

**ITU-T / ATIS Workshop**  
**“Next Generation Technology and Standardization”**

**Las Vegas, 19-20 March 2006**

**ATIS:**  
**Next Generation Networks (NGN)**  
**Activities**

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**19<sup>th</sup> March, 2006**



# ATIS Next-Gen Network (NGN) Activities

- o Next-Gen Network (NGN) initiatives are underway at all levels in ATIS:
  - ATIS Board of Directors where senior executives identify industry's most urgent technical and operational priorities.
  - ATIS TOPS Council where focus is given to assessing these priorities and specifying actions to address industry's needs.
  - ATIS Committee where technical and operational experts develop the critical standards.
- o Result: End-to-End Implementable, Interoperable Standards and Solutions for the NGN!

# ATIS' Direction: ATIS Board of Directors

- Active Board of Directors comprised of CTOs and senior-most executives of major telecom companies doing business in North America.
- Board of Directors drives market-based standards development:
  - Identifies priority standards work needed by industry to get new services to market rapidly;
  - Focuses standards work on these priority areas.

# Technology and Operations Council (TOPS)

## ATIS Board Established the TOPS Council

- Subset of ATIS Board members:
  - Comprised of over 35 senior executives from industry's leading companies.
- The cornerstone of ATIS' commitment to the rapid development and promotion of technical and operations standards.
- Addresses the industry's most urgent technical and operational priorities.

# Technology and Operations Council (TOPS)

## TOPS-commissioned Focus Groups:

- Commissions formation of Focus Groups, Exploratory Groups, and/or Task Forces to assess needs.
- Coordinates priority work in ATIS and among appropriate industry standards development organizations.
- Provides an industry road-map for the successful development of standards in support of the Work Plan and the creation of end-to-end solutions.

# Technology and Operations Council (TOPS)

- In 2003, TOPS identified five critical industry priorities: VoIP, Security, Data Interchange, Wide Area Ethernet, and Mobile Wireless Services.
- Work has been completed and Work Plans have been released.
- Building on the initial five priorities, TOPS launched the NGN-FG in June 2004 to specify industry's set of requirements and high-level architecture for the NGN.

# Building from ATIS' Priority Work: ATIS NGN Focus Group

## TOPS Council commissioned Next Generation Network Focus Group (NGN-FG) Mission:

To develop an ATIS set of requirements for NGN that defines a multi-service, access and transport agnostic architecture and enables an evolution from currently deployed architectures to provide an open and interoperable architecture and service interfaces that will allow the seamless delivery of applications to customers while ensuring continued support for existing services.

# ATIS NGN Focus Group: Objectives

- Resolve NGN-related standards gaps and overlaps through ATIS committees and within external organizations.
- Form essential NGN requirements for the North American market.
- Provide a venue for ATIS members to drive the strategic direction of the NGN architecture, services and protocols.
- Enhance ATIS members' alignment around a consistent NGN architecture.
- Harmonize industry standardization initiatives to achieve globally acceptable standards for NGN.



# ATIS NGN, Part I: Framework For the Future

In 4Q2004, ATIS released the *ATIS Next Generation Network (NGN) Framework, Part I: NGN Definitions Requirements and Architecture*:

- First comprehensive set of NGN requirements delivered internationally from a U.S.-based standards organization.

# ATIS NGN, Part I: Framework For the Future

- Defines high-level architecture for NGN that meets business and wide-scale deployment needs of ATIS member companies.
- A Business-driven action plan for achieving implementable, interoperable, converged network standards.

# ATIS NGN, Part II: Roadmap to the Future

In 3Q2005, ATIS released the *ATIS Next Generation Network (NGN) Framework, Part II: Roadmap 2005*:

- Builds on Part I and seeks to clarify the priorities for elements within these standards initiatives.
- Primary criterion for developing the ATIS NGN Roadmap is the creation of an infrastructure that “enables” the flexible creation of new NGN services.

