OUT OF SCOPE  |                           |
| RFC3261-22-9  |             |                   | For this reason, any credentials in the INVITE that were accepted by a server <b>MUST</b> be accepted by that server for the ACK.                                                                        | MUST        | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-22-10 |             |                   | Servers <b>MUST NOT</b> attempt to challenge an ACK.                                                                                                                                                     | MUST NOT    | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-22-11 |             |                   | Although the CANCEL method does take a response (a 2xx), servers <b>MUST NOT</b> attempt to challenge CANCEL requests since these requests cannot be resubmitted.                                        | MUST NOT    | NOT REQUIRED  | [Proxy test]              |



| No            | RFC Section | RFC Section Title            | Functional Specification                                                                                                                                                                                                                                                                                    | RFC Status | Test Priority | Test Profile |
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| RFC3261-22-12 |             |                              | Generally, a CANCEL request <b>SHOULD</b> be accepted by a server if it comes from the same hop that sent the request being canceled (provided that some sort of transport or network layer security association, as described in Section 26.2.1, is in place).                                             | SHOULD     | NOT REQUIRED  | [Proxy test] |
| RFC3261-22-13 |             |                              | When a UAC receives a challenge, it <b>SHOULD</b> render to the user the contents of the "realm" parameter in the challenge (which appears in either a WWW-Authenticate header field or Proxy-Authenticate header field) if the UAC device does not already know of a credential for the realm in question. | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-22-14 |             |                              | A UAC <b>MUST NOT</b> re-attempt requests with the credentials that have just been rejected (though the request may be retried if the nonce was stale).                                                                                                                                                     | MUST NOT   | NOT REQUIRED  | [UA test]    |
| RFC3261-22-15 | 22.2        | User-to-User Authentication  | The WWW-Authenticate response-header field <b>MUST</b> be included in 401 (Unauthorized) response messages.                                                                                                                                                                                                 | MUST       | NOT REQUIRED  |              |
| RFC3261-22-16 |             |                              | When the originating UAC receives the 401 (Unauthorized), it <b>SHOULD</b> , if it is able, re-originate the request with the proper credentials.                                                                                                                                                           | SHOULD     | NOT REQUIRED  |              |
| RFC3261-22-17 |             |                              | Once authentication credentials have been supplied (either directly by the user, or discovered in an internal keyring), UAs <b>SHOULD</b> cache the credentials for a given value of the To header field and "realm" and attempt to re-use these values on the next request for that destination.           | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-22-18 |             |                              | When a UAC resubmits a request with its credentials after receiving a 401 (Unauthorized) or 407 (Proxy Authentication Required) response, it <b>MUST</b> increment the CSeq header field value as it would normally when sending an updated request.                                                        | MUST       | NOT REQUIRED  |              |
| RFC3261-22-19 | 22.3        | Proxy-to-User Authentication | The proxy <b>MUST</b> populate the 407 (Proxy Authentication Required) message with a Proxy-Authenticate header field value applicable to the proxy for the requested resource.                                                                                                                             | MUST       | NOT REQUIRED  | [Proxy test] |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                  | RFC Status  | Test Priority | Test Profile |
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| RFC3261-22-20 |             |                   | Proxies <b>MUST NOT</b> add values to the Proxy-Authorization header field.                                                                                                                                                                                                                               | MUST NOT    | NOT REQUIRED  |              |
| RFC3261-22-21 |             |                   | All 407 (Proxy Authentication Required) responses <b>MUST</b> be forwarded upstream toward the UAC following the procedures for any other response.                                                                                                                                                       | MUST        | NOT REQUIRED  |              |
| RFC3261-22-22 |             |                   | When the originating UAC receives the 407 (Proxy Authentication Required) it <b>SHOULD</b> , if it is able, re-originate the request with the proper credentials.                                                                                                                                         | SHOULD      | NOT REQUIRED  | [UA test]    |
| RFC3261-22-23 |             |                   | The UAC <b>SHOULD</b> also cache the credentials used in the re-originated request.                                                                                                                                                                                                                       | SHOULD      | NOT REQUIRED  | [UA test]    |
| RFC3261-22-24 |             |                   | The following rule is <b>RECOMMENDED</b> for proxy credential caching:                                                                                                                                                                                                                                    | RECOMMENDED | NOT REQUIRED  |              |
| RFC3261-22-25 |             |                   | These credentials <b>MUST NOT</b> be cached across dialogs; however, if a UA is configured with the realm of its local outbound proxy, when one exists, then the UA <b>MAY</b> cache credentials for that realm across dialogs.                                                                           | MUST NOT    | NOT REQUIRED  | [UA test]    |
| RFC3261-22-26 |             |                   | When multiple proxies are used in a chain, a Proxy-Authorization header field value <b>MUST NOT</b> be consumed by any proxy whose realm does not match the "realm" parameter specified in that value.                                                                                                    | MUST NOT    | NOT REQUIRED  |              |
| RFC3261-22-27 |             |                   | Note that if an authentication scheme that does not support realms is used in the Proxy-Authorization header field, a proxy server <b>MUST</b> attempt to parse all Proxy-Authorization header field values to determine whether one of them has what the proxy server considers to be valid credentials. | MUST        | OUT OF SCOPE  |              |

