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TITLE: **2005 ATIS Annual Report**

AGENDA ITEM: **GSC11 OPENING; 4.3**

DOCUMENT FOR:

Decision	
Discussion	
Information	**XX**

1   DECISION/ACTION REQUESTED

N/A

2   REFERENCES

N/A

3   RATIONALE

The 2005 ATIS Annual Report summarizes the past, current, and future work taking place in ATIS.

4   CONSEQUENCES AND IMPLICATIONS
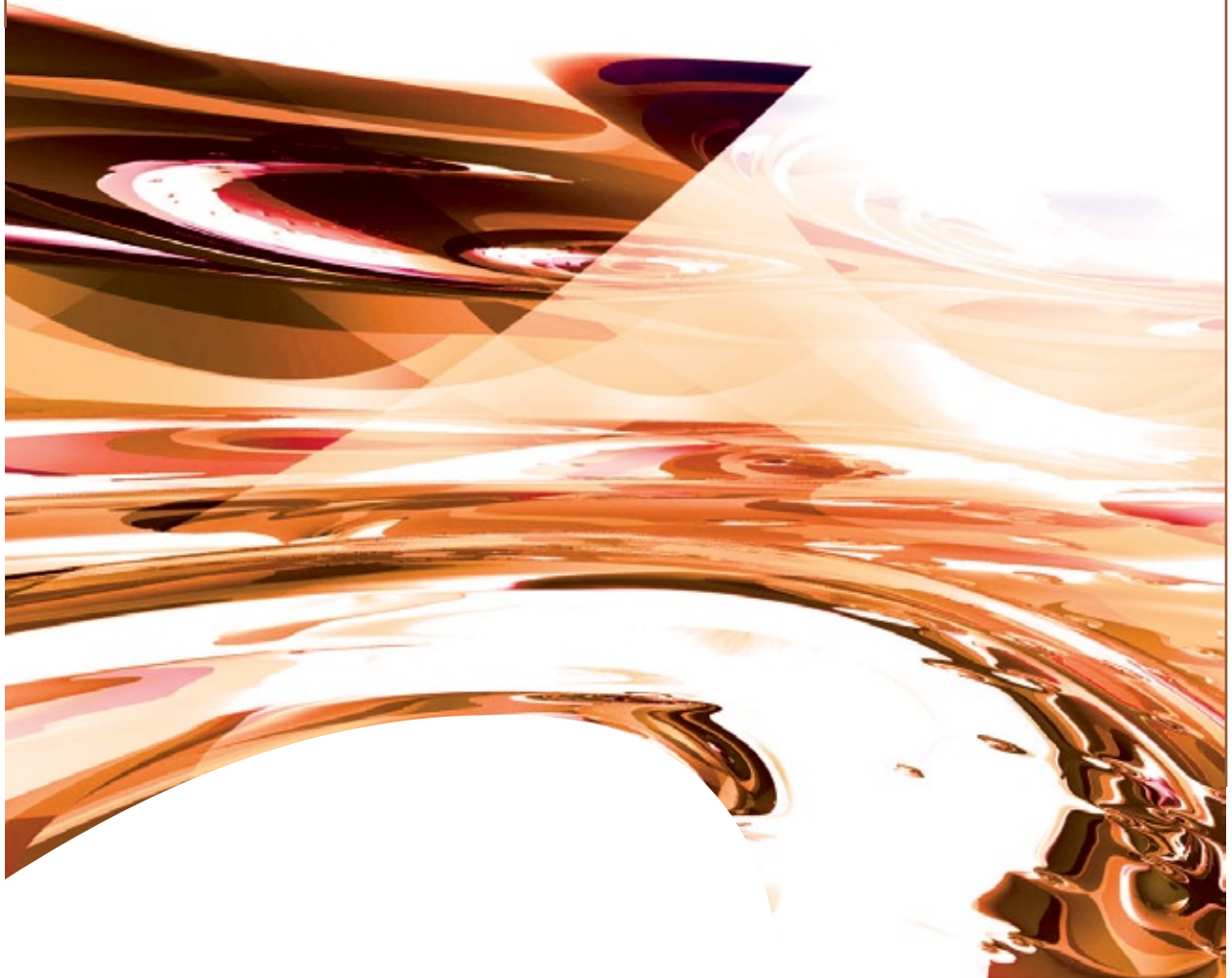
N/A

5   ISSUES FOR DISCUSSION

N/A

CONVERGE

ATIS 2005 ANNUAL REPORT

Our Mission

ATIS is committed to rapidly developing and promoting technical and operations standards for the communications and related information technology industry worldwide, using a pragmatic, flexible, and open approach.

Our Vision

The ATIS vision is to create interoperable, implementable, end-to-end standards and solutions – suites of accepted industry standards that, when followed, support the successful implementation and integration of new products and services. The ATIS implementable end-to-end standard defines frameworks for services and performance requirements, interfaces and physical characteristics for technologies, systems, and business processes, and ensures interoperability.

Our Membership

ATIS is the U.S.-based technical planning and standards development organization for the communications and related information technologies industry. ATIS' 308 member companies include global service providers, manufacturers, software developers, and other organizations active in the development of business-driven standards that support the timely rollout of new wireless and wireline communications products and services into the marketplace. Engineers, technicians, information management experts, network designers and numerous other industry professionals from ATIS member companies actively support and participate in ATIS' 23 standardization committees – creating the necessary standards that drive the business of our industry.

Message from the President and CEO

Susan M. Miller
President & CEO

"Converge" is the title of the ATIS 2005 Annual Report . . . and while for some it may be the action-packed, "buzzword" of the day, it also embodies the reality – both the opportunities and the challenges – beckoning and facing this industry. It also represents the promise of an avalanche of new service and technology choices to be realized by consumers, many of which are already entering the marketplace.

We are seeing and experiencing the product of convergence everywhere. Telephone companies are offering television. Mobile phone companies are providing voice, video, and data access on handheld devices. Internet Service Providers are offering video on demand, and cable companies are providing voice service. The companies whose individual identities were the bedrock of the communications industry are merging, and many whose identities were shaped by the services they offered are shedding familiar lines of business. Everywhere, new services launched into the marketplace are giving consumers choices beyond their imagination, and a taste of what the next generation of communications networks will deliver. And so, for our 2005 annual report, we focus on convergence – the effects and impacts of this new force on the market-driven standardization work of this industry, as it is accomplished by ATIS.

At ATIS, we're seeing the intense competitive demands for new and innovative services driving the development of the Next Generation Network. And, until recently, service providers and equipment manufacturers had their own, disparate views and definitions of the NGN. Now, as a result of ATIS' NGN activities, the industry's consensus view on NGN has matured to the point that there is a shared vision to support a faster and more successful implementation of the "anytime, anywhere" network. ATIS is the place where the industry is having this dialogue and developing the standards that will support this goal.

Building on its release of the *ATIS Next Generation Network Framework, Part I: Definitions, Requirements and Architecture,* in 2005 the ATIS Technology and Operations (TOPS) Council identified and prioritized the key technical "enablers" that will provide the platform for the implementation of NGN services. Additionally, in August the Council published its *NGN Roadmap,* which defines the building of the NGN architecture. As you read this annual report, you will also learn how ATIS has shared its NGN efforts with the global standards community, in an effort to define and lead the development of global NGN standards.

Message from the President and CEO

We might call it the year of "IPTV" – Internet Protocol Television – one of the biggest developments in this era of convergence. ATIS is leading the "standards" path for this market-changing service. This year, we launched one of the first industry efforts to develop and drive the standards and solutions needed for deploying IPTV. In the first quarter of 2005, ATIS established an IPTV Exploratory Group (IEG) to assess the technical and operational opportunities and challenges that will support IPTV deployment. The result of those efforts was the creation of a new ATIS committee – the IPTV Interoperability Forum (IIF) – which held its first meeting less than six months after the IEG was formed. The IIF is focusing first on the IPTV architecture, digital rights management, and quality of service metrics. By the end of the first quarter of 2006, we will see the product of these efforts.

ATIS also launched, in 2005, an intense and focused study on the rollout of IPv6 – with a position on the impacts of IPv6 to be released in early 2006. The global industry is focused on the transition from IPv4 to IPv6, and ATIS will soon offer its views on this important matter.
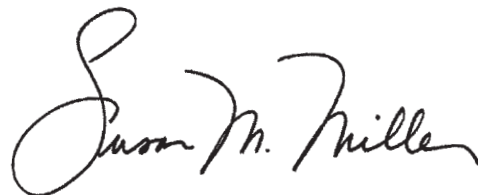
Our 2005 Annual Report also highlights a number of other ATIS accomplishments for the year, including the ATIS CIO Council National Diversity Assurance Initiative, which examined the diversity of critical communication circuits for the financial services sector in the context of a national disaster.

Additionally in 2005, we continued to drive important standards for E-911, to include the development of an American National Standard for IP-based emergency communications. And, we created an award-winning technical solution for hearing aid compatibility with wireless devices. This annual report includes the accomplishments of all of our standards committees, which produced this year over 150 deliverables –

standards, technical releases, requirements, and reports.

I would like to take this opportunity to thank the many who contribute to the development of standards and the technical planning efforts at ATIS. The members and the subject matter experts populating the ATIS committees work unceasingly in the development and the support of timely, market-driven standards. The ATIS member companies contribute many resources to support the process of collaboration around the priority issues facing the industry – including VoIP, network security, wide area ethernet, mobile wireless services, data interchange, IPTV and the NGN. The executives who have shared their vision and leadership on ATIS' Board of Directors are a key piece of the equation to produce these important results. This entire "standards ecosystem" works because hundreds of people support ATIS, and spend countless hours to ensure that ATIS standards meet their company's technical priorities and important business objectives.

ATIS' many accomplishments are really those of our members, our committee standards experts, and the ATIS Board of Directors. In 2006 and beyond, ATIS will continue to remain focused on its core mission – to provide the technical and operational standards that deliver interoperable, implementable end-to-end solutions that meet the business needs of the industry. And, we will collaborate with the global community to advance the achievement of global standards. It has been an exciting year for us. Thank you for being a part of the ATIS community, and for your enormous support of our common mission and objectives.

Susan M. Miller

2005 Highlights

NGN Roadmap Is Released

In August 2005, the ATIS TOPS Council released its *ATIS NGN Framework, Part II: Roadmap 2005.* The *NGN Roadmap* identifies the phasing and prioritization of network capabilities or enablers that are necessary to ensure the deployment of the NGN and its services. Building on the TOPS Council's November 2004 *ATIS NGN Framework Part I: NGN Definitions, Requirements and Architecture,* the *NGN Roadmap* prioritizes those enablers requiring the most immediate attention, and targets a standardized deployment in the network no later than year-end 2007. Supporting ATIS standards are targeted for availability by mid-year 2006.

IPTV Interoperability Forum Established

ATIS established the IPTV Interoperability Forum (IIF) to develop ATIS standards and related technical and operations activities that enable the interoperability, interconnection and implementation of IPTV systems and services, including video on demand and interactive TV services. Objectives of the IIF include: the creation of an industry overall reference architecture for IPTV; content security; interoperability standards and testing requirements for components; restoration after outages; QoS; path establishment; reliability and robustness of service components; and the establishment of user expectations, among other areas.

National Diversity Assurance Initiative Launched

The National Diversity Assurance Initiative (NDAI) was organized by the ATIS Chief Information Officer (CIO) Council to evaluate the problem inherent in assuring National Security and Emergency Preparedness (NS/EP) circuit route delivery in a multi-carrier environment. Given the importance of ensuring continuity of critical operations in the event of a disaster, leading U.S. carriers, joined by the Federal Reserve and ATIS, worked as partners to launch this important initiative. A report on the initiative's findings and recommendations will be published by ATIS in 1Q 2006.

ATIS Technology Conference Premiered at TELECOM '05

ATIS conducted a nine-session technology conference at TELECOM 05 featuring the leading senior executives in the communications industry, who offered their perspective on emerging communications technologies such as IPTV, WiMAX, IMS, and VoIP. The conference included over 45 presenters, and was kicked off with a General Session featuring the senior technology officers from BellSouth, Verizon, AT&T, and Qwest. ATIS is offering an expanded 18-session conference called *ATIS TechThink,* which takes place March 20-23, 2006 at Mandalay Bay in Las Vegas, in conjunction with USTelecom's new industry event, *TelecomNEXT*.