# ATIS NGN, Part III: Standards Gaps Analysis

ATIS NGN-FG is working towards releasing the *ATIS Next Generation Network (NGN) Framework, Part III: Standards Gap Analysis:*

- Builds on Part I & Part II and seeks to:
  - identify standards activities (i.e., gaps, overlaps, synergies and harmonization)
  - assess the potential impacts of NGN across other TOPS priority issues, and
  - assess the progress of NGN development and issues or requirements not previously identified.

# ATIS Committees: Building the Standards

- o ATIS TOPS Council's commissioned groups do not develop standards.
- o Technical & operational standards are developed by appropriate standards developers.
  - ATIS Committees
  - External standards developers
    - ITU-T, ETSI, 3GPP, and IETF
  - Industry forums & special interest groups:
    - Multi-service Forum, IPDR.org, ect.

# ATIS Committees: Building the Standards

Multiple ATIS Committees are engaged in NGN:

- *Emergency Services Interconnection Forum (ESIF)*: deals with NG Emergency -related services.
- *IPTV Interoperability Forum (IIF)*: develop standards and related technical activities that enable the interoperability, interconnection and implementation of IPTV systems and services.
- *Telecom Management & Operations Committee (TMOC)*: develops operations, administration, maintenance and provisioning standards, and other documentation related to OSS and Network Element (NE) functions.

# ATIS Committees: Building the Standards

- *Ordering & Billing Forum (OBF)*: identify, discuss and resolve national issues that affect ordering, billing, provisioning and exchange of information.
- *Packet Technologies & Systems Committee (PTSC)*: develops and recommends standards and technical reports related to services, architectures, and signaling.
- *Wireless Technologies & Systems Committee (WTSC)*: develops and recommends standards and technical reports related to wireless and/or mobile services and systems.

# ATIS NGN Activities: Deliverables

- Provides the global arena with the unique North American user and regulatory perspective.
- Scopes out NGN from an “inter-carrier” business perspective.
- Prioritizes NGN service enablers or underlying network capabilities.
- Helps to harmonize various industry standardization initiatives.
- Fosters a strategic focus on end-to-end NGN interoperability.
- Fosters closer coordination and collaborations with other leading standards developers.



# ATIS & ITU-T Objective

ATIS & ITU-T establish a process to ensure a consistent and aligned definition and description for NGN:

- o ATIS and ITU-T to work together to achieve harmonized NGN-related specification and standards.
- o Document agreed on common work efforts/programs.
- o Enhance communications & coordinate NGN efforts (e.g., liaisons, etc.).



Alliance for Telecommunications  
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# Appendix: Additional Information

- o ATIS
- o NGN-FG
- o ATIS Committees

# Overview of ATIS

## Mission Statement

- o ATIS is a United States based body that is committed to rapidly developing and promoting technical and operations standards for the communications and related information technologies industry worldwide using a pragmatic, flexible and open approach.

# Overview of ATIS

- o ATIS is committed to global standards and plays a key role in their development with other SDOs:
  - North American Organizational Partner in the Third Generation Partnership Program (3GPP).
  - Global Standards Collaboration (GSC).
  - Single largest contributor to the ITU Process (via the State Department).

# Overview of ATIS

- o Committed to rapidly developing and promoting technical and operations standards for the communications and related information technologies industry worldwide.
- o Collaborates with industry's standards developers to achieve interoperable, implementable, end-to-end standards and solutions.
- o Educate, engage, and influence regulators' decisions on technical and operations issues (FCC, State Dept., FBI, Congress, Dept. of Justice).

# Overview of ATIS

- A technical planning and standards development organization for the communications industry with a diverse membership:
  - 300+ member companies.
  - Over 1,100 professionals participating in 22 industry standards committees and forums.
- Over 60 senior executives from industry's leading companies on the ATIS Board of Directors.
- TOPS Council - a standing committee of the ATIS Board- is comprised of over 35 ATIS Board members.