| No            | RFC Section | RFC Section Title                | Functional Specification                                                                                                                                                                                                                                 | RFC Status | Test Priority | Test Profile     |
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| RFC3261-22-28 |             |                                  | Because this is potentially very time-consuming in large networks, proxy servers <b>SHOULD</b> use an authentication scheme that supports realms in the Proxy-Authorization header field.                                                                | SHOULD     | BASIC         | [Proxy test]     |
| RFC3261-22-29 |             |                                  | Each WWW-Authenticate and Proxy-Authenticate value received in responses to the forked request <b>MUST</b> be placed into the single response that is sent by the forking proxy to the UA; the ordering of these header field values is not significant. | MUST       | NOT REQUIRED  | [Proxy test]     |
| RFC3261-22-30 |             |                                  | As noted above, multiple credentials in a request <b>SHOULD</b> be differentiated by the "realm" parameter.                                                                                                                                              | SHOULD     | NOT REQUIRED  | [Proxy test]     |
| RFC3261-22-31 |             |                                  | The same credentials <b>SHOULD</b> be used for the same realm.                                                                                                                                                                                           | SHOULD     | NOT REQUIRED  |                  |
| RFC3261-22-32 | 22.4        | The Digest Authentication Scheme | Since RFC 2543 is based on HTTP Digest as defined in RFC 2069 [39], SIP servers supporting RFC 2617 <b>MUST</b> ensure they are backwards compatible with RFC 2069.                                                                                      | MUST       | NOT REQUIRED  |                  |
| RFC3261-22-33 |             |                                  | Note, however, that SIP servers <b>MUST NOT</b> accept or request Basic authentication.                                                                                                                                                                  | MUST NOT   | OUT OF SCOPE  |                  |
| RFC3261-22-34 |             |                                  | For SIP, the 'uri' <b>MUST</b> be enclosed in quotation marks.                                                                                                                                                                                           | MUST       | BASIC         | generic_www-auth |
| RFC3261-22-35 |             |                                  | RFC 2617 notes that a nonce value <b>MUST NOT</b> be sent in an Authorization (and by extension Proxy-Authorization) header field if no qop directive has been sent.                                                                                     | MUST NOT   | NOT REQUIRED  | [tester]         |

| No            | RFC Section | RFC Section Title   | Functional Specification                                                                                                                                                                    | RFC Status | Test Priority | Test Profile     |
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| RFC3261-22-36 |             |                     | However, servers <b>MUST</b> always send a "qop" parameter in WWW-Authenticate and Proxy-Authenticate header field values.                                                                  | MUST       | BASIC         | generic_www-auth |
| RFC3261-22-37 |             |                     | If a client receives a "qop" parameter in a challenge header field, it <b>MUST</b> send the "qop" parameter in any resulting authorization header field.                                    | MUST       | BASIC         | generic_www-auth |
| RFC3261-22-38 |             |                     | These mechanisms <b>MUST</b> be used by a server to determine if the client supports the new mechanisms in RFC 2617 that were not specified in RFC 2069.                                    | MUST       | NOT REQUIRED  | [UA test]        |
| RFC3261-23-1  | 23.1        | S/MIME Certificates | Each user agent that supports S/MIME <b>MUST</b> contain a keyring specifically for end-users' certificates.                                                                                | MUST       | NOT REQUIRED  |                  |
| RFC3261-23-2  |             |                     | Over time, users <b>SHOULD</b> use the same certificate when they populate the originating URI of signaling (the From header field) with the same address-of-record.                        | SHOULD     | NOT REQUIRED  |                  |
| RFC3261-23-3  |             |                     | However, users <b>SHOULD</b> acquire certificates from known public certificate authorities.                                                                                                | SHOULD     | NOT REQUIRED  |                  |
| RFC3261-23-4  |             |                     | However, the holder of a certificate <b>SHOULD</b> publish their certificate in any public directories as appropriate.                                                                      | SHOULD     | NOT REQUIRED  |                  |
| RFC3261-23-5  |             |                     | Similarly, UACs <b>SHOULD</b> support a mechanism for importing (manually or automatically) certificates discovered in public directories corresponding to the target URIs of SIP requests. | SHOULD     | NOT REQUIRED  |                  |

