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ACCESS

ATN Compliant Communications
European Strategy Study

AFTN/AMHS IUT Conformance Testing Specification

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DOCUMENT CONTROL LOG

Revision Number	Date	Description of Change
0.1	28 October 1998	first draft giving complete test list and a sample test specification
0.2	December 1998	second draft, taking into account the comments of M Vacher (STNA) of 5th November and adding explanatory text, test PDUs and incorporating test specifications supplied by NATS.
0.3	11 January, 1999 & 3 February, 1999	third draft, including amendments and detailed comments by JMVacher and appropriate completions by Robert Willmott (all identified by revision marks)
1.0	12 February 1999	minor editorial adaptions and creation of final version by TBelitz (DFS)

EXECUTIVE SUMMARY

The motivation, strategy options and recommended approach for performing conformance tests on implementations of the AFTN/AMHS IUT are described in ACCESS WP270, ”AFTN/AMHS IUT Conformance Testing Requirements”. One of the tasks to be performed is to define the conformance tests themselves.

This document contains the two deliverables of Work Package 271:

- The list of the conformance tests proposes a description of each test with a high level definition to give the general purpose of a given test. This list should facilitate the execution of the tests as well as the analysis of the test results.
- The specification of the conformance tests implies the accurate description of the test itself by showing the role of each functional element of the test configuration. Each object used to perform the test is presented as well as its behaviour during the test execution. Finally the expected results are given.

The following sections specify tests of an MHS IUT - the Implementation Under Test (IUT). These tests have been identified from the SARPS using the following procedure:

- Identifying all requirements (i.e. identifying all uses of the words ‘shall’ and ‘should’);
- Eliminating all ‘shall’ and ‘should’ statements which are ‘configuration’ statements;
- Eliminating all ‘shall’ and ‘should’ statements which should be tested during formal ISP or AFTN conformance testing which do not contain an AFTN/AMHS IUT component;
- Eliminating all statements which apply to internal interfaces within the IUT - these are implicitly un-testable;
- Eliminating all other statements that cannot be tested by formal conformance testing.
- Tests for the remaining requirements have been combined where reasonably possible to reduce the number of tests. They have then been related to the following sets of tests, each initiated by generation of either an AMHS or an AFTN PDU.

The format of each test will specify:

- The selection of reference PDU elements to be used to initiate the test and specification of modifications or changes to specific field values to the reference PDU required to perform the test;
- The sequence of events required for a valid outcome - i.e. where the IUT is judged to conform to the tested requirement;
- Specification of AMHS and AFTN PDUs which should be generated as a result of the test (by reference to those specified in the annexes to this document);
- Specification of the resultant log contents;
- Specification of any errors which should appear at the IUT’s control position.

TABLE OF CONTENTS

1. Introduction

1.1. Scope

This document is one of the deliverables of Phase 2, Part 2 of the ACCESS project Phase 2, Part 2 is being performed under the title of ”interoperability testing” of implementations of AMHS components - see [A260] for an overview of the overall approach and strategy. The ACCESS Consortium has decided to include some work in this part which is of a somewhat different nature and which cannot, strictly speaking, be classed as interoperability testing.

The scope of this document is restricted to the conformance testing of implementations of the AFTN/AMHS IUT as specified in [ICAO1]. The goals and results expected from the conformance testing activity and requirements placed on it are described in [A270]. One of the activities defined there is the specification of the conformance tests themselves, the scope of this document.

1.2. Purpose of Document

The purpose of the document is to specify the conformance tests of the AFTN/AMHS IUT in the context of the approach defined in [A270] to a sufficient level of detail so that conformance tests can be performed without ambiguity-

1.3. Document Structure

Following this introduction, the document consists of two major sections:

AFTN/AMHS IUT Conformance Test List, and

The Conformance Test Specifications

In a further section, components common to more than one of the tests are specified.

1.4. References

Reference	Title
[ICAO1]	ICAO, Aeronautical Telecommunications Network (ATN), Standards and Recommended Practices (SARPs), Sub-Volume 3, Ground-Ground Applications, Version 2.2, January 1998
[ICAO2]	Guidance Material on [ICAO1]
[Axxx]	ACCESS Deliverable WPxxx
[NATS1]	Infrastructure Programmes - Ground Communications Services – AMHS/AFTN IUT tests.

1.5. Glossary

ACCESS	ATN Compliant Communications European Strategy Study
AFTN	Aeronautical Fixed Telecommunications Network
AMHS	ATS Message Handling System
ATN	Aeronautical Telecommunications Network
ATS	Air Traffic Services

ATSMHS	Air Traffic Services Message Handling Services
IPM	Interpersonal Message
IUT	Implementation Under Test
UA	User Agent

2. ATSMHS/AFTN IUT Tests

2.1. Test Identification

Each test is identified by a reference with the following format CT-GW-XX

- CT - Conformance Test
- GW - IUT
- XX - Test number.

The tests are run under the conformance test scenarios described in [A270].

2.2. Control Position tests

2.0.1. Error Reporting to the control position

Error Reporting is considered to be tested in later sections as an outcome of other tests.
IPM UA Requirements of the IUT: The Control Position part of the IUT should undergo tests for ISP conformance (i.e. to be able to originate IPMs). The Control Position should also be tested for the generation of RNs and NRNs.

2.0.1.1. AFTN Service message and channel check PDU suppression

2.0.2. AFTN Service Message and Channel Check Suppression

CT-GW- 1

Description:	The tester generates a stream of AFTN channel check PDUs and a selection of all other types of AFTN service messages except end-to-end acknowledgement service messages and end-to-end unknown addressee service messages in the absence of any other messaging activity.
Expected results	If **any** AMHS message results, the IUT should fail; otherwise the IUT passes.

2.0.2.1.AFTN to AMHS Message Conversions

2.0.3. Convert an SS priority IA5 text message with an XF-address mapping and ATS optional heading information

CT-GW- 2

Test Type: Incoming valid IA5 AFTN message

Description: The tester submits an AFTN message to the IUT AFTN interface with the following parameters:

- An IA5 text;
- An ATS priority of *SS*;
- The originator's AFTN address with an XF address equivalent;
- the recipient's AFTN address with an XF address equivalent;
- Optional Heading Information = *ABCDE*;

Expected results: IUT generates a valid AMHS IPM message with the following envelope parameters:

- MTS envelope priority of *urgent*;
- the correct recipient's OR-address;
- correct originator's OR-address;
- the element originally-specified-recipient-number generated by the IUT is set to the correct value dependent on the number of recipients specified in the test message;
- original-encoded-information-type should hold the value *ia5-text* which is a value of type BuiltInEncodeInformationTypes;
- content-type should hold the value *Interpersonal-Messaging-1984* which is a value of type BuiltInContentTypes;
- content-identifier and content-correlator should be present/absent depending on local policy;
- The per-domain-bilateral-information, if present, should be structured as follows:

  per-domain-bilateral-information;

  country-name;

  administrative-domain-name;

  private-domain-identifier;

  bilateral-information;

- responsibility of the per-recipient-indicators in each of the per-recipient-fields is set to *responsible;*
- originating-MTA-report-request of the per-recipient-indicators in each of the per-recipient-fields is set to *non-delivery-report;*
- originator-report-request of the per-recipient-indicators in each of the per-recipient-fields is set to *non-delivery-report;*
- global-domain-identifier of the MTS-identifier holds the identity of the AMHS Management Domain within which the IUT is

operating. This should be structured as follows:

global-domain-identifier;

country-name;

administrative-domain-name;

private-domain-identifier;

- local-identifier in the MTS-identifier is correctly formatted;
- country-name of the MTS-identifier, trace information and internal trace information on the Message Transfer Envelope are correctly formatted;
- ADMD-name of the MTS-identifier, trace information and internal trace information on the Message Transfer Envelope are correctly formatted;
- PRMD-name of the MTS-identifier, trace information and internal trace information on the Message Transfer Envelope are correctly formatted;
- mta-name of the trace-information and internal-trace-information holds the value assigned to the IUT;
- disclosure-of-other-recipients is set to *disclosure-of-other-recipients-prohibited;*
- implicit-conversion-prohibited is set to *implicit-conversion-allowed;*
- alternate-recipient-allowed is set to *alternate-recipient-allowed;*
- content-return-request is set to *content-return-not-requested;*
- bilateral-information element is implemented according to local policy and agreement between the MD operating the IUT and other AMHS MD. A bilateral-information element should be present or absent depending on locally defined policies;
- the arrival-time element holds the value of the time at which the message arrived at the IUT for conversion;
- the routing-action of the trace-information and internal-trace-information holds the value *relayed;*

IPM Checks:

- the ATS-Message-Priority is set to *SS*;
- the IPM is a single IA5 text AFTN message content carrying an IA5 encoded version of the AFTN messages content;
- the ATS-Message-Filing-Time element of the IPM for the resulting AMHS should hold the same value as the filing time of the original AFTN message;
- the AFTN Optional Heading info is present in the AMHS ATS-Message-Optional-Heading-Information;
- the originator address should take the form of a formal-name and should hold the address of the indirect AMHS user, converted into AMHS format;
- the recipient address should take the form of a formal-name and

should hold the address of the recipients (direct or indirect), in AMHS format;

- the repertoire field should hold the value *ia5;*
- the primary recipients IPM field should hold the address of the recipients (direct or indirect), in AMHS format;
- the notification-request should be set to request rn and nrn;
- the user in the this-IPM field is set to the address of the indirect AMHS originator with the address in MF-address format;

IUT output AFTN PDUs: None.

