



**APT/ITU Conformance and
Interoperability Event**

09 – 10 September 2013, Bangkok, Thailand



**Document C&I/INP-07
09 September 2013**

Oki Electric Industry Co. Ltd.

OVERVIEW OF HATS

Asia-Pacific Telecommunity
Conformance and Interoperability Event
09 September, 2013 – Bangkok, Thailand

Overview of HATS

OKI Electric Industry Co., Ltd.
Yasubumi Chimura

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-1-

Harmonization of
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1. Introduction

**HATS : Promotion Conference of
Harmonization of Advanced Telecommunication Systems**

**HATS is a Non-Profit organization that ensure
interconnectivity and interoperability
of info-communication equipment
developed by various manufacturers**

HATS was established in Aug. 1988.

- Members: info-communications carriers, vendors, TTC, MIC*1
- Secretariat: Communications and Information network Association of Japan (CIAJ)

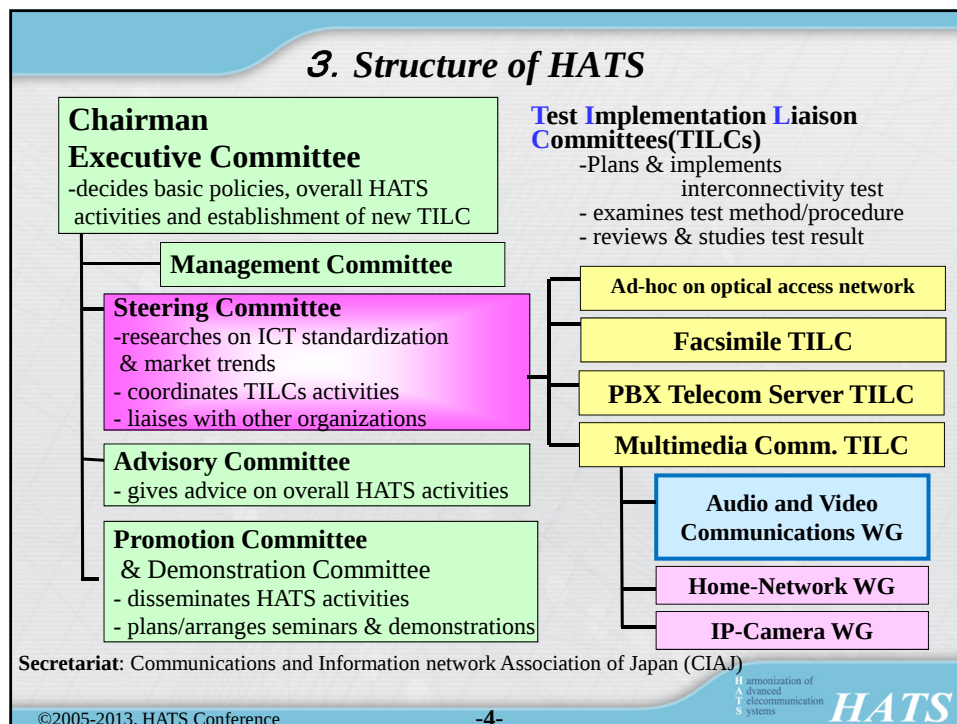
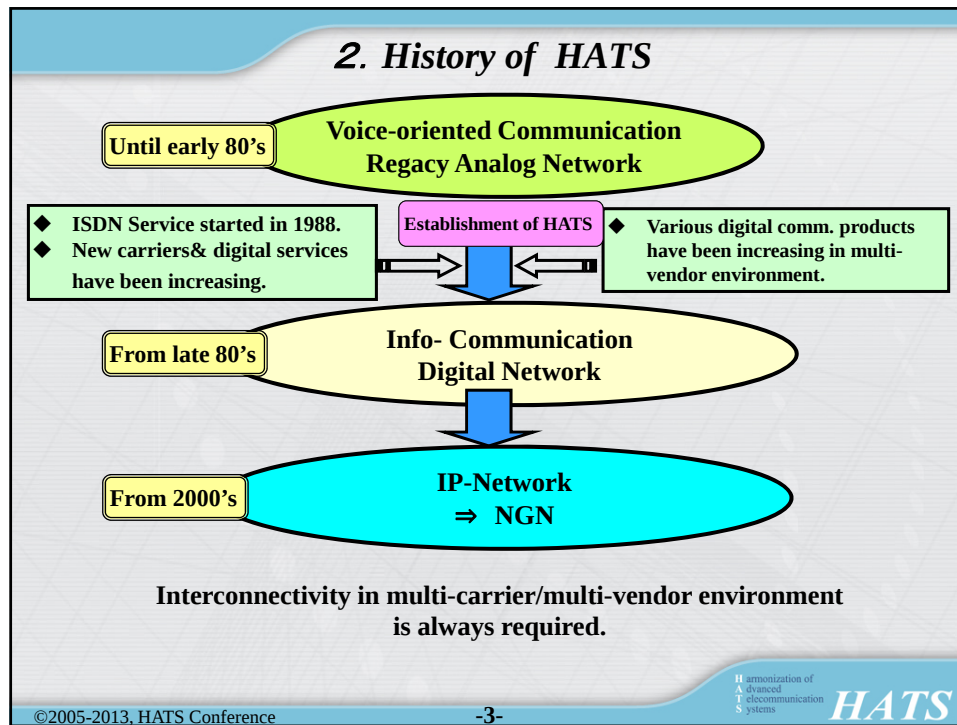
Note*1: MIC (Ministry of Internal Affairs and Communication),

