ATIS-1000052

BYTE COUNT REPORTING IN AN INTERNET ACCESS AND SERVICES LAES ENVIRONMENT

TECHNICAL REPORT

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ATIS-1000052, *Byte Count Reporting in an Internet Access and Services LAES Environment*

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ATIS Technical Report on

Byte Count Reporting in an Internet Access and Services LAES Environment

Alliance for Telecommunications Industry Solutions

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Abstract

The purpose of this Technical Report is to specify a byte count reporting capability that can be used in an Internet Access and Services LAES environment.

Foreword

The Alliance for Telecommunication 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-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.

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

At the time of initiation or issuance of the letter ballot for this document, PTSC, which was responsible for it's development, had the following roster:

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ATIS Technical Report on –

Byte Count Reporting in an Internet Access and Services LAES Environment

1 Scope, Purpose, & Application

ATIS-1000013.2007 [Ref 1] and ATIS-1000013.a.2009 [Ref 2] specify two methods for delivering Content Associated Communications Identifying Information (CACmII) to the LEA: the Packet Data Header Report and the Packet Data Summary Report. This TR specifies how byte count of IP packets is to be reported in a Packet Data Header Report and a Packet Data Summary Report (i.e., in addition to the other IP layer-3 and layer-4 information included in these messages) as specified in [Ref 1] and [Ref 2].

The byte count reporting capability is not intended to be a standalone capability, but rather builds on [Ref 1] and [Ref 2]. Events that trigger reporting of the Packet Data Header Report or the Packet Data Summary Report as specified in [Ref 1] and [Ref 2] shall instead trigger reporting of the Packet Data Header Report or the Packet Data Summary Report as specified in this TR.

Creation of this TR is premised upon the understanding that byte count in the Packet Data Header Report of [Ref 1] and associated supplement(s) is not currently part of the safe harbor CALEA requirements. This TR makes no representation regarding byte count information being provided pursuant to a lawful authorization that does not include a full content intercept.

Any requirements or standards language (i.e., “shall”, “should”) is used strictly in the context of ensuring that this TR is inherently sound and provides appropriate guidance to voluntary implementers.

1.1 Scope

This TR specifies LAES capability of reporting byte count in the Packet Data Header Report and Packet Data Summary Report messages in an IAS environment.

1.2 Purpose

This TR is provided as a specification of byte count reporting capability with minor modifications to [Ref 1] and [Ref 2].

1.3 Application

An Internet Access or Services Provider (IASP) currently provides byte count data as part of a full content intercept. There is an LEA need to obtain byte count information associated with an intercept subject’s electronic communications, pursuant to a lawful authorization that does not include a full content intercept (e.g., a pen-register order). The subject may have engaged in many different types of packet data sessions. Byte counts, together with other Internet Protocol (IP) header information – such as IP addresses and port numbers – could help the LEA in determining the types of sessions in which the subject was engaged to enable the LEA to focus investigations on specific sessions. Therefore, there is a need to incorporate byte count data in packet header information reported to the LEA when lawfully authorized.

2 Normative References

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

[Ref 1] ATIS-1000013.2007 *Lawfully Authorized Electronic Surveillance (LAES) for Internet Access and Services*, 2007. [1]

[Ref 2] ATIS-1000013.a.2009, *Supplement A to ATIS-1000013.2007*, January 2009.[1]

[Ref 3] IETF RFC 791, *Internet Protocol DARPA Internet Program Protocol Specification*, September 1981.[2]

[Ref 4] IETF RFC 2460, *Internet Protocol, Version 6 (IPv6) Specification*, December 1998.[2]

3 Definitions, Acronyms, & Abbreviations

3.1 Definitions

For a list of common communications terms and definitions, please visit the *ATIS Telecom Glossary*, which is located at < http://www.atis.org/glossary >.

3.1.1 Byte count: The integer value contained in the Total Length field of the IP header if the packet is IPv4 [Ref 3], or Payload Length field of the IP header if the packet is IPv6 [Ref 4].

3.1.2 Total byte count: The sum of the byte counts for all packets included in the packet count for a packet data session.

3.2 Acronyms & Abbreviations

ATIS	Alliance for Telecommunications Industry Solutions
CACmII	Content Associated Communications Identifying Information
CF	Collection Function
CmII	Communications Identifying Information
IAS	Internet Access and Services
IASP	Internet Access or Services Provider
IETF	Internet Engineering Task Force
IP	Internet Protocol
LAES	Lawfully Authorized Electronic Surveillance
LEA	Law Enforcement Agency
TR	Technical Report

[1] This document is available from the Alliance for Telecommunications Industry Solutions, 1200 G Street N.W., Suite 500, Washington, DC 20005. < http://www.atis.org >

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

4 IAS Model

The IAS model described in Clause 4.1 of [Ref 1] applies.

5 General Surveillance Model and IAS Surveillance Model

The general surveillance model described in Clause 4.2 and the IAS surveillance model described in clause 4.3 of [Ref 1] apply.

