

# IPv6 Ready Logo Phase 2

IP Multimedia Subsystem

## Policy Document

Version 0.4.0

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- IPv6 Promotion Council  
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SIP IPv6 Sub Working Group  
BII Group

Commentators:



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### [I] Phase 2 Policy

(for IMS IPv6-Ready Logo Program)

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## 1. Introduction of the IPv6 Ready Logo Program

The IPv6 forum plays a major role to bring together industrial actors, to develop and deploy the next generation of IP protocols. Contrary to IPv4, which started with a small closed group of implementers, the universality of IPv6 leads to a huge number of implementations. Interoperability has always been considered as a critical feature in the Internet community. Due to the large number of IPv6 implementations, it is important to provide the market a strong signal proving the level of interoperability across various products. To avoid confusion in the mind of customers, a globally unique logo program should be defined. The IPv6 logo will give confidence to users that IPv6 is currently operational. It will also be a clear indication that the technology will still be used in the future. To summarize, this logo program will contribute to the feeling that IPv6 is available and ready to be used.

The IPv6 Logo Program consists of three phases, Phase 1, Phase 2 and Phase 3.

For more details, refer to the *White Paper*

(<http://www.ipv6ready.org/?page=docs&loc=admin>).



## 2. References

The following documents are referenced in the test specifications.

[IMS]

- (1) TS 24.229: IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3(Relase 8), 3GPP TS 24.229 v8.10.0.  
(<http://www.3gpp.org/ftp/Specs/html-info/24229.htm>)

[SIP/SDP]

- (2) RFC3261: SIP: Session Initiation Protocol (<http://www.ietf.org/rfc/rfc3261.txt>)
- (3) RFC3265: Session Initiation Protocol (SIP)-Specific Event Notification  
(<http://www.ietf.org/rfc/rfc3265.txt>)
- (4) RFC3327: Session Initiation Protocol (SIP) Extension Header Field for Registering Non-Adjacent Contacts (<http://www.ietf.org/rfc/rfc3327.txt>)
- (5) RFC3455: Private Header (P-Header) Extensions to the Session Initiation Protocol (SIP) for the 3rd-Generation Partnership Project (3GPP)  
(<http://www.ietf.org/rfc/rfc3455.txt>)
- (6) RFC3608: Session Initiation Protocol (SIP) Extension Header Field for Service Route Discovery During Registration (<http://www.ietf.org/rfc/rfc3608.txt>)
- (7) RFC3680: A Session Initiation Protocol (SIP) Event Package for Registrations  
(<http://www.ietf.org/rfc/rfc3680.txt>)
- (8) RFC4320: Actions addressing identified issues with the Session Initiation Protocol's non-INVITE Transaction (<http://www.ietf.org/rfc/rfc4320.txt>)
- (9) RFC4566: SDP: Session Description Protocol (<http://www.ietf.org/rfc/rfc4566.txt>)

[SigComp]

- (10) RFC3320: Signaling Compression (SigComp) (<http://www.ietf.org/rfc/rfc3320.txt>)
- (11) RFC3485: The Session Initiation Protocol (SIP) and Session Description Protocol (SDP) Static Dictionary for Signaling Compression (SigComp)  
(<http://www.ietf.org/rfc/rfc3485.txt>)
- (12) RFC3486: Compressing the Session Initiation Protocol  
(<http://www.ietf.org/rfc/rfc3486.txt>)
- (13) RFC4896: Signaling Compression (SigComp) Corrections and Clarifications  
(<http://www.ietf.org/rfc/rfc4896.txt>)



(14) RFC5049: Applying Signaling Compression (SigComp) to the Session Initiation Protocol (SIP) (<http://www.ietf.org/rfc/rfc5049.txt>)

[IMS AKA and Security Association]

(15) TS.33.203: 3G security; Access security for IP-based services (Release 8), 3GPP TS 33.203 v8.8.0. (<http://www.3gpp.org/ftp/Specs/html-info/33203.htm>)

(16) RFC3310: Hypertext Transfer Protocol (HTTP) Digest Authentication Using Authentication and Key Agreement (AKA) (<http://www.ietf.org/rfc/rfc3310.txt>)