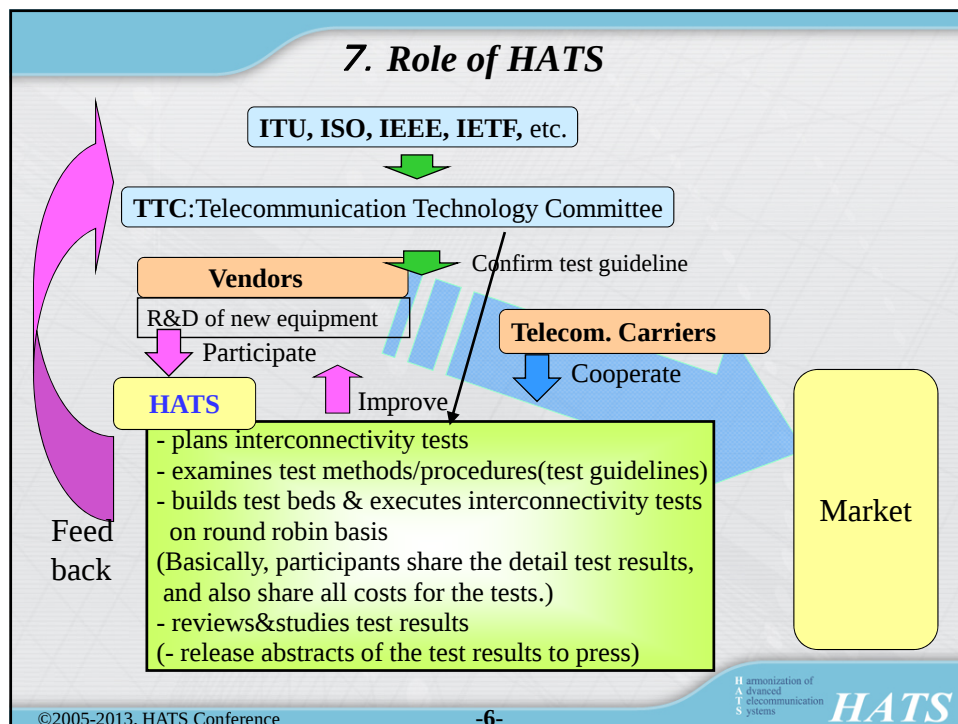
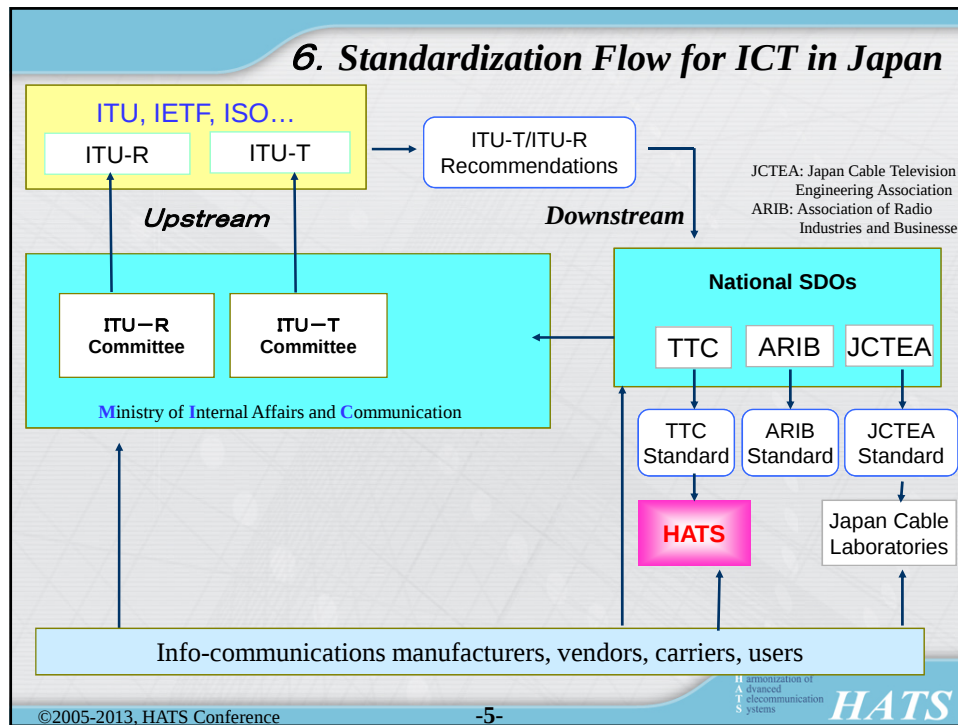
For the details,
<http://www.ciaj.or.jp/hats/english/about.html>