Industry Collaborative Agreements Reached

ATIS and the MultiService Forum (MSF) agreed to establish a collaborative relationship that will speed the development of secure, robust, carrier-grade packet-based interconnection and end-to-end QoS for next-generation networks. The two organizations signed a Memorandum of Understanding (MOU) that enables MSF and ATIS committees and working groups to better align work efforts, and unite areas of relevant expertise towards the development of critical industry standards. Additionally, ATIS signed an MOU with the Telecommunications Technology Association (TTA) to coordinate standards development for applications in the global telecom industries of the United States and Korea. The agreement opens avenues for the sharing of work products, contributions to regional and global standards bodies, the protection of each organization's Intellectual Property Rights and the participation of their respective members in hosted or sponsored events.

Next Generation Networks:
The ATIS TOPS Council

True convergence is the promise of delivering users the "anytime, anywhere" experience. It is the delivery of new products and services to customers across a wide array of access devices and networks – from computers, to televisions, to handheld devices, over a mix of wireline and wireless networks.

Convergence is the goal for telecom companies as they move aggressively to build Next Generation Networks, offering an array of new and exciting services that users will want, and grow to expect, from their service provider.

A critical juncture in delivering on the promise of convergence is the ability of an entire industry – service providers, manufacturers, software companies and other segments – to agree upon a common NGN architecture. It also requires industry to reach agreement on the technology path that migrates, in full, the traditional public switched network to a packet-based infrastructure that is secure, interoperable, seamless, and transparent to the user.

Globally, ATIS is working closely with other technical bodies and standards development organizations to define a common NGN architecture. The ATIS Technology and Operations (TOPS) Council released the *ATIS NGN Framework, Part I: Requirements, Definitions and Architecture*, in November 2004. It is the first comprehensive set of requirements for NGN issued from the North American telecommunications industry. The framework defines a high-level architecture for NGN that meets the business and wide-scale deployment needs of ATIS member companies.

The *ATIS NGN Framework* serves as the foundation upon which significant milestones were achieved by ATIS and its NGN activities in 2005. In April, ATIS formally introduced the ATIS

NGN Framework to TISPAN, a committee of the European Telecommunications Standards Institute (ETSI) which is responsible for ETSI standardization activities relating to NGN. In addition to ETSI, this year ATIS has shared its NGN activities within the Global Standards Collaboration (GSC), a consortium of key telecommunications standards bodies from around the world, and which meets annually in support of collaborative standardization efforts.

In August 2005, the ATIS TOPS Council completed the second phase of its NGN standardization effort, through the release of its *ATIS Next Generation Network (NGN) Framework Part II: NGN Roadmap 2005.* The *NGN Roadmap* offers an industry "release strategy" to produce implementable standards for a defined set of network architecture capabilities or "enablers" that will allow for the introduction of NGN services.

Additionally, the roadmap prioritizes those enablers requiring the most immediate attention, and targets a standardized deployment in the network no later than year-end 2007, with supporting ATIS standards targeted for availability by mid-year 2006. These prioritized enablers include: unified user profile; security; presence; admission control based on service requirements and capacity; service transparency; QoS; accounting settlement; Ordering, Administration, and Management (OAM); multicast; address resolution; digital rights management; user control of profile/services; media resource functions; and group management.

ATIS' continuing NGN activities make it possible for ATIS members to define the industry vision for NGN – and bring order to the complex technical considerations and standards decisions that must be made, in order to make tomorrow's converged network architecture a reality.

What will the Next Generation Network architecture look like?

Existing network deployments, either standards-based or proprietary, will transition to the IP-based NGN.

Services will traverse multiple providers' networks.

Interoperability between service providers' networks will be based on defined interconnect specifications that should include management and security, along with functional interoperability.

Interfaces will be based on standards. Where proprietary interfaces are required initially, they will be transitioned to full standards-based interfaces as soon as practical.

The NGN will display multi-vendor interoperability.

Fraud Management capabilities will be included in NGN functionalities from initial deployment. Without these functionalities, the Fraud Management functions performed today cannot be performed for NGN services.

"Working together as an industry allows us to shape the vision and create the standards that will deliver 21st century communications across network boundaries, service providers, and continents. ATIS is collaborating with other technology organizations to ensure global platforms for the next generation of services."
Harald Braun, President, Siemens Communications, Networks Division,
ATIS Treasurer

The business strategies and technology deployments of today's leading communications companies are rapidly evolving – and changing the way people communicate and access information like never before.

IPTV: Aligning the Industry on Architecture and Standards

"ATIS is the place where technology companies create the architecture and roadmap for the NGN. The current migration from legacy voice-centric systems to the packet-based Next Generation Network is a seismic shift for the communications industry. Everything about our networks – from the central office, to the services we deliver, to consumer devices – is undergoing an evolution we could not imagine a generation ago. ATIS will produce the standards that are essential for the next generation of converged networks and services."

Bill Smith, Chief Technology Officer, BellSouth, *ATIS Chairman*

IPTV is gaining tremendous industry momentum as a technology of choice for the deployment of real-time entertainment video and TV service offerings. Numerous ATIS member companies currently utilize, or are presently deploying, IPTV for delivery of video and TV services.

IPTV encompasses service provider network subscriber services that deliver secure broadcast-quality audio and video to devices for display or recording. Services may include broadcast type services like Video On Demand (VOD) and Interactive TV (iTV) services. These services are delivered across an access agnostic, packet switched network that employs the IP protocol to transport the audio and video signals. In contrast to video over the public Internet, with IPTV deployments, network security and performance are tightly managed to ensure a superior entertainment experience, resulting in a compelling business environment for content providers, advertisers and customers alike.

In March 2005, the ATIS Technology and Operations (TOPS) Council announced the formation of an IPTV Exploratory Group (IEG) to examine IPTV's ability to deliver on industry's expectations and user demands, and to assess areas in which ATIS may play a role in the development of industry standards in support of these goals. Co-chaired by Kevin Schneider, Chief Technology Officer for ADTRAN, and Bill DeMuth, Vice President & Chief Technology Officer for SureWest Communications, the exploratory group was asked to assess, on a fast-track timetable, the technical and operational opportunities as well as the challenges surrounding deployment of IPTV.

The exploratory group identified key areas requiring standards and industry consensus, as wide-scale industry deployment of IPTV becomes a reality. These areas include the need for an overall reference architecture for IPTV; the need for industry-accepted standardized metrics and requirements for content security, and for quality of content delivery; the need for end-to-end QoS functionality to support multiple services on the same network; and the need for interoperability standards and testing of components in the video delivery network.

At the recommendation of the IEG, the ATIS Board of Directors approved the establishment of the ATIS IPTV Interoperability Forum (IIF) in June 2005.

ATIS IPTV Interoperability Forum

The IPTV Interoperability Forum (IIF) enables the interoperability, interconnection, and implementation of IPTV systems and services by developing ATIS standards, and facilitating related technical activities. The forum places an emphasis on North American and ATIS member company needs, in coordination with other regional and international standards development organizations. The scope of the work in the IIF includes the following areas:

- Coordinate standards activities that relate to IPTV technologies. This includes providing a liaison function between the various Standards Development Organizations (SDOs) and forums that are each working on important components for multimedia, but may not have visibility to other aspects of the application.
- Develop interoperability agreements, technical reports, or other ATIS standards where appropriate.
- Provide a venue for interoperability activities.
- Provide a venue for the assessment of IPTV issues, in the context of NGN.

Among the key focus areas of the IIF is the creation of a reference architecture for IPTV. Other chief areas include content delivery; digital rights management, interoperability standards and testing requirements for components; reliability and robustness of service components; and user expectations. The IIF has created four task forces to address these needs: Architecture (ARCH); Digital Rights Management (DRM); Quality of Service and Metrics (QoSM); and Testing and Interoperability (T&I).

As ATIS member companies progress in their IPTV deployment strategies, the IIF will serve as the developer of critical industry standards that will facilitate the rollout and delivery of IPTV services.

"ATIS' IPTV reference architecture and standards are needed to support an interconnected network and establish economies of scale for the required equipment, which is vital to IPTV's widespread success."
Chris Rice, Executive Vice President, Network Planning and Engineering, AT&T,
ATIS First Vice Chairman

Collaboration

... With Global Standards Bodies

ATIS is a principal leader in NGN global efforts – actively participating as a contributor to the **International Telecommunication Union (ITU)**, as an organizational partner in the **Third Generation Partnership Project (3GPP)**, and within the **Global Standards Consortium (GSC)**. In 2005 ATIS hosted the 3GPP and **European Telecommunications Standards Institute (ETSI)** workshop on IP Multimedia Subsystems (IMS), a key wireless technology being adapted to support wireline networks in the converged NGN. The same week, ATIS hosted a meeting with members of the **ETSI TISPAN (Telecoms & Internet Converged Services and Products for Advanced Networks) Committee** to discuss respective standardization activities supporting the deployment of NGN, and areas of mutual collaboration. As a result of the workshop, ATIS and ETSI agreed to pursue

collaboration efforts within four areas of common interest: NGN interconnect; emergency communications, including emergency identification and routing; user identification, number portability, ENUM and directory services; and security requirements and access agnostic solutions.

In 2005, ATIS formalized its relationship with the **Telecommunications Technology Association (TTA)** of Korea to coordinate standards development for applications in the global telecom industries of the United States and Korea. Additionally, ATIS signed an agreement with the **MultiService Forum (MSF)** to collaborate on the development of secure, robust, carrier-grade packet-based interconnection and end-to-end QoS for the NGN.

... With Users

The **ATIS Incubator Solutions Program #4 (AISP.4)** played a significant role in the industry and with the **Federal Communications Commission (FCC)** in 2005. The Incubator provided a forum for wireless device manufacturers, wireless carriers and representatives from the hard-of-hearing community to work together to develop and implement testing activities to certify that wireless handheld devices meet FCC requirements for hearing aid compatibility (HAC). By working together through the Incubator, competitive wireless device manufacturers and carriers were able to identify systemic problems in the testing protocols and certification standards and in turn present a unified industry voice to the FCC and relevant standards bodies. Due in part to the work of the ATIS Incubator, more than 60 phones have been certified as compliant with radio frequency (RF) emitting hearing aids. The Incubator was honored with the National Wireless Access Award for 2005 from the **Self Help for Hard of Hearing People** organization at its international conference.

"The rapid evolution of communications technologies is requiring networks to interoperate like never before. The NGN brings together disparate delivery systems and services, requiring the collaboration of experts to ensure the seamless and secure exchange of voice, video and data. ATIS' ability to develop standards and ensure their global coordination and acceptance is important to Cisco Systems and supports the industry's success in satisfying user needs."

Nick Adamo, Vice President - US Service Provider, Cisco Systems,

ATIS Second Vice Chairman

National Diversity Assurance Initiative:
The ATIS CIO Council

Telecommunications resiliency, and reliability of National Security/Emergency Preparedness (NS/EP) facilities, have always been a key focus of both the telecommunications and financial services sectors, but never more so since the aftermath of the September 11th terrorist attacks.

Telecommunications circuit diversity is a key component of resiliency. It provides for multiple communication paths so there is no single point of failure for NS/EP services. Establishing multiple and physically diverse circuit routes from a critical facility is promoted as a best practice by public and private sector organizations for ensuring resiliency of point-to-point telecommunication links. While individual carriers have conducted their own regional initiatives to evaluate circuit diversity for their customers, an evaluation of network diversity was needed which took into account the multi-carrier setting in which the telecommunications industry presently operates.

In 2004, the ATIS Chief Information Officer (CIO) Council – established by ATIS to serve as an interface with government and cross-industry interests on matters of security – agreed to establish a partnership with the Federal Reserve, for the purpose of conducting an in-depth assessment of circuit diversity assurance in a multi-carrier environment. This activity, known as the National Diversity Assessment Initiative, moved forward with a series of identified goals:

- Understand and define the capabilities of diversity assessment and assurance for the financial services sector.

- Understand the framework and processes that would be required to develop a diversity assessment and assurance model across multiple service providers.

- Identify and develop recommended requirements for providing diversity assessment and assurance.

- Assess framework and lessons learned.

The NDAI team consisted of the Federal Reserve, AT&T, BellSouth, MCI, Qwest, SBC, Sprint, Verizon, and ATIS. The NDAI was a valuable research project that resulted in many insights and learnings. Prior to the initiative, there was no industry analysis conducted to determine the level of effort, or to quantify the costs involved in assessing and assuring diversity of telecommunications circuits across multiple carriers.