# ATIS NGN Framework Part I & Part II



# ATIS NGN Part 1: Deliverable

- o Specifies objectives for NGN Releases:
  - an “implementable standard”
  - ‘end-to-end’ capability to deliver service
  - multi-service, multi-media in capability
  - inter-carrier in scope
  - creating value in communications
  - articulated as network interworked functionality

# ATIS NGN Part 1: Deliverable

- Provides the global arena with the unique North American user and regulatory perspective.
- Expands the scope of current NGN-related efforts by scoping out NGN from an “inter-carrier” perspective.
  - Carrier-to-carrier settlement issues and business models that drive requirements.
- Optimizes the NGN for future NGN-type services as well as continued support of vital legacy-based services.
- Sets in place explicit criteria for access networks in order to interconnect and interwork with the core NGN.

# ATIS NGN, Part II: Roadmap to the Future

- o Focuses on identifying the underlying “service enablers” that allow for many potential new services to be introduced, and then letting the market decide which of these new services should succeed.
- o Specifies priorities of the NGN service enablers and underlying capabilities.

# ATIS NGN, Part II: Roadmap to the Future

NGN Roadmap 2005 is based on several guiding principles and assumptions, including:

- NGN will be multi-vendor.
- Services must be able to traverse multiple operators.
- Interoperability must be based on defined interconnection specifications.
- Initial release strategy is based on capabilities that could be deployed in the network, in standardized form, by no later than Year End (YE) 2007.

# ATIS NGN, Part II: Roadmap to the Future

- o Based on these guiding principles, the NGN Roadmap 2005 outlines and prioritizes network service enablers or capabilities to identify the minimum set of capabilities necessary to create a near-term environment for flexible service creation.

# Priority Enablers

1. Unified User Profile
2. Security
3. Service Decoupling
4. Presence
5. Service Transparency
6. QoS
7. Resource and Admission control
8. Settlement
9. NGN Management (OAM&P)

# Priority Enablers

10. Multicast
11. Address Resolution
12. Commercial Location-Based Services
13. DRM
14. User Control of profile/services
15. Media Resource Functions
16. Group Management
17. Emergency Related Services

