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AERONAUTICAL TELECOMMUNICATIONS NETWORK PANEL(ATNP)

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WG3 Agenda Item 5.3 : Briefing on Potential Defect Reports and CCB working

CCB Agenda Item 5 : Review of Outstanding Defect Reports

Summary of ATSMHS PDRs

Presented by Jean-Marc Vacher (Sub-Volume 3 SME)

Summary

This paper proposes a list of PDRs which have been submitted against the ATSMHS SARPs (Sub-Volume 3, Part 1) since the ATNP WG/1 meeting.

These PDRs have been collected by the SME from different sources, and will be formally submitted to the CCB when its associated procedures and tools become fully operational.

Title: use of implicit-conversion flag and EITs
PDR Reference:
Originator Reference:
SARPs Document Reference: ATSMHS 3.1.2.3.5.2.1
Status: SUBMITTED
PDR Revision Date: <dd/mm/yy>
PDR Submission Date:<dd/mm/yy>
Submitting State/Organization: SITA
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Submitting Author Supplemental Contact Information:
SARPs Date: ICAO version 1.1 (Phuket output)
SARPs Language:
Summary of Defect:

Initially, the ATSMHS SARPs specified that AFTN/AMHS Gateways should only convey IA5 Text messages in the direction AMHS to AFTN. SG1 subsequently agreed to update the draft ATSMHS SARPs such that both ISO 646 and optionally ISO 8859-1 text messages should also be conveyed by AFTN/AMHS Gateways.

Unfortunately, the result of the SARPs update is incomplete in the following areas:

- a. The *implicit-conversion-prohibited per-message-flag*, if set to *prohibited*, should only cause the message to be rejected by the AFTN/AMHS Gateway if, and only if, the EITs indicate that the message contains an ISO 8859-1 text bodypart (including the ATS-Message-Text).
- b. The list of "acceptable" EITs should be those corresponding to the following body part types: IA5 Text (either basic and externally-defined), General Text (externally-defined - ISO 646), and optionally General Text (externally-defined - ISO 8859-1).

Assigned SME: Sub-Volume 3 SME
Proposed SARPs amendment: see following pages
SME Recommendation to CCB: <resolve, reject, forward>
CCB Decision:

3.1.2.3.5.2.1. Initial processing of AMHS Messages

3.1.2.3.5.2.1.1. Upon reception by the Message Transfer and Control Unit of an IPM conveyed with a Message Transfer Envelope, the received message shall be processed in one of the following manners:

- a) processing as specified in 3.1.2.3.5.2.1.2 if the abstract-value of the *implicit-conversion-prohibited* in the *per-message-indicators* element in the Message Transfer Envelope differs from "prohibited"; or
- b) if the abstract-value of the element is "prohibited" and if the abstract-value of the encoded-information-type is both OID {id-cs-eit-authority 6} and OID {id-cs-eit-authority 100}:
 - 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "conversion-not-performed" for the *non-delivery-reason-code*;
 - ii) "implicit-conversion-prohibited" for the *non-delivery-diagnostic-code*; and
 - iii) "unable to convert to AFTN" for the *supplementary-information*.

3.1.2.3.5.2.1.2. A message which was not rejected as the result of 3.1.2.3.5.2.1.1 shall be processed in one of the following manners, depending on the abstract-value of the current encoded-information-types, determined as either the abstract-value of the latest *converted-encoded-information-types*, if existing, in the *trace-information* element, or as the abstract-value of the *original-encoded-information-types* element if the previous does not exist:

- a) processing as specified in 3.1.2.3.5.2.1.3 if the abstract-value of the ~~current~~ encoded-information-types is either is basic "ia5-text", or ~~or~~ externally-defined extended "ia5-text", or both OID {id-cs-eit-authority 6} and OID {id-cs-eit-authority 100}; or
- b) if the abstract-value ~~differs from~~ is neither basic built-in "ia5-text", nor and from externally-defined extended "ia5-text" nor both OID {id-cs-eit-authority 6} and OID {id-cs-eit-authority 100}:
 - 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "unable-to-transfer" for the *non-delivery-reason-code*; and
 - ii) "encoded-information-types-unsupported" for the *non-delivery-diagnostic-code*.