A report on the NDAI's research findings and recommendations, as well as an evaluation of what would be required by the industry to establish an automated diversity assessment solution, will be published by ATIS in 1Q 2006.

Prior to the NDAI, no industry analysis had been conducted to determine the level of effort or to quantify the costs involved in assessing and assuring diversity of telecommunications circuits across multiple carriers.

2005 Annual Meeting of the Committees

Mark Wegleitner, Verizon, shares his vision of the connected home during the ATIS General Session for Committees.

October 24-28, ATIS held its Second Annual Meeting of the Committees at the Venetian Hotel in Las Vegas. More than 550 committee participants and standards experts came together for a week of committee meetings and educational general sessions, and to experience cutting edge technology in the TELECOM '05 exhibit hall. The ATIS Annual Meeting was co-located with US Telecom's Telecom '05 event.

Among the events was the ATIS General Session for Committees, led by ATIS President and CEO Susan Miller, featuring presentations by Kathy Walker, Chief Network Officer, Sprint; Nick Adamo, Vice President, U.S. Service Provider, Cisco Systems; Mark Wegleitner, Senior Vice President – Technology and Chief Technology Officer, Verizon; and Chris Rice, Executive Vice President – Network Planning & Engineering, SBC. Bill Smith, Chairman of the ATIS Board of Directors and Chief Technology Officer of BellSouth, offered the keynote presentation.

The 2005 ATIS Annual Awards were presented during the General Session for Committees.

ATIS Award for Distinguished Service in Communications Standards — given to a committee or forum participant for unique and outstanding contributions to the work of ATIS committees over a period of time. Persons receiving this award are those who have participated in ATIS Committees for five or more years.

2006 Recipient: Neil Seitz , National Telecommunications and Information Administration, U.S. Department of Commerce

Neil received the award in recognition of his more than twenty years of participation in ATIS Committees. His leadership has assisted with the production of more than three dozen American National Standards and Technical Reports. Neil authored or co-authored at least 100 U.S. contributions to the International Telecommunication Union.

ATIS Award for Leadership in Standards Development — presented to an ATIS forum or committee leader whose vision and leadership have resulted in support for ATIS standards and recognition of ATIS' committee work within the industry.

2006 Recipient: Mike Fargano, Qwest

Mike was recognized for his vision and leadership in enabling the timely completion of necessary industry standards in both the Emergency Services Interconnection Forum (ESIF) and the Telecom Management and Operations Committee (TMOC).

Award for Outstanding Contributions to an ATIS Forum or Committee — presented to individuals who have provided valuable contributions to the completion of ATIS standards that meet industry needs. Recipients have demonstrated significant efforts to support acceptance and use of ATIS standards throughout the industry.

The following ATIS participants received this award in 2005:

Jay Bennett, Telcordia Technologies
Stephanie Cowart, BellSouth
Robert H. Fox, Telcordia Technologies
Steven Gorshe, PMC-Sierra
Stuart Jacobs, Verizon
Nevin R. Jones, Agere Systems
Steve Moore, Sprint
Penn Pfautz, AT&T
Niranjan Sandesara, Telcordia Technologies
Robert Sherry, Intrado
Dana W. Smith, Verizon
Massimo Sorbara, Conexant
David Whitney, BellSouth
Mark S. Yelchak, SBC Communications

ATIS Technology Forum at TELECOM '05

ATIS President & CEO Susan Miller moderates the ATIS Technology Forum General Session featuring (from left), Balan Nair, Qwest; Bill Smith, BellSouth; Mark Wegleitner, Verizon; and Chris Rice, AT&T.

The ATIS Technology Forum at TELECOM '05 – held October 24-26, 2005 in Las Vegas – included nine sessions on cutting-edge technology from the industry's leading executives.

WHAT'S NEXT: THE GLOBAL VISION AND PROMISE OF THE CONVERGED NEXT-GEN NETWORK

Moderator:
ATIS President and CEO Susan Miller

Panelists:
Bill Smith - Chief Technology Officer, BellSouth

Balan Nair - Chief Technology Officer, Qwest

Chris Rice - Executive Vice President - Network Planning & Engineering, AT&T

Mark Wegleitner - Senior Vice President - Technology & Chief Technology Officer, Verizon

VIDEO, DATA, AND VOICE: DELIVERING THE HOME NETWORK EXPERIENCE

Moderator: Larry Holmberg - SVP, Sales, Marketing and Customer Support, Agilent Technologies

Panelists:
Kenny Frank - Senior Vice President and CTO, Alcatel

Chris Rice - Executive Vice President - Network Planning & Engineering, AT&T

Rizwan Khan - Vice President – Global Marketing, Tellabs

SECURITY IN A WORLD OF OPEN PACKET-BASED NETWORKS

Moderator: Jim Healy-Vice President - Industry Alliances, T-Mobile USA

Panelists:
Raj Puri - Vice President - Communications Business Development, VeriSign

Robin Bienfait - Vice President, Network Operations, Network Security & Disaster Recovery, AT&T

Robert Boetticher - Director, Systems Engineering Wireline and Emerging Providers, Cisco Systems

IPTV CONTENT DELIVERY AND DIGITAL RIGHTS MANAGEMENT

Moderator:
Vince Vittore, Executive Editor, Telephony Magazine

Panelists:
Michael Koons - SE Director, Cisco Systems

Eran Wagner - Vice President of Content and IPTV, AMDOCS

Glenn Morten - Vice President Engineering and Chief Technology Officer, Widevine Technologies

Steve Manning - Director of Broadband Content Services, VeriSign

WIMAX: Will Carriers Take the Leap?

Moderator:
Pradeep Samudra - Vice President of Broadband Networks, Samsung Telecommunications

Panelists:
Ali Tabassi - Vice President – Innovative Technologies, Sprint-Nextel

Mick Reeve - Group Technology Officer, BT

Aamir Hussain - Director of Engineering, Qwest

Mike Seymour - Vice President, Broadband Wireless Division, Alcatel

REINVENTING DSL WITH COPPER PAIR BONDING

Moderator:
Kevin Schneider- Chief Technical Officer, ADTRAN

Panelists:
Jurgen Lison - Vice President, North American Support Center, Access Products, Alcatel

Rouben Toumani - Vice President of Systems Engineering, Ikanos

Gary Tennyson - Distinguished Member Technical Staff, BellSouth

E9-1-1 SERVICES IN THE VOIP ENVIRONMENT

Moderator:
Ray Paddock - Vice President & General Manager, Intrado

Panelists:
Martin Hakim Din - SVP of Architecture, Vonage

Maureen Napolitano - Director, Verizon

Monica Marics - Vice President, Product Management, Intrado

Mike Fasciani - Vice President of Development for NGN, Siemens

IP MULTIMEDIA SYSTEM: THE KEY TO CONVERGENCE

Moderator:
Asok Chatterjee - Vice President for Strategic Standardization and Public Affairs, Ericsson

Panelists:
Harald Braun - President Siemens Communications, Networks Division

Kenny Frank - Senior Vice President and CTO - Alcatel

Lionel Lapras - Director of Strategy, New Ventures and Technology, Hewlett-Packard

BUILDING THE PROFITABLE CARRIER CLASS ETHERNET SERVICE

Moderator:
Tim Jefferies, Vice President, Technology Development, ATIS

Panelists:
J. Thomas Gruenwald - EVP, Broadband Networking Products, Tellabs

Lindsay Newell - Vice President, Product Marketing, Alcatel IP Division

Rocky Kler - General Manager, Optical Networks Systems Division, NEC America

Navid Ghandeharioun - Senior Manager, Systems Engineering Service Provider Operation, Cisco Systems

Mike McRoberts - Product Development Director, Sprint

BOARD OF DIRECTORS

MEMBERS

TOPS COUNCIL
- VoIP
- NGN
- Network Security
- Data Interchange
- Wide Area Ethernet
- Mobile Wireless Services
- IPv6
- IPTV

CIO COUNCIL
- National Diversity Assurance Initiative

ATIS COMMITT

UNIVERSAL FUNCTIONS

PERFORMANCE RELIABILITY & SECURITY	INTEROPERABILITY	OAM&P	ORDERING & BILLING	USER INTERFACE
PRQC Network Performance Reliability and Quality of Service Committee	**PIC** Protocol Internetworking Committee	**NIOAF** Network Integration, Operations and Administration Forum	**OBF** Ordering and Billing Forum	**ESIF** Emergency Services Interconnection Forum
TFPC Telecommunications Fraud Prevention Committee		INC *Industry Numbering Committee*		**IVR** Interactive Voice Response Accessibility Forum
NRSC Network Reliability Steering Committee		IITC *Internetwork Interoperability Test Coordination Committee*		**TTY** Text Telephony Forum
		NIIF *Network Interconnection Interoperability Forum*		
		BCSC *Bar Code/Standard Coding Committee*		
		TMOC Telecom Management and Operations Committee		

VoIP — • Information Sharing Group

SECURITY — • Inter-Committee Security Review Group

TEES & FORUMS

FUNCTIONAL PLATFORMS

CIRCUIT SWITCHED & PLANT INFRASTRUCTURE	WIRELESS	MULTIMEDIA	OPTICAL	PACKET BASED NETWORKS
O5 Committee O5 **NIPP** Network Interface, Power and Protection Committee	**WTSC** Wireless Technologies and Systems Committee **IOC** IMSI Oversight Council **IFAST** International Forum on ANSI-41 Standards Technology	**IIF** IPTV Interoperability Forum	**OPTXS** Optical Transport and Synchronization Committee	**PTSC** Packet Technologies and Systems Committee

ATIS Committee Reports

NRSC: Network Reliability Steering Committee
Chair: Archie McCain, BellSouth

The Network Reliability Steering Committee (NRSC) monitors network reliability utilizing the information contained in major outage reports filed with the FCC. Through its team of industry outage experts, the NRSC works with the FCC to: review the health of the nation's wireline telecommunications networks, identify emerging outage trends, and makes recommendations aimed at improving telecommunications network reliability.

In its 2004 annual report (prepared and published in 2005), the NRSC notes that while 2004 was a year of considerable hurricane activity, the network performed well and the observed network reliability trends were largely in the right direction for most categories. Some observations include:

- The lowest number of outages ever observed. The second lowest aggregated outage index ever observed.

- Facility outages at a record low in terms of both number of events and impact (i.e., outage index)

- Lowest number of local switch outages ever observed.

- Second lowest frequency ever for tandem switch outages.

- A five-year trend of 19% annual reduction in total outage frequency.

- An eight-year trend of 13% annual reduction for facility outage frequency.

The NRSC uses three primary metrics to measure the pulse of the nation's networks: outage frequency, outage duration, and outage impact. The latter is computed with an outage index that is based on event duration, customers affected, time-of-day, and services affected. Thus, network reliability improvements include both reducing the number of outages and reducing the impact of a given outage. These results are consistent with those observed in recent years, and demonstrate the continued overall reliability of the public wireline communications networks and services.

Beginning in 2005, the FCC extended its outage reporting requirements beyond wireline communications to include wireless, cable, and satellite communications and at the same time made extensive changes to the reporting requirements for wireline carriers. Believing its function to be invaluable to the nation, the NRSC is working to expand industry participation within the committee in these areas, and has been working closely with the FCC to identify outage trends using the FCC's new outage reporting system.

Looking forward into 2006, the NRSC will continue to work with the FCC to identify outage trends, and bring industry resources to bear to reverse negative trends as they are identified.

TFPC: Telecommunications Fraud Prevention Committee
Chair: Mark Yelchak, AT&T

The Telecommunications Fraud Prevention Committee (TFPC) is dedicated to the prevention of identified fraud vulnerabilities in the national public switched telephone network, and works toward resolving fraud-related issues pertinent to the telecommunications industry. Participants benefit by interfacing with telecommunication professionals in

a working forum to discuss and develop resolutions for voluntary implementation by the participants. As fraud issues are identified, defined, and agreed to by a full committee consensus within TFFC, working subgroups provide further research, identify potential solutions and communicate the results of their collective work effort. Due to the sensitive nature of topics discussed, all TFPC participant members work under a mandatory non-disclosure agreement.

In 2005, the TFPC successfully brought closure to three active issues:

- *Fraud Implications of Automatic Number Identification (ANI) Masking*

- *Delinquent Account with Foreign In-Collect Usage*

- *Trojan Dialers on Personal Computers (whereby modems/outbound telephone service is hijacked by unsolicited software unknown to the PC user)*

A subgroup was created and work was initiated on one new issue:

- Identification of Fraud Opportunities Involving Voice over Internet Protocol (VoIP) Service & Interconnection to the Public Telephone Switched Network (PSTN).