(17) RFC3329: Security Mechanism Agreement for the Session Initiation Protocol (SIP) (<http://www.ietf.org/rfc/rfc3329.txt>)

[SIP Digest]

(18) RFC2617: HTTP Authentication: Basic and Digest Access Authentication (<http://www.ietf.org/rfc/rfc2617.txt>)

[Call Flow Examples]

(19) TS24.228: Signalling flows for the IP multimedia call control based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3, 3GPP TS 24.228 v5.15.0. (<http://www.3gpp.org/ftp/Specs/html-info/24228.htm>)

(20) RFC3665: SIP Basic Call Flow Examples (<http://www.ietf.org/rfc/rfc3665.txt>)



### 3. The Objective of IMS IPv6-Ready Logo Phase-2

The Key object of the IMS IPv6 Ready Logo is to verify protocol implementation and validate interoperability of IMS IPv6 products. The IMS test criteria are specified from the viewpoint of the basic functionality that is common to various IMS IPv6 products.

### 4. Requirement for the IMS IPv6-Ready Logo Phase-2

Obtaining the Phase-2 IPv6 Ready Core Logo is a prerequisite before obtaining IMS IPv6-Ready Logo Phase-2, with the exception that the IMS implementation uses an operating system which already obtained the Phase-2 IPv6 Core Protocols. You cannot obtain the IMS IPv6-Ready Logo Phase-2 Logo for extended protocol features just by meeting the requirements of that extended test category.

For the latest information, refer to the *White Paper* (<http://www.ipv6ready.org/?page=docs&loc=admin>).

The functions for obtaining the IMS IPv6 Ready Logo Phase-2 are classified as BASIC functions and ADVANCED functions. The BASIC functions are mandatory to ensure interoperability and you must pass the test related to BASIC functions. The ADVANCED functions can be optional; if the equipment supports an ADVANCED function which is applied to the logo test, you must pass the test related to the function. For more details on the classifications of the functions, see section 5.

The documents for the IMS IPv6 Ready Logo Program Phase-2 are summarized in table 4-1.





**Table 4-1 the documents for the IMS IPv6 Ready Logo Program Phase 2**

No	Document	Contents
1	Policy Document	The policy of the IMS IPv6 Ready Logo Phase-2.
2	Conformance Test Specification (User Equipment)	The details of the Conformance Test for IMS User Equipment.
3	Interoperability Test Scenario	The guideline for the IMS interoperability test.
4	The explanation of the submission for the IMS IPv6 Ready Logo	The document describes required tests and submission to obtain the IMS IPv6 Ready Logo Phase-2.



## 5. The IMS IPv6-Ready Logo Phase-2 test Criteria

### 5.1. The procedure of classification

The functions for the IMS IPv6 Ready Logo Phase-2 are specified as follows:

1. Classify the functions according to the main clauses (clause 4 to 10) and Annex A in 3GPP TS24.229 v8.10.0 as follows:
  - [a] The functions which are indicated as mandatory.
  - [b] The other functions.
2. Classify the functions [a] as following categories:
  - (1) BASIC : the minimum necessary functions for IMS connection.
  - (2) ADVANCED : the other functions.

The functions [b] are classified as following category:

- (1) NOT REQUIRED : non- objective functions.

Some reference documents that specified in 3GPP TS24.229 v8.10.0, related to the functions [a], are also classified as above..

The result of the classification is summarized in table 5-1 and 5-2.



**Table 5-1 IMS IPv6 functions classified as “BASIC” and “ADVANCED”**

Node	Function	
	BASIC	ADVANCED
UE	<ul style="list-style-type: none"> <li>- Registration with IMS-AKA*</li> <li>- Reg Event Package</li> <li>- Establishment, disconnection, and cancellation of Session</li> <li>- SDP Offer/Answer (INVITE-200)</li> <li>- Querying for the capabilities</li> <li>- Fork</li> <li>- SIP timer</li> <li>- IPsec</li> <li>- **SigComp</li> </ul>	<ul style="list-style-type: none"> <li>- GRUU</li> <li>- tel-URI</li> <li>- Media authorization</li> <li>- precondition</li> <li>- messaging</li> <li>- Multiple public user identities</li> <li>- Caller preferences</li> <li>- SigComp(xDSL)</li> <li>- Privacy</li> <li>- Resource-Priority</li> <li>- Registration with SIP digest</li> </ul>

\*: IMS-AKA is BASIC function for all UEs containing a UICC.