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-2-

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8. History of test activities in HATS

- 1989- ISDN Terminal Adapter/digital telephone, G4 facsimile, PBX, MHS
- 1990- Analog videophone
- 1991- Digital videophone/videoconference, LAN router
- 1996- Super G3 facsimile
- 1997- MPEG2(H.262)
- 1999- LAN router(ATM, IPsec), H.324 videophone, Internet facsimile
- 2000- H.323 videophone(over IP), Color facsimile
- 2001- ADSL, LAN router(IPv6 native/tunnel mode), PBX(VoIP:IP-QSIG), SIP(VoIP), Internet-FAX
- 2002- ADSL(CPE), LAN router(OSPF, PPOE), SIP(VoIP), H.323+, IP-PBX(VoIP:IP-QSIG+), Internet-FAX
- 2003- ADSL, LAN router(VRRP), sYCC color FAX, H.323, SIP PBX(IP-QSIG)
- 2004- LAN router (Internet VPN: IPsec-IKE), PBX-SIP, H.323, SIP
- 2005- PBX-SIP, IP-FAX, SIP, MPEG4
- 2006- PBX-SIP, IP-FAX, SIP, MPEG4, H.264
- 2007-2011 Enhanced Expand above-mentioned test functions and established new 2 new groups (Home Network and IP Camera) and 1 SWG (HDTV-Teleconference)
- 2012- Ad-hoc for interoperability of equipment for optical access network

Note: ADSL and LAN TILC has terminated on 2005.

