Network Working Group | Brian Bidulock
INTERNET-DRAFT | OpenSS7 Corporation
Intended status: PROPOSED STANDARD | February 3, 2007

Expires in August 2007

SS7 MTP2-User Peer-to-Peer Adaptation Layer Implementer's Guide <draft-bidulock-sigtran-m2pa-ig-01.ps>

Abstract

This Internet-Draft provides information for the Internet community on clarifications and interpretations of the text of the *SS7 MTP2-User Peer-to-Peer Adaptation Layer* [M2PA] based on working group comments and experience at interoperability events. It also provides information on specification addendum and errata -- whether of an editorial or technical nature -- discovered to the date of this document.

This document is intended as a companion document to the M2PA RFC [M2PA] to be used in the implementation of M2PA to clarify the original M2PA document.

This document updates RFC 4165 [M2PA] and text within this document supersedes the text found in RFC 4165 [M2PA].

Contents

A complete table of contents, list of illustrations, list of tables and change history for this document appears at the end of the document.

1. Introduction

This document contains a compilation of all specification addenda and errata found up until the publishing of this document for *SS7 MTP2-User Peer-to-Peer Adaptation Layer*, RFC 4165 [M2PA]. These addenda and errata may be of an editorial or technical nature. This document may be thought of as a companion document to be used in the implementation of M2PA to clarify errata and provide addenda to the original M2PA document [M2PA].

This document updates RFC 4165 [M2PA] and text within this document, where noted, supersedes the text found in RFC 4165 [M2PA]. Each error will be detailed within this document in the form of:

- The problem description.
- The text quoted from RFC 4165 [M2PA].
- The replacement text.
- A description of the solution.

1.1. Conventions

The key words "**MUST**", "**MUST NOT**", "**REQUIRED**", "**SHALL**", "**SHALL NOT**", "**SHOULD**", "**SHOULD NOT**", "**RECOMMENDED**", "**MAY**", and "**OPTIONAL**" in this document are to be interpreted as described in [RFC2119].

2. Errata, Addenda and Clarifications

2.1. Initial Sequence Number

2.1.1. Problem Statement

Although it is described in the applicable MTP2 standard, some implementers have become confused over what the initial value of the FSN and BSN should be.

2.1.2. Text Changes

2.1.2.1. Old Text (Section 4.1.3, Page 25)

None.

2.1.2.2. New Text (Section 4.1.3, Page 25, at end of page.)

```
The value of the FSN in the first Non-Empty User Data message
transmitted on an M2PA link after alignment is the same as that
described in the applicable standard (e.g. Q.703, ANSI T1.111.3),
typically zero (0).
```

2.1.3. Solution Description

The text change clarifies that the value of the initial sequence numbers is specified by the applicable standard and identifies that the value of the initial FSN is typically zero (0).

2.2. BSN when FSN Out of Order

2.2.1. Problem Statement

2.2.2. Text Changes

2.2.2.1. Old Text (Section 4.2.1, Page 30)

```
If M2PA receives a User Data message with an FSN that is out of
order, M2PA SHALL discard the message.
```

2.2.2.2. New Text (Section 4.2.1, Page 30)

```
In accordance with the applicable MTP2 standard, if M2PA receives a
User Data message with an FSN that is out of order, M2PA SHALL
discard the message.  Processing of the BSN in the discarded message
is in accordance with the applicable MTP2 standard.
```

2.2.3. Solution Description

The text change identifies that this procedure is in accordance with the applicable MTP2 standard and does not change the way that messages received with FSN out of order are handled.

2.3. LS Ready received during Proving

2.3.1. Problem Statement

If an implementation operates precisely as described in the MTP2 SDLs (e.g. Q.703/Clause 12) [Q.703] then such an M2PA link will fail to align if an "LS Ready" message is received during the Proving period and no additional "LS Ready" message is later received after proving ends.

2.3.2. Text Changes

2.3.2.1. Old Text (Section 4.1.3, Page 25)

```
The Link Status Ready message replaces the FISU of MTP2 that is sent
at the end of the proving period.  The Link Status Ready message is
used to verify that both ends have completed proving.  When M2PA
starts timer T1, it SHALL send a Link Status Ready message to its
peer in the case where MTP2 would send a FISU after proving is
complete.  If the Link Status Ready message is sent, then M2PA MAY
send additional Link Status Ready messages while timer T1 is running.
These Link Status Ready messages are sent on the Link Status stream.

In the case that MTP2 sends an MSU or SIPO message at the end of
proving, M2PA SHALL send (respectively) a User Data or Link Status
Processor Outage message.
```

2.3.2.2. New Text (Section 4.1.3, Page 25)

```
The Link Status Ready message replaces the FISU(s) of MTP2 sent at
the end of the proving period.  The Link Status Ready message is used
to verify that both ends have completed proving.  When M2PA starts
timer T1, it SHALL send a Link Status Ready message to its peer in
the case where MTP2 would send FISU(s) after proving is complete.  If
the Link Status Ready message is sent, then M2PA MAY send additional
Link Status Ready messages while timer T1 is running.  These Link
Status Ready messages are sent on the Link Status stream.

In the case that MTP2 sends an MSU or SIPO message at the end of
proving, M2PA SHALL send (respectively) a User Data or Link Status
Processor Outage message.
```

2.3.2.3. Old Text (Section 4, Page 19)

None.

2.3.2.4. New Text (Section 4, Page 19, 4th Paragraph)

```
As they contain errors that impede interoperability of M2PA
implementations, M2PA SHOULD NOT follow precisely in implementation
the SDLs described in Clause 12 of the applicable MTP2 standards.
```

2.3.3. Solution Description

The first text change more clearly identifies that the single transmission of a "Link Status Ready" message replaces the possibly multiple repeated FISU(s) sent at the end of the proving period in MTP2.

It is not within the scope of the document to dictate implementation; however, strictly following the SDLs of Q.703/Clause 12 [Q.703] or ANSI T1.111.3 [T1.111] will result in an implementation that does not function in the second respect (MSU sent at the end of proving), even though there is a test case for same in Q.781 [Q.781] and M2PA validation tests [M2PATEST]. Anyone not heeding the the statements at the beginning of Clause 12 in the MTP2 standards, and using the SDLs directly for implementation might fail to create a fully interoperable implementation. The second text change identifies this interoperability concern.

Security Considerations

There are no security considerations for this draft.

IANA Considerations

There are no IANA considerations for this draft.

0. Change History

This section provides historical information on the changes made to this draft. This section will be removed from the document when the document is finalized.

0.1. Changes from Version 0.0 to Version 0.1

- updated boilerplate and to idnits-2.00.1.
- updated references, version numbers and dates.

0.0. Version 0.0

The initial version of this document representing the three items from Jeffrey Craig's document upon which consensus could be reached.

0.0.0. Change Log

```
$Log: draft-bidulock-sigtran-m2pa-ig-01.me,v $
Revision 0.9.2.1  2007/02/03 15:47:14  brian
- added new drafts

Revision 0.9.2.1  2006/07/11 22:56:23  brian
- initial version of M2PA IG replacement draft
```

Normative References

[**RFC2119**] Bradner, S., *“Key words for use in RFCs to Indicate Requirement Levels,”* **BCP 14/RFC 2119**, The Internet Society (March 1997). **<http://www.ietf.org/rfc/rfc2119.txt>**

[**M2PA**] George, T., Bidulock, B., Dantu, R., Schwarzbauer, H. J. and Morneault, K., *“Signaling System 7 (SS7) Message Transfer Part 2 (MTP2)-User Peer-to-Peer Adaptation Layer (M2PA),”* **RFC 4165**, The Internet Society (September 2005). *(Status: PROPOSED STANDARD)* **<http://www.ietf.org/rfc/rfc4165.txt>**

Informative References

[**Q.703**] ITU, *“Signalling System No. 7 — Signalling Link,”* **ITU-T Recommendation Q.703**, ITU-T Telecommunication Standardization Sector of ITU, Geneva (March 1993). *(Previously "CCITT Recommendation")*

[**T1.111**] ANSI, *“Signalling System No. 7 — Message Transfer Part,”* **ANSI T1.111**, American National Standards Institute (1992).

[**Q.781**] ITU, *“Signalling System No. 7 — MTP Level 2 Test Specification,”* **ITU-T Recommendation Q.781**, ITU-T Telecommunication Standardization Sector of ITU, Geneva (March 1993). *(Previously "CCITT Recommendation")*

[**M2PATEST**] Bidulock, B., *“SS7 MTP2-User Peer-to-Peer Adaptation Layer — Test Specifications,”* **draft-bidulock-sigtran-m2pa-test-08.txt**, Internet Engineering Task Force — Signalling Transport Working Group (February 3, 2007). *Work In Progress.* **<http://www.ietf.org/internet-drafts/draft-bidulock-sigtran-m2pa-test-08.txt>**

Acknowledgements

The author would like to thank Andrew Booth, Jeffrey Craig, Mark Davidson, Mark Erickson, Tom George, Michael Tuexen, for their valuable comments and suggestions.

Author’s Addresses

Brian Bidulock
OpenSS7 Corporation
1469 Jeffreys Crescent
Edmonton, AB T6L 6T1
Canada

Phone: +1-780-490-1141
Email: bidulock@openss7.org
URL: http//www.openss7.org/

This draft expires August 2007.

Table of Contents

Intellectual Property

Disclaimer of Validity

Full Copyright Statement

Acknowledgement

Funding for the RFC Editor function is currently provided by the Internet Society.