6 Byte Count Reporting Capability

The byte count reporting capability is not intended to be a standalone capability, but rather builds on [Ref 1] and [Ref 2]. When this capability is utilized, Clause 5.2.11, *Packet Data Header Report*, and Clause 5.2.12, *Packet Data Summary Report*, of [Ref 1] and including their revision in [Ref 2] and the corresponding functionality as included in any future revision shall apply.

Events that trigger reporting of the Packet Data Header Report as specified in [Ref 1] (currently in Clause 5.2.11) and as modified in any supplements to [Ref 1] as well as any successor standards, shall trigger reporting of the Packet Data Header Report with the inclusion of an additional parameter as specified in Clause 6.1 below.

Events that trigger reporting of the Packet Data Summary Report as specified in [Ref 1] (currently in Clause 5.2.12) and as modified in any supplements to [Ref 1] as well as any successor standards shall trigger reporting of the Packet Data Summary Report with the inclusion of an additional parameter as specified in Clause 6.2 below.

6.1 Packet Data Header Report

The Packet Data Header Report provides the CACmII on a per packet basis. The Packet Data Header Report is triggered by each packet of a packet stream sent or received by the intercept subject. The Header Set parameter in the *Packet Data Header Report* message as specified in [Ref 1] Clause 6.2.11 and as modified in supplements to [Ref 1] (e.g., [Ref 2]) as well as any successor standard shall include the number of bytes (byte count) that are transferred in each packet. The byte count reported is the number contained in the Total Length field of the packet header if the packet is IPv4 [Ref 3], or Payload Length field of the packet header if the packet is IPv6 [Ref 4]. The byte count is in addition to all the information that is reported in the Packet Data Header Report.

6.2 Packet Data Summary Report

The Packet Data Summary Report provides CACmII in a summarized format. The Stream Set parameter in the *Packet Data Summary Report* message as specified in [Ref 1] Clause 6.2.12 and as modified in supplements to [Ref 1] (e.g., [Ref 2]) as well as any successor standard, shall include the total byte count for a packet data session. Total byte count is the sum of the byte counts for all packets included in the packet count for a packet data session. The total byte count is in addition to all the information that is reported in the Packet Data Summary Report.

7 Byte Count Reporting Abstract Syntax Notation

7.1 Byte Count Reporting Abstract Syntax Notation - Packet Data Header Report

In conjunction with the Packet Data Header Report, the “byteCount” shall be inserted into the HeaderSet parameter as a new last entry.

```
   byteCount              [30] INTEGER           OPTIONAL
```

The following shows how the “byteCount” is inserted into the HeaderSet parameter of [Ref 2].

```
HeaderSet ::= SEQUENCE
{
   packetDataSessionID    [0] PacketDataSessionID,
   sourceIPaddress        [1] IpAddress,
   destinationIPaddress   [2] IpAddress,
   protocol               [3] INTEGER,
   sourcePortNumber       [4] INTEGER            OPTIONAL,
   destinationPortNumber  [5] INTEGER            OPTIONAL,
   iPv6FlowLabel          [6] INTEGER            OPTIONAL,
   byteCount              [30] INTEGER           OPTIONAL
}
```

The following shows how the “byteCount” is inserted into the HeaderSet parameter of [Ref 1].

```
HeaderSet ::= SEQUENCE
{
   streamID               [0] Value,
   sourceIPaddress        [1] IpAddress,
   destinationIPaddress   [2] IpAddress,
   sourcePortNumber       [3] PortNumber         OPTIONAL,
   destinationPortNumber  [4] PortNumber         OPTIONAL,
   byteCount              [30] INTEGER           OPTIONAL
}
```

7.2 Total Byte Count Reporting Abstract Syntax Notation - Packet Data Summary Report

In conjunction with Packet Data Summary Header Report, the “totalByteCount” shall be inserted into the StreamSet parameter as a new last entry.

```
   totalByteCount            [30] INTEGER        OPTIONAL
```

The following shows how the “totalByteCount” is inserted into the StreamSet parameter of [Ref 2].

```
StreamSet ::= SET OF SEQUENCE
{
   packetDataSessionID    [0] PacketDataSessionID,
   sourceIPaddress        [1] IpAddress,
   destinationIPaddress   [2] IpAddress,
   packetCount            [3] INTEGER,
   protocol               [4] INTEGER,
   sourcePortNumber       [5] INTEGER            OPTIONAL,
   destinationPortNumber  [6] INTEGER            OPTIONAL,
   iPv6FlowLabel          [7] INTEGER            OPTIONAL,
   totalByteCount         [30] INTEGER           OPTIONAL
```

```
}
```

The following shows how “totalByteCount” is inserted into the StreamSet parameter of [Ref 1].

```
StreamSet ::= SET OF SEQUENCE
{
   streamID               [0] Value,
   sourceIPaddress        [1] IpAddress,
   destinationIPaddress   [2] IpAddress,
   packetCount            [3] INTEGER,
   sourcePortNumber       [4] INTEGER            OPTIONAL,
   destinationPortNumber  [5] INTEGER            OPTIONAL,
   byteCount              [30] INTEGER           OPTIONAL
}
```