The TFPC was an active participant and Focus Group member supporting the ATIS Next Generation Network (NGN) Framework efforts. For 2006, the Committee will diligently continue its pursuit and understanding of fraud and its impact on the Next Generation Network. As service providers make the transition to a fully conveyed NGN, fraud management professionals must keep pace in order to thwart the intentions of individuals who seek to perpetuate fraud.

PRQC: Network Performance, Reliability, and Quality of Service Committee
Chair: Randy Wohlert, AT&T

As communication networks evolve from a circuit-switched to a packet (IP) based infrastructure, network performance, reliability, and Quality of Service standards will become increasingly important for the provision of satisfactory end-to-end customer service. The ATIS PRQC meets the industry need for a North American–based forum that addresses these issues. Although much of the PRQC's work is ongoing, representative examples of completed deliverables in 2005 include the following:

- **Network Reliability**
  - *Technical Report on Reliability and Survivability Aspects of Emergency Telecommunications Service* (ATIS-0100004 TR)

  - *Service Restoration Priority Levels in IP Networks* (Issue A0016)

  - *User Plane Traffic Priority Levels in IP Networks* (ATIS-0100003 TR)

- **Network Security**
  - *Technical Report on User Plane Security Requirements in Next Generation Networks* (Issue A0010)

- **Quality of Service**
  - *Multimedia Communications Delay, Synchronization, and Frame Rate* (ATIS 0100801.04)

  - *Enhanced IP-Based Video QoS Performance Objectives (Issue A0002)*
    - New QoS classes defined to address the stringent QoS needs of digital path emulation and high resolution video transmission

    - Revised text for ITU-T Recommendation Y.1541

  - *IP Network QoS Control and Resource Sharing in a Multi-Provider Environment (Issue A0009)*
    - Final text of ITU-T Q-Series Supplement 51 (Signaling Requirements for IP-QoS), based strongly on U.S. contributions developed in PRQC (and PTSC)

- *Enhanced Perceptual Model for Single-Ended Speech Quality Estimation (PRQC-2006-12R2)*

  • Perceptual Model for Non-Intrusive Estimation of Narrow-Band Speech Quality

  • Specifies the algorithm carefully and includes executable source code

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INC: INDUSTRY NUMBERING COMMITTEE
Chair: Ken Havens, Sprint

The INC provides an open forum to address and resolve industry-wide issues associated with the planning, administration, allocation, assignment and use of the North American Numbering Plan (NANP) resources, as well as related dialing considerations for public telecommunications within the area covered by the NANP. The INC, through its varied membership and participation, is able to balance the needs of service providers with the needs and requirements of regulatory bodies.

The INC guidelines and recommendations are used as the primary reference documents by the North American Numbering Plan Administrator (NANPA) and the National Pooling Administrator (PA). These documents form the basis for all numbering assignments, reclamation, reservation, area code relief activities, etc., that take place within the United States.

The INC provides reports on work completed, requests for policy guidance, and offers highlights of ongoing work at the bi-monthly North American Numbering Council (NANC) meetings, an advisory committee to the Federal Communications Commission (FCC).

The INC successfully resolved 35 issues in 2005. The vast majority of these issues effected changes and process improvements to the Central Office Code Assignment Guidelines (COCAG), ATIS-0300051, and the Thousands-Block Pooling Administration Guidelines (TBPAG), ATIS-0300066. These ATIS INC Guidelines are used by all service providers in the U.S. to obtain geographic numbering resources from the NANPA and the national PA. The guidelines reflect the FCC rules for number resource optimization and meet the industry's need for efficient resource acquisition and administration.

In July, NANC published *VoIP Service Providers' Access Requirements for NANP Resource Assignments,* a report identifying potential changes in the numbering rules for making numbering resources generally available to IP-enabled service providers. Upon receipt of the document, the INC re-activated its VoIP Subcommittee. In 2006, the INC anticipates the FCC approval of the NANC report, whereupon the VoIP Subcommittee will incorporate necessary changes into existing INC documents.

In August, the INC published an ATIS standard on the Numbering and Dialing Plan within the United States. It documented the format and values of telephone numbers in the United States portion of the NANP. It further defined other telecommunications industry uses of numbers and described those uses in the United States.

In November, the request by the Department of the Navy (DoN) to acquire a Number Plan Area (NPA) (i.e., Area Code) for its exclusive use was resolved. Introduced in 2004, the request was made to enable the DoN to exercise greater control over their telephone directory numbers by seeking to implement a nationwide overlay NPA for all DoN telephone numbers including geographic wireline, wireless, and paging numbers. In early 2005, the INC contacted nearly a dozen potentially impacted telecommunications organizations and standards groups for their input on the DoN request. The INC reviewed their various questions and data, categorized them, and presented them to the DoN for

consideration. In November, the DoN asked that the issue be withdrawn from consideration. INC preserved the questions and comments generated by the INC and other standards organizations should the request, or a similar request, be reinitiated.

In October, INC concluded its work on an issue to document and improve the process used by NANPA and the PA to handle pooled NXXs that have been returned or abandoned. The process improvements in the guidelines helps ensure that the potential impact to ported customers on such codes would be minimized. INC also began work on a related issue for returned or abandoned pooled thousands-blocks.

In 2006, the INC moved forward with efforts to discern the impacts of VoIP and Next Generation Networks and on numbering and continued to improve the processes of number assignment and management. In addition, INC leadership is actively participating in the ATIS TOPS Council NGN Focus Group's activities.

IITC: INTERNETWORK INTEROPERABILITY TEST COORDINATION COMMITTEE
Chair: Jim Neises, Lucent Technologies

The IITC Committee provides an open forum in which telecommunications industry service providers, vendors, and the user community communicate. This committee coordinates internetwork and interoperability testing of telecommunications services and architectures resulting from the introduction of new network interconnections and technologies. IITC Committee activities determine potential effects on the reliability of the Public Switched Telephone Network (PSTN) because of the introduction of new technologies or the interconnection of the PSTN with other telecommunications networks, such as IP networks.

The IITC Committee has been proactive in seeking means to increase participation in internetwork

interoperability testing. Specifically, the committee is now focusing its attention on preparing for Network-to-Network Interoperability (NNI) testing of Next Generation Network (NGN) IP networks.

More recently, the committee has prepared a questionnaire to be presented to the ATIS TOPS Council members, soliciting their opinions as to whether a need exists to perform multilateral end-to-end NGN NNI testing. If such a need is identified, the TOPS Council members will indicate the timeframe in which this testing should occur and the type of tests that should be performed.

The IITC Committee has identified a two-stage approach for purposes of conducting the NGN NNI testing. The planning phase would produce a detailed test plan, to include a proposed architecture for NNI testing. The execution phase would include a full-scale bilateral, or multilateral, IITC Committee-sponsored test effort.

The IITC Committee will continue in 2006 to be anticipatory and proactive in seeking testing solutions. The committee's ongoing effort will be to anticipate the challenges of the industry, adapt to meet them, and remain the industry choice for conducting internetwork interoperability testing.

NIIF: NETWORK INTERCONNECTION INTEROPERABILITY FORUM
Co-Chair: Robert Schafer, Verizon
Co-Chair: Cathie Capita, T-Mobile

As an open industry forum addressing a diverse range of telecommunications network interconnection and interoperability issues, the NIIF delivered guidelines and standards on a diverse range of issues in 2005. The NIIF met many challenges and developed valuable work products for of the telecommunications industry.

The NIIF concluded its ninth year as an open industry forum addressing a diverse range of telecommunications network interconnection and interoperability issues, including a wide range of industry practices covering network architecture, operations, and administration interconnection architecture; testing; network operations; and routing resources. NIIF opened issues relating to the Telcordia® LERG™ Routing Guide, the Telcordia® Business Integrated Routing and Rating Database System (BIRRDS), the Jurisdictional Information Parameter (JIP), Local Number Portability (LNP), and Central Location On-line Entry System (CLONES).

The NIIF Network Routing Resources Information Committee (NRRIC) is working a number of key local exchange routing industry issues, including:

- Substantive updates to NIIF 0015, *Inter-Company Responsibilities Within the Telecommunications Industry.* This document assists all new service provider entrants with requirements in the industry. As these requirements change, the document is updated to ensure an accurate description of telephony requirements.

- Updates to the *Merger and Acquisitions* document. This document provides service providers with pertinent information when preparing for a merger or acquisition with another company, and the proper method for industry notification.

- Removal of unnecessary switching entity information from public access. An active NRRIC issue as we enter into 2006, this issue addresses the security of the switching networks and seeks to ensure the removal of significant switch information from public access sites.

- Updating NIIF *Part XIII Terms and Definition.* This consists of reviewing current industry terms and definitions to ensure they properly reflect meanings in today's environment.

The NIIF Network Inter-Operability Committee (NIOC) is working several issues related to the convergence of VoIP and the PSTN. These issues address:

- Quality of Service

- High-Volume Call-In events

- Jurisdictional Information Parameter

- National Security/Emergency Preparedness

- Testing Guidelines

- Call Forwarding Causing Looping

For 2006, the NIOC is working with the Local Number Portability Administration Working Group to resolve trouble reporting in a multi-service provider network. Additionally, the NIOC is working with the Ordering and Billing Forum to resolve issues related to the Charge Number field and the Calling Party Number field. Finally, the NIOC is working with Telecommunications Relay Service (TRS) industry experts to provide a specific Automated Numbering Identification (ANI) parameter for TRS customers.

BCSC: BAR CODE/STANDARD CODING COMMITTEE
Chair: Bob Fox, Telcordia Technologies

The BCSC establishes industry standards for common shipping, package and product marking labels, product changes and software issuance standards. These standards simplify the receiving, shipping, transportation and tracing of telecommunications products through company and industry business processes and the supply chain.

During 2005, the BCSC completed the following:

- Discussion and resolution of issues related to implementation of two-dimensional (2D) product

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labeling (Issue 001). Revisions were made to ATIS-0300038 (*Product Marking Implementation Guideline* - formerly TCIF-00-003), which included changing the 2D Implementation Date from October 1, 2005 to October 1, 2006, and adding a transitional 2D Implementation Date of April 1, 2006 for all new products shipped from that date. In addition, a new section was created to include transition-related information for the linear and 2D areas. Constructs for specifying the Department of Defense UID (Unique Item Identification) were also added.

- Review of TCIF-03-005, *Guideline for Identifying Downloadable Software for Plug-in Cards* (Issue 006). The BCSC modified the document to: clarify scope and terminology definitions; include intelligent network plug-in cards in the scope; define product change guidelines; add business problem issues and clarify resolution of the issues in this section; and add a subsection called *Recommendations for Efficient Software Download.*

- Review of TCIF-02-004, *Guideline for Data Elements included in the Management Information Base (MIB)* (Issue 013). The BCSC modified this document to add several new definitions, (e.g., for equipment identifier, manufacturer equipment version, manufacturer name, manufacturer part number, change the manufacture date to an optional data element, add a new optional data element, manufacturer product name and update references).

- Revision to the *Product Marking Implementation Guideline* (Issue 014). The BCSC updated the document references and graphics, fixed some typographical errors and noted that alphanumeric Equipment Catalog Item numbers (ECIs) cannot be encoded in the TCIF Linked Code 39 symbology.

- *IETF Entity MIB Enhancements* (Issue 004). Committee members worked with the Internet Engineering Task Force (IETF) to have IETF develop standards (RFC4133 and RFC4152) to describe the encoding of data in the MIB as described in ATIS-0300040, *Guideline for Data Elements included in the Management Information Base (MIB).*

- Review of TCIF-BCC-95-004, *Guidelines for the Identification and Bar Code Labeling of Cable Reels* (Issue 010). The BCSC corrected contact information for the Maintenance Agent, added to recently assigned Owner Codes; added more detailed environmental requirements for the label; organized the document into a more logical sequence; and reorganized it to reflect current industry practices.

In 2006, the BCSC expects to revise TCIF-98-005, *Product Serialization Guideline,* and work with the TMOC Telecom Management and Operations Committee to develop a global serialization standard; revise ATIS-0300038, *Product Marking Implementation Guideline,* to allow usage of the PDF417 symbology; complete a scanner test plan and schedule industry testing to help ensure this equipment meets industry requirements; and determine whether to update or retire the *Product Change Administration (PCN) Guidelines* (TCIF-99-010).

