ITU-T / ATIS Workshop
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NGN NNI Signalling Profile

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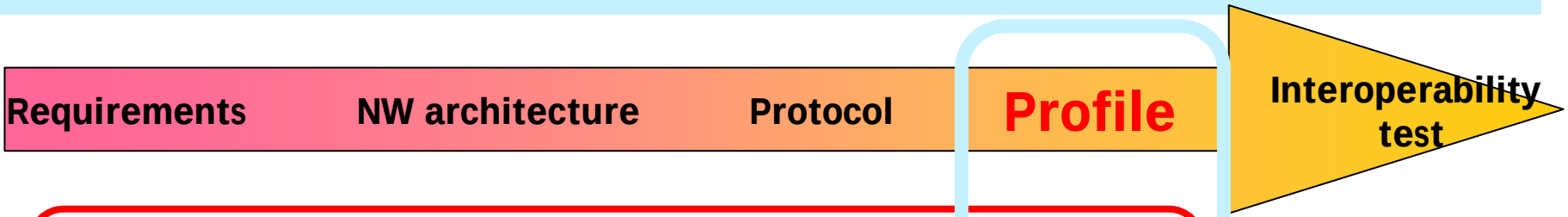
ITU-T

Alliance for Telecommunications Industry Solutions

What is a signalling profile?

- Purpose of signalling profile
  - Higher possibility of interoperability
  - Easier implementation
- Contents of signalling profile
  - Specifications to be referenced as M/O
  - Parameters to be supported as M/O
  - Profiling or major remarks of specific functions