\*\*: SigComp is BASIC function only for the implementation which connects by 3GPP-GERAN,3GPP-UTRAN-FDD, 3GPP-UTRAN-TDD, 3GPP-E-UTRAN-FDD, 3GPP-E-UTRAN-TDD, 3GPP2-1X, 3GPP2-1X-HRPD, 3GPP2-UMB, IEEE-802.11, IEEE-802.11a, IEEE-802.11b or IEEE-802.11g, or IEEE-802.11n.

**Table 5-2 IMS IPv6 functions classified as “NOT REQUIRED”**

NOT REQUIRED
<ul style="list-style-type: none"> <li>- Roaming</li> <li>- Emergency call</li> <li>- Session Timer</li> <li>- The AS service functions</li> <li>- The charging functions</li> <li>- pre-existing Route Set</li> <li>- SDP Offer/Answer procedure by 2xx-ACK</li> <li>- Multipart MIME body</li> <li>- Redirection</li> <li>- Stateless proxy server</li> <li>- Multicast</li> <li>- Message segmentation</li> <li>- DNS (NAPTR, SRV)</li> <li>- Tracing of signaling</li> <li>- Any other extension for SIP</li> </ul>



## 5.2. Test Priority

The functions [a] that classified according to the procedure in clause 5.1 are classified in more details as follows:

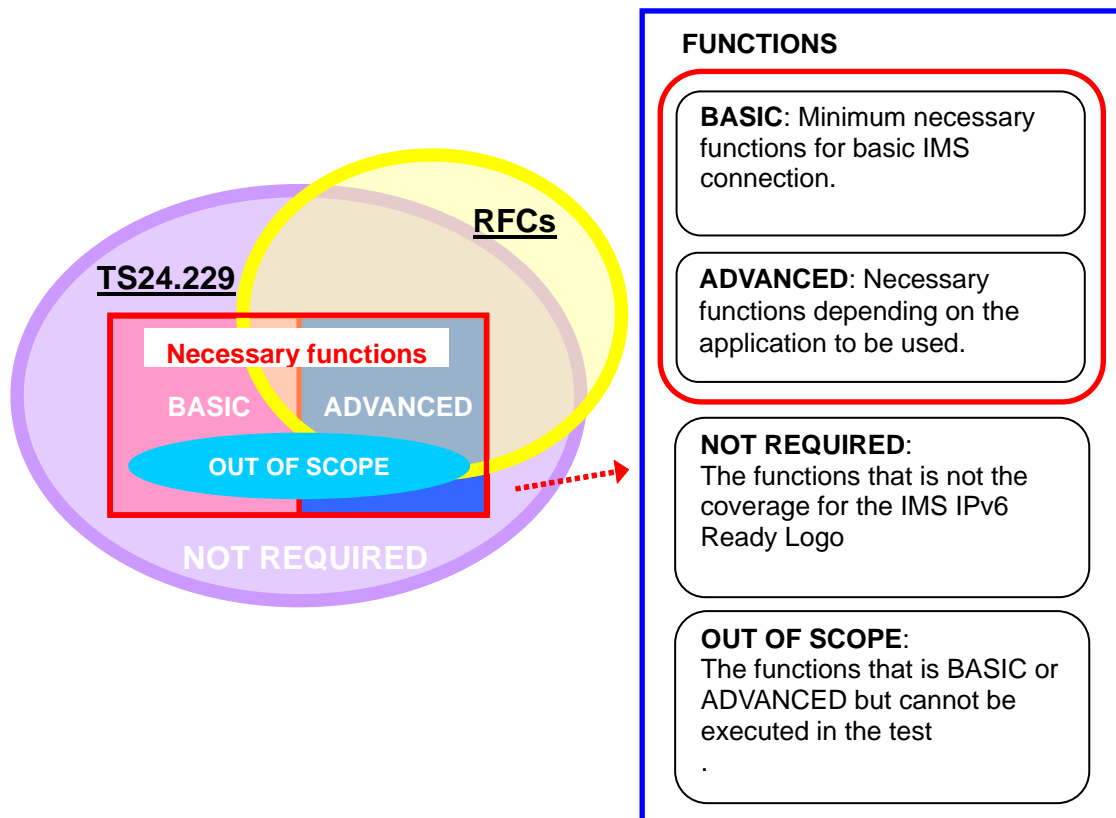
1. Extract the sentences which include the one of the key words (shall/should /must/may/can (3GPP) or MUST/SHOULD (RFC)) in documents.
2. Classify the extracted sentences as following categories:
  - (1) BASIC: the test items that are related to BASIC functions are classified into “BASIC” category. You must pass 100% the BASIC test items.
  - (2) ADVENCED: the test items that are related to ADVENCED functions are classified into “ADVENCED” category. ADVENCED test items can be optional. If the equipment supports an ADVANCED function which is applied to the logo test, you must pass the ADVENCED test items related to the function.
  - (3) NOT REQUIRED: The test items that are not coverage for the logo are classified into “NOT REQUIRED” category.
  - (4) OUT OF SCOPE: The test items that are related to BASIC or ADVENCED function but no way to test are classified into “OUT OF SCOPE” category.