| No            | RFC Section | RFC Section Title   | Functional Specification                                                                                                                                                                                                                                                                                                                                                                                               | RFC Status | Test Priority | Test Profile |
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| RFC3261-23-6  | 23.2        | S/MIME Key Exchange | Whenever the CMS SignedData message is used in S/MIME for SIP, it <b>MUST</b> contain the certificate bearing the public key necessary to verify the signature.                                                                                                                                                                                                                                                        | MUST       | NOT REQUIRED  |              |
| RFC3261-23-7  |             |                     | When a UAC sends a request containing an S/MIME body that initiates a dialog, or sends a non-INVITE request outside the context of a dialog, the UAC <b>SHOULD</b> structure the body as an S/MIME 'multipart/signed' CMS SignedData body.                                                                                                                                                                             | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-8  |             |                     | If the desired CMS service is EnvelopedData (and the public key of the target user is known), the UAC <b>SHOULD</b> send the EnvelopedData message encapsulated within a SignedData message.                                                                                                                                                                                                                           | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-9  |             |                     | When a UAS receives a request containing an S/MIME CMS body that includes a certificate, the UAS <b>SHOULD</b> first validate the certificate, if possible, with any available root certificates for certificate authorities.                                                                                                                                                                                          | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-10 |             |                     | The UAS <b>SHOULD</b> also determine the subject of the certificate (for S/MIME, the SubjectAltName will contain the appropriate identity) and compare this value to the From header field of the request.                                                                                                                                                                                                             | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-11 |             |                     | If the certificate cannot be verified, because it is self-signed, or signed by no known authority, or if it is verifiable but its subject does not correspond to the From header field of request, the UAS <b>MUST</b> notify its user of the status of the certificate (including the subject of the certificate, its signer, and any key fingerprint information) and request explicit permission before proceeding. | MUST       | NOT REQUIRED  |              |
| RFC3261-23-12 |             |                     | If the certificate was successfully verified and the subject of the certificate corresponds to the From header field of the SIP request, or if the user (after notification) explicitly authorizes the use of the certificate, the UAS <b>SHOULD</b> add this certificate to a local keyring, indexed by the address-of-record of the holder of the certificate.                                                       | SHOULD     | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                                                     | RFC Status | Test Priority | Test Profile |
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| RFC3261-23-13 |             |                   | When a UAS sends a response containing an S/MIME body that answers the first request in a dialog, or a response to a non-INVITE request outside the context of a dialog, the UAS <b>SHOULD</b> structure the body as an S/MIME 'multipart/signed' CMS SignedData body.                                                                                       | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-14 |             |                   | If the desired CMS service is EnvelopedData, the UAS <b>SHOULD</b> send the EnvelopedData message encapsulated within a SignedData message.                                                                                                                                                                                                                  | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-15 |             |                   | When a UAC receives a response containing an S/MIME CMS body that includes a certificate, the UAC <b>SHOULD</b> first validate the certificate, if possible, with any appropriate root certificate.                                                                                                                                                          | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-16 |             |                   | The UAC <b>SHOULD</b> also determine the subject of the certificate and compare this value to the To field of the response; although the two may very well be different, and this is not necessarily indicative of a security breach.                                                                                                                        | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-17 |             |                   | If the certificate cannot be verified because it is self-signed, or signed by no known authority, the UAC <b>MUST</b> notify its user of the status of the certificate (including the subject of the certificate, its signator, and any key fingerprint information) and request explicit permission before proceeding.                                      | MUST       | NOT REQUIRED  |              |
| RFC3261-23-18 |             |                   | If the certificate was successfully verified, and the subject of the certificate corresponds to the To header field in the response, or if the user (after notification) explicitly authorizes the use of the certificate, the UAC <b>SHOULD</b> add this certificate to a local keyring, indexed by the address-of-record of the holder of the certificate. | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-19 |             |                   | If the UAC had not transmitted its own certificate to the UAS in any previous transaction, it <b>SHOULD</b> use a CMS SignedData body for its next request or response.                                                                                                                                                                                      | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-20 |             |                   | On future occasions, when the UA receives requests or responses that contain a From header field corresponding to a value in its keyring, the UA <b>SHOULD</b> compare the certificate offered in these messages with the existing certificate in its keyring.                                                                                               | SHOULD     | NOT REQUIRED  |              |

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| RFC3261-23-21 |             |                   | If there is a discrepancy, the UA <b>MUST</b> notify its user of a change of the certificate (preferably in terms that indicate that this is a potential security breach) and acquire the user's permission before continuing to process the signaling.                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-23-22 |             |                   | If the user authorizes this certificate, it <b>SHOULD</b> be added to the keyring alongside any previous value(s) for this address-of-record.                                                                                                                                                                                                      | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-23 |             |                   | If a UA receives an S/MIME body that has been encrypted with a public key unknown to the recipient, it <b>MUST</b> reject the request with a 493 (Undecipherable) response.                                                                                                                                                                        | MUST       | NOT REQUIRED  |              |
| RFC3261-23-24 |             |                   | This response <b>SHOULD</b> contain a valid certificate for the respondent (corresponding, if possible, to any address of record given in the To header field of the rejected request) within a MIME body with a 'certs-only' "smime-type" parameter.                                                                                              | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-25 |             |                   | Note that a user agent that receives a request containing an S/MIME body that is not optional (with a Content-Disposition header "handling" parameter of "required") <b>MUST</b> reject the request with a 415 Unsupported Media Type response if the MIME type is not understood.                                                                 | MUST       | NOT REQUIRED  |              |
| RFC3261-23-26 |             |                   | A user agent that receives such a response when S/MIME is sent <b>SHOULD</b> notify its user that the remote device does not support S/MIME, and it <b>MAY</b> subsequently resend the request without S/MIME, if appropriate; however, this 415 response may constitute a downgrade attack.                                                       | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-27 |             |                   | If a user agent sends an S/MIME body in a request, but receives a response that contains a MIME body that is not secured, the UAC <b>SHOULD</b> notify its user that the session could not be secured.                                                                                                                                             | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-28 |             |                   | However, if a user agent that supports S/MIME receives a request with an unsecured body, it <b>SHOULD NOT</b> respond with a secured body, but if it expects S/MIME from the sender (for example, because the sender's From header field value corresponds to an identity on its keychain), the UAS <b>SHOULD</b> notify its user that the session | SHOULD NOT | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title    | Functional Specification                                                                                                                                                                                                                                                                                             | RFC Status | Test Priority | Test Profile |
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| RFC3261-23-29 |             |                      | could not be secured.                                                                                                                                                                                                                                                                                                | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-30 |             |                      | Finally, if during the course of a dialog a UA receives a certificate in a CMS SignedData message that does not correspond with the certificates previously exchanged during a dialog, the UA <b>MUST</b> notify its user of the change, preferably in terms that indicate that this is a potential security breach. | MUST       | NOT REQUIRED  |              |
| RFC3261-23-31 | 23.3        | Securing MIME bodies | "multipart/signed" <b>MUST</b> be used only with CMS detached signatures.                                                                                                                                                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-23-32 |             |                      | S/MIME bodies <b>SHOULD</b> have a Content-Disposition header field, and the value of the "handling" parameter <b>SHOULD</b> be "required."                                                                                                                                                                          | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-33 |             |                      |                                                                                                                                                                                                                                                                                                                      | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-34 |             |                      | UACs <b>MAY</b> send an initial request such as an OPTIONS message with a CMS detached signature in order to solicit the certificate of the remote side (the signature <b>SHOULD</b> be over a "message/sip" body of the type described in Section 23.4).                                                            | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-35 |             |                      | Senders of S/MIME bodies <b>SHOULD</b> use the "SMIMECapabilities" (see Section 2.5.2 of [24]) attribute to express their capabilities and preferences for further communications.                                                                                                                                   | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-36 |             |                      | S/MIME implementations <b>MUST</b> at a minimum support SHA1 as a digital signature algorithm, and 3DES as an encryption algorithm.                                                                                                                                                                                  | MUST       | NOT REQUIRED  |              |



