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航空组织

LN 3/20-SA5411

18 May 2012

To: Mr. Pierre Dubois, Directeur Régional de l'Aviation Civile aux Antilles et en Guyane (France)
Mr. Zulficar Mohamed, Director General, Civil Aviation Authority, Guyana
Mr. Falisie Jozef Pinas, Minister of Transport, Communication and Tourism, Suriname

Subject: **RLA/03/901 REDDIG Management System and Administration of the Satellite Segment – Course on ATS Message Handling System (COM-AMHS) and Interconnection Aspects (Lima, 16 to 20 July 2012)**

Action
required: Your reply by 15 June 2012

Sir,

I have the honour to refer to my letter LN 3/20-SA5339 dated 24 April 2012 requesting your agreement to carry out the Course on the ATS Message Handling System (COM-AMHS) and Interconnection Aspects, as part of the activities of Project RLA/03/901 for this year, which costs would be charged to the project budget as allowed by its allocations.

Since no adverse replies have been received to my above mentioned letter, the Course will be held at the premises of this Regional Office from 16 to 20 July 2012.

The course is designed for the technical and operational personnel in charge of the installation, operation and maintenance of AMHS systems, and will be conducted by a specialist with wide experience in AMHS, from EUROCONTROL's CNS/ATM INSTILUX Training Centre (Luxembourg). Its detailed content is attached as **Appendix A** to this letter.

The course objective is to present information on the technical design of an AMHS system (data networks, server topology, user configuration, routing tables, monitoring and supervision tools, interconnection with other AMHS systems, etc.), as well as on operational topics, such as the design of an addressing and correct routing policy, strategies of flow migration from AFTN to AMHS, and particular attention to the contents related to interconnection of AMHS systems and operating procedures of resolution and escalation of incidences.

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The course is aimed at professional personnel in charge of the installation, maintenance and operation of the AMHS or AFTN systems, and it is expected that, by the end of the event, participants will have increased their knowledge of the AMHS system, acquiring the information necessary to facilitate the interoperability between AMHS systems installed in the region.

In accordance with the above, I am pleased to invite your Administration to nominate candidates if possible no later than **15 June 2012**, by sending the *Registration Form* included as **Appendix B** with the data of each participant and, if applicable, the *ICAO Fellowship Nomination Form* duly completed, (also attached), considering that the reservation of vacancies will be made on a first come first served basis to fill the places available.


To participate in the course, your Administration might consider the following financing alternatives:

- a) Fellowships under an ICAO Project approved by your country;
- b) Availability of a fellowship under the Regional Project RLA/03/901 for each State participating in this project that does not have the previous option. The administration concerned must provide round trip tickets;
- c) Own resources of your Administration, if lacking any of the previous alternatives.

The course documentation will be distributed by electronic means, so it is recommended that participants carry a lap-top.

If further information is required, please contact Mr. Onofrio Smarrelli, CNS Regional Officer, at e-mail osmarrelli@lima.icao.int.

Accept, Sir, the assurances of my highest consideration.



Franklin Hoyer
Regional Director
ICAO South American Office
Lima

Enclosures

As indicated

cc: Mr. Daniel Madiot, Chef du SNA (ai) aux Antilles et en Guyane (France)
Mrs. Thelma Douglas Pinas, Permanent Secretary, Ministry of Transport, Communication and Tourism, Suriname
Mr. Brian De Souza, Acting Director, CASAS, Suriname
Mr. Stanley Betterson, Acting Director of Civil Aviation, Suriname
REDDIG Counterparts
C/FOS, C/PIU

APPENDIX A

PRESENTATION ON ATS MESSAGE HANDLING SYSTEM (COM-AMHS) AND INTERCONNECTION ASPECTS

MODULE 01: THEORY FOR THE USER

1. INTRODUCTION
 - Module Objectives
 - The References for this course
2. DATA COMMUNICATIONS TECHNOLOGY
 - Seven Layers
 - Role of Communications in an ATM System
 - ICAO Data Applications
 - ATN Upper/Lower Layer Protocols
 - The move to IP
 - So, what is ATN?
3. MESSAGING AND E-MAIL
 - What is a Message?
 - The Postal Analogy
 - Point to Point Messaging
 - Store and Forward / Retrieve Messaging
4. ATC MESSAGING AND AFTN
 - The ATC Requirement for Messaging
 - Current Messaging Requirements
 - Messaging Application - an ATC Example
 - ICAO Protocols and Standards
 - Services provided by the AFTN
 - AFTN Procedures
 - AFTN Addressing
 - ICAO Regions
 - Message Formats
 - AFTN Inter-Centre Communication
 - AFTN Limitations
 - Why migrate to AMHS
 - Benefits of AMHS
 - The Way Forward
5. X.400: DEFINING THE TERMS
 - What is MHS?
 - Standards Development
 - What is a Message Handling System?
 - Message Structure
 - MHS Information Objects
 - MHS Services
 - The MHS Architecture
 - (A)MHS components: (ATS) Message Server
 - (A)MHS components: (ATS) User Agent
 - (A)MHS Components: The Message Store
 - (A)MHS Components: Access Units
 - The Journey of a Message
 - Management Domains
 - ADMDs and PRMDs
 - AMHS Management Domains
 - 'XX' Country Codes

