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Federal Aviation Administration**

Java Message Service Description Document (JMSDD)

**System Wide Information Management (SWIM)
Flight Data Publication Service (SFDPS)**

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Federal Aviation Administration
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800 Independence Avenue, SW
Washington, DC 20591**

**Prepared by
Volpe National Transportation Systems Center
Air Traffic Management Systems Division
55 Broadway, Cambridge, MA 02142**

Java Messaging Service Description Document

SWIM Flight Data Publication Service

Approval Signatures

Name	Organization	Signature	Date Signed
Chris Pressler	AJM-316		11/09/2015

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SWIM Flight Data Publication Service

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1. Scope

This Java Messaging Service Description Document (JMSDD) describes the Java messaging services for the System-Wide Information Management (SWIM) Flight Data Publication Service (SFDPS). These Service Oriented Architecture (SOA) services are available to Federal Aviation Administration (FAA) users and non-FAA users as National Airspace System (NAS) services. This document was prepared in accordance with the FAA Standard Practice Preparation of Java Messaging Service Description Documents [FAA-STD-073 (Reference 13)].

SFDPS publishes four different categories of data, defined as four En Route Data Services. The four services are:

- En Route Flight Data Publication (ERFDP) – Includes any data specific to an individual flight.
- En Route Airspace Data Publication (ERADP) – Includes airspace data that is of general interest.
- En Route Operational Data Publication (ERODP) – Includes data sent by En Route Automation Modernization (ERAM) to support specific FAA monitoring functions.
- En Route General Message Publication (ERGMP) – The ability to send general, free-form text messages and other messages to one or more clients or classes of clients.

The description is divided into three core sections: Service Profile, Service Interfaces, and Service Implementation.

- The Service Profile section answers the question “What does the service do?” It does this in a manner that allows a service consumer to determine whether a particular service meets its needs.
- The Service Interfaces section answers the question “How does the service work?” It describes the interface and semantics of the service; that is, it details the content of requests, message formats, data types, and transport formats.
- The Service Implementation section answers the question “How does one access the service?” It specifies the communication protocol and network address.

1.1 Background

This JMSDD applies to the current version of Phase 1 of the SFDPS. SFDPS is the SWIM program developed to provide flight information services to a wide variety of consumers in a manner that complies with SWIM standards and requirements. The general purpose of Phase 1 is to make ERAM system data easily accessible to consumers. Phase 1 provides only a one-way data distribution; two-way communications between other systems and ERAM are deferred to Phase 2.

SFDPS data consumers could be FAA facilities, FAA systems or programs, other government systems or programs, or non-government systems or programs. This data is derived completely from the Host Air Traffic Management (ATM) Data Distribution System (HADDSS) Common Message Set (CMS) messages. The general behavior is that an incoming CMS message from HADDSS triggers a data publication from SFDPS.

SFDPS publishes messages to the National Airspace (NAS) Enterprise Messaging Service (NEMS), which then delivers those messages to subscribers.

This document only deals with SFDPS JMS publication services. Request-Response web services are described in the Web Service Description Document (WSDD) (See Reference 6).

2. Applicable Documents

2.1 Government Documents

1. Ken Howard, *FDPS Architecture Description*, Volpe National Transportation System Center, Cambridge, MA, report no. VNTSC-TFM-12-6, March 2012
2. *System/Subsystem Specification (SSS) Document for the En Route Flight Data Publication Service, Draft*, Volpe National Transportation System Center, Cambridge, MA, Version 2.0, January 9, 2015
3. *Host Air Traffic Management (ATM) Data Distribution System (HADDS) Application Programming Interface (API) Document, Revision 1 For Common Message Set (CMS)*, May 2008
4. *System/Subsystem Design Description (SSDD) For the En Route Flight Data Publication Service, Draft*, Volpe National Transportation System Center, Cambridge, MA, Version 0.37, September 1, 2014
5. *Development Test (DT) Test Plan For the En Route Flight Data Publication Service (FDPS) Version 1.10*, Volpe National Transportation System Center, Cambridge, MA, October 19, 2012
6. *FPDS Software Design Description Document (SDD), Draft*, Version 1.2, Volpe National Transportation System Center, Cambridge, MA, September 1, 2014
7. *Web Service Requirements Document (WSRD) System Wide Information Management (SWIM) Flight Data Publication Service (SFDPs)*, Version 2.2, Volpe National Transportation System Center, Cambridge, MA, July 01, 2015
8. *Web Service Description Document (WSDD) System Wide Information Management (SWIM) Flight Data Publication Service (SFDPs)*, Version 2.3, Volpe National Transportation System Center, Cambridge, MA, July 01, 2015
9. FAA-STD-063, *XML Namespaces*, May 1, 2009
<http://www.tc.faa.gov/its/worldpac/standards/faa-std-063.pdf>
10. FAA-STD-064, *Web Service Registration*, May 1, 2009
<http://www.tc.faa.gov/its/worldpac/standards/faa-std-064.pdf>
11. FAA-STD-065, *Standard Practice Preparation of Web Service Description Documents*, February 26, 2010
<http://www.tc.faa.gov/its/worldpac/standards/faa-std-065.pdf>
12. FAA-STD-066, *Web Service Taxonomies*, February 26, 2010
<http://www.tc.faa.gov/its/worldpac/standards/faa-std-066.pdf>
13. FAA-STD-073, *Preparation of Java Messaging Service Description Documents*, January 29, 2014
<http://www.tc.faa.gov/its/worldpac/standards/faa-std-073.pdf>
14. *NAS Enterprise Messaging Service (NEMS) Asynchronous Messaging ICD, Draft*, Federal Aviation Administration, System Wide Information Management Program, July 20, 2012
15. *SFDPs_v1.2.xsd*, Volpe National Transportation System Center, Cambridge, MA, December 10, 2014

16. FIXM 3.0 Schema Files, Volpe National Transportation System Center, Cambridge, MA, December 10, 2014
17. AIXM Schema Files, Volpe National Transportation System Center, Cambridge, MA, July 24, 2014

2.2 Non-Government Documents and Other Publications

18. World Wide Web Consortium (W3C) XML Schema
<http://www.w3.org/XML/Schema>
19. W3C Recommendation, "XML-Signature Syntax and Processing", 12 February 2002.
<http://www.w3.org/TR/2002/REC-xmldsig-core-20020212/>
20. W3C Recommendation, D. Eastlake et al. XML Signature Syntax and Processing
21. Java 2 Platform, Enterprise Edition, v 1.3 API Specification
<http://docs.oracle.com/javaee/1.3/api/>
22. XML Signature Syntax and Processing (Second Edition). 10 June 2008.
<http://www.w3.org/TR/2008/REC-xmldsig-core-20080610/>
23. Organization for the Advancement Structured of Information Standards (OASIS) SOA Reference Model.
<http://docs.oasis-open.org/soa-rm/v1.0/soa-rm.pdf>

2.3 Security Policies

24. FAA Order 1370.103, Encryption Policy, dated 11/12/08
25. FAA Order 1370.104, Digital Signature Policy dated 10/31/2008
26. FAA Order 1370.112, FAA Application Security Policy dated 10/5/2010
27. FAA Order 1370.92A, Password and PIN Management Policy dated 8/6/2010
28. FAA Order 1370.95, Wide Area Network Connectivity Security dated 9/12/2006
29. FAA Protecting Personally Identifiable Information Order 1280.1B, 12/17/08
30. FAA Order 1370.113 Web Security Management Policy 5/16/12

3. Definitions

Many of the terms listed in this section are defined in FAA-STD-073, Preparation of Java Messaging Service Description Documents (see Reference 13).

3.1 Terms and Definitions

Asynchronous	An interaction in which the associated messages are chronologically and procedurally decoupled. For example, in a request-response interaction, the client agent can process the response at some indeterminate point in the future when its existence is discovered.
Authentication	The process of verifying an identity claimed by or for a system entity.
Authorization	The granting of rights or permission to a system entity (mainly but not always a user or a group of users) to access a service.
Binding	An association between an interface, a concrete protocol, and a data format. A binding specifies the protocol and data format to be used in transmitting messages defined by the associated interface.
Client	A client is an external entity that interacts with a service. A client makes a request of a service and receives a response from the service. The client may also request a subscription and receive messages when a service publishes information. A client may be a software system, software application, or another service. A client may be a NAS client or a non-NAS client.
Data Element	A unit of data for which the definition, identification, representation, and permissible values are specified by means of a set of attributes.
Datatype	A set of distinct values, characterized by properties of those values, and by operations on those values.
Effect	A state or condition that results from interaction with a service. Multiple states may result depending on the extent to which the interaction completes successfully or generates a fault.
End Point	An association between a fully specified binding and a physical point (i.e., a network address) at which a service may be accessed.
Fault	A message that is returned as a result of an error that prevents a service from implementing a required function. A fault usually contains information about the cause of the error.
Format	The arrangement of bits or characters within a group, such as a data element, message, or language.
Input	Data entered into, or the process of entering data into, an information processing system or any of its parts for storage or processing.
Java Message Service (JMS)	A Java-based application programming interface (API) that

	provides a common way for Java programs to create, send, receive, and read an enterprise messaging system's messages.
JMS Client	An application or process that produces and/or receives messages.
Message	A basic unit of communication from one software agent to another sent in a single logical transmission.
Message Producer	A JMS client that creates and sends messages.
Namespace	A collection of names, identified by a Uniform Resource Identifier (URI) reference, that are used in Extensible Markup Language (XML) documents as element types and attribute names. The use of XML namespaces to identify uniquely metadata terms allows those terms to be used unambiguously across applications, promoting the possibility of shared semantics.
NAS Enterprise Messaging Service (NEMS)	A NAS-based implementation of message-oriented middleware (MOM) that is responsible for distributing messages among information consumers and providers, as well as providing administrative functionality that includes (but is not limited to) fault tolerance, load balancing, mediation and orchestration support.
Operation	A set of messages related to a single service action.
Organization	A unique framework of authority within which a person or persons act, or are designated to act, towards some purpose. Any department, service, or other entity within an organization which needs to be identified for information exchange.
Output	Data transferred out of, or the process by which an information processing system or any of its parts transfers data out of, that system or part.
Permissible Values	The set of allowable instances of a data element.
Protocol	A formal set of conventions governing the format and control of interaction among communicating functional units.
Quality of Service (QoS)	A parameter that specifies and measures the value of a provided service.
Security	The protection of information and data so that unauthorized persons or systems cannot read or modify them and authorized persons or systems are not denied access to them.
Service	A mechanism to enable access to one or more capabilities, where the access is provided using a prescribed interface and is exercised consistent with constraints and policies as specified by the service description.
Service Consumer	An organization that seeks to satisfy a particular need through the use of capabilities offered by means of a service.
Service Description	The information needed in order to use, or consider using, a service.

Service Interface	The means by which the underlying capabilities of a service are accessed.
Service Provider	An organization that offers the use of capabilities by means of a service.
Subscription	For Phase 1 of SFDPS, the term "subscription" used in this document or in the service names/artifacts, is a connection for published data by an SFDPS consumer. Consumers can request specific data sets by specifying values during on-ramping to NEMS.
Topic	A distribution mechanism for publishing messages that are delivered to multiple subscribers.
Uniform Resource Identifier (URI)	A compact string of characters for identifying an abstract or physical resource.
User	A human, his/her agent, a surrogate, or an entity that interacts with information processing systems. A person, organization entity, or automated process that accesses a system, whether authorized to do so or not.
Web Service	A platform-independent, loosely coupled software component designed to support interoperable machine-to-machine interaction over a network. It has an interface described in a machine-processable format. Other systems interact with the Web service in a manner prescribed by its description by means of XML-based messages conveyed using Internet transport protocols in conjunction with other Web-related standards.

3.2 Acronyms

ADS/ADS-B	Automated Dependent Surveillance (-Broadcast)
AIXM	Airspace Information Exchange Model
API	Application Programming Interface
ARTCC	Air Route Traffic Control Center
ARTS	Automated Radar Terminal System
ATM	Air Traffic Management
ATS	Air Traffic Service
BARR	Block Aircraft Registration Request
CMS	Common Message Set
CTAS	Center-TRACON Automation System
DME	Distance Measuring Equipment
EDCT	Estimated Departure Clearance Time
EET	Estimated Elapsed Time
ERADP	En Route Airspace Data Publication
ERAM	En Route Automation Modernization

ERFDP	En Route Flight Data Publication
ERGMP	En Route General Message Publication
ERODP	En Route Operational Data Publication
FDB	Full Data Block
FDPS	Flight Data Publication Service
FIR	Flight Information Region
FIXM	Flight Information Exchange Model
FMS	Flight Management System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
GUFID	Globally Unique Flight Identifier
HADDS	Host ATM Data Distribution System
ICAO	International Civil Aviation Organization
ICD	Interface Control Document
IFPA	Instrument Flight Procedure Automation
IFR	Instrument Flight Rules
IPOP	Intermediate Point of Presence
IRU	Inertial Reference Unit
JMS	Java Message Service
JMSDD	Java Messaging Service Description Document
LOCID	Location Identifier
MOM	Message-Oriented Middleware
NAS	National Airspace System
NEMS	NAS Enterprise Messaging System
PBN	Performance-Based Navigation
QoS	Quality of Service
RIF	Revised In Flight
RNAV	Area Navigation
RNP	Required Navigation Performance
RVSM	Reduced Vertical Separation Minimums
SAA	Special Activities Airspace
SOA	Service Oriented Architecture
SSDD	System/Subsystem Design Document
SSR	Secondary Surveillance Radar
SSS	System/Subsystem Specification
STARS	Standard Terminal Automation Replacement System

SFDPS	SWIM Flight Data Publication Service
SWIM	System Wide Information Management
TCP	Transmission Control Protocol
TFDM	Terminal Flight Data Manager
TFMS	Traffic Flow Management System
TRACON	Terminal Radar Approach Control Facility
UFPI	Unique Flight Plan Identifier, same as the ERAM-GUFI.
URI	Uniform Resource Identifier
VFR	Visual Flight Rules
VHF	Very High Frequency
VOR	VHF Omni-directional Radar
W3C	World Wide Web Consortium
WAAS	Wide-Area Augmentation System
WMSCR	Weather Message Switching Center Replacement
WSDD	Web Service Description Document
XML	Extensible Markup Language

4. Service Profile

The SWIM Flight Data Publication Service makes CMS messages sent from ERAM available through one of four publication services depending on the type of the message. The messages supported by each service are defined in the schema document, SFDPS_v1.2.xsd (see reference 15).

1. En Route Flight Data Publication Service

Name	EnrouteFlightDataPublication
Namespace	us:gov:dot:faa:atm:enroute:services:flightdatapub
Description	This Java Messaging Service accepts subscriptions for flight and track data. It allows users to specify a range of selection criteria defined in Section 5.5.0. Flight messages meeting these criteria are routed to the consumer by NEMS.
Version	1.2.8.1
Service Category	Flight Information Service
Lifecycle Stage	Production
Criticality Level	Essential

2. En Route Airspace Data Publication Service

Name	EnrouteAirspaceDataPublication
Namespace	us:gov:dot:faa:atm:enroute:services:airspaceatapub
Description	This Java Messaging Service accepts subscriptions for sector and route data. It allows users to specify a range of selection criteria defined in Section 5.5.2. Airspace messages meeting these criteria are routed to the consumer by NEMS.
Version	1.2.8.1
Service Category	Navigation Information Service
Lifecycle Stage	Production
Criticality Level	Essential

3. En Route Operational Data Publication Service

Name	EnrouteOperationalDataPublication
Namespace	us:gov:dot:faa:atm:enroute:services:operationaldatapub
Description	This Java Messaging Service accepts subscriptions for operational message data. It allows users to specify a range of selection criteria defined in Section 5.5.3. Operational messages meeting these criteria are routed to the consumer by NEMS.
Version	1.2.8.1
Service Category	Air Traffic Support Service
Lifecycle Stage	Production
Criticality Level	Essential

4. En Route General Message Publication Service

Name	EnrouteGeneralMessagePublication
Namespace	us:gov:dot:faa:atm:enroute:services:generalmessagepub
Description	This Java Messaging Service accepts subscriptions for general message publication data. It allows users to specify a range of selection criteria defined in Section 0. General messages meeting these criteria are routed to the consumer by NEMS.
Version	1.2.8.1
Service Category	Air Traffic Support Service
Lifecycle Stage	Production
Criticality Level	Essential

4.1 Service Provider

Name	Federal Aviation Administration (FAA) System Wide Information Management (SWIM) Program Office, Enterprise Programs
Description	A program within the FAA Air Traffic Organization that is responsible for transforming technologies that provide more efficient operations and streamlined data communications capabilities.
Web page	http://www.faa.gov/nextgen/swim/

4.1.1 Point of Contact

Name	Linda Chen
Organization	Federal Aviation Administration
Title	SWIM Program SFDPS Team Leader
Phone	202-267-7566
email	Linda.Chen@faa.gov

4.2 Service Consumers

Potential consumers of SFDPS data and services include the following:

- **Traffic Flow Management System (TFMS)** – TFMS monitors all planned and current flights. It would subscribe for all flight plan data, position updates, and other flight data messages. It also needs current sector configurations and route status messages. It is a trusted FAA system, and would therefore get all messages.
- **Terminal Radar Approach Control Facility (TRACON)/Tower** – An FAA system such as the Standard Terminal Automation Replacement System (STARS) or the Terminal Flight Data Manager (TFDM) could subscribe to a subset of the en route data of particular interest to that system. For example, TFDM might want all flight plans for flights departing from or arriving at a certain airport, and track updates for flights approaching that airport. Being an FAA system, they would have access to all of the flight data.
- **Non-FAA Government Data Consumer** – This could be a military group or any other government agency. They would be authorized to get data for any flight, but might have very specific data requirements. That is, they might want only a small subset of the message types or data fields, or for a small subset of flights.
- **Non-government Data Consumer** – This could be an airline or a company that shows flight progress and status. They might want only certain flights; for example, an airline might want position updates for only its own flights. Being non-government

entities, they would not have authorization to get data for military flights or other sensitive flights.

4.3 Service Functionality

SFDPS is the SWIM program developed to provide ERAM en-route flight information services to a wide variety of consumers in manner that complies with SWIM standards and requirements. The consumers could be FAA facilities, FAA systems or programs, other government systems or programs, or non-government systems or programs.

A goal of SFDPS is to transform the data it receives from 20 different ERAM sources into a single stream of Extensible Markup Language (XML) formatted text. Each discrete message is further associated with:

- A unique flight identifier so that the consumer knows which flight a message belongs to rather than having to perform message matching.
- The state of the flight as it moves from Proposed to Active to Landed. Flights may also be cancelled.
- A means to know whether a message was sent from an Air Route Traffic Control Center (ARTCC) that is controlling a flight or not. This allows extraneous messages to be ignored.

The effect of these functions is to relieve consumers of the burdens of processing the raw messages themselves. A consumer is able to track flights easily, to know when flights are canceled or delayed, and to know if the flight is affected by a ground-delay program or some other traffic management initiative.

Furthermore, by tagging each message with JMS properties, a consumer can arrange for a filtered feed of messages. A military consumer can receive only messages that relate to military flights, an airline can receive only messages related to its operations, a company that displays live flight data can receive only flight plan messages for the predicted route and track messages for the actual route.

4.4 Security

SFDPS complies with NEMS security requirements as a message producer. NEMS handles identification and authentication of SFDPS consumers. NEMS also performs authorization. When SFDPS is deployed, both operationally with NAS Operational NEMS and with Research and Development NEMS, it is provisioned in "trusted" and "untrusted" regions.

SFDPS obtains updated sensitive flight data tagging files from AJR-2 on a periodic basis or as directed by AJR-2 for time critical requirements. Following the AJR-2 flight data sensitivity identification process, SFDPS uses the information in those files to mark, or tag, service messages as containing sensitive or non-sensitive flight data. During the SWIM on-boarding process, each client is authorized to receive either sensitive or non-sensitive flight data, and is configured accordingly when on-ramped to NEMS. NEMS uses the client configuration and each message's "Send To" tag (FDPS_Sensitive) to ensure messages with sensitive flight data are only sent to clients authorized to receive sensitive flight data. Flight data tagged as sensitive is Sensitive Security Information (SSI) and must be protected in accordance with FAA Order 1600.75, Protecting Sensitive Unclassified Information (SUI).

4.4.1 Roles

Role	Description
NON-GOVERNMENT- NON-FAA	Access is restricted to non-sensitive data only. SFDPDS filters military operations and privacy track data (BARR) sent in real time and marks the filtered data as FDPS_sensitive = false.
GOVERNMENT -NON-FAA	Access to non-sensitive data is granted. Access to sensitive data may be granted based upon need-to-know (e.g., US Department of Defense has access to all sensitive and military flight data, whereas NASA does not have access). Data is marked FDPS_sensitive=true for unfiltered data or FDPS_sensitive=false for filtered data.
FAA	Unrestricted data access. Data is marked FDPS_sensitive= true.

4.4.2 Access Control Mechanisms

Access Control	Description / Regulating Document
Identification & Authentication	NEMS provides credentials for the JMS-Producer(SFDPDS) and JMS-Consumer of SFDPDS services.
Authorization	When a client registers to connect to a topic, a process called on-ramping, NEMS assigns a role to the client. SFDPDS attaches metadata to each message it sends to NEMS and NEMS applies correct access control rules based on this metadata.

4.5 Quality of Services (QoS)

The SFDPDS QoS requirements are as defined in sections 3.11.2, 3.11.3, 3.11.4, and 3.11.5 of the SFDPDS SSS. See Reference [2].

4.6 Service Policies

No specific service policies are applied to this service. However, through the consumer on-ramping process, NEMS designates a consumer as either a NAS or non-NAS consumer.

These headers are defined in more detail in Section 5.2.1.

4.7 Environmental Constraints

One instance of SFDPDS is deployed to publish into the Research and Development NEMS. This instance of SFDPDS has a record type of pre-recorded, which consists of HADDSS replay data that was recorded seven days prior to the current date.

The operational implementation of SFDPS is a NAS message producer deployed to publish into the NAS Operational NEMS. The record type is live.

5. Service Interfaces

This section provides detailed information about the types and content of messages that the SFDPS exchanges, message exchange models that the service deploys, and any conditions implied by these messages.

5.1 Interface

SFDPS follows version 1.1 of the JMS specification.

SFPDS uses the Publish/Subscribe messaging model.

5.2 Operations

None.

5.2.1 Processing Considerations

SFDPS publishes flight data in three formats, SimpleXML , Flight Information Exchange Model (FIXM) and Airspace Information Exchange Model(AIXM). It publishes operational and general messages only in SimpleXML format. All SimpleXML messages have a one-to-one correspondence between the corresponding CMS message and the SimpleXML output. In addition to the message body, SFDPS attaches data to each message:

- JMS properties – These allow NEMS to filter the message and deliver it only to those consumers who want it.
- SFDPS properties – These are optional data fields derived from the messages that provide additional information about the message. They provide additional context for the message.

SFDPS processes each flight related message and assigns the following fields based on the contents of the current message and of previous messages for the flight:

- Globally Unique Flight Identifier (GUFID) – This is a unique identifier that identifies all of the messages that belong to one flight. A flight is defined as the operation of an aircraft from take-off to touch-down.
- Flight status – Indicates the current state of a flight, one of proposed, active, landed, cancelled, dropped.
- Flight plan sequence number – the number of flight plans received by a flight.

SFDPS maintains a database of received messages to aid in the processing of flight level data.

SFDPS also sets the following JMS properties based on its stored data:

- Military/sensitive – Whether the message pertains to a flight that is military, sensitive, or neither.

- Authoritative – Whether the message was sent from an ARTCC that has control of the flight or not.

All filtering of published data is performed by NEMS as described in the NEMS Interface Control Document (ICD) [see Reference 14].

5.3 Messages

This section describes messages and data properties for the four En Route data publication services supported by SFDPS Java Messaging services. The tables below show cross-references to the subsection which contains the message's detailed description.

EN ROUTE FLIGHT DATA PUBLICATION [Section 5.3.1]		
Message Name	Message Code	Subsection
Flight Plan Information	FH	5.3.1.1
Flight Amendment Information	AH	5.3.1.2
Converted Route Information	HX	5.3.1.3
Cancellation Information	CL	0
Departure Information	DH	5.3.1.5
Aircraft Identification Amendment Information	IH	5.3.1.6
Hold Information	HH	5.3.1.7
Progress Report Information	PH	5.3.1.8
Flight Arrival Information	HV	5.3.1.9
Flight Plan Update Information	HU	5.3.1.10
Expected Departure Time Information ¹	ET	5.3.1.11
Position Update Information	HP	5.3.1.12
Tentative Flight Plan Information	NP	0
Tentative Aircraft Identification Amendment Information	NI	0
Tentative Flight Plan Removal	NL	5.3.1.15
Tentative Flight Plan Amendment Information	NU	5.3.1.16
Track Information	TH	5.3.1.17
Drop Track Information	RH	5.3.1.18
Interim Altitude Information	LH	5.3.1.19
Automated Radar Terminal System (ARTS) Flow Control Track/Full Data Block Information ¹	HZ	5.3.1.20
Beacon Code Reassignment	BA	5.3.1.21

¹ This message could be phased out once it becomes available from its primary source (for ET, this would be TFMS; for HZ, this would be ARTS/STARS).

EN ROUTE FLIGHT DATA PUBLICATION [Section 5.3.1]		
Message Name	Message Code	Subsection
Beacon Code Restricted	RE	5.3.1.22
FDB Fourth Line Information	HF	5.3.1.23
Point Out Information	HT	5.3.1.24
Inbound Point Out Information	PT	5.3.1.25
Handoff Status	OH	5.3.1.26
Flight Plan Reconstitution Message	DBRTFPI	5.3.1.27
Flight Data Properties	---	5.3.1.28

EN ROUTE AIRSPACE DATA PUBLICATION [Section 5.3.2]		
Message Name	Message Code	Sub-section
Sector Assignment Status	SH	5.3.2.1
Route Status	HR	0
Special Activities Airspace (SAA)	SU	5.3.2.3
Altimeter Setting	HA	5.3.2.4
Adapted Route Status Reconstitution	DBRTRI	5.3.2.5
Altimeter Status Reconstitution	DBRTAI	5.3.2.6
Sector Assignment Reconstitution	DBRTSI	5.3.2.7
Airspace Data Properties	---	5.3.2.8

EN ROUTE OPERATIONAL DATA PUBLICATION [Section 5.3.3]		
Message Name	Message Code	Sub-section
Traffic Count Adjustment	AK	5.3.3.1
Instrument Approach Count Adjustment	AC	5.3.3.2
Sign In Sign Out	SY	0
Beacon code Utilization	UB	5.3.3.4
Geographic Beacon Code Utilization	UG	5.3.3.5
Operational Data Properties	---	5.3.3.6

EN ROUTE GENERAL MESSAGE PUBLICATION [Section 5.3.4]		
Message Name	Message Code	Sub-section
General Information	GH	5.3.4.1
Interim Altitude Status Information	HE	5.3.4.2
Hold Status Information	HO	5.3.4.3
ERAM Status Information	HS	5.3.4.4
Unsuccessful Transmission Information	UI	5.3.4.5
General Message Properties	---	5.3.4.6

5.3.1 Flight Data Publication Service Messages

Frequency estimates provided are based on data received on August 10th, 2015

5.3.1.1 Flight Plan Information: FH

Flight Plan Information: FH	
Message Name	Flight Plan Information: FH
Message Description	The Flight Plan Message is sent to transfer active and proposed flight plan data. It is generally sent when an ERAM at an ARTCC first creates a new flight record for a flight. Multiple ARTCCs send copies of the same flight plan. A single ARTCC may have multiple flight plans for one flight, although only one should ever be active.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	N/A
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.9/sec(Avg), 61/sec (Peak)
Minimum/Maximum Size (bytes)	3472/5617

5.3.1.2 Flight Amendment Information: AH

Flight Amendment Information: AH	
Message Name	Flight Amendment Information: AH

Flight Amendment Information: AH	
Message Description	The Flight Amendment Message is used to resend all data/fields in the Flight Plan Information message when an amendment has been made to one or more of those fields.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	3/sec (Avg) , 108/sec (Peak)
Minimum/Maximum Size (bytes)	3185/5610

5.3.1.3 Converted Route Information: HX

Converted Route Information: HX	
Message Name	Converted Route Information: HX
Message Description	The Converted Route Message is sent to provide the fixes along the route and calculated time of arrival at each fix, as computed by ERAM. It should be re-sent whenever an FH, AH, DH, or HU is sent.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	4.1/sec (Avg), 107/sec (Peak)
Minimum/Maximum Size (bytes)	2812/10947

5.3.1.4 Cancellation Information: CL

Cancellation Information: CL	
Message Name	Cancellation Information: CL
Message Description	The Cancellation Message is sent when a flight plan record is canceled within a particular ARTCC's ERAM. This means that no more data is sent from that center for that flight plan.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.9/sec(Avg), 27/sec (Peak)
Minimum/Maximum Size (bytes)	2488/2716

5.3.1.5 Departure Information: DH

Departure Information: DH	
Message Name	Departure Information: DH
Message Description	Departure Message – Provides departure related data for a flight plan. If the flight plan was proposed, the DH indicates the flight is now active.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.3/sec (Avg), 6/sec (Peak)
Minimum/Maximum Size (bytes)	2753/3063

5.3.1.6 Aircraft Identification Amendment Information: IH

Aircraft Identification Amendment Information: IH	
Message Name	Aircraft Identification Amendment Information: IH
Message Description	The Aircraft Identifier Amendment Message is sent to indicate a change to the flight identification field (flightId_02a) or assignment of computer identification (computerId_02d) for a flight.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	9.5/hour (Avg), 2/sec (Peak)
Minimum/Maximum Size (bytes)	2635/2817

5.3.1.7 Hold Information: HH

Hold Information: HH	
Message Name	Hold Information: HH
Message Description	The Hold Message indicates a hold of a definite duration, an indefinite hold, or hold release for a specified flight.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.6/min (Avg), 3/sec (Peak)
Minimum/Maximum Size (bytes)	2434/2710

5.3.1.8 Progress Report Information: PH

Progress Report Information: PH	
Message Name	Progress Report Information: PH
Message Description	The Progress Report Message is sent from ERAM to update the position for an active flight, or to release it from a prior hold status.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.46/hour (Avg), 1/sec (Peak)
Minimum/Maximum Size (bytes)	2681/2721

5.3.1.9 Flight Arrival Information: HV

Flight Arrival Information: HV	
Message Name	Flight Arrival Information: HV
Message Description	The Flight Arrival Message provides arrival data from ERAM for any arriving flight.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.3/sec (Avg), 7/sec (Peak)
Minimum/Maximum Size (bytes)	2537/2756

5.3.1.10 Flight Plan Update Information: HU

Flight Plan Update Information: HU	
Message Name	Flight Plan Update Information: HU
Message Description	The Flight Plan Update Message is sent to provide the latest flight plan data on an active flight when a new ARTCC assumes control of that flight.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.5/sec (Avg), 7/sec (Peak)
Minimum/Maximum Size (bytes)	3234/5065

5.3.1.11 Expected Departure Time Information: ET

Expected Departure Time Information: ET	
Message Name	Expected Departure Time Information: ET
Message Description	The Expected Departure Time Message provides Estimated Departure Clearance Time (EDCT) information; that is, the assigned departure time for a proposed flight plan inbound to a controlled airport with a ground delay in effect, and is used to cancel a previously issued EDCT. The original source of this data is TFMS.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	1.2/min (Avg), 21/sec (Peak)
Minimum/Maximum Size (bytes)	2435/2658

5.3.1.12 Position Update Information: HP

Position Update Information: HP	
Message Name	Position Update Information: HP
Message Description	The Position Update Message is sent to update the coordination time on an active flight when the present position fix time is updated.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	4.2/sec (Avg), 52/sec (Peak)
Minimum/Maximum Size (bytes)	2588/2849

5.3.1.13 Tentative Flight Plan Information: NP

Tentative Flight Plan Information: NP	
Message Name	Tentative Flight Plan Information: NP
Message Description	The Tentative Flight Plan Message is sent when a controller creates a temporary, partial set of flight plan data and associates it with a flight. It includes the source, flight identification, and may include optional UFPI (ERAM-GUFI), aircraft data, type of aircraft, airborne equipment qualifier, beacon code, speed, assigned altitude, reported altitude, and interim altitude. Often, many of these fields are missing. A tentative flight plan may be either canceled or merged with a real flight plan (FH). In the latter case, the FH might have the same Site Specific Plan Identifier (sspld_167a) and Computer ID (computerid_02d) as the NP, or it may be different. An NP can be issued only for an active flight.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.6/min (Avg), 3/sec (Peak)
Minimum/Maximum Size (bytes)	2614/2818