IUT error reports: None.

Logs:

- the incoming AFTN message;
- the outgoing AMHS message;

2.0.4. Convert valid ITA-2 text message

CT-GW- 3

Test Type: Incoming valid ITA-2 AFTN message with Priority DD, an originator AF-address mapping to an MF-Address, and a recipient AF-address mapping to an MF-Address.

Description: The tester presents the IUT with the following parameters:

- an AFTN message with ITA2 text;
- *DD* priority;
- an originator AFTN address with an MF-Address equivalent in the IUT tables;
- a recipient address with an MF-address equivalent in the IUT tables.

Expected Results: The IUT should generate an AMHS messages with the following characteristics:

- an AFTN message with ITA2 encoding;
- AMHS Message Transfer Envelope priority set to *normal*;
- AMHS ATS-Message-Priority-Indicator set to *DD*;
- The originator and recipient's address should be take their MF-address values as configured in the IUT's;
- There should be no ATS-Message-Optional-Heading-Information present in the ATS AMHS message.

No AFTN messages should be generated.

No error reports should be generated.

Logs:

- the incoming AFTN message;
- the outgoing AMHS message.

2.0.5. Convert valid message with priority *FF*

CT-GW-4

Test Type: Incoming AFTN message with priority FF addressed to one recipient with an XF-Address, and another with a non-XF–Address.

Description: The tester presents the IUT with the following parameters:

- an AFTN message with ITA2 encoding;
- *FF* priority;
- originator AFTN address with an MF-Address equivalent in the IUT tables;
- a recipient address with an MF-address equivalent in the IUT tables;
- another recipient address with an XF-address equivalent in the IUT tables.

Expected Results: The IUT should generate AMHS message having the following characteristics:

- the text converted to IA5 characters;
- AMHS Message Transfer Envelope priority set to *normal*;
- AMHS ATS-Message-Priority-Indicator set to *FF*;
- Two addressees, one MF address equivalent, and one XF equivalent to the two presented in the AFTN message.

2.0.6. Convert valid message with priority *GG*

CT-GW- 5

Test Type: Incoming AFTN message with priority 'GG'

Description: The tester presents the IUT with the following parameters:

- an AFTN message with ITA2 encoding;
- *GG* priority;
- originator AFTN address with an MF-Address equivalent in the IUT tables;
- recipient AFTN address with an MF-Address equivalent in the IUT tables;

Expected Results: The IUT should generate an AMHS message having the following characteristics:

- AMHS Message Transfer Envelope priority set to *Non-Urgent;*
- ATS-Message-Priority-Indicator set to *GG;*
- Correctly translated originator and recipient addresses.

2.0.7. AFTN message with priority *KK*

CT-GW- 6

Test Type: Incoming AFTN message with priority KK

Description: The tester presents the IUT with the following parameters:

- an AFTN message with ITA2 encoding;
- *KK* priority;
- originator AFTN address with an MF-Address equivalent in the IUT tables;
- recipient AFTN address with an MF-Address equivalent in the IUT tables;

Expected Results: The IUT should generate an AMHS message having the following characteristics:

- AMHS Message Transfer Envelope priority set to *non-urgent*;
- ATS-Message-Priority-Indicator set to *KK*;
- Correctly translated originator and recipient addresses.

2.0.7.1. Invalid AFTN messages

2.5.1. Invalid AF address (i.e. not configured in the IUT)

CT-GW- 7

Test Type: The AFTN message contains an invalid AF address (i.e. no equivalent is configured for it configured in the IUT address mapping tables)

Description: The tester presents the IUT with the following parameters:

- an AFTN message with ITA2 encoding;
- *KK* priority;
- originator AFTN address with no equivalent AMHS XF nor MF OR-addresses configured in the IUT's tables.

Expected Results: The IUT should report the error to the control position with a copy of the AFTN message.

2.6. AFTN Message Acknowledgement Conversion

2.6.1. AFTN Acknowledgement Message with subject RN requested

CT-GW- 8

Test Type: This test verifies that the IUT deals correctly with an AFTN Acknowledgement Message for which the subject message's IPM receipt-notification-request was set.

Description: The tester passes an IPM message with receipt-notification-request set to the IUT. This should result in the IUT generating its AFTN equivalent message for transit through the AFTN.

The tester then passes a corresponding AFTN acknowledgement back through the IUT.

Expected Results: Conversion of the AFTN acknowledgement into an IPN receipt-notification. The resulting AMHS IPN should have the following elements set:

- the priority indicator should have the value urgent ;
- the AMHS recipient-name should identify the originator of the subject IPM;
- the originator indicator element in the AFTN message should be translated into the ipn-originator element of the Receipt Notification;
- the Receipt Notification should have the receipt time (YYMMDDHHMMZ)set up as follows:
  - the YY figures indicating the year should be generated by the IUT;
  - the MM figures indicating the month should be generated by the IUT;
  - the DD figures indicating the day should be the first two numbers from the AFTN date-time group;

- the HHMM figures indicating the hour and the minutes should be the last four numbers from the AFTN date-time group;

- the IUT should add a character Z on to the end of the receipt-time element;
- the resulting AMHS receipt notification should only have the ipm-preferred-recipient if it differs from the ipn-originator. It should be set to the abstract value of the O/R Descriptor of the recipient of the subject AFTN message;
- the resulting AMHS receipt notification subject-ipn field should take the value of the this-IPM heading field of the subject IPM;
- if the encoded-information-types differs from the originally-encoded-information-types the conversion-eits should be set to the value of the encoded-information-types of the subject IPM;
- the acknowledgement-mode should be set to the abstract value *manual;*
- the formal-name should be set to the converted AFTN address of the originator indicator from the AFTN service message.

No error report is presented to the control position.

Log Entries:

- the incoming AFTN acknowledgement
- the outgoing AMHS receipt notification.

2.6.2. AFTN Acknowledgement Message with subject IPM - RN not requested

CT-GW- 9

Test Type:	This test verifies that the IUT deals correctly with a valid AFTN Acknowledgement Message for which the subject IPM receipt-notification-request was **not** set.
Description:	The tester passes a test IPM Message with receipt-notification-request not set through the IUT. This should result in the IUT generating an AFTN equivalent message for transit through the AFTN. The tester then passes the corresponding AFTN acknowledgement back through the IUT.
Expected Results:	Verify the conversion of the AFTN acknowledgement text into an IPM message with the IPM heading subject field carrying the value ”AFTN Service Information”. An error report is presented to the control position together with the erroneous AFTN message. Log Entries: • the incoming AFTN acknowledgement; • the outgoing AMHS Receipt Notification.

2.6.3. AFTN Acknowledgement - subject message did not previously traverse IUT

CT-GW- 10

Test Type:	This test is to ensure the correct handling of an AFTN Acknowledgement which arrives and for which the subject message did not previously traverse the IUT.
Description:	The tester presents a valid AFTN Message Acknowledgement to the IUT for which the subject message did not previously traverse the IUT
Expected Results:	Verify conversion of the AFTN acknowledgement text into an IPM with the subject field of the IPM Heading having the value ”AFTN Service Information”
	Error report presented to the control position, indicating that the subject message did not previously traverse the IUT.
	Log Entries:

- the incoming AFTN acknowledgement
- the outgoing AMHS Receipt Notification.

2.7. AFTN Unknown Address Service Message Conversions

2.7.1. Convert an AFTN Unknown Address Service Message where the subject message previously traversed the IUT

CT-GW-11

Test Type: To verify correct conversion of an AFTN Unknown Address Service Message into a non-delivery report where the subject message has previously traversed the IUT.

Description: The tester presents the IUT with a valid subject AMHS message. The tester then presents the IUT with a related AFTN Unknown Address Service message with the following parameters:

- the AFTN service message is a direct consequence of the original AMHS subject message;
- The AFTN service message's unknown addressee indicators which caused generation of the AFTN service message can be found in the IUT's address tables;
- The AFTN unknown address indicators have valid MF address mappings in the IUT's address tables;
- The *originator-report-request* of the subject message is **not** set to *report* (note: meaning that a delivery report would have been generated);
- The *originating-MTA-report-request* of the subject message is **not** set to *report* nor *audited report* (note: meaning that a delivery report would have been generated.;
- No previous delivery report has been generated for the same subject message and the same recipient.