Also in 2006, the BCSC intends to continue to develop specifications for Radio Frequency Identification (RFID) tags for packages and shipment, as well as other RFID requirements for the industry.

TMOC: TELECOM MANAGEMENT AND OPERATIONS COMMITTEE
Chair: Michael J. Fargano, Qwest

The Telecom Management and Operations Committee (TMOC) develops operations, administration, and maintenance and provisioning (OAM&P) standards, and other documentation related to Operations Support System (OSS) and Network Element (NE) functions and interfaces for communications networks.

Business Value Proposition: The TMOC value proposition is based on providing high interest and essential telecommunications OAM&P guidelines, requirements, and standards for purposes of supporting voluntary and mandated systems interoperability in a rapidly changing industry. This business value is seen in operations cost reductions, opening of markets, improved time-to-market for services, and scaling of services and operations. The end result is an efficient and effective multi-supplier and multi-service-provider telecommunications OAM&P environment.

Scope of Work: The scope of the work in the committee includes the development of standards and other documentation for communications network operations and management areas, such as: configuration management, performance management (including in-service transport performance management), fault management, security management (including management plane security), accounting management, coding/language data representation, common/underlying management functionality/technology, and ancillary functions (such as network tones and announcements). This work requires close and coordinated working relationships with other domestic and international standards development organizations and industry forums.

Support for ATIS TOPS Council Initiatives: TMOC plays a key OAM&P standards development role for the TOPS Initiatives such as NGN, Security, Data Interchange, VoIP and Wide Area Ethernet. This and other TMOC work is grouped into the following three major TMOC work areas:

Common OAM&P Functionality and Technology Work Area
Current work efforts in this area provide for significant standards efficiency and industry efficiency by providing for the common frameworks and models that many or all Inter-Administration OAM&P standards and Network Technology Specific OAM&P standards can utilize as a foundation. This provides for the rapid formulation of these standards as well as the opportunity for efficient implementations thereof. TMOC is the key contributor to ITU-T in this area. Key examples of work in this area are Management Plane Security, Security Management System, and NGN Accounting Management.

Inter-Administration OAM&P Work Area
Current work efforts in this area provide for interoperability and intercommunications between service providers. This work requires close collaboration with related industry fora, such as the ATIS OBF. All Inter-administration work is related to TOPS Data Interchange work. Key examples of work in this area are coding schemes for information interchange (e.g., Service Provider Codes); Operations Support System (OSS) to OSS Interconnection interface application standards (e.g., Trouble Administration); OSS to OSS Interconnection transport protocol; and support for the Global Telecommunications Data Dictionary (GTDD) initiative.

Network Technology Specific OAM&P Work Area
Current work efforts in this area provide for network technology specific OAM&P interoperability between and among service providers' and suppliers' systems (i.e., network technology specific OAM&P

interoperability between and among OSSs, Element Management Systems, and Network Elements). Key examples of work in this area are VoIP & IPTV Accounting Management, Wide Area Ethernet, and Emergency Telecom Services (ETS).

2006 TMOC Activities: TMOC work efforts in 2006 are expected to include: (1) OAM&P aspects of cross-committee standards initiatives driven by the current and future ATIS TOPS Council initiatives (e.g., NGN initiative); (2) Continued or expanded standards work on OAM&P aspects of VoIP and IPTV, to include Accounting Management, as well as Coding and Language Data Representation (CLDR), GTDD, ETS, OSS Transport protocol, OSS Interconnection Application for Fault Management, Management Plane Security, Security Management System, Metro Ethernet, and Human-Machine Interface.

ORDERING AND BILLING

OBF: ORDERING AND BILLING FORUM
OBF Co-Chair: Dave Thurman, Sprint Nextel
OBF Co-Chair: Dawn Kaplan, Telcordia Technologies

The OBF provides a forum for representatives from the communications industry to identify, discuss and resolve issues which affect ordering, billing, provisioning, and exchange of information about access and other jointly provided services. The OBF is comprised of 13 committees and 9 subcommittees. In addition to creating standards for traditional telephony services, the OBF has expanded its focus to the development of intercarrier ordering and billing standards for new and future telecommunications technologies, e.g., VoIP and IPTV. In order to conduct work on these technologies, OBF formed a new committee called the Internet Protocol Network-to-Network Interface (IP-NNI) Committee. The IP-NNI Committee is charged with developing standards and processes related to accounting and settlements between suppliers and partners for use of the packet-

based network and associated service elements. These services include VoIP, Wi-Fi roaming, IPTV and various multimedia systems. The committee also analyzes and identifies issues associated with IP-NNI service establishment functions.

The OBF worked collaboratively with other ATIS and non-ATIS standards committees and forums on these new initiatives and other ATIS TOPS Council priorities. Collaborative discussions and work sessions were held at OBF General Sessions with representatives from the ATIS TMOC, PTSC, and NIIF, as well as NENA, the ENUM forum, and IPDR.org, and the ATIS NGN Focus Group. These discussions identified issues in the areas of VoIP Ordering Access, VoIP Ordering Local, VoIP IP/PSTN Billing, VoIP IP/IP, and NGN Billing. The success of these meetings has set the tone for even greater collaborative standards activities.

As part of work activities identified by the ATIS Board TOPS Council VoIP Focus Group, the OBF published the *VoIP Ordering and Billing Issues and Concerns Document,* a compilation of industry questions, comments, concerns and assumptions surrounding VoIP and the related challenges for intercarrier ordering and billing. The publication traces call flows for multiple scenarios across IP systems interacting with wireless and wireline networks, as well as identifying areas that require new standards and processes. In addition, OBF developed new standards and settlement record types for IP-related services, and for the settlement of Wi-Fi roaming charges between roaming partners.

In support of the ATIS Board TOPS Council Data Interchange Focus Group Work Plan, the OBF continued to expand the use of the Unified Ordering Model (UOM) methodology to develop end-to-end implementable standards for the *Access Service Ordering Guidelines* (ASOG), *Local Service Ordering Guidelines* (LSOG), and *Wireless Intercarrier Communication Interface Specifications* (WICIS).

The OBF continued to work an "Anti-Slamming Protective Measures" Issue to develop standards and processes that reduce the potential for toll free service outages resulting from unauthorized or inadvertent porting of toll free numbers. This effort included work with the North American Numbering Council Toll Free Issue Management Group (NANC TF IMG) to develop a series of recommendations, which have been sent to the FCC for consideration.

In support of the ATIS Board TOPS Council Wide Area Ethernet Work Plan, the OBF created a new Ethernet Virtual Connection standard and modified existing ordering standards, to allow trading partners to communicate the associated attributes required for the ordering and provisioning of Ethernet Virtual Connections.

The OBF finalized Issue 2 of the *Local Service Migration Guideline (LSMG) Standard,* which establishes business rules and procedures governing the seamless and timely migration of end users between wireless and wireline providers based on an end user's request to the new Local Service Provider. An overview of the *LSMG Issue 2* was presented to the National Association of Regulatory Utility Commissioners (NARUC) to encourage their support of a national migration standard, as opposed to state specific standards.

 OBF is looking forward to the challenges of 2006. It will continue to identify and work the ordering and billing issues associated with traditional telephony services as well as expand to a global focus on IP-based services.

ESIF: EMERGENCY SERVICES INTERCONNECTION FORUM
Chair: Maureen Napolitano, Verizon

ESIF is tasked with identifying and resolving a wide variety of complex technical and operational issues related to the interconnection of communications and emergency services networks. Throughout 2005, ESIF continued to break important new ground in its efforts to define the best practices, standards and solutions necessary to effectively and expeditiously deploy E9-1-1 services nationwide.

On October, 25, 2005, ATIS announced the publication of the *Emergency Services Messaging Interface (ESMI) Standard* (ATIS.PP.0500002.200X), which defines the transfer of emergency services information in Next Generation Networks (NGN). This interface will be critical for ensuring emergency services and first responders are considered in the evolution of the NGN. The ESMI will gradually replace the existing data retrieval infrastructure with an IP-based system that will interoperate with Public Safety Answering Points (PSAPs) and other emergency service entities. It will co-exist and interoperate with existing legacy systems and services to preserve the integrity of emergency services and ensure the public's safety. In existing emergency services networks, the transfer of Automatic Location Identification (ALI) data (e.g., fixed addresses for wireline calls, GPS coordinates from wireless devices) to a PSAP occurs on limited point-to-point circuits via modems. In comparison, the ESMI will provide a superior standard for delivering information from the ALI to the PSAP using XML data packets over a multi-point IP network. Over the coming year, ESIF will continue its work on additional messaging and interaction protocols between emergency services networks, going considerably beyond the paradigms that exist today for providing those services.

In 2004, ESIF published the highly anticipated Technical Report, *High Level Requirements for Accuracy Testing Methodologies* (ATIS-0500001). This report provided an invaluable common frame of reference for wireless service providers, hardware and software vendors, public safety organizations, and federal and state regulatory authorities for validating different accuracy testing methodologies employed by 9-1-1 location technologies. In 2005, a considerable amount of additional work was done to expand and build upon these original requirements, including end-to-end functional testing and maintenance testing.

In July 2005, ESIF reached a consensus on the guidelines for an interim pseudo Automatic Numbering Identification Code (pANI) Administrator, entitled *Routing Number Authority (RNA) for pANIs Used for Routing Emergency Calls: pANI Assignment Guidelines and Procedures.* ESIF then forwarded its recommendation to the North American Numbering Council (NANC), which is officially chartered to provide the FCC with advice and recommendations on all numbering issues, including the selection of neutral number administrators. In light of the urgency of the recommendation, the NANC established a pANI Issues Management Group (IMG) which then generated a report to the FCC. On September 8, 2005, the NANC submitted the interim RNA guidelines to the FCC's Wireline Competition Bureau. Subsequently, ATIS also filed an ex parte with the FCC on behalf of ESIF advocating an expedited approval process for the selection of the interim administrator. ESIF continued its work on this important issue through late 2005 and into 2006 and identified guidelines for Emergency Services Query Key allocation, as well as guidelines for the migration from dialable pANIs to non-dialable pANIs.

As ATIS continues to explore critical next generation solutions in an evolving technological landscape, ESIF will remain at the forefront of this process so that all public safety and emergency services needs are identified, understood and resolved.

IVR: INTERACTIVE VOICE RESPONSE ACCESSIBILITY FORUM
Chair: Jim Tobias, Inclusive Technologies

The ATIS IVR Forum investigates and documents potential accessibility and usability solutions for voice mail and other interactive voice response systems and services as required by relevant regulations.

In 2005, the IVR Forum continued its mission to identify features that could make IVRs easier to use by people with disabilities. The forum's focus included interoperability with assistive devices and text communication features. Through its review of emerging communications technologies and trends in IVR systems implementation, the forum identified issues that may need further solution development by standards organizations. The forum also scanned regulative and legislative issues affecting IVRs and disability access to communications services.

The IVR Forum engages consumers, government entities, telecommunications manufacturers, assistive technology manufacturers, service providers, and other interested parties in the identification and implementation of accessible solutions.

In order to provide the industry with information about the barriers and advantages of IVR Systems for people with disabilities, the IVR Forum continues to develop and host a Disability Implications Matrix and an IVR Accessibility Checklist.

The IVR Forum expects to continue its mission throughout 2006 and is working toward a broadened response and coordination of efforts for disability access to communications services from the telecommunications industry, as well as government entities and consumer advocacy organizations.

ATIS Committee Reports

NIPP: NETWORK INTERFACE, POWER, AND PROTECTION COMMITTEE
Chair: Rick Townsend, Lucent Technologies/Bell Labs

The NIPP Committee develops standards and technical reports related to interfaces associated with user access to the public telecommunication networks, power systems, and electrical and physical protection of the network.

Value to the Telecommunications Industry
The committee develops standards and technical reports in two diverse areas of interest: (1) network access interfaces including analog and digital, focusing this year on an access interface for IPTV; and (2) power systems and their interfaces, and the electrical and physical protection of the network.

Globally, NIPP provides significant input to the ITU-T SG 15 to voice the needs of the U.S. industry on DSL. It approved 42 company contributions this year plus numerous contributions from member companies to Rapporteur meetings, and maintains liaison contacts with other significant bodies such as the DSL Forum, and IEEE.

NIPP-NAI: Network Access Interfaces
In 2005, NIPP-NAI was involved in a major effort developing a VDSL2 specification intended for the IPTV market. To minimize time-to-completion and to maximize the harmonization of the specification in a global market, the group focused its effort in producing input for the draft being developed in ITU-T Q.4/15. Approval is expected in early 2006. Two specifications are available now for transporting IPTV to the home – ADSL2/ADSL2plus, and VDSL2.

The committee work on Dynamic Spectrum Management (DSM) continues to gain momentum, with a number of agreements on various subjects being included in a draft document, as well as a developing relationship on this subject with the DSL Forum. DSM offers techniques for managing (and optimizing) the capacity/bandwidth of DSL wire pairs.

All of the above DSL work areas fall within the ATIS TOPS Council's priority to enhance DSL capabilities for the marketplace.

The majority of the traditional analog and digital interfaces are, for the most part, in maintenance mode. A number of standards on analog voiceband, DS-1, and SONET UNI interfaces were re-affirmed this year.

NIPP-NPS: Network Power Systems
The draft for *Battery Enclosures and Rooms/Areas* was updated and re-introduced to the ballot process. Other work continues on *DC Power Wire and Cable for Telecommunications Power Systems* and *Telecommunications Power Systems Management.*

NIPP-NEP: Network Electrical Protection
The committee's Network Electrical Protection Sub-committee (NIPP-NEP) completed balloting and is awaiting pre-publication of its drafts on *Electrical Protection Applied to Telecommunications Network Plant at the Entrances to Customer Structures or Buildings* and *Electrical Protection for Network Operator-Type Equipment Positions.* Finishing the ballot process and going to publication were *Electrical Protection of Network-Powered Broadband Facilities* and *Technical Requirements for Testing of Telecommunication Equipment.* The subcommittee is beginning new work on electro-magnetic compatibility and broadband electrical protection considerations.

NIPP-NPP: Network Physical Protection
Continuing their efforts on physical design for the Central Office environment, the NIPP Network Physical Sub-committee is well into the ballot phase on *Surface*

Temperature Limits and Acoustic Noise standards. A proposed draft on mechanical requirements is also out for ballot. This draft provides the physical technical requirements for telecommunications equipment systems and assemblies intended for installation in network equipment buildings, equipment areas within buildings, electronic equipment enclosures such as controlled environmental vaults, outside electronic equipment cabinets, and customer locations. Other subjects being discussed include spatial specifications, anchoring, frameworks, vibration, and lead-free coatings.

2006

The Network Access Interfaces Subcommittee (NIPP-NAI) group will continue the maintenance on its traditional user-to-network interface standards work. Following approval by ITU-T SG15 of the VDSL2 work, the group will start looking at enhancements to provide more effective and efficient transport over DSL, to include spectrum management, in addition to enhancements to the line code. The NIPP-NPS and NIPP-NPP will continue their efforts in their respective subject areas by providing standards developed via debate and consensus in an open, public arena.

COMMITTEE O5 – WOOD POLES AND PRODUCTS

Chair: Nelson G. Bingel III, Osmose Utilities Services

Committee O5 is responsible for developing wood pole and crossarm standards – integral structures in the telecommunication outside plant. The committee membership consists of a balance from three industry perspectives: producers, users and general interest. Three standards are maintained by the committee:

ANSI O5.1-2002 – *Wood Poles – Specifications and Dimensions*

ANSI O5.2-1996 (R2001) – *Wood Poles – Structural Glued Laminated Timber for Utility Structures*

ANSI O5.3-2002 – *Wood Products – Solid-Sawn Wood Crossarms and Braces – Specifications and Dimensions*

The committee has continued data collection and analysis of present day pole strengths since publishing the current edition of its ANSI O5.1 in 2002. A task force created a database of actual pole dimensions collected at production plants all across the country. The task force presented a report at the annual meeting which included data from almost 20,000 poles.

Analysis of the data showed that some of the overly conservative requirements in the current standard could be relaxed. The pole strengths in the standard are currently based on minimum specified dimensions. The data validated, as expected, that the actual oversize on poles up to 55 feet in length more than compensated for some strength reduction factors that was being applied to all poles.

In 2005, a letter ballot was issued to revise ANSI O5.1-2002, but all of the comments have not been resolved and currently are being addressed. It is expected that a new letter ballot will be issued in early 2006.

In addition to reviewing pole strengths, the committee is in the process of analyzing through-boring — a method of drilling small diameter holes in the groundline zone of western species poles prior to preservative treatment. This greatly improves the effectiveness of the original treatment. Pole owners in the western U.S. have been experimenting with various drilling patterns.

However, the industry needed to develop a standard pattern and to gain an understanding of the impact that through-boring has on pole strength. Oregon State University conducted testing in 2005 to optimize

a boring pattern from a pole strength perspective which could become an industry standard for economies of manufacturing. This resulted in a recommended pattern, along with pole strength test data, that will be presented to Committee O5.

The Electric Power Research Institute conducted full scale pole break tests of several species of tropical hardwood from Brazil. The test data was compiled and provided to Committee O5, and a task force was formed to review the data in consideration of adding these poles as foreign species in ANSI O5.1.

In 2006, Committee O5 will review pole dimension data collected on mid-sized transmission poles. Data from the through-boring test program will be included with the review. After determining the impact on pole strengths, a revised version of ANSI O5.1 is expected to be issued for letter ballot. Consideration of the new foreign species will also continue.

WIRELESS

IOC: IMSI OVERSIGHT COUNCIL
Chair: Gary Richenaker, Telcordia Technologies

The IOC is an open industry council of tele-communications companies and other organizations with a direct interest in the management of International Mobile Subscriber Identity (IMSI) codes. An IMSI is a 15-digit number used within mobile phones that allows service operators to identify mobile terminals for purposes of international roaming. The IOC is responsible for overseeing the management of IMSI codes that have been assigned to the United States and its possessions as authorized by the U.S. Department of State since 1996.

The IOC maintains the *IMSI Assignment and Management Guidelines and Procedures* to ensure that it meets the evolving needs of the U.S. wireless

telecommunications industry and continues to reflect ITU Recommendation E.212. The document contains the guidelines and procedures for the assignment and use of IMSIs in the United States, with consideration given to other North American Numbering Plan (NANP) countries.

The IOC directly manages and oversees the assignment of the Home Network Identifier (HNI) portion of IMSIs used in the United States through an IMSI-Administrator (IMSI-A).

In 2005, the IOC brought to affirmative resolution a request for the inclusion of wireless carriers located in the U.S. Territory of Guam to be eligible for administration of HNIs under the *IMSI Assignment and Management Guidelines and Procedures* through the U.S.-based IMSI-A.

WTSC: WIRELESS TECHNOLOGIES AND SYSTEMS COMMITTEE
Chair: Mark Younge, T-Mobile

The WTSC develops standards and technical reports and transposes specifications related to 2G, 3G, and 3G+ wireless services and systems, as well as those for Wireless Wideband Internet Access systems. WTSC is the primary ATIS committee in the Third Generation Partnership Project (3GPP) a global federation of regional Standards Development Organizations (SDOs) targeted at evolving the GSM specifications to 3G and beyond. WTSC teams with other ATIS committees and external SDOs to develop joint standards on issues common to wireless and wireline networks and services.

Companies participating in WTSC are influencing the development of 3G wireless networks and services globally, and are on the cutting edge of wireless technology development.

There are currently four subcommittees operating in WTSC:

- Radio Aspects of GSM/3G and Beyond
  – Jim Ragsdale, Ericsson, Chair

- Mobile/Wireless GSM/3G System and Network
  – Peter Musgrove, Cingular Wireless, Chair

- WTSC-WWINA Wireless Wideband Internet Access
  – Brian Kiernan, Interdigital, Chair

- WTSC-LI Lawful Intercept
  – Brye Bonner, Motorola, Chair

Third Generation Mobile Wireless

Third generation mobile wireless work continues to be WTSC's primary area of focus. As the lead ATIS committee to 3GPP, WTSC continues working on the standardization of all aspects of UMTS and GPRS/EDGE technologies. This includes issues in the areas of radio access (W-CDMA), core network (IMS), user terminals, and systems/services aspects. WTSC experts work in 3GPP, generating deliverables that are ultimately transposed into ATIS standards and specifications.

WTSC co-located and met jointly with GSM North America several times this year, largely to provide an educational overview and update of work in various 3GPP technical specification groups, IETF, and ITU, and to allow North American feedback to be provided on a variety of 3GPP, IETF, and ITU activities.

WTSC also generates ATIS' inputs to the ITU recommendations on IMT-2000 services and systems generated by ITU-T SG 19 and ITU-R WP 8F. This year, WTSC completed the transposition of the M.1457-5 update to ITUR-WP 8F and submitted and obtained approval of update material for TDMA-SC for Revision 6 of M.1457.

WTSC also provides a platform for obtaining North American regulatory input on issues such as Emergency Alert Service, emergency services, and Multimedia Priority Service. Future work will include developing North American requirements/standards to support emergency services for wireless VoIP.

Wideband Wireless Internet Access

WTSC continues to develop air interface standards to support Wideband Internet Access. This year WTSC balloted and approved publication of *High Capacity-Spatial Division Multiple Access (HC-SDMA)* (ATIS-0700004-2005).

Lawful Intercept

Regulatory mandates such as Lawfully Authorized Electronic Surveillance (LAES) services are highly controversial regional issues. As such, WTSC works LAES standardization activities jointly with TIA to ensure uniformity across technology lines within the region. This year witnessed much controversy regarding surveillance requirements for packet mode networks and services. WTSC participated in the ATIS Joint Experts Meeting on Timing for Lawful Intercept. Our latest work items are LAES messages for VoIP and LAES messages for PoC. 3GPP Release 6 TS 33.106, TS 33.107 and TS 33.108 are transposed as ATIS lawful intercept standards intended for U.S. safe harbor.

2006

WTSC will remain active within the framework of the 3GPP to further enhance the evolution of the GSM system, as well as independently develop additional Wireless Wideband Internet Access standards.

MULTIMEDIA

IIF: IPTV INTEROPERABILITY FORUM
Chair/Convener: Kevin Schneider, ADTRAN

The IIF was established this year after an ATIS TOPS Council IPTV Exploratory Group (IEG) identified the need for an open industry forum focused on the needs of the nascent IPTV industry.

The IIF enables the interoperability, interconnection, and implementation of IPTV systems and services by developing ATIS standards and facilitating related technical activities. This forum places an emphasis on North American and ATIS member company needs, in coordination with other regional and international standards development organizations.

The scope of the work in the IIF includes the following areas:

1. Coordinate standards activities that relate to IPTV technologies. This includes providing a liaison function between the various Standards Development Organizations (SDOs) and Industry Forums that are each working on important components of IPTV, but may not have visibility to other aspects of the application.

2. Develop interoperability agreements, technical reports, or other types of ATIS standards where appropriate.

3. Provide a venue for interoperability activities.

4. Provide a venue for the assessment of IPTV issues in the context of NGN directions.

The IIF was established in June by the ATIS Board of Directors, and held its first meeting on September 13, 2005. The IIF has established Task Forces to address three issues that were identified by the IEG: IPTV Architecture, Digital Rights Management and Quality of Service (QoS) metrics.

The work that began in 2005 is expected to result in sets of functional requirements, specifically, IPTV Requirements and Roadmap; Digital Rights Management Requirements; and IPTV Quality of Service and Experience (QoS/QoE) Network Requirements and Mechanisms.

The IPTV Requirements and Roadmap effort is focused on defining the service aspects of IPTV, and requirements relating to the IPTV operators platform, IPTV terminal functions, home networking (as it relates to IPTV), and content contributors.

The Digital Rights Management work is focused on developing a set of requirements for client-server systems which provide security for IPTV content. This includes functional requirements for operator-controlled features, subscriber-controlled features, and requirements for interoperability between functional elements.

The IPTV Quality of Service and Experience work is focused on identifying the appropriate standardized measurements, metrics and mechanisms, and adapting them to the IPTV environment, as well as creating new metrics where standards do not yet exist. The work products are expected to define measurement points for ensuring QoS/QOE for IPTV and appropriate QoS/QoE metrics for each measurement point. Subsequent work will focus on defining QoS/QoE mechanisms.

These work items represent the first step toward the IIF's goal to fully specify all appropriate interfaces in the IPTV architecture, and to identify and specify metrics that are appropriate to measure the quality of IPTV service across those interfaces. The IPTV architecture is a large and complex system, and the IIF is establishing working relationships with other industry forums and SDOs that are working in related fields to help reach this goal in a timely manner.