5.3.1.14 Tentative Aircraft Identification Amendment Information: NI

Tentative Aircraft Identification Amendment Information: NI	
Message Name	Tentative Aircraft Identification Amendment Information: N
Message Description	The Tentative Aircraft Identifier Amendment Message is sent from ERAM to indicate a change to the flight identification field (flightId_02a) of a tentative flight plan.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	23/day (Avg), 1/sec (Peak)
Minimum/Maximum Size (bytes)	2612/2619

5.3.1.15 Tentative Flight Plan Removal: NL

Tentative Flight Plan Removal: NL	
Message Name	Tentative Flight Plan Removal: NL
Message Description	The Tentative Flight Plan Removal Message is sent to indicate the removal of a tentative flight plan; may indicate that the tentative flight plan has been merged with a normal flight plan.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.6/min (Avg), 2/sec (Peak)
Minimum/Maximum Size (bytes)	2434/2761

5.3.1.16 Tentative Flight Plan Amendment Information: NU

Tentative Flight Plan Amendment Information: NU	
Message Name	Tentative Flight Plan Amendment Information: NU
Message Description	The Tentative Flight Amendment Message is used to update tentative flight plan data.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	7.4/hour (Avg), 2/sec (Peak)
Minimum/Maximum Size (bytes)	2480/2763

5.3.1.17 Track Information: TH

Track Information: TH	
Message Name	Track Information: TH
Message Description	The Track Message provides track data/target information, such as aircraft track/target position, altitude, and speed. It is normally sent every 12 seconds for an active flight.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	204.5/sec (Avg), 2090/sec (Peak)
Minimum/Maximum Size (bytes)	2765/3449

5.3.1.18 Drop Track Information: RH

Drop Track Information: RH	
Message Name	Drop Track Information: RH
Message Description	The Drop Track Message indicates that an ARTCC has discontinued tracking of a particular flight.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.4/sec (Avg), 6/sec (Peak)
Minimum/Maximum Size (bytes)	2384/2602

5.3.1.19 Interim Altitude Information: LH

Interim Altitude Information: LH	
Message Name	Interim Altitude Information: LH
Message Description	The Interim Altitude Message provides an ATM Intermediate Point of Presence (IPOP) with interim altitude data for a flight.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	1.7/sec (Avg), 19/sec (Peak)
Minimum/Maximum Size (bytes)	2425/2643

5.3.1.20 ARTS Flow Control Track/Full Data Block Information: HZ

Automated Radar Terminal System (ARTS) Flow Control Track/Full Data Block Information: HZ	
Message Name	ARTS Flow Control Track/Full Data Block Information: HZ
Message Description	The ARTS TZ Flow Control Track/Full Data Block (FDB) Message provides a position update from an ARTS; this is a data pass-through.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	3.3/sec (Avg), 36/sec (Peak)
Minimum/Maximum Size (bytes)	2597/2819

5.3.1.21 Beacon Code Reassignment: BA

Beacon Code Reassignment: BA	
Message Name	Beacon Code Reassignment: BA
Message Description	The Beacon Code Reassignment Message provides an updated beacon code for a flight plan when ERAM determines that an automatic beacon code reassignment occurred because the requested beacon code was already in use by another aircraft.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.1/sec (Avg), 5/sec (Peak)
Minimum/Maximum Size (bytes)	2764/2933

5.3.1.22 Beacon Code Restricted: RE

Beacon Code Restricted: RE	
Message Name	Beacon Code Restricted: RE
Message Description	The Beacon Code Restricted Message provides an updated beacon code for a flight when ERAM determines that a beacon code reassignment occurred because the requested beacon code is adapted as restricted.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	5.3/hour (Avg), 2/sec (Peak)
Minimum/Maximum Size (bytes)	2828/2985

5.3.1.23 FDB Fourth Line Information: HF

FDB Fourth Line Information: HF	
Message Name	FDB Fourth Line Information: HF
Message Description	The FDB Fourth Line Message is used to send the displayable, user-specified FDB fourth line data stored in ERAM; this can be heading, speed, or free-form text.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.9/sec (Avg), 10/sec (Peak)
Minimum/Maximum Size (bytes)	2383/2713

5.3.1.24 Point Out Information: HT

Point Out Information: HT	
Message Name	Point Out Information: HT
Message Description	The Point Out Message provides inter-facility and intra-facility point out information when these actions occur.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.3/sec (Avg), 10/sec (Peak)
Minimum/Maximum Size (bytes)	2493/2796

5.3.1.25 Inbound Point Out Information: PT

Inbound Point Out Information: PT	
Message Name	Inbound Point Out Information: PT
Message Description	The Inbound Point Out Message is sent by ERAM upon receipt of an inter-facility point out message from another center.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	1.2/min (Avg), 2/sec (Peak)
Minimum/Maximum Size (bytes)	2624/2835

5.3.1.26 Handoff Status: OH

Handoff Status: OH	
Message Name	Handoff Status: OH
Message Description	The Handoff Status Message is sent when a handoff is initiated, accepted, control is taken away (assert control), or retracted, or when the failure of handoff is detected. It includes field handoffEventIndicator_336a , a single letter value, where the letter stands for: I = Initiation; A = Acceptance; R = Retraction; T = Take Control (Assert Control); U = Update; F = Failure
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	6.1/sec (Avg), 73/sec (Peak)
Minimum/Maximum Size (bytes)	2687/3019

5.3.1.27 Flight Plan Reconstitution: DBRTFPI

Flight Plan Reconstitution: DBRTFPI	
Message Name	Flight Plan Reconstitutio: DBRTFPI
Message Description	The Flight Plan Reconstitution Message is sent when a client first connects to a HADDS or when it reconnects to a HADDS after communication between the client and HADDS is disrupted.
Message Property Descriptions	Refer to Table 5-1, below
Permissible Property Values	Refer to Table 5-1, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-1, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.6/min (Avg), 293/sec (Peak)
Minimum/Maximum Size (bytes)	2779/8039

5.3.1.28 Flight Data Properties

Table 5-1: Flight Data Properties

Property Name	Description	Permissible Values
FDPS_SourceFacility	This property, of type String, indicates the source, the ARTCC, of the CMS message that caused this message to be published.	ZAB, ZAU, ZBW, ZDC, ZDV, ZFW, ZHU, ZID, ZJX, ZKC, ZLA, ZLC, ZMA, ZME, ZMP, ZNY, ZOA, ZOB, ZSE, ZTL
FDPS_SourceSystem	This property, of type String, indicates the specific instance of SFDPS that published the message. A change in the value of this property indicates that the producer has switched from one site to the other.	FDPS1, FDPS2
FDPS_MessageType	This property, of type String, indicates the type of message	FH, AH, HX, CL, DH, IH, HH, PH, HV, HU, ET, HP, NP, NI, NL, NU, TH, RH, LH, HZ, BA, RE, HR, HT, PT, OH, FH_FIXM, AH_FIXM, HX_FIXM, CL_FIXM, DH_FIXM, IH_FIXM, HH_FIXM, PH_FIXM, HV_FIXM, HU_FIXM, ET_FIXM, HP_FIXM, NP_FIXM, NI_FIXM, NL_FIXM, NU_FIXM, TH_FIXM, RH_FIXM, LH_FIXM, HZ_FIXM, BA_FIXM, RE_FIXM, HF_FIXM, HT_FIXM, PT_FIXM, OH_FIXM, DBRTFPI, DBRTFPI_FIXM
FDPS_FlightOperator	This property, of type String, indicates the operator of the flight that caused this message to be published.	While this property may contain any three-letter code or none, only those listed below are available for routing due to limitations of NEMS: DAL,SWA,UAL,AAL,USA,ASQ,JBU,SKW, TRS, ASA,WJA,NKS,FFT,HAL,AAU,UPS,FDX

Property Name	Description	Permissible Values
FDPS_Origin	This property, of type String, indicates the originating airport of the flight to which this message applies.	While this property may contain any destination or none, only those listed below are available for routing due to limitations of NEMS: KATL,KBOS,KBWI,KCLE,KCLT,KCVG, KDCA,KDEN,KDFW,KDTW,KEWR,KFLL, KHNL,KIAD,KIAH,KJFK,KLAS,KLAX, KLGA,KMCO,KMDW,KMEM,KMIA,KMSP, KORD,KPDX,KPHL,KPHX, KPIT,KSAN,KSEA, KSFO,KSLC,KSTL,KTPA
FDPS_DestId	This property, of type String, indicates the destination airport of the flight to which this message applies.	While this property may contain any destination or none, only those listed below are available for routing due to limitations of NEMS: KATL,KBOS,KBWI,KCLE,KCLT,KCVG, KDCA,KDEN,KDFW,KDTW,KEWR,KFLL, KHNL,KIAD,KIAH,KJFK,KLAS,KLAX, KLGA,KMCO,KMDW,KMEM,KMIA,KMSP, KORD,KPDX,KPHL,KPHX, KPIT,KSAN,KSEA, KSFO,KSLC,KSTL,KTPA
FDPS_Sensitive	This property, of type Boolean, indicates whether the flight to which this message applies is military/sensitive or not.	TRUE – The flight is military/sensitive FALSE – The flight is neither military nor sensitive
FDPS_Authoritative	This property, of type Boolean, indicates whether the CMS message that caused this message to be published was sent from an Source Facility or ARTCC that was the authoritative or controlling Center of the flight.	TRUE – The CMS message came from the controlling center FALSE – The CMS message did not come from the controlling center
FDPS_Recon	This property, of type Boolean, indicates whether this message was generated as the result of a data reconstitution.	TRUE – The message was generated as the result of a data reconstitution. FALSE – The message was not generated as the result of a data reconstitution.

Property Name	Description	Permissible Values
FDPS_DataType	This property, of type String, indicates the type of data publication this message is part of.	FlightSimpleXML, FlightFIXM
FDPS_OneMinFreq	This property, of type Boolean, is set to true on every fifth track message received from HADDs for a flight. Track messages are generated at a 12-second frequency.	TRUE – This track message was generated one minute after the last track message for this flight that had a value of TRUE in this property. FALSE – This track message was received within a minute of the last track message for this flight that had a value of TRUE in this property.

5.3.2 Airspace Data Publication Service Messages

5.3.2.1 Sector Assignment Status: SH

Sector Assignment Status: SH	
Message Name	Sector Assignment Status: SH
Message Description	The Sector Assignment Status: SH Message is used to communicate current sector and TRACON configurations. A sector or TRACON may either be closed or open. If the sector or TRACON is open, it is composed of one or more FAVs.
Message Property Descriptions	Refer to Table 5-2, below
Permissible Property Values	Refer to Table 5-2, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-2, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	1.2/min (Avg), 6/sec (Peak)
Minimum/Maximum Size (bytes)	8325/16677

5.3.2.2 Route Status: HR

Route Status: HR	
Message Name	Route Status: HR
Message Description	A Route Status message is used to communicate whether some adapted departure and/or arrival routes are active or not. A route status is indicated by the route name followed by either "ON" or "OFF." ERAM generates an HR when an assignment at a center changes, or when reconstituting data. A single HR contains only route assignments for that one center, and can include one or more routes.
Message Property Descriptions	Refer to Table 5-2, below
Permissible Property Values	Refer to Table 5-2, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-2, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	12/hour (Avg), 9/sec (Peak)
Minimum/Maximum Size (bytes)	1885/38401

5.3.2.3 Special Activities Airspace (SAA): SU

Special Activities Airspace (SAA): SU	
Message Name	Special Activities Airspace (SAA): SU
Message Description	The SAA Information message provides the status and schedules for the SAA.
Message Property Descriptions	Refer to Table 5-2, below
Permissible Property Values	Refer to Table 5-2, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-2, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	31/hour (Avg), 7/sec (Peak)
Minimum/Maximum Size (bytes)	1821/6063

5.3.2.4 Altimeter Setting: HA

Altimeter Setting: HA	
Message Name	Altimeter Setting: HA
Message Description	<p>An Altimeter-Setting message is used to communicate altimeter reference data for a particular station, generally an airport. The altimeter reference data includes the data reporting time (35a), the reporting station (13.3), and the altimeter setting (34a).</p> <p>ERAM generates an HA when an altimeter setting is processed. ERAM receives most altimeter settings from the Weather Message Switching Center Replacement (WMSCR), but occasionally a value might be entered by a controller. Either source causes ERAM to generate an HA message; there is no way to distinguish the source. ERAM at an ARTCC may receive altimeter data for many stations, both internal and external to that ARTCC. As a result, SFDPS may receive multiple copies of altimeter setting data for a particular station. For example, SFDPS could receive HA messages from ZBW, ZNY, ZDC, ZOB, ZTL, and ZLA for the airport DCA. In almost all cases, these messages are copies of the same data; that is, they have the same data reporting time and altimeter setting.</p>
Message Property Descriptions	Refer to Table 5-2, below
Permissible Property Values	Refer to Table 5-2 , below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-2, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.9/sec (Avg), 578/sec (Peak)
Minimum/Maximum Size (bytes)	1835/1900

5.3.2.5 Adapted Route Status Reconstitution: DBRTRI

Adapted Route Status Reconstitution: DBRTRI	
Message Name	Adapted Route Status Reconstitution: DBRTRI
Message Description	The Adapted Route Status Reconstitution message is sent when a client first connects to a HADDS or when a client reconnects to a HADDS due to a disruption in communication.
Message Property Descriptions	Refer to Table 5-2, below
Permissible Property Values	Refer to Table 5-2 , below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-2, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.1/sec (Avg), 2091/sec (Peak)
Minimum/Maximum Size (bytes)	1919/1922

5.3.2.6 Altimeter Status Reconstitution: DBRTAI

Altimeter Status Reconstitution: DBRTAI	
Message Name	Altimeter Status Reconstitution: DBRTAI
Message Description	The Altimeter Status Reconstitution message is sent when a client first connects to a HADDS or when a client reconnects to a HADDS due to a disruption in communication.
Message Property Descriptions	Refer to Table 5-2, below
Permissible Property Values	Refer to Table 5-2 , below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-2, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	.6/min (Avg), 229/sec (Peak)
Minimum/Maximum Size (bytes)	1902/1969

5.3.2.7 Sector Assignment Reconstitution: DBRTSI

Sector Assignment Reconstitution: DBRTSI	
Message Name	Sector Assignment Reconstitution: DBRTSI
Message Description	The Sector Assignment Reconstitution message is sent when a client first connects to a HADDS or when a client reconnects to a HADDS due to a disruption in communication.
Message Property Descriptions	Refer to Table 5-2, below
Permissible Property Values	Refer to Table 5-2 , below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-2, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	11.1/hour (Avg), 65/sec (Peak)
Minimum/Maximum Size (bytes)	1912/5779

5.3.2.8 Airspace Data Properties

Table 5-2: Airspace Data Properties

Property Name	Description	Permissible Values
FDPS_SourceFacility	This property, of type String, indicates the source, the ARTCC, of the CMS message that caused this message to be published.	ZAB, ZAU, ZBW, ZDC, ZDV, ZFW, ZHU, ZID, ZJX, ZKC, ZLA, ZLC, ZMA, ZME, ZMP, ZNY, ZOA, ZOB, ZSE, ZTL
FDPS_SourceSystem	This property, of type String, indicates the specific instance of SFDPS that published the message. A change in the value of this property indicates that the producer has switched from one site to the other.	FDPS1, FDPS2
FDPS_MessageType	This property, of type String, indicates the type of message	SH, HR, HA, SU, SH_AIXM, HR_AISM, SU_AIXM, DBRTSI, DBRTAI, DBRTRI, DBRTSI_AIXM, DBRTRI_AIXM, DBRTAI_AIXM
FDPS_Recon	This property, of type Boolean, indicates whether this message was generated as the result of a	TRUE – The message was generated as the result of a reconstitution.

Property Name	Description	Permissible Values
	data reconstitution.	FALSE – The message was not generated as the result of a data reconstitution.
FDPS_DataType	This property, of type String, indicates the type of data publication of which this message is a part.	ERADP, AirspaceAIXM
FDPS_Sensitive	This property, of type Boolean, indicates that data contained within this message is sensitive.	FALSE – The default (and currently the only) value, indicating the message does not contain any sensitive data
FDPS_Authoritative	This property, of type Boolean, indicates whether the CMS message that caused this message to be published was sent from an Source Facility or ARTCC that was the authoritative or controlling Center for the data contained within the message.	TRUE – The default (and currently the only) value, indicating the message is from the authoritative center

5.3.3 Operational Data Publication Service Messages

5.3.3.1 Traffic Count Adjustment: AK

Traffic Count Adjustment: AK	
Message Name	Traffic Count Adjustment: AK
Message Description	<p>The Traffic Count Adjustment message is used to adjust (increment or decrement) one of the following traffic counts:</p> <ul style="list-style-type: none"> • ACDD (Air Carrier Domestic Departures) • ATDD (Air Taxi Domestic Departures) • GADD (General Aviation Domestic Departures) • MIDD (Military Domestic Departures) • ACDO (Air Carrier Domestic Overs) • ATDO (Air Taxi Domestic Overs) • GADO (General Aviation Domestic Overs) • MIDO (Military Domestic Overs) • ACOD (Air Carrier Oceanic Departures) • ATOD (Air Taxi Oceanic Departures)

Traffic Count Adjustment: AK	
	<ul style="list-style-type: none"> • GAOD (General Aviation Oceanic Departures) • MIOD (Military Oceanic Departures) • ACOO (Air Carrier Oceanic Overs) • ATOO (Air Taxi Oceanic Overs) • GAOO (General Aviation Oceanic Overs) • MIOO (Military Oceanic Overs) • VFRC (Visual Flight Rules [VFR] Traffic Count)
Message Property Descriptions	Refer to Table 5-3, below
Permissible Property Values	Refer to Table 5-3, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-3, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	2/hour (Avg), 2/sec (Peak)
Minimum/Maximum Size (bytes)	1957/2595

5.3.3.2 Instrument Approach Count Adjustment: AC

Instrument Approach Count Adjustment: AC	
Message Name	Instrument Approach Count Adjustment: AC
Message Description	<p>The Instrument Approach Count message is used to adjust (increment or decrement) one of the following instrument approach counts:</p> <ul style="list-style-type: none"> • AC (air carrier) • AT (air taxi) • GA (general aviation) • MI (military)
Message Property Descriptions	Refer to Table 5-3, below
Permissible Property Values	Refer to Table 5-3, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-3, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text

Instrument Approach Count Adjustment: AC	
Estimated Frequency	1/hour (Avg), 8/sec (Peak)
Minimum/Maximum Size (bytes)	1987/1989

5.3.3.3 Sign In Sign Out: SY

Sign In Sign Out: SY	
Message Name	Sign In Sign Out: SY
Message Description	The Sign In Sign Out Information (SY) message is sent to the ATM IPOP each time a sign in or sign out occurs, or when a reconstitution request is received.
Message Property Descriptions	Refer to Table 5-3, below
Permissible Property Values	Refer to Table 5-3, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-3, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	10/min (Avg), 7/sec (Peak)
Minimum/Maximum Size (bytes)	2114/2399

5.3.3.4 Beacon Code Utilization: UB

Beacon Code Utilization: UB	
Message Name	Beacon Code Utilization: UB
Message Description	The Beacon Code Utilization Information message is used to provide the peak number of beacon codes used, the total number of adapted codes, and the number of code reassignments since start-up or local midnight, for an adapted period of time.
Message Property Descriptions	Refer to Table 5-3, below
Permissible Property Values	Refer to Table 5-3, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-3, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	13/hour (Avg), 1/sec (Peak)
Minimum/Maximum Size (bytes)	2160/2160

5.3.3.5 Geographic Beacon Code Utilization: UG

Geographic Beacon Code Utilization: UG	
Message Name	Geographic Beacon Code Utilization: UG
Message Description	The Geographic Beacon Code Utilization message provides the total number of adapted beacon codes for each destination region as well as the peak number of beacon codes used for each destination region during the period.
Message Property Descriptions	Refer to Table 5-3, below
Permissible Property Values	Refer to Table 5-3, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-3, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	1/day
Minimum/Maximum Size (bytes)	2541/4241

5.3.3.6 Operational Data Properties

Table 5-3: Operational Data Properties

Property Name	Description	Permissible Values
FDPS_SourceFacility	This property, of type String, indicates the source, the ARTCC, of the CMS message that caused this message to be published.	ZAB, ZAU, ZBW, ZDC, ZDV, ZFW, ZHU, ZID, ZJX, ZKC, ZLA, ZLC, ZMA, ZME, ZMP, ZNY, ZOA, ZOB, ZSE, ZTL
FDPS_SourceSystem	This property, of type String, indicates the specific instance of SFDPS that published the message. A change in the value of this property indicates that the producer has switched from one site to the other.	FDPS1, FDPS2
FDPS_MessageType	This property, of type String, indicates the type of message	AC, AK, SY, UB, UG
FDPS_DataType	This property, of type String, indicates the type of data publication this message is part of.	ERODP

FDPS_Sensitive	This property, of type Boolean, indicates whether the data contained in this message is sensitive in nature.	FALSE – The default (and currently only) value. Data in this message does not pertain to a military/sensitive flight
FDPS_Authoritative	This property, of type Boolean, indicates whether the CMS message that caused this message to be published was sent from an Source Facility or ARTCC that was the authoritative or controlling Center for for the data contained in the message.	TRUE – The default (and currently only) value. The CMS message came from the controlling center

5.3.4 General Information Publication Service Message

5.3.4.1 General Information: GH

General Information: GH	
Message Name	General Information: GH
Message Description	A general information message is used to communicate a free-form text message from one facility to one or more other facilities. The content of the message is the free-form text, contained in an inter-facility remarks field (11c).
Message Property Descriptions	Refer to Table 5-4, below
Permissible Property Values	Refer to Table 5-4, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-4, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	1/day
Minimum/Maximum Size (bytes)	1750/2150

5.3.4.2 Interim Altitude Status Information: HE

Interim Altitude Status Message: HE	
Message Name	Interim Altitude Status Message: HE
Message Description	The Interim Altitude Status Information message provides interim

Interim Altitude Status Message: HE	
	altitude status information on all active aircraft to a client during the initialization process.
Message Property Descriptions	Refer to Table 5-4, below
Permissible Property Values	Refer to Table 5-4, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-4, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	3/day (Avg)
Minimum/Maximum Size (bytes)	2404/2406

5.3.4.3 Hold Status Information: HO

Hold Status Information: HO	
Message Name	Hold Status Information: HO
Message Description	The Hold Status Information message provides hold information (holding fix, and estimated fix departure time for definite-duration holds) on all active aircraft to a client during the initialization process.
Message Property Descriptions	Refer to Table 5-4, below
Permissible Property Values	Refer to Table 5-4, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-4, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	1/day
Minimum/Maximum Size (bytes)	1605/1629

5.3.4.4 ERAM Status Information: HS

ERAM Status Information: HS	
Message Name	ERAM Status Information: HS
Message Description	The ERAM Status Information message is sent when an ERAM status

ERAM Status Information: HS	
	change occurs.
Message Property Descriptions	Refer to Table 5-4, below
Permissible Property Values	Refer to Table 5-4, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-4, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	9/day (Avg), 2/sec (Peak)
Minimum/Maximum Size (bytes)	1601/1601

5.3.4.5 Unsuccessful Transmission Information: UI

Unsuccessful Transmission Information: UI	
Message Name	Unsuccessful Transmission Information: UI
Message Description	The Unsuccessful Information Transmission (UI) message is sent by ERAM when transmission of flight data to a remote facility is unsuccessful either due to a transmission error or because transmission of the flight data to the remote facility is inhibited.
Message Property Descriptions	Refer to Table 5-4, below
Permissible Property Values	Refer to Table 5-4, below
Message ID (if applicable)	NA
Filter Criteria	Refer to Table 5-4, below
Applicable Topic/Queue	FDPSDATA.IN
Delivery Mode	Nonpersistent
Message Body Type	Text
Estimated Frequency	1.2/min (Avg), 9/sec (Peak)
Minimum/Maximum Size (bytes)	2438/2445

5.3.4.6 General Information Data Properties

Table 5-4: General Information Data Properties

Property Name	Description	Permissible Values
FDPS_SourceFacility	This property, of type String, indicates the source, the ARTCC, of	ZAB, ZAU, ZBW, ZDC, ZDV, ZFW, ZHU, ZID, ZJX, ZKC, ZLA, ZLC, ZMA, ZME,

	the CMS message that caused this message to be published.	ZMP, ZNY, ZOA, ZOB, ZSE, ZTL
FDPS_SourceSystem	This property, of type String, indicates the specific instance of SFDPS that published the message. A change in the value of this property indicates that the producer has switched from one site to the other.	FDPS1, FDPS2
FDPS_MessageType	This property, of type String, indicates the type of message	GH, HE, HO, HS, UI
FDPS_DataType	This property, of type String, indicates the type of data publication this message is part of.	ERGMP
FDPS_Sensitive	This property, of type Boolean, indicates whether the data contained in this message pertains to a military/sensitive flight.	TRUE – Data in this message pertains to a military/sensitive flight FALSE – Data in this message does not pertain to a military/sensitive flight
FDPS_Authoritative	This property, of type Boolean, indicates whether the CMS message that caused this message to be published was sent from an Source Facility or ARTCC that was the authoritative or controlling Center of the flight if the message pertains to a flight.	TRUE – The CMS message came from the controlling center or is not related to a flight FALSE – The CMS message did not come from the controlling center

5.4 Exceptions Handling

SFDPS alerts consumers to the following exceptions when there is an interruption in the flow of published data. This alert takes the form of an error or status message published to NEMS which routes the message to every consumer connected to a topic that is receiving SFDPS data. SFDPS does not assign an error code to these messages.

When the ERAM or HADDS data source is disconnected from SFDPS, a message is sent to each consumer listing the ARTCC and the time of the disconnection. The text of the message is "HADDS Disconnect."

When the data for an individual ARTCC is not available to SFDPS, a message is sent to each consumer once a minute listing the ARTCC, the time of the message, and the current state of the ARTCC which is the text "down."

Element Name [Status]	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
Classification	This element specifies whether the message will be published externally or internally.	string	No	Public All messages sent to clients will have the value of Public.	Public	Yes
Time	This element specifies the time the message was generated.	string	No	Time in standard XML format. 'YYYY-MM-DDTHH:MM:SSZ'	2012-01-01T18:00:00Z	Yes
Status type	Specifies why the message was generated.	string	No	HADDS Connection HADDS Disconnect HADDS Download Initiated HADDS Download Complete HADDS Re-initialization HADDS Interface Connection ARTCC Status NEMS Status	HADDS Disconnect	Yes
Source	The process or component that generated the message	string	No			Yes
artcc	Indicates whether an ARTCC is providing data or not.	string	No	Up Down	Down	Yes

Element Name [Status]	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
				Unknown		
software	Indicates whether a software process is functioning or not.	string	No	Up Down Unknown	Up	Yes
process	Indicates that a process was restarted.		No			Yes
details	Additional details that may be of use to a client.	string	No	Free form text.		Yes
numberOfMessages	If it is included in the message, this element specifies the fix and calculated time of arrival at each fix that describes the aircraft's ERAM converted route of flight. The fix and time of arrival at the fix are specified in a format that breaks down the fix and the time in separate elements: <i>fix_68c1</i> and <i>crossingTime_68c2</i> .		Yes	Sequence of elements <i>fix_68c1</i> and <i>crossingTime_68c2</i> , specified between 3 and 326 times.		Yes

5.5 Data

This section describes data elements and conceptual diagrams for the messages of the four En Route data publication services supported by SFDPS Java Messaging services. The tables below show cross-references to the subsection which contains the message's detailed description.

EN ROUTE FLIGHT DATA PUBLICATION [Section 5.5.0]			
Message Name	Message Code	Subsection: Data Elements	Subsection: Diagram
Flight Plan Information	FH	5.5.1.2	5.5.1.3
Flight Amendment Information	AH	5.5.1.4	5.5.1.5
Converted Route Information	HX	5.5.1.6	5.5.1.7
Cancellation Information	CL	5.5.1.8	5.5.1.9
Departure Information	DH	5.5.1.10	5.5.1.11
Aircraft Identification Amendment Information	IH	5.5.1.12	5.5.1.13
Hold Information	HH	5.5.1.14	5.5.1.15
Progress Report Information	PH	5.5.1.16	5.5.1.17
Flight Arrival Information	HV	5.5.1.18	5.5.1.19
Flight Plan Update Information	HU	5.5.1.20	5.5.1.21
Expected Departure Time Information ²	ET	5.5.1.22	5.5.1.23
Position Update Information	HP	5.5.1.24	5.5.1.25
Tentative Flight Plan Information	NP	5.5.1.26	5.5.1.27
Tentative Aircraft Identification Amendment Information	NI	5.5.1.28	5.5.1.29
Tentative Flight Plan Removal	NL	5.5.1.30	5.5.1.31
Tentative Flight Plan Amendment Information	NU	5.5.1.32	5.5.1.33
Track Information	TH	5.5.1.34	5.5.1.35
Drop Track Information	RH	5.5.1.36	5.5.1.37
Interim Altitude Information	LH	5.5.1.38	5.5.1.39
Automated Radar Terminal System (ARTS) Flow Control Track/Full Data Block Information ¹	HZ	5.5.1.40	5.5.1.41
Beacon Code Reassignment	BA	5.5.1.42	5.5.1.43
Beacon Code Restricted	RE	5.5.1.44	5.5.1.45
FDB Fourth Line Information	HF	5.5.1.46	5.5.1.47
Point Out Information	HT	5.5.1.48	5.5.1.49
Inbound Point Out Information	PT	5.5.1.50	5.5.1.51
Handoff Status	OH	5.5.1.52	5.5.1.53
Flight Plan Reconstitution	DBRTFPI	5.5.1.54	5.5.1.55

² This message could be phased out once it becomes available from its primary source (for ET, this would be TFMS; for HZ, this would be ARTS/STARS).

EN ROUTE AIRSPACE DATA PUBLICATION [Section 5.5.2]			
Message Name	Message Code	Subsection: Data Elements	Subsection: Diagram
Sector Assignment Status	SH	5.5.2.2	5.5.2.3
Route Status	HR	5.5.2.4	5.5.2.5
Special Activities Airspace (SAA)	SU	5.5.2.6	5.5.2.7
Altimeter Setting	HA	5.5.2.8	5.5.2.9
Adapted Route Status Reconstitution	DBRTRI	5.5.2.10	5.5.2.11
Altimeter Status Reconstitution	DBRTAI	5.5.2.12	5.5.2.13
Sector Assignment Reconstitution	DBRTSI	5.5.2.14	5.5.2.15

EN ROUTE OPERATIONAL DATA PUBLICATION [Section 5.5.3]			
Message Name	Message Code	Subsection: Data Elements	Subsection: Diagram
Traffic Count Adjustment	AK	5.5.3.2	5.5.3.3
Instrument Approach Count Adjustment	AC	5.5.3.4	5.5.3.5
Sign In Sign Out	SY	5.5.3.6	5.5.3.7
Beacon code Utilization	UB	5.5.3.8	5.5.3.9
Geographic Beacon Code Utilization	UG	5.5.3.9	5.5.3.11

EN ROUTE GENERAL MESSAGE PUBLICATION [Section 5.5.4]			
Message Name	Message Code	Subsection: Data Elements	Subsection: Diagram
General Information	GH	5.5.4.2	5.5.4.3
Interim Altitude Status Information	HE	5.5.4.4	5.5.4.5
Hold Status Information	HO	5.5.4.6	5.5.4.7
ERAM Status Information	HS	5.5.4.8	5.5.4.9
Unsuccessful Transmission Information	UI	5.5.4.10	5.5.4.11

5.5.1 Flight Data Publication Service Data Elements and Diagrams

5.5.1.1 ERFDP Service: targetNamespace

The targetNamespace that applies to all messages in the Flight Data Publication Service is: **us:gov:dot:faa:atm:enroute:entities:flightdata**

5.5.1.2 Flight Plan, Flight Amendment, and Flight Update [FH, AH and HU]-Data Elements

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	Source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element consists in the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	The message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , such as <i>ddd, ddL, dLd, dLL</i> .	020	No
eramGufi_316a	To be assigned	GUFI that uniquely identifies each flight plan in the system.	string	No	"[A-Z]{2}\d{5}[1-7]\d{2}" This element includes 10 alphanumeric characters: -International Civil Aviation Organization (ICAO) country code (one letter); -en-route facility ID (one letter); -time in seconds of current day (five digits in the range 00000-86400); -sequence number (two digits).	KB5980017	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by Instrument Flight Procedures Automation (IFPA) to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
numberOfAircraft_03a	To be assigned	This element includes the number of aircraft for the flight followed optionally by the Special Aircraft Indicator.	string	No	"\d{0,2}[A-Z]?" The element consists of zero to two digits optionally followed by one uppercase letter to represent the Special Aircraft Indicator. The indicator can also appear on its own (without the leading digits).	3H The number of aircraft is 3 and the special aircraft indicator is H for Heavy Jet.	No
typeOfAircraft_03c	To be assigned	Type of aircraft.	string	No	"[A-Z][A-Z0-9]{1,3}" The element consists of one letter followed by one to three alphanumeric characters.	B747	Yes

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
airborneEquip_03e	To be assigned	Airborne equipment qualifier. It consists of one alphanumeric character.	string	No	"[A-Z]" The element consists of one alphanumeric character, that can have one of the following values: A - Transponder with no Mode C B - Transponder with Mode C E – FMS with Distance Measuring Equipment (DME)/DME and Inertial Reference Unit (IRU) position updating G – Global Navigation Satellite System (GNSS), including Global Positioning System (GPS) or Wide Area Augmentation System (WAAS), with en-route and terminal capability X – No transponder W - Reduced Vertical Separation Minimums (RVSM)	E	No
beaconCode_04a	To be assigned	Beacon code.	string	No	"[0-7]{4}" The element includes four octal digits (i.e. 0-7). When the last two digits of the four-digits are zero, the beacon code is a non-discrete code. A discrete code is any code not ending in 00.	Non-discrete VFR code: 2101	No
externalBeaconCode_04b	To be assigned	External beacon. It contains the requested beacon code when the flight plan is inbound from an adjacent Center or an adjacent Non-U.S. Automated Facility, the requested beacon code is different from the assigned beacon code, and the aircraft is not established on the assigned beacon code. Then, if the facility is adapted to receive Field (04b), Field 04b is be transmitted.	string	No	"[0-7]{4}" It has the same format as element beaconCode_04a.	3434	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
trueAirSpeed_05a	To be assigned	True airspeed expressed in knots.	string	No	"\d{2,4}" The format is two to four-digits, in the range 01 – 3700 knots. Aircraft speed is required to be specified by using one of the three possible elements: trueAirSpeed_05a, machSpeed_05c or classifiedSpeed_05d.	540 Aircraft true airspeed is 540 knots.	Yes, if neither machSpeed_05c nor classifiedSpeed_05d are included in the message.
machSpeed_05c	To be assigned	Mach speed.	string	No	"M\d{3}" The letter M followed by three digits. The maximum value is M500.	The speed 0.85 Mach is represented as M085 .	Yes, if neither trueAirSpeed_05a nor classifiedSpeed_05d are included in the message.
classifiedSpeed_05d	To be assigned	Adapted classified speed. It is not printed on flight strips.	string	No	"SC"	This element may only include the string character SC .	Yes, if neither trueAirSpeed_05a nor machSpeed_05c are included in the message.