| No            | RFC Section | RFC Section Title                                            | Functional Specification                                                                                                                                                                                                                                  | RFC Status | Test Priority | Test Profile |
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| RFC3261-23-37 |             |                                                              | Each S/MIME body in a SIP message <b>SHOULD</b> be signed with only one certificate.                                                                                                                                                                      | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-38 |             |                                                              | Parallel signatures <b>SHOULD NOT</b> be used.                                                                                                                                                                                                            | SHOULD NOT | NOT REQUIRED  |              |
| RFC3261-23-39 | 23.4        | SIP Header Privacy and Integrity using S/MIME: Tunneling SIP | If a UAS receives a request that contains a tunneled "message/sip" S/MIME body, it <b>SHOULD</b> include a tunneled "message/sip" body in the response with the same smime-type.                                                                          | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-40 |             |                                                              | Any traditional MIME bodies (such as SDP) <b>SHOULD</b> be attached to the "inner" message so that they can also benefit from S/MIME security.                                                                                                            | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-41 | 23.4.1      | Integrity and Confidentiality Properties of SIP Headers      | Note that for the purposes of loose timestamping, all SIP messages that tunnel "message/sip" <b>SHOULD</b> contain a Date header in both the "inner" and "outer" headers.                                                                                 | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-42 | 23.4.1.1    | Integrity                                                    | If these header fields are not intact end-to-end, implementations <b>SHOULD NOT</b> consider this a breach of security.                                                                                                                                   | SHOULD NOT | NOT REQUIRED  |              |
| RFC3261-23-43 |             |                                                              | Changes to any other header fields defined in this document constitute an integrity violation; users <b>MUST</b> be notified of a discrepancy.                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-23-44 | 23.4.1.2    | Confidentiality                                              | If the From header field in an encrypted body differs from the value in the "outer" message, the value within the encrypted body <b>SHOULD</b> be displayed to the user, but <b>MUST NOT</b> be used in the "outer" header fields of any future messages. | SHOULD     | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title                      | Functional Specification                                                                                                                                                                        | RFC Status | Test Priority | Test Profile |
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| RFC3261-23-45 |             |                                        |                                                                                                                                                                                                 | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-23-46 |             |                                        | They <b>SHOULD NOT</b> however be used in the "outer" headers of any future messages.                                                                                                           | SHOULD NOT | NOT REQUIRED  |              |
| RFC3261-23-47 |             |                                        | If present, the Date header field <b>MUST</b> always be the same in the "inner" and "outer" headers.                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-23-48 |             |                                        | UAs <b>SHOULD</b> never include these in an "inner" message if they are not included in the "outer" message.                                                                                    | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-49 |             |                                        | UAs that receive any of these header fields in an encrypted body <b>SHOULD</b> ignore the encrypted values.                                                                                     | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-50 |             |                                        | If a SIP UA encounters an unknown header field with an integrity violation, it <b>MUST</b> ignore the header field.                                                                             | MUST       | NOT REQUIRED  |              |
| RFC3261-23-51 | 23.4.2      | Tunneling Integrity and Authentication | In order to eliminate possible confusions about the addition or subtraction of entire header fields, senders <b>SHOULD</b> replicate all header fields from the request within the signed body. | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-52 |             |                                        | Any message bodies that require integrity protection <b>MUST</b> be attached to the "inner" message.                                                                                            | MUST       | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title                    | Functional Specification                                                                                                                                                                      | RFC Status | Test Priority | Test Profile |
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| RFC3261-23-53 |             |                                      | If a Date header is present in a message with a signed body, the recipient <b>SHOULD</b> compare the header field value with its own internal clock, if applicable.                           | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-54 |             |                                      | If a significant time discrepancy is detected (on the order of an hour or more), the user agent <b>SHOULD</b> alert the user to the anomaly, and note that it is a potential security breach. | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-55 |             |                                      | UAs <b>SHOULD</b> notify users of this circumstance and request explicit guidance on how to proceed.                                                                                          | SHOULD     | NOT REQUIRED  |              |
| RFC3261-23-56 | 23.4.3      | Tunneling Encryption                 | The message must first be decrypted, and the "inner" From header field <b>MUST</b> be used as an index.                                                                                       | MUST       | NOT REQUIRED  |              |
| RFC3261-23-57 |             |                                      | In order to provide end-to-end integrity, encrypted "message/sip" MIME bodies <b>SHOULD</b> be signed by the sender.                                                                          | SHOULD     | NOT REQUIRED  |              |
| RFC3261-25-1  | 25.1        | Basic Rules                          | These special characters <b>MUST</b> be in a quoted string to be used within a parameter value.                                                                                               | MUST       | BASIC         | [tester]     |
| RFC3261-25-2  |             |                                      | Note, however, that any characters allowed there that are not allowed in the user part of the SIP URI <b>MUST</b> be escaped.                                                                 | MUST       | OUT OF SCOPE  |              |
| RFC3261-26-1  | 26.2.1      | Transport and Network Layer Security | The TLS_RSA_WITH_AES_128_CBC_SHA ciphersuite [6] <b>MUST</b> be supported at a minimum by implementers when TLS is used in a SIP application.                                                 | MUST       | NOT REQUIRED  |              |