3.1.2.3.5.2.1.3. A message which was not rejected as the result of 3.1.2.3.5.2.1.2 shall be processed in one of the following manners:

- a) processing as specified in 3.1.2.3.5.2.1.4 if there is one single body part in the IPM body; or
- b) if there are multiple body parts in the IPM body:
 - 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "unable-to-transfer" for the *non-delivery-reason-code*;
 - ii) "content-syntax-error" for the *non-delivery-diagnostic-code*; and
 - iii) "unable to convert to AFTN due to multiple body parts" for the *supplementary-information*.

3.1.2.3.5.2.1.4. A message which was not rejected as the result of 3.1.2.3.5.2.1.3 shall be processed in one of the following manners:

- a) processing as specified in 3.1.2.3.5.2.1.5 if the body part type is one of the following:
- 1) a basic body part type "ia5-text";
 - 2) a standard extended body part type "ia5-text-body-part";
 - 3) a standard extended body part type "general-text-body-part" of which the repertoire set description is Basic (ISO 646);
 - 4) a standard extended body part type "general-text-body-part" of which the repertoire set description is Basic-1 (ISO 8859-1), if and only if the local policy of the AMHS Management Domain is to support the conversion of this repertoire set into IA5IRV characters according to locally defined conversion rules;
 - 5) a basic body part type "message" with the body part types of the innermost IPM being one of the body part types 1) to 4) above; or
 - 6) a standard extended body part type "message-body-part" with the body part types of the innermost IPM being one of the body part types 1) to 4) above; or
- b) if the body part type is different from the body part types 1) to 6) under a) above, or if the local policy of the AMHS Management Domain is not to support the conversion of the ISO 8859-1 repertoire set:
- 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "unable-to-transfer" for the *non-delivery-reason-code*;
 - ii) "content-syntax-error" for the *non-delivery-diagnostic-code*; and
 - iii) "unable to convert to AFTN due to unsupported body part type" for the *supplementary-information*.

Note.- The locally defined conversion rules mentioned in bullet 4), item a) may be for example CCITT Recommendation X.408.

3.1.2.3.5.2.1.5. A message not rejected as the result of 3.1.2.3.5.2.1.4 shall then be processed in one of the following manners:

- a) processing as specified in 3.1.2.3.5.2.1.6 if the text structure in the body part in the body part complies with the requirements of 3.1.2.2.3.2; or
- b) if the text structure does not comply with the requirements of 3.1.2.2.3.2:
 - 1) rejection of the message for all the message recipients; and

- 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "unable-to-transfer" for the *non-delivery-reason-code*;
 - ii) "content-syntax-error" for the *non-delivery-diagnostic-code*; and
 - iii) "unable to convert to AFTN due to ATS-Message-Header syntax error" for the *supplementary-information*.

Note.- The compliance requested to meet the condition of item b) includes the requirement that the element is present and has a value which is syntactically valid for the priority indicator, i.e. a value among SS, DD, FF, GG and KK, and for the filing time, i.e. a value in which the first six figures in the sequence build a valid date-time group.

3.1.2.3.5.2.1.6. A message which was not rejected as the result of 3.1.2.3.5.2.1.5 shall be processed in one of five mutually exclusive manners:

- a) processing as specified in 3.1.2.3.5.2.1.7 if the abstract-value of the *conversion-with-loss-prohibited* element in the *extensions* of the per message fields is "allowed";
- b) if the abstract-value of the element *conversion-with-loss-prohibited* is "prohibited" and at least one line in the message exceeds 69 characters:
 - 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "conversion-not-performed" for the *non-delivery-reason-code*; and
 - ii) "line-too-long" for the *non-delivery-diagnostic-code*;
- c) if the abstract-value of the element *conversion-with-loss-prohibited* is "prohibited" and at least one punctuation symbol in the text is not authorized in Annex 10, Volume II, 4.1.2:
 - 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "conversion-not-performed" for the *non-delivery-reason-code*; and
 - ii) "punctuation-symbol-loss" for the *non-delivery-diagnostic-code*;
- d) if the abstract-value of the element *conversion-with-loss-prohibited* is "prohibited" and at least one alphabetical character in the text is not authorized in Annex 10, Volume II, 4.1.2:
 - 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "conversion-not-performed" for the *non-delivery-reason-code*; and
 - ii) "alphabetical-character-loss" for the *non-delivery-diagnostic-code*; or
- e) if several of the conditions under b) to d) above are simultaneously met:
 - 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:

- i) "conversion-not-performed" for the *non-delivery-reason-code*; and
- ii) "multiple-information-loss" for the *non-delivery-diagnostic-code*.

