

# AMHS Implementation Workshop 2013

## AMHS Test Process

**Dominican Republic  
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**Federal Aviation  
Administration**



# Test Process – Key Issues

- ✓ Interoperability Test Process in General
- ✓ FAA Specific Discussion



# Factors in Interoperability Test Planning

The following factors must be considered in the planning of AMHS Interoperability Test:

- ✓ Regional Considerations
- ✓ Planned Configuration and Implementation
- ✓ Available Test Configurations and Resources
- ✓ Utilization of Existing Test Procedures
- ✓ Commonality of Equipment Under Test

Each of these factors is discussed in greater detail in the upcoming slides.



# Regional Considerations

- ✓ Differences between regions mandate differences in test planning
  - Use of ATN Routers vs. direct IP connectivity
  - X.25 vs. IP
- ✓ These differences dictate the test scenarios, the equipment and the connectivity necessary for test activities



# Planned Configuration and Implementation

- ✓ Planned network topology must be considered in planning for interoperability configuration
- ✓ Examples:
  - Will connection be point-to-point or network based?
  - Will configuration involves only two end systems or will tri-partite test be involved?
  - Is this an entirely new implementation or the integration of a new end system into an existing AMHS implementation?



# Available Test Configurations and Resources

- ✓ Interoperability test planning must consider not only the intended implementation but the available resources for testing
- ✓ For example, while the planned operational circuit may be a point-to-point leased circuit or VPN, time and cost limitations may make this impractical for testing; need to consider all alternatives
  - ◆ Leased line (X.25 or IP)
  - ◆ Dialup line
  - ◆ Public internet
  - ◆ Others

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(Cont'd)



# Available Test Configurations and Resources

- ✓ Will testing be on the planned operational system, or a test system?
- ✓ And are they identical, or is the test system a good (or poor) substitute for the real thing?



# Utilization of Existing Test Procedures

- ✓ Test cases provided by the AMHS Manual of either Asia/Pac or Europe should be used in interoperability testing (or a variant thereof)
- ✓ Test case selection should be a bi-lateral activity involving all parties of the interoperability test
- ✓ Additional tests can be defined as needed, again subject to agreement by all parties





# Commonality of Equipment Under Test

- ✓ Interoperability test planning should consider all equipment in the planned implementation
- ✓ Have either/both end systems been tested / implemented in the region previously?
- ✓ Examine commonality of systems, including underlying MTA; is it two systems essentially operating with themselves?
- ✓ This can be useful in planning for system configuration, as well as in scheduling
- ✓ But note: While similar systems provide a higher comfort level, still need to verify entire configuration end-to-end



# FAA-Specific Interoperability Test

- ✓ All requests for test are handled through the FAA International Program Office (process previously discussed)
- ✓ Once Technical Letter has been exchanged, test process begins
- ✓ Regular conference calls begin with all involved parties
- ✓ Test circuit request can be set into motion
- ✓ Configuration parameters exchanged (more on that later)
- ✓ Test plan exchanged (more on that later too)



# FAA-Specific Interoperability Test (cont'd)

- ✓ Test circuit verified (not a trivial item)
- ✓ Test execution (using Interop Plan)
- ✓ Resolution of issues found during testing, if necessary
- ✓ Retest
- ✓ Eventual approval
- ✓ Arrange cutover



# Configuration Parameter Document

- ✓ FAA originates this document, then sends to partner for completion
- ✓ Very simple, fill in the columns
- ✓ See sample on next slide (note that the sample is just a partial page of what is a 4 page document)



# Configuration Parameter Document (cont'd)

Item Description	U.S. FAA	Other Country
Mode (1988,1984,1988/84 RTSE)	1988	
RTSE Window Size	5	
RTSE Checkpoint Size	10 KB	
RTSE Transfer Time	No limit	
Idle time before unbind (time that connection initiator will hold connection open when there are no additional messages to send)	30 seconds	
Dialogue mode	Monologue	
X400 Tracing	All	
Permanent Association	No	
Association limit	1 in / 1 out	
MTS Timeout	4 hours	



# Interoperability Test Plan

- ✓ FAA originates this document, then sends to partner for comment and modification
- ✓ Tests are based on EUR AMHS Manual, with additional tests that the FAA has included
- ✓ Document contains tests that may or may not be applicable to any given configuration, partner can indicate applicability for each
- ✓ For Example:
  - “Relay of Message Through Curacao AMHS to/from K Region Using XF Originator and XF Destination Addressing Scheme”
  - This will only make sense if Curacao actually routes messages to other countries, and should otherwise be marked N/A in the test plan.



## Interoperability Test Plan (cont'd)

- ✓ Tests need to be agreed upon bi-laterally
- ✓ Test addresses must also be completed by each partner
- ✓ Procedure can take some time to nail down so coordination needs to start well in advance of planned test date



# Conclusion

Careful planning and consideration of all factors discussed in this presentation provide the opportunity for thorough and successful interoperability test between network partners.