| No           | RFC Section | RFC Section Title                    | Functional Specification                                                                                                                                                                                        | RFC Status  | Test Priority | Test Profile |
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| RFC3261-26-2 |             |                                      | For purposes of backwards compatibility, proxy servers, redirect servers, and registrars <b>SHOULD</b> support TLS_RSA_WITH_3DES_EDE_CBC_SHA.                                                                   | SHOULD      | NOT REQUIRED  |              |
| RFC3261-26-3 | 26.2.2      | SIPS URI Scheme                      | The use of SIPS in particular entails that mutual TLS authentication <b>SHOULD</b> be employed, as <b>SHOULD</b> the ciphersuite TLS_RSA_WITH_AES_128_CBC_SHA.                                                  | SHOULD      | NOT REQUIRED  |              |
| RFC3261-26-4 |             |                                      |                                                                                                                                                                                                                 | SHOULD      | NOT REQUIRED  |              |
| RFC3261-26-5 |             |                                      | Certificates received in the authentication process <b>SHOULD</b> be validated with root certificates held by the client; failure to validate a certificate <b>SHOULD</b> result in the failure of the request. | SHOULD      | NOT REQUIRED  |              |
| RFC3261-26-6 |             |                                      |                                                                                                                                                                                                                 | SHOULD      | NOT REQUIRED  |              |
| RFC3261-26-7 | 26.3.1      | Requirements for Implementers of SIP | Proxy servers, redirect servers, and registrars <b>MUST</b> implement TLS, and <b>MUST</b> support both mutual and one-way authentication.                                                                      | MUST        | NOT REQUIRED  |              |
| RFC3261-26-8 |             |                                      |                                                                                                                                                                                                                 | MUST        | NOT REQUIRED  |              |
| RFC3261-26-9 |             |                                      | It is strongly <b>RECOMMENDED</b> that UAs be capable initiating TLS; UAs <b>MAY</b> also be capable of acting as a TLS server.                                                                                 | RECOMMENDED | NOT REQUIRED  |              |

| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                                            | RFC Status | Test Priority | Test Profile |
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| RFC3261-26-10 |             |                   | Proxy servers, redirect servers, and registrars <b>SHOULD</b> possess a site certificate whose subject corresponds to their canonical hostname.                                                                                                                                                                                                     | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-26-11 |             |                   | All SIP elements that support TLS <b>MUST</b> have a mechanism for validating certificates received during TLS negotiation; this entails possession of one or more root certificates issued by certificate authorities (preferably well-known distributors of site certificates comparable to those that issue root certificates for web browsers). | MUST       | NOT REQUIRED  |              |
| RFC3261-26-12 |             |                   | All SIP elements that support TLS <b>MUST</b> also support the SIPS URI scheme.                                                                                                                                                                                                                                                                     | MUST       | NOT REQUIRED  |              |
| RFC3261-26-13 |             |                   | When a UA attempts to contact a proxy server, redirect server, or registrar, the UAC <b>SHOULD</b> initiate a TLS connection over which it will send SIP messages.                                                                                                                                                                                  | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-14 |             |                   | Proxy servers, redirect servers, registrars, and UAs <b>MUST</b> implement Digest Authorization, encompassing all of the aspects required in 22.                                                                                                                                                                                                    | MUST       | NOT REQUIRED  |              |
| RFC3261-26-15 |             |                   | Proxy servers, redirect servers, and registrars <b>SHOULD</b> be configured with at least one Digest realm, and at least one "realm" string supported by a given server <b>SHOULD</b> correspond to the server's hostname or domainname.                                                                                                            | SHOULD     | BASIC         | [tester]     |
| RFC3261-26-16 |             |                   |                                                                                                                                                                                                                                                                                                                                                     | SHOULD     | BASIC         | [tester]     |
| RFC3261-26-17 |             |                   | If a UA holds one or more root certificates of certificate authorities in order to validate certificates for TLS or IPSec, it <b>SHOULD</b> be capable of reusing these to verify S/MIME certificates, as appropriate.                                                                                                                              | SHOULD     | NOT REQUIRED  |              |

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| RFC3261-26-18 | 26.3.2.1    | Registration      | When a UA comes online and registers with its local administrative domain, it <b>SHOULD</b> establish a TLS connection with its registrar (Section 10 describes how the UA reaches its registrar).                                                                                                                                                                         | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-19 |             |                   | The registrar <b>SHOULD</b> offer a certificate to the UA, and the site identified by the certificate <b>MUST</b> correspond with the domain in which the UA intends to register; for example, if the UA intends to register the address-of-record 'alice@atlanta.com', the site certificate must identify a host within the atlanta.com domain (such as sip.atlanta.com). | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-20 |             |                   |                                                                                                                                                                                                                                                                                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC3261-26-21 |             |                   | When it receives the TLS Certificate message, the UA <b>SHOULD</b> verify the certificate and inspect the site identified by the certificate.                                                                                                                                                                                                                              | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-22 |             |                   | If the certificate is invalid, revoked, or if it does not identify the appropriate party, the UA <b>MUST NOT</b> send the REGISTER message and otherwise proceed with the registration.                                                                                                                                                                                    | MUST NOT   | NOT REQUIRED  |              |
| RFC3261-26-23 |             |                   | The UA then creates a REGISTER request that <b>SHOULD</b> be addressed to a Request-URI corresponding to the site certificate received from the registrar.                                                                                                                                                                                                                 | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-24 |             |                   | When the UA sends the REGISTER request over the existing TLS connection, the registrar <b>SHOULD</b> challenge the request with a 401 (Proxy Authentication Required) response.                                                                                                                                                                                            | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-25 |             |                   | The "realm" parameter within the Proxy-Authenticate header field of the response <b>SHOULD</b> correspond to the domain previously given by the site certificate.                                                                                                                                                                                                          | SHOULD     | NOT REQUIRED  |              |