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-7-

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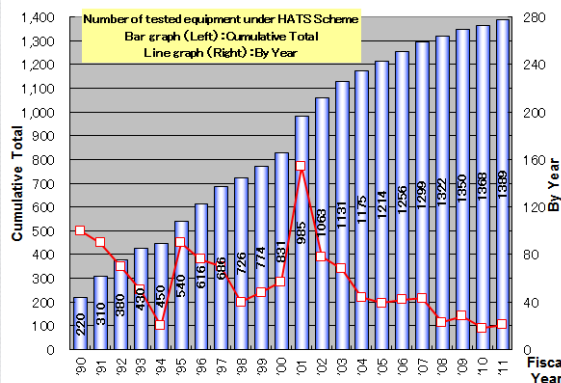
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Records of HATS tests

ITEMS	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
PBX	3	7	5	5	5	5	5	5	5	5
Facsimile	1	5	0	11	10	22	1			
LAN	24	11	6							
H.323	17	13	6							
SIP	29	32	23	18	20	10	12	10	3	
MPEG4			4	5	4	2	5	0		
H.264					3	4		2		
H-NW										3
DSL	4									
IP-Camera								11	10	13
Total	78	68	44	39	42	43	23	28	18	21

The number of info-communication equipment tested under HATS Scheme
(TOTAL : JFY1988-2011)
⇒1,389

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- 1991- Digital videophone/videoconference, LAN router
- 1996- Super G3 facsimile
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- 2003- ADSL, LAN router(VRRP), sYCC colour FAX, H.323, SIP PBX(IP-QSIG)
- 2004- LAN router (Internet VPN: IPsec-IKE), PBX-SIP, H.323, SIP
- 2005- PBX-SIP, IP-FAX, SIP, MPEG4
- 2006- PBX-SIP, IP-FAX, SIP, MPEG4, H.264
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-8-

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NGN interoperability event

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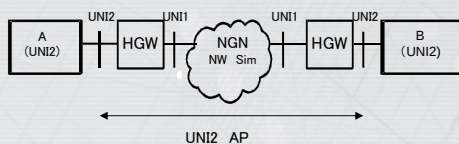
-9-

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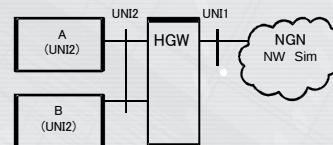
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Interoperability Test of NGN Equipment in 2012

- ✓ Purpose : Expansion of the NGN market
- ✓ Test Suites : NGN Network Simulator, Home Gateway, Office Gateway
- ✓ Test scenario :
 - ✓ Interface : UNI2 (under Gateway)
 - ✓ Profiles : IP-Phone/Video-Phone/Video-Conference, IP-FAX (T.38), Contents Transfer (JJ-40.20)
 - ✓ Participants : NTT, NEIX, Softfront, OKI, NEC, Brother Industries, Ricoh, Fuji Xerox, Toshiba Tech, Konica Minolta Business Technologies
- ✓ Date : 11th July, 2012 ~ 12th July, 2012



Case 1) Interoperability Test via NGN NW Simulator
(External Case)



Case 2) Interoperability Test via Home Gateway
(Internal Case)

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Interoperability Test of NGN Equipment in 2012

- 10 Vendors, 12 Devices
 - VoIP/Video Phone: 5 vendors, 5 devices (NTT, Softfront, OKI, NEC)
 - IP-FAX: 3 vendors, 3 devices (Fuji Xerox, Ricoh, Brother Industry)
 - Contents Transfer: 4 vendors, 4 devices (Konica Minolta Business Technologies, Toshiba Tech, NTT, Softfront)
- Network Simulator: 2 vendors, 2 devices (NTT, Neix)