NGN signalling standardization



International standardization in NGN

SG13: Architecture

SG11: Protocol

ITU-T

Q.NNI profile

ATIS

North American standardization in NGN

This is the main topic of this presentation

IETF

Owner of SIP

Multiservice Forun

Implementation agreement and Interoperability testing

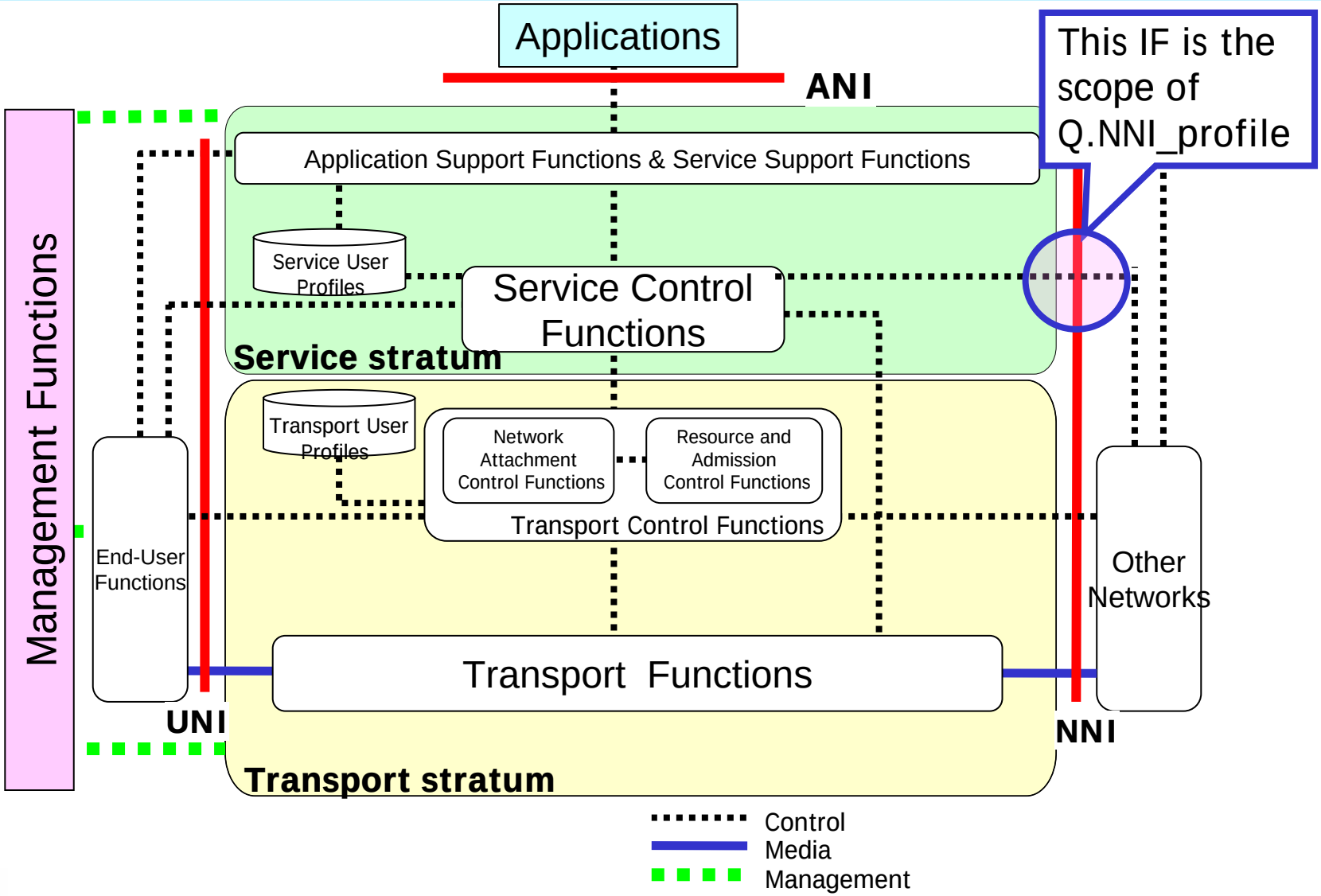
TISAPN

IMS based overall NGN discussion

Q.NNI_profile

- ITU-T SG11 agreed to create a new recommendation for NGN NNI signalling profile.
- The first draft was issued during the January meeting.
  - Service-level signalling (i.e., SIP and SDP) is focused on.
  - Based on IMS architecture defined in Y.FRA and Y.IFN of SG13.
  - Basic voice connectivity between home networks is focused on before other services.
  - Expected completion is the end of 2006.