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| RFC3261-26-26 |             |                      | When the UAC receives the challenge, it <b>SHOULD</b> either prompt the user for credentials or take an appropriate credential from a keyring corresponding to the "realm" parameter in the challenge.                                      | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-27 |             |                      | The username of this credential <b>SHOULD</b> correspond with the "userinfo" portion of the URI in the To header field of the REGISTER request.                                                                                             | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-26-28 |             |                      | Once the registration has been accepted by the registrar, the UA <b>SHOULD</b> leave this TLS connection open provided that the registrar also acts as the proxy server to which requests are sent for users in this administrative domain. | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-29 | 26.3.2.2    | Interdomain Requests | Assuming that the client has completed the registration process described in the preceding section, it <b>SHOULD</b> reuse the TLS connection to the local proxy server when it sends an INVITE request to another user.                    | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-30 |             |                      | The UA <b>SHOULD</b> reuse cached credentials in the INVITE to avoid prompting the user unnecessarily.                                                                                                                                      | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-31 |             |                      | When the local outbound proxy server has validated the credentials presented by the UA in the INVITE, it <b>SHOULD</b> inspect the Request-URI to determine how the message should be routed (see [4]).                                     | SHOULD     | OUT OF SCOPE  |              |
| RFC3261-26-32 |             |                      | The local outbound proxy server at atlanta.com <b>SHOULD</b> therefore establish a TLS connection with the remote proxy server at biloxi.com.                                                                                               | SHOULD     | NOT REQUIRED  |              |
| RFC3261-26-33 |             |                      | Since both of the participants in this TLS connection are servers that possess site certificates, mutual TLS authentication <b>SHOULD</b> occur.                                                                                            | SHOULD     | NOT REQUIRED  |              |

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| RFC3261-26-34 |             |                       | Each side of the connection <b>SHOULD</b> verify and inspect the certificate of the other, noting the domain name that appears in the certificate for comparison with the header fields of SIP messages.                                         | SHOULD     | OUT OF SCOPE  |                           |
| RFC3261-26-35 |             |                       | The atlanta.com proxy server, for example, <b>SHOULD</b> verify at this stage that the certificate received from the remote side corresponds with the biloxi.com domain.                                                                         | SHOULD     | OUT OF SCOPE  |                           |
| RFC3261-26-36 |             |                       | The proxy server at biloxi.com <b>SHOULD</b> inspect the certificate of the proxy server at atlanta.com in turn and compare the domain asserted by the certificate with the "domainname" portion of the From header field in the INVITE request. | SHOULD     | OUT OF SCOPE  |                           |
| RFC3261-26-37 |             |                       | Once the INVITE has been approved by the biloxi proxy, the proxy server <b>SHOULD</b> identify the existing TLS channel, if any, associated with the user targeted by this request (in this case "bob@biloxi.com").                              | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-26-38 |             |                       | Before they forward the request, both proxy servers <b>SHOULD</b> add a Record-Route header field to the request so that all future requests in this dialog will pass through the proxy servers.                                                 | SHOULD     | NOT REQUIRED  | [UA test]<br>[Proxy test] |
| RFC3261-26-39 | 26.3.2.3    | Peer-to-Peer Requests | When Carol wishes to send an INVITE to "bob@biloxi.com", her UA <b>SHOULD</b> initiate a TLS connection with the biloxi proxy directly (using the mechanism described in [4] to determine how to best to reach the given Request-URI).           | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-26-40 |             |                       | When her UA receives a certificate from the biloxi proxy, it <b>SHOULD</b> be verified normally before she passes her INVITE across the TLS connection.                                                                                          | SHOULD     | NOT REQUIRED  |                           |
| RFC3261-26-41 |             |                       | Carol <b>SHOULD</b> then establish a TCP connection with the designated address and send a new INVITE with a Request-URI containing the received contact address (recomputing the signature in the body as the request is readied).              | SHOULD     | NOT REQUIRED  |                           |