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
coordFix_06a	To be assigned	The Coordination fix represents the starting point to begin processing the flight plan route from one of the following points: the departure airport, the airfile fix or the adjacent center inbound coordination fix. For ARTS III flight plans the coordination fix Field 06 is used as the inbound coordination fix or the outbound coordination fix or, for an ARTS internal flight, it can be the departure or destination airport.	string	No	<p>"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) \d{4}[A-Z]?/\d{4,5}[A-Z]? ([A-Z0-9]{3,4})"</p> <p>This element can have one of the following formats:</p> <p>Two to five alphanumeric characters for a fix name.</p> <p>The fix name as above followed by six digits, for a fix radial distance.</p> <p>Four-digits followed by an optional alphabetic character, followed by a virgule ('/'), followed by four to five digits followed by an optional alphanumeric character for a lat/long.</p> <p>Three to four alphanumeric characters for a location identifier (LOCID).</p>	AB DFW KDFW AB200010 SHP090015 ATOKA300040 3500/04000 3500N/04000W	Yes
coordStatusTime_07d	To be assigned	Coordination time that represents the starting time in hours and minutes at the coordination fix.	string	No	<p>"((A D E P F)[0-1][0-9][0-5][0-9] ((A D E P F)2[0-3][0-5][0-9])"</p> <p>The element includes one letter (possible values are A, D, E, P, or F) followed by four-digits that represent time as <i>hhmm</i>.</p>	P1020	Yes
coordStatus_07d1	To be assigned	The coordStatus field is the single letter A , D , E , F , or P , as described for element coordStatusTime_07d.	string	No	"(A D E P F)"	F	Yes
coordTime_07d2	To be assigned	Starting time at the coordination fix.	dateTime	No	dateTime	2014-06-20T20:17:52	Yes
delayTime_07e	To be assigned	Delay time in expressed in minutes.	string	No	<p>"\d{3}"</p> <p>Three digits.</p>	030	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
assignedAlt_08a	To be assigned	Assigned altitude or flight level expressed in hundreds of feet. Only one of the altitude elements assignedAlt_08a, assignedAlt_08b, assignedAlt_08c, assignedAlt_08d, assignedAlt_08e, assignedAlt_08f, assignedAlt_08g, assignedAlt_08h may be included in the message.	string	No	"(\d{2,3}) VFR" The format consists of either two to three digits, or the constant string VFR . Three digits are required for ARTS III, thus a leading zero needs to be used when necessary.	Assigned altitude of 34,000 feet: 340 Assigned altitude 9,000 feet ARTS III: 090	No
assignedAlt_08b	To be assigned	Fixed value of OTP which indicates VFR-ON-Top. It specifies that the aircraft is flying above the clouds in VFR conditions.	string	No	"OTP"	Fixed value of OTP .	No
assignedAlt_08c	To be assigned	VFR-ON-Top with altitude. It represents an Instrument Flight Rules (IFR) flight operating above the clouds in VFR conditions at the specified assigned altitude.	string	No	"OTP/\d{2,3}" The format is the constant string OTP/ followed by two to three digits that represent the assigned altitude in hundreds of feet.	Aircraft flying VFR-ON-Top at 25,000 feet: OTP/250	No
assignedAlt_08d	To be assigned	The assigned block of altitudes for the flight to fly at.	string	No	"\d{2,3}B\d{2,3}" The format is two to three digits, followed by the letter B , followed by two to three digits. The leading and trailing two to three digits define the block of altitudes in hundreds of feet for the flight to fly at. The lowest altitude must be listed first.	Assigned altitude block of 8,000 feet to 14,000 feet: 80B140	No
assignedAlt_08e	To be assigned	Element used for IFR flights operating above a specified altitude.	string	No	"ABV/\d{2,3}" The format consists of the string ABV/ followed by two to three digits that represent the altitude in hundreds of feet above which the flight is flying.	Aircraft is flying above 60,000 feet. ABV/600	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
assignedAlt_08f	To be assigned	Assigned Altitude/FIX/Altitude element specifies the altitudes to and from a fix for the flight to fly at.	string	No	"(\d{2,3}/[A-Z0-9]{2,5}/\d{2,3}) (\d{2,3}/[A-Z0-9]{2,5}\d{6}/\d{2,3}) (\d{2,3}/\d{4}[A-Z]?/\d{4,5}[A-Z]?/\d{2,3})" The altitudes are specified in hundreds of feet in a two to three digit format. The fix is specified using the same format as the coordination fix element "coordFix_06a". The fix cannot be the departure or arrival point.	240/DAL350010/220 Flight flies at altitude 24,000 feet to the fix radial distance fix and then descend to altitude 22,000 feet.	No
assignedAlt_08g	To be assigned	It is used to specify that the flight is flying Visual Flight Rules (VFR). It can only have the value VFR .	string	No	" VFR "	The string VFR .	No
assignedAlt_08h	To be assigned	It is used to specify that the flight is flying VFR at a specified altitude.	string	No	" VFR/\d{2,3} " The format consists of the string VFR/ followed by two to three digits that represent an altitude in hundreds of feet.	VFR/75 The aircraft is flying VFR at 7,500 feet.	No
requestedAlt_09a	To be assigned	The element is used to specify requested altitude or flight level in hundreds of feet. Only one of the seven requested altitude elements (requestedAlt_09a to requestedAlt_08g) may be included in a proposed flight message.	string	No	"\d{2,3}" The format consists of two to three digits. ARTS III requires three characters, with a leading 0 when required (such as 090).	340 Aircraft is requesting to fly at 34,000 feet altitude.	No
requestedAlt_09b	To be assigned	The element Requested Altitude format OTP represents an IFR flight requesting to operate above the clouds in VFR conditions. OTP stands for VFR-ON-Top.	string	No	" OTP "	The element has a fixed value of OTP .	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
requestedAlt_09c	To be assigned	The element "Requested Altitude format OTP with altitude" represents a flight requesting to operate VFR-ON-Top at the requested altitude.	string	No	"OTP/\d{2,3}" The format consists of the string OTP/ followed by two to three digits that represent the requested altitude in hundreds of feet. ERAM only sends ARTS III the requested altitude with a format of three digits (leading zeroes used when necessary, as in 090) and places a special altitude indicator (U if Heavy Jet) in element numberOfAircraft_03a.	OTP/250 Flight is requesting to fly VFR-ON-Top at 25,000 feet.	No
requestedAlt_09d	To be assigned	Element used for an IFR flight requesting to operate above a specified altitude.	string	No	"ABV/\d{2,3}" The format consists of the string ABV/ followed by two to three digits that represent the requested altitude in hundreds of feet.	ABV/600	No
requestedAlt_09e	To be assigned	Element used to specify a requested block of altitudes or flight levels for the flight to fly at. The altitudes are specified in hundreds of feet.	string	No	"\d{2,3}B\d{2,3}" The format consists of two to three digits for the lowest altitude, followed by the letter B , followed by two to three digits for the highest altitude.	250B260 Flight is requesting to fly inside an altitude block between 25,000 feet and 26,000 feet.	No
requestedAlt_09f	To be assigned	This element is used when the aircraft is requesting to fly VFR.	string	No	"VFR" It can only include the fixed string "VFR." ERAM sends ARTS III the three characters and also places a special altitude indicator V (not a Heavy Jet) or W (if a Heavy Jet) in element numberOfAircraft_03a.		No
requestedAlt_09g	To be assigned	The element used to represent a flight requesting to fly VFR at a specified altitude.	string	No	"VFR/\d{2,3}" The format consists of the constant string VFR/ followed by two to three digits that specify the requested altitude in hundreds of feet.	VFR/35 Aircraft is requesting to fly VFR at 3,500 feet	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
flightPlanRoute_10a	To be assigned	It specifies the trajectory followed by the airplane from the departure point to the arrival point, based on the fixes and routes along that trajectory.	string	No	"[A-Z0-9+/*]{2,12}_?\.[A-Z0-9+/*]\.[A-Z0-9+/*]{2,12}_?(\d{4})?" The element format consists of a string that includes fixes and routes along the trajectory flown by the airplane. The fixes and routes are specified using the FIX.ROUTE.FIX format, where either element can be implied, such as FIX..FIX, or ROUTE..ROUTE.	OKC.V14S.TUL.TU L090..FYV270.FYV	Yes
departurePoint_26a	To be assigned	It is used to specify the point at which to start processing the flight plan route as follows: the departure airport or the airfile point.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z])?" Any of the standard ways to represent a fix can be used for this element (fix name, lat/long, or fix-radial-distance), including the standard airport designators.	AB DFW KDFW SHP090015 ATOKA300040 3500N/04000W	Yes
destination_27a	To be assigned	It is used to specify the point at which to end processing the flight plan route.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z])?" Any of the standard ways to represent a fix can be used for this element (fix name, lat/long, or fix-radial-distance), including the standard airport designators.	AB DFW KDFW SHP090015 ATOKA300040 3500N/04000W	Yes
FAV_143b0	To be assigned	The element specifies the FAV number containing the first fix where the route alteration occurs due to an AAR application.	string	No	"\d{4}" The format is four-digits.	7601	No
FAV_143b1	To be assigned	The element specifies the FAV number containing the second fix where the route alteration occurs due to an AAR application.	string	No	"\d{4}" The format is four-digits.	7601	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
FAV_143b2	To be assigned	The element specifies the FAV number containing the third fix where the route alteration occurs due to an AAR application.	string	No	"\d{4}" The format is four-digits.	7601	No
FAV_143b3	To be assigned	The element specifies the FAV number containing the fourth fix where the route alteration occurs due to an AAR application.	string	No	"\d{4}" The format is four-digits.	7601	No
ADARid_141a	To be assigned	If required for the flight, this element specifies the ADAR departure arrival route name.	string	No	"\d{5}" The format consists of five alphanumeric characters.	DA001	No
ADRID_141b	To be assigned	If required for the flight, the Adapted Route indicator format specifies the ADR adapted departure route name.	string	No	"\d{5}"	PD001	No
AARid_141c	To be assigned	If required for the flight, this element specifies the AAR adapted arrival route name.	string	No	"\d{5}"	PA001	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
ADARFId10_142a	To be assigned	This element contains the adapted ADAR preferential route in Field 10 format. The Preferential Route Alphanumerics are used to control the flow and separation of traffic departing and arriving at designated airports. An ADAR has the complete preferential routing from the departure airport to the arrival airport. Either this element or the element ADARNonFId10_142b may be included in the message.	string	No	"[A-Z0-9\.\.]{4,44}" Field 10 format.	SX2.PSX.V20.CRP.	No
ADARNonFId10_142b	To be assigned	This element contains the adapted ADAR preferential route in non-Field 10 format. If required for the flight and if the element ADARFId10_142a is not included in the message, the FH message contains this element for the ADAR adapted route. Either this element or the element ADARFId10_142a may be included in the message.	string	No	"[A-Z0-9\.\.]{4,44}" A "+" delimiter precedes and follows the non-Field10 elements.	+LISSE6+ +TS1 MEM270 LIT050+	No
ADRFId10_142c	To be assigned	Adapted ADR preferential route in Field 10 format. Either this element or the element ADRNonFId10_142d may be included in the message.	string	No	"[A-Z0-9\.\.]{4,84}" Field 10 format.	.ALAMO6.HENLY. J131.FUZ.J105.	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
ADRNonFld10_142d	To be assigned	Adapted ADR preferential route in non-Field 10 format. Either this element or the element ADRFld10_142c may be included in the message.	string	No	"[A-Z0-9\.\/\+ -]{4,84}" A "+" delimiter precedes and follows the non-Field10 elements.	+RV J25+CRP.LISSE6 Notice the non-Field10 substring that is enclosed between "+" characters.	No
AARFld10_142e	To be assigned	This element includes the AAR preferential route in Field 10 format. Either this element or the element AARNonFld10_142f may be included in the message.	string	No	"[A-Z0-9\./]{4,97}" Field 10 format.	./BLEUZ.RYTHM3 .	No
AARNonFld10_142f	To be assigned	This element includes the AAR preferential route in non-Field 10 format. Either this element or the element AARFld10_142e may be included in the message.	string	No	"[A-Z0-9\.\/\+]{4,97}" A "+" delimiter precedes and follows the non-Field10 elements.	J25.CRP+LISSE6+ Notice the non-Field10 substring that is enclosed between "+" characters.	No
remarks_11c	To be assigned	Flight plan remarks text.	string	No	The string is from 1 to 400 characters in length. It has an attribute called <i>remarktype</i> with the possible values of interfacility or intrafacility.	OAIR EVAC AMG/N0482F290 SQT/N0479F310 JOL+	No
flightRules_908a	To be assigned	This element specifies the flight rules as one character as follows: I = IFR V = VFR Y = IFR First Z = VFR First	string	No	"[IVYZ]" If Y or Z is used, the point or points at which a change of flight rules is planned should be shown in the route.	V	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
typeOfFlight_908b	To be assigned	This element specifies the type of flight specified using one of the following characters: S = Scheduled air transport N = Non-scheduled air transport G = General Aviation M = Military O = Other flights	string	No	"[SNGMO]"	N	No
wakeTurbulenceCat_909c	To be assigned	Wake turbulence category specified using one of the following characters: H = Heavy M = Medium L = Light	string	No	"[HML]"		No
comNavApproachEquip_910a	To be assigned	Airborne Equipment Qualifier: Radio Communication, Navigation, and Approach AID Equipment.	string	No	"([A-M,O-Z]{1,25}) N" This element has one required plus 24 optional letters. The 25 possible letters are the letters A through Z and each letter can only be used once. If the letter N is present, it must be the only letter present.	SCHJ See ICAO 4444 for the complete list of characters.	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
survEquip_910b	To be assigned	This element represents the ICAO airborne equipment qualifier.	string	No	<p>"[NACXPIS][D]?"</p> <p>The format consists of up to two letters. The first letter must be one of the Secondary Surveillance Radar (SSR) equipment letters and the second letter, if used, must be the Automated Dependent Surveillance (ADS) capability letter "D".</p> <p>The valid values for the first letter and their significance are:</p> <p>N: Nil A: Transponder Mode A C: Transponder Mode A and C X: Transponder Mode S without both aircraft ID and pressure-altitude transmission P: Transponder Mode S, with pressure-altitude transmission but aircraft ID transmission I: Transponder Mode S with aircraft ID transmission but no pressure-altitude transmission S: Transponder Mode S with both pressure-altitude and aircraft ID transmission D: ADS capability</p>	SSR equipment as Mode S with ADS capability: SD	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
comNavApproachEquipCA O2012_910c	To be assigned	This element is the ICAO 2012 version of the element comNavApproachEquip_910a.	string	No	<p>"[A-Z][A-Z0-9]{0,63}"</p> <p>The valid values are:</p> <ul style="list-style-type: none"> N – No equipment is carried, or equipment is unserviceable S – Standard equipment is carried and is serviceable A – GBAS landing system B – LPV (APV with SBAS) C – LORAN C D – DME E1 – FMC WPR ACARS E2 – D-FIS ACARS E3 – PDC ACARS F – ADF G – GNSS H – HF RTF I – Inertial Navigation J1 – CPDLC ATN VDL Mode 2 J2 – CPDLC FANS 1/A HDFL J3 - CPDLC FANS 1/A VDL Mode A J4 - CPDLC FANS 1/A VDL Mode 2 J5 - CPDLC FANS 1/A SATCOM (INMARSAT) J6 - CPDLC FANS 1/A SATCOM (MTSAT) 	ADE3RV	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
comNavApproachEquipICA O2012_910c (cont.)					J7 - CPDLC FANS 1/A SATCOM (Iridium) K – MLS L – ILS M1 – ATC RTF SATCOM (INMARSAT) M2 - ATC RTF SATCOM (MTSAT) M3 – ATC RTF (Iridium) O – VOR P1-P9 – Reserved for RCP R – PBN approved T – TACAN U – UHF RTF V – VHF RTF W – RVSM approved X – MNPS approved Y – VHF with 8.33 kHz spacing capacity Z – Other equipment carried		

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
survEquipICAO2012_910d	To be assigned	This element is the ICAO 2012 equivalent of the element survEquip_910b.	string	No	<p>"N A C (C?[BDEGHILPSUVX][BDEGHILPSUVX12]*)"</p> <p>Minimum element length=1 Maximum element length=20 The valid values are the following: N – No surveillance equipment or equipment unserviceable A – Transponder Mode A C – Transponder Mode A and C E – Transponder – Mode S, including aircraft identification, pressure-altitude and extended squitter Automated Dependent Surveillance-Broadcast (ADS-B) capability H – Transponder – Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability I - Transponder – Mode S, including aircraft identification, but no pressure-altitude capability L – Transponder – Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability</p>	HB2U2V2G1	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
survEquipICAO2012_910d (cont.)					P – Transponder – Mode S, including pressure-altitude, but no aircraft identification S – Transponder – Mode S, including both pressure-altitude and aircraft identification capability X – Transponder - Mode S with neither aircraft identification nor pressure-altitude capability B1 – ADS-B with dedicated 1090 MHz ADS-B “out” capability B2 – ADS-B with dedicated 1090 MHz ADS-B “out” and “in” capability U1 - ADS-B “out” capability using UAT U2 - ADS-B “out” AND “IN” capability using UAT V1 - ADS-B “out” capability using VDL Mode 4 V2 - ADS-B “out” and “in” capability using VDL Mode 4 D1 – ADS-C with FANS 1/A capabilities G1 - ADS-C with ATN capabilities		
altAero_916c	To be assigned	This element contains Alternate Arrival Point(s) or Aerodrome(s), if any. More than one alternate arrival points of aerodromes may be specified.	string	No	"[{A-Z}{4} ?[A-Z]{0,4}) ({A-Z0-9}{2,5}) ({A-Z0-9}{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?) ({A-Z0-9}{3,4})" The aerodrome is specified using the 4-letter ICAO name or ZZZZ if no ICAO location indicator has been allocated. The arrival point format has to be one of the fix formats described above (see coordFix_06a). If two or more alternatives are included, they may have any of the valid formats and they have to be separated by blanks.	EBBR EDDL	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
ICAOSToredFormat_918a	To be assigned	This element may only have the value zero, to indicate that none of the Other Information elements (with suffixes 918b – 918x) is present in the message.	string	No	"0"	0	No
EETIndicator_918b	To be assigned	This element specifies Significant Points or Flight Information Region (FIR) Boundary designators and accumulated estimated elapsed times to such points or boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate Air Traffic Service (ATS) authority. EET stands for Estimated Elapsed Time.	string	No	Freeform text up to a total of 3,000 characters. The element consists of one or more Significant Points with appended estimated flying time from departure in <i>hhmm</i> format with a blank separating each occurrence of Significant Point and time.	KZNY0046 HUBE0213	No
RIFIndicator_918c	To be assigned	This element specifies the route to a revised destination aerodrome, followed by the aerodrome location code. The revised route is subject to re-clearance in flight. RIF stands for Revised in Flight.	string	No	Free-form string of up to 3,000 characters. The destination aerodrome has to be specified using the four-letter ICAO location code.	DTA HEC KLAX	No
REGIndicator_918d	To be assigned	This element specifies Aircraft Registration (tail number), if different from the aircraft identification specified in element flightId_02a.	string	No	Free-form string of up to 3000 characters.	N5258E	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
SELIndicator_918e	To be assigned	This element specifies the SELCAL code. SELCAL is a selective-calling radio system that alerts aircraft crew to incoming radio communications.	string	No	Free-form string of up to 3000 characters.	ACHA BRLM	No
OPRIndicator_918f	To be assigned	This field specifies the Aircraft Operator, if not obvious from the aircraft identification in flightId_02a.	string	No	Free-form string of up to 3000 characters.	UAL	No
STSIndicator_918g	To be assigned	This element specifies the Reason for Special Handling by ATS, such as hospital aircraft.	string	No	Free-form string of up to 3000 characters. The following are the only valid special handling indicators: ALTRV ATFMX FFR FLTCK HAZMAT HEAD HOSP HUM MARSA MEDEVAC NONRVSM SAR STATE NONRNP10 NO NRPN10 PROTECTED CARGO CARGO FLT	ALTRV	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
TYPIndicator_918h	To be assigned	Type(s) of Aircraft, preceded if necessary by number of aircraft, if ZZZZ is specified in the element numberOfAircraft_03a.	string	No	Free-form string of up to 3000 characters.	CESNA140	No
PERIndicator_918i	To be assigned	This element specifies the aircraft performance data.	string	No	Single valid letter specified in PAN-OPS 8168 Volume 1: A – Indicated airspeed (IAS) less than 169 km/h (91kt) B – IAS between 169 km/h (91kt) and 224 km/h (121 kt) C – IAS between 224 km/h (121 kt) and 261 km/h (141 kt) D – IAS between 261 km/h (141 kt) and 307 km/h (166 kt) E - IAS between 307 km/h (166 kt) and 391 km/h (211 kt) H - Helicopters	C	No
COMIndicator_918j	To be assigned	This element contains Communication Equipment Data. It is used for additional Communication Equipment on board not specified in the flightPlanRoute_10a element.	string	No	Free-form string of up to 3000 characters.	HF ONLY TCAS	No
DATIndicator_918k	To be assigned	This element specifies data related to data link capability.	string	No	Free-form string of up to 3000 characters. Valid values are: S – satellite data link H – HF data link V – VHF data link M – SSR Mode S data link One or more of the valid letters may be specified in this element.	SV	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
NAVIndicator_918l	To be assigned	This element contains Navigation Equipment Data. It is used for additional Navigation Equipment not specified in the flightPlanRoute_10a element.	string	No	Free-form string of up to 3000 characters.	ADF ONLY	No
DEPIndicator_918m	To be assigned	This element contains the name of the Departure Aerodrome if ZZZZ is specified in Field 13, or the ICAO four-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained, if AFIL is specified in Field 13 (flight plan was filed by an active flight). Note: Field 13 does not appear in FH, AH, and HU messages.	string	No	Free-form string of up to 3000 characters.	NORTON FIELD	No
DESTIndicator_918n	To be assigned	This element includes the name of the destination aerodrome, if ZZZZ is specified in Field 16. Note: Field 16 does not appear in FH, AH, and HU messages.	string	No	Free-form string of up to 3000 characters.	MILLSPAW FARM	No
ALTNIndicator_918o	To be assigned	This element includes the name of the alternate destination aerodrome(s), if ZZZZ is specified in Field 16. Note: Field 16 does not appear in FH, AH, and HU messages.	string	No	Free-form string of up to 3000 characters.	MILLSPAW FARM	No
RALTIndicator_918p	To be assigned	This element contains the en-route alternate aerodrome(s).	string	No	Free-form string of up to 3000 characters.	JP RANCH	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
CODEIndicator_918q	To be assigned	This element specifies the aircraft Controller-Pilot Data Link Communications (CPDLC) address.	string	No	Free-form string of up to 3000 characters.	45FA16	No
RACEIndicator_918r	To be assigned	This element specifies the requested altitude and speed en route.	string	No	Free-form string of up to 3000 characters.	KRAFT/M080F380	No
SURIndicator_918s	To be assigned	This element specifies the surveillance applications or capabilities not specified in localIntendedRoute_10b.	string	No	Free-form string of up to 3000 characters.	282B	No
DLEIndicator_918t	To be assigned	This element specifies significant en route delay or holding point(s), followed by length of delay.	string	No	Free-form string of up to 3000 characters. The length of delay is specified in the format <i>hhmm</i> .	MDG0030	No
TALTIndicator_918u	To be assigned	This element specifies the take-off alternate aerodrome.	string	No	Free-form string of up to 3000 characters. Valid formats include aerodrome name or any of the fix formats (i.e., lat/long, fix-radial-distance, or name).	KRAFT FARM	No
DOFIndicator_918v	To be assigned	This element specifies the date of flight.	string	No	Six-digit date in the format <i>yymmdd</i> .	140617	No
ORGNIndicator_918w	To be assigned	This element specifies the originator's eight-letter AFTN address or other appropriate contact details, in cases where the originator of the flight plan may not be readily identified, as required by the appropriate ATS authority.	string	No	Eight-letter character string.	LEBBYNYX	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
PBNIndicator_918x	To be assigned	This element specifies the Area Navigation (RNAV) or Required Navigation Performance (RNP) capability. PBN stands for Performance Based Navigation.	string	No	Up to eight two-character specifications may be included, for a total of 16 characters. RNAV and RNP capabilities are two-characters each, as follows. RNAV specifications: A1 RNAV10 (RNP 10) B1 RNAV 5 all permitted sensors B2 RNAV 5 GNSS B3 RNAV 5 DME/DME B4 RNAV 5 VOR/DME B5 RNAV 5 INS or IRS B6 RNAV 5 LORANC C1 RNAV 2 all permitted sensors C2 RNAV 2 GNSS C3 RNAV 2 DME/DME C4 RNAV 2 DME/DME/IRU D1 RNAV 1 all permitted sensors D2 RNAV 1 GNSS D3 RNAV 1 DME/DME D4 RNAV 1 DME/DME/IRU	B1O1	No
					RNP specifications: L1 RNP 4 O1 Basic RNP 1 all permitted sensors O2 Basic RNP 1 GNSS O3 Basic RNP 1 DME/DME O4 Basic RNP 1 DME/DME/IRU S1 RNP APCH S2 RNP APCH with BAR-VNAV T1 RNP AR APCH with RF (special authorization required) T2 RNP AR APCH without RF (special authorization required)		

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
RNVArrival_925a	To be assigned	This element specifies the RNAV accuracy value for the arrival phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No
RNVEnroute_925b	To be assigned	This element specifies the RNAV accuracy value for the en route phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.1 nm: 0010	No
RNVOceanic_925c	To be assigned	This element specifies the RNAV accuracy value for the oceanic phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.1 nm: 0010	No
RNVDeparture_925d	To be assigned	This element specifies the RNAV accuracy value for the departure phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.1 nm: 0010	No
RNVSpare1_925e	To be assigned	This is a spare element.	string	No	"\d{4}"		No
RNVSpare2_925f	To be assigned	This is a spare element.	string	No	"\d{4}"		No
RNPArrival_925g	To be assigned	This element specifies the RNP accuracy value for the arrival phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No
RNPEnroute_925h	To be assigned	This element specifies the RN accuracy value for the en route phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
RNPOceanic_925i	To be assigned	This element specifies the RN) accuracy value for the oceanic phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No
RNPDeparture_925j	To be assigned	This element specifies the RN) accuracy value for the departure phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No
RNPSpare1_925k	To be assigned	This is a spare element.	string	No	"\d{4}"		No
RNPSpare2_925l	To be assigned	This is a spare element.	string	No	"\d{4}"		No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
ICAO1stAdaptedField18_99 9a ICAO1stAdaptedField18_99 9b ICAO1stAdaptedField18_99 9c ICAO1stAdaptedField18_99 9d ICAO1stAdaptedField18_99 9e ICAO1stAdaptedField18_99 9f ICAO1stAdaptedField18_99 9g ICAO1stAdaptedField18_99 9h ICAO1stAdaptedField18_99 9i ICAO1stAdaptedField18_99 9j ICAO1stAdaptedField18_99 9k ICAO1stAdaptedField18_99 9l ICAO1stAdaptedField18_99 9m ICAO1stAdaptedField18_99 9n ICAO1stAdaptedField18_99 9o ICAO1stAdaptedField18_99 9p ICAO1stAdaptedField18_99 9q ICAO1stAdaptedField18_99 9r ICAO1stAdaptedField18_99 9s ICAO1stAdaptedField18_99 9t ICAO1stAdaptedField18_99 9u ICAO1stAdaptedField18_99 9	To be assigned	Elements having the suffix of _999a through _999y contain the data that is that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements a through y. They are formatted as free- form text.	string	No	Free-form string of up to 3,000 characters.		No
			79				

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
localIntendedRoute_10b	To be assigned	<p>The Local Intended Route element contains the flight plan route that is coordinated to penetrated facilities. It consists of the flight plan route with any expected-to-be-applied-by-the-controlling-center ADRs, ADARs or AARs already applied. It is intended for the clients that wish to know the expected state of the flight plan when the current facility releases control of the flight. Element localIntendedRoute_10b contains the filed route (field 10a) merged with any locally applicable adapted routes (preferential routes, transition fixes and A-line fixes). Optional Field 10b is sent to ATM-IPOP, when Field 10b is not the same as Field 10a.</p>	string	No	<p>"[A-Z0-9+/*]{2,12}_?\. [A-Z0-9+\. /]*\.[A-Z0-9+/*]{2,12}_?(\d{4})?"</p> <p>Minimum length = 3 Maximum length = 1000</p>		No

Element Name [FH, AH, HU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
ATCIntendedRoute_10c	To be assigned	<p>The ATC Intended Route element contains the current cleared flight plan route with any unacknowledged auto routes already applied. The ATC Intended Route includes to-be-applied AARs that are not to be notified in the current center. It is intended for clients that wish to know the currently expected route of the flight across contiguous ERAM airspace. Field 10c contains the filed route (field 10a) merged with any adapted routes (preferential routes, transition fixes and A-line fixes). Optional Field 10c is sent to ATM-IPOP, when parameter Merged ATC Intended Route Switch (MARS) is ON and if either one of the following is true:</p> <p>If Field 10b exists and Field 10c is not the same as Field 10b</p> <p>If Field 10b does not exist and Field 10c is not the same as Field 10a.</p>	string	No	<p>"[A-Z0-9+/*]{2,12}_?\. [A-Z0-9+\.\/]*\.[A-Z0-9+/*]{2,12}_?(\d{4})?"</p> <p>Minimum length = 3</p> <p>Maximum length = 1000</p>		No

5.5.1.3 Flight Plan, Flight Amendment, and Flight Update [FH, AH and HU]: Diagram

The conceptual diagram for Flight Plan [FH], Flight Plan Amendment [AH] and Flight Plan Update [HU] are identical. Due to the size of the diagram, it has been separated into six successive figures for legibility.