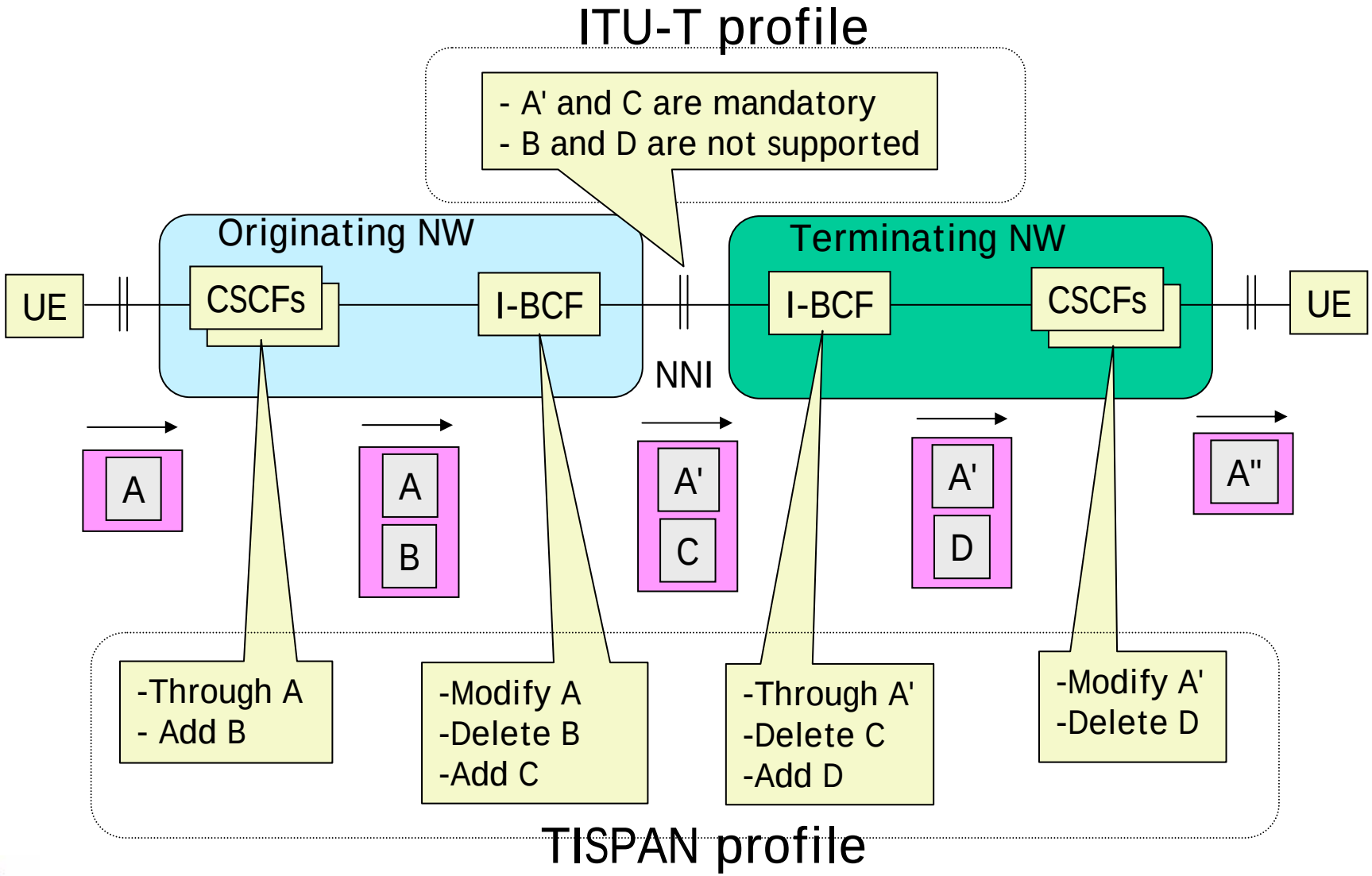
Reference point for Q.NNI_profile



ATIS and ITU-T profiles

- Signalling part of the ATIS IP NNI interconnect standard was the starting point of ITU-T's NNI signalling profile.
- ITU-T's NNI signalling profile incorporates IMS features and generalizes some North American specific features from the ATIS standard. However, both profiles in ATIS and ITU-T are very similar in terms of basic VoIP connectivity.

Relationship to TISPAN (1/2)