Expected Results: Generation of a non-delivery report with the following parameters:

- *non-delivery-reason-code* set to "unable to transfer";
- *non-delivery-diagnostic-code* set to "unrecognised-OR-name".

2.7.2. Convert an AFTN Unknown Address Service Message in response to a subject message which has previously traversed the IUT, and where report requests have not been requested

CT-GW- 12 (S3.1.2.3.4.4.1.4 b)

Test Type: To verify correct action of the IUT on receipt of a correct AFTN Unknown Address Service Message which is response to a subject message which previously traversed the IUT, but where report requests have been requested and a delivery report has been previously generated by the IUT.

Description: The tester passes a subject message through the IUT. The IUT generates a delivery report. It then presents the IUT with an AFTN Message with the following conditions:

- The AFTN message's valid addressee indicator which caused generation of the AFTN service message can be found in the IUT's address tables;
- The AFTN unknown address indicator has a valid MF address mapping in the IUT's address tables;
- The *originator-report-request* of the subject message is set to "report" or the *originating-MTA-report-request* of the subject message is set to either "report" or audited report"

Expected Results: Verify that the Service Message is converted into an IPM with the subject field of the IPM heading set to "AFTN service information".

2.7.3. Unknown Address Service Message for which the subject message did pass through the IUT and reports were not requested in the subject message, and some of the unknown addresses cannot be translated into MF Form

CT-GW- 13

Test Type: This test ensures the correct handling of an AFTN Unknown Address Service Message which arrives and for which the subject message did pass through the IUT and reports were not requested in the subject message, and some of the unknown addresses cannot be translated into MF Form.

Description: The tester presents an AFTN Unknown Address Service Message to the IUT with the following characteristics:

- the subject AFTN message was previously passed through the IUT by the tester;
- the addressee indicator(s) that caused the service message can be identified;
- some of the unknown addressee indicator(s) **cannot** be transformed into their MF format;
- the abstract value of the originator-report-request differs from *report* and the abstract value of originating-MTA-report-request differs from both *report* and *audited-report;*
-

Expected Results:

- Those address(es) which cannot be translated should have been converted into an interpersonal message with the subject of the IPM heading field set to *"AFTN service information"*. They should not be present in the following non-delivery report.
- The addresses which could be translated should be converted into an IPM non-delivery-report with the following fields:
  - the non-delivery-reason-code should be *unable-to-transfer*;
  - the non-delivery-diagnostic-code should be *unrecognised-OR-name;*
  - the actual-recipient-names in each per-recipient field should take the value of the unknown recipient MF address.

2.7.4. Convert an AFTN Unknown Address Service Message which arrive and for which the subject message did not pass through the IUT

CT-GW- 14

Test Type:	This test ensures the correct handling of AFTN Unknown Address Service Message which arrive and for which the subject message did not pass through the IUT.
Description:	The tester presents a valid AFTN Unknown Address Service Message to the IUT (where the subject message did not previously pass through the IUT).
Expected Results:	The AFTN acknowledgement message should be converted into an interpersonal message with the subject of the IPM heading field set to *"AFTN service information"*.

2.8. Conversion of AMHS IPM Message to AFTN

2.8.1. Single 'IA5-text' body part to a Distribution list where conversion is required

CT-GW- 15

Test Type: Convert a valid IPM message with a single 'IA5-text' body part addressed to an AMHS Distribution List with the ATS-optional-Heading-Info absent.

Description: A valid IPM message is presented to the IUT with the following parameters:

- An IPM-1984 content type;
- A single ia5-text IPM body part;
- A single OR-Address of the Distribution List for which the IUT is *responsible*;
- The distribution list contains less than 21 recipient addresses;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- a text structure in the body part which complies with SARP 3.1.2.2.3.2., and a punctuation character not allowed in Annex 10 is present in the text, and at least one line should be longer than 69 characters;
- the length of the ATS-Message-text element is less than 1800 characters;
- the message priority is set to normal;
- the originating-MTA-report-request element is set to either *report* or *audited report* or the originator-report-request element is set to *report.*

Expected Results: Verify that the following AFTN Messages have been generated:

- an AFTN message containing an AFTN address for each recipient member of the distribution list;
- the originator's OR-address should have been correctly translated into an AFTN equivalent;
- the value of the priority in the AFTN message should be the same as that in the ATS-Message-Priority Element in the AMHS message ;
- the value of the filing time in the AFTN message should be the same as that in the ATS-Message-Filing Time Element in the AMHS message;
- The AFTN message text part should contain the ATS-Message-Text of the AMHS message as follows:
  - any character which is not in the IA5IRV character repertoire should have been converted into an IA5IRV

upper case character according to locally set down rules;

- any unauthorised character(s) should be replaced by the question mark character (?);
- lines of over 69 characters should have been folded;
- a Start-of-Heading character has been created by the IUT;
- the Transmission Identifier has been created by the IUT;
- There is no ATS-Optional-Heading-Info present;
- The AFTN message should have an AFTN priority set to *DD* or *FF*.

The incoming AMHS message should be logged;

The outgoing AFTN message should be logged.

2.8.2. Single ‘externally-defined-IA5-text’ body, without use of an address lookup table and generation of distress message priority

CT-GW- 16

Test Type: Convert a valid IPM message with a single ‘externally-defined-IA5-text’ body part, without use of an address lookup table. The test also verifies the correct generation of a distress message priority.

Description: A valid IPM message is presented to the IUT with the following parameters:

- the abstract-value of the current encoded-information-types set to *externally-defined ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope is not set to *prohibited*;
- a single externally-defined ia5-text body part;
- a single recipient XF address is present;
- the originator’s address is in XF form;
- a text structure in the body part which complies with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.
- the priority is set to ”urgent”;
- no optional heading information (ATS-Optional-Heading-Info) will be included;
- the originator-report-request element is set to *report.*

Expected Results: The IUT should process the message into the equivalent AFTN message as follows:

- The AFTN message text part should contain the ATS-Message-Text of the AMHS message as follows:
  - the contents of all AMHS addresses should be converted into upper case IA5IRV characters;
  - all alignment functions have been created by the AFTN component of the IUT;
- the value of the Priority Indicator has been given the converted value of the ATS-Message-Priority, which is supposed to be ”SS”;
- the addressee indicator has been set to the value of the first element of the organisational-unit-name if the value is syntactically correct for an AFTN address and the organisation-name of the AMHS message was set to *AFTN;*

- the originator indicator should be assigned the value of the first element of the organisational-unit-names if this value is syntactically correct for an AFTN address and the organisation-name is set at *AFTN;*
- the filing time of the converted AFTN message should have the value of the filing-time component in the ATS-Message-Filing-time from the AMHS message being converted;
- the start of text character has been created by the AFTN component of the IUT;
- the resulting AFTN message should have 5 successive BEL characters as the alarm priority.

2.8.3. 'IA5-text-body-part' body part, converting a non XF-Address

CT-GW- 17

Test Type: Accept messages with 'IA5-text-body-part' body part, converting the OR-Address to an AFTN address using a lookup table.

Description: A valid IPM message is presented to the IUT with the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1984;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single body part of the extended body part type *ia5-text-body-part* type;
- A single recipient address in non-XF form is present;
- The originator's address is in non-XF form;
- the text structure in the body part which does comply with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21;
- no priority alarm indicator will be included; the message priority is either *normal* or *non-urgent* (not a distress message) ;
- no optional heading information (ATS-Optional-Heading-Info) will be included;
- the originating-MTA-report-request element is set to *audited report.*

Expected Results: The IUT should process the messages into an equivalent AFTN message. The resulting AFTN message should be checked for the following:

- The AFTN message text part should contain the ATS-Message-Text of the AMHS message as follows:
  - the contents of all AMHS addresses should be converted into upper case IA5IRV characters;
  - all alignment functions have been created by the AFTN component of the IUT;
- the value of the Priority Indicator has been given the converted value of the ATS-Message-Priority and differs from "SS";
- the resulting AFTN originator and recipient addresses should have been retrieved from the look-up table, only if an exact match was found;
- the filing time of the converted AFTN message should have the

value of the filing-time component in the ATS-Message-Filing-time from the AMHS message being converted;

- the start of text character should have been created by the IUT;
- a delivery report should be generated by the IUT and passed back to the originator. The supplementary-information element should be set to "*This report only indicates (potential) conversion to AFTN, not delivery to a recipient*". The global-domain-identifier should identify the AMHS MD under which the AFTN / AMHS IUT operates. The format for the element should be:
  - country-name
  - administrative-domain-name
  - private-domain-identifier
- the mta-name should hold the mta-name assigned to the IUT.