- OR-Address Forms
- The Need for Directory Services
- Directory Overview
- Security Threats
- The MHS Security Functional Groups
- 6. X.400 - THE COMMUNICATIONS PROTOCOLS
 - Connecting MHS System Components
 - MHS Protocols
 - Underlying Networks: Physical vs. Logical Connections
 - AMHS Network over underlying network
 - Levels of connectivity in the AMHS architecture
 - Why not SMTP?
- 7. X.400 - MTS AND IPMS
 - MTS Functional Groups
 - Basic MTS Envelope
 - Delivery Reports
 - Non-Delivery Reports
 - The IPMS Elements of Service & IPM Heading
 - Receipt, Non-Receipt & Other Notifications
- 8. FROM MHS TO AMHS - ICAO ATN SARPS
 - AMHS SARPs Development
 - Basic and Extended Services
 - Selected Functions of the Extended Services
 - AMHS components: AFTN/AMHS Gateway
 - AMHS Message Formats
 - Message and Report Mappings
 - Message Field Mappings
 - Scenarios for an AFTN SS Message
 - AMHS address types
 - The A in AMHS
- 9. STRATEGY
 - PENS: Pan European Network Services over IP
 - The PENS - Status
 - PENS contract signed
 - COM05
 - COM05 progress report
 - Where are we today with AMHS?
 - HARE Programme
 - Single European Sky - Messaging
 - AMHS in SESAR
 - SWIM and SESAR
 - Future Communications Infrastructure
- 10. AMHS IN THE WORLD
 - AMHS in ASIAPAC
 - AMHS ASIAPAC Network
 - Transition - ASIAPAC
 - AMHS in CARSAM
- 11. CONCLUSION
 - Conclusion
 - Programme

MODULE 02: AMHS SYSTEM DESIGN AND TECHNICAL ISSUES

1. INTRODUCTION
Objectives
2. DRIVERS FOR AFTN MIGRATION
Reminder: Why migrate to AMHS
3. AMHS SYSTEM DESCRIPTION
AMHS System Description
General AMHS Overview
ATSMHS traffic flows
How does an X.400 system work?
AMHS information model
AMHS Objects
Flow of Information Objects in AMHS
AMHS activity over underlying networks
ATM applications over UNDERLYING NETWORKS
Topology of AMHS servers: centralised vs. distributed
Network characteristics determined by topology
European ATS Messaging Profile
AMHS QoS Requirements
4. AMHS SYSTEM DESIGN CRITERIA
Phases for AMHS Deployment
Transaction Examples
Technical Criteria
Modular Solution
Scalable and Portable Solution
5. AMHS USER TYPES
Evolution/Migration of Users
TYPE of ATM COMs SERVICES
Objectives for the User Migration Process
How does a User Agent Work?
What does the User do?
... and what tools does the user have?
UA: Free Text Format Message
UA: Auto-Formatting AIS Messages
UA: Auto-Formatting ATS Messages
UA: Auto-Formatting MET Messages
UA: Non Delivery Reports (NDR)
UA: Receipt Notifications (RN)
UA: Tracking Sent Messages
UA: Filtering Tool
UA: Message Backup
AU: Access Unit
Logical Connections for the ICARO/AMHS Solution
Access Unit: EAD Solution
EURONOTAM (I): COMMUNICATIONS FLOW
EURONOTAM (II): PHYSICAL TOPOLOGY
Exercises

6. AMHS SYSTEM MANAGEMENT TOOLS
 - Support Levels
 - Main AMHS Management Tools
 - High Level Administration Tool (HILA) (1)
 - HILA (2): Users and Adjacent MTAs
 - HILA (3): Local Users Administration
 - HILA (4): Adjacent MTAs Admin
 - HILA (5): Routing Table Administration
 - Local and Central Supervision
 - SNMP Alarms Supervision
 - End-to-End View Based on SNMP
 - Tracking Tool (1)
 - Tracking Tool (2): Web-based Administration Tool
 - Tracking Tool (3): Search Criteria
 - Tracking Tool (4): Results
 - Messaging Activity Monitor (1)
 - Messaging Activity Monitor (2): Users' View
 - Messaging Activity Monitor (3): Adjacent MTA's View
 - Messaging Activity Monitor (4): Alarms View
 - Messaging Activity Monitor (5): Global View
 - UA Archive: Control Position
 - AMHS Queue Monitoring
 - Historical Data Storage Manager
 - Statistics
 - Time Synchronisation: Network Time Protocol NTP
 - Remote Monitoring
7. AMHS COMMON FACILITIES
 - Common Facilities
 - Pan-European IP Network: PENS
 - Example: Madrid-Frankfurt IP Connection
 - PENS current situation
 - MAIN OBJECTIVES AND BENEFITS OF PENS
 - POTENTIAL PENS USERS
 - CONSIDERATIONS About SWIM, AMHS and PENS
 - Transition Plan IPv4/IPv6
 - Protocol Stacks for Transition-Phase AMHS Applications
 - Management Center (CMC)
 - EUR/NAT COM Chart
 - ATS Messaging Management Centre (AMC)
 - Directory Services
 - Name Resolution
 - Address Conversion
 - UA: Directory Query
 - Inter-Regional Gateways
 - An MTA with Dual Stacks
 - SITA TYPE B / AMHS Gateway (1) : Initial Situation
 - SITA TYPE B / AMHS Gateway (2): Message Migration
 - AMHS Security
 - Testing and Training Facilities
 - Examples of Testing Tools
 - Human resources analysis for IP/AMHS interoperability activities
 - Platform Standardization Test