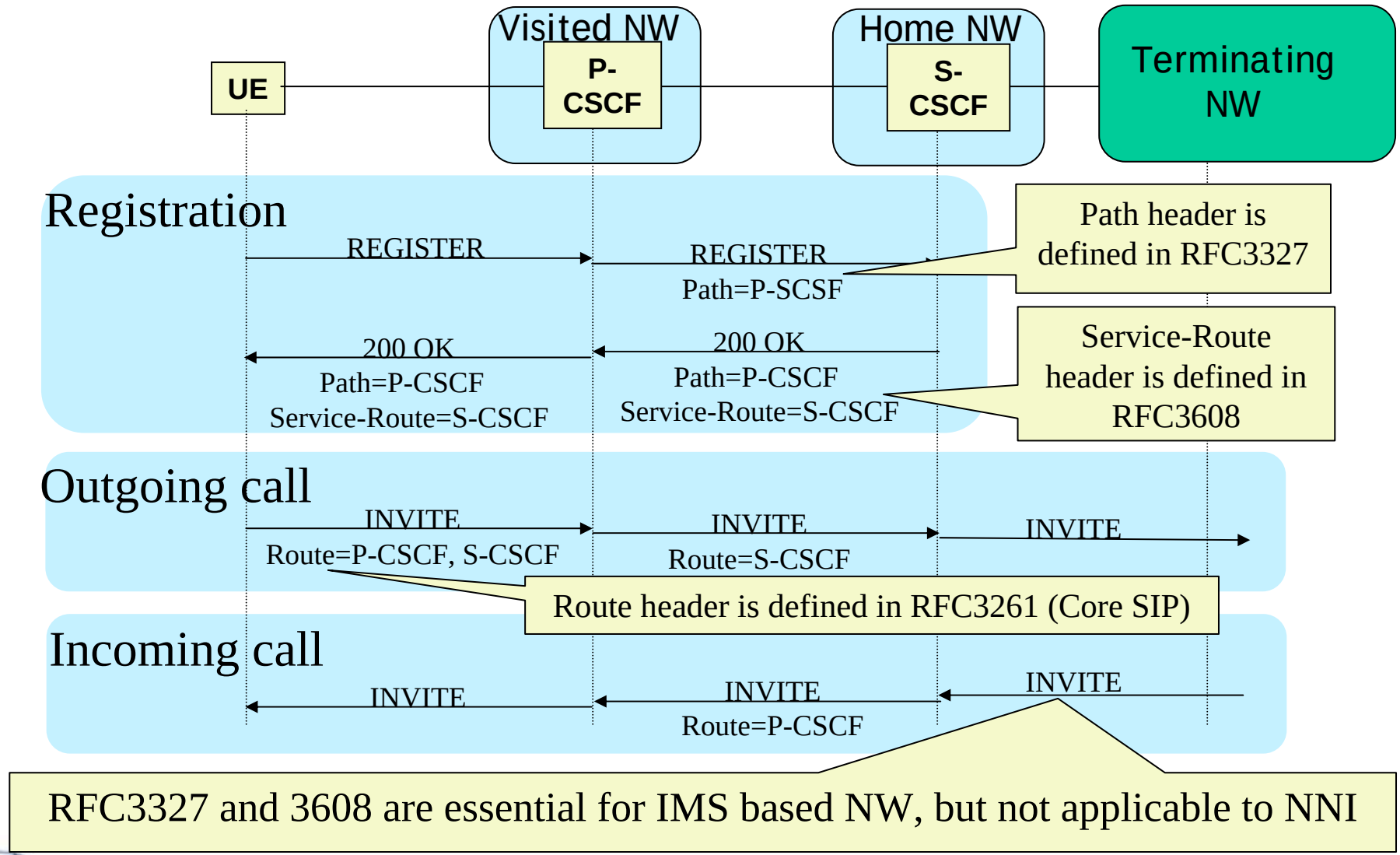


Relationship to TISPAN (2/2)

- ITU-T profile
  - Closely related to interworking between NGNs
  - 30 pages
- TISPAN profile
  - Closely related to implementation
  - 300 pages
- Both of them are necessary
  - Compatible and complementary
  - Do not duplicate nor contradict each other

TISPAN SIP/SDP profile refers to 63 IETF RFCs and Internet Drafts. Although it is not clearly stated in the TISPAN document,
-23 of them are related to NNI
-only 9 of them are mandatory in NNI