# ATIS Committees: Additional Information



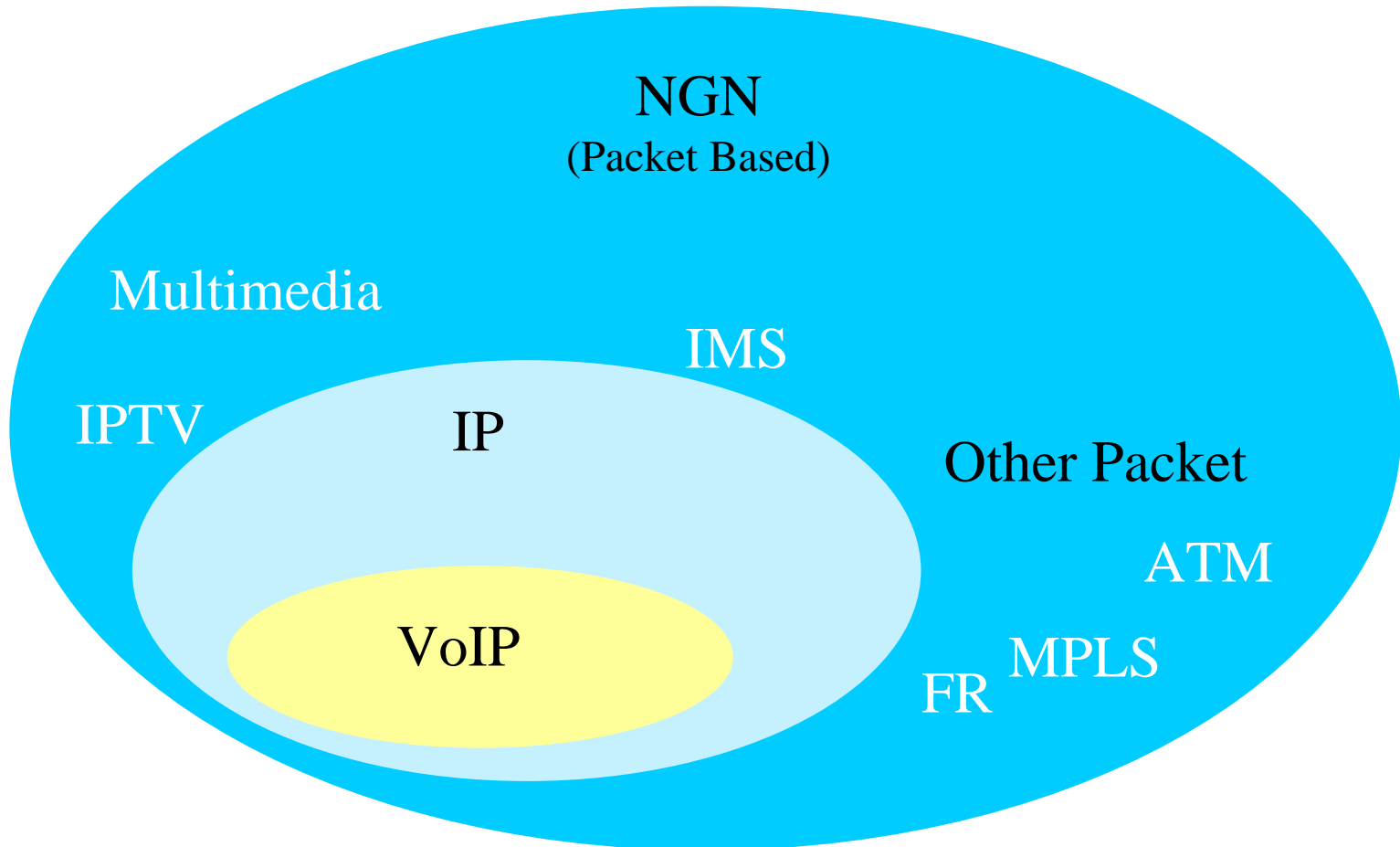


# PTSC NGN Major Initiatives

- o IP-IP Network Interconnection (NNI)
- o Terminal to Network Interconnection (UNI)
- o Emergency Services
- o Signaling Standards which address:
  - IMS/Multimedia Services
  - Priority Routing and Admission Control
  - Security of Signaling and Control
  - Session Initiation Protocol (SIP) Application
- o Lawfully Authorized Electronic Surveillance
- o NNI Interconnection Testing

# PTSC Areas of Work Related to NGN

Signaling, Architecture and Control



# PTSC Issue Statements NGN Related

- o S0002 - LAES for Public IP Network Access Services
- o S0005 -SS7/BICC Network (NNI) Interconnection with IP networks Security Standard
- o S0006 - VoP/Multimedia Control and Signaling Standard
- o S0007- US Standard for Signaling Security - UNI Access and Signaling

# PTSC Issue Statements NGN Related

- o S0008 - Technical Report on Test Framework for IP-IP Network Interconnection
- o S0009 - Standard defining the NNI for IP-IP Network Interconnection Supporting Multi-Media Services
- o S0010 - Addendum to T1.679, "Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control or ISDN User Part"

# PTSC Issue Statements NGN Related

- o S0018 - Proposed Issue statement supporting a NGN Architecture Technical Report
- o S0019 - Proposed Issue statement supporting a IP QoS/RACS Technical Report
- o S0022 - LAES of NGN
- o S0023 - Vertical Signaling Interface to Communicate QoS and Reliability/Priority Parameters Between the Application Layer and the User Plane in IP Networks

# PTSC Issue Statements NGN Related

- S0024 - Session/Border Control Functions Definitions and Requirements
- S0025 - NNI Numbering and Routing Capabilities and Procedures
- S0026 - Use of SIP History-Info within and between NGN Networks
- S0027 - IP Device (SIP UA) to Network Interface Standard
- S0029 - An Interworking Standard to Support ANSI Extensions to NSS

# PTSC Issue Statements NGN Related

- o S0032 - Minimum Security Mechanisms for Messaging Applications
- o S0033 - End to End Authentication
- o S0035 - Provider Job Aid for LAES Standards
- o S0037 - Support for LAES of Advanced VoP Conferencing
- o S0038 - NGN "9-1-1" Service
- o S0039 - Packet Priority and Priority Call Processing - Phase 2