With a high level of industry interest in IPTV, the IIF is looking forward to a productive and rewarding 2006. The initial set of standards deliverables from the three IIF Task Forces are expected in the first half of 2006. In addition, new issues and work items are expected to be introduced that build on the initial set of standards, as well as expand the standards portfolio into other relevant IPTV areas.

OPTXS: OPTICAL TRANSPORT AND SYNCHRONIZATION COMMITTEE

Chair: Ken Biholar, Alcatel

OPTXS develops and recommends standards and prepares technical reports related to telecommunications network technology pertaining to network synchronization interfaces and hierarchical structures for U.S. telecommunications networks. OPTXS focuses on those functions and characteristics necessary to define and establish the interconnection of signals comprising network transport.

Almost all communications services, packet-based or circuit-based, rely on high quality and reliable optical transport and synchronization. ATIS OPTXS is focused on developing the standards necessary to support new services efficiently over today's networks, while also developing standards to enable new technology solutions for tomorrow. Except for standards specific to North America's SONET technologies, ATIS OPTXS is focused on contributing to the development of global standards in the form of reviewing technical contributions intended for planned ITU-T Recommendations.

2005 was characterized primarily by the continued work of the Synchronization (OPTXS-SYNC) and Optical Hierarchical Interfaces (OPTXS-OHI) subcommittees towards the development of harmonized global standards in the areas of optical networks, digital hierarchies, and synchronization. More than 30 OPTXS member-generated contributions were submitted to the ITU-T in 2005.

OPTXS was the primary ATIS committee involved in the Workshop on Synchronization in Telecommunications Systems (WSTS), an annual event held May 9-12, 2005 and cosponsored by ATIS and the National Institute of Standards and Technology (NIST). OPTXS-SYNC members played a key role in the formulation of the agenda and peer review of presentations for the 2005 event.

OPTXS' primary areas of focus include:

Synchronization over Packet Networks

The OPTXS Synchronization Subcommittee (OPTXS-SYNCH) is developing a Technical Report detailing the needs of synchronization for packets sent over SONET, and plans to communicate current status of work to ITU-T SG15. While not required within the IP "cloud," packets sent over SONET still require synchronization at the ingress and egress points to the network. Work is expected be ongoing throughout 2006.

Network Synchronization Interface Standard

OPTXS-SYNC is undertaking a revision to T1.101-1999 (Synchronization Interface standard), which is expected to be published 1Q 2006.

Transport of Ethernet Frames

Work is basically complete on the base protocols and management of the Generic Framing Procedure (GFP), Virtual Concatenation (VCAT), and Link Capacity Adjustment Scheme (LCAS) to support efficient transport of Ethernet (and Storage Area Network interfaces). Work on operation and management will continue throughout 2006, with the focus on harmonizing work activities with efforts in ITU-T SG15.

Ethernet Frames over Transport Services

The OPTXS-Optical Hierarchical Interfaces Subcommittee (OPTXS-OHI) plans to enhance and further define Ethernet Private Line Service, Ethernet Virtual Private Line Service, and other Ethernet services supported over SONET/SDH and OTN networks. Work is expected to be ongoing throughout 2006.

Architecture for Service Management

OPTXS-OHI is defining network architectures and supporting methodologies for supporting the efficient

management of services, as well as the architectures and supporting methodologies for establishing and maintaining network based transport services. Work is expected to be ongoing throughout 2006.

PACKET BASED NETWORKS

PTSC: PACKET TECHNOLOGIES AND SYSTEMS COMMITTEE
Chair: Bob Hall, AT&T

The Packet Technologies and Systems Committee (PTSC) has the significant responsibility of developing standards, technical specifications and technical reports for new packet architectures, and the development or application of the enabling signaling protocols.

Representative examples of key deliverables for 2005 include the following:

- **IP to IP Network Interconnection**
  IP Network to Network Interface (NNI) standards are required to facilitate interconnection between IP networks. A key interconnection standard will be developed as will several related standards supporting specific aspects of the IP NNI interface. NNI Interconnection is a key element required to support IP applications for business. The scope of the initial standard will focus on VoIP applications, and it will be expanded later to address multimedia applications.

  This initial standard was completed and sent to ballot in January 2006.

- **Lawfully Authorized Electronic Surveillance (LAES)**
  LAES capability in the VoIP (more specifically, voice-over-packet technologies) environment is required and will extend beyond voice services

into other services and capabilities. LAES standards allow carriers to meet regulatory LAES requirements as well as CALEA (Communications Assistance for Law Enforcement Act) requirements. A Revised version of *Lawfully Authorized Electronic Surveillance* (LAES) *for Voice over Packet Technologies in Wireless Networks,* ATIS–10000678 (T1.678 v2) was completed and sent to publishing in January 2006. Several more related standards and products are scheduled in 2006, including a standard dealing with "IP Network Access." Additionally, a PTSC technical report, *LAES for the NGN*, is in preparation for completion in 2006.

- **Network Security**
  Security is important to all network aspects. The PTSC's security work focuses on the definition of security in a standard architecture, and application of a suite of security standards now under development by PTSC will enable signaling security, and allow for securing user and network information. The first standard of the set, titled *Generic Signaling and Control Plane Security Requirements for Evolving Networks,* was completed and sent to publishing in January 2006. Additional standards will be completed during 2006.

- **Emergency Telecommunication Service**
  Emergency Telecommunication Service (ETS) has long been an important service for the U.S. Government, and must be provided in the new IP environment. The IP environment requires that many of the ETS features be redesigned to fit in the new modes of operation. A phase one Technical Report on *Standard for Support of Emergency Telecommunications Service (ETS) in IP Networks* was completed and sent to ballot in January 2006, with other products to follow.

- **Interoperability**

  A standard supporting interoperability between existing signaling protocols and SIP signaling with specific messages in SIP was developed in 2005.

  Because so many types of specific signaling needs will be needed for interoperability, this development will allow accommodation of supplementary services without changing SIP.

  Additionally, the Draft Proposed American National Standard, *ANSI Extensions to the Narrowband Signaling Syntax* (NSS), was completed and sent to publishing in January 2006.

The PTSC has many other deliverables underway and will continue to deliver new products during 2006.

OTHER ATIS ACTIVITIES

ACTA: ADMINISTRATIVE COUNCIL FOR TERMINAL ATTACHMENTS
Chair: Jim Haynes, Uniden Engineering Services

The Federal Communication Commission (FCC) established the Administrative Council for Terminal Attachments (ACTA) in 2000 to take over the FCC's PART 68 administrative duties with respect to maintaining technical criteria for connecting terminal equipment to the PSTN. ATIS and TIA co-sponsor the ACTA. ATIS provides secretariat administration and legal counsel to the ACTA.

The ACTA is an open industry body with a mission to:

(1) act as the clearinghouse for publishing technical standards developed and approved by organizations accredited under procedures and practices that mandate industry and public consensus before approving standards; and

(2) establish and maintain a database of equipment approved as compliant with the technical standards published by the ACTA. The ACTA has no authority or role in the development of technical standards.

The operations of the ACTA (as specified by the FCC) are as follows:

- *Adopt and publish technical criteria for terminal equipment developed by ANSI-accredited standards development organizations to protect the network from harm.*

- *Operate and maintain a database of equipment, approved as compliant with the ACTA-published technical criteria, meeting the requirements of the FCC and the labeling requirements of the U.S. Customs Service.*

- *Establish and maintain an appropriate labeling scheme for terminal equipment.*

- *Respond to inquiries from the public regarding the published technical criteria or refer such inquires to the appropriate standards development organization.*

- *Manage such other tasks as necessary and within its scope that were formerly part of the FCC Part 68 functions.*

The ACTA continues to work closely with the FCC to ensure that the industry remains compliant with federal regulations. The ACTA works to improve its services to the industry through liaison with industry forums and foreign authorities concerned with terminal equipment, and by monitoring standards and regulations relevant to the ACTA's purpose.

During 2005, the ACTA held elections for the 2005-2007 terms of the Council's Interest Segment Representatives, and elected a new council chair. New technical criteria completed public review and was adopted by the ACTA in February 2005. The ACTA

also completed two revisions to its *Guidelines and Procedures for Submittal of Information for Inclusion in the ACTA Database of Approved Telephone Terminal Equipment ("TTE")*, in response to the need for clarification and development of the submission process.

In November 2005, the ACTA launched a new Part68.org website and ACTA Online Filing (AOF) system. The AOF allows for responsible parties and Telecommunication Certification Bodies (TCBs) to electronically file terminal equipment (TE) to the ACTA Database.

In 2006, the ACTA will continue to expedite the introduction of new technical criteria, as well as the approval and registration processes of new TTEs.

ATIS INCUBATOR SOLUTIONS PROGRAM

The ATIS Incubator Solutions Program is a flexible streamlined process where the industry can advance a technical or operational telecommunications issue in an environment designed to expeditiously introduce pressing issues, and focus on market driven needs and results. The ATIS Incubator Solutions Program was launched from an idea developed by ATIS' own membership, in recognition of the need to develop solutions faster, with few, if any, impediments.

AISP.4 – Hearing Aid Compatibility(HAC)

The ATIS Incubator Solutions Program #4 (AISP.4) was established to investigate performance between hearing aids (HAs) and Wireless Devices (WDs) and to determine methods of enhancing interoperability and usability for consumers with hearing aids. The activities are in response to the Federal Communications Commission (FCC) *Report & Order* for WT Docket No. 01-309, RM 8658 regarding hearing aid compatibility for digital wireless services.

AISP.4-HAC is focused on the technical evaluation and test methodology of the measurement standard as referenced in the C63.19 Standard. Through an open and impartial consensus process, AISP.4-HAC is investigating and developing recommendations for standards for measuring HA immunity, magnetic coupling, and interference caused by WDs. The Incubator reports the progress of its work and status of compliance of its members to the FCC in Status Reports as defined in the *Report & Order.*

During 2005, AISP.4-HAC Working Group 4 (WG4) engaged in efforts to evaluate the ANSI C63.19 Standard. The Incubator's recommendations with regard to the C63.19 Standard are defined in the AISP.4-HAC *Hearing Aid Compatibility Test Specification* (HACTS). WG4 also completed round-robin testing to help ensure accurate and consistent test results across the industry for the September 2005 HAC compliance deadline for Radio Frequency (RF) interference.

Through its Working Group 6, the comprehensive educational activities of AISP.4-HAC continue to ensure a far-reaching, consistent message to hard of hearing consumers looking to purchase WDs compatible with hearing aids. In May 2005, the recommendations of the Incubator to clarify labeling of RF and T-Coil ratings of WDs were noted in the FCC's *Order on Reconsideration.* The Incubator was honored in July 2005 with the National Wireless Access Award for 2005 from Self Help for Hard of Hearing People (SHHH) to recognize AISP.4-HAC's consumer outreach efforts. In December 2005, the AISP.4-HAC in collaboration with the Cellular Telecommunications and Internet Association (CTIA), released educational materials targeted to consumers with hearing loss and hearing healthcare professionals.

Through its Working Group 8 (WG8), the Incubator has sought to revise the methods employed by the C63.19 Standard to determine Articulation Weighting Factor (AWF). WG8 has investigated and presented its proposal for a repeatable and mathematic-based

method for determining AWF for current and future air interface technologies to the C63.19 Committee.

Through its Working Group 9 (WG9), the AISP.4-HAC has investigated the interaction between HAs and WDs operating in the low bands and at higher power than those that were operating in the United States at the time the C63.19 Standard was originally written. WG9 has actively pursued solutions through laboratory and field testing of WDs and analysis of additional sources of data. The recommendations of WG9 have been noted by the FCC in its September 2005 Grant of Waiver and are under consideration by the C63.19 Committee for inclusion in the Standard.

During 2006, the AISP.4 HAC is employing similar technical review and methodology through the Incubator to achieve the FCC's September 18, 2006 deadline for magnetic ("T-coil") compatibility. It expects to continue activities in its working groups in support of the development of hearing aid compatible WDs and a mature standard to which they can be tested.

PEG: PROTECTION ENGINEERS GROUP
Chair: Richard Chadwick, AC Data Systems

The Protection Engineers Group (PEG) is comprised of specialists who share a common interest in the electrical protection of communications facilities.

PEG's primary goals are to encourage the free-flow of ideas among electrical protection specialists, and to be a resource that provides the most up-to-date information on electrical protection.

PEG was originally an organization of local service providers, but since 1995 has opened its membership to all service providers and manufacturers in the communications protection field.