Example of N.A. RFCs in NNI

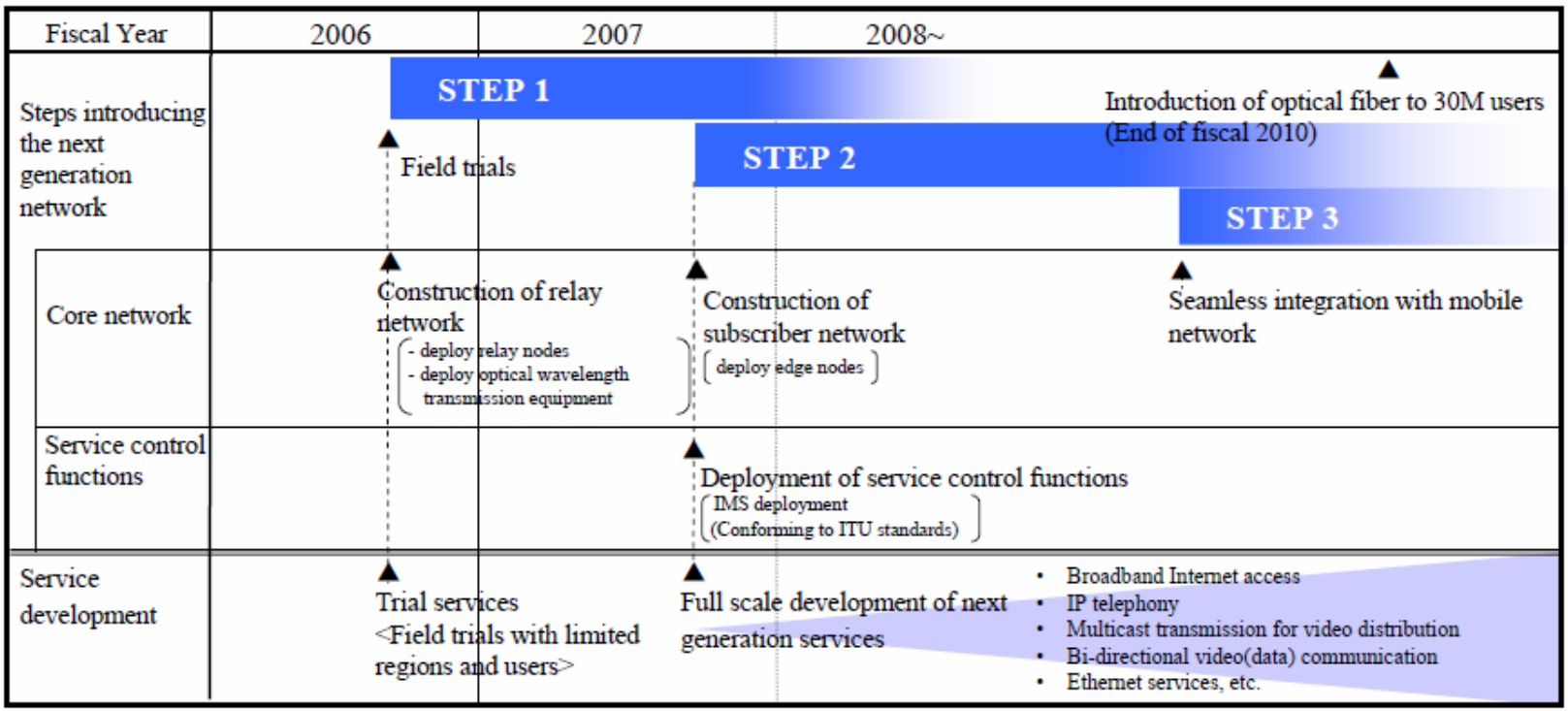


NGN is coming soon!

STEP 1: In the second half of fiscal 2006, field trials will begin and deployment of relay nodes and optical wavelength transmission equipment will commence on the IP networks of NTT East and NTT West, which makes a first step in construction of the next-generation network relay system.

STEP 2: In the second half of fiscal 2007, deployment of edge nodes and service control functions will commence, and full scale provision of services using the next-generation network will start (and be developed to overlay the existing IP networks).

STEP 3: Seamless integration with mobile network will be achieved by the deployment of mobile network edge nodes at the time of NTT DoCoMo's introduction of the Super 3G service and by the transition of ATM network (voice) to IP-based network.



http://www.ntt.co.jp/ir/events_e/results/2005.html

Summary

- "Profiling" is one of the most important collaboration areas between ATIS and ITU-T.
- ITU-T has started standardizing the NGN NNI signalling profile.
- The NGN NNI signalling profile work in ITU-T complements the work in TISPAN.
- The NGN NNI signalling profile will be required very soon.

Back up slides

Contents of Q.NNI_profile

1. Scope
2. References
3 Definitions
4 Abbreviations
5 Reference Model
6. Media Availability in a SIP Session
7. Codec
8. Routing and Addressing
9. Signalling
   - 9.1. Call Control
     - **9.1.1. SIP PROFILE**
     - **9.1.2. Mandatory and optional SIP Extensions Supported**
   - 9.2. Mandatory and Optional Media-Related Protocols to Be Supported
   - 9.3. Call Control Signalling Transport
   - 9.4. IP Protocol Version

The latest draft is TD GEN/11-289, output of SG11 meeting Jan. 2006

SIP extensions (1/3)

Extensions	Title	M/O
RFC 2976	The SIP INFO Method	O
RFC 3087	Control of Service Context using SIP Request-URI	O
RFC 3204	MIME media types for ISUP and QSIG Objects	O
RFC 3261	SIP: Session Initiation Protocol	M
RFC 3262	Reliability of Provisional Responses in the Session Initiation Protocol (SIP)	M
RFC 3264	An Offer/Answer Model with the Session Description Protocol (SDP)	M
RFC 3265	Session Initiation Protocol (SIP)-Specific Event Notification	O
RFC 3311	The Session Initiation Protocol (SIP) UPDATE Method	M
RFC 3312	Integration of Resource Management and Session Initiation Protocol (SIP)	O
RFC 3323	A Privacy Mechanism for the Session Initiation Protocol (SIP)	M
RFC 3324	Short Term Requirements for Network Asserted Identity	O
RFC 3325	Private Extensions to the Session Initiation Protocol (SIP) for Asserted Identity within Trusted Networks	M
RFC 3326	The Reason Header Field for the Session Initiation Protocol (SIP)	M
RFC 3398	Integrated Services Digital Network (ISDN) User Part (ISUP) to Session Initiation Protocol (SIP) Mapping	O
RFC 3420	Internet Media Type message/sipfrag	O