2.8.4. 'general-text-body-part' – Basic, with an ATS-Optional-Heading-Info

CT-GW- 18

Test Type: Accept messages with 'general-text-body-part' Basic body part which contain an ATS-Optional-Heading-Info in the message.

Description: A valid IPM message is presented to the IUT with the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single, standard extended body part type *general-text-body-part* of which the repertoire set description is Basic (ISO 646);
- a text structure in the body part which complies with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21;
- the message priority is set to non-urgent;

Expected Results: The IUT should process the AMHS message into the equivalent AFTN message as follows:

- the AFTN message text part should contain the AMHS body part contents encoded as specified in ISO/IEC 10021-7, B2;
- the information in the ATS-Optional-Heading-Info of the AMHS message should become the contents of Optional Heading Information in the resulting AFTN message;
- the AFTN message should have no alarm priority setting, and the AFTN priority should be either GG or KK.

2.8.5. Convert a message with a ‘general-text-body-part’ Basic-1

CT-GW- 19

Test Type: Convert a message with ‘general-text-body-part’ - Basic-1 body part

Description: The tester presents the IUT with an AMHS message having the following parameters:

- the abstract-value of the current encoded-information-types set to *general-text-body-part;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single standard extended body part type *general-text-body-part* of which the repertoire set description is Basic-1 (ISO 8859-1);
- a text structure in the body part which complies with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21;

Expected Results: The IUT should process the message into the equivalent AFTN message, where the IPM general text body part has been converted into ia5 IRV upper case characters.

2.8.6. Split message of length exceeding 1800 characters (with available IUT resources)

CT-GW- 20

Test Type: Split messages with body parts which exceed 1800 characters length (with available resources)

Description: The tester presents the IUT with an AMHS message having the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which complies with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is greater than 1800 characters, however, the IUT has been declared to be able to utilise the procedure for splitting messages as proposed in Annex 10, Volume II, Attachment D.
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The IUT should process the message into several equivalent AFTN messages.

The IUT should log the incoming AMHS message and each outgoing AFTN message.

2.8.7. Split messages with more than 21 recipients (with available IUT resources)

CT-GW- 21

Test Type: Split messages with more than 21 recipients (with available resources)

Description: The tester presents the IUT with a message having more than 21 recipients, and the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which complies with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is greater than 21 and the IUT is declared as able to split the message(s) with more than 21 recipients into several messages.

Expected Results: The IUT should process the message into the equivalent number of separate AFTN messages, each addressed to a separate subset of the AMHS message's addressees.

The incoming AMHS message is logged;

The outgoing AFTN Messages are each logged.

2.8.8. Valid encoded-information-types designated by means of an object identifier (1)

CT-GW- 22

Test Type: Accept a message with a valid encoded-information-types designated by means of an object identifier.

Description: The tester presents the IUT with an AMHS message containing:

- the abstract-value of the current encoded-information-types set to *OID {id-cs-eit-authority 1};*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single body part;
- a single basic body part type *ia5-text;*
- a text structure in the body part which does comply with the SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The IUT should process the message into the equivalent AFTN message.

2.8.9. Valid encoded-information-types designated by means of an object identifier (2)

CT-GW- 23

Test Type: Accept a message with a valid encoded-information-types designated by means of an object identifier

Description: The tester presents the IUT with an AMHS message containing:

- the abstract-value of the current encoded-information-types set to *OID {id-cs-eit-authority 2};*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single body part;
- a single basic body part type *ia5-text;*
- a text structure in the body part which does comply with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The IUT should process the message into the equivalent AFTN message where the IPM body part is converted into Ia5 IRV upper case.

2.8.10. Valid encoded-information-types designated by means of an object identifier (6)

CT-GW- 24

Test Type: Accept a message with a valid encoded-information-types designated by means of an object identifier

Description: The tester presents the IUT with an AMHS message containing:

- the abstract-value of the current encoded-information-types set to *OID {id-cs-eit-authority 6};*
- a content-type of IPM-1984 or IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which does comply with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The IUT should process the message into the equivalent AFTN message where the IPM body part is converted into Ia5 IRV upper case.

2.8.11. Valid encoded-information-types designated by means of an object identifier (100)

CT-GW- 25

Test Type: Accept a message with a valid encoded-information-types designated by means of an object identifier

Description: The tester presents the IUT with an AMHS message containing:

- the abstract-value of the current encoded-information-types set to *OID {id-cs-eit-authority 100};*
- a content-type of IPM-1984 or IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which does comply with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The IUT should process the message into the equivalent AFTN message where the IPM body part is converted into Ia5 IRV upper case.

2.9. Reject AMHS PDUs

2.9.1. Non-IPM 84 nor IPM 88 message

CT-GW- 26

Test Type: Reject non-IPM 84 or IPM 88 messages

Description: The tester presents the IUT with an EDIM message, with the content type set to ”35”.

Expected Results: A non-delivery report is generated with the following parameters:

- *non-delivery-reason-code* set to ”unable-to-transfer”;
- *non-delivery-diagnostic-code* set to ”content-type-not-supported”;

Logs: The subject message and generated non-delivery-report are both logged;

The error is reported to the control position.

2.9.2. NRN PDU

CT-GW- 27

Test Type: Reject NRN PDUs

Description: The tester presents the IUT with an IPM non-receipt-notification with the following parameters:

- The responsibility bit on the envelope is ”responsible”;

Expected Results: An error should be raised with the control position and the NRN should be passed to it.

2.9.3. Implicit conversion prohibited and a line exceeding 69 characters

CT-GW- 28

Test Type: Reject messages with conversion prohibited where at least one line of the message exceeds 69 characters.

Description: The tester presents the IUT with an AMHS message having the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which does comply with SARP 3.1.2.2.3.2. but at least one line in the message exceeds 69 characters*;*
- the abstract-value of the conversion-with-loss-prohibited set to *prohibited*;
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The message is rejected for all recipients.

A non-delivery report should be generated with the non-delivery-reason-code value set *conversion-not-performed* and the non-delivery-diagnostic code set to *line-too-long*.

2.9.4. Invalid encoded information type (of object identifier)

CT-GW- 29

Test Type: Reject a message with an invalid encoded information type present

Description: The tester presents the IUT with a message having the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope set to *prohibited*
- value of the encoded-information-types includes OID *{id-cs-eit-authority 0};*
- a single basic body part type *ia5-text;*
- a text structure in the body part which complies with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The message is rejected for all recipients and a non-delivery report should be generated with the non-delivery-reason-code value *conversion-not-performed*, the non-delivery-diagnostic code set to *implicit-conversion-prohibited* and the supplementary-information set to *unable to convert to AFTN.*

2.9.5. Multiple body parts

CT-GW- 30

Test Type: Reject a message with multiple body parts.

Description: The tester presents the IUT with a message having the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- body parts;
- multiple basic body part type *ia5-text* are present*;*
- a text structure in the body part which complies with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The message is rejected for all recipients and a non-delivery report should be generated with the non-delivery-reason-code value set *unable- to-transfer*, the non-delivery-diagnostic code set to *content-syntax-error* and the supplementary-information set to *unable to convert to AFTN due to multiple body parts.*

2.9.6. More than 21 recipients (with no available resources)

CT-GW- 31

Test Type: Split messages with more than 21 recipients (with **no** available resources)

Description: The tester presents the IUT with a message having more than 21 recipients, and the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which complies with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is greater than 21 and the IUT is declared as **not** able to split the message(s) with more than 21 recipients into a set of messages each having less than 21 recipients.

Expected Results: The message should be rejected for all recipients and a non-delivery report should be generated with the non-delivery-reason-code value set at *unable-to-transfer* and the non-delivery-diagnostic code set to *too-many-recipients* and the supplementary information set to *unable to convert to AFTN due to number of recipients*. The report should then be conveyed over the AMHS.

2.9.7. Unacceptable body part type

CT-GW- 32

Test Type: Reject a message with an unacceptable body part type.

Description: The tester presents the IUT with a message having more than 21 recipients, and the following parameters:

- the abstract-value of the current encoded-information-types set to *g3fax;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single body part type is set to ”g3fax”;
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The message should be rejected for all recipients and a non-delivery report should be generated with the non-delivery-reason-code value set *unable-to-transfer*, the non-delivery-diagnostic code set to *content-syntax-error* and the supplementary-information set to *unable to convert to AFTN due to unsupported body part type.*

2.9.8. Non compliant text AFTN message

CT-GW- 33

Test Type: Rejection of an AMHS IPM where the text body part is non compliant with AFTN messages;

Description: The tester presents the IUT with a message having the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which does **not** comply with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The message should be rejected for all recipients. A non-delivery report should be generated with the non-delivery-reason-code value set *unable-to-transfer*, the non-delivery-diagnostic code set to *content-syntax-error* and the supplementary-information set to *unable to convert to AFTN due to ATS-Message-Header syntax error*.