The categories are summarized in table 5-3.

**Table 5-3 Test Priority**

	Test Priority
BASIC (Mandatory)	Minimum necessary function for basic IMS connection.
ADVANCED (Optional)	Necessary function depending on the application to be used.
NOT REQUIRED	Function classified as NOT REQUIRED is not the coverage for the IMS IPv6 Ready Logo.
OUT OF SCOPE	Function classified as OUT OF SCOPE cannot execute the test although that is BASIC or ADVANCED.

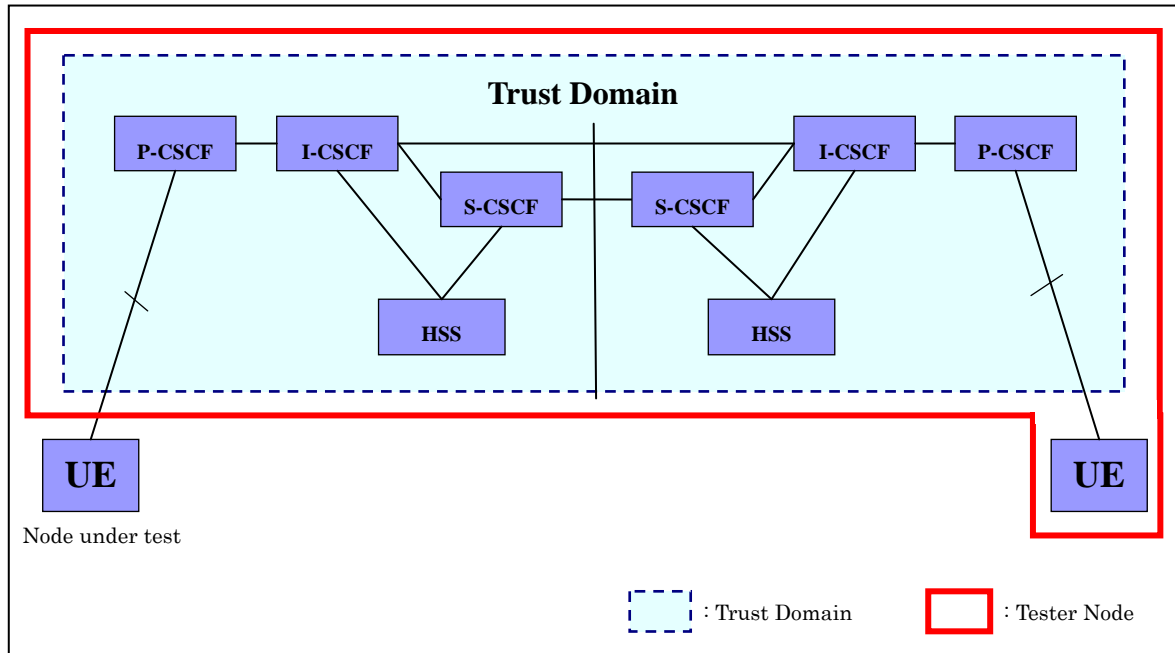
Figure 5-1 shows the relationships among the classifications of functions, the test items and the coverage of the IMS IPv6 Conformance Test.