SIP extensions (2/3)

Extensions	Title	M/O
RFC 3428	Session Initiation Protocol (SIP) Extension for Instant Messaging	O
RFC 3455	Private Header (P-Header) Extensions to the Session Initiation Protocol (SIP) for the 3rd-Generation Partnership Project (3GPP)	O
RFC 3515	The Session Initiation Protocol (SIP) Refer Method	O
RFC 3603	Private Session Initiation Protocol (SIP) Proxy-to-Proxy Extensions for Supporting the PacketCable Distributed Call Signaling Architecture	O
RFC 3824	Using E.164 numbers with the Session Initiation Protocol (SIP)	O
RFC 3891	The Session Initiation Protocol (SIP) "Replaces" Header	O
RFC 3892	The Session Initiation Protocol (SIP) Referred-By Mechanism	O
RFC 3893	Session Initiation Protocol (SIP) Authenticated Identity Body (AIB) Format	O
RFC 3911	The Session Initiation Protocol (SIP) "Join" Header	O
RFC 3959	The Early Session Disposition Type for the Session Initiation Protocol (SIP)	O
RFC 3960	Early Media and Ringing Tone Generation in the Session Initiation Protocol (SIP)	O
RFC 3966	The tel URI for Telephone Numbers	M
RFC 4028	Session Timers in the Session Initiation Protocol (SIP)	M
RFC 4032	Update to the Session Initiation Protocol (SIP) Preconditions Framework	O
RFC 4235	An INVITE Initiated Dialog Event Package for the Session Initiation Protocol (SIP)	O

SIP extensions (3/3)

Extensions	Title	M/O
RFC 4244	An Extension to the Session Initiation Protocol for Request History Information	O
draft-rosenberg-sipping-acr-code-00	Rejecting Anonymous Requests in the Session Initiation Protocol (SIP)	O
draft-ietf-iptel-trunk-group-06.txt	Representing Trunk Groups in tel/sip URIs	O
draft-ietf-sip-content-indirect-mech-05.txt	A Mechanism for Content Indirection in Session Initiation Protocol (SIP) Messages	O
draft-ietf-sip-resource-priority-10.txt	Communications Resource Priority for the Session Initiation Protocol (SIP)	O
draft-ietf-iptel-tel-np-08.txt	Number Portability Parameters for the “tel” URI	O

M: mandatory
O: optional

RFC3261 header fields

Header	Send	Recv
Accept	O	O
Accept-Encoding	O	O
Accept-Language	O	O
Alert-Info	O	O
Allow	M	M
Authentication-Info	O	O
Authorization	O	O
Call-ID	M	M
Call-Info	O	O
Contact	M	M
Content-Disposition	O	O
Content-Encoding	O	O
Content-Language	O	O
Content-Length	M	M
Content-Type	M	M

Header	Send	Recv
CSeq	M	M
Date	O	O
Error-Info	O	O
Expires	M	M
From	M	M
In-Reply-To	O	O
Max-Forwards	M	M
Min-Expires	O	O
MIME-Version	O	O
Organization	O	O
Priority	O	O
Proxy-Authenticate	O	O
Proxy-Authorization	O	O
Proxy-Require	M	M
Record-Route	M	M

Header	Send	Recv
Reply-To	O	O
Require	M	M
Retry-After	O	O
Route	M	M
Server	O	O
Subject	O	O
Supported	M	M
Timestamp	O	O
To	M	M
Unsupported	M	M
User-Agent	O	O
Via	M	M
Warning	O	O
WWW-Authenticate	O	O

M: mandatory
O: optional

Status codes

- Status codes, which specify mandatory or optional, etc, are shown in static view or dynamic view.
  - A static view represents whether or not the implementation of each specified protocol element is required. SIP specifications in ITU-T, ATIS, and TISPAN/3GPP are based on a static view.
  - A dynamic view represents whether or not each specified protocol element appears in the protocol data unit. SIP specifications in IETF are based on a dynamic view.