# PTSC Issue Statements NGN Related

- o S0040 - IP-NNI for VoIP and Multimedia Services in NGN
- o S0041 - Support of Emergency Telecommunication Services in IP Networks - Phase 2



# Ordering and Billing Forum (OBF)

- o The OBF developed and published the “VoIP Ordering and Billing Issues & Concerns” document.
- o The OBF established the OBF IP-NNI committee in order to address inter-company accounting and settlements for Packet Based Services.
- o The OBF is engaged with IPDR.org by way of a Memorandum of Understanding between IPDR.org and ATIS.

# Ordering and Billing Forum (OBF)

- o The OBF has defined and reached industry consensus on an ordering process to support Wide Area Ethernet with Issue 2889 - *Develop a New Industry Process for Ordering Ethernet Virtual Connections*. Implementation is scheduled for 4Q2006.
- o The OBF Billing Committee is addressing IP/PSTN interconnection with Issue 2776 - *Identification of IP-Originated, PSTN-Terminated Traffic for InterCarrier Compensation Purposes*.

# *Wireless Technologies & Systems Committee (WTSC)*

- o As an Organizational Partner of 3GPP, the ATIS WTSC is:
  - working on the Long Term Evolution (LTE) of radio access methods, and;
  - the System Architecture Evolution (SAE) including the IP Multimedia Subsystem (IMS) that has been the model for other standards groups in pursuit of NGN.

## ○ **Common OAM&P Functionality and Technology**

- *Provides for industry efficiencies from common frameworks and models (e.g., Management Plane Security, ...)*

## ○ **Inter-Administration OAM&P**

- *Provides for interoperability and intercommunication between service providers (e.g., OSS Interconnection, Common Coding/Language, ...)*

## ○ **Network Technology Specific OAM&P**

- *Provides for interoperability between and among service providers' and suppliers' systems (e.g., Tech Specific [VoIP, IPTV] Accounting Management, ...)*

# TMOC - Common OAM&P Functionality and Tech

Iss #	Issue Title	Issue Description/Need	Comments
56	<b>Security Management System</b>	Part of TOPS Security Work Plan, Section 3: Overall Security Management System includes: -Security Event Management and Attack Determination and Mitigation; -Configuration Management (including user accounts and passwords); -Credentials Management -Security Verification and Validation; -EMS Interface	In Letter Ballot process
60	<b>ITU-T Study Group 4</b>	The development of USSGB/ITU-T USA positions for the ITU-T Study Period from 2005 to 2008. Note that positions may be targetted towards one or more ITU-T SG 4 Questions under study (see T1M1/2003-240 and/or <a href="http://www.itu.int/ITU-T/studygroups/com04/questions.html">www.itu.int/ITU-T/studygroups/com04/questions.html</a> )	Umbrella Issue for Study Period of ITU-T SG4
62	<b>ITU-T NGN Management Focus Group (NGN Subset of Issue 60)</b>	With the emphasis on NGN in ATIS and the industry, there is a need to track and influence the work of the ITU-T NGN Management Focus Group (NGNMFG) which has been established with the objective to provide, through industry-wide collaboration, the management interface capabilities to support NGN management (see the NGNMFG details in TMOC-2005-019).	ITU-T NGN Management Focus Group (NGN Subset of Issue 60)
81	<b>Inter-Administration Accounting Management</b>	TMOC has been requested by OBF to update ATIS-0300075 and ATIS-0300075.1 and to work with ITU-T to include the Billing/Settlement needs of OBF. See OBF to TMOC Liaisons: TMOC-2006-025 and TMOC-2006-026.	
82	<b>Trial Use to ANS: ATIS-0300075.1</b>	ATIS-0300075.1 is currently an ANS for Trial Use. An open work item on ATIS-0300075.1 must be maintained for appropriate management of ATIS-0300075.1 during the trial period (for related contributions, comments, discussions, etc.). [Note, with the recent TMOC/3GPP Harmonization Agreement regarding Accounting Management (see TMOC-2006-022), the ITU-T NGNM Focus Group requested that TMOC/3GPP accelerate a propose draft ITU-T Rec (based on the Harmonization Agreement) for consideration in ITU-T SG4 -- that would reference the TMOC and 3GPP standards.]	

