ATIS-1000079

National Security Emergency Preparedness Next Generation Network Priority Service (NS/EP NGN-PS): Transport Level Packet Marking and Packet Scheduling

TECHNICAL REPORT

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Is an ATIS Standard developed by the **ATIS Packet Technologies and Systems Committee (PTSC).**

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ATIS Technical Report on

National Security Emergency Preparedness Next Generation Network Priority Service (NS/EP NGN-PS): Transport Level Packet Marking and Packet Scheduling

Alliance for Telecommunications Industry Solutions

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Abstract

This Technical Report provides guidance on how the Long Term Evolution (LTE) Allocation Retention Priority (ARP) parameter is used for transport level packet marking and packet scheduling in support of National Security Emergency Preparedness Next Generation Priority Service (NS/EP NGN-PS).

Foreword

The Alliance for Telecommunications Industry Solutions (ATIS) serves the public through improved understanding between carriers, customers, and manufacturers. The Packet Technologies and Systems Committee (PTSC) develops and recommends standards and technical reports related to services, architectures, and signaling, in addition to related subjects under consideration in other North American and international standards bodies. PTSC 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 U.S. ITU-T and U.S. ITU-T Study Groups or other standards organizations, and review for acceptability or per contra the positions of other countries in related standards development and takes or recommends appropriate actions.

The mandatory requirements are designated by the word *shall* and recommendations by the word *should*. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages. The word *may* denotes an optional capability that could augment the standard. The standard is fully functional without the incorporation of this optional capability.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, PTSC, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time of consensus on this document, PTSC, which was responsible for its development, had the following leadership:

M. Dolly, PTSC Chair (AT&T)

V. Shaikh, PTSC Vice Chair (Vencore Labs)

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1 Scope, Purpose, & Application

This Technical Report (TR) describes support of National Security/Emergency Preparedness Next Generation Priority Services (NS/EP NGN-PS) based on updated 3GPP features allowing use of the Quality of Service (QoS) Class Identifier (QCI) and Allocation Retention Priority (ARP) parameters for:

1. Transport Level Packet Marking (e.g., to set DiffServ Code Point value for priority traffic), and
2. Packet Scheduling (e.g., to determine the relative priority of Service Data Flows (SDFs) and which packet to serve when the QCI Packet Delay Budget (PDB) can no longer be met for one or more SDF aggregates across all UEs).

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

[FCC 47 CFR § 64 Appendix B]	FCC Title 47 Telecommunication Appendix B to Part 64; Priority Access Service (PAS) for National Security and Emergency Preparedness (NSEP)[1]
[ATIS-1000057]	ATIS-1000057, Service Requirements for Emergency Telecommunications Service (ETS) in Next Generation Network.[2]
[ATIS-1000065]	ATIS-1000065, Emergency Telecommunications Service (ETS) Evolved Packet Core (EPC) Network Element Requirements.[2]
[ATIS-1000066]	ATIS-1000066, Emergency Telecommunications Service (ETS) Network Element Requirements for IMS-based Next Generation Network (NGN) Phase 2.
[TS 22.153]	3GPP TS 22.153, Multimedia Priority Service.[3]
[TS 23.203]	3GPP TS 23.203, Policy and charging control architecture.3
[TS 23.401]	3GPP TS 23.401, General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access.[3]
[RFC 3260]	IETF RFC 3260, New Terminology and Clarifications for Diffserv.[4]
[RFC 5865]	IETF RFC 5865, A Differentiated Services Code Point (DSCP) for Capacity-Admitted Traffic.[4]

[1] This document is available from the Electronic Code of Federal Regulations (eCFR) at < https://www.ecfr.gov/ >.

[2] This document is available from ATIS at < https://www.atis.org/docstore/default.aspx >.

[3] This document is available from the Third Generation Partnership Project (3GPP) at < http://www.3gpp.org/specifications >.

[4] This document is available from the Internet Engineering Task Force (IETF). < http://www.ietf.org >.