3.1.2.3.5.2.1.7. A message which was not rejected as the result of 3.1.2.3.5.2.1.6 shall be processed in one of three mutually exclusive manners:

- a) if the length of the ATS-Message-Text element exceeds 1800 characters, and if, due to system resource limitation, the procedure proposed in Annex 10, Volume II, Attachment D cannot be properly achieved by the AFTN/AMHS Gateway:
 - 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "unable-to-transfer" for the *non-delivery-reason-code*;
 - ii) "content-too-long" for the *non-delivery-diagnostic-code*; and
 - iii) "unable to convert to AFTN due to message text length" for the *supplementary-information*.

- b) if the length of the ATS-Message-Text element exceeds 1800 characters, and if the procedure proposed in Annex 10, Volume II, Attachment D is applied in the AFTN/AMHS Gateway:
 - 1) splitting of the message, internally to the Message Transfer and Control Unit, into several messages in accordance with the aforementioned Annex 10 procedure:
 - i) each of the resulting messages having for conversion purposes the same Message Transfer Envelope, the same IPM Heading and the ATS-Message-Header as the message subject to the splitting; and
 - ii) only the ATS-Message-Text element varying between the different resulting messages; and
 - 2) processing of each of these messages as specified in 3.1.2.3.5.2.1.8; or
- c) processing as specified in 3.1.2.3.5.2.1.8 if the length of the ATS-Message-Text element does not exceed 1800 characters.

3.1.2.3.5.2.1.8. A message resulting from the situations in items b) and c) of 3.1.2.3.5.2.1.7 above shall be processed in one of three manners, depending on the number of message recipients towards which the Message Transfer and Control Unit is responsible for conveyance of the message, and on the AFTN/AMHS Gateway resources:

- a) if this number exceeds 21 message recipients:
 - 1) attempt to split the message, internally to the Message Transfer and Control Unit, into several messages, each of them with no more than 21 message recipients:
 - i) each of the resulting messages having for conversion purposes the same *per-message-fields* in the Message Transfer Envelope, and the same *content* as the message subject to the splitting; and
 - ii) only the *per-recipient-fields* elements in the Message Transfer Envelope varying between the different resulting messages; and
 - 2) processing of each of these messages as specified in 3.1.2.3.5.2.2 to 3.1.2.3.5.2.4;
- b) if this number exceeds 21 message recipients, and if, due to system resource limitation, the splitting attempt made by the gateway as specified in item a) above cannot be properly achieved:
 - 1) rejection of the message for all the message recipients; and
 - 2) generation of a non-delivery report as specified in 3.1.2.3.5.6 with the following elements taking the following abstract-values in all the *per-recipient-fields* of the report:
 - i) "unable-to-transfer" for the *non-delivery-reason-code*;
 - ii) "too-many-recipients" for the *non-delivery-diagnostic-code*; and

- iii) "unable to convert to AFTN due to number of recipients" for the *supplementary-information*; or
- c) processing as specified in 3.1.2.3.5.2.2 to 3.1.2.3.5.2.4, if this number does not exceed 21 message recipients.

Note 1.- In the processing defined in item a), the per-recipient-fields related to a particular recipient remain unchanged by the splitting. This applies in particular to the originally-specified-recipient-number, which is not altered by the processing specified in this clause.

Note 2.- The combination of 3.1.2.3.5.2.1.7 and 3.1.2.3.5.2.1.8 above may result in a very high number of AFTN messages being generated from one single AMHS message. Items 3.1.2.3.5.2.1.7 a) and 3.1.2.3.5.2.1.8 b) may, as a local matter, be used under such circumstances.