Photos of the interoperability test

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Participants List

Participants	Equipment	Profiles
Neix	SmartGate Adapter HD	VoIP
NTT	Hikari-Flets Phone VP-3000	Video Phone
	Proto Type	Contents Transfer
NEC	NC1000-MV	Video Phone
OKI Access Technologies	IP Video Phone	Video Phone
Softfront	LivyTalk	Video Phone
	SUPREE embedded Contents Transfer	Contents Transfer
Toshiba Tech	Proto Type	Contents Transfer
Konica Minolta Business Technologies	Proto Type	Contents Transfer
Ricoh	imagio MP C4002	IP-FAX
Fuji Xerox	DocuCentre-IV C2263	IP-FAX
Brother Industries	MFC-8520DN	IP-FAX

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Test Results of Interoperability Test of NGN Equipment in 2012

Profile	Test Scenario	Success Rates
VoIP	External	100 %
	Internal	100 %
Video Phone	External	44 %
	Internal	75 %
IP-FAX	External	100 %
	Internal	100 %
Contents Transfer	External	100 %
	Internal	100 %



Photo of the Interoperability Test

Reports

1. Success Rates of VoIP and IP-FAX, Contents Transfer were 100%.
2. The issue of Video Phone is the Negotiation Mechanism of Multi-Codec (SD and HD).

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HATS Interoperability Workshop on NGN supported by ITU

1.Information

Date

13 July 2012 / 14:00-17:00

Location

CIAJ (Tokyo, Japan) <http://www.ciaj.or.jp/en/about/map/>

Sponsor

HATS Conference

Support

The Telecommunication Technology Committee (TTC)
Communication and Information network Association of Japan (CIAJ)
International Telecommunication Union (ITU)

2.Opening

HATS Promotion Committee Chair Mr. Yoshito Sakurai (Hitachi) MIC Global ICT Strategy Bureau Ms. Michiko Fukahori TTC
General Chair Mr. Yoichi Maeda CIAJ Executive Vice President Mr. Hiroaki Takeichi ITU Director of TSB (Video Letter) Mr.
Malcolm Johnson

3.Sessions

"Overview of NGN Interoperability Test 2012 in HATS"

Multimedia Communication TILC(*) VoIP system WG Leader
TTC Interoperability Advisory Group Leader
OKI Electric Industry Mr. Yasubumi Chimura

"ITU-T Conformity and Interoperability Portal Overview"

NEC Corporation. Mr. Hajime Koto

"SG11 supports HATS NGN interoperability event"

ITU-T SG11 Vice-Chairman

NEC Europe Mr. Kaoru KenYoshi

"IPTV Interoperability Testing in ITU-T SG16"

ITU-T SG16 Chairman

Mitsubishi Electric Mr. Yushi Naito

(*)TILC : Test Implementation Liaison Committee

4.Closing

HATS Steering Committee Chair Mr. Kenji Koro (OKI)

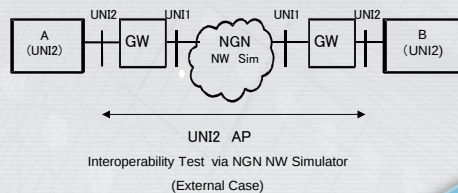


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Interoperability Test of NGN Equipment in 2013

- ✓ Purpose : Expansion of HDTV Communications in the NGN market
- ✓ Test Suites : NGN Network Simulator, Home Gateway, Office Gateway, SIP-Residential Gateway
- ✓ Test scenario :
 - ✓ Interface : UNI2 (under Gateway)
 - ✓ Profiles : Video-Phone/Video-Conference
(H.264 (Baseline Profile@Level3.1 (720P))) – JJ40.30 (TTC)
 - ✓ Participants : Cisco, NTT Software, NTT, NEIX, Softfront, OKI, NEC, Panasonic System Networks
- ✓ Test Date : 8th July ,2013



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Interoperability Test of NGN Equipment in 2013

- Terminal Devices
 - VoIP/Video Phone: 6 vendors, 6 devices (Cisco, NTT, Softfront, OKI, NEC, Panasonic System Networks)
 - Gateway: 2 vendors, 5 devices (NTT, NTT Software)
 - MCU: 2 Vendors, 2 devices (Cisco, NEC)
- Network Simulator: 2 vendors, 2 devices (NTT, Neix)
- Test Result
 - Terminal to Terminal : Success Rate 65%
 - Terminal to MCU : Success Rate 60%
 - Issues : Negotiation of HD Profile of SDP