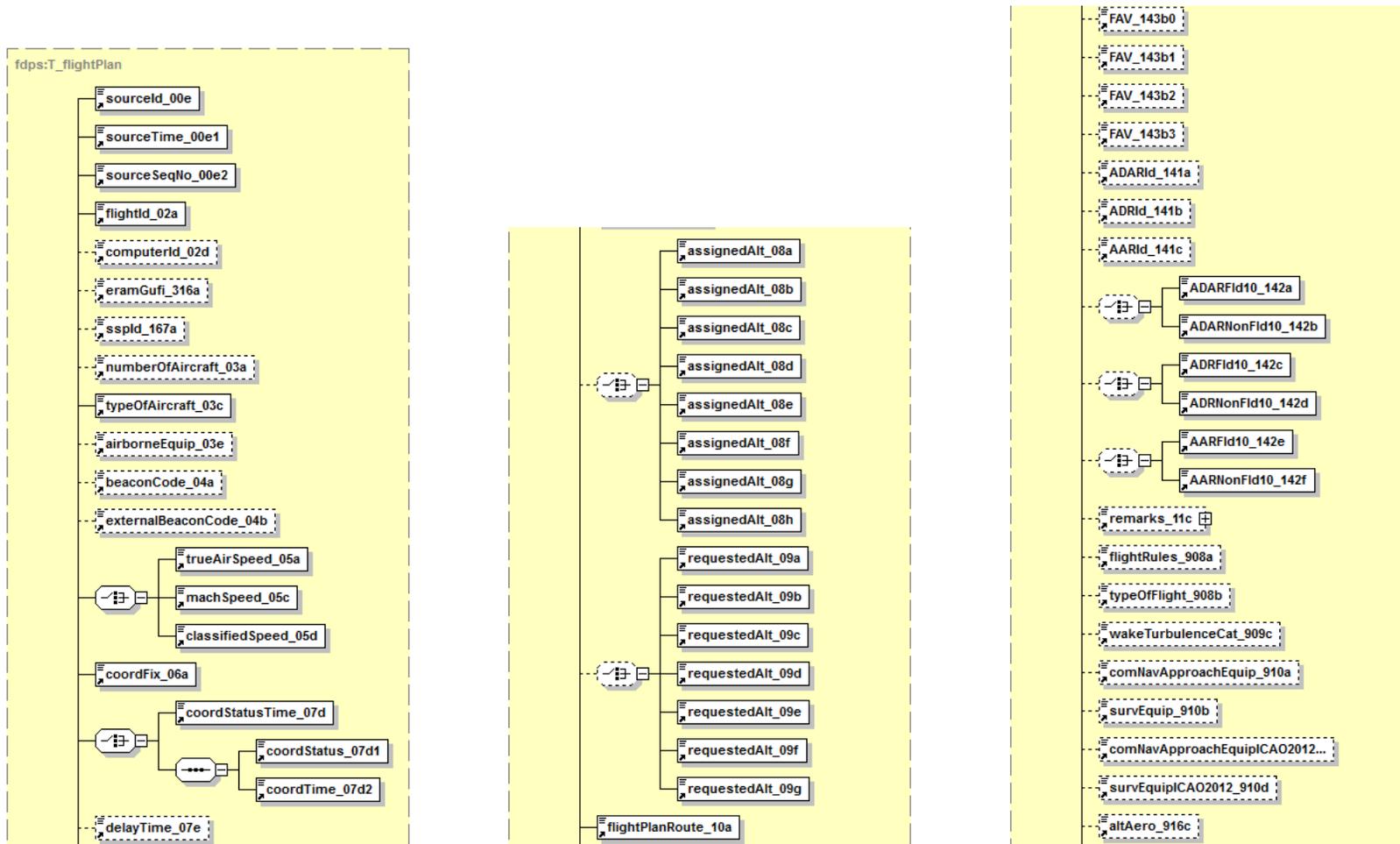


Figure 5-1: FH Data Diagram [parts 1,2, and 3]

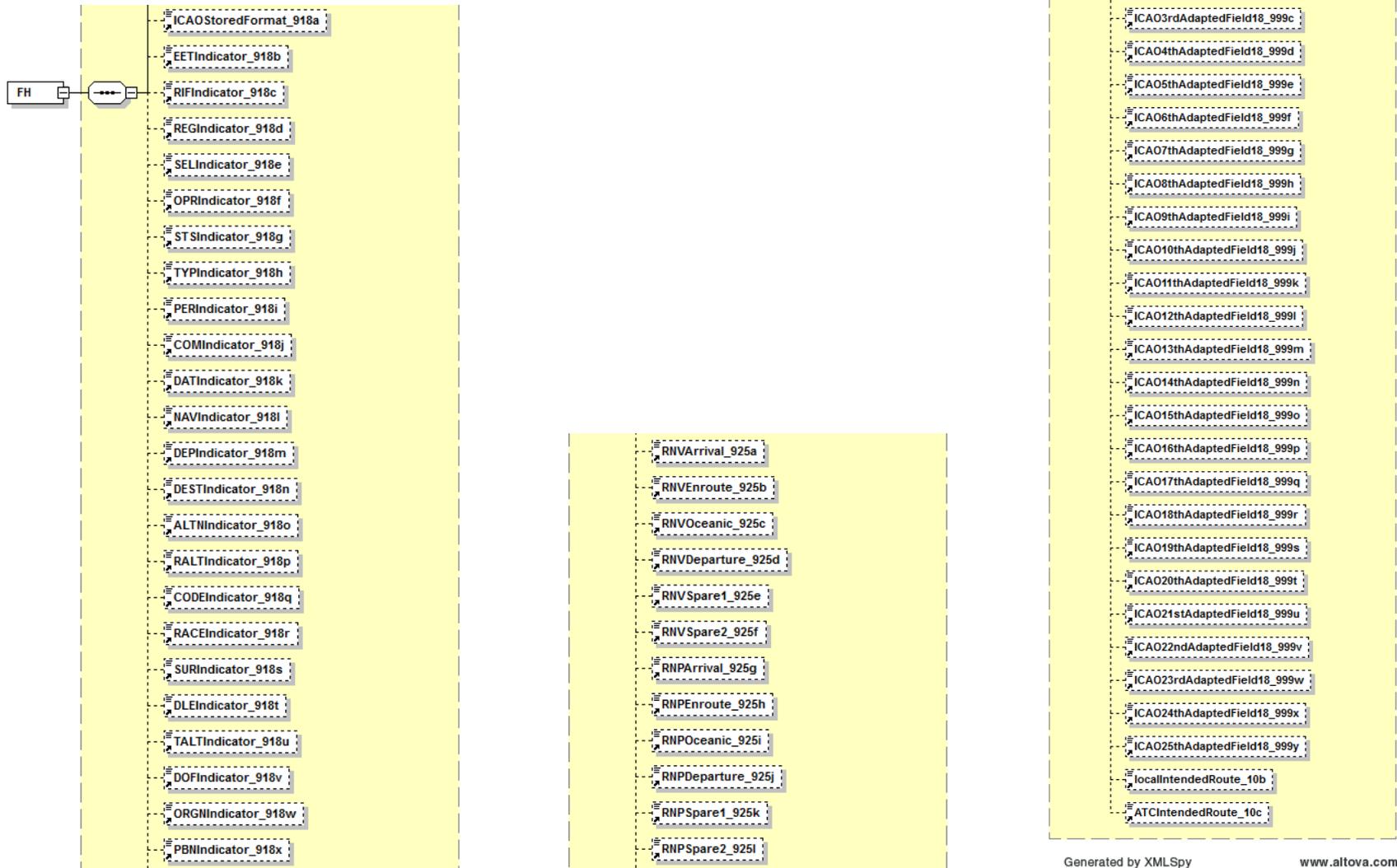


Figure 5-2: FH Diagram [parts 4, 5, and 6]

5.5.1.4 Flight Amendment Information [AH] – Data Elements

See Data Elements for Flight Plan [FH]: Section 5.5.1.2.

5.5.1.5 Flight Amendment Information [AH] – Diagram

See Diagram for Flight Plan [FH]: Section 5.5.1.2.

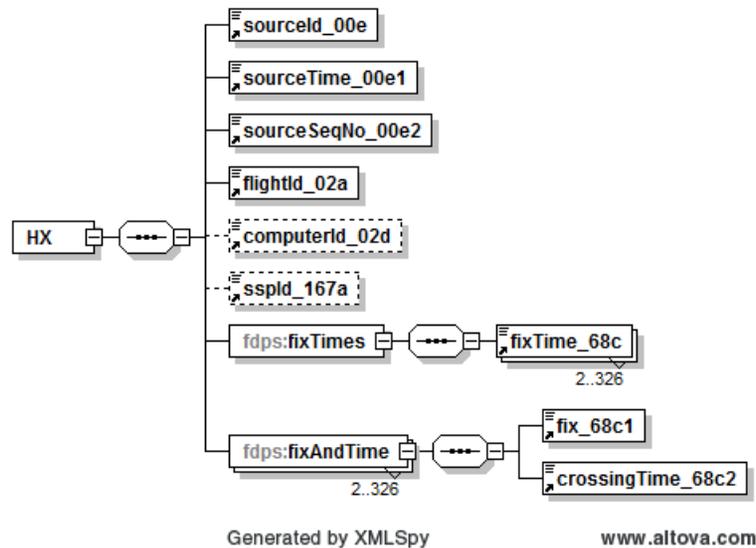
5.5.1.6 Converted Route Information [HX] - Data Elements

Element Name [HX]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].	2359359001 where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])"	020	No

Element Name [HX]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O .		
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
fixTimes	To be assigned	This element specifies the fix and calculated time of arrival at each fix that describes the aircraft's ERAM converted route of flight.		Yes	Sequence of <i>fixTime_68c</i> elements. Minimum number of elements = 3. Maximum number of elements = 326		Yes
fixTime_68c	To be assigned	This element contains a fix and the expected time of arrival at the fix in hours and minutes.	string	No	"([A-Z0-9]{2,5}/\d{4}) ([A-Z0-9]{2,5}\d{6})/\d{4}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?/\d{4}) " The format consists of a valid representation of a fix (see element coordFix_06a in the FH message table), followed by a virgule, and is followed by time in <i>hhmm</i> format. Minimum length = 7 Maximum length = 17	LFT/1800 JIMIE004034/1320	Yes
fixAndTime	To be assigned	If it is included in the message, this element specifies the fix and calculated time of arrival at each fix that describes the aircraft's ERAM converted route of flight. The fix and time of arrival at the fix are specified in a format that breaks down the fix and the time in separate elements: <i>fix_68c1</i> and <i>crossingTime_68c2</i> .		Yes	Sequence of elements <i>fix_68c1</i> and <i>crossingTime_68c2</i> , specified between 3 and 326 times.		No
fix_68c1	To be assigned	This element specifies the fix component of the element <i>fixTime_68c</i> .	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?) ([A-Z0-9]{3,4})"	KDFW 3500N/04000W	No

Element Name [HX]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					The format consists of a valid representation of a fix (see element coordFix_06a in the FH message table).		
crossingTime_68c2	To be assigned	This element specifies the time component of the element <i>fixTime_68c</i> .	dateTime	No	The format is <i>dateTime</i> , and not <i>hhmm</i> as it is in the <i>fixTime_68c</i> element.	2014-06-20T20:17:52	No

5.5.1.7 Converted Route Information [HX]- Diagram

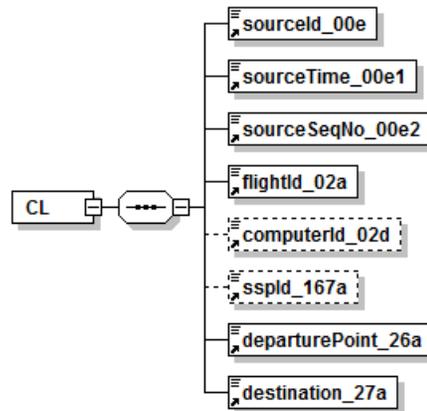


5.5.1.8 Cancellation Information [CL] - Data Elements

Element Name [CL]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O .	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
departurePoint_26a	To be assigned	The departure point is the point at which to start processing a flight plan as	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)"	AB KDFW SHP090015	Yes

Element Name [CL]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		follows: the departure airport, or the airfile point. When the flight plan represents an airfile, originating within this center area, this element contains the airfile point.			Any of the allowed ways to represent a fix can be used in this field, including the standard airport designators. A fix name, lat/long or fix-radial-distance can also be used.	3500N/04000W	
destination_27a	To be assigned	The destination is the point where to end processing the flight plan.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the allowed ways to represent a fix can be used in this field, including the standard airport designators. A fix name, lat/long or fix-radial-distance can also be used.	AB KDFW SHP090015 3500N/04000W	Yes
T_fix	To be assigned	The allowed ways to represent a fix can be used in this field, including the standard airport designators.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)"	AB KDFW SHP090015 3500N/04000W	

5.5.1.9 Cancellation Information [CL] – Diagram



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5.5.1.10 Departure Information [DH] - Data Elements

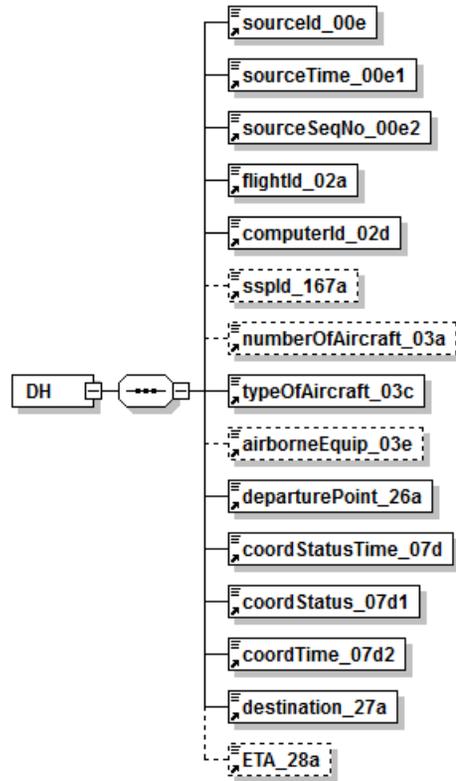
Element Name [DH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	<p>“\d{10}”</p> <p>Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].</p>	<p>2359359001, where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).</p>	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	<p>“[0-2]\d_[0-5]\d_[0-5]\d”</p> <p>Time in the format <i>hh_mm_ss</i>, where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.</p>	<p>23_59_35 that represents 23:59:35 UTC</p>	Yes

Element Name [DH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O.	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
numberOfAircraft_03a	To be assigned	This element includes the number of aircraft for the flight followed optionally by the Special Aircraft Indicator.	string	No	"\d{0,2}[A-Z]?" The element consists of zero to two digits optionally followed by one uppercase letter to represent the Special Aircraft Indicator. The indicator can also appear on its own (without the leading digits).	3H The number of aircraft is 3 and the special aircraft indicator is H for Heavy Jet.	No
typeOfAircraft_03c	To be assigned	Type of aircraft.	string	No	"[A-Z][A-Z0-9]{1,3}" The element consists of one letter followed by one to three alphanumeric characters.	B747	Yes
airborneEquip_03e	To be assigned	Airborne equipment qualifier. It consists of one alphanumeric character.	string	No	"[A-Z]" The element consists of one alphanumeric character, that can have one of the following values: A - Transponder with no Mode C B - Transponder with Mode C E - FMS with DME/DME and IRU position updating	E	No

Element Name [DH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					G – GNSS, including GPS or WAAS, with en-route and terminal capability X – No transponder W - RVSM		
departurePoint_26a	To be assigned	The departure point is the point at which to start processing a flight plan as follows: the departure airport, or the airfile point. When the flight plan represents an airfile, originating within this center area, this element contains the airfile point.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the allowed ways to represent a fix can be used in this field, including the standard airport designators. A fix name, lat/long or fix-radial-distance can also be used.	AB KDFW SHP090015 3500N/04000W	Yes
coordStatusTime_07d	To be assigned	Coordination time that represents the starting time in hours and minutes at the coordination fix.	string	No	"((A D E P F)[0-1][0-9][0-5][0-9] (A D E P F)2[0-3][0-5][0-9])" The element includes one letter (possible values are A , D , E , P , or F) followed by four-digits that represent time as <i>hhmm</i> .	P1020	Yes
coordStatus_07d1	To be assigned	The coordStatus field is the single letter A , D , E , F , or P , as described for element coordStatusTime_07d.	string	No	"(A D E P F)"	F	Yes
coordTime_07d2	To be assigned	Starting time at the coordination fix.	dateTime	No		2014-06-20T20:17:52	Yes
destination_27a	To be assigned	The destination is the point where to end processing the flight plan.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the allowed ways to represent a fix can be used in this field, including the standard airport designators. A fix name, lat/long or fix-radial-distance can also be used.	AB KDFW SHP090015 3500N/04000W	Yes
ETA_28a	To be assigned	Estimated Time of Arrival (ETA) at destination in hours and minutes. ETA supplied only if	string	No	"\d{4}" Four-digits representing time in format	1720	No

Element Name [DH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		the Estimated Time Enroute (ETE) was filed with the flight plan.			<i>hhmm.</i>		

5.5.1.11 Departure Information [DH] - Diagram



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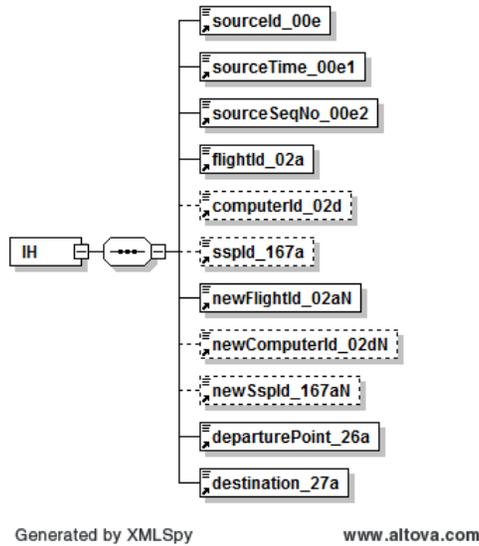
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5.5.1.12 Aircraft Identification Amendment Information [IH] - Data Elements

Element Name [IH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].	2359359001 where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits represent the sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O .	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
newFlightId_02aN	To be assigned	The new Aircraft ID, or flight ID (also called Call Sign), that has been	string	No	"\+[A-Z][A-Z0-9]{1,6}"	DAL52	Yes

Element Name [IH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	changed by the IH message.			It has a variable format, starting with one uppercase alphabetic character, followed by one to six alphanumeric characters. When it is only two characters long, the format must be one letter followed by one digit, such as A1 for Air Force One.		
newComputerId_02d N	To be assigned	This element contains the new Computer ID that has been changed by the IH message.	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([A-HJ-NP-Z]{3}) ([0-9]{2}[A-HJ-NP-Z0-9])" The computer ID is represented by three alphanumeric characters, as specified by the pattern above. The letters I and O are prohibited. One special all alphabetic code may be used, literally, XXX . This is only used in DA (Data Accept) messages in response to an ARTS VFR flight plan input.	436	No
newSspld_167aN	To be assigned	This element contains the new Site Specific Plan Identifier that has been changed by the IH message.	string	No	"\d{1,4}" The format consists of one- to four-digit string in a range from 0 – 4000.		No
departurePoint_26a	To be assigned	The departure point is the point at which to start processing a flight plan as follows: the departure airport, or the airfile point. When the flight plan represents an airfile, originating within this center area, this element contains the airfile point.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the allowed ways to represent a fix can be used in this field, including the standard airport designators. A fix name, lat/long or fix-radial-distance can also be used.	AB KDFW SHP090015 3500N/04000W	Yes
destination_27a	To be assigned	The destination is the point where to end processing the flight plan.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the allowed ways to represent a fix can be used in this field, including the standard airport designators. A fix name, lat/long or fix-radial-distance can also be used.	AB KDFW SHP090015 3500N/04000W	Yes

5.5.1.13 Aircraft Identification Amendment Information [IH] - Diagram

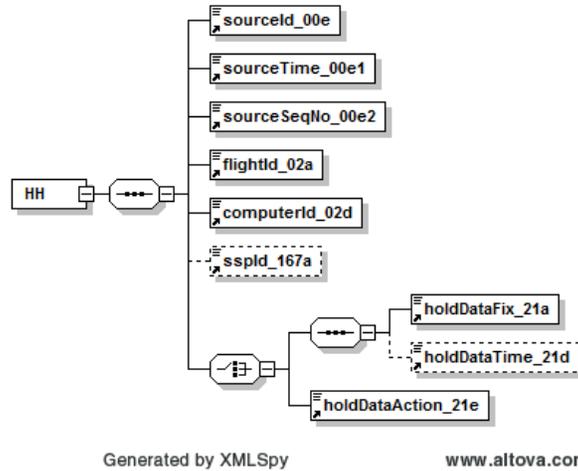


5.5.1.14 Hold Information [HH] – Data Elements

Element Name [HH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes

Element Name [HH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O, as specified by the pattern above.	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
holdDataFix_21a	To be assigned	This element specifies the position location for the flight to hold along the filed route of flight. If the message does not include the optional <i>holdDataTime_21d</i> element, the flight goes into an indefinite hold status when the flight arrives at the hold fix.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the valid fix formats can be used, as described for <i>coordFix_06a</i> element.	AB KDFW SHP090015 3500N/04000W	No
holdDataTime_21d	To be assigned	This element specifies the time the flight can expect further clearance at the holding location specified in the element <i>holdDataFix_21a</i> . This element can only be included in the HH messages if the element <i>holdDataFix_21a</i> is also included.	dateTime	No		2014-06-20T20:17:52	No
holdDataAction_21e	To be assigned	This element is used in a Hold message to terminate an existing stored hold. It can only be included in a Hold message if the element <i>holdDataFix_21a</i> is not included.	string	No	[C] This element can only specify the letter C.	C	No

5.5.1.15 Hold Information [HH] - Diagram

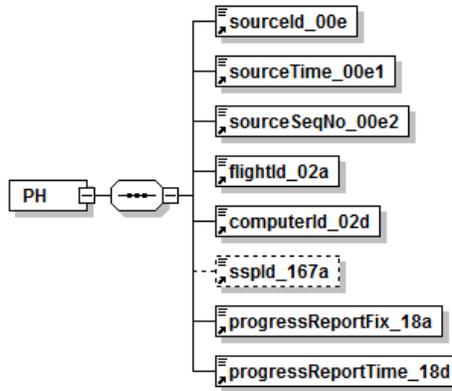


5.5.1.16 Progress Report Information [PH] – Data Elements

Element Name [PH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	<p>“\d{10}”</p> <p>Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].</p>	2359359001, where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	<p>“[0-2]\d[0-5]\d[0-5]\d”</p> <p>Time in the format <i>hh_mm_ss</i>, where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.</p>	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the	string	No	<p>“\d{4}”</p> <p>Four-digit number in the range [0000-9999].</p>	9001	Yes

Element Name [PH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		sourceId_00e element.					
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O.	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
progressReportFix_18a	To be assigned	This element specifies the position location report of the flight along the filed route of flight.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" It uses the standard fix formats, as specified for the element <i>coordFix_06a</i> .	AB KDFW SHP090015	Yes
progressReportTime_18d	To be assigned	This element specifies the time of the flight arriving at the fix specified in element <i>progressReportFix_18a</i> , above.	dateTime	No		2014-10-31T22:30:00	Yes

5.5.1.17 Progress Report Information [PH] - Diagram



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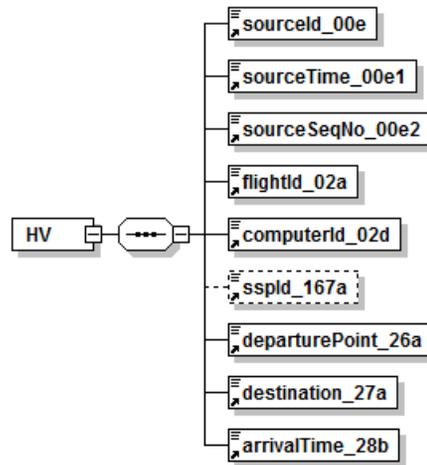
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5.5.1.18 Flight Arrival Information [HV] – Data Elements

Element Name [HV]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes

Element Name [HV]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O.	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
departurePoint_26a	To be assigned	This element specifies the point at which to start processing the flight plan	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" It uses the standard fix formats, as specified for the element <i>coordFix_06a</i> .	AB KDFW SHP090015 3500N/04000W	Yes
destination_27a	To be assigned	This element specifies the destination, which is the point at which to end processing the flight plan.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" It uses the standard fix formats, as specified for the element <i>coordFix_06a</i> .	AB KDFW SHP090015 3500N/04000W	Yes
arrivalTime_28b	To be assigned	This element specifies the reported time of arrival.	string	No	"[A-Z]\d{4}" where the first letter can be A or E, as follows: A: if time received in field 00 of TB message caused flight to be dropped; E: if flight dropped by application of AFDI or EFDI. The four-digits specify time in <i>hhmm</i> format.	A2020	Yes

5.5.1.19 Flight Arrival Information [HV] - Diagram



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5.5.1.20 Flight Plan Update Information [HU] – Data Elements

See Data Elements for Flight Plan [FH]: Section 5.5.1.2.

5.5.1.21 Flight Plan Update Information [HU] - Diagram

See Diagram for Flight Plan [FH]: Section 5.5.1.2.

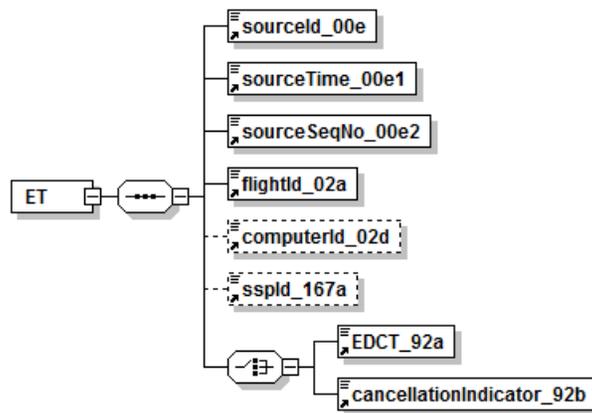
5.5.1.22 Expected Departure Time Information [ET] – Data Elements

Element Name [ET]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and	2359359001 , where the first 6 digits are the UTC time	Yes

Element Name [ET]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		sequence number.			the last four-digits, represent the message sequence number in the range [0000-9999].	(23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified by the pattern above.	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
EDCT_92a	To be assigned	This element specifies the Estimated Departure Clearance Time.	string	No	"\d{4}" Time expressed in <i>hhmm</i> format.	1722	Either this element or the element <i>cancellationIndicator_92b</i> has to be included in the ET message.
cancellationIndicator_92b	To be assigned	This element is used to cancel the EDCT for an aircraft	string	No	"C" This element can only specify the letter		Either this element or the

Element Name [ET]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					C.		element EDCT_92a has to be included in the ET message.

5.5.1.23 Expected Departure Time Information [ET] - Diagram



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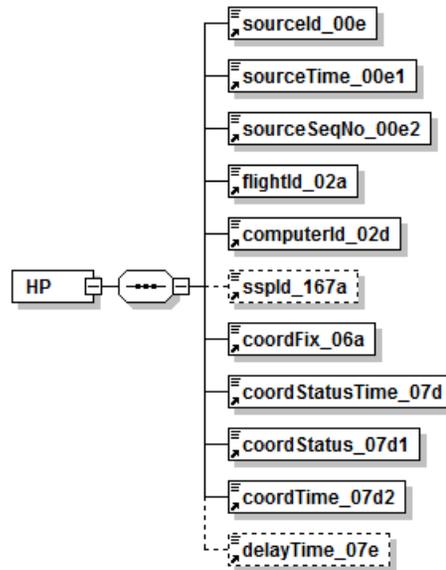
5.5.1.24 Position Update Information [HP] – Data Elements

Element Name [HP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes

Element Name [HP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified by the pattern above.	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
coordStatusTime_07d	To be assigned	Coordination time that represents the starting time in hours and minutes at the coordination fix.	string	No	"((A D E P F)[0-1][0-9][0-5][0-9] ((A D E P F)2[0-3][0-5][0-9]))" The element includes one letter (possible values are A , D , E , P , or F) followed by four-digits that represent time as <i>hhmm</i> .	P1020	Yes
coordStatus_07d1	To be assigned	The coordStatus field is the single letter A , D , E , F , or P , as described for element coordStatusTime_07d.	string	No	"(A D E P F)"	F	Yes
coordTime_07d2	To be assigned	Starting time at the coordination fix.	dateTime	No		2014-06-20T20:17:52	Yes

Element Name [HP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
delayTime_07e	To be assigned	This element is used to provide an optional delay time.	string	No	"\d{3}" Three digits representing time in minutes.	030	No

5.5.1.25 Position Update Information [HP] - Diagram



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5.5.1.26 Tentative Flight Plan Information [NP] – Data Elements

Element Name [NP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified by the pattern above.	020	No
eramGufi_316a	To be assigned	GUFI that uniquely identifies each flight in the system.	string	No	"[A-Z]{2}\d{5}[1-7]\d{2}" This element includes 10 alphanumeric characters: -ICAO country code (one letter); -en-route facility ID (one letter); -time in seconds of current day (five digits in the range 00000-86400);	KB5980017	No

Element Name [NP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					-sequence number (two digits).		
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
numberOfAircraft_03a	To be assigned	This element includes the number of aircraft for the flight followed optionally by the Special Aircraft Indicator.	string	No	"\d{0,2}[A-Z]?" The element consists of zero to two digits optionally followed by one uppercase letter to represent the Special Aircraft Indicator. The indicator can also appear on its own (without the leading digits).	3H The number of aircraft is 3 and the special aircraft indicator is H for Heavy Jet.	No
typeOfAircraft_03c	To be assigned	Type of aircraft.	string	No	"[A-Z][A-Z0-9]{1,3}" The element consists of one letter followed by one to three alphanumeric characters.	B747	Yes
airborneEquip_03e	To be assigned	Airborne equipment qualifier. It consists of one alphanumeric character.	string	No	"[A-Z]" The element consists of one alphanumeric character, that can have one of the following values: A - Transponder with no Mode C B - Transponder with Mode C E - FMS with DME/DME and IRU position updating G - GNSS, including GPS or WAAS, with en-route and terminal capability X - No transponder W - RVSM	E	No
beaconCode_04a	To be assigned	Beacon code.	string	No	"[0-7]{4}" The element includes four octal digits (i.e. 0-7). When the last two digits of the four-digits are zero, the beacon code is a non-discrete code. A discrete code is any code not ending in 00.	Non-discrete VFR code: 2101	No

Element Name [NP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
externalBeaconCode_04b	To be assigned	External beacon. It contains the requested beacon code when the flight plan is inbound from an adjacent Center or an adjacent Non-U.S. Automated Facility, the requested beacon code is different from the assigned beacon code, and the aircraft is not established on the assigned beacon code. Then, if the facility is adapted to receive Field (04b), Field 04b is transmitted.	string	No	"[0-7]{4}" It has the same format as element beaconCode_04a.	3434	No
trueAirSpeed_05a	To be assigned	True airspeed expressed in knots.	string	No	"\d{2,4}" The format is two to four-digits, in the range 01 – 3700 knots. Aircraft speed is required to be specified by using one of the three possible elements: trueAirSpeed_05a, machSpeed_05c or classifiedSpeed_05d.	540 Aircraft true airspeed is 540 knots.	Yes, if neither machSpeed_05c nor classifiedSpeed_05d are included in the message.
machSpeed_05c	To be assigned	Mach speed.	string	No	"M\d{3}" The letter M followed by three digits. The maximum value is M500.	The speed 0.85 Mach is represented as M085 .	Yes, if neither trueAirSpeed_05a nor classifiedSpeed_05d are included in the message.
classifiedSpeed_05d	To be assigned	Adapted classified speed. It is not printed on flight strips.	string	No	"SC"	This element may only include the string character SC .	Yes, if neither trueAirSpeed_05a nor machSpeed_05c are included in the message.
coordFix_06a	To be assigned	The Coordination fix represents the starting point to begin processing the flight plan route from one of the following points: the departure airport, the airfile fix or the adjacent center inbound coordination fix. For ARTS III flight plans the coordination fix Field 06 is used as the inbound coordination fix or the outbound coordination fix or, for	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) \d{4}[A-Z]? \d{4,5}[A-Z]? ([A-Z0-9]{3,4})" This element can have one of the following formats: Two to five alphanumeric characters for a fix name.	AB DFW KDFW AB200010 SHP090015 ATOKA300040 3500/04000	Yes

Element Name [NP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		an ARTS internal flight, it can be the departure or destination airport.			The fix name as above followed by six digits, for a fix radial distance. Four-digits followed by an optional alphabetic character, followed by a virgule ('/'), followed by four to five digits followed by an optional alphanumeric character for a lat/long. Three to four alphanumeric characters for a LOCID.	3500N/04000W	
coordStatusTime_07d	To be assigned	Coordination time that represents the starting time in hours and minutes at the coordination fix.	string	No	"((A D E P F)[0-1][0-9][0-5][0-9] ((A D E P F)2[0-3][0-5][0-9])" The element includes one letter (possible values are A , D , E , P , or F) followed by four-digits that represent time as <i>hhmm</i> .	P1020	Yes
coordStatus_07d1	To be assigned	The coordStatus field is the single letter A , D , E , F , or P , as described for element coordStatusTime_07d.	string	No	"(A D E P F)"	F	Yes
coordTime_07d2	To be assigned	Starting time at the coordination fix.	dateTime	No		2014-06-20T20:17:52	Yes
delayTime_07e	To be assigned	Delay time in expressed in minutes.	string	No	"\d{3}" Three digits.	030	No
assignedAlt_08a	To be assigned	Assigned altitude or flight level expressed in hundreds of feet. Only one of the altitude elements assignedAlt_08a, assignedAlt_08b, assignedAlt_08c, assignedAlt_08d, assignedAlt_08e, assignedAlt_08f, assignedAlt_08g, assignedAlt_08h may be included in the message.	string	No	"(\d{2,3}) VFR" The format consists of either two to three digits, or the constant string VFR . Three digits are required for ARTS III, thus a leading zero needs to be used when necessary.	Assigned altitude of 34,000 feet: 340 Assigned altitude 9,000 feet ARTS III: 090	No
assignedAlt_08b	To be assigned	Fixed value of OTP which indicates VFR-ON-Top. It specifies that the aircraft is flying above the clouds in VFR conditions. It may only be specified if none of the other assignedAlt_08 elements is included in the message.	string	No	"OTP"	Fixed value of OTP .	No
assignedAlt_08c	To be	VFR-ON-Top with altitude. It	string	No	"OTP/\d{2,3}"	Aircraft flying VFR-	No

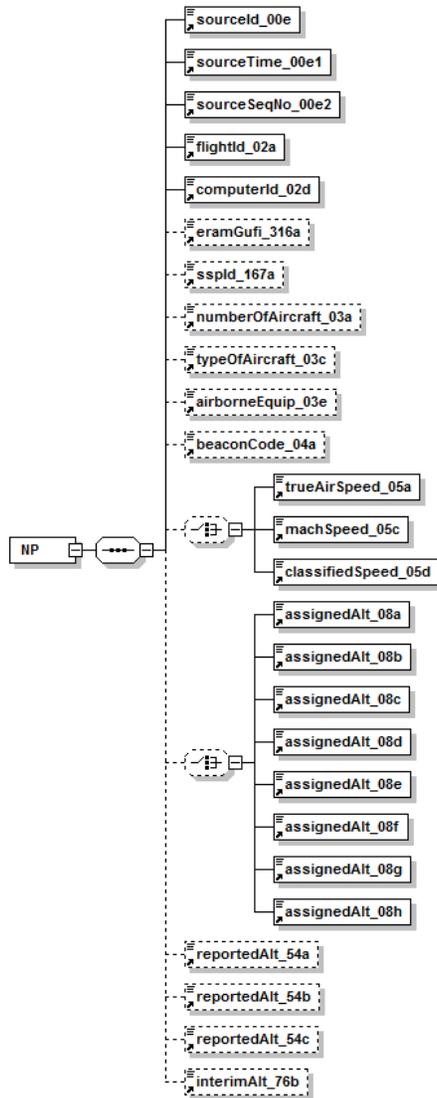
Element Name [NP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	represents an IFR flight operating above the clouds in VFR conditions at the specified assigned altitude. It may only be specified if none of the other assignedAtl_08 elements is included in the message.			The format is the constant string OTP/ followed by two to three digits that represent the assigned altitude in hundreds of feet.	ON-Top at 25,000 feet: OTP/250	
assignedAlt_08d	To be assigned	The assigned block of altitudes for the flight to fly at. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"\d{2,3}B\d{2,3}" The format is two to three digits, followed by the letter B , followed by two to three digits. The leading and trailing two to three digits define the block of altitudes in hundreds of feet for the flight to fly at. The lowest altitude must be listed first.	Assigned altitude block of 8,000 feet to 14,000 feet: 80B140	No
assignedAlt_08e	To be assigned	Element used for IFR flights operating above a specified altitude. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"ABV/\d{2,3}" The format consists of the string ABV/ followed by two to three digits that represent the altitude in hundreds of feet above which the flight is flying.	Aircraft is flying above 60,000 feet. ABV/600	No
assignedAlt_08f	To be assigned	Assigned Altitude/FIX/Altitude element specifies the altitudes to and from a fix for the flight to fly at. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"(\d{2,3}/[A-Z0-9]{2,5}/\d{2,3}) (\d{2,3}/[A-Z0-9]{2,5}\d{6}/\d{2,3}) (\d{2,3}/\d{4}[A-Z]?/\d{4,5}[A-Z]?/\d{2,3})" The altitudes are specified in hundreds of feet in a two to three digit format. The fix is specified using the same format as the coordination fix element "coordFix_06a". The fix cannot be the departure or arrival point.	240/DAL350010/220 Flight flies at altitude 24,000 feet to the fix radial distance fix and then descend to altitude 22,000 feet.	No
assignedAlt_08g	To be assigned	It is used to specify that the flight is flying Visual Flight Rules (VFR). It can only have the value VFR . It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	" VFR "	The string VFR .	No
assignedAlt_08h	To be assigned	It is used to specify that the flight is flying VFR at a specified altitude.	string	No	" VFR/\d{2,3} " The format consists of the string VFR/	VFR/75 The aircraft is flying	No

Element Name [NP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		It may only be specified if none of the other assignedAtI_08 elements is included in the message.			followed by two to three digits that represent an altitude in hundreds of feet.	VFR at 7,500 feet.	
reportedAlt_54a	To be assigned	The element is used to specify the reported altitude. For aircraft with operative Mode C capability, this element contains the Mode C altitude. For aircraft without Mode C capability or with non-operative Mode C capability, this element may contain the controller reported altitude. If there is no Mode C or controller reported altitude, or the reported altitude is negative, this element contains "0" or "000" or is optional.	string	No	"\d{1,3}" The format consists of one to three digits that represent the reported aircraft altitude in hundreds of feet. Leading zeroes may be inserted for altitudes of less than 3 digits.	310 The aircraft reported altitude is 31,000 feet.	No
reportedAlt_54b	To be assigned	This field is the reported altitude B4 indicator. The ERAM controllers' full data block used for tracking an aircraft has a special indicator for the B4 character of the full data block.	string	No	"[ABCFTVX^v+/-]" The format of this element is one character as follows: A - Reported altitude (controller entered) equals single assigned altitude. B - Beacon reported altitude is in conformance or controller entered reported altitude is in the block for an aircraft which has been assigned an altitude block (B1 to B3 - low altitude limit of block and C1 to C3=high altitude limit of block). C - Beacon reported altitude is within Altitude Conformance Limits feet. F - Reported altitude (controller entered) equals first altitude or (beacon reported) is within Altitude Conformance Limits of first altitude when assigned altitude is (d)dd/fix/(d)dd and the first altitude is displayed in Field B. N - No beacon reported altitude has been received for the aircraft; no controller entered reported altitude exists for the aircraft; or the aircraft's rate of change is questionable and	B	No

Element Name [NP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					<p>Computed Rate of Change is being used to make further conformance checks.</p> <p>T - Interim altitude is currently being displayed in the assigned altitude field (B1 through B3).</p> <p>V - Beacon reported or controller entered reported altitude, when no assigned altitude exists for the aircraft.</p> <p>X - Beacon reported altitude becomes disestablished. (C1-C3 also contains 'X' character.)</p> <p>^ - Beacon reported or controller entered reported altitude is below assigned altitude when flight is climbing</p> <p>v - Beacon reported or controller entered reported altitude is above assigned altitude when flight is descending</p> <p>+ - Beacon reported altitude exceeds upper conformance limit for an aircraft which has reached it assigned altitude or the controller entered reported altitude exceeds the assigned altitude for a non-Mode C aircraft which has previously been reported at the assigned altitude.</p> <p>-- Beacon reported altitude is less than lower conformance limit for an aircraft which has reached its assigned altitude or the controller entered reported altitude is less than the assigned altitude for a non-Mode C aircraft which has previously been reported at the assigned altitude.</p> <p>/ - Flight type is 'OTP' or 'VFR'</p>		
reportedAlt_54c	To be assigned	<p>The element specifies the reported altitude C4 indicator.</p> <p>The ERAM controllers full data block used for tracking an aircraft has a special indicator for the C4 character of the full data block as follows: If the</p>	string	No	"[#X]"	#	No

Element Name [NP]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		<p>aircraft is not responding with the Mode C altitude, the controller entered reported altitude is displayed in <i>reportedAlt_54c</i> with a pound sign (#) or X in position C4 whenever (1) the controller entered reported altitude does not equal the assigned altitude or is not within the assigned altitude block, (2) no assigned altitude has been entered, or (3) the assigned altitude is VFR, VFR/(d)dd, OTP, or OTP/(d)dd. In either case for a Mode C reported altitude or a controller reported altitude, when an interim altitude is displayed in <i>reportedAlt_54b</i> the B4 character position contains the letter "T" and the reported altitude, or either the lower or upper altitude of an assigned block altitude is displayed in <i>reportedAlt_54c</i>. In the case where a controller entered reported altitude exists, a pound sign (#) or X is displayed in the C4 position.</p>					
interimAlt_76b	To be assigned	This element specifies the interim altitude for the flight in hundreds of feet. It is included in the message if an interim altitude is assigned.	string	No	"\d{1,3}"	240	No

5.5.1.27 Tentative Flight Plan Information [NP] - Diagram

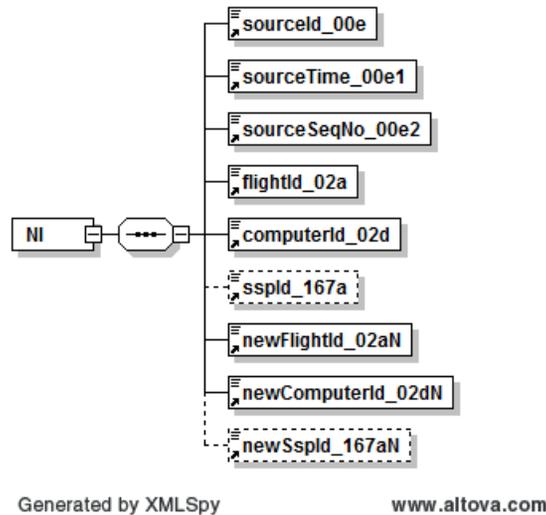


5.5.1.28 Tentative Aircraft Identification Amendment Information [NI] – Data Elements

Element Name [NI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four-digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d[0-5]\d[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified by the pattern above.	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
newFlightId_02aN	To be assigned	The new Aircraft ID, or flight ID (also called Call Sign), that has been changed by the NI message.	string	No	"\+[A-Z][A-Z0-9]{1,6}" It has a variable format, starting with one uppercase alphabetic character, followed by one to six	DAL52	Yes

Element Name [NI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					alphanumeric characters. When it is only two characters long, the format must be one letter followed by one digit, such as A1 for Air Force One.		
newComputerId_02d N	To be assigned	This element contains the new Computer ID that has been changed by the NI message.	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([A-HJ-NP-Z]{3}) ([0-9]{2}[A-HJ-NP-Z0-9])" The computer ID is represented by three alphanumeric characters, as specified by the pattern above. The letters I and O are prohibited. One special all alphabetic code may be used, literally, XXX. This is only used in DA (Data Accept) messages in response to an ARTS VFR flight plan input.	436	No
newSspId_167aN	To be assigned	This element contains the new Site Specific Plan Identifier that has been changed by the NI message.	string	No	"\d{1,4}" The format consists of one- to four-digit string in a range from 0 – 4000.	32	No

5.5.1.29 Tentative Aircraft Identification Amendment Information [NI] - Diagram



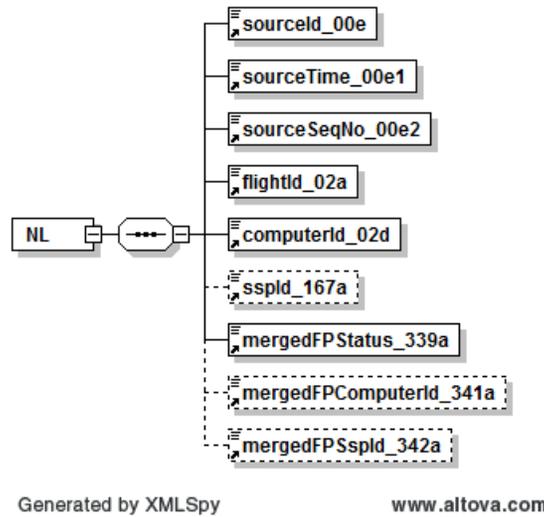
5.5.1.30 Tentative Flight Plan Removal [NL] – Data Elements

Element Name [NL]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four- digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range	23_59_35 that represents 23:59:35 UTC	Yes

Element Name [NL]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
					00-59.		
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One upper-case alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O, as specified by the pattern above.	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
mergedFPStatus_339a	To be assigned	This field contains the tentative flight plan merge status. The merge status must be one of the following: N - deletion without merge – the tentative plan is deleted without merge S* - merge – an active plan is merged into the tentative flight plan; the flight has the same CID and Site Specific Plan Identifier as the tentative plan D* - merge – a proposed plan is activated and the tentative flight plan is merged into the activated plan; the flight has the CID and Site Specific Plan Identifier of the activated plan which are different from the tentative plan.	string	No	"[NSD]" One of the letters N, S, or D.	N S D	Yes

Element Name [NL]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
		* Note: For field value S, an FH is sent for the merged flight plan. For value D, an AH or DH message is sent for the activated flight plan.					
mergedFPCComputerId_341a	To be assigned	This element specifies the merged flight plan computer ID.	string	No	"\d[A-Z0-9][A-Z0-9]" The format consists of one digit followed by two alphanumeric characters.	9PP 45A 522	No
mergedFPSspId_342a	To be assigned	This element contains the merged flight plan site-specific identifier. If the merge is of an active flight into the tentative flight, (<i>mergedFPStatus_339a=S</i>), the SSPID is the same as the tentative. If the merge is due to activation of a proposed flight plan, (<i>mergedFPStatus_339a=D</i>), the SSPID is that of the activated flight plan.	string	No	"\d{1,4}"	25 5289	No

5.5.1.31 Tentative Flight Plan Removal [NL] - Diagram



5.5.1.32 Tentative Flight Plan Amendment Information [NU] – Data Elements

Element Name [NU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes

Element Name [NU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O, as specified by the pattern above.	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
numberOfAircraft_03a	To be assigned	This element includes the number of aircraft for the flight followed optionally by the Special Aircraft Indicator.	string	No	"\d{0,2}[A-Z]?" The element consists of zero to two digits optionally followed by one uppercase letter to represent the Special Aircraft Indicator. The indicator can also appear on its own (without the leading digits).	3H The number of aircraft is 3 and the special aircraft indicator is H for Heavy Jet.	No
typeOfAircraft_03c	To be assigned	Type of aircraft.	string	No	"[A-Z][A-Z0-9]{1,3}" The element consists of one letter followed by one to three alphanumeric characters.	B747	Yes
airborneEquip_03e	To be assigned	Airborne equipment qualifier. It consists of one alphanumeric character.	string	No	"[A-Z]" The element consists of one alphanumeric character, that can have one of the following values: A - Transponder with no Mode C B - Transponder with Mode C E - FMS with DME/DME and IRU position updating	E	No

Element Name [NU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					G – GNSS, including GPS or WAAS, with en-route and terminal capability X – No transponder W - RVSM		
beaconCode_04a	To be assigned	Beacon code.	string	No	"[0-7]{4}" The element includes four octal digits (i.e. 0-7). When the last two digits of the four digits are zero, the beacon code is a non-discrete code. A discrete code is any code not ending in 00.	Non-discrete VFR code: 2101	No
trueAirSpeed_05a	To be assigned	True airspeed expressed in knots.	string	No	"\d{2,4}" The format is two to four digits, in the range 01 – 3700 knots. Aircraft speed is required to be specified by using one of the three possible elements: trueAirSpeed_05a, machSpeed_05c or classifiedSpeed_05d.	540 Aircraft true airspeed is 540 knots.	Yes, if neither machSpeed_05c nor classifiedSpeed_05d are included in the message.
machSpeed_05c	To be assigned	Mach speed.	string	No	"M\d{3}" The letter M followed by three digits. The maximum value is M500.	The speed 0.85 Mach is represented as M085 .	Yes, if neither trueAirSpeed_05a nor classifiedSpeed_05d are included in the message.
classifiedSpeed_05d	To be assigned	Adapted classified speed. It is not printed on flight strips.	string	No	"SC"	This element may only include the string character SC .	Yes, if neither trueAirSpeed_05a nor machSpeed_05c are included in the message.
assignedAlt_08a	To be assigned	Assigned altitude or flight level expressed in hundreds of feet. Only one of the altitude elements assignedAlt_08a, assignedAlt_08b, assignedAlt_08c, assignedAlt_08d, assignedAlt_08e, assignedAlt_08f, assignedAlt_08g,	string	No	"(\d{2,3}) VFR" The format consists of either two to three digits, or the constant string VFR . Three digits are required for ARTS III, thus a leading zero needs to be used when necessary.	Assigned altitude of 34,000 feet: 340 Assigned altitude 9,000 feet ARTS III: 090	No

Element Name [NU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		assignedAlt_08h may be included in the message.					
assignedAlt_08b	To be assigned	Fixed value of OTP which indicates VFR-ON-Top. It specifies that the aircraft is flying above the clouds in VFR conditions. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"OTP"	Fixed value of OTP .	No
assignedAlt_08c	To be assigned	VFR-ON-Top with altitude. It represents an IFR flight operating above the clouds in VFR conditions at the specified assigned altitude. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"OTP/d{2,3}" The format is the constant string OTP/ followed by two to three digits that represent the assigned altitude in hundreds of feet.	Aircraft flying VFR-ON-Top at 25,000 feet: OTP/250	No
assignedAlt_08d	To be assigned	The assigned block of altitudes for the flight to fly at. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"d{2,3}Bd{2,3}" The format is two to three digits, followed by the letter B , followed by two to three digits. The leading and trailing two to three digits define the block of altitudes in hundreds of feet for the flight to fly at. The lowest altitude must be listed first.	Assigned altitude block of 8,000 feet to 14,000 feet: 80B140	No
assignedAlt_08e	To be assigned	Element used for IFR flights operating above a specified altitude. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"ABV/d{2,3}" The format consists of the string ABV/ followed by two to three digits that represent the altitude in hundreds of feet above which the flight is flying.	Aircraft is flying above 60,000 feet. ABV/600	No
assignedAlt_08f	To be assigned	Assigned Altitude/FIX/Altitude element specifies the altitudes to and from a fix for the flight to fly at.	string	No	"(d{2,3}/[A-Z0-9]{2,5}/d{2,3}) (d{2,3}/[A-Z0-9]{2,5}d{6}/d{2,3}) (d{2,3}/d{4}[A-Z]?/d{4,5}[A-Z]?/d{2,3})"	240/DAL350010/220 Flight flies at altitude 24,000 feet to the fix radial distance fix and	No

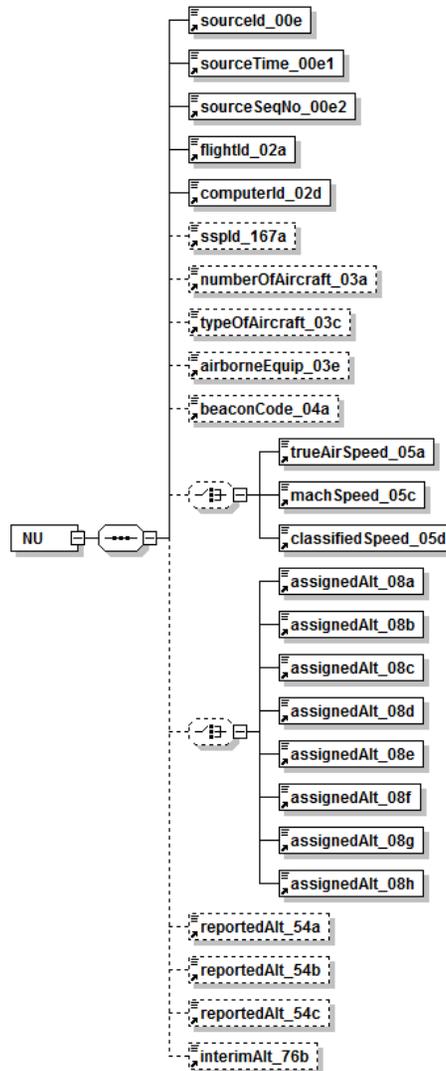
Element Name [NU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		It may only be specified if none of the other assignedAtl_08 elements is included in the message.			The altitudes are specified in hundreds of feet in a two to three digit format. The fix is specified using the same format as the coordination fix element "coordFix_06a". The fix cannot be the departure or arrival point.	then descend to altitude 22,000 feet.	
assignedAlt_08g	To be assigned	It is used to specify that the flight is flying Visual Flight Rules (VFR). It can only have the value VFR . It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"VFR"	The string VFR .	No
assignedAlt_08h	To be assigned	It is used to specify that the flight is flying VFR at a specified altitude. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"VFR/\d{2,3}" The format consists of the string VFR/ followed by two to three digits that represent an altitude in hundreds of feet.	VFR/75 The aircraft is flying VFR at 7,500 feet.	No
reportedAlt_54a	To be assigned	The element is used to specify the reported altitude. For aircraft with operative Mode C capability, this element contains the Mode C altitude. For aircraft without Mode C capability or with non-operative Mode C capability, this element may contain the controller reported altitude. If there is no Mode C or controller reported altitude, or the reported altitude is negative, this element contains "0" or "000" or is optional.	string	No	"\d{1,3}" The format consists of one to three digits that represent the reported aircraft altitude in hundreds of feet. Leading zeros may be inserted for altitudes of less than 3 digits.	310 The aircraft reported altitude is 31,000 feet.	No
reportedAlt_54b	To be assigned	This field is the reported altitude B4 indicator. The ERAM	string	No	"[ABCNTVX^v+/-]" The format of this element is one	B	No

Element Name [NU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		<p>controllers' full data block used for tracking an aircraft has a special indicator for the B4 character of the full data block.</p>			<p>character as follows: A - Reported altitude (controller entered) equals single assigned altitude. B - Beacon reported altitude is in conformance or controller entered reported altitude is in the block for an aircraft which has been assigned an altitude block (B1 to B3 - low altitude limit of block and C1 to C3=high altitude limit of block). C - Beacon reported altitude is within Altitude Conformance Limits feet. F - Reported altitude (controller entered) equals first altitude or (beacon reported) is within Altitude Conformance Limits of first altitude when assigned altitude is (d)dd/fix/(d)dd and the first altitude is displayed in Field B. N - No beacon reported altitude has been received for the aircraft; no controller entered reported altitude exists for the aircraft; or the aircraft's rate of change is questionable and Computed Rate of Change is being used to make further conformance checks. T - Interim altitude is currently being displayed in the assigned altitude field (B1 through B3). V - Beacon reported or controller entered reported altitude, when no assigned altitude exists for the aircraft. X - Beacon reported altitude becomes disestablished. (C1-C3 also contains `X' character.) ^ - Beacon reported or controller entered reported altitude is below assigned altitude when flight is climbing v - Beacon reported or controller entered reported altitude is above assigned altitude when flight is</p>		

Element Name [NU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					descending + - Beacon reported altitude exceeds upper conformance limit for an aircraft which has reached its assigned altitude or the controller entered reported altitude exceeds the assigned altitude for a non-Mode C aircraft which has previously been reported at the assigned altitude. - - Beacon reported altitude is less than lower conformance limit for an aircraft which has reached its assigned altitude or the controller entered reported altitude is less than the assigned altitude for a non-Mode C aircraft which has previously been reported at the assigned altitude. / - Flight type is `OTP' or `VFR'		
reportedAlt_54c	To be assigned	The element specifies the reported altitude C4 indicator. The ERAM controllers full data block used for tracking an aircraft has a special indicator for the C4 character of the full data block as follows: If the aircraft is not responding with the Mode C altitude, the controller entered reported altitude is displayed in <i>reportedAlt_54c</i> with a pound sign (#) or X in position C4 whenever (1) the controller entered reported altitude does not equal the assigned altitude or is not within the assigned altitude block, (2) no assigned altitude has been entered, or (3) the assigned altitude is VFR, VFR/(d)dd, OTP, or OTP/(d)dd.	string	No	“{#X}”	#	No

Element Name [NU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		<p>In either case for a Mode C reported altitude or a controller reported altitude, when an interim altitude is displayed in <i>reportedAlt_54b</i> the B4 character position contains the letter "T" and the reported altitude, or either the lower or upper altitude of an assigned block altitude is displayed in <i>reportedAlt_54c</i>. In the case where a controller entered reported altitude exists, a pound sign (#) or X is displayed in the C4 position.</p>					
interimAlt_76b	To be assigned	This element specifies the interim altitude for the flight in hundreds of feet. It is included in the message if an interim altitude is assigned.	string	No	"\d{1,3}"	240	No

5.5.1.33 Tentative Flight Plan Amendment Information [NU] - Diagram



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5.5.1.34 Track Information [TH] – Data Elements

Element Name [TH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified by the pattern above.	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
groundSpeed_05b	To be assigned	This element contains the aircraft ground speed in knots.	string	No	"\d{3}" The format is three digits.	357 Aircraft ground	Yes

Element Name [TH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
					If the aircraft ground speed is not available, this element contains three zeroes.	speed is 357 knots. 000 Indicates that the aircraft ground speed is missing.	
assignedAlt_08a	To be assigned	Assigned altitude or flight level expressed in hundreds of feet. Only one of the altitude elements assignedAlt_08a, assignedAlt_08b, assignedAlt_08c, assignedAlt_08d, assignedAlt_08e, assignedAlt_08f, assignedAlt_08g, assignedAlt_08h may be included in the message.	string	No	"(\d{2,3}) VFR" The format consists of either two to three digits, or the constant string VFR . Three digits are required for ARTS III, thus a leading zero needs to be used when necessary.	Assigned altitude of 34,000 feet: 340 Assigned altitude 9,000 feet ARTS III: 090	No
assignedAlt_08b	To be assigned	Fixed value of OTP which indicates VFR-ON-Top. It specifies that the aircraft is flying above the clouds in VFR conditions. It may only be specified if none of the other assignedAlt_08 elements is included in the message.	string	No	" OTP "	Fixed value of OTP .	No
assignedAlt_08c	To be assigned	VFR-ON-Top with altitude. It represents an IFR flight operating above the clouds in VFR conditions at the specified assigned altitude. It may only be specified if none of the other assignedAlt_08 elements is included in the message.	string	No	" OTP /\d{2,3}" The format is the constant string OTP / followed by two to three digits that represent the assigned altitude in hundreds of feet.	Aircraft flying VFR-ON-Top at 25,000 feet: OTP/250	No
assignedAlt_08d	To be assigned	The assigned block of altitudes for the flight to fly at. It may only be specified if none of the other assignedAlt_08 elements is included in the message.	string	No	"\d{2,3} B \d{2,3}" The format is two to three digits, followed by the letter B , followed by two to three digits. The leading and trailing two to three digits define the block of altitudes in hundreds of feet for the flight to fly at. The lowest altitude must be listed first.	Assigned altitude block of 8,000 feet to 14,000 feet: 80B140	No
assignedAlt_08e	To be assigned	Element used for IFR flights operating above a specified altitude. It may only be specified if none of	string	No	" ABV /\d{2,3}" The format consists of the string ABV / followed by two to three digits that represent the altitude in hundreds of	Aircraft is flying above 60,000 feet. ABV/600	No

Element Name [TH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
		the other assignedAtl_08 elements is included in the message.			feet above which the flight is flying.		
assignedAlt_08f	To be assigned	Assigned Altitude/FIX/Altitude element specifies the altitudes to and from a fix for the flight to fly at. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	"(\d{2,3}/[A-Z0-9]{2,5}/\d{2,3}) (\d{2,3}/[A-Z0-9]{2,5}\d{6}/\d{2,3}) (\d{2,3}/\d{4}[A-Z]?/\d{4,5}[A-Z]?/\d{2,3})" The altitudes are specified in hundreds of feet in a two to three digit format. The fix is specified using the same format as the coordination fix element "coordFix_06a". The fix cannot be the departure or arrival point.	240/DAL350010/220 Flight flies at altitude 24,000 feet to the fix radial distance fix and then descend to altitude 22,000 feet.	No
assignedAlt_08g	To be assigned	It is used to specify that the flight is flying Visual Flight Rules (VFR). It can only have the value VFR . It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	" VFR "	The string VFR .	No
assignedAlt_08h	To be assigned	It is used to specify that the flight is flying VFR at a specified altitude. It may only be specified if none of the other assignedAtl_08 elements is included in the message.	string	No	" VFR/\d{2,3} " The format consists of the string VFR/ followed by two to three digits that represent an altitude in hundreds of feet.	VFR/75 The aircraft is flying VFR at 7,500 feet.	No
reportedAlt_54a	To be assigned	The element is used to specify the reported altitude. For aircraft with operative Mode C capability, this element contains the Mode C altitude. For aircraft without Mode C capability or with non-operative Mode C capability, this element may contain the controller reported altitude. If there is no Mode C or controller reported altitude, or the reported altitude is negative, this element contains "0" or "000" or is optional.	string	No	"\d{1,3}" The format consists of one to three digits that represent the reported aircraft altitude in hundreds of feet. Leading zeros may be inserted for altitudes of less than 3 digits.	310 The aircraft reported altitude is 31,000 feet.	No It may be absent only if element <i>reportedAlt_54b</i> = N

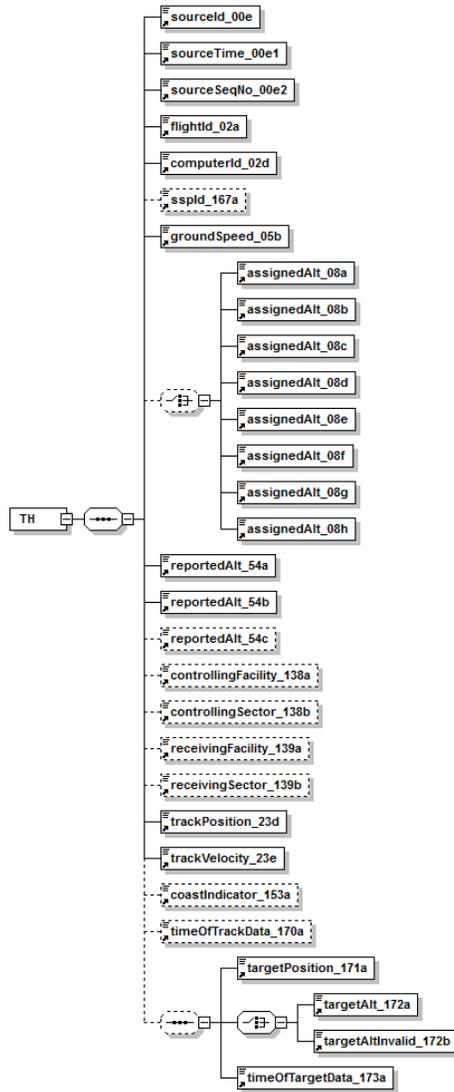
Element Name [TH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
reportedAlt_54b	To be assigned	This field is the reported altitude B4 indicator. The ERAM controllers' full data block used for tracking an aircraft has a special indicator for the B4 character of the full data block.	string	No	<p>"[ABCNTVX^v+/-]"</p> <p>The format of this element is one character as follows:</p> <p>A - Reported altitude (controller entered) equals single assigned altitude.</p> <p>B - Beacon reported altitude is in conformance or controller entered reported altitude is in the block for an aircraft which has been assigned an altitude block (B1 to B3 - low altitude limit of block and C1 to C3=high altitude limit of block).</p> <p>C - Beacon reported altitude is within Altitude Conformance Limits feet.</p> <p>F - Reported altitude (controller entered) equals first altitude or (beacon reported) is within Altitude Conformance Limits of first altitude when assigned altitude is (d)dd/fix/(d)dd and the first altitude is displayed in Field B.</p> <p>N - No beacon reported altitude has been received for the aircraft; no controller entered reported altitude exists for the aircraft; or the aircraft's rate of change is questionable and Computed Rate of Change is being used to make further conformance checks.</p> <p>T - Interim altitude is currently being displayed in the assigned altitude field (B1 through B3).</p> <p>V - Beacon reported or controller entered reported altitude, when no assigned altitude exists for the aircraft.</p> <p>X - Beacon reported altitude becomes disestablished. (C1-C3 also contains 'X' character.)</p> <p>^ - Beacon reported or controller entered reported altitude is below assigned altitude when flight is climbing</p> <p>v - Beacon reported or controller</p>	B	Yes