Title: conversion of forwarded IPMs

PDR Reference:

Originator Reference:

SARPs Document Reference: Sections 3.1.2.3.5.2.1.4, Table 3.1.2-11/Part 3/8.2, 3.1.2.3.5.2.3.4

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SARPs Date: ICAO version 1.1 (Phuket output)

SARPs Language:

Summary of Defect:

An AMHS/AFTN Gateway should reject an incoming IPM (nested) Forwarded message since the concept of AFTN (nested) Forwarded Messages does NOT exist.

To illustrate the comment above, the following scenario may be considered:

Direct User DU1 sends an IPM to Direct User DU2. DU2 forwards it to Direct User DU3 who in turn forwards it to Indirect User IU1 via an AFTN/AMHS Gateway. Since the AFTN/AMHS Gateway generates the AFTN *Originator Indicator* and *Addressee Indicator* from the *originator-name* and the *recipient-name* fields on the AMHS Message envelope respectively, the AFTN user corresponding to IU1 will consider the message to be directly from the AFTN user corresponding to DU3 since the AFTN Message will NOT contain any information concerning the DU1/DU2 and DU2/DU3 message exchanges.

Assigned SME: Sub-Volume 3 SME

Proposed SARPs amendment:

SME Recommendation to CCB: <resolve, reject, forward>

CCB Decision:

Title: MHS priority and ATS-Message-priority mismatch

PDR Reference:

Originator Reference:

SARPs Document Reference: ATSMHS Section 3.1.2.3.4.3.4.3

Status: SUBMITTED

PDR Revision Date: <dd/mm/yy>

PDR Submission Date:<dd/mm/yy>

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SARPs Date: ICAO version 1.1 (Phuket output)

SARPs Language:

Summary of Defect:

The priority element of an AMHS Message generated at a commercial UA is able to take the value <<urgent>> not only if the value of the priority-indicator in the “ATS-Message-Priority” is ‘SS’ but in any another case. That means that it exists the possibility of receiving an incoming AMHS message with the “ATS-Message- Priority” element set to ‘SS’ and the “MHS priority” set to a different value of ‘urgent’. There are neither provisions envisaged in the SARP nor recommendations in the Guidance Material about the actions to be performed by the AFTN/AMHS Gateway in such a situation.

Besides, it exists a special behaviour in the following situation: a IPM message is generated by a direct user with the “ATS-Message-Priority” set to ‘SS’, the “MHS priority” set to a different value of ‘urgent’. Also, this subject IPM is able to have activated or not the ‘receipt-notification-request’ element. They can be found the following cases:

- If the ‘receipt-notification-request’ was activated, according to the SARP (3.1.2.3.4.3.4.3), the priority of the ‘RN’ generated shall be the same of the subject IPM. In this case, it would be different from ‘urgent’.
- If the ‘receipt-notification-request’ was not activated, according to the SARP (3.1.2.3.4.3.1.5), the priority of the IPM conveyed would be in accordance with the “ATS-Message-Priority” of the AFTN acknowledgement message. In this case, this “MHS priority” shall be ‘urgent’ although the “MHS priority” of the subject IPM was setted to a different value of ‘urgent’.

Assigned SME: Sub-Volume 3 SME

Proposed SARPs amendment:

- Include in the SARPs and/or in the Guidance Material which should be the AFTN/AMHS Gateway behaviour when receiving and IPM message with the “ATS-Message- Priority” element set to ‘SS’ and the “MHS priority” set to a different value of ‘urgent’.
- Change the text referred to the clause 3.1.2.3.4.3.4.3 of the ATSMHS SARP: “The element priority shall take the same value as that of the subject IPM” for the following text: “The element priority shall always take the value urgent”. Include this case in the Guidance Material (2.3.5.3.3.3 paragraph).

SME Recommendation to CCB: <resolve, reject, forward>

CCB Decision:

Title: prohibited character check in converted AMHS messages

PDR Reference:

Originator Reference:

SARPs Document Reference: ATSMHS Section 3.1.2.3.5.2.2.9

Status: SUBMITTED

PDR Revision Date: <dd/mm/yy>

PDR Submission Date:<dd/mm/yy>

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SARPs Date: ICAO version 1.1 (Phuket output)

SARPs Language:

Summary of Defect:

Related to the conversion of each character which is not in the IA5IRV character repertoire into an IA5IRV character according to the locally defined conversion rules that is automatically performed by the commercial APIs, it would be taken into consideration:

- The possibility of receiving within the text of IPM message characters or character sequences not authorized in Annex 10, Volume II, 4.1.2 (i.e., 'ZCZC' sequence...) is very low.
- Besides, this activity would dramatically decrease the general system performance due to an exhausted checking of the text of the converted AFTN message, character by character, would have to be implemented.

