

August 30, 2013

Via email
Thomas Dolislager
FirstNet Network Service Platforms RFI
3130 Crow Canyon Place, Suite 210
San Ramon, CA 94583 USA

Re: Response to Request for Information
Solicitation Number: SA1301-12-RP-0016-g

Dear Mr. Dolislager:

The Alliance for Telecommunications Industry Solutions (ATIS) is pleased to provide this response to the Request for Information (RFI) for Core Network Evolved Packet Cores issued by the First Responder Network Authority (FirstNet). ATIS actively supports enhancements to telecommunications networks to support public safety requirements and has worked collaboratively on this effort with the National Institute for Standards and Technology, the Federal Bureau of Investigation, the Department of Homeland Security, and others. As ATIS does not provide network services, these comments are intended solely to provide information on industry work related to core network Evolved Packet Cores (EPC) that may be beneficial to FirstNet and to stakeholders that may support FirstNet through the provision of goods and services.

ATIS' comments are directed at the RFI sections on: Evolved Packet Core, Security and Enterprise Management System.

Background

ATIS is a global standards development and technical planning organization that leads, develops and promotes worldwide technical and operations standards for information, entertainment, and communications technologies. ATIS' diverse membership includes key stakeholders from the Information and Communication Technology (ICT) industry –wireless and wireline service providers, equipment manufacturers, broadband providers, software developers, consumer electronics companies, public safety agencies, digital rights management companies, and internet service providers. ATIS is the North American Organizations Partner in the 3rd Generation Partnership Project (3GPP) and a significant focus of ATIS' work is directed at the development of IP Multimedia Subsystems (IMS)-based network and Long Term Evolution (LTE) technologies.

Work within ATIS is progressed through ATIS' open industry committees and other initiatives, which include participation from nearly six hundred (600) industry subject matter experts. Among the committees that have work programs relevant to the information sought in the RFI are:

- Emergency Services Interconnection Forum (ESIF). ATIS' ESIF serves as the primary forum for the telecommunications industry, public safety and other stakeholders to identify and resolve recognized technical and operational interconnection issues related to the delivery of E9-1-1 services. ESIF liaises with standards and government organizations to apprise them of its deliberations and decisions. ESIF also works closely with the National Emergency Number Association (NENA), which currently manages the technical evolution of the 9-1-1 system and emergency communications process.
- Packet Technologies and Systems Committee (PTSC). The ATIS PTSC develops and recommends standards and technical reports related to services, architectures, and signaling, including emergency services and Emergency Telecommunications Service (ETS). The PTSC also coordinates and develops standards and technical reports relevant to telecommunications networks in the U.S., reviews and prepares contributions on such matters for submission to

the U.S. International Telecommunication Union Standardization (ITU-T) and the U.S. International Telecommunication Union Radiocommunication (ITU-R) Study Groups or other standards organizations and reviews for acceptability or per contra the positions of other countries in related standards development and takes or recommends appropriate actions.

- Wireless Technologies and Systems Committee (WTSC). The ATIS WTSC is comprised of leading technologists who lead industry technical work on wireless issues, including Next Generation 9-1-1 (NG9-1-1). ATIS WTSC develops standards and technical reports related to 2G, 3G, and 4G wireless services and systems for advancing NG9-1-1 communications services. The ATIS WTSC coordinates and develops standards and technical reports primarily relevant to wireless/mobile telecommunications networks in the U.S. and reviews and prepares contributions on such matters for submission to the appropriate U.S. preparatory body for consideration as ITU contributions or for submission to other domestic and regional standards organizations.

Evolved Packet Core (EPC)

In the RFI, FirstNet seeks input regarding EPC performance issues, including quality of service (QoS) capabilities [EPC 6.04]. ATIS has two EPC QoS projects underway. The first project defines capabilities and extensions in order to provide QoS and priority in support of Next Generation Network (NGN) Government Emergency Telecommunications Services (GETS) (ETS/GETS/Wi-Fi Protected Setup (WPS)). The second defines the EPC network element/functional element requirements in order to provide QoS and priority in support of NGN GETS.

The RFI also seeks information on the Communications Assistance for Law Enforcement Act (CALEA) and lawful interception functions [EPC 10.01]. ATIS has led industry efforts to develop lawful intercept standards. As the North American Organizational Partner within 3GPP, ATIS has helped to develop the 3GPP specifications that define lawful interception requirements (*i.e.*, 3GPP TS 33.106, TS 33.107 and TS 33.108) and has transposed these documents into ATIS specifications.¹ Work continues within ATIS to transpose 3GPP Release 10 and Release 11.

This includes:

- *LAES for 3GPP IMS-based VoIP and other Multimedia Services* (ATIS-0700005 and Supplement A thereto) - defines an interface between a Telecommunications Service Provider and a Law Enforcement Agency for reporting of Lawfully Authorized Electronic Surveillance for 3GPP IMS-based Voice-over-IP (VoIP) and other multimedia services.
- *Canadian LAES Location Reporting* (ATIS-0700009) - defines LAES capabilities that can be used to report Intercept Subject location information for meeting Canadian regulatory and licensing requirements.

Active work is underway to address a number of other CALEA-related issues. This work includes efforts to address IMS-based VoIP lawful intercept functions that are not specified in 3GPP specifications and address legal requirements pertaining to the delivery of communications content of intercepted communications to law enforcement agencies. Other work underway within ATIS will address IMS-based push-to-talk over cellular capabilities in a new standard and additions and modifications 3GPP Release 6 lawful interception specifications (*i.e.*, 3GPP TS 33.106, 3GPP TS 33.107, and 3GPP TS 33.108) that are needed to meet U.S. (*i.e.*, CALEA) and Canadian requirements for LAES.

¹ See *e.g.*, ATIS.3GPP.33.106V610-2005, ATIS.3GPP.33.106V701-2007, ATIS.3GPP.33.106V810-2009, ATIS.3GPP.33.106.900-2010, ATIS.3GPP.33.107V640-2005, ATIS.3GPP.33.107V770-2007, ATIS.3GPP.33.107V860-2009, ATIS.3GPP.33.107.900-2010, ATIS.3GPP.33.108V682-2005, ATIS.3GPP.33.108V780-2007, ATIS.3GPP.33.108V850-2009, and ATIS.3GPP.33.108.920-2010.

ATIS' work also addresses EPC in the context of ETS. For example, work within ATIS is focusing on the development of ETS EPC network elements and ETS EPC call flows.

Security

The RFI also seeks information pertaining to network and system security [Security 4.01]. ATIS has a significant work program on security, including related topics of authentication and identify management. *US Standard for Signaling Security – Security Roadmap* (ATIS-1000024), for example, provides a roadmap for the suite of signaling and control plane security standards. The suite of standards under the umbrella of this roadmap provides covering generic signaling and control security, network-to-network signaling and control security, user-to-network signaling and control security, and Signaling System #7 security. Other work includes:

- *Generic Signaling and Control Plane Security Requirements for Evolving Networks* (ATIS-1000007.2006(R2011)), which provide generic signaling and control plane security requirements and a general security framework to mitigate security risks in evolving telecommunications networks.
- *Signaling System No. 7 (SS7) – SS7 Network and NNI Interconnection Security Requirements and Guidelines* (ATIS-1000012.2006(R2011)), which provides security requirements and guidelines for Signaling System No.7 (SS7) network and its network interconnections.
- *Network to Network Interface (NNI) Standard for Signaling and Control Security for Evolving VoP Multimedia Networks* (ATIS-1000019.2007(R2012)), which specifies Voice over Packet (VoP) and Multimedia signaling and control plane security requirements for evolving networks.
- *User to Network Interface (UNI) Standard for Signaling and Control Security Requirements for Evolving VoP/Multimedia Networks* (ATIS-1000025.2013), which specifies VoP and Multimedia signaling and control plane security requirements for evolving networks, and is part of a suite of signaling and control security standards (see Figure 1 within the standard). This standard also provides security requirements for VoP and Multimedia signaling and control services that cross the User to Network Interfaces (UNI).
- *Security Requirements for NGN* (ATIS-1000029.2008(R2013)), which provides security requirements for the Next Generation Network (NGN) against security threats, and to mitigate the effects of security attacks. This standard is aligned with ITU Y.2701, *Security Requirements for NGN Release 1*.
- *Next Generation Network (NGN): Security Mechanisms and Procedures* (ATIS-1000034), which provides security requirements for next generation networks and their interfaces (e.g., UNIs, NNIs and ANIs) and specifies the suite of options for each selected mechanism.
- *Emergency Telecommunications Service (ETS): Core Network Security Requirements* (ATIS-1000055.2013), notes that the integrity, confidentiality and availability of ETS in a multi-provider NGN environment will depend on the security of each individual network involved in an end-to-end communication. To allow network provided security of end-to-end ETS communications in a multi-provider environment, intra-network domain and inter-network domain security requirements for ETS protection are needed. This ATIS standard provides a minimum set of common (i.e., independent of network type or technology) and core network security requirements for the protection of ETS in a multi-provider NGN environment.

Enterprise Management System (EMS)

In the RFI, FirstNet asked for input regarding security management [EMS 5.02]. ATIS' standard entitled, *Authentication and Authorization Requirements for Next Generation Network (NGN)* (ATIS-1000030.2008), provides authentication and authorization requirements for NGN, including requirements for authentication and authorization across the User-to-Network Interface (UNI), the Network-to-Network Interface (NNI) and the Application-to- Network Interface (ANI) as well

as any entities internally with a network that may require authentication and authorization. Another ATIS document, *ATIS Technical Report on Next Generation Network Certificate Management* (ATIS-1000054), provides guidelines for managing X.509 certificates for NGN security.

ATIS also has a robust work program on identity management. Relevant ATIS work on this issue includes published standards on:

- *ATIS NGN Identity Management Framework* (ATIS-1000035.2009), which establishes a Framework for handling identities in a secured and authenticated manner in a multi-network, multiple service provider environment.
- *ATIS NGN Identity Management Use Case* (ATIS-1000044.201), which defines use cases illustrating Identity Management (IdM) applications in a multi-network, multiple service provider environment defined by the ATIS NGN architecture and establishes requirements for handling identities in a secured and authenticated manner in a multi-network, multiple service provider environment.
- *ATIS NGN Identity Management Mechanisms* (ATIS-1000045), which establishes a framework for handling identities in a secured and authenticated manner in a multi-network, multiple service provider environment.

ATIS is pleased to have the opportunity to provide its input in response to the FirstNet RFI for Core Network Evolved Packet Cores. The information in this filing will also be included into the RFI spreadsheets.

If there are any questions, please do not hesitate to contact the undersigned.

Sincerely,

[Original signed by Thomas Goode]

Thomas Goode
General Counsel

Alliance for Telecommunications Industry Solutions
DUNS No: 115350696
CAGE Code: 018B4
EIN: 13-3182027
1200 G Street NW
Suite 500
Washington, DC 20005
(202) 434-8830
tgoode@atis.org