Element Name [TH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
					entered reported altitude is above assigned altitude when flight is descending + - Beacon reported altitude exceeds upper conformance limit for an aircraft which has reached it assigned altitude or the controller entered reported altitude exceeds the assigned altitude for a non-Mode C aircraft which has previously been reported at the assigned altitude. - - Beacon reported altitude is less than lower conformance limit for an aircraft which has reached its assigned altitude or the controller entered reported altitude is less than the assigned altitude for a non-Mode C aircraft which has previously been reported at the assigned altitude. / - Flight type is `OTP' or `VFR'		
reportedAlt_54c	To be assigned	The element specifies the reported altitude C4 indicator. The ERAM controllers full data block used for tracking an aircraft has a special indicator for the C4 character of the full data block as follows: If the aircraft is not responding with the Mode C altitude, the controller entered reported altitude is displayed in <i>reportedAlt_54c</i> with a pound sign (#) or X in position C4 whenever (1) the controller entered reported altitude does not equal the assigned altitude or is not within the assigned altitude block, (2) no assigned altitude has been entered, or (3) the assigned altitude is VFR, VFR/(d)dd, OTP, or OTP/(d)dd. In either case for a Mode C reported altitude or a controller reported altitude, when an interim altitude is displayed in	string	No	“[#X]”	#	No

Element Name [TH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
		<i>reportedAlt_54b</i> the B4 character position contains the letter "T" and the reported altitude, or either the lower or upper altitude of an assigned block altitude is displayed in <i>reportedAlt_54c</i> . In the case where a controller entered reported altitude exists, a pound sign (#) or X is displayed in the C4 position.					
controllingFacility_138a	To be assigned	This element specifies the facility that is controlling the flight.	string	No	"LLL" The format consists of three letters. The value is 3 blank characters if identification of the controlling facility is not available.	ZCH	No
controllingSector_138b	To be assigned	This element specifies the controlling ARTS position or the controlling ERAM ARTCC sector number. The Controlling Sector is the sector/position that is controlling the flight. The value is 00 if identification of the controlling sector is not available.	string	No	"d[A-Z0-9]" The format is one digit followed by one alphanumeric.	1W	No
receivingFacility_139a	To be assigned	This element specifies the facility that is receiving the flight.	string	No	"[A-Z]{3}" The format is three letters.	AIA	No
receivingSector_139b	To be assigned	This element specifies the receiving ARTS position or the receiving ERAM ARTCC sector number. The receiving sector is the sector/position that is receiving the flight. The value is 00 if identification of the receiving sector is not available.	string	No	"[0-9][A-Z0-9]" The format is one digit followed by one alphanumeric.	1W	No
trackPosition_23d	To be assigned	This element specifies the track position form ERAM to ATM-IPOP.	string	No	"\d{6}[A-Z]/\d{7}[A-Z]" It is a latitude/longitude pair, separated by a virgule. For latitude, the first two digits are degrees, the second two are minutes, and the last two are seconds. The letter can be N or S. For the longitude, the first three digits are	393106N/0842535W	Yes

Element Name [TH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
					degrees, the second two are minutes, and the last two are seconds. The letter can be E or W.		
trackVelocity_23e	To be assigned	This element specifies the velocity in nautical miles per hour.	string	No	"[+\\-]\\d\\d{0,3}/[+\\-SH]\\d\\d{0,3}" Minimum length = 5 Maximum length = 11 It has an X and a Y component separated by a virgule. Either component can be preceded by either a + or – sign, followed by one to three digits. The second component can be preceded by an S or an H, for speed only (NM/hr), or heading only (degrees), respectively.	+46/-355 -0/S439	Yes
coastIndicator_153a	To be assigned	This element specifies an action indicator. It has only one possible value, C for Coast.	string	No	"C"	C	No
timeOfTrackData_170a	To be assigned	This element specifies the date and time the track data was stored.	dateTime	No	dateTime	2014-06-20T20:17:52	No
targetPosition_171a	To be assigned	This element specifies the ERAM radar target position, in latitude/longitude format, as described in message number.	string	No	"\\d{6}[A-Z]/\\d{7}[A-Z]" Length = 16 It is a latitude/longitude pair, separated by a virgule.	393106N/0842535W	No
targetAlt_172a	To be assigned	This element specifies the Mode C Target altitude (corrected for barometric pressure) in hundreds of feet.	string	No	"\\d{3}" The format is three digits, with leading zeroes required. If the target altitude is negative, targetAlt_172a is 000.	290 000	No
targetAltInvalid_172b	To be assigned	If the element <i>targetAlt_172a</i> is not valid, this field is set to INV , for invalid Mode C altitude.	string	No	"INV"	INV	No
timeOfTargetData_173a	To be assigned	This element specifies the date and time of the correlated target.	dateTime	No	dateTime	2014-06-20T20:17:50	No

5.5.1.35 Track Information [TH] - Diagram



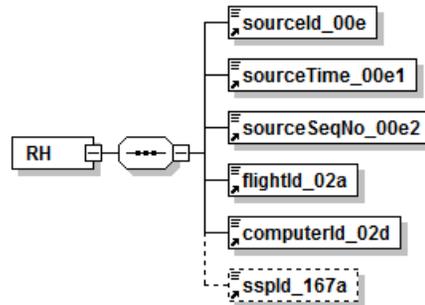
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5.5.1.36 Drop Track Information [RH] – Data Elements

Element Name [RH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified by the pattern above.	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No

5.5.1.37 Drop Track Information [RH] - Diagram



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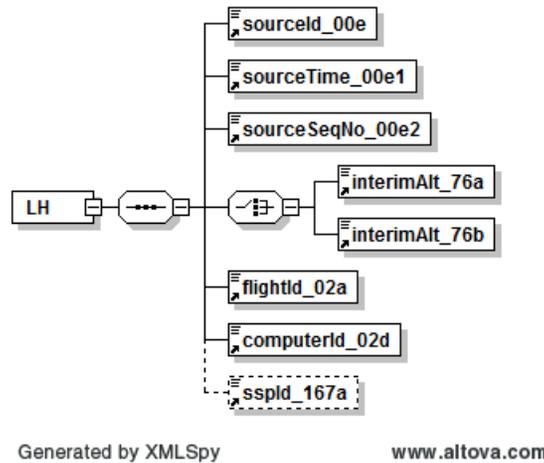
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5.5.1.38 Interim Altitude Information [LH] – Data Elements

Element Name [LH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	“\d{4}” Four-digit number in the range [0000-9999].	9001	Yes
interimAlt_76a	To be assigned	This element specifies the letter D that is used to delete the interim	string	No	“D”	D	Yes, if element <i>interimAlt_76b</i> is not included

Element Name [LH]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
		altitude stored by ATM-IPOP. The message has to include either this element or the element <i>interimAlt_76b</i> .					in the message
interimAlt_76b	To be assigned	This element specifies the interim altitude for the flight in hundreds of feet. The message has to include either this element or the element <i>interimAlt_76a</i> .	string	No	"\d{1,3}" The format is one to three digits, in the range 0 to 999.	240 Aircraft interim altitude of 24,000 feet.	Yes, if element <i>interimAlt_76a</i> is not included in the message
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified by the pattern above.	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned byIFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No

5.5.1.39 Interim Altitude Information [LH] - Diagram



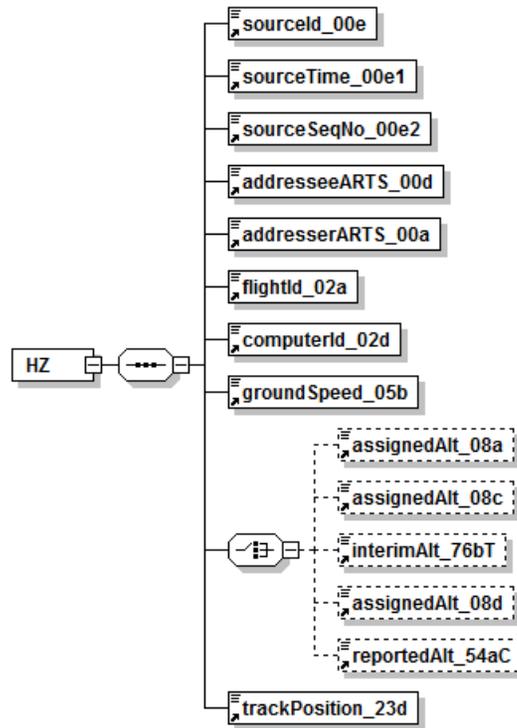
5.5.1.40 ARTS Flow Control Track/Full Data Block Information [HZ] – Data Elements

Element Name [HZ]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes

Element Name [HZ]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
addresseeARTS_00d	To be assigned	This element contains the ARTS facility identification to which ERAM is to relay the message.	string	No	"[A-Z]{1,3}"	NNN	Yes
addresserARTS_00a	To be assigned	This element contains the ARTS facility identification from which ERAM is to relay the message.	string	No	"[A-Z]{1,3}"	MMM	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified by the pattern above.	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
groundSpeed_05b	To be assigned	This element contains the aircraft ground speed in knots.	string	No	"\d{3}" The format is three digits. If the aircraft ground speed is not available, this element contains three zeroes.	357 Aircraft ground speed is 357 knots. 000 Indicates that the aircraft ground speed is missing.	Yes
assignedAlt_08a	To be assigned	Assigned altitude or flight level expressed in hundreds of feet. It may only be specified if none of the other altitude elements (assignedAlt_08a, assignedAlt_08c, interimAlt_76bT, assignedAlt_08d, reportedAlt_54aC) is included in the message.	string	No	"(\d{2,3}) VFR" The format consists of either two to three digits, or the constant string VFR . Three digits are required for ARTS III, thus a leading zero needs to be used when necessary.	Assigned altitude of 34,000 feet: 340 Assigned altitude 9,000 feet ARTS III: 090	No
assignedAlt_08c	To be assigned	VFR-ON-Top with altitude. It represents an IFR flight operating above the clouds in VFR conditions at the specified assigned altitude.	string	No	"OTP/\d{2,3}" The format is the constant string OTP/ followed by two to three digits that represent the assigned altitude in hundreds of feet.	Aircraft flying VFR-ON-Top at 25,000 feet: OTP/250	No

Element Name [HZ]	FDR Number	Element Definition	Type	Complex ?	Format/Permissible Values	Example	Required?
		It may only be specified if none of the other altitude elements (assignedAlt_08a, assignedAlt_08c, interimAlt_76bT, assignedAlt_08d, reportedAlt_54aC) is included in the message.					
interimAlt_76bT	To be assigned	This element specifies the interim altitude for the flight in hundreds of feet It may only be specified if none of the other altitude elements (assignedAlt_08a, assignedAlt_08c, interimAlt_76bT, assignedAlt_08d, reportedAlt_54aC) is included in the message.	string	No	"\d{1,3}T" One to three digits in the range 0 – 999.	240	No
assignedAlt_08d	To be assigned	The assigned block of altitudes for the flight to fly at. It may only be specified if none of the other altitude elements (assignedAlt_08a, assignedAlt_08c, interimAlt_76bT, assignedAlt_08d, reportedAlt_54aC) is included in the message.	string	No	"\d{2,3}B\d{2,3}" The format is two to three digits, followed by the letter B , followed by two to three digits. The leading and trailing two to three digits define the block of altitudes in hundreds of feet for the flight to fly at. The lowest altitude must be listed first.	Assigned altitude block of 8,000 feet to 14,000 feet: 80B140	No
reportedAlt_54aC	To be assigned	This element contains the reported Mode C altitude. It may only be specified if none of the other altitude elements (assignedAlt_08a, assignedAlt_08c, interimAlt_76bT, assignedAlt_08d, reportedAlt_54aC) is included in the message.	string	No	"\d{3}C" Three digits followed by the letter C. The digits represent the aircraft altitude in hundreds of feet. Leading zeroes have to be inserted when necessary. If there is no Mode C or the reported altitude is negative, this element contains "000".	090C Mode C altitude of 9,000 feet.	No
trackPosition_23d	To be assigned	This element specifies the track position form ERAM to ATM-IPOP.	string	No	"\d{6}[A-Z]/\d{7}[A-Z]" It is a latitude/longitude pair, separated by a virgule. For latitude, the first two digits are degrees, the second two are minutes, and the last two are seconds. The letter can be N or S. For the longitude, the first three digits are degrees, the second two are minutes, and the last two are seconds. The letter can be E or W.	393106N/0842535W	Yes

5.5.1.41 ARTS Flow Control Track/Full Data Block Information [HZ] - Diagram



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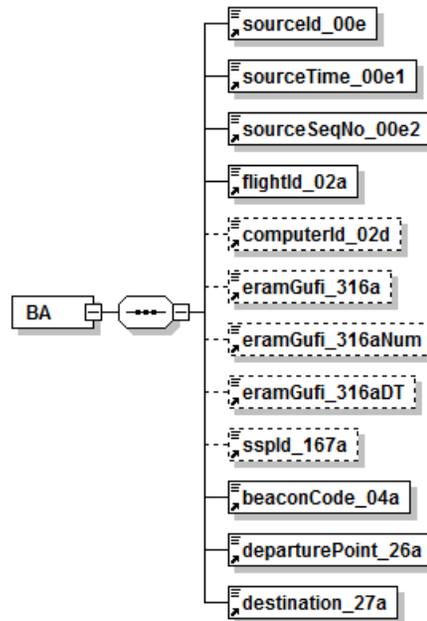
5.5.1.42 Beacon Code Reassignment [BA] – Data Elements

Element Name [BA]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	<p>"\d{10}"</p> <p>Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].</p>	<p>2359359001, where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).</p>	Yes

Element Name [BA]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified by the pattern above.	020	No
eramGufi_316a	To be assigned	GUFID that uniquely identifies each flight in the system.	string	No	"[A-Z]{2}\d{5}[1-7]\d{2}" This element includes 10 alphanumeric characters: -ICAO country code (one letter); -en-route facility ID (one letter); -time in seconds of current day (five digits in the range 00000-86400); -sequence number (two digits).	KB5980017	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
beaconCode_04a	To be assigned	Beacon code.	string	No	"[0-7]{4}" The element includes four octal digits (i.e. 0-7). When the last two digits of the four digits are zero, the beacon code is a non-discrete code. A discrete code is any code not ending in 00.	Non-discrete VFR code: 2101	Yes

Element Name [BA]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
departurePoint_26 a	To be assigned	It is used to specify the point at which to start processing the flight plan route as follows: the departure airport or the airfile point.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the standard ways to represent a fix can be used for this element (fix name, lat/long, or fix-radial-distance), including the standard airport designators.	AB DFW KDFW SHPO90015 ATOKA300040 3500N/04000W	Yes
destination_27a	To be assigned	It is used to specify the point at which to end processing the flight plan route.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the standard ways to represent a fix can be used for this element (fix name, lat/long, or fix-radial-distance), including the standard airport designators.	AB DFW KDFW SHPO90015 ATOKA300040 3500N/04000W	Yes

5.5.1.43 Beacon Code Reassignment [BA] - Diagram



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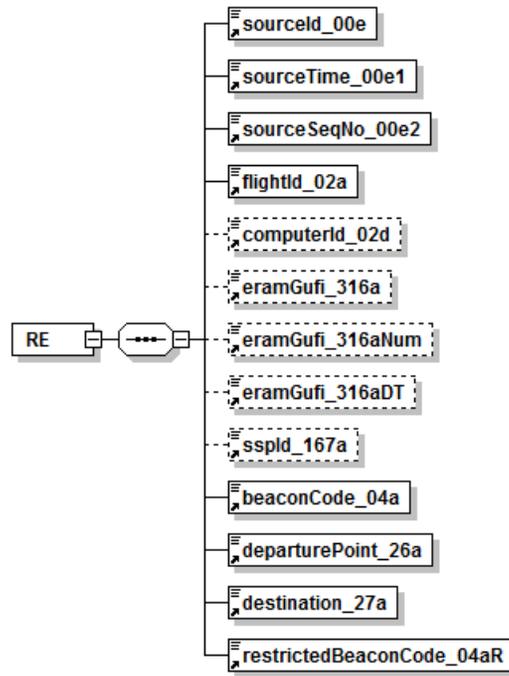
5.5.1.44 Beacon Code Restricted [RE] – Data Elements

Element Name [RE]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourcecld_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourcecld_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the	23_59_35 that represents	Yes

Element Name [RE]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23:59:35 UTC	
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O, as specified by the pattern above.	020	No
eramGufi_316a	To be assigned	GUFI that uniquely identifies each flight in the system.	string	No	"[A-Z]{2}\d{5}[1-7]\d{2}" This element includes 10 alphanumeric characters: -ICAO country code (one letter); -en-route facility ID (one letter); -time in seconds of current day (five digits in the range 00000-86400); -sequence number (two digits).	KB5980017	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
beaconCode_04a	To be assigned	Beacon code.	string	No	"[0-7]{4}" The element includes four octal digits (i.e. 0-7). When the last two digits of the four digits are zero, the beacon code is a non-discrete code. A discrete code is any code not ending in 00.	Non-discrete VFR code: 2101	Yes
departurePoint_26a	To be assigned	It is used to specify the point at which	string	No	"([A-Z0-9]{2,5})	AB	Yes

Element Name [RE]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	to start processing the flight plan route as follows: the departure airport or the airfile point.			"([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the standard ways to represent a fix can be used for this element (fix name, lat/long, or fix-radial-distance), including the standard airport designators.	DFW KDFW SHP090015 ATOKA300040 3500N/04000W	
destination_27a	To be assigned	This element is used to specify the point at which to end processing the flight plan route.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the standard ways to represent a fix can be used for this element (fix name, lat/long, or fix-radial-distance), including the standard airport designators.	AB DFW KDFW SHP090015 ATOKA300040 3500N/04000W	Yes
restrictedBeaconCode_04a R	To be assigned	This element is used to specify the restricted beacon code.	string	No	"[0-7]{4}" The element includes four octal digits (i.e. 0-7). When the last two digits of the four digits are zero, the beacon code is a non-discrete code. A discrete code is any code not ending in 00.	2101	Yes

5.5.1.45 Beacon Code Restricted [RE] - Diagram



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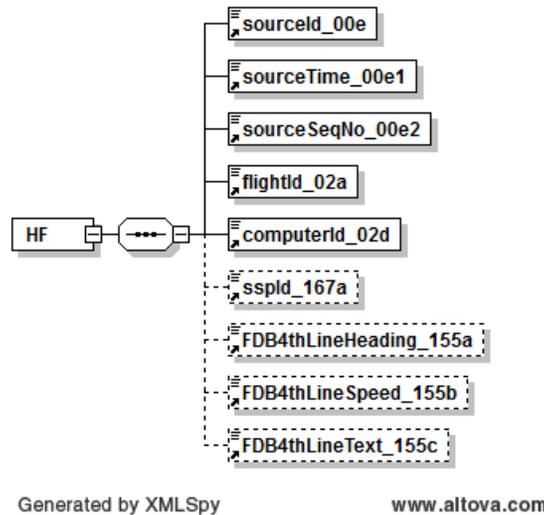
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5.5.1.46 FDB Fourth Line Information [HF] – Data Elements

Element Name [HF]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (hhmmss) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element,	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format hh_mm_ss, where:	23_59_35 that represents 23:59:35	Yes

Element Name [HF]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		sourceId_00e.			<i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	UTC	
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O.	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
FDB4thLineHeading_155a	To be assigned	This element is used to display the heading of the aircraft issued by the controller. Its format is one to four alphanumeric characters. Samples: 075, H075.	string	No	"[A-Z0-9]{1,4}"	075 H075	No
FDB4thLineSpeed_155b	To be assigned	This element is used to display the speed of the aircraft issued by the controller.	string	No	"[A-Z0-9+-.]{1,4}" Minimum length = 1 character Maximum length = 4 characters.	280+ S260 M83+ .75-	No
FDB4thLineText_155c	To be assigned	This element is used to display free-form text issued by the controller.	string	No	"[A-Z0-9+.=*/_;\.,\ ^\v]{1,8}" The allowed characters are the alphanumeric characters, -, +, =, *, /, underscore (_), semicolon (;), period (.), and comma (,). No leading or embedded spaces are allowed. It can be one to eight characters long.	-BUFFI NOBBL BLVNS	No

5.5.1.47 FDB Fourth Line Information [HF] - Diagram

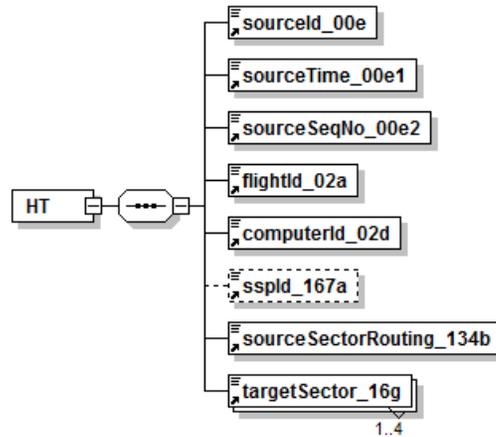


5.5.1.48 Point Out Information [HT] – Data Elements

Element Name [HT]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourcecld_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourcecld_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be	This element specifies the message	string	No	"\d{4}"	9001	Yes

Element Name [HT]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	sequence number component of the sourceId_00e element.			Four-digit number in the range [0000-9999].		
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O.	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
sourceSectorRouting_134b	To be assigned	This element contains the entering sector number for a Point Out action <i>HT</i> message for ATM-IPOP.	string	No	"\d{2}" Two digits in the range 00 – 99.	50	Yes
targetSector_16g	To be assigned	This element contains an adjacent center sector number for that center or an internal ERAM sector number.	string	No	"[A-Z]?[0-9]{2}" The format is an optional letter to specify the center, followed by two digits to specify the sector.	M45 80	Yes

5.5.1.49 Point Out Information [HT] - Diagram



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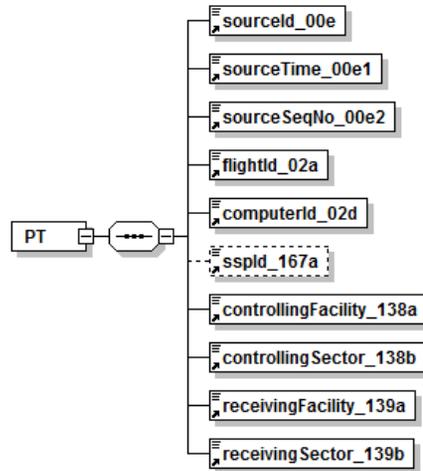
5.5.1.50 Inbound Point Out Information [PT] – Data Elements

Element Name [PT]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourcecld_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourcecld_00e.	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be	This element specifies the message	string	No	“\d{4}”	9001	Yes

Element Name [PT]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	sequence number component of the sourceId_00e element.			Four-digit number in the range [0000-9999].		
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O.	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
controllingFacility_138a	To be assigned	This element contains the facility that is controlling the flight.	string	No	"[A-Z]{3}" The format consists of three letters. Value is three blank characters if identification of the controlling facility is not available.	ZCH	Yes
controllingSector_138b	To be assigned	This element contains the controlling ARTS position or the controlling ERAM ARTCC sector number. The Controlling Sector is the sector/position that is controlling the flight. The value is 00 if identification of the controlling sector is not available.	string	No	"[A-Z][A-Z0-9]" The format is one digit followed by one alphanumeric.	1W	Yes
receivingFacility_139a	To be assigned	This element contains the facility that is receiving the flight.	string	No	"[A-Z]{3}" The format is three letters. Value is three blank characters if identification of the controlling facility is not available.	AIA	Yes
receivingSector_139b	To be assigned	This element contains the receiving ERAM ARTCC sector number in the PT message. The receiving sector is the sector/position that is receiving the flight. The value is 00 if	string	No	"[0-9]{2}" The format consists of two digits.	74	Yes

Element Name [PT]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		identification of the receiving sector is not available. <i>Note:</i> When used in the TH or OH messages, this element contains the receiving ERAM ARTCC sector number, or the ARTS IIII Receiving Position.					

5.5.1.51 Inbound Point Out Information [PT] - Diagram



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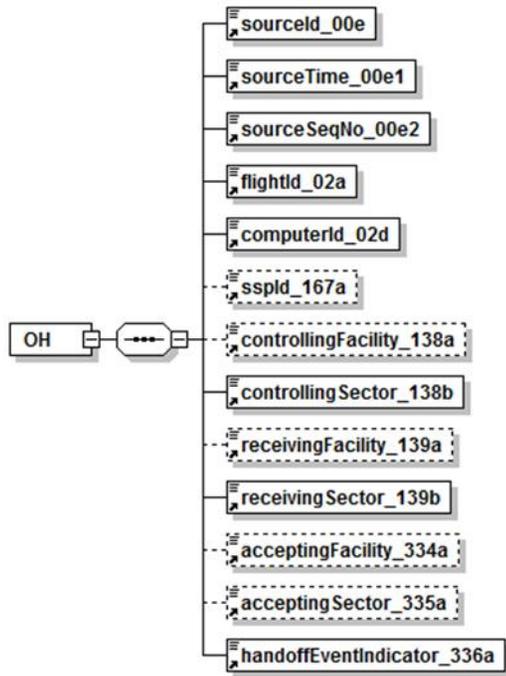
5.5.1.52 Handoff Status [OH] – Data Elements

Element Name [OH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and	Yes

Element Name [OH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		sequence number.			the last four digits, represent the message sequence number in the range [0000-9999].	the last 4 digits are sequence number of the message (9001).	
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	<p>"[0-2]\d_[0-5]\d_[0-5]\d"</p> <p>Time in the format <i>hh_mm_ss</i>, where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.</p>	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	<p>"\d{4}"</p> <p>Four-digit number in the range [0000-9999].</p>	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	<p>"\+?[A-Z][A-Z0-9]{1,6}"</p> <p>One uppercase alphabetic character followed by one to six alphanumeric characters.</p>	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	<p>"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])"</p> <p>The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O, as specified by the pattern above.</p>	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	<p>"\d{1,4}"</p> <p>One to four digits.</p>	24	No
controllingFacility_138a	To be assigned	This element contains the facility that is controlling the flight.	string	No	<p>"[A-Z]{3}"</p> <p>The format consists of three letters. Value is three blank characters if identification of the controlling facility is not available.</p>	ZCH	No
controllingSector_138b	To be assigned	This element contains the controlling ARTS position or the controlling ERAM ARTCC sector number. The Controlling Sector is the sector/position that is controlling the flight. The value is 00 if identification	string	No	<p>"[A-Z][A-Z0-9]"</p> <p>The format is one digit followed by one alphanumeric.</p>	1W	Yes

Element Name [OH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		of the controlling sector is not available.					
receivingFacility_139a	To be assigned	This element contains the facility that is receiving the flight.	string	No	“[A-Z]{3}” The format is three letters. Value is three blank characters if identification of the controlling facility is not available.	AIA	No
receivingSector_139b	To be assigned	This element contains the ARTS III Receiving Position, or the receiving ERAM ARTCC sector number. The value is 00 if the identification of the receiving sector is not available.	string	No	“[0-9][A-Z0-9]” The format is one digit followed by one alphanumeric character.	Facility position in Houston ARTS: IN The receiving ERAM ARTCC sector number: 74	Yes
acceptingFacility_334a	To be assigned	This element contains the accepting facility identifier. The accepting facility is the facility receiving the flight when the handoff was initiated. Data in this field indicates that a handoff is accepted.	string	No	“[A-Z]{3}” The format consists of three letters.	ZCA	No
acceptingSector_335a	To be assigned	This element contains the accepting sector data. The accepting sector is the receiving sector/position that accepts the flight in handoff status. Element <i>acceptingSector_335a</i> is the same as element <i>receivingSector_139b</i> .	string	No	“[0-9][A-Z0-9]” The format is one digit followed by one alphanumeric character.	1B 49	No
handoffEventIndicator_336a	To be assigned	This element contains the handoff event indicator. The possible values and their meanings are: I – initiation A – acceptance R – retraction T – take control U – update F – failure	string	No	“[IARTUF]” One of the letters above.	I A	Yes

5.5.1.53 Handoff Status [OH] – Diagram



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5.5.1.54 Flight Plan Reconstitution [DBRTFPI] – Data Elements

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O, such as <i>ddd</i> , <i>ddL</i> , <i>dLd</i> , <i>dLL</i> .	020	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
eramGufi_316a	To be assigned	GUFI that uniquely identifies each flight in the system.	string	No	"[A-Z]{2}\d{5}[1-7]\d{2}" This element includes 10 alphanumeric characters: -ICAO country code (one letter); -en-route facility ID (one letter); -time in seconds of current day (five digits in the range 00000-86400); -sequence number (two digits).	KB5980017	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
numberOfAircraft_03a	To be assigned	This element includes the number of aircraft for the flight followed optionally by the Special Aircraft Indicator.	string	No	"\d{0,2}[A-Z]?" The element consists of zero to two digits optionally followed by one uppercase letter to represent the Special Aircraft Indicator. The indicator can also appear on its own (without the leading digits).	3H The number of aircraft is 3 and the special aircraft indicator is H for Heavy Jet.	No
typeOfAircraft_03c	To be assigned	Type of aircraft.	string	No	"[A-Z][A-Z0-9]{1,3}" The element consists of one letter followed by one to three alphanumeric characters.	B747	Yes
airborneEquip_03e	To be assigned	Airborne equipment qualifier. It consists of one alphanumeric character.	string	No	"[A-Z]" The element consists of one alphanumeric character, that can have one of the following values: A - Transponder with no Mode C B - Transponder with Mode C E - FMS with DME/DME and IRU position updating G - GNSS, including GPS or WAAS, with en-route and terminal capability	E	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					X – No transponder W - RVSM		
beaconCode_04a	To be assigned	Beacon code.	string	No	" [0-7]{4} " The element includes four octal digits (i.e. 0-7). When the last two digits of the four digits are zero, the beacon code is a non-discrete code. A discrete code is any code not ending in 00.	Non-discrete VFR code: 2101	No
trueAirSpeed_05a	To be assigned	True airspeed expressed in knots.	string	No	" \d{2,4} " The format is two to four digits, in the range 01 – 3700 knots. Aircraft speed is required to be specified by using one of the three possible elements: trueAirSpeed_05a, machSpeed_05c or classifiedSpeed_05d.	540 Aircraft true airspeed is 54,000 knots.	Yes, if neither machSpeed_05c nor classifiedSpeed_05d are included in the message.
machSpeed_05c	To be assigned	Mach speed.	string	No	" M\d{3} " The letter M followed by three digits. The maximum value is M500.	The speed 0.85 Mach is represented as M085 .	Yes, if neither trueAirSpeed_05a nor classifiedSpeed_05d are included in the message.
classifiedSpeed_05d	To be assigned	Adapted classified speed. It is not printed on flight strips.	string	No	" SC "	This element may only include the string character SC .	Yes, if neither trueAirSpeed_05a nor machSpeed_05c are included in the message.
coordFix_06a	To be assigned	The Coordination fix represents the starting point to begin processing the flight plan route from one of the following points:	string	No	" ([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?) ([A-Z0-9]{3,4})"	AB DFW KDFW AB200010	Yes

