

AMHS Seminars / AMHS Training

Get ready for the new technology!

in Markdorf (Germany) at the
Lake of Constance Area (Bodensee)

On the way to AMHS

At present, there are many initiatives and activities aiming at a rapid implementation and operation of the ATS Message Handling System (AMHS). At the level of ICAO Regions working groups are tasked with the development of guidelines for and the coordination of implementations. Particular work items are the development of common communication profiles, recommendations for conformance and interoperability testing, and the provision of so-called "common facilities" in support of a reliable overall communication service. Regional AMHS workshops are conducted for coordination between States and information exchange with manufacturers. In addition, activities are underway aiming at the harmonisation of the inter-regional AMHS communication.

Need for training

The AMHS SARPs (ICAO Doc 9880) are written as "delta specification" to the ISO/IEC 10021 standard series. The AMHS SARPs specify in detail the AMHS specific provisions, however, the adopted MHS elements are only identified by references. That means, sufficient understanding of the AMHS needs study of the AMHS SARPs as well as the underlying quite voluminous MHS specifications. In consideration of this situation, regional AMHS implementation groups identified the urgent need of appropriate training for technical and operational staff.

AC-B's AMHS Seminar

The Seminar offered by AC-B provides a comprehensive technical and operational survey of the AMHS. In contrast to other available seminars, the course materials have been developed from and with an AMHS perspective, taking the underlying ISO/IEC MHS standard series into consideration as far as needed. The AFTN/AMHS Gateway is handled in detail from an operations- and design-viewpoint. The most recent update of the AMHS SARPs (ICAO Doc 9880) and the provisions of Regional Profiles are taken into account. Live-Demonstrations of AMHS centre functions in a conformance test environment supplement classroom training.

Who should attend?

The contents of the Seminar address system engineers tasked with the specification and commissioning of AMHS facilities, and the operators of such facilities. Implementers and staff involved in the testing are provided with detailed materials which will facilitate the reading of the AMHS SARPs and the underlying ISO/IEC MHS standard series. The Seminar is also suitable for refreshing and expanding knowledge gained from other (introductory) seminars.

Seminar contents

The seminar is organised in eight parts:

- AMHS Basics
- Gateway/1 (operational aspects)
- AMHS Routing
- Extended AMHS
- MHS Procedures
- MHS Information Objects
- Gateway/2 (technical aspects)
- Regional Implementations

AMHS Basics – This part provides a basic overview of the AMHS communication concept and the services offered to AMHS users. Major topics are the AMHS architecture (in terms of functional components, information objects and protocols), supported data types and user addressing. The presentations focus on the Basic ATS Message Service as currently implemented by most of the ANSPs. Explanations are given how elements of the ISO/IEC MHS standard form the platform of the AMHS. Supplementary information relates to the embedding of the AMHS in the ATN environment and provides the background of the ICAO standardisation work. The concluding section handles the current migration of the ATN from ISO/OSI communication (ATN OSI) to the Internet Protocol Suite (ATN IPS).

See our next course dates at
<http://www.ac-b.de/>

Time	Tuesday	Wednesday	Thursday	Friday
09:00—10:30 am	AMHS Basics	AMHS Routing	MHS Procedures	MHS Information Objects
11:00—12:30 am	AMHS Basics	AMHS Routing	MHS Procedures	Gateway/2
Lunch Break				
02:00—03:30 pm	Gateway/1	Extended AMHS	MHS Information Objects	Regional Implementations
04:00—05:00 pm	Gateway/1	Extended AMHS	AMHS Live Demonstration	



Gateway/1 – This part is dedicated to the operational aspects of the AFTN/AMHS Gateway. The audience is provided with the taken conceptual approach and the conversion mechanisms. Operational limitations of the gateway and needed operator assistance are identified.

AMHS Routing – This part provides firstly an introduction to network topology aspects and common routing strategies upon them. In more detail, the developed concept for AMHS routing in the European Region is presented. In addition, routing issues during the transition phase from AFTN/CIDIN to AMHS are discussed.

Extended AMHS – This part deals with the enhancements added to the Basic ATS Message Service, i.e. support of unstructured binary data, secure messaging, use of directory services and use of MHS service elements not yet available at the time of the initial AMHS specifications.