# TMOC - Inter-Administration OAM&P

Iss #	Issue Title	Issue Description/Need	Comments
14	<b>ETS Work Items related to ITU-T Study Group 4 (ETS Subset of Issue 60)</b>	The development of ETS related USSGB/ITU-T USA positions for ITU-T (SG4) Question 7/4, Requirements for Business to Business and Customer to Business Management interfaces, and other SG4 Questions as appropriate	Closed in Mar 2006
63	<b>Instant resolution of ITU Carrier Codes (ICCs) as NGN identifiers</b>	See ICC Issue Description (TMOC-CLDR-2005-007). A request was presented to ITU-T SG 4 in its February 2005 meeting, proposing that an ad hoc group be formed to develop NGN related revisions to M.1400 for ITU Carrier Codes (ICCs). The request appeared to propose that ICCs be used to identify resources such as providers of NGN IP-enabled networks, network element management systems, and directories. This would considerably extend the scope of ICCs beyond the current ICC definition and management as specified in ITU-T Rec. M.1400.	
73	<b>Revision of tML Transport Profile Specification</b>	Part of TOPS DI Work Plan, Work Area 1 (evolve the tML Transport Profile ): General update of tML Transport Profile Specification including the incorporation of the resolutions to Issue 50 and 51.	
77	<b>TMOC support for GTDD</b>	Part of TOPS DI Work Plan update; GTDD is assigned to TMOC; see TMOC-2005-085. Data definitions and usage rules are not globally defined for the telecommunications industry. This leads to redundancies and conflicts, making it difficult to integrate new products and services, especially in end-to-end E-business processes.	

# TMOC -- Network Technology Specific OAM&P

Iss #	Issue Title	Issue Description/Need	Comments
12	<b>T1.202: Future Study Item - IP Focus</b>	T1.202-2004 – Internetwork Operations – Guidelines for Network Management of the Public Telecommunications Networks under Disaster Conditions has been completed and contains an Annex on Future Study Items, e.g., Proposal for version of T1.202 focused on IP Networks.	
57	<b>VoIP Accounting Management NE/OSS Interface - ANS</b>	There is a need for an American National Standard regarding the accounting interface between VoIP-handling network and service elements and OSS/BSS. For this purpose, VoIP-handling network and service elements could include VoIP gateways, gatekeepers, media gateway controllers, etc. Typical OSS/BSS that may be involved would include mediation systems, billing systems, EMS, etc. See TMOC/IPDR Collaboration Terms of Reference (T1M1/2003-204Rx)	See Issue 82. Built on NGN AccMgt -- ATIS-0300075.1
58	<b>VoIP Accounting Management NE/OSS Interface - ITU-T</b>	There is a need for an ITU-T Recommendation regarding the accounting interface between VoIP-handling network and service elements and OSS/BSS. For this purpose, VoIP-handling network and service elements could include VoIP gateways, gatekeepers, media gateway controllers, etc. Typical OSS/BSS that may be involved would include mediation systems, billing systems, EMS, etc. See TMOC/IPDR Collaboration Terms of Reference (T1M1/2003-204Rx)	See Issue 82. Built on NGN AccMgt -- ATIS-0300075.1
61	<b>WAE OAM and Network Management</b>	As identified by the ATIS TOPS Wide Area Ethernet (WAE) Work Plan, TMOC should work with MEF to establish common baseline requirements for network management for Ethernet services, and also should be involved in WAE OAM work occurring in the industry (via cross committee coordination and liaison).	
76	<b>IPTV Accounting Management</b>	IPTV services do not currently have standardized accounting mechanisms. Standard IPTV accounting management can provide for significant efficiencies for all interested parties. Accounting in IPTV could serve a variety of purposes, including revenue management, settlement between value chain partners, marketing analysis, service level measurements, and more.	