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		the departure airport, the airfile fix or the adjacent center inbound coordination fix. For ARTS III flight plans the coordination fix Field 06 is used as the inbound coordination fix or the outbound coordination fix or, for an ARTS internal flight, it can be the departure or destination airport.			This element can have one of the following formats: Two to five alphanumeric characters for a fix name. The fix name as above followed by six digits, for a fix radial distance. Four digits followed by an optional alphabetic character, followed by a virgule ('/'), followed by four to five digits followed by an optional alphanumeric character for a lat/long. Three to four alphanumeric characters for aLOCID.	SHP090015 ATOKA30004 0 3500/04000 3500N/04000 W	
coordStatusTime_07d	To be assigned	Coordination time that represents the starting time in hours and minutes at the coordination fix.	string	No	"((A D E P F)[0-1][0-9][0-5][0-9] (A D E P F)2[0-3][0-5][0-9])" The element includes one letter (possible values are A , D , E , P , or F) followed by four digits that represent time as <i>hhmm</i> .	P1020	Yes
coordStatus_07d1	To be assigned	The coordStatus field is the single letter A , D , E , F , or P , as described for element coordStatusTime_07d.	string	No	"(A D E P F)"	F	Yes
coordTime_07d2	To be assigned	Starting time at the coordination fix.	dateTime	No	dateTime	2014-06-20T20:17:52	Yes
delayTime_07e	To be assigned	Delay time in expressed in minutes.	string	No	"\d{3}" Three digits.	030	No
departureTime_243n	To be assigned	This element specifies the reported (actual) departure time.	dateTime	No	dateTime	2014-06-20T20:17:52	No
proposedDepartureTime_2431	To be assigned	This element specifies the proposed departure time.	dateTime	No	dateTime	2014-06-20T20:17:52	No
estDepartureClearanceTime_2432	To be assigned	This element specifies the EDCT.	dateTime	No	dateTime	2014-06-20T20:27:52	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
arrivalTime_28b	To be assigned	This element specifies the reported (actual) arrival time.	dateTime	No	dateTime	2014-06-20T22:27:52	No
assignedAlt_08a	To be assigned	Assigned altitude or flight level expressed in hundreds of feet. Only one of the altitude elements assignedAlt_08a, assignedAlt_08b, assignedAlt_08c, assignedAlt_08d, assignedAlt_08e, assignedAlt_08f, assignedAlt_08g, assignedAlt_08h may be included in the message.	string	No	"(\d{2,3}) VFR" The format consists of either two to three digits, or the constant string VFR . Three digits are required for ARTS III, thus a leading zero needs to be used when necessary.	Assigned altitude of 34,000 feet: 340 Assigned altitude 9,000 feet ARTS III: 090	No
assignedAlt_08b	To be assigned	Fixed value of OTP which indicates VFR-ON-Top. It specifies that the aircraft is flying above the clouds in VFR conditions.	string	No	"OTP"	OTP	No
assignedAlt_08c	To be assigned	VFR-ON-Top with altitude. It represents an IFR flight operating above the clouds in VFR conditions at the specified assigned altitude.	string	No	"OTP/\d{2,3}" The format is the constant string OTP/ followed by two to three digits that represent the assigned altitude in hundreds of feet.	Aircraft flying VFR-ON-Top at 25,000 feet: OTP/250	No
assignedAlt_08d	To be assigned	The assigned block of altitudes for the flight to fly at.	string	No	"\d{2,3}B\d{2,3}" The format is two to three digits, followed by the letter B , followed by two to three digits. The leading and trailing two to three digits define the block of altitudes in hundreds of feet for the flight to fly at. The lowest altitude must be listed first.	Assigned altitude block of 8,000 feet to 14,000 feet: 80B140	No
assignedAlt_08e	To be assigned	Element used for IFR flights operating above a specified	string	No	"ABV/\d{2,3}" The format consists of the string	Aircraft is flying above	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		altitude.			ABV/ followed by two to three digits that represent the altitude in hundreds of feet above which the flight is flying.	60,000 feet. ABV/600	
assignedAlt_08f	To be assigned	Assigned Altitude/FIX/Altitude element specifies the altitudes to and from a fix for the flight to fly at.	string	No	"(\d{2,3}/[A-Z0-9]{2,5}/\d{2,3}) (\d{2,3}/[A-Z0-9]{2,5}\d{6}/\d{2,3}) (\d{2,3}/\d{4}[A-Z]?/\d{4,5}[A-Z]?/\d{2,3})" The altitudes are specified in hundreds of feet in a two to three digit format. The fix is specified using the same format as the coordination fix element "coordFix_06a". The fix cannot be the departure or arrival point.	240/DAL3500 10/220 Flight flies at altitude 24,000 feet to the fix radial distance fix and then descend to altitude 22,000 feet.	No
assignedAlt_08g	To be assigned	It is used to specify that the flight is flying Visual Flight Rules (VFR). It can only have the value VFR .	string	No	"VFR"	VFR.	No
assignedAlt_08h	To be assigned	It is used to specify that the flight is flying VFR at a specified altitude.	string	No	"VFR/\d{2,3}" The format consists of the string VFR/ followed by two to three digits that represent an altitude in hundreds of feet.	VFR/75 The aircraft is flying VFR at 7,500 feet.	No
requestedAlt_09a	To be assigned	The element is used to specify requested altitude or flight level in hundreds of feet. Only one of the seven requested altitude elements (requestedAlt_09a to requestedAlt_08g) may be included in a proposed flight message.	string	No	"\d{2,3}" The format consists of two to three digits. ARTS III requires three characters, with a leading 0 when required (such as 090).	340 Aircraft is requesting to fly at 34,000 feet altitude.	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
requestedAlt_09b	To be assigned	The element Requested Altitude format OTP represents an IFR flight requesting to operate above the clouds in VFR conditions. OTP stands for VFR-ON-Top.	string	No	"OTP"	The element has a fixed value of OTP .	No
requestedAlt_09c	To be assigned	The element "Requested Altitude format OTP with altitude" represents a flight requesting to operate VFR-ON-Top at the requested altitude. numberOfAircraft_03a.	string	No	"OTP/\d{2,3}" The format consists of the string OTP/ followed by two to three digits that represent the requested altitude in hundreds of feet. ERAM only sends ARTS III the requested altitude with a format of three digits (leading zeroes used when necessary, as in 090) and places a special altitude indicator (U if Heavy Jet) in element numberOfAircraft_03a.	OTP/250 Flight is requesting to fly VFR-ON-Top at 25,000 feet.	No
requestedAlt_09d	To be assigned	Element used for an IFR flight requesting to operate above a specified altitude.	string	No	"ABV/\d{2,3}" The format consists of the string ABV/ followed by two to three digits that represent the requested altitude in hundreds of feet.	ABV/600	No
requestedAlt_09e	To be assigned	Element used to specify a requested block of altitudes or flight levels for the flight to fly at. The altitudes are specified in hundreds of feet.	string	No	"\d{2,3}B\d{2,3}" The format consists of two to three digits for the lowest altitude, followed by the letter B , followed by two to three digits for the highest altitude.	250B260 Flight is requesting to fly inside an altitude block between 25,000 feet and 260,000 feet.	No
requestedAlt_09f	To be assigned	This element is used when the aircraft is requesting to fly VFR.	string	No	"VFR" It can only include the fixed string "VFR". ERAM sends ARTS III the three		No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					characters and also places a special altitude indicator V (not a Heavy Jet) or W (if a Heavy Jet) in element numberOfAircraft_03a.		
requestedAlt_09g	To be assigned	The element used to represent a flight requesting to fly VFR at a specified altitude.	string	No	"VFR/\d{2,3}" The format consists of the constant string VFR/ followed by two to three digits that specify the requested altitude in hundreds of feet.	VFR/35 Aircraft is requesting to fly VFR at 3,500 feet	No
flightPlanRoute_10a	To be assigned	It specifies the trajectory followed by the airplane from the departure point to the arrival point, based on the fixes and routes along that trajectory.	string	No	"[A-Z0-9+/*]{2,12}_?\. [A-Z0-9+\. /]*\.[A-Z0-9+/*]{2,12}_?(/d{4})?" The element format consists of a string that includes fixes and routes along the trajectory flown by the airplane. The fixes and routes are specified using the FIX.ROUTE.FIX format, where either element can be implied, such as FIX..FIX, or ROUTE..ROUTE.	OKC.V14S.TUL .TUL090..FVY2 70.FVY	Yes
departurePoint_26a	To be assigned	It is used to specify the point at which to start processing the flight plan route as follows: the departure airport or the airfile point.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the standard ways to represent a fix can be used for this element (fix name, lat/long, or fix-radial-distance), including the standard airport designators.	AB DFW KDFW SHPO90015 ATOKA30004 0 3500N/04000 W	Yes
destination_27a	To be assigned	It is used to specify the point at which to end processing the flight plan route.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the standard ways to represent a fix can be used for this element (fix name, lat/long, or fix-radial-distance), including the standard airport designators.	AB DFW KDFW SHPO90015 ATOKA30004 0 3500N/04000 W	Yes

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
ETE_2439	To be assigned	This element specifies the estimated time en route (ETE).	duration	No		PT2H30M	No
ETA_28a	To be assigned	This element specifies the estimated time of arrival at the flight plan destination.	dateTime	No	dateTime	2014-06-20T22:27:52	No
remarks_11c	To be assigned	Flight plan remarks text.	string	No	The string is from 1 to 400 characters in length. It has an attribute called <i>remarktype</i> with the possible values of interfacility or intrafacility.	OAIR EVAC AMG/N0482F 290 SQT/N0479F3 10 JOL+	No
holdDataFix_21a	To be assigned	This element specifies the position location for the flight to hold along the filed route of flight. If the message does not include the optional <i>holdDataTime_21d</i> element, the flight goes into an indefinite hold status when the flight arrives at the hold fix.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" Any of the valid fix formats can be used, as described for <i>coordFix_06a</i> element.	AB KDFW SHP090015 3500N/04000 W	No
holdDataTime_21d	To be assigned	This element specifies the time the flight can expect further clearance at the holding location specified in the element <i>holdDataFix_21a</i> . This element can only be included in the HH messages if the element <i>holdDataFix_21a</i> is also included.	dateTime	No	dateTime	2014-06-20T20:17:52	No
progressReportFix_18a	To be assigned	This element specifies the position location report of the flight along the filed route of flight.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)" It uses the standard fix formats, as specified for the element	AB KDFW SHP090015	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					<i>coordFix_06a</i> .		
progressReportTime_18d	To be assigned	This element specifies the time of the flight arriving at the fix specified in element <i>progressReportFix_18a</i> , above.	dateTime	No	dateTime	2014-06-20T20:17:52	No
departureAutoRouteInhibitIndicator_244g	To be assigned	This element specifies whether the departure route from the departure airport is inhibited or not.	string	No	"*"	*	No
destinationAutoRouteInhibitIndicator_244h	To be assigned	This element specifies whether the arrival route to the arrival airport is inhibited or not.	string	No	"*"	*	No
interimAlt_76b	To be assigned	This element specifies the interim altitude for the flight in hundreds of feet.	string	No	"\d{1,3}" The format is one to three digits, in the range 0 to 999.	240 Aircraft interim altitude of 24,000 feet.	No
AARFld10_142e	To be assigned	This element includes the AAR preferential route in Field 10 format. Either this element or the element <i>AARNonFld10_142f</i> may be included in the message.	string	No	"[A-Z0-9\./]{4,97}" Field 10 format.	./BLEUZ.RYT HM3.	No
AARNonFld10_142f	To be assigned	This element includes the AAR preferential route in non-Field 10 format. Either this element or the element <i>AARFld10_142e</i> may be included in the message.	string	No	"[A-Z0-9\./\+&#x20;]{4,97}" A "+" delimiter precedes and follows the non-Field10 elements.	.J25.CRP+LISS E6+ Notice the non-Field10 substring that is enclosed between "+" characters.	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
ADRFld10_142c	To be assigned	Adapted ADR preferential route in Field 10 format. Either this element or the element <i>ADRNonFld10_142d</i> may be included in the message.	string	No	"[A-Z0-9\.\/*]{4,84}" Field 10 format.	.ALAMO6.HE NLY.J131.FUZ. J105.	No
ADRNonFld10_142d	To be assigned	Adapted ADR preferential route in non-Field 10 format. Either this element or the element <i>ADRFld10_142c</i> may be included in the message.	string	No	"[A-Z0-9\.\/*+]{4,84}" A "+" delimiter precedes and follows the non-Field10 elements.	+RV J25+CRP.LISSE 6 Notice the non-Field10 substring that is enclosed between "+" characters.	No
ADARFld10_142a	To be assigned	This element contains the adapted ADAR preferential route in Field 10 format. The Preferential Route Alphanumerics are used to control the flow and separation of traffic departing and arriving at designated airports. An ADAR has the complete preferential routing from the departure airport to the arrival airport. Either this element or the element <i>ADARNonFld10_142b</i> may be included in the message.	string	No	"[A-Z0-9\./]{4,44}" Field 10 format.	.PSX2.PSX.V20 .CRP.	No
ADARNonFld10_142b	To be assigned	This element contains the adapted ADAR preferential route in non-Field 10 format. If required for the flight and if the element	string	No	"[A-Z0-9\./+]{4,44}" A "+" delimiter will precede and follow the non-Field10 elements.	+LISSE6+ +TS1 MEM270 LIT050+	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		ADARFId10_142a is not included in the message, the FH message contains this element for the ADAR adapted route. Either this element or the element ADARFId10_142a may be included in the message.					
AARId_141c	To be assigned	If required for the flight, this element specifies the AAR adapted arrival route name.	string	No	"\d{5}"	PA001	No
ADRIId_141b	To be assigned	If required for the flight, the Adapted Route indicator format specifies the ADR adapted departure route name.	string	No	"\d{5}"	PD001	No
ADARId_141a	To be assigned	If required for the flight, this element specifies the ADAR departure arrival route name.	string	No	"\d{5}" The format consists of five alphanumeric characters.	DA001	No
FPA_143a0	To be assigned	FPA containing the first postable fix (1 st)	string	No	"\d{4}"	7601	No
FPA_143a1	To be assigned	FPA containing the first postable fix (2 nd)	string	No	"\d{4}"	7601	No
FPA_143a2	To be assigned	FPA containing the first postable fix (3 rd)	string	No	"\d{4}"	7601	No
FPA_143a3	To be assigned	FPA containing the first postable fix (4 th)	string	No	"\d{4}"	7601	No
FAV_143b0	To be assigned	The element specifies the FAV number containing the first fix where the route alteration occurs due to an AAR application.	string	No	"\d{4}" The format is four digits.	7601	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
FAV_143b1	To be assigned	The element specifies the FAV number containing the second fix where the route alteration occurs due to an AAR application.	string	No	"\d{4}" The format is four digits.	7601	No
FAV_143b2	To be assigned	The element specifies the FAV number containing the third fix where the route alteration occurs due to an AAR application.	string	No	"\d{4}" The format is four digits.	7601	No
FAV_143b3	To be assigned	The element specifies the FAV number containing the fourth fix where the route alteration occurs due to an AAR application.	string	No	"\d{4}" The format is four digits.	7601	No
timeBtw1stAndLastConvertedRouteFix_2449	To be assigned	The element specifies the time interval between the first and last converted route fix.	duration	No		PT30M The above value specifies a period of 30 minutes	No
flightRules_908a	To be assigned	This element specifies the flight rules as one character as follows: I = IFR V = VFR Y = IFR First Z = VFR First	string	No	"[IVYZ]" If Y or Z is used, the point or points at which a change of flight rules is planned should be shown in the route.	V	No
typeOfFlight_908b	To be assigned	This element specifies the type of flight specified using one of the following characters: S = Scheduled air transport N = Non-scheduled air transport G = General Aviation M= Military O = Other flights	string	No	"[SNGMO]"	N	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
wakeTurbulenceCat_909c	To be assigned	This element specifies the wake turbulence category as heavy, medium or light.	string	No	"[HML]" , where: H = Heavy M = Medium L = Light	H M L	No
comNavApproachEquip_910a	To be assigned	Airborne Equipment Qualifier: Radio Communication, Navigation, and Approach AID Equipment.	string	No	"([A-M,O-Z]{1,25}) N" This element has one required plus 24 optional letters. The 25 possible letters are the letters A through Z and each letter can only be used once. If the letter N is present, it must be the only letter present.	SCHJ See ICAO 4444 for the complete list of characters.	No
survEquip_910b	To be assigned	This element represents the ICAO airborne equipment qualifier.	string	No	"[NACXPIS][D]?" The format consists of up to two letters. The first letter must be one of the SSR equipment letters and the second letter, if used, must be the ADS capability letter " D ". The valid values for the first letter and their significance are: N : Nil A : Transponder Mode A C : Transponder Mode A and C X : Transponder Mode S without both aircraft ID and pressure-altitude transmission P : Transponder Mode S, with pressure-altitude transmission but aircraft ID transmission I : Transponder Mode S with aircraft ID transmission but no pressure-altitude transmission S : Transponder Mode S with both pressure-altitude and aircraft ID transmission D : ADS capability	SSR equipment as Mode S with ADS capability: SD	No
altAero_916c	To be assigned	This element contains Alternate Arrival Point(s) or	string	No	"([A-Z]{4} ?[A-Z]{0,4})	EBBR EDDL	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		Aerodrome(s), if any. More than one alternate arrival points of aerodromes may be specified.			<p> ([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?) ([A-Z0-9]{3,4})" </p> <p>The aerodrome is specified using the 4-letter ICAO name or ZZZZ if no ICAO location indicator has been allocated.</p> <p>The arrival point format has to be one of the fix formats described above (see coordFix_06a).</p> <p>If two or more alternatives are included, they may have any of the valid formats and they have to be separated by blanks.</p>		
FDB4thLineHeading_155a	To be assigned	This element is used to display the heading of the aircraft issued by the controller. Its format is one to four alphanumeric characters. Samples: 075, H075.	string	No	"[A-Z0-9]{1,4}"	075 H075	No
FDB4thLineSpeed_155b	To be assigned	This element is used to display the speed of the aircraft issued by the controller.	string	No	"[A-Z0-9+-.]{1,4}" Minimum length = 1 character Maximum length = 4 characters.	280+ S260 M83+ .75-	No
FDB4thLineText_155c	To be assigned	This element is used to display free-form text issued by the controller.	string	No	"[A-Z0-9+-.*/_;\.,\ ^v]{1,8}" The allowed characters are the alphanumeric characters, -, +, =, *, /, underscore (_), semicolon (;), period (.), and comma (,). No leading or embedded spaces are allowed. It can be one to eight characters long.	-BUFFI NOBBL BLVNS	No
externalBeaconCode_04b	To be assigned	This element specifies the external beacon. It contains the requested beacon code when the flight plan is inbound from an adjacent	string	No	"[0-7]{4}" It has the same format as element beaconCode_04a.	3434	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		Center or an adjacent Non-U.S. Automated Facility, the requested beacon code is different from the assigned beacon code, and the aircraft is not established on the assigned beacon code. Then, if the facility is adapted to receive Field (04b), Field 04b is transmitted.					
localIntendedRoute_10b	To be assigned	The Local Intended Route element contains the flight plan route that is coordinated to penetrated facilities. It consists of the flight plan route with any expected-to-be-applied-by-the-controlling-center ADRs, ADARs or AARs already applied. It is intended for the clients that wish to know the expected state of the flight plan when the current facility releases control of the flight. Element localIntendedRoute_10b contains the filed route (field 10a) merged with any locally applicable adapted routes (preferential routes, transition fixes and A-line fixes). Optional Field 10b is sent to ATM-IPOP, when Field 10b is not the same as Field 10a.	string	No	"[A-Z0-9+/*]{2,12}_?[A-Z0-9+\./*]*\.[A-Z0-9+/*]{2,12}_?(/d{4})?" Minimum length = 3 Maximum length = 1000		No
timeRouteValues_2461	To be assigned	This element contains the time of the route values.	dateTime	No	dateTime	2014-06-20T20:17:52	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
fixTimes	To be assigned	This element specifies the fix and calculated time of arrival at each fix that describes the aircraft's ERAM converted route of flight.		Yes	Sequence of the elements <i>fixTime_68c</i> , <i>fix_68c1</i> , and <i>crossingTime_68c2</i> . It can be included between zero and 326 times.		No
fixTime_68c	To be assigned	This element contains a fix and the expected time of arrival at the fix in hours and minutes.	string	No	"([A-Z0-9]{2,5}/\d{4}) ([A-Z0-9]{2,5}\d{6}/\d{4}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?/\d{4}) " The format consists of a valid representation of a fix (see element <i>coordFix_06a</i> in the FH message table), followed by a virgule, and followed by time in <i>hhmm</i> format. Minimum length = 7 Maximum length = 17	LFT/1800 JIMIE004034/ 1320	No
fix_68c1	To be assigned	This element specifies the fix component of the element <i>fixTime_68c</i> .	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]? ([A-Z0-9]{3,4})" The format consists of a valid representation of a fix (see element <i>coordFix_06a</i> in the FH message table).	KDFW 3500N/04000 W	No
crossingTime_68c2	To be assigned	This element specifies the time component of the element <i>fixTime_68c</i> .	dateTime	No	The format is <i>dateTime</i> , and not <i>hhmm</i> as it is in the <i>fixTime_68c</i> element.	2014-06- 20T20:17:52	No
adjacentCenterRouting	To be assigned	It groups the elements <i>outputRouting_253a</i> and <i>FAV_29d</i> .		Yes	It can be included between zero and 25 times.		No
outputRouting_253a	To be assigned	This element indicates the destination of the output message.	string	No	"[A-Z+]{1,3}"		Required in the element <i>adjacentCenterRouting</i> .
FAV_29d	To be assigned	This element provides the FAV Airspace Assignment	string	No	"\d{4}"	0053	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	number.			The format consists in four digits, with leading zeroes as needed.	2509	
ICAOStoredFormat_918a	To be assigned	This element may only have the value zero, to indicate that none of the Other Information elements (with suffixes 918b – 918x) is present in the message.	string	No	"0"	0	No
EETIndicator_918b	To be assigned	This element specifies Significant Points or FIR Boundary designators and accumulated estimated elapsed times to such points or boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority. EET stands for Estimated Elapsed Time.	string	No	Freeform text up to a total of 3,000 characters. The element consists of one or more Significant Points with appended estimated flying time from departure in <i>hhmm</i> format with a blank separating each occurrence of Significant Point and time.	KZNY0046 HUBE0213	No
RIFIndicator_918c	To be assigned	This element specifies the route to a revised destination aerodrome, followed by the aerodrome location code. The revised route is subject to re-clearance in flight. RIF stands for Revised in Flight.	string	No	Free-form string of up to 3000 characters. The destination aerodrome has to be specified using the four-letter ICAO location code.	DTA HEC KLAX	No
REGIndicator_918d	To be assigned	This element specifies Aircraft Registration (tail number), if different from the aircraft identification specified in element flightId_02a.	string	No	Free-form string of up to 3000 characters.	N5258E	No
SELIndicator_918e	To be assigned	This element specifies the SELCAL code. SELCAL is a	string	No	Free-form string of up to 3000 characters.	ACHA BRLM	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		selective-calling radio system that alerts aircraft crew to incoming radio communications.					
OPRIndicator_918f	To be assigned	This field specifies the Aircraft Operator, if not obvious from the aircraft identification in <i>flightId_02a</i> .	string	No	Free-form string of up to 3000 characters.	UAL	No
STSIndicator_918g	To be assigned	This element specifies the Reason for Special Handling by ATS, such as hospital aircraft.	string	No	Free-form string of up to 3000 characters. The following are the only valid special handling indicators: ALTRV ATFMX FFR FLTCK HAZMAT HEAD HOSP HUM MARSA MEDEVAC NONRVSM SAR STATE NONRNP10 NO NRPN10 PROTECTED CARGO CARGO FLT	ALTRV	No
TYPIndicator_918h	To be assigned	Type(s) of Aircraft, preceded if necessary by number of aircraft, if ZZZZ is specified in the element <i>numberOfAircraft_03a</i> .	string	No	Free-form string of up to 3000 characters.	CESNA140	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
PERIndicator_918i	To be assigned		string	No	Single valid letter specified in PAN-OPS 8168 Volume 1: A – Indicated airspeed (IAS) less than 169 km/h (91kt) B – IAS between 169 km/h (91kt) and 224 km/h (121 kt) C – IAS between 224 km/h (121 kt) and 261 km/h (141 kt) D – IAS between 261 km/h (141 kt) and 307 km/h (166 kt) E - IAS between 307 km/h (166 kt) and 391 km/h (211 kt) H - Helicopters	C	No
COMIndicator_918j	To be assigned	This element contains Communication Equipment Data. It is used for additional Communication Equipment on board not specified in the flightPlanRoute_10a element.	string	No	Free-form string of up to 3000 characters.	HF ONLY TCAS	No
DATIndicator_918k	To be assigned	This element specifies data related to data link capability.	string	No	Free-form string of up to 3000 characters. Valid values are: S – satellite data link H – HF data link V – VHF data link M – SSR Mode S data link One or more of the valid letters may be specified in this element.	SV	No
NAVIndicator_918l	To be assigned	This element contains Navigation Equipment Data. It is used for additional Navigation Equipment not specified in the flightPlanRoute_10a element.	string	No	Free-form string of up to 3000 characters.	ADF ONLY	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
DEPIndicator_918m	To be assigned	This element contains the name of the Departure Aerodrome if ZZZZ is specified in Field 13, or the ICAO four-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained, if AFIL is specified in Field 13 (flight plan was filed by an active flight). Note: Field 13 does not appear in FH, AH, and HU messages.	string	No	Free-form string of up to 3000 characters.	NORTON FIELD	No
DESTIndicator_918n	To be assigned	This element includes the name of the destination aerodrome, if ZZZZ is specified in Field 16. Note: Field 13 does not appear in FH, AH, and HU messages.	string	No	Free-form string of up to 3000 characters.	MILLSPAW FARM	No
ALTNIndicator_918o	To be assigned	This element includes the name of the alternate destination aerodrome(s), if ZZZZ is specified in Field 16. Note: Field 13 does not appear in FH, AH, and HU messages.	string	No	Free-form string of up to 3000 characters.	MILLSPAW FARM	No
RALTIndicator_918p	To be assigned	This element contains the en-route alternate aerodrome(s).	string	No	Free-form string of up to 3000 characters.	JP RANCH	No
CODEIndicator_918q	To be assigned	This element specifies the aircraft Controller-Pilot Data Link Communications (CPDLC) address.	string	No	Free-form string of up to 3000 characters.	45FA16	No
RACEIndicator_918r	To be assigned	This element specifies the requested altitude and speed en route.	string	No	Free-form string of up to 3000 characters.	KRAFT/M080F 380	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
SURIndicator_918s	To be assigned	This element specifies the surveillance applications or capabilities not specified in localIntendedRoute_10b.	string	No	Free-form string of up to 3000 characters.	282B	No
DLEIndicator_918t	To be assigned	This element specifies significant en route delay or holding point(s), followed by length of delay. It is new in ICAO 2012.	string	No	Free-form string of up to 3000 characters. The length of delay is specified in the format <i>hhmm</i> .	MDG0030	No
TALTIndicator_918u	To be assigned	This element specifies the take-off alternate aerodrome.	string	No	Free-form string of up to 3000 characters. Valid formats include aerodrome name or any of the fix formats (i.e., lat/long, fix-radial-distance, or name).	KRAFT FARM	No
DOFIndicator_918v	To be assigned	This element specifies the date of flight.	string	No	" d{6} " Six-digit date in the format <i>yymmdd</i> .	140617	No
ORGNIndicator_918w	To be assigned	This element specifies the originator's eight-letter AFTN address or other appropriate contact details, in cases where the originator of the flight plan may not be readily identified, as required by the appropriate ATS authority.	string	No	Eight-letter character string.	LEBBYNYX	No
PBNIndicator_918x	To be assigned	This element specifies the RNAV or RNP capability. PBN stands for Performance Based Navigation.	string	No	Up to eight two-character specifications may be included, for a total of 16 characters. RNAV and RNP capabilities are two-characters each, as follows. RNAV specifications: A1 RNAV10 (RNP 10) B1 RNAV 5 all permitted sensors B2 RNAV 5 GNSS B3 RNAV 5 DME/DME B4 RNAV 5 VOR/DME	B101	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					B5 RNAV 5 INS or IRS B6 RNAV 5 LORANC C1 RNAV 2 all permitted sensors C2 RNAV 2 GNSS C3 RNAV 2 DME/DME C4 RNAV 2 DME/DME/IRU D1 RNAV 1 all permitted sensors D2 RNAV 1 GNSS D3 RNAV 1 DME/DME D4 RNAV 1 DME/DME/IRU		
ICAO1stAdaptedField18_999a	To be assigned	Elements having the suffix of <i>_999a</i> through <i>_999y</i> contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO2ndAdaptedField18_999b	To be assigned	Elements having the suffix of <i>_999a</i> through <i>_999y</i> contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO3rdAdaptedField18_999c	To be assigned	Elements having the suffix of <i>_999a</i> through <i>_999y</i> contain the data that is present for the optionally adapted element 918	string	No	Free-form string of up to 3000 characters.		No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .					
ICAO4thAdaptedField18_999d	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO5thAdaptedField18_999e	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO6thAdaptedField18_999f	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO7thAdaptedField18_999g	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918	string	No	Free-form string of up to 3000 characters.		No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .					
ICAO8thAdaptedField18_999h	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO9thAdaptedField18_999i	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO10thAdaptedField18_999j	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO11thAdaptedField18_999k	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918	string	No	Free-form string of up to 3000 characters.		No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .					
ICAO12thAdaptedField18_999l	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO13thAdaptedField18_999m	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO14thAdaptedField18_999n	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO15thAdaptedField18_999o	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918	string	No	Free-form string of up to 3000 characters.		No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .					
ICAO16thAdaptedField18_999p	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO17thAdaptedField18_999q	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO18thAdaptedField18_999r	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO19thAdaptedField18_999s	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918	string	No	Free-form string of up to 3000 characters.		No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .					
ICAO20thAdaptedField18_999t	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO21stAdaptedField18_999u	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO22ndAdaptedField18_999v	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO23rdAdaptedField18_999w	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918	string	No	Free-form string of up to 3000 characters.		No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .					
ICAO24thAdaptedField18_999x	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
ICAO25thAdaptedField18_999y	To be assigned	Elements having the suffix of _999a through _999y contain the data that is present for the optionally adapted element 918 indicators that are transmitted to CMS, when applicable, using a Field Reference Number of 999, with elements <i>a</i> through <i>y</i> .	string	No	Free-form string of up to 3000 characters.		No
lastSeqNo_245a	To be assigned	The ERAM sequence number of the last message received for a flight. Sequence number is part of field 00.	integer	No			Yes
lastFltMsgRcvd_245b	To be assigned	This element specifies the time the last message was received for a flight.	dateTime	No	dateTime	2014-06-20T20:17:52	Yes
RNVArrival_925a	To be assigned	This element specifies the RNAV accuracy value for the arrival phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The valid range is [0001-9999]. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No
RNVEnroute_925b	To be	This element specifies the	string	No	"\d{4}"	Accuracy of	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	RNAV accuracy value for the en route phase of the flight expressed in hundredths (.01) nm.			The allowable range is 0001-9999. If the value is 0 then the field is not included.	0.1 nm: 0010	
RNVOceanic_925c	To be assigned	This element specifies the RNAV accuracy value for the oceanic phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.1 nm: 0010	No
RNVDeparture_925d	To be assigned	This element specifies the RNAV accuracy value for the departure phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.1 nm: 0010	No
RNVSpare1_925e	To be assigned	This is a spare element.	string	No	"\d{4}"		No
RNVSpare2_925f	To be assigned	This is a spare element.	string	No	"\d{4}"		No
tentativeFlightPlanIndicator_2459	To be assigned	This element indicates whether the flight plan data is from a tentative flight plan or not.	string	No	"*"	*	No
RNPArrival_925g	To be assigned	This element specifies the RNP accuracy value for the arrival phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No
RNPEnroute_925h	To be assigned	This element specifies the RNP accuracy value for the en route phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No
RNPOceanic_925i	To be assigned	This element specifies the RNP accuracy value for the oceanic phase of the flight expressed in hundredths	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No

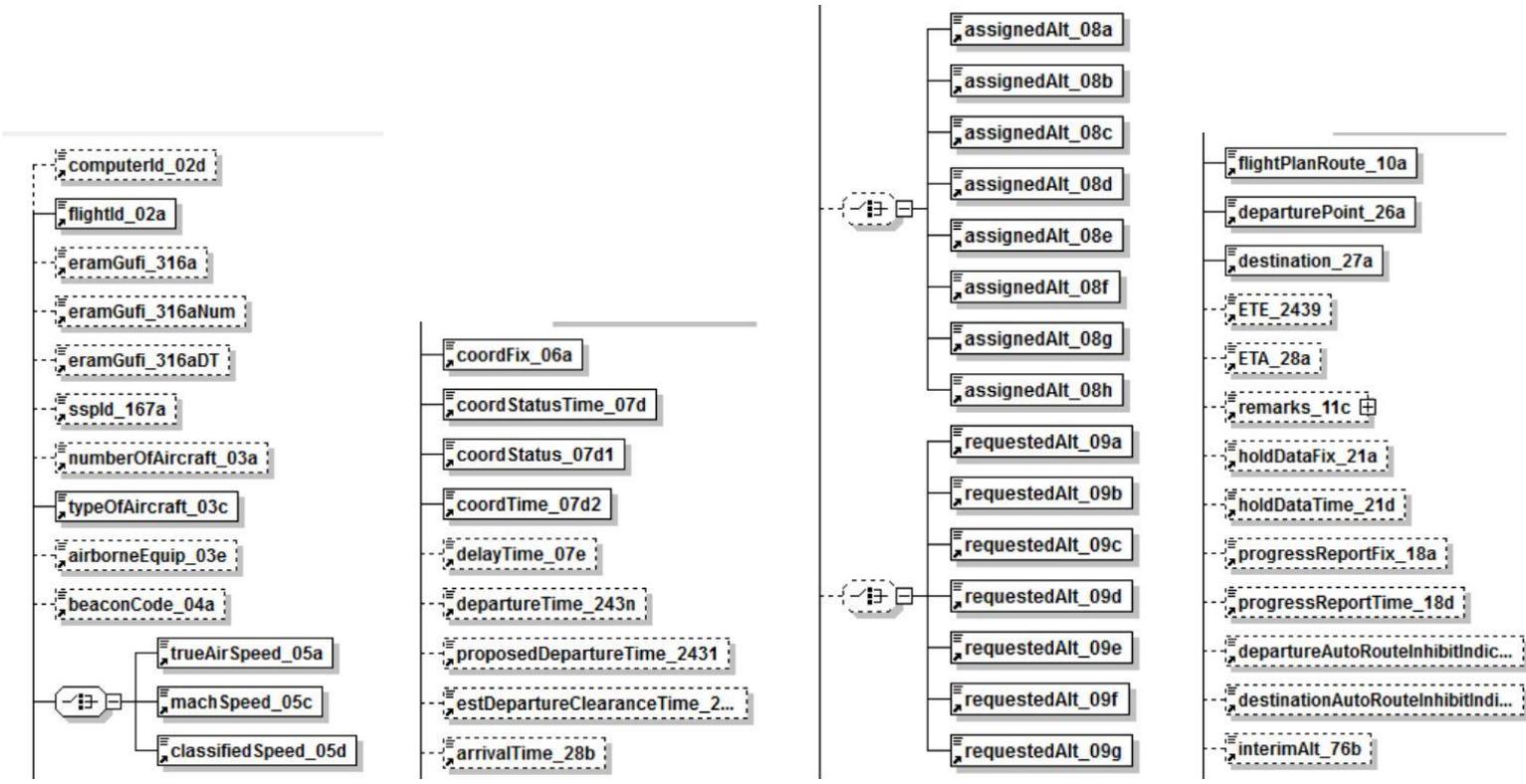
Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		(.01) nm.					
RNPDeparture_925j	To be assigned	This element specifies the RNP accuracy value for the departure phase of the flight expressed in hundredths (.01) nm.	string	No	"\d{4}" The allowable range is 0001-9999. If the value is 0 then the field is not included.	Accuracy of 0.3 nm: 0030	No
RNPSpare1_925k	To be assigned	This is a spare element.	string	No	"\d{4}"		No
RNPSpare2_925l	To be assigned	This is a spare element.	string	No	"\d{4}"		No
cancellationIndicator_92b	To be assigned	This optional element includes a cancellation indicator.	string	No	"C" The letter C is the only valid value.	C	No
ATCIntendedRoute_10c	To be assigned	The ATC Intended Route element contains the current cleared flight plan route with any unacknowledged auto routes already applied. The ATC Intended Route includes to-be-applied AARs that are not to be notified in the current center. It is intended for clients that wish to know the currently expected route of the flight across contiguous ERAM airspace. Field 10c contains the filed route (field 10a) merged with any adapted routes (preferential routes, transition fixes and A-line fixes). Optional Field 10c is sent to ATM-IPOP, when parameter Merged ATC Intended Route Switch (MARS) is ON and if either one of the following is true: If Field 10b exists and Field	string	No	"[A-Z0-9+/*]{2,12}_?[A-Z0-9+/*]*\.[A-Z0-9+/*]{2,12}_?(\d{4})?" Minimum length = 3 Maximum length = 1000	JFK.J42.TXK.S TAR1.DFW	No