MHS Procedures – This part is concerned in detail with procedures, operations and protocols defined with the ISO/IEC MHS standard and adopted for the AMHS. In addition, the components defined at the Application Layer for MHS communication are explained and the related parameters needed for establishment of connections between adjacent AMHS systems are indicated.

MHS Information Objects – This part presents in detail the construction of MHS information objects and related communication services and indicates their relevance for AMHS. The reader is provided with sufficient knowledge about MHS features to understand in detail the conversion mechanisms in the AFTN/AMHS gateway as handled in the part Gateway/2.

Gateway/2 – This part presents details of the mutual mapping process between AMHS and AFTN information objects. Situations where mapping fails are examined. The provided information supplements the presentations given in Gateway/1.

Regional Implementations – This part gives an outline of the planning activities conducted in ICAO Regions for a coordinated AMHS implementation. In particular, Regional AMHS Profiles are explained as well as the developed specifications for AMHS conformance and interoperability testing. The concluding section informs about the implemented centralised European AMHS off-line management functions (AMC). Generally, this part

indicates the scope of needed agreements and provisions of common facilities at the level of ICAO Regions to close such functional areas which in the AMHS SARPs are seen as "implementation matters". The given information is useful in preparation for forthcoming inter-regional coordination activities.

Style and form

The Seminar is based on PowerPoint presentations accompanied by live demonstration. A small classroom ensures an adequate Seminar atmosphere and allows discussions of presented subjects. The provided workbook for the course comprises about 700 pages. Please visit our Web site <http://www.ac-b.de> for examples of course materials and further details on the seminar contents.

Live demonstration

The participants of the seminar are invited to watch live scenarios demonstrated in an AMHS test network. Several demonstrations are presented in connection with the specific AMHS topics during the course. The participants will be given the chance to look at AMHS messages, reports and probes through an authentic (operational) user interface and experience the behaviour of a real AMHS/AFTN Gateway implementation in a simulated network environment.

The venue

Markdorf is situated in a beautiful region close to Lake Constance and the Alps. You can travel by plane via airports Friedrichshafen (12 km) or Zurich (84 km) and by railway. Should you need travel and hotel booking assistance, please send an e-mail to: info@ac-b.de

AC-B specializes in providing IT-solutions for communication, information, monitoring and control in distributed and heterogeneous environments. We transform your business needs and define testable requirements, custom design system architecture and successfully implement your IT-solution. To modernize already productive systems, migration solutions help realize new targets. AC-B's comprehensive services include overall feasibility studies, dedicated consulting services in technical or project-specific matters, project management support as well as turn-key project execution from requirements acquisition to commissioning. AC-B provides maintenance and support for existing systems, with an optional 24/7 helpdesk / hotline service. Included in our client base are several well-known companies and organizations such as the German Civil Aviation Authority (DFS), the German Aerospace Centre (DLR) and the European Aeronautic Defence and Space Company (EADS). Projects awarded to AC-B include: the maintenance and support of VAN - the national messaging network of the DFS - used for the exchange of air traffic control information; project management and quality assurance support for the Meteosat weather satellite ground station operated by the DLR.

The lecturers

Manfred Okle joined the ICAO AFTN/CIDIN/AMHS Panel work in the late 70's. Since 1993, he worked as technical advisor in the ATN Panel for the standardization of the AMHS. He made essential contributions to the specification of AMHS gateways. Participations in European AFS implementation groups (as PIANEG, GERAC and AFSG) and the SPACE study project, made Manfred Okle familiar with specific European implementation issues. In addition, Manfred Okle was engaged as technical project manager in a number of AFS implementations. Today, he is a consultant for AC-B GmbH.

Rainer Hoffmann is a systems engineer for software projects and a professional in data networking, messaging and management applications. In the nineties, he contributed to the standardization of ICAO's Aeronautical Telecommunication Network (ATN). He participated in European ATN studies and initial ATN implementation projects, such as EURATN and ProATN. Together with AC-B GmbH Rainer Hoffmann designed the AMHS Test Suite, which is a conformance test tool for aeronautical message handling systems. Today he works as a test and verification engineer and AMHS seminar trainer.