**Figure 5-1 Classifications of function for the Conformance Test**

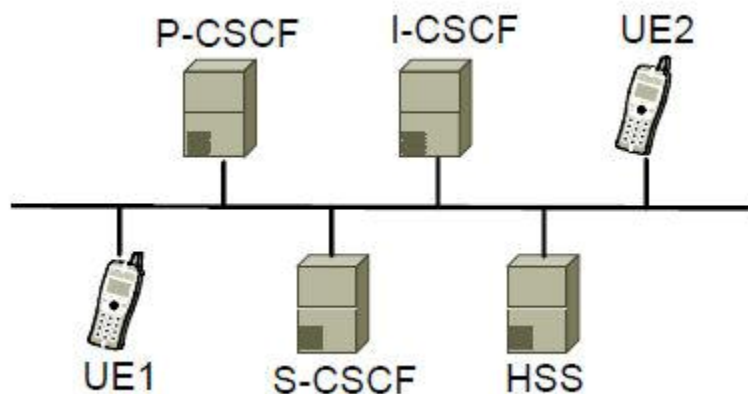
### 5.3 Reference Network Architecture

Figure 5-2 shows the network architecture that is covered in the IMS IPv6 Conformance Test.



**Figure 5-2 Reference Network Architecture (UE)**

Figure 5-3 shows the network architecture that is covered in the IMS IPv6 Interoperability Test.



**Figure 5-3 Reference Network Architecture (UE)**



#### **5.4 Transport Protocol**

- Only UDP is covered.
- TCP/TLS is not covered.

#### **5.5 Security and Authentication**

- IMS-AKA is covered (IMS-AKA is mandatory for all UEs containing a UICC). SIP digest is covered (Optional for UEs).

#### **5.6 Media**

Media is not covered for the IPv6 Ready Logo Phase 2 for IMS.



## 6. Procedures Summary for Obtaining the IMS IPv6-Ready Logo Phase-2

The procedures for obtaining the IMS IPv6-Ready Logo Phase-2 are summarized in table 6-1. For more details, refer to the *White Paper* of IPv6 Ready Logo. (<http://www.ipv6ready.org/?page=docs&loc=admin>)

**Table 6-1 Procedures Summary for Obtaining the IMS IPv6-Ready Logo Phase-2**

Seq	Procedures	Contents
1	Obtain the Phase-2 IPv6-Ready Core Logo.	Obtaining the Phase-2 IPv6 Ready Core Logo is a prerequisite before obtaining extended test categories, with the exception that the IMS implementation uses an operating system which already obtained the Phase-2 IPv6 Core Protocols. For details, refer to the documents about the IPv6 Core Protocols. ( <a href="http://www.ipv6ready.org">http://www.ipv6ready.org</a> )
2	Pass the IMS conformance test	You must pass 100% the IMS conformance test assertions with a Self Tester such as IMS IPv6 Conformance Test Tool ( <a href="http://cert.v6pc.jp/ims-ipv6/">http://cert.v6pc.jp/ims-ipv6/</a> ). (See, <i>IMS IPv6 Conformance Test Tool Reference Manual of the Test Suite</i> .)
3	Pass the IMS interoperability test	You must pass 100% the IMS interoperability test assertions. Execute the test between two different types of IMS equipments which passed each Conformity inspection. (See, <i>IMS Interoperability Test Scenario</i> .)
4	Submit required documents	The tested product needs to pass 100% each of the appropriate conformance and interoperability test assertions. You must submit required documents to obtain the Phase 2 Logo. For details of the documents, see <i>The explanation of the submission for the SIP IPv6 Ready logo program</i> .





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