| No            | RFC Section | RFC Section Title | Functional Specification                                                                                                                                                                                                                                                                                                                         | RFC Status  | Test Priority | Test Profile |
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| RFC3261-26-42 | 26.3.2.4    | DoS Protection    | When the host on which a SIP proxy server is operating is routable from the public Internet, it <b>SHOULD</b> be deployed in an administrative domain with defensive operational policies (blocking source-routed traffic, preferably filtering ping traffic).                                                                                   | SHOULD      | OUT OF SCOPE  |              |
| RFC3261-26-43 |             |                   | UAs and proxy servers <b>SHOULD</b> challenge questionable requests with only a single 401 (Unauthorized) or 407 (Proxy Authentication Required), forgoing the normal response retransmission algorithm, and thus behaving statelessly towards unauthenticated requests.                                                                         | SHOULD      | NOT REQUIRED  | [Proxy test] |
| RFC3261-26-44 | 26.4.2      | S/MIME            | For that reason, it is <b>RECOMMENDED</b> that TCP should be used as a transport protocol when S/MIME tunneling is employed.                                                                                                                                                                                                                     | RECOMMENDED | NOT REQUIRED  |              |
| RFC3261-26-45 | 26.4.4      | SIPS URIs         | To address these concerns, it is <b>RECOMMENDED</b> that recipients of a request whose Request-URI contains a SIP or SIPS URI inspect the To header field value to see if it contains a SIPS URI (though note that it does not constitute a breach of security if this URI has the same scheme but is not equivalent to the URI in the To header | RECOMMENDED | NOT REQUIRED  |              |
| RFC3261-26-46 |             |                   | If the UAS has reason to believe that the scheme of the Request-URI has been improperly modified in transit, the UA <b>SHOULD</b> notify its user of a potential security breach.                                                                                                                                                                | SHOULD      | NOT REQUIRED  |              |
| RFC3261-26-47 | 26.5        | Privacy           | A user location service can infringe on the privacy of the recipient of a session invitation by divulging their specific whereabouts to the caller; an implementation consequently <b>SHOULD</b> be able to restrict, on a per-user basis, what kind of location and availability information is given out to certain classes of callers.        | SHOULD      | NOT REQUIRED  |              |
| RFC3261-27-1  | 27.1        | Option Tags       | The name <b>MAY</b> be of any length, but <b>SHOULD</b> be no more than twenty characters long.                                                                                                                                                                                                                                                  | SHOULD      | NOT REQUIRED  |              |
| RFC3261-27-2  |             |                   | The name <b>MUST</b> consist of alphanumeric (Section 25) characters only.                                                                                                                                                                                                                                                                       | MUST        | NOT REQUIRED  |              |

| No           | RFC Section | RFC Section Title        | Functional Specification          | RFC Status | Test Priority | Test Profile |
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| RFC3261-28-1 | 28.1        | Major Functional Changes | This was changed to <b>MUST</b> . | MUST       | OUT OF SCOPE  |              |

| No          | RFC Section | RFC Section Title               | Functional Specification                                                                                                                                                                                                                                               | RFC Status | Test Priority | Test Profile   |
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| RFC2617-1-1 | 1.2         | Access Authentication Framework | This response <b>MUST</b> include a WWW-Authenticate header field containing at least one challenge applicable to the requested resource.                                                                                                                              | MUST       | BASIC         | [tester]       |
| RFC2617-1-2 |             |                                 | The 407 (Proxy Authentication Required) response message is used by a proxy to challenge the authorization of a client and <b>MUST</b> include a Proxy-Authenticate header field containing at least one challenge applicable to the proxy for the requested resource. | MUST       | NOT REQUIRED  | [Proxy tester] |
| RFC2617-1-3 |             |                                 | The user agent <b>MUST</b> choose to use one of the challenges with the strongest auth-scheme it understands and request credentials from the user based upon that challenge.                                                                                          | MUST       | OUT OF SCOPE  |                |
| RFC2617-1-4 |             |                                 | If the origin server does not wish to accept the credentials sent with a request, it <b>SHOULD</b> return a 401 (Unauthorized) response.                                                                                                                               | SHOULD     | NOT REQUIRED  |                |
| RFC2617-1-5 |             |                                 | The response <b>MUST</b> include a WWW-Authenticate header field containing at least one (possibly new) challenge applicable to the requested resource.                                                                                                                | MUST       | BASIC         | [tester]       |
| RFC2617-1-6 |             |                                 | If a proxy does not accept the credentials sent with a request, it <b>SHOULD</b> return a 407 (Proxy Authentication Required).                                                                                                                                         | SHOULD     | NOT REQUIRED  |                |
| RFC2617-1-7 |             |                                 | The response <b>MUST</b> include a Proxy-Authenticate header field containing a (possibly new) challenge applicable to the proxy for the requested resource.                                                                                                           | MUST       | NOT REQUIRED  | [Proxy tester] |

| No          | RFC Section | RFC Section Title                    | Functional Specification                                                                                                                                                                                                                                         | RFC Status | Test Priority | Test Profile                           |
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| RFC2617-1-8 |             |                                      | Proxies <b>MUST</b> be completely transparent regarding user agent authentication by origin servers.                                                                                                                                                             | MUST       | OUT OF SCOPE  |                                        |
| RFC2617-2-1 | 2           | Basic Authentication Scheme          | A client <b>SHOULD</b> assume that all paths at or deeper than the depth of the last symbolic element in the path field of the Request-URI also are within the protection space specified by the Basic realm value of the current challenge.                     | SHOULD     | OUT OF SCOPE  |                                        |
| RFC2617-3-1 | 3.2.1       | The WWW-Authenticate Response Header | qop-options This directive is optional, but is made so only for backward compatibility with RFC 2069 [6]; it <b>SHOULD</b> be used by all implementations compliant with this version of the Digest scheme.                                                      | SHOULD     | BASIC         | generic_www-auth<br>generic_proxy-auth |
| RFC2617-3-2 |             |                                      | Unrecognized options <b>MUST</b> be ignored.                                                                                                                                                                                                                     | MUST       | NOT REQUIRED  |                                        |
| RFC2617-3-3 |             |                                      | Any unrecognized directive <b>MUST</b> be ignored.                                                                                                                                                                                                               | MUST       | NOT REQUIRED  |                                        |
| RFC2617-3-4 | 3.2.2       | The Authorization Request Header     | If present, its value <b>MUST</b> be one of the alternatives the server indicated it supports in the WWW-Authenticate header.                                                                                                                                    | MUST       | OUT OF SCOPE  | [UA test]                              |
| RFC2617-3-5 |             |                                      | This directive is optional in order to preserve backward compatibility with a minimal implementation of RFC 2069 [6], but <b>SHOULD</b> be used if the server indicated that qop is supported by providing a qop directive in the WWW-Authenticate header field. | SHOULD     | OUT OF SCOPE  | [UA test]                              |
| RFC2617-3-6 |             |                                      | nonce This <b>MUST</b> be specified if a qop directive is sent (see above), and <b>MUST NOT</b> be specified if the server did not send a qop directive in the WWW-Authenticate header field.                                                                    | MUST       | OUT OF SCOPE  | [UA test]                              |