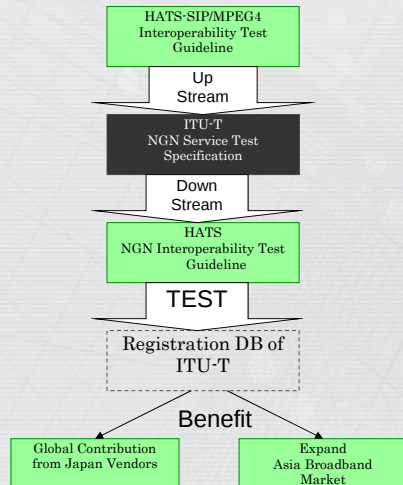
Photos of the interoperability test

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Standardization of Interoperability Test

- HATS and TTC contribute to ITU-T Standardization of NGN Service Interoperability Test.



Level	Conformance			Interoperability			
	ITU-TM local testing	ITU-TM local testing	ITU-TM local testing	ITU-TM local testing	ITU-TM local testing	ITU-TM local testing	ITU-TM local testing
1.1	1.1	1.2	1.3	2.1	2.2	2.3	2.4
2.1	2.1	2.2	2.3	2.4	2.5	2.6	2.7
3.1	3.1	3.2	3.3	3.4	3.5	3.6	3.7
4.1	4.1	4.2	4.3	4.4	4.5	4.6	4.7
5.1	5.1	5.2	5.3	5.4	5.5	5.6	5.7
6.1	6.1	6.2	6.3	6.4	6.5	6.6	6.7
7.1	7.1	7.2	7.3	7.4	7.5	7.6	7.7
8.1	8.1	8.2	8.3	8.4	8.5	8.6	8.7
9.1	9.1	9.2	9.3	9.4	9.5	9.6	9.7
10.1	10.1	10.2	10.3	10.4	10.5	10.6	10.7
11.1	11.1	11.2	11.3	11.4	11.5	11.6	11.7
12.1	12.1	12.2	12.3	12.4	12.5	12.6	12.7
13.1	13.1	13.2	13.3	13.4	13.5	13.6	13.7
14.1	14.1	14.2	14.3	14.4	14.5	14.6	14.7
15.1	15.1	15.2	15.3	15.4	15.5	15.6	15.7
16.1	16.1	16.2	16.3	16.4	16.5	16.6	16.7
17.1	17.1	17.2	17.3	17.4	17.5	17.6	17.7
18.1	18.1	18.2	18.3	18.4	18.5	18.6	18.7
19.1	19.1	19.2	19.3	19.4	19.5	19.6	19.7
20.1	20.1	20.2	20.3	20.4	20.5	20.6	20.7
21.1	21.1	21.2	21.3	21.4	21.5	21.6	21.7
22.1	22.1	22.2	22.3	22.4	22.5	22.6	22.7
23.1	23.1	23.2	23.3	23.4	23.5	23.6	23.7
24.1	24.1	24.2	24.3	24.4	24.5	24.6	24.7
25.1	25.1	25.2	25.3	25.4	25.5	25.6	25.7
26.1	26.1	26.2	26.3	26.4	26.5	26.6	26.7
27.1	27.1	27.2	27.3	27.4	27.5	27.6	27.7
28.1	28.1	28.2	28.3	28.4	28.5	28.6	28.7
29.1	29.1	29.2	29.3	29.4	29.5	29.6	29.7
30.1	30.1	30.2	30.3	30.4	30.5	30.6	30.7
31.1	31.1	31.2	31.3	31.4	31.5	31.6	31.7
32.1	32.1	32.2	32.3	32.4	32.5	32.6	32.7
33.1	33.1	33.2	33.3	33.4	33.5	33.6	33.7
34.1	34.1	34.2	34.3	34.4	34.5	34.6	34.7
35.1	35.1	35.2	35.3	35.4	35.5	35.6	35.7
36.1	36.1	36.2	36.3	36.4	36.5	36.6	36.7
37.1	37.1	37.2	37.3	37.4	37.5	37.6	37.7
38.1	38.1	38.2	38.3	38.4	38.5	38.6	38.7
39.1	39.1	39.2	39.3	39.4	39.5	39.6	39.7
40.1	40.1	40.2	40.3	40.4	40.5	40.6	40.7
41.1	41.1	41.2	41.3	41.4	41.5	41.6	41.7
42.1	42.1	42.2	42.3	42.4	42.5	42.6	42.7
43.1	43.1	43.2	43.3	43.4	43.5	43.6	43.7
44.1	44.1	44.2	44.3	44.4	44.5	44.6	44.7
45.1	45.1	45.2	45.3	45.4	45.5	45.6	45.7
46.1	46.1	46.2	46.3	46.4	46.5	46.6	46.7
47.1	47.1	47.2	47.3	47.4	47.5	47.6	47.7
48.1	48.1	48.2	48.3	48.4	48.5	48.6	48.7
49.1	49.1	49.2	49.3	49.4	49.5	49.6	49.7
50.1	50.1	50.2	50.3	50.4	50.5	50.6	50.7
51.1	51.1	51.2	51.3	51.4	51.5	51.6	51.7
52.1	52.1	52.2	52.3	52.4	52.5	52.6	52.7
53.1	53.1	53.2	53.3	53.4	53.5	53.6	53.7
54.1	54.1	54.2	54.3	54.4	54.5	54.6	54.7
55.1	55.1	55.2	55.3	55.4	55.5	55.6	55.7
56.1	56.1	56.2	56.3	56.4	56.5	56.6	56.7
57.1	57.1	57.2	57.3	57.4	57.5	57.6	57.7
58.1	58.1	58.2	58.3	58.4	58.5	58.6	58.7
59.1	59.1	59.2	59.3	59.4	59.5	59.6	59.7
60.1	60.1	60.2	60.3	60.4	60.5	60.6	60.7
61.1	61.1	61.2	61.3	61.4	61.5	61.6	61.7
62.1	62.1	62.2	62.3	62.4	62.5	62.6	62.7
63.1	63.1	63.2	63.3	63.4	63.5	63.6	63.7
64.1	64.1	64.2	64.3	64.4	64.5	64.6	64.7
65.1	65.1	65.2	65.3	65.4	65.5	65.6	65.7
66.1	66.1	66.2	66.3	66.4	66.5	66.6	66.7
67.1	67.1	67.2	67.3	67.4	67.5	67.6	67.7
68.1	68.1	68.2	68.3	68.4	68.5	68.6	68.7
69.1	69.1	69.2	69.3	69.4	69.5	69.6	69.7
70.1	70.1	70.2	70.3	70.4	70.5	70.6	70.7
71.1	71.1	71.2	71.3	71.4	71.5	71.6	71.7
72.1	72.1	72.2	72.3	72.4	72.5	72.6	72.7
73.1	73.1	73.2	73.3	73.4	73.5	73.6	73.7
74.1	74.1	74.2	74.3	74.4	74.5	74.6	74.7
75.1	75.1	75.2	75.3	75.4	75.5	75.6	75.7
76.1	76.1	76.2	76.3	76.4	76.5	76.6	76.7
77.1	77.1	77.2	77.3	77.4	77.5	77.6	77.7
78.1	78.1	78.2	78.3	78.4	78.5	78.6	78.7
79.1	79.1	79.2	79.3	79.4	79.5	79.6	79.7
80.1	80.1	80.2	80.3	80.4	80.5	80.6	80.7
81.1	81.1	81.2	81.3	81.4	81.5	81.6	81.7
82.1	82.1	82.2	82.3	82.4	82.5	82.6	82.7
83.1	83.1	83.2	83.3	83.4	83.5	83.6	83.7
84.1	84.1	84.2	84.3	84.4	84.5	84.6	84.7
85.1	85.1	85.2	85.3	85.4	85.5	85.6	85.7
86.1	86.1	86.2	86.3	86.4	86.5	86.6	86.7
87.1	87.1	87.2	87.3	87.4	87.5	87.6	87.7
88.1	88.1	88.2	88.3	88.4	88.5	88.6	88.7
89.1	89.1	89.2	89.3	89.4	89.5	89.6	89.7
90.1	90.1	90.2	90.3	90.4	90.5	90.6	90.7
91.1	91.1	91.2	91.3	91.4	91.5	91.6	91.7
92.1	92.1	92.2	92.3	92.4	92.5	92.6	92.7
93.1	93.1	93.2	93.3	93.4	93.5	93.6	93.7
94.1	94.1	94.2	94.3	94.4	94.5	94.6	94.7
95.1	95.1	95.2	95.3	95.4	95.5	95.6	95.7
96.1	96.1	96.2	96.3	96.4	96.5	96.6	96.7
97.1	97.1	97.2	97.3	97.4	97.5	97.6	97.7
98.1	98.1	98.2	98.3	98.4	98.5	98.6	98.7
99.1	99.1	99.2	99.3	99.4	99.5	99.6	99.7
100.1	100.1	100.2	100.3	100.4	100.5	100.6	100.7