2.9.9. 'conversion-with-loss-prohibited' is present with a disallowed punctuation symbol

CT-GW- 34

Test Type: Reject a message where 'conversion-with-loss-prohibited' is present and a punctuation symbol disallowed by Annex 10 Vol II 4.1.2 is present.

Description: The tester presents the IUT with a message having the following parameters:

- abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which does comply with SARP 3.1.2.2.3.2. but at least one punctuation symbol in the text is not authorised in Annex 10 Volume II, 4.1.2*;*
- the abstract-value of the conversion-with-loss-prohibited is set to *prohibited*;
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The message should be rejected for all recipients and a non-delivery report should be generated with the non-delivery-reason-code value set *conversion-not-performed* and the non-delivery-diagnostic code set to *punctuation-symbol-loss*.

2.9.10. 'conversion-with-loss-prohibited' is present with a disallowed alphabetic character

CT-GW- 35

Test Type: Reject a message where 'conversion-with-loss-prohibited' is present and an alphabetic character disallowed by Annex 10 Vol II 4.1.2 is present

Description: The tester presents the IUT with a message having the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which does comply with SARP 3.1.2.2.3.2. but at least one alphabetical character in the text is not authorised in Annex 10 Volume II, 4.1.2.*;*
- the abstract-value of the conversion-with-loss-prohibited is set to *prohibited*;
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The message should be rejected for all recipients and a non-delivery report should be generated with the non-delivery-reason-code value set *conversion-not-performed* and the non-delivery-diagnostic code set to *alphabetical-character-loss*.

2.9.11. 'conversion-with-loss-prohibited' is present with a number of faults

CT-GW- 36

Test Type: Reject a message where 'conversion-with-loss-prohibited' is present and a number of faults which are disallowed by Annex 10 Vol II 4.1.2 are present

Description: The tester presents the IUT with a message having the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which does comply with SARP 3.1.2.2.3.2., *but:*
  - at least one line in the message exceeds 69 characters;
  - at least one punctuation symbol in the text is not authorised in Annex 10 Volume II, 4.1.2;
  - at least one alphabetical character in the text is not authorised in Annex 10 Volume II, 4.1.2.;
- the abstract-value of the conversion-with-loss-prohibited set to *prohibited*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The message should be rejected for all recipients and a non-delivery report should be generated with the non-delivery-reason-code value set *conversion-not-performed* and the non-delivery-diagnostic code set to *multiple-information-loss.*

2.9.12. Length exceeding 1800 characters and IUT systems resources are limited

CT-GW- 37

Test Type: Reject a message with body parts which exceed 1800 characters length where systems resources are limited.

Description: The tester presents the IUT with a message having the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single basic body part type *ia5-text;*
- a text structure in the body part which complies with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is greater than 1800 characters and the IUT is unable to utilise the procedure, for splitting messages, proposed in Annex 10, Volume II, Attachment D.

Expected Results: The message should be rejected for all recipients and an AMHS non-delivery report is generated with the non-delivery-reason-code set to *unable- to-transfer*, the non-delivery-diagnostic-code set to *content- too-long* and the supplementary-information set to *unable to convert to AFTN due to message text length*.

2.9.13. Reject a Delivery report

CT-GW- 38

Test Type:	Reject a delivery report
Description:	The tester presents the IUT with a non-delivery-notification related to a message which was previously converted by the IUT.
Expected Results:	Register the error with the control position.

2.9.14. Invalid extensions (per-recipient)

CT-GW- 39

Test Type: Reject a message with invalid extensions.

Description: The tester presents the IUT with a message having the following parameters:

- criticality set to *critical for transfer* or *critical for delivery;*
- a non-semantically correct extension-field element is present;
- the extension is part of the per-recipient-fields.

Expected Results: The message should be rejected for that message recipient and a non-delivery report should be raised, the non-delivery-reason-code should be set to the abstract value *unable- to-transfer* and the non-delivery-diagnostic-code set to *unsupported-critical-function*.

2.9.15. Invalid extensions (per message)

CT-GW- 40

Test Type: Reject a message with invalid extensions

Description: The tester presents the IUT with a message having the following parameters:

- criticality set to *critical for transfer* or *critical for delivery;*
- a non-semantically correct extension-field element is present;
- the extension is part of the per-message-fields.

Expected Results: The message should be rejected for all message recipients and a non-delivery report should be raised, the non-delivery-reason-code should be set to the abstract value *unable-to-transfer* and the non-delivery-diagnostic-code set to *unsupported-critical-function*.

2.9.16. XF address with no AFTN equivalent in the IUT's address tables

CT-GW- 41

Test Type: Reject a message with an OR-Address in XF form which is not listed in the IUT's address tables with an AFTN equivalent.

Description: A valid IPM message is presented to the IUT with the following parameters:

- the abstract-value of the current encoded-information-types set to *ia5-text;*
- a content-type of IPM-1988;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- a single body part of the extended body part type *ia5-text-body-part* type;
- An XF form recipient's OR-address for which there is no translation in the IUT's address tables;
- a text structure in the body part which does comply with SARP 3.1.2.2.3.2.*;*
- the abstract-value of the conversion-with-loss-prohibited set to *allowed;*
- the length of the ATS-Message-text element is less than 1800 characters;
- the number of intended recipient AFTN addresses is less than 21.

Expected Results: The message should be rejected for the recipient and a non-delivery report should be generated with the non-delivery-reason-code value set at *unable-to-transfer* and the non-delivery-diagnostic code set to *unrecognised-OR-name.*

2.9.17. non-XF form originator's address with no AFTN mapping

CT-GW- 42

Test Type:	Reject a message for which the originator's address in non-XF form cannot be translated into an AFTN address
Description:	The tester presents the IUT with a message having where the originator's address is in non-XF form and it is not represented in the IUT's mapping tables.
Expected Results:	The message is rejected for all recipients and a non-delivery report should be generated with the non-delivery-reason-code value set at *unable- to-transfer*, the non-delivery-diagnostic code set to *invalid-arguments* and the supplementary-information set to *unable to convert to AFTN due to unrecognised originator O/R address*.

2.10. AMHS Receipt Notification Conversion

2.10.1. Convert an RN into an AFTN Acknowledgement

CT-GW- 43

Test Type: Convert a valid RN into an AFTN Acknowledgement

Description: The tester presents the IUT with an IPN Receipt Notification which is in response to a subject AMHS message which was previously converted by the IUT with the following parameters:

- a content type of IPM 1988;
- a priority indicator of ”SS”;

Expected Results: The AMHS RN should be converted into an AFTN Acknowledgement Service Message with the priority set to ”SS”.

The date-time group should take the value of the six characters between and including the fifth and tenth characters of the receipt-time element of the AMHS receipt notification being converted.

The acknowledgement message should have a text message made up of:

- the procedure signal R;
- the origin line which is made up of:
  - the filing time;
  - originator indicator.

2.10.2. Reject an RN for which the subject was not converted by the IUT

CT-GW- 44

Test Type:	Reject RNs for which no previous AFTN message passed through the IUT
Description:	The tester presents the IUT with an IPM Receipt Notification for which a subject AMHS message was not previously converted from an AFTN message by the IUT.
Expected Results:	The error should be logged and passed to the Control Position together with a copy of the RN for appropriate processing. An AMHS non-delivery report should be generated with the non-delivery-reason-code set to *unable- to-transfer*, the non-delivery-diagnostic-code set to *invalid-arguments* and the supplementary-information set to *unable to convert RN to AFTN Ack service message due to misrouted RN.*

2.10.3. Reject an RN with a priority indicator value different to ‘urgent’

CT-GW- 45

Test Type:	Reject a RN not containing a priority indicator value of ‘urgent’.
Description:	The tester presents the IUT with a receipt notification as a response to a message which has previously been converted by the IUT. Its priority indicator is **not** *SS*.
Expected Results:	An error should be logged and a report passed to the Control Position together with a copy of the RN for appropriate processing.

2.11. AMHS Non-delivery Report Conversion

2.11.1. Non-delivery report conversion

CT-GW- 46

Test Type: Valid Non-delivery report conversion into an AFTN unknown Address Service Message

Description: The tester presents the IUT with a non-delivery-report for which the IUT previously generated an AMHS message. It should be set up as follows:

- there is no originally-intended-recipient-name present which differs from the value of the actual-recipient-name;
- O='AFTN';
- OU1 contains a valid AFTN address syntax;
- the non-delivery diagnostic was 'unrecognised-OR-name'.

Expected Results: The Non-delivery-report should be converted into an AFTN Unknown Address service message.

The service message should take the same priority value as the subject AFTN message.

The service message should have the addressee indicator set to the originator indicator of the subject AFTN message.

The AFTN service message should have the filing time set to the time at which the IUT generated the service message. The format of the filing time should be in compliance with Annex 10, Volume I, 4.4.15.2.2.1

The service message should have the originator address set to the AFTN address given to the AFTN component of the IUT. The service message should have the message text set as follows:

- line one should be made up of the following:
  - the abbreviation SVC;
  - the procedure signal ADS;
  - the origin of the message in error, i.e. the filing time and the originator indicator of the AFTN subject message;
  - an alignment function.
- line two should be made up of the following:
  - the line following the heading of the message as received, i.e. the priority of the message followed by the addresses to which the message was originally being sent;
  - an alignment function.
- line three should be made up of the following:
  - the indication UNKNOWN;
  - the unknown addressee indicator;
  - the end of text signal.

One of the following conditions must be met by the AFTN service

message:

- the unknown addressee indicator should be assigned the value of the first element of the organisational-unit-names in the actual-recipient-name of the NDR, if this value is syntactically correct for an AFTN address and the organisation-name is set at *AFTN;*
- the unknown addressee indicator should be assigned the value of AFTN address which has been retrieved from the look-up table for the actual-recipient-name of the NDR;

If an AFTN address cannot be determined by either of the above two methods an error should be reported to the Control Position. The Non-Delivery Report and MF-Address should also be passed to the Control Position for further processing.

2.11.2. Error for a Non-delivery-report for which the subject did not traverse the IUT

CT-GW- 47

Test Type:	Error report for a Non-delivery-reports for which no previous AMHS message was generated by the IUT
Description:	The tester presents the IUT with a non-delivery report for which the IUT did not previously convert a subject message.
Expected Results:	The error should be logged and a report passed to the Control Position. The Control Position should also be passed a copy of the report for appropriate processing.

2.11.3. Error, where the non-delivery-diagnostic-code was not 'unrecognised-OR-name'

CT-GW- 48

Test Type: Error for where the non-delivery-diagnostic-code was not 'unrecognised-OR-name'

Description: The tester presents the IUT with a non-receipt-notification having the following parameters:

- the report corresponds to a subject IPM that was previously converted by the IUT;
- none of the originally-intended-recipient-names differ from the value of the actual-recipient-name;
- a non-delivery-diagnostic-code having a value which differs from *unrecognised-OR-name*.

Expected Results: The error should be logged and a report passed to the Control Position. The Control Position should also be passed a copy of the report for appropriate processing.

2.11.4. Error in case where the actual recipient/originally intended recipient fields in an ”unrecognised OR-name” NDR disagree

CT-GW- 49

Test Type:	Error in case of all addressees actual recipient/originally intended recipient fields in an ”unrecognised OR-name” NDR disagree.
Description:	The tester presents the IUT with a non-delivery report for which the IUT previously converted a subject message. All of the originally-intended-recipient-names in per-recipient fields have values which differ from the actual recipient field.
Expected Results:	The error should be logged and a report passed to the Control Position. The Control Position should also be passed a copy of the report for appropriate processing.

2.11.5. Error where some actual recipient/originally intended recipient fields in an ”unrecognised OR-name” NDR disagree

CT-GW- 50

Test Type:	Error in case some actual recipient/originally intended recipient fields in an ”unrecognised OR-name” NDR disagree.
Description:	The tester presents the IUT with a non-delivery-report for which the IUT previously generated a subject message. At least one of the originally-intended-recipient-name occurs in a per-recipient field with a value different from the actual recipient field, and at least one other per-recipient field does not meet this condition
Expected Results:	The error should be logged and a report passed to the Control Position together with a copy of the report for appropriate processing. The IUT should process the report into an AFTN service message for those per-recipient-fields where the originally-intended-recipient-name elements do not differ from the value different of the actual recipient name.

2.12. AMHS Probe handling

2.12.1. Probe response with an XF-recipient name

CT-GW- 51

Test Type: Response to a Probe

Description: The tester presents the IUT with a Probe having the following parameters:

- a content-type of IPM-1988;
- a current encoded-information-type of *ia5-text*;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- the content length does not exceed 1800 characters;
- the number of probe recipients the IUT is responsible for is 21 or less recipients;
- the organisation-name attribute of each probe recipient OR-address is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address.

Expected Results: The IUT generates of a single AMHS delivery-report addressed to the probe's originator confirming possible delivery for all of the addressees cited in the original Probe.

2.12.2. Probe response with a non-XF recipient name

CT-GW- 52

Test Type: Response to a Valid Probe where the probed recipient name is not an XF address

Description: The tester presents the IUT with a Probe having the following parameters:

- a content-type of IPM-1984;
- a current encoded-information-type of *ia5-text*;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- the content length does not exceed 1800 characters;
- the number of probe recipients the IUT is responsible for 21 or less recipients;
- the originator's organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address;
- the recipient's OR-name matches exactly an entry in the IUT's look-up table.

Expected Results: A delivery-report should be generated confirming possible delivery to the recipient.

2.12.3. Probe response where there are more than 21 potential recipients, and the IUT can split

CT-GW- 53

Test Type: Respond to a Probe where there are more than 21 potential recipients, and where IUT can perform splitting

Description: The tester presents the IUT with a probe having the following parameters:

- a content-type of IPM-1988;
- a current encoded-information-type of *extended-ia5-text*;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- the content length does not exceed 1800 characters;
- the number of probe recipients for which the IUT is responsible exceeds 21. However, the IUT **is declared as being able to split** the probe into several probes each of which has less than 21 recipients and the only difference in these new probes are their recipients;
- the originator's organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address;
- for each recipient OR-name, the recipient's organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address.

Expected Results: A delivery-report should be generated confirming possible delivery to all of the recipients.

2.12.4. Reject non IPM (84/88) Probes

CT-GW- 54

Test Type: Reject non IPM (84/88) Probes.

Description: The tester presents the IUT with a probe with the following specification:

- Content type of EDIMG (35);
- One valid originator-name's organisation-name OR-address = 'AFTN', and a valid organisational-unit-name OR-address AF-Address syntax for the intended recipient;
- one valid recipient-name's organisation-name OR-address = 'AFTN' and valid organisational-unit-name OR-address in AF-Address syntax;
- Body Part = 'ia5';
- Implicit conversion not prohibited;
- Content length is acceptable to the IUT;
- Less than 21 recipients;

Expected Results: A non-delivery report should be generated with the non-delivery-reason-code value set at *unable- to-transfer* and the non-delivery-diagnostic code set to *content-type-not-supported.*

2.12.5. Reject bad addresses but respond to a good one

CT-GW- 55

Test Type: Reject bad addresses but respond to good ones

Description: The tester presents the IUT with a probe with the following specification:

- Content type of IPM-88;
- A valid originator-name's organisation-name = 'AFTN', and a valid organisational-unit-name AF-Address syntax for the intended recipient;
- One invalid recipient MF-Address with no matching AF-Address in IUT's tables;
- one valid recipient-name's organisation-name OR-address = 'AFTN' and valid organisational-unit-name OR-address in AF-Address syntax;
- body part = ia5;
- implicit conversion not prohibited;
- content length less than 1800 characters;
- less than 21 recipients;

Expected Results: A non-delivery report should be generated for the invalid recipient's OR-address. The non-delivery-reason-code set to *unable- to-transfer* and the non-delivery-diagnostic-code set to *unrecognised-OR-name.*

A delivery report should be generated for the valid recipient's OR-address. All AMHS address attributes in the delivery report should be converted into upper case letters.

2.12.6. Reject a Probe with encoded-information-types other than built-in 'ia5' or extended 'ia5-text'

CT-GW- 56

Test Type: Reject a message with encoded-information-types with values other than built-in ia5 or extended 'ia5-text';

Description: The tester presents the IUT with a probe having the following parameters:

- a content-type of IPM-1988;
- an encoded-information-type of g3fax**;**
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope is not set to *prohibited*;
- the content length does not exceed the IUT conversion capabilities;
- the number of probe recipients the IUT is responsible for is 21 or less recipients;
- the originator-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address;
- the considered recipient-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address;

Expected Results: An AMHS non-delivery-report should be generated with the non-delivery-reason-code set to *unable- to-transfer*, the non-delivery-diagnostic-code set to *encoded-information-types-unsupported.*

2.12.7. Reject a Probe with 'prohibited' value in the implicit-conversion-field

CT-GW- 57

Test Type: Reject a message with 'prohibited' value in the implicit-conversion-field.

Description: The tester presents the IUT with a probe having the following parameters:

- a content-type of IPM-1988;
- a current encoded-information-type of *general-text*;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope is set to ***prohibited*;**
- the content length does not exceed the IUT conversion capabilities;
- the number of probe recipients the IUT is responsible for 21 or less recipients;
- the originator-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address;
- the considered recipient-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address.

Expected Results: An AMHS non-delivery-report should be generated with the non-delivery-reason-code set to *conversion-not-performed*, the non-delivery-diagnostic-code set to *implicit-conversion-prohibited* and the supplementary-information is set to *unable to convert to AFTN*.

2.12.8. Reject a Probe where the content-length exceeds IUT system resources

CT-GW- 58

Test Type: Reject a message where the content-length exceeds system resources

Description: The tester presents the IUT with a probe having the following parameters:

- a content-type of IPM-1988;
- a current encoded-information-type of *ia5-text*;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- the content length **exceeds** the IUT conversion capabilities;
- the number of probe recipients the IUT is responsible for 21 or less recipients;
- the originator-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address;
- the considered recipient-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address.

Expected Results: An AMHS non-delivery-report should be generated with the non-delivery-reason-code set to *unable- to-transfer*, the non-delivery-diagnostic-code set to *content- too-long*.

2.12.9. Reject a Probe where there are more than 21 potential recipients, and the IUT cannot split

CT-GW- 59

Test Type: Reject a Probe where there are more than 21 potential recipients, and where IUT limitations prevent splitting

Description: The tester presents the IUT with a probe having the following parameters:

- a content-type of IPM-1988;
- a current encoded-information-type of *ia5-text*;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- the content length does not exceed the IUT conversion capabilities;
- the number of probe recipients the IUT is responsible for **more than 21 recipients** and due to IUT limitations it is unable to split the probe into several probes;
- the considered recipient-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address;

Expected Results: An AMHS non-delivery-report should be generated with the non-delivery-reason-code set to *unable- to-transfer*, the non-delivery-diagnostic-code set to *too-many-recipients* and the supplementary-information is set to *unable to convert to AFTN due to number of recipients.*

2.12.10. Reject a Probe with an invalid originator's XF address

CT-GW- 60

Test Type: Reject a probe with an invalid originator's OR-address where O='AFTN', but there is an invalid organisational-unit-names AF-address syntax in the originator-name

Description: The tester presents the IUT with a probe having the following parameters:

- a content-type of IPM-1988;
- a current encoded-information-type of *ia5-text*;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- the content length does not exceed the IUT conversion capabilities;
- the number of probe recipients the IUT is responsible for 21 or less recipients;
- the originator-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute **neither** matches exactly an entry in the IUT's look-up table nor is it set to a value which is a syntactically correct AF-Address;
- the considered recipient-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is a syntactically correct AF-Address.

Expected Results: An AMHS non-delivery-report should be generated with the non-delivery-reason-code set to *unable- to-transfer*, the non-delivery-diagnostic-code set to *invalid-arguments* and the supplementary-information is set to *unable to convert to AFTN due to unrecognised originator O/R address.*

2.12.11. Reject a probe with an invalid originator's OR-address

CT-GW- 61

Test Type: Reject a probe with an invalid OR-address

Description: The tester presents the IUT with a probe containing an invalid OR-Address with the following parameters:

- a content-type of IPM-1988;
- a current encoded-information-type of *ia5-text*;
- the abstract value of the implicit-conversion-prohibited in the message transfer envelope not set to *prohibited*;
- the content length does not exceed the IUT conversion capabilities;
- the number of probe recipients the IUT is responsible for 21 or less recipients;
- the originator-name element organisation-name attribute is set to *AFTN* and the first element of the organisational-unit-names attribute is set to a value which is not a syntactically correct AF-Address.
- the considered recipient-name element organisation-name attribute is set to *AFTN* or the first element of the organisational-unit-names attribute neither matches exactly an entry in the IUT look-up table and it is set to a value which is a syntactically correct AF-Address.

Expected Results: An AMHS non-delivery-report should be generated with the non-delivery-reason-code set to *unable- to-transfer* and the non-delivery-diagnostic-code set to *unrecognised-OR-name.*

3. Test PDUs

The following sections provide descriptions of AFTN and AMHS default PDUs. These should be used to select PDU field values for particular tests. The field values specified in the default PDUs are replaced by those values specified in the individual tests.

3.1 AFTN Message

AFTN Message Part	**Value**
Heading	
Start-of-Heading Character	
Transmission Identification	Three alphabetical characters followed by a serial number
Address	
Alignment Function	
Priority Indicator	GG except otherwise specified in test
Addressee Indicator(s)	As specified in test
Alignment Function	
Origin	
Filing Time	Time of creation/submission or as specified in test
Originator Indicator	As specified in test
Priority Alarm	Absent unless the priority is SS
Optional Heading Information	Absent unless otherwise specified in test
Alignment Function	
Start-of-Text Character	
Text	As specified in test, or six lines of random text, each of 69 characters
Ending	
Alignment Function	
Page-feed sequence	
End-of-Text Character	

3.2 AFTN Acknowledgement Service Message

AFTN Message Part	**Value**
Heading	
Start-of-Heading Character	
Transmission Identification	Three alphabetical characters followed by a serial number
Address	
Alignment Function	
Priority Indicator	SS
Addressee Indicator(s)	As specified in test
Alignment Function	
Origin	
Filing Time	Time of creation/submission or as specified in test
Originator Indicator	As specified in test
Priority Alarm	Present
Optional Heading Information	Absent unless otherwise specified in test
Alignment Function	
Start-of-Text Character	
Text	As specified in test
Ending	
Alignment Function	
Page-feed sequence	
End-of-Text Character	

3.3 AFTN Unknown Address Service Message

AFTN Message Part	**Value**
Heading	
Start-of-Heading Character	
Transmission Identification	Serial number
Address	
Alignment Function	
Priority Indicator	Same as subject message
Addressee Indicator(s)	As specified in test
Alignment Function	
Origin	
Filing Time	Time of creation/submission or as specified in test
Originator Indicator	As specified in test
Priority Alarm	Absent
Optional Heading Information	Absent
Alignment Function	
Start-of-Text Character	
Text	As specified in test
Ending	
Alignment Function	
Page-feed sequence	
End-of-Text Character	

3.4 Message Transfer Envelope

Message Transfer Envelope	From Tester	From IUT
(per recipient fields)		
message-identifier		
global-domain-identifier		
country-name	F	D
administrative-domain-name	**ADMDy**	**ADMDx**
private-domain-identifier	**ICAO**	**PRMDUT**
local-identifier	Tester name + MTAName + Serial Number	IUT name + MTAName + Serial Number
originator-name	*OU1= Tester0*	*OU1= IUT0*
originator-encoded-information-types		
built-in-encoded-information-types	Test dependent	Test dependent
content-type		
built-in	Test dependent	Test dependent
content-identifier	*Any – may be used to identify a test in a sequence!*	*Any – may be used to identify a test in a sequence!*
priority	Test dependent	Test dependent
per-message-indicators		
disclosure-of-other-recipients	**Prohibited**	**Prohibited**
implicit-conversion-prohibited	**Allowed**	**Allowed**
alternate-recipient-allowed	**Allowed**	**Allowed**
per-domain-bilateral-information		
country-name	**D**	**F**
administrative-domain-name	**ADMDy**	**ADMDx**
private-domain-identifier	**ICAO**	**PRMDUT**
bilateral-information		*any*
trace-information		
trace-information-element		
global-domain-identifier		
country-name	**D**	**F**
administrative-domain-name	**ADMDy**	**ADMDx**
private-domain-identifier	**ICAO**	**PRMDUT**

domain-supplied-information		
arrival-time	Real time	Real time
routing-action		
relayed	Test dependent	relayed
extensions		
type		
standard-extension		
criticality		
value		
content-correlator		
internal-trace-information		
global-domain-identifier		
country-name	**D**	**F**
administrative-domain-name	**ADMDy**	**ADMDx**
private-domain-identifier	**ICAO**	**PRMDUT**
mta-name	Test-mta	Iut-under-test
mta-supplied-information		
arrival-time	Real Time	Real Time
routing-action		
relayed	Test dependent	Relayed
per recipient fields		
recipient-name	***Test dependent***	***Test Dependent***
originally-specified-recipient-number	”	”
per-recipient-indicators	”	”
Content	”	”

3.5 MTS Report

Relaying Arguments	
Report-identifier	Generated by the tester – tester identity + serial number
Trace-information	Generated by the tester according to its identity
Internal-trace-information	Absent
Redirection-history	Absent
Report DestinationArguments	
Report-destination-name	The originator of the subject message
Report Request Argument	
Originator-report-request	Absent
Subject Trace Arguments	
Subject-identifier	The same as the subject message message-identifier
Originally-specified-recipient-number	Taken from the subject message
Subject-intermediate-trace-information	Must include the IUT and the tester's trace items
Arrival-time	Time of arrival
Originator-and-DL-expansion-history	Absent
Reporting DL name	Absent
Conversion Arguments	
Converted-encoded-information-types	Absent
Supplementary Information Arguments	
Supplementary-information	Absent
Physical-forwarding-address	Absent
Subject Redirection Arguments	
Actual-recipient-name	Absent
Originally-intended-recipient-name	As specified in the subject message
Redirection-history	Absent
Content Arguments	
Original-encoded-information-types	As specified in the subject message
Content-type	As specified in the subject message
Content-identifier	As specified in the subject message
Content-correlator	As specified in the subject message
Returned-content	Absent
Delivery Arguments	

Message-delivery-lime	Time of delivery
Type-of-MTS-user	Private
Non-delivery Arguments	
Non-delivery-reason-code	Transfer-failure unless otherwise specified
Non-delivery-diagnostic-code	MTS-congestion unless otherwise specified
Security Arguments	
Recipient-certificate	Absent
Proof-of-delivery	Absent
Reporting-MTA-certificate	Absent
Report-origin-authentication-check	Absent
Message-security-label	Absent
Additional information Argument	
Additional-information	Absent unless otherwise specified

3.6 Probe

Message Transfer Envelope	From Tester	From IUT
(per recipient fields)		
message-identifier		
global-domain-identifier		
country-name	D	
administrative-domain-name	**ADMDy**	
private-domain-identifier	**ICAO**	
local-identifier	Tester name + MTAName + Serial Number	
originator-name	*Tester = Tester0*	
originator-encoded-information-types		
built-in-encoded-information-types	test dependent	
content-type		
built-in	test dependent	
content-identifier	*Any – may be used to identify a test in a sequence!*	
priority	***Normal***	
per-message-indicators		
disclosure-of-other-recipients	**Prohibited**	
implicit-conversion-prohibited	**Test dependent**	
alternate-recipient-allowed	**Allowed**	
Per-domain-bilateral-information		
country-name	**D**	
administrative-domain-name	**ADMDy**	
private-domain-identifier	**ICAO**	
bilateral-information		
trace-information		
trace-information-element		
global-domain-identifier		
country-name	**D**	
administrative-domain-	**ADMDy**	

name		
private-domain-identifier	**ICAO**	
domain-supplied-information		
arrival-time	Real time	
routing-action		
relayed	Test dependent	
extensions		
type		
standard-extension		
criticality		
value		
content-correlator		
internal-trace-information		
global-domain-identifier		
country-name	**D**	
administrative-domain-name	**ADMDy**	
private-domain-identifier	**ICAO**	
mta-name	Test-mta	
mta-supplied-information		
arrival-time	Real Time	
routing-action		
relayed	Test dependent	
per recipient fields		
recipient-name	***Test dependent***	
originally-specified-recipient-number	”	
per-recipient-indicators	”	
Content Length	”	

3.7 IPM ATS-Message

IPM Structure

Heading	
this-IPM	
IPMIdentifier	
user	**Originator identifier**
user-relative-recipient	
originator	
ORdescriptor	
formal-name	**OR-Name of the originator**
primary-recipients	
RecipientSpecifier	
recipient	**OR-Name of the recipient**
notification-requests	
rn	**Absent unless P1 priority is urgent**
nrn	**Absent**
Body	
ia5-text	
parameters	
repertoire	
data	
ATS-Message-Header	
start-of-heading	
ATS-Message-Priority	
priority-indicator	**Test dependent**
ATS-Message-Filing-time	
filing-time	**At test time**
ATS-Message-Optional-Heading-Info	
Optional-Heading-Information	**Test dependent**
end-of-heading-blank-line	
start-of-text	
ATS-Message-text	Six lines of random text, each of 69 characters

3.8 IPM receipt – notification

subject-ipm	m	As for subject message
ipn-originator	o	As for originator of the IPM
ipm-intended-recipient	o	Address of the intended recipient
conversion-eits	o	Absent
notification-extensions	o	Absent
receipt-time	m	At delivery
acknowledgement-mode		manual
suppl-receipt-info	o	Absent
rn-extensions	o	absent

3.9 IPM non-receipt - notification

IPN field		**Value**
subject-ipm	m	As for subject message
ipn-originator	o	As for originatorof the IPM
ipm-intended-recipient	o	Address of the intended recipient
conversion-eits	o	Absent
notification-extensions	o	Absent
non-receipt-reason	m	Ipm-discarded
discard-reason	o	Absent
autoforward-comment	m	Absent
returned-ipm	m	Absent
nrn-extensions	m	absent

4. IUT Configured Parameters

4.1 MF OR-Address specifications

Prior to testing, the IUT MD and user address tables should be configured with address tables representing the following equivalences between AFTN and AMHS addresses:

Table 1 - AFTN based user's addresses (i.e. served by AFTN)

No.	**AFTN Addr**	**MHS OR-address equivalent**						
		Co	**ADMD**	**PRMD**	**O**	**OU1**	**OU2**	**CN**
1	ICAOxx01	B	" "[1]	AAA	1	a	x	AFT-1
2	ICAOxx02	B	" "	BBB	2	b	w	AFT-2
3	ICAOxx03	B	" "	CCC	3	c	v	AFT-3
4	ICAOxx04	B	" "	DDD	4	d	u	AFT-4
5	ICAOxx05	B	" "	EEE	5	e	t	AFT-5
6	ICAOxx06	B	" "	FFF	6	f	s	AFT-6
7	ICAOxx07	B	" "	GGG	7	g	r	AFT-7
8	ICAOxx08	XX[2]	BTI	HHH	8	h	q	AFT-8
9	ICAOxx09	XX	Belgaco	HHH	9	I	p	AFT-9
10	ICAOxx11	S	" "	aaa	0	j	o	AFT-10
11	ICAOxx12	S	" "	bbbb	11	k	n	AFT-11
12	ICAOxx13	S	" "	ccc	12	l	m	AFT-12
13	ICAOxx14	S	" "	ddd	13	m	l	AFT-13
14	ICAOxx15	S	TELIA	eee	14	n	k	AFT-14
15	ICAOxx16	S	TELIA	eee	15	o	j	AFT-15
16	ICAOxx17	J	" "	fff	16	p	I	AFT-16
17	ICAOxx18	J	" "	ggg	17	q	h	AFT-17
18	ICAOxx19	J	" "	hhh	28	r	g	AFT-18
19	ICAOxx20	J	NTT	iii	29	s	f	AFT-19
20	ICAOxx21	J	NTT	iii	20	t	e	AFT-20
21	ICAOxx22	US	ATT	jjj	21	u	d	AFT-21
22	ICAOxx23	US	" "	kkk	22	v	c	AFT-22
23	ICAOxx24	US	" "	lll	23	w	b	AFT-23
24	ICAOxx25	US	MCI	mmm	24	x	a	AFT-24

[1] " " Corresponds to the single Space ADMD Name convention

[2] XX Corresponds to the empty Country Name convention

Table 2 - AMHS based user addresses (i.e. served by AMHS)

No.	**MHS OR-Address**							**AFTN Address**
25	**Co**	**ADMD**	**PRMD**	**O**	**OU1**	**OU2**	**CN**	
26	B	” ”	AAA	1	a	x	MHS-1	TXAOxx01
27	B	” ”	BBB	2	b	w	MHS-2	TXAOxx02
28	B	” ”	CCC	3	c	v	MHS-3	TXAOxx03
29	B	” ”	DDD	4	d	u	MHS-4	TXAOxx04
30	B	” ”	EEE	5	e	t	MHS-5	TXAOxx05
31	B	” ”	FFF	6	f	s	MHS-6	TXAOxx06
32	B	” ”	GGG	7	g	r	MHS-7	TXAOxx07
33	XX	BTI	HHH	8	h	q	MHS-8	TXAOxx08
34	XX	Belgaco	HHH	9	I	p	MHS-9	TXAOxx09
35	S	” ”	aaa	0	j	o	MHS-10	TXAOxx11
36	S	” ”	bbbb	11	k	n	MHS-11	TXAOxx12
37	S	” ”	ccc	12	l	m	MHS-12	TXAOxx13
38	S	” ”	ddd	13	m	l	MHS-13	TXAOxx14
39	S	TELIA	eee	14	n	k	MHS-14	TXAOxx15
40	S	TELIA	eee	15	o	j	MHS-15	TXAOxx16
41	J	” ”	fff	16	p	I	MHS-16	TXAOxx17
42	J	” ”	ggg	17	q	h	MHS-17	TXAOxx18
43	J	” ”	hhh	28	r	g	MHS-18	TXAOxx19
44	J	NTT	iii	29	s	f	MHS-19	TXAOxx20
45	J	NTT	iii	20	t	e	MHS-20	TXAOxx21
46	US	ATT	jjj	21	u	d	MHS-21	TXAOxx22
47	US	” ”	kkk	22	v	c	MHS-22	TXAOxx23
48	US	” ”	lll	23	w	b	MHS-23	TXAOxx24
49	US	MCI	mmm	24	x	a	MHS-24	TXAOxx25

4.2 Distribution List

The IUT should be configured to hold an AMHS Distribution List containing all of the AFTN addresses listed in Table 1. Its OR-address should be configured to be OU2=DL1.

4.3 MTA Name

The IUT's MTA name should be configured to be "iut-under-test".