| No           | RFC Section | RFC Section Title      | Functional Specification                                                                                                                                                                                                                                                                                                                                           | RFC Status | Test Priority | Test Profile |
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| RFC2617-3-7  |             |                        |                                                                                                                                                                                                                                                                                                                                                                    | MUST NOT   | OUT OF SCOPE  | [UA test]    |
| RFC2617-3-8  |             |                        | nonce-count This <b>MUST</b> be specified if a qop directive is sent (see above), and <b>MUST NOT</b> be specified if the server did not send a qop directive in the WWW-Authenticate header field.                                                                                                                                                                | MUST       | OUT OF SCOPE  | [UA test]    |
| RFC2617-3-9  |             |                        |                                                                                                                                                                                                                                                                                                                                                                    | MUST NOT   | OUT OF SCOPE  | [UA test]    |
| RFC2617-3-10 |             |                        | Any unrecognized directive <b>MUST</b> be ignored.                                                                                                                                                                                                                                                                                                                 | MUST       | OUT OF SCOPE  |              |
| RFC2617-3-11 | 3.2.2.5     | Various considerations | This may be "*", an "absoluteURL" or an "abs_path" as specified in section 5.1.2 of [2], but it <b>MUST</b> agree with the Request-URI.                                                                                                                                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC2617-3-12 |             |                        | In particular, it <b>MUST</b> be an "absoluteURL" if the Request-URI is an "absoluteURL".                                                                                                                                                                                                                                                                          | MUST       | NOT REQUIRED  |              |
| RFC2617-3-13 |             |                        | The authenticating server must assure that the resource designated by the "uri" directive is the same as the resource specified in the Request-Line; if they are not, the server <b>SHOULD</b> return a 400 Bad Request error.                                                                                                                                     | SHOULD     | NOT REQUIRED  |              |
| RFC2617-3-14 |             |                        | The HTTP/1.1 protocol specifies that when a shared cache (see section 13.7 of [2]) has received a request containing an Authorization header and a response from relaying that request, it <b>MUST NOT</b> return that response as a reply to any other request, unless one of two Cache-Control (see section 14.9 of [2]) directives was present in the response. | MUST NOT   | NOT REQUIRED  |              |

| No           | RFC Section | RFC Section Title                                    | Functional Specification                                                                                                                                                                                                                                                                                                                   | RFC Status | Test Priority | Test Profile |
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| RFC2617-3-15 |             |                                                      | If the original response included the "must-revalidate" Cache-Control directive, the cache MAY use the entity of that response in replying to a subsequent request, but <b>MUST</b> first revalidate it with the origin server, using the request headers from the new request to allow the origin server to authenticate the new request. | MUST       | NOT REQUIRED  |              |
| RFC2617-3-16 | 3.2.3       | The Authentication-Info Header                       | If the nextnonce field is present the client <b>SHOULD</b> use it when constructing the Authorization header for its next request.                                                                                                                                                                                                         | SHOULD     | OUT OF SCOPE  |              |
| RFC2617-3-17 |             |                                                      | The server <b>SHOULD</b> use the same value for the message-qop directive in the response as was sent by the client in the corresponding request.                                                                                                                                                                                          | SHOULD     | NOT REQUIRED  |              |
| RFC2617-3-18 |             |                                                      | The "nonce-value" and "nc-value" <b>MUST</b> be the ones for the client request to which this message is the response.                                                                                                                                                                                                                     | MUST       | OUT OF SCOPE  |              |
| RFC2617-3-19 |             |                                                      | The "response-auth", "nonce", and "nonce-count" directives <b>MUST BE</b> present if "qop=auth" or "qop=auth-int" is specified.                                                                                                                                                                                                            | MUST       | NOT REQUIRED  |              |
| RFC2617-4-1  | 4.1         | Authentication of Clients using Basic Authentication | Because Basic authentication involves the cleartext transmission of passwords it <b>SHOULD NOT</b> be used (without enhancements) to protect sensitive or valuable information.                                                                                                                                                            | SHOULD NOT | NOT REQUIRED  |              |
| RFC2617-4-2  |             |                                                      | Server implementers <b>SHOULD</b> guard against the possibility of this sort of counterfeiting by gateways or CGI scripts.                                                                                                                                                                                                                 | SHOULD     | OUT OF SCOPE  |              |

| No          | RFC Section | RFC Section Title                                   | Functional Specification                                                                                                                          | RFC Status | Test Priority | Test Profile |
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| RFC2617-4-3 | 4.6         | Weakness Created by Multiple Authentication Schemes | A user agent <b>MUST</b> choose to use the strongest auth- scheme it understands and request credentials from the user based upon that challenge. | MUST       | OUT OF SCOPE  |              |