Would this decrease of the system performance compensate the remote possibility of occurring those forbidden characters or character sequences in the text ?.

Assigned SME: Sub-Volume 3 SME

Proposed SARPs amendment:

Delete the c) item of this paragraph (3.1.2.3.5.2.2.9) in the SARP. This clause could be maintained as a recommendation in the Guidance Material.

SME Recommendation to CCB: <resolve, reject, forward>

CCB Decision:

Title: Erroneous Cross-references to Sub-Volume 5

PDR Reference:

Originator Reference:

SARPs Document Reference: ATSMHS Sections Section 3.1.2.1.5.2.3, 3.1.2.2.2.1.2.1 and 3.1.2.2.2.1.2.4

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SARPs Date: ICAO version 1.1 (Phuket output)

SARPs Language:

Summary of Defect:

The cross-references to sections 5.5.4, 5.5.5 and 5.5.6 of the SARPs (Sub-Volume 5) should be 5.4, 5.5 and 5.6, respectively.

Assigned SME: Sub-Volume 3 SME

Proposed SARPs amendment:

3.1.2.1.5.2.3 Transport, Session and Presentation Addresses

The TSAP (Transport Service Access Point) of an ATS Message Server or of an ATS Message User Agent shall comply with the provisions of ~~5.5.4~~ 5.4.

[...]

3.1.2.2.2.1.2.1. The Basic ATS Message Service shall make use of the Connection Mode Transport Service as specified in ~~5.5.5~~ 5.5.

[...]

3.1.2.2.2.1.2.4. For the support of the Basic ATS Message Service, transport connections shall be established over the ATN Transport Service between systems belonging to the AMHS using the value of the ATN Security Label as specified in ~~5.65.5.6~~, which corresponds to:

- a) the ATN Traffic Type "ATN Operational Communications";
- b) the Sub-Type "Air Traffic Services Communications" (ATSC); and

c) "No Traffic Type Policy Preference".

SME Recommendation to CCB: <resolve, reject, forward>

CCB Decision:

Title: Recommendation on report generation

PDR Reference:

Originator Reference:

SARPs Document Reference: ATSMHS Sections 3.1.2.3.5.6.1.1 and 3.1.2.3.5.6.1.2

Status: SUBMITTED

PDR Revision Date: <dd/mm/yy>

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SARPs Date: ICAO version 1.1 (Phuket output)

SARPs Language:

Summary of Defect:

The recommendation is ambiguous, since it applies only to reports generated at the gateway resulting from a message (or probe) rejection at the gateway itself, but not to reports converted from unknown addressee AFTN service messages.

In other terms, the recommendation applies only to item a) of clause 3.1.2.3.5.6.1.1.

Assigned SME: Sub-Volume 3 SME

Proposed SARPs amendment:

eliminate any ambiguity by the following changes:

3.1.2.3.5.6.1.1. A non-delivery report shall be generated by the Message Transfer and Control Unit:

- a) for each message or probe which was rejected at the AFTN/AMHS Gateway, as the result of the procedures described in 3.1.2.3.5.1.1, 3.1.2.3.5.1.4, 3.1.2.3.5.2 and 3.1.2.3.5.5, either for all the recipients or for certain recipients; and
- b) as the result of the conversion of an unknown address AFTN service message, as specified in 3.1.2.3.4.4.1.6.

3.1.2.3.5.6.1.2. **Recommendation.**- *When the generation of a non-delivery report is required in relation with the rejection at the AFTN/AMHS Gateway of the subject AMHS message for more than one recipient of the subject AMHS message, a single non-delivery report should be generated to report on the rejection for multiple recipients, using several per-recipient-fields elements in the Report Transfer Content.*

SME Recommendation to CCB: <resolve, reject, forward>

CCB Decision: