



FIXM Primer

The Flight Information Exchange Model (FIXM) is an exchange model capturing Flight and Flow information that is globally standardised. The requirement for FIXM was identified by the International Civil Aviation Organisation (ICAO) Air Traffic Management Requirements and Performance Panel (ATMRPP) and endorsed at the 12th Air Navigation Conference as part of the Aviation System Block Upgrades (ASBU) and as described in Flight and Flow Information for a Collaborative Environment (FF-ICE).

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The FIXM Primer is the entry point to FIXM. It provides an introduction to FIXM, sets it into context, explains how the FIXM community is organised and lists its components and supporting materials.

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The authoritative reference for FIXM is www.FIXM.aero.

Details on the FIXM CCB and a list of its members is available on request from fixm.secretariat@eurocontrol.int.

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Introduction

The FIXM Primer is the entry point to FIXM. It provides an introduction to FIXM, sets it into context, explains how the FIXM community is organised and lists its components and supporting materials. The target audience for the FIXM Primer is:

- Experts in the Flight domain and ATM expert modellers having an interest in the global harmonisation of Flight information
- Developers of systems and information services that require interoperable exchange of Flight information
- More generally, any organisations or individuals working in the field of ATM that are interested in exchanging Flight information

Introduction to FIXM

What is FIXM?

The Flight Information Exchange Model (FIXM) is an exchange model capturing Flight and Flow information that is globally standardised.

FIXM is the equivalent, for the Flight domain, of AIXM (Aeronautical Information Exchange Model) and WXXM (Weather Information Exchange Model) both of which were developed in order to achieve global interoperability for, respectively, AIS and MET information exchange. FIXM is therefore part of a family of technology independent, harmonized and interoperable information exchange models designed to cover the information needs of Air Traffic Management. According to the ICAO SWIM concept [1], FIXM is one of the models that belong to the “Information Exchange Models” layer of the ICAO SWIM Global Interoperability framework.

FIXM contains flight information items that satisfy, and are traceable to, ICAO requirements for Flight information exchanges.

Main FIXM drivers

The requirement for FIXM was identified by the ICAO Air Traffic Management Requirements and Performance Panel (ATMRPP) and endorsed at the 12th Air Navigation Conference as part of the Aviation System Block Upgrades (ASBU) and as described in Flight and Flow Information for a Collaborative Environment (FF-ICE) [2].

FIXM is mainly developed as an enabler for the ICAO FF-ICE concept. FIXM also supports the flight data exchanges required by ICAO GADSS/LADR [3].

The **FIXM Strategy** details the strategic objectives for FIXM to guide the overall FIXM development.

FIXM development and change management

The development of FIXM is **open** to any organisation or individual having a verifiable interest in FIXM. The collaborative group of FIXM Stakeholders forms the **FIXM Community of Interest (Col)**.

The evolution of FIXM is managed by the **FIXM Change Control Board (CCB)**. It is supported by the **FIXM CCB Secretariat (CCBS)** which provides the technical and human resources for the management of the FIXM Change Proposals, of the FIXM components and of the FIXM online resources.

The FIXM CCB, FIXM CCBS and FIXM Col act under the provision of the **FIXM Change Management Charter**. This document clarifies the roles and responsibilities of each group and details the FIXM change management process.

Because FIXM is an enabler for the ICAO FF-ICE concept, the FIXM development is supervised by the **ICAO ATMRPP**.

FIXM online resources

The development and release process of FIXM are supported by the following online resources:

- The **FIXM website** (www.FIXM.aero) serves as the authoritative reference for all FIXM materials. It stores the official FIXM releases and related materials endorsed by the FIXM CCB.
- The **FIXM User Manual** (<https://docs.fixm.aero/>) provides access to the strategic documents that guide the overall FIXM development, and captures technical guidance for the implementation of FIXM.
- The **FIXM Work Area** (<https://eurocontrol.sharepoint.com/sites/coll-FIXM>) is a SharePoint Environment created under OneSky Teams, the collaborative platform of the EUROCONTROL Extranet. It supports the day-to-day work on FIXM and facilitates the discussions between FIXM stakeholders about any FIXM-related subject. The **FIXM Work Area** complements the “static” FIXM website by providing a more “dynamic” environment in support of the evolution of FIXM.

Note: FIXM online resources are provided or hosted by different members of the FIXM Col. This does not imply any specific ownership of related content and structures by these members.

Downloading and using FIXM

Appendix A provides the links to all official - and latest - FIXM components and supporting documents, including guidance for implementing and using FIXM.

Commercial uses of FIXM are permitted as stated in the license agreement on page 2.

Becoming a member of the FIXM Col or FIXM CCB

Becoming a registered member of the FIXM Col is achieved by registering to the FIXM Work Area. The **FIXM website** provides guidance for completing this registration and for accessing and using the FIXM online resources.

The **FIXM Change Management Charter** defines the FIXM CCB membership rules. FIXM CCB membership requests shall be addressed directly to the FIXM CCB.