Figure 2 NGN testing document preliminary map

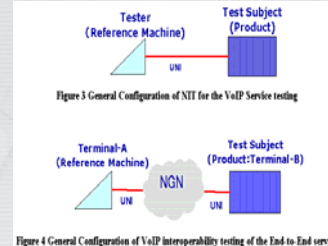


Figure 4 General Configuration of VoIP interoperability testing of the End-to-End service

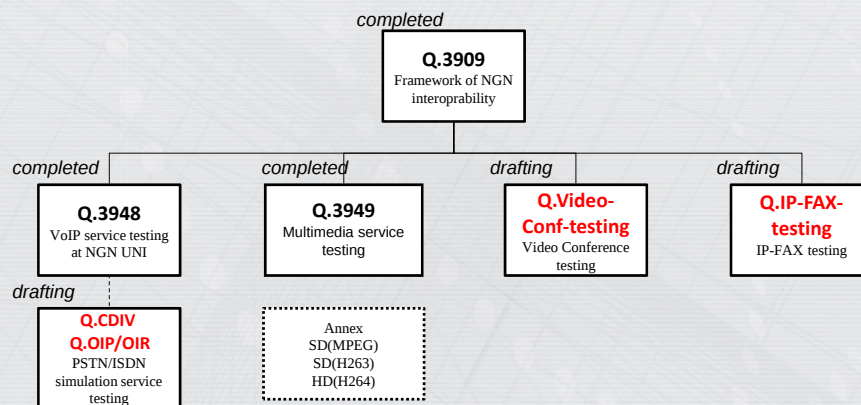
NGN Service Test Recommended by ITU-T

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Status of Standardization for NGN interoperability in ITU-T

ITU-T SG11 works on the Test Scenarios for NGN interoperability. TTC and HATS contributes on this works.



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Conclusions & Challenges

- To resolve **interoperability issues** raised by developing countries , it is effective to have **interoperability events** including tests and workshops.
- The **interoperability tests** should be based on ITU-T Recommendations, and it is a pragmatic way to achieve by regional SDOs. Such a **global interoperability event** provides good opportunities to resolve the issues for both of developed and developing countries in APT region.
- This **new collaboration framework** such as the **interoperability events** will foster mutual understanding and cooperation among regional/national SDOs .
- HATS will be able to take a certain role in the framework through its experiences.

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-19-

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Thank You!

HATS Secretariat:

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2-2-12 Hamamatsu-cho, Minato-ku, Tokyo, 105-0013, JAPAN

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-20-

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