MODULE 03: AMHS OPERATIONAL ISSUES

1. **AMHS OPERATIONAL ISSUES**
 - Main AMHS Operational Issues
 - AMHS Addressing: CAAS
 - AMHS Addressing: XF
 - AMHS Addressing: CAAS and XF
 - AMHS Addressing: CAAS vs. XF
 - How to define a national CAAS scheme
 - AMHS Addressing Registry
 - XF Address Conversion: Use of the ICAO registry
 - CAAS Addr. Conversion: Use of the ICAO registry
 - Global AMHS Address Registration
 - International Topology and Routing Strategy
 - Conversion between an AMHS IPM and an AFTN message
 - Mapping priorities
 - Conversion of AFTN Service Messages
 - Acknowledgement of SS-priority messages
 - Reception of an AMHS message with ATS-Message-header SS and RN not requested
 - Reception of an AMHS message with ATS-Message-header no SS and RN requested
 - Reception of RN with subject message not generated by the AFTN/AMHS GW
 - AMHS to AFTN Direction (reception of a Non-Receipt-Notification)
 - Message rejection due to the use of an unknown addressee indicator or recipient
 - Rejection of an AFTN-to-AMHS message: Transfer of NDR to the control position
 - Reception of NDR with subject message not generated by the AFTN/AMHS GW
 - AFTN to AMHS direction: Unsuccessful conversion of addressee indicator in incoming
 - AFTN to AMHS Direction (unsuccessful conversion of origin OGN indicator)
 - AMHS to AFTN Direction (unsuccessful conversion)
 - AMHS to AFTN Direction (non-delivery and out-of-line situations)
 - Legal AMHS Recording
 - Legacy Procedures
 - Management of MTA names and passwords
 - Associations between MTAs: Dialogue mode
 - Simultaneous P1 associations
 - Application and network timers optimization
 - AMHS operational issues
2. **OPERATIONAL AFTN MIGRATION TO AMHS**
 - AFTN to AMHS Migration
 - Decisions during AMHS Planning
 - Pre-requisite tasks
 - Tasks to be performed with every AMHS COM centre
 - Testing phases
 - Preoperational scenario
 - Details of the preoperational phase
 - AFTN Flows migration to AMHS: Objectives
 - AFTN Flows migration to AMHS: Initial situation
 - AFTN Flows migration to AMHS: Step 1
 - AFTN Flows migration to AMHS: Step 2
 - AFTN Flows migration to AMHS: Step 3
 - AFTN Flows migration to AMHS: Step 4a
 - AFTN Flows migration to AMHS: Step 4b
 - Operational AFTN migration to AMHS
 - Interconnection considerations

3. THE FIRST PROJECT ACTIVITIES
 - Current Status
 - FIRST
 - Outcomes of the FIRST Team
 - First Operational IP Link: MADRID-FRANKFURT
 - FIRST Team: Testing Structure
 - FIRST Team: Testing Development
4. CONCLUSION, DOCUMENTATION AND GLOSSARY
 - ICAO documentation
 - AMHS SARPs sub-volume 3
 - Need for Amendment to SARPS (PDRs)
 - Glossary
 - Conclusion



APPENDIX B /APÉNDICE B

INTERNATIONAL CIVIL AVIATION ORGANIZATION ORGANIZACIÓN DE AVIACIÓN CIVIL INTERNACIONAL

RLA/03/901 Regional Project Proyecto Regional RLA/03/901

PRESENTATION ON ATS MESSAGE HANDLING SYSTEM (COM-AMHS) AND INTERCONNECTION ASPECTS / PRESENTACIÓN SOBRE EL SISTEMA DE MANEJO DE MENSAJES ATS (COM-AMHS) Y ASPECTOS DE INTERCONEXIÓN

Lima, Peru, 16 to 20 July 2012 / Lima, Perú, 16 al 20 de julio de 2012

REGISTRATION FORM / FORMULARIO DE REGISTRO

1. Estado/*State*:
Organismo/*Organization*: _____

2. Nombre/*Name*: _____

3. Cargo/*Position*: _____

4. Dirección oficial /
Business address: _____

5. Tel.: _____ E-mail: _____

6. Hotel o dirección en
la ciudad/ *Hotel or*
local address: _____

7. Información de vuelo/ Vuelo llegada/ fecha/ hora/
Flight information: *Arrival flight/ date/ hour*: _____

Vuelo salida/ fecha/ hora/
Departure flight/ date/ hour: _____

Firma/
Signature: _____ Fecha/
Date: _____

Enviar este formulario debidamente completado a:: *mail@lima.icao.int*