Overview of the latest release

FIXM components

The term FIXM refers collectively to a set of technical components and associated documentation. FIXM Core is the principal component of this set. Appendix A provides the list of the FIXM components and corresponding URLs.

The latest release of FIXM Core is version 4.3.0. FIXM Core v4.3.0 comes together with the “FF-ICE Message” Application Library (v1.1.0) that addresses the use of FIXM Core in the specific context of FF-ICE and that provides formal representation of the individual FF-ICE messages. A “Basic Message” Application Library (v1.1.0) is also available in order to provide basic messaging support.

Scope of FIXM Core v4.3.0

The scope of FIXM Core 4.3.0 is the following: provide harmonised representation of the flight data structures exchanged 1) in the context of FF-ICE/R1 and 2) in the context of ICAO GADSS/LADR.

Main changes in FIXM Core v4.3.0

- Reflects a more mature and almost final version of the FF-ICE/R1 requirements specified by the ICAO ATMRPP.
- Model and schema optimisations based on implementers’ feedback.
- Adds data elements exchanged in the context of GADSS/LADR.

The **FIXM Release Note** provides further details about the changes implemented in this release.

Plans for future FIXM versions

Plans for future FIXM versions will be gradually documented on the FIXM online resources.

Main FIXM References

- [1] Manual On System Wide Information Management (SWIM) Concept, (Advanced Edition – 2015), ICAO Doc 10039
- [2] Manual on Flight and Flow Information for a Collaborative Environment (First Edition – 2012), ICAO Doc 9965
- [3] Manual on the Functional Specifications for the Location of an Aircraft in Distress Repository (LADR) (First Edition – 2021), ICAO Doc 10150

Appendix A – List of FIXM materials

FIXM Strategy & Change Management

FIXM Strategy	Details the strategic objectives for FIXM.	https://www.fixm.aero/documents/FIXM%20Strategy.pdf
FIXM Change Management Charter	Clarifies the roles and responsibilities of the FIXM CCB, CCBS & Col and details the FIXM change management process.	https://www.fixm.aero/documents/FIXM%20Change%20Management%20Charter.pdf

FIXM Core v4.3.0

Logical Model	Captures in UML the flight data structures that are exchanged, in line with the scope declaration of FIXM.	https://www.fixm.aero/releases/FIXM-4.3.0/FIXM_Core_v4.3.0.eap
XML Schemas	A realisation of the Logical Model expressed as a XML Schema Definition (XSD).	https://www.fixm.aero/releases/FIXM-4.3.0/FIXM_Core_v4.3.0_Schemas.zip

FF-ICE Message Application Library v1.1.0

Logical Model	Captures in UML the FF-ICE Message data structures and the individual FF-ICE Message templates.	https://www.fixm.aero/releases/FFICE-Msg-1.1.0/FIXM_Ffice_Message_v1.1.0_with_Core_v4.3.0.eap
XML Schemas	A realisation of the Logical Model expressed as a XML Schema Definition (XSD).	https://www.fixm.aero/releases/FFICE-Msg-1.1.0/FIXM_Ffice_Message_v1.1.0_with_Core_v4.3.0_Schemas.zip

Basic Message Application Library v1.1.0

Logical Model	Captures in UML a generic Message structure.	https://www.fixm.aero/releases/Basic-Msg-1.1.0/FIXM_Basic_Message_v1.1.0_with_Core_v4.3.0.eap
XML Schemas	A realisation of the Logical Model expressed as a XML Schema Definition (XSD).	https://www.fixm.aero/releases/Basic-Msg-1.1.0/FIXM_Basic_Message_v1.1.0_with_Core_v4.3.0_Schemas.zip

Supporting materials

FIXM Primer <i>(this document)</i>	The entry point to FIXM.	https://www.fixm.aero/releases/FIXM-4.3.0/FIXM_Core_v4.3.0_Primer.pdf
HTML Documentation	An online HTML description of the FIXM content derived programmatically from the main FIXM components.	<p>FIXM Core v4.3.0: https://www.fixm.aero/releases/FIXM-4.3.0/doc/schema_documentation/Fixm.html</p> <p>FF-ICE Message Application Library v1.1.0: https://www.fixm.aero/releases/FFICE-Msg-1.1.0/doc/schema_documentation/ffice_message/FficeMessage.html</p> <p>FF-ICE Message Templates v1.1.0: https://www.fixm.aero/releases/FFICE-Msg-1.1.0/doc/schema_documentation/ffice_templates/FficeTemplates.html</p> <p>Basic Message Application Library v1.1.0: https://www.fixm.aero/releases/Basic-Msg-1.1.0/doc/schema_documentation/BasicMessage.html</p>
Requirements Traceability Report	Provides a mapping between the FIXM logical model classes and the ICAO requirements, explaining why each class exists in the FIXM model.	https://www.fixm.aero/releases/FIXM-4.3.0/FIXM_Core_v4.3.0_Requirements_Traceability_Report.pdf