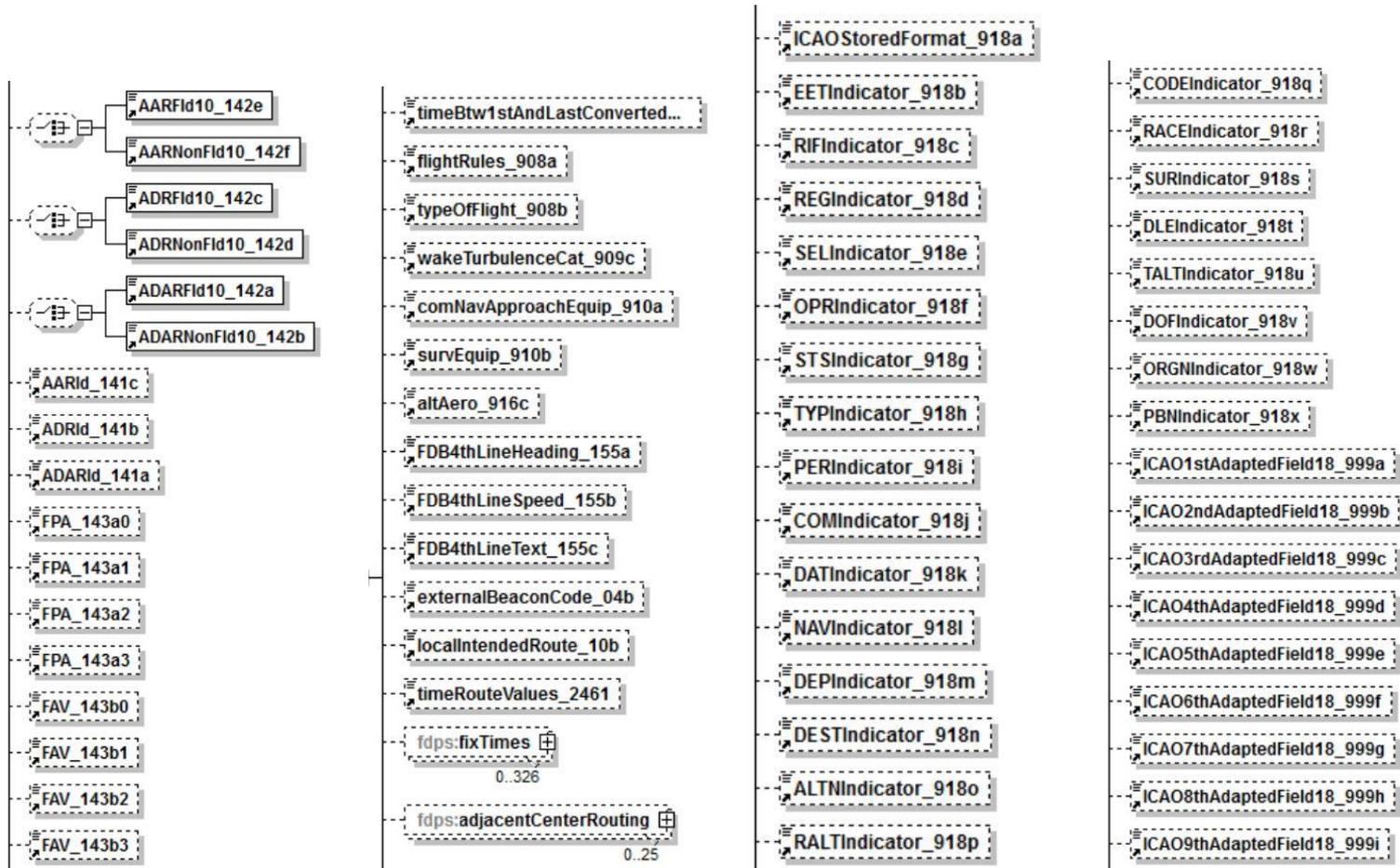
Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		10c is not the same as Field 10b If Field 10b does not exist and Field 10c is not the same as Field 10a.					
flightPlanRouteRevNo_2468	To be assigned	This optional element specifies the flight plan route revision number.	string	no	"[0-9]"	7	No
reconReportedAlt_2460	To be assigned	If the flight is active, this field contains the reported altitude from the last track message received for the flight.	String	No	"\d{1,3}" One to three digits in the range 0 – 999.	240	No
clearanceRoute_2469	To be assigned		string	no	"[A-Z0-9+/*]{2,12}_?\. [A-Z0-9+\. /]*\.[A-Z0-9+/*]{2,12}_?(/d{4})?" Minimum length = 3 Maximum length = 1000		No
comNavApproachEquipICAO2012_910c	To be assigned	This element is the ICAO 2012 version of the element <i>comNavApproachEquip_910a</i> .	string	No	"[A-Z][A-Z0-9]{0,63}" The valid values are: N – No equipment is carried, or equipment is unserviceable S – Standard equipment is carried and is serviceable A – GBAS landing system B – LPV (APV with SBAS) C – LORAN C D – DME E1 – FMC WPR ACARS E2 – D-FIS ACARS E3 – PDC ACARS F – ADF G – GNSS H – HF RTF I – Inertial Navigation J1 – CPDLC ATN VDL Mode 2 J2 – CPDLC FANS 1/A HDFL	ADE3RV	No

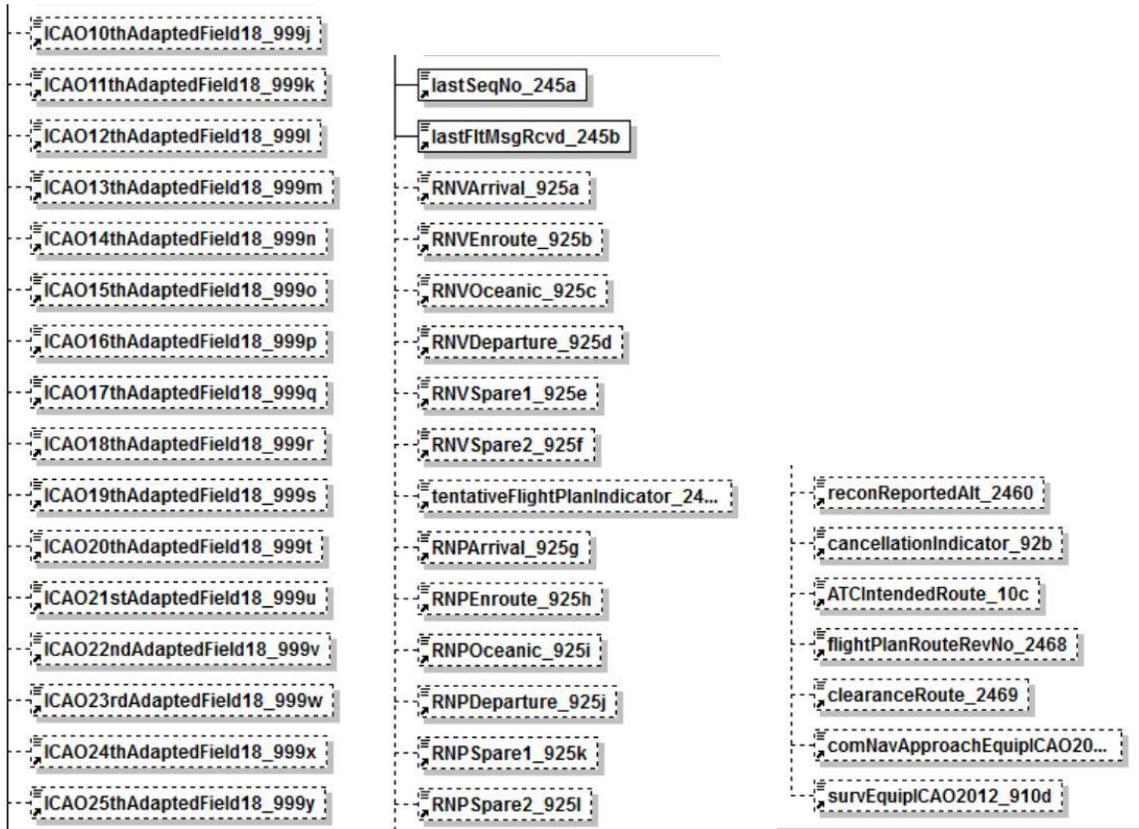
Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					J3 - CPDLC FANS 1/A VDL Mode A J4 - CPDLC FANS 1/A VDL Mode 2 J5 - CPDLC FANS 1/A SATCOM (INMARSAT) J6 - CPDLC FANS 1/A SATCOM (MTSAT) J7 - CPDLC FANS 1/A SATCOM (Iridium) K – MLS L – ILS M1 – ATC RTF SATCOM (INMARSAT) M2 - ATC RTF SATCOM (MTSAT) M3 – ATC RTF (Iridium) O – VOR P1-P9 – Reserved for RCP R – PBN approved T – TACAN U – UHF RTF V – VHF RTF W – RVSM approved X – MNPS approved Y – VHF with 8.33 kHz spacing capacity Z – Other equipment carried		
survEquipCAO2012_910d	To be assigned	This element is the ICAO 2012 equivalent of the <i>element survEquip_910b</i> .	string	No	"N A C (C?[BDEGHILPSUVX][BDEGHILPSUVX12])*" Minimum element length=1 Maximum element length=20 The valid values are the following: N – No surveillance equipment or equipment unserviceable A – Transponder Mode A C – Transponder Mode A and C E – Transponder – Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability	HB2U2V2G1	No

Element Name [DBRTFPI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					H – Transponder – Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability I - Transponder – Mode S, including aircraft identification, but no pressure-altitude capability L – Transponder – Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability P – Transponder – Mode S, including pressure-altitude, but no aircraft identification S – Transponder – Mode S, including both pressure-altitude and aircraft identification capability X – Transponder - Mode S with neither aircraft identification nor pressure-altitude capability B1 – ADS-B with dedicated 1090 MHz ADS-B “out” capability B2 – ADS-B with dedicated 1090 MHz ADS-B “out” and “in” capability U1 - ADS-B “out” capability using UAT U2 - ADS-B “out” AND “IN” capability using UAT V1 - ADS-B “out” capability using VDL Mode 4 V2 - ADS-B “out” and “in” capability using VDL Mode 4 D1 – ADS-C with FANS 1/A capabilities G1 - ADS-C with ATN capabilities		

5.5.1.55 Flight Plan Reconstitution [DBRTFPI] – Diagram







5.5.2 Airspace Data Publication Service Data Elements and Diagrams

5.5.2.1 ERADP Service: targetNamespace

The targetNamespace that applies to all messages in the Airspace Data Publication Service is: **us:gov:dot:faa:atm:enroute:entities:flightdata**

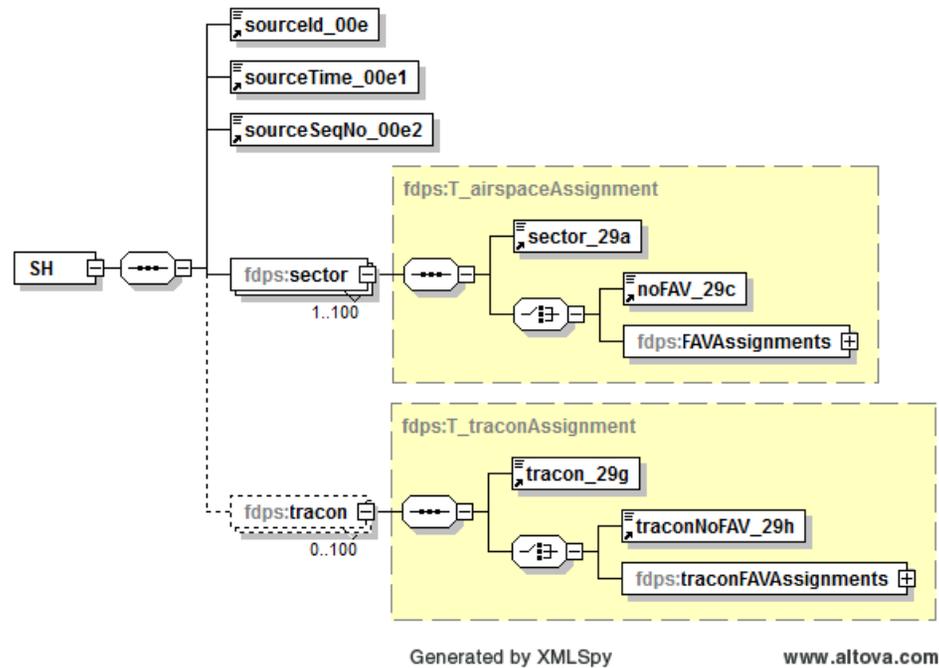
5.5.2.2 Sector Assignment Status [SH] – Data Elements

Element Name [SH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“\d{2}\d{2}\d{2}” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	“\d{4}” Four-digit number in the range [0000-9999].	9001	Yes
sector	To be assigned	This element is used to group the following elements: sector_29a, noFAV_29c, and FAVAssignments, The element FAVAssignments is used to group, between one and 437 FAV_29d elements. Each sector element can include one sector_29a	T_airspaceAssignment	Yes	This element can appear from one to one hundred times.		Yes

Element Name [SH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		element, followed by either a noFAV_29c element or a FAVAssignments element.					
tracon	To be assigned	This element is used to group the following elements: tracon_29g, traconNoFAV_29h, traconFAVAssignments, Each tracon element can include one tracon_29g element, followed by either a traconNoFAV_29h element or a traconFAVAssignments element.	T_traconAssignment	Yes	The tracon element can appear from zero to one hundred times.		No
sector_29a	To be assigned	This element provides the sector number, for which the following FAV data applies.	string	No	"\d{2}" The format consists of two digits, with leading zeroes as needed.	53 09	Yes
noFAV_29c	To be assigned	When this element is present in the message, it indicates that there is no FAV assignment for this sector. Either this element or the element FAVAssignments must be present in a message.	string	No	"-" Only one valid value, "-"(a dash).	-	No
FAVAssignments	To be assigned	This element groups the following FAV_29d elements. There can be from one to 437 FAV_29d elements in each FAVAssignments element. Either this element or noFAV_29c must be present in the element <i>tracon</i> .		Yes			No
FAV_29d	To be assigned	This element provides the FAV Airspace Assignment number	string	No	"\d{4}" The format consists of four digits, with leading zeroes as needed.	0053 2509	No
tracon_29g	To be assigned	This element provides the tracon identifier, for which	string	No	"[A-Z0-9]{3}"	PIP	No

Element Name [SH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		the following FAV data applies.					
traconNoFAV_29h	To be assigned	When this element is included in the message, it indicates that there is no FAV assignment for this sector. If this field appears, <i>FAVAssignments</i> element is not be included in the message.	string	No	"-" It has only one allowed value, - (a dash).	-	No
traconFAVAssignments	To be assigned	This element groups the following <i>traconFAV_29i</i> elements. There can be from one to 437 <i>traconFAV_29i</i> elements in each <i>traconFAVAssignments</i> element. If this element appears in the message, element <i>traconNoFAV_29h</i> is not included in the message.		Yes			No
traconFAV_29i	To be assigned	This element provides the FAV Airspace Assignment number.	string	No	"\d{4}" The format consists of four digits. Leading zeroes are included when necessary.	0053 2509	No

5.5.2.3 Sector Assignment Status [SH] - Diagram

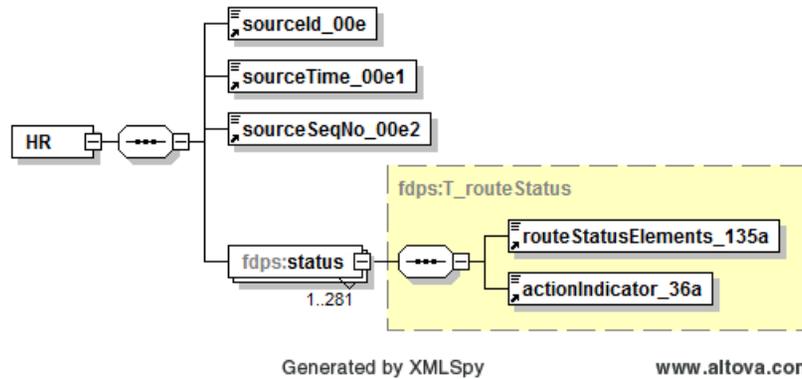


5.5.2.4 Route Status [HR] – Data Elements

Element Name [HR]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> ,	23_59_35 that represents	Yes

Element Name [HR]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		element, sourceId_00e.			where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23:59:35 UTC	
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
routeStatus	To be assigned	This element groups the following two elements, routeStatusElements_135a and actionIndicator_36a.	T_routeStatus	Yes	This element can be repeated from one to 281 times.		Yes
routeStatusElements_135a	To be assigned	This element contains the adapted route status elements. The adapted names are Standard Instrument Departures (SID), Standard Terminal Arrival Routes (STAR), Adapted Arrival Routes (AAR), Adapted Departure Routes (ADR) and Adapted Departure and Arrival Routes (ADAR) that are active when initialization begins.	string	No	"[A-Z0-9]{2,6}" The format is two to six alphanumeric characters.	SD001	Yes
actionIndicator_36a	To be assigned	This element shows the status of the route elements in element <i>actionIndicator_36a</i> .	string	No	"(ON) (OFF)" It can have one of two possible values: ON or OFF.	ON OFF	Yes

5.5.2.5 Route Status [HR] - Diagram



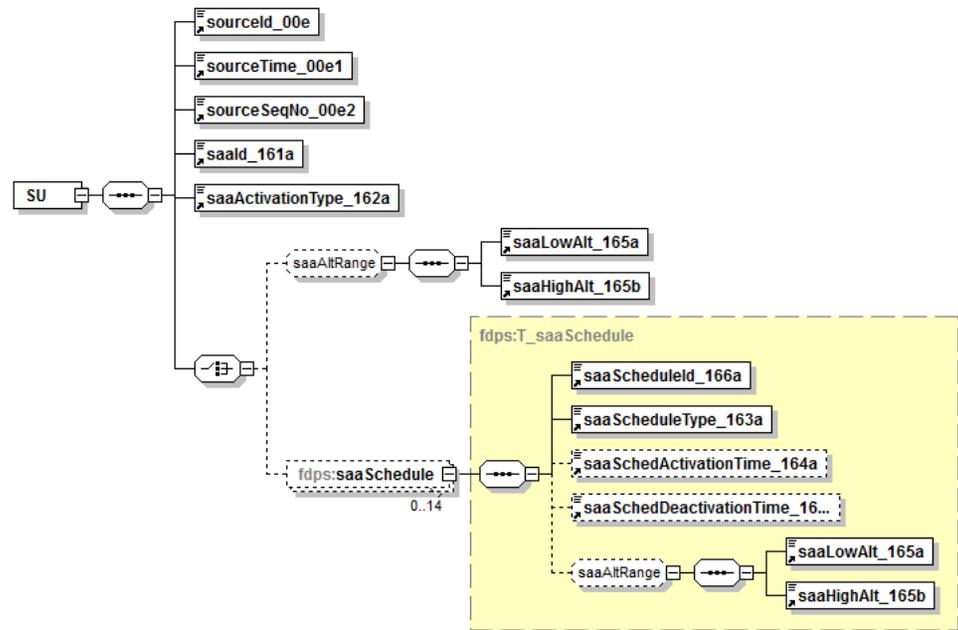
5.5.2.6 Special Activities Airspace (SAA) [SU] – Data Elements

Element Name [SU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
saald_161a	To be	This element specifies the ID	string	No	"[A-Z0-9]{1,10}"	SHPT38ALPHA	Yes

Element Name [SU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	for the special activities airspace			It consists of one to ten alphanumeric characters.	Specifies: SHP Air Force BASE training area "Alpha" for T38s.	
saaActivationType_162a	To be assigned	This element provides the status of the SAA area.	string	No	"(ON) (OFF) (SCHED)" There are three possible values: ON (area is active), OFF (area is not active), SCHED (area activation is controlled by schedule).	ON OFF SCHED	Yes
saaAltRange	To be assigned	This element groups together the following two elements: saaLowAlt_165a and saaHighAlt_165b.	group	Yes	Either this element or <i>saaSchedule</i> may appear in a message.		No
saaLowAlt_165a	To be assigned	This element contains the lower limit of the altitude range for the SAA, expressed in feet.	integer	No	Integer in the range -2000 – 100000.	5000	No
saaHighAlt_165b	To be assigned	This element contains the higher limit of the altitude range for the SAA, expressed in feet.	integer	No	Integer in the range -2000 – 100000.	30000	No
saaSchedule	To be assigned	This element groups together the following elements: <i>saaScheduleId_166a</i> , <i>saaScheduleType_163a</i> , <i>saaSchedActivationTime_164a</i> , <i>saaSchedDeactivationTime_164b</i> , and <i>saaAltRange</i> .	group	Yes	Either this element or <i>saaAltRange</i> may appear in a message. This element may appear between zero and 14 times in the SU message.		No
saaScheduleId_166a	To be assigned	This element contains the SAA schedule ID followed by a sequence number.	string	No	"[A-Z]{3}\d{10}" The format is three letters followed by ten digits.	SHP0000000016	Yes
saaScheduleType_163a	To be assigned	This element contains the SAA schedule type. The Schedule Type describes whether the activity is for the SAA is Scheduled or Deleted.	string	No	"S D" The following formats are valid: • "S" = scheduled • "D" = deleted	S D	Yes
saaSchedActivationTime_164a	To be assigned	This element contains the dates and UTC times of an	string	No	"\d{6}" Date/time format <i>ddhhmm</i> , where: <i>dd</i> :	302030	No

Element Name [SU]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		activation period.			day of month, <i>hh</i> : UTC hour, <i>mm</i> : UTC minute.		
saaSchedDeactivationTime_164b	To be assigned	This element contains the dates and UTC times of a deactivation period.	string	No	"\d{6}" Date/time format <i>ddhhmm</i> , where: <i>dd</i> : day of month, <i>hh</i> : UTC hour, <i>mm</i> : UTC minute.	302330	No

5.5.2.7 Special Activities Airspace (SAA) [SU] – Diagram



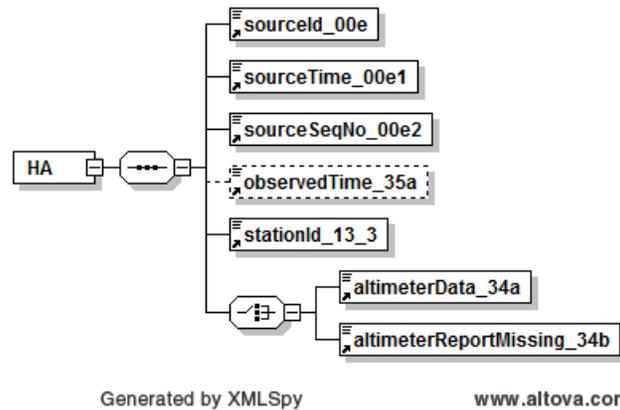
Generated by XMLSpy www.altova.com

5.5.2.8 Altimeter Setting [HA] – Data Elements

Element Name [HA]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
observedTime_35a	To be assigned	This element represents the time of the observed altimeter setting.	dateTime	No		2014-10-25T17:20:00	No
stationId_13_3	To be assigned	This element groups the following two elements: altimeterData_34a and altimeterReportMissing_34b.	group	Yes			Yes
altimeterData_34a	To be assigned	This element contains the three digits of barometric pressure.	string	No	"\d{3}" An altimeter setting of 000-499 implies a value of 3000-3499, and a setting of 500-999 implies a value of 2500-2999. The only possible range of settings is 2500 to 3499. NOTE: The leading digit 2 or 3 is not reported.	929 : the altimeter is 2929 011 : the altimeter is 3011	Yes
altimeterReportMissing_34b	To be	This element indicates that the altimeter data for the	string	No	"M"	M	Yes

Element Name [HA]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	associated reporting station is missing. Either this element or altimeterData_34a appears in the HA message.			The only allowed value is M.		

5.5.2.9 Altimeter Setting [HA] – Diagram

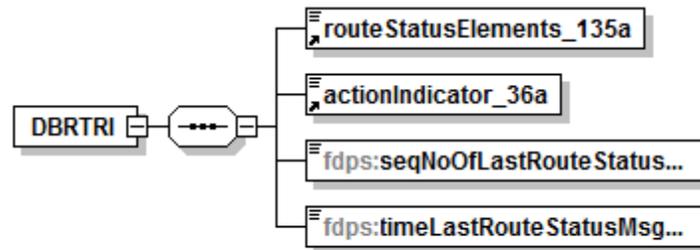


5.5.2.10 Adapted Route Status Reconstitution [DBRTRI] – Data Elements

Element Name [DBRTRI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
routeStatusElements_135a	To be assigned	This element specifies the adapted route status elements.	string	No	"[A-Z0-9]{2,6}" The adapted names are Standard Instrument Departures (SID), Standard Terminal Arrival Routes (STAR), Adapted Arrival Routes (AAR), Adapted Departure Routes (ADR) and Adapted Departure and Arrival Routes (ADAR) that are active when initialization begins.	SD001	Yes
actionIndicator_36a	To be	This element specifies the	string	No	"(ON) (OFF)"	ON	Yes

Element Name [DBRTRI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	status of the route elements specified in the element <i>routeStatusElements_135a</i> .			This element has two valid values: ON or OFF.	OFF	
seqNoOfLastRouteStatusMsg_251c	To be assigned	This element specifies the sequence number of the last route message was received.	int	No		171	Yes
timeLastRouteStatusMsgRcvd_251d	To be assigned	This element specifies the time the last route message was received.	dateTime	No	dateTime	2014-06-20T20:17:52	Yes

5.5.2.11 Adapted Route Status Reconstitution [DBRTRI] – Diagram



Generated by XMLSpy

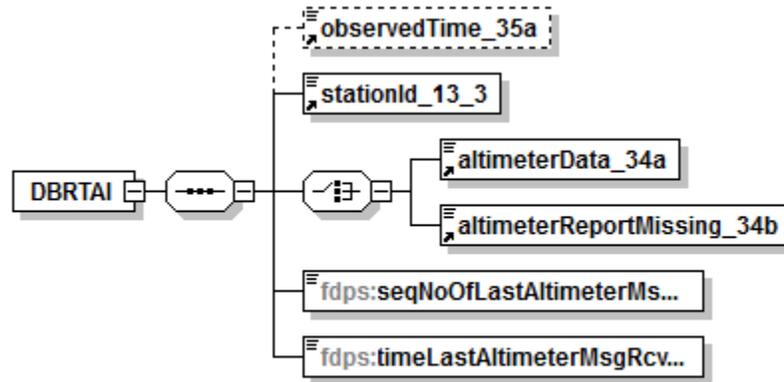
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5.5.2.12 Altimeter Status Reconstitution [DBRTAI] – Data Elements

Element Name [DBRTAI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
observedTime_35a	To be assigned	This element specifies the altimeter data entrance time.	dateTime	No		2014-06-20T20:17:52	No
stationId_13_3	To be assigned	This element specifies the altimeter reporting station	string	No	"[A-Z0-9]{2,5}"	H5B	Yes

Element Name [DBRTAI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		identifier.					
altimeterData_34a	To be assigned	This element specifies the reported altimeter setting. Either this element or the element <i>altimeterReportMissing_34b</i> must be included in a DBRTI element.	string	No	"\d{3}" The format is three digits in the range 2500 – 3499. This element reports the three least-significant digits of the barometric pressure. The most significant digit can only be 2 or 3, and is devised as follows. An altimeter setting of 000-499 implies a value of 3000-3499, and a setting of 500-999 implies a value of 2500-2999. The only possible range of settings is 2500 to 3499. If the character M is entered, the altimeter setting for the associated reporting station is missing and it is specified in the element <i>altimeterReportMissing_34b</i> .	An altimeter setting of: The altimeter setting of: 929 implies a barometric pressure value of: 2929. The altimeter setting of: 011 implies a barometric pressure value of: 3011.	No
altimeterReportMissing_34b	To be assigned	This element specifies that the altimeter setting for the associated reporting station is missing. Either this element or the element <i>altimeterReportMissing_34a</i> must be included in a DBRTI element.	string	No	"M" The only valid value is the letter M.	M	No
seqNoOfLastAltimeterMsg_246d	To be assigned	This element specifies the sequence number of the last altimeter message received.	int	No		240	Yes
timeLastAltimeterMsgRcvd_246e	To be assigned	This element specifies the time of the last altimeter message received.	dateTime	No	dateTime	2014-06-20T20:17:52	Yes

5.5.2.13 Altimeter Status Reconstitution [DBRTAI] – Diagram



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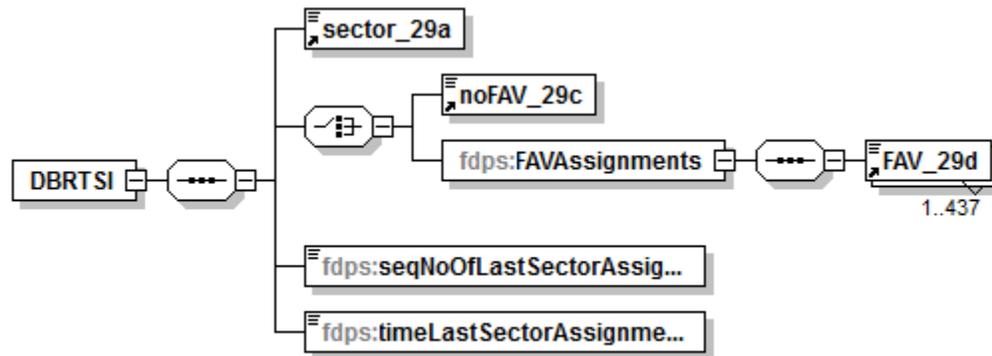
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5.5.2.14 Sector Assignment Reconstitution [DBRTSI] – Data Elements

Element Name [DBRTSI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sector_29a	To be assigned	This element specifies the sector assignment.	string	No	"\d{2}"	22	Yes
noFAV_29c	To be assigned	When this element is present in the message, it indicates that there is no FAV assignment for this sector. Either this element or the element FAVAssignments has to be present in a message, but not both.	string	No	"-" Only one valid value, "-" (a dash).	-	No
FAVAssignments	To be assigned	This element groups the following FAV_29d elements. There can be from one to 437 FAV_29d elements in each FAVAssignments element. Either this element or the element noFAV_29c has to be present in a message, but not		Yes			No

Element Name [DBRTSI]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		both.					
FAV_29d	To be assigned	This element provides the FAV Airspace Assignment number.	string	No	"\d{4}" The format consists in four digits, with leading zeroes as needed.	0053 2509	No
seqNoOfLastSectorAssignmentStatusMsg_250c	To be assigned	This element specifies the sequence number of the last sector assignment status message received.	int	No			Yes
timeLastSectorAssignmentStatusMsgRcvd_250d	To be assigned	This element specifies the time of the last sector