PEG provides the industry a unique opportunity to discuss challenges and find resolution to current electrical protection issues with national and international experts and manufacturers. PEG's annual conference provides vendors, manufacturers, and service providers an environment to discuss and provide input on current, and pending NEC articles, products, standards and processes that shape product design, and that add clarity to effective use.

ATIS Standards and Documents 2005

DOCUMENT NAME	DOCUMENT NUMBER
555 NXX Assignment Guidelines	ATIS-0300048
900 NXX Code Assignment Guidelines	ATIS-0300060
Above-Baseline Electrical Protection for Designated Telecommunications Central Offices and Similar-Type Facilities against High-Altitude Electromagnetic Pulse (HEMP) [Revision of T1.320-1994 (R1999)]	ATIS-0632000.2005
Access Service Ordering Guidelines (ASOG) 31	ATIS-0404000-0031
Access Service Ordering Guidelines (ASOG) 32	ATIS-0404000-0032
Access Service Request Guidelines Mechanized Specifications (31)	ATIS-0404100-0031
Access Service Request Guidelines Mechanized Specifications (32)	ATIS-0404100-0032
Air Interface Standard for Broadband Direct Sequence CDMA for Fixed Wireless PSTN Access - Layer 1	T1.716-2000 (R2004)
Air Interface Standard for Broadband Direct Sequence CDMA for Fixed Wireless PSTN Access - Layer 2	T1.717-2000 (R2004)
ASR Version 31 Industry Test Plan	ATIS-0404101-0031
ASR Version 32 Industry Test Plan	ATIS-0404101-0032
ATM based Multi-pair Bonding	T1.427.01-2004
Bearer Independent Call Control (BICC)	T1.672-2000 (R2005)
B-ISDN ATM Adaptation Layer-Service Specific Connection Oriented Protocol (SSCOP)	T1.637-1999 (R2005)
B-ISDN ATM Adaptation Layer-Service Specific Coordination Function for Support of Signaling at the User to Network Interface	T1.638-1999 (R2005)
B-ISDN Signaling ATM Adaptation Layer (SAAL)-Overview Description	T1.636-1999 (R2005)
B-ISDN-ATM Layer Functionality and Specification	T1.627-1993 (R2004)
Broadband ISDN-ATM Adaptation Layer for Constant Bit Rate Services Functionality and Specification	T1.630-1999 (R2005)
Broadband ISDN-ATM Adaptation Layer Type 5 Common Part Functions and Specifications	T1.635.1999 (R2005)
Broadband ISDN-Meta-Signaling Protocol	T1.644-1995 (R2005)
Calling Name Identification Presentation	T1.641-1995 (R2004)
Carrier Identification Code Assignment Guidelines	INC 95-0127-006
Central Office Code (NXX) Assignment Guidelines	ATIS-0300051
Central Office Code Assignment Guidelines	INC 95-0407-008
CORBA Generic Network and NE Level Information Model (Revision of T1.270-2000)	ATIS-0327000.2004
Description of Above-Baseline Physical Threats to Telecommunications Links	T1.331-1999 (R2004)
Design Layout Report - Industry Support Interface (DLR-ISI) Issue 10	ATIS-0404130-0010
Digital Hierarchy - Electrical Interface	T1.102-1993 (R2005)
Digital Hierarchy - Formats Specification (Virtual Concatenation and LCAS) Supplement to T1.107-2005)	ATIS-0610700.a.2005
Digital Subscriber Signaling System No. 1 DSS1 Layer 3 Overview	T1.615-1992 (R2004)
ECS-Connection and Ring Back Addendum (Supplement to T1.628-2000)	T1.628a-2001 (R2005)
EDI LSOG Mechanization Specification (ELMS 10)	ATIS-0402000-0010
EDI LSOG Mechanization Specification (ELMS 11)	ATIS-0402000-0011
Electrical Coordination of Primary and Secondary Surge Protection for Use in Telecommunications Circuits	T1.338-2004
Electronic Communications Interactive Agent Functional Specification	TCIF-98-006-3.2
Electronic Interactive Agent (IA)	T1.274.2000 (R2005)

DOCUMENT NAME	DOCUMENT NUMBER
Emergency Calling Service	T1.628-2000 (R2005)
Enhanced Single-Pair High-Speed Digital Subscriber Line (E-SHDSL) Transceivers	T1.426-2004
Enhanced Telecommunications Charge Card Physical Characteristics and Numbering Structure	T1.212-1995 (R2004)
Enhanced Wireless 9-1-1 Phase 2 (Revision of J-STD-036-A)	J-STD-036-B
Equal Access Subscription-Customer Account Record Exchange (CARE) Issue 16 Revision 1	ATIS-0408000-1601
Equal Access Subscription-Customer Account Record Exchange (CARE) Issue 16 Revision 2	ATIS-0408000-1602
Equal Access Subscription-Customer Account Record Exchange (CARE) Issue 16 Revision 3	ATIS-0408000-1603
Equal Access Subscription-Customer Account Record Exchange (CARE) Issue 17	ATIS-0408000-1700
Ethernet-based Multi-Pair Bonding	T1.427.02-2005
Exchange Message Interface (EMI) Issue 22	ATIS-0406000-2200
Exchange Message Interface (EMI) Issue 22 Revision 1	ATIS-0406000-2201
Exchange Message Interface (EMI) Issue 22 Revision 2	ATIS-0406000-2202
Exchange Message Interface (EMI) Issue 22 Revision 3	ATIS-0406000-2203
Exchange-Interexchange Carrier Interfaces-950+XXXX Access Signaling Protocols	T1.109-1990 (R2004)
Framework for CORBA-Based Telecommunications Management Network Interfaces (Revision of T1.271-2000)	ATIS-0327100.2004
Guideline for Data Elements included in the Management Information Base (MIB)	ATIS-0300040
Guideline for Identifying Downloadable Software for Plug-in Cards	ATIS-0300039
Guidelines for the Identification and Bar Code Labeling of Cable Reels	ATIS-0300044
High bit rate Digital Subscriber Line - 2nd Generation (HDSL2/HDSL4), Issue 2	T1.418a-2004
Installation, Testing & Maintenance Responsibilities for SS7 Links and Trunks, Part III - Attachment I SS7 Network Security Base Guidelines	ATIS-0300020
Integrated Services Digital Network (ISDN) - Basic Access Interface for S and T Reference Points (Layer 1 Specification)	T1.605-1991 (R2004)
Integrated Services Digital Network (ISDN) - Basic Access Interface for Use on Metallic Loops for Application on the Network Side of the NT (Layer 1 Specification)	T1.601-1999 (R2004)
Integrated Services Digital Network (ISDN)-Call Park Supplementary Service	T1.653-1996 (R2005)
Integrated Services Digital Network (ISDN)-Call Park Supplementary Service-Generic Procedures for the Control of ISDN Supplementary Services	T1.653a-1998 (R2005)
Integrated Services Digital Network ISDN-Conference Calling Supplementary Service	T1.647-1995 (R2005)
Integrated Services Digital Network (ISDN) - Conference Calling Supplementary Service-Operations Across Multiple Interfaces	T1.647a-1998 (R2005)
Integrated Services Digital Network (ISDN) - Layer 3 Signaling Specification for Circuit Switched Bearer Service for Digital Subscriber Signaling System #1	T1.607-2000 (R2004)
Interactions Between the Operator Services Network Capability and Release to Pivot	T1.666a-2000 (R2004)
Interface between Networks and Customers Installation Very-high-bit-rate Digital Subscriber Lines (VDSL) Metallic Interface (QAM-based)	T1.TRQ.12-2004
Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control or ISDN User Part	T1.679-2004
Interworking between the ISDN User-Network Interface Protocol and the Signalling System Number 7 ISDN User Part	T1.609-1999 (R2004)
IP Network Traffic Priorities and ETS	T1.TR.84-2004
ISDN Call Hold Supplementary Services	T1.616-1992 (R2004)
ISDN - Data-Link Layer Signaling Specification for Application at the User-Network Interface	T1.602-1996 (R2004)
ISDN Supplementary Service Call Deflection	T1.642-1995 (R2004)
ISDN Supplementary Service Normal Call Transfer	T1.632-1993 (R2004)
ISDN - Usage of the Cause Information Element in Digital Subscriber Signaling System Number 1 (DSS1)	T1.650-1995 (R2005)
Local Service Migration Guidelines (LSMG) Issue 2	ATIS-0405300-0002
Local Service Ordering Guidelines (LSOG) 11	ATIS-0405000-0011
Local Service Ordering Guidelines (LSOG) 12	ATIS-0405000-0012

DOCUMENT NAME	DOCUMENT NUMBER
MCSB Physical, MAC/LLC & Network Layer Specification	ATIS-0700001.2005
Minimal Set of Bearer Services for the ISDN Basic Rate Interface	T1.604-1990 (R2004)
Minimal Set of Bearer Services for the ISDN Primary Rate Interface	T1.603-1990 (R2004)
Model Interface Across Jurisdictional Boundaries to Support the Local Service Inquiry Functions (LSOG 8)	ATIS-0410500-0001
Model Interface Across Jurisdictional Boundaries to Support the Local Service Inquiry Functions (LSOG 9)	ATIS-0410500-0002
Multi-Pair Bonding Using Time-Division Inverse Multiplexing	T1.427.03-2004
Network and Customer Installation Interfaces - Broadband ISDN: Common Criteria	T1.646-2003
Network and Customer Installation Interfaces - DS1 Physical Layer Interface and Mapping Specifications for ATM Applications	T1.403.03-2002
Network and Customer Installation Interfaces - SONET Physical Layer Interface and Mapping Specifications for ATM Applications	T1.416.04-2005
Network Interconnection Interoperability (NIIF) Reference Document	ATIS-0300008
Network Performance - Point-to-Point Voice-Grade Special Access Network Voiceband Data Transmission Objectives	T1.512-1994 (R2004)
Network Performance Parameters for Dedicated Digital Services for Rates Up to and Including DS3 Specifications	T1.510-1999 (R2004)
Network-Broadband ISDN-ATM Adaptation Layer for Constant Bit Rate Services Functionality and Specifications	T1.630a-2002 (R2005)
NIIF Intercompany Responsibilities Within the Telecommunications Industry	ATIS-0300037
NIIF Reference Document Part I - Installation and Maintenance Responsibilities for Special Access Services, WATS Access Lines, and Switched Access Services Feature Group	ATIS-0300009
NIIF Reference Document Part II - Installation and Maintenance Responsibilities for Switched Access Services Feature Groups	ATIS-0300010
NIIF Reference Document Part III - Attachment J - SS7 Software Validation	ATIS-0300021
NIIF Reference Document Part III - Installation and Maintenance Responsibilities for SS7 Links and Trunks (formerly NIIF 5018)	ATIS-0300011
NIIF Reference Document Part III - Attachment B - ISUP Compatibility Tests	ATIS-0300012
NIIF Reference Document Part III - Attachment C - SCCP Protocol Class 0 Compatibility Tests	ATIS-0300014
NIIF Reference Document Part III - Attachment D - Test Severity Analysis Criteria	ATIS-0300015
NIIF Reference Document Part III - Attachment E - SS7 Network Gateway Screening	ATIS-0300016
NIIF Reference Document Part III - Attachment F - SS7 ISUP Tests for ISDN Network Interconnection	ATIS-0300017
NIIF Reference Document Part III - Attachment G - SS7 Link Diversity Validation Guidelines	ATIS-0300018
NIIF Reference Document Part III - Attachment H - SS7 Cause Codes and Tones and Annoucements	ATIS-0300019
NIIF Reference Document Part III - Attachment K - SS7 Link Diversity Validation Guidelines	ATIS-0300022
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NIIF Reference Document Part V - Attachment A - Test Line Directory Dictionary	ATIS-0300025
NIIF Reference Document Part V - Test Line Guidelines	ATIS-0300024
NIIF Reference Document Part VI - Attachment A - Emergency SS7 Restoration Operations Planning Considerations	ATIS-0300027
NIIF Reference Document Part VI - Network Management Guidelines	ATIS-0300026
NIIF Reference Document Part VII - Information Sharing	ATIS-0300028
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NIIF Reference Document Part IX - Installation, Testing, and Maintenance Responsibilities for Facilities	ATIS-0300030
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NIIF Reference Document Part X - Interconnection Between LECs - Operations Handbook Local Interconnection Service Arrangement	ATIS-0300032
NIIF Reference Document Part XI - Local Number Portability Interconnection Testing	ATIS-0300034
NIIF Reference Document Part XII - Toll Free Industry Test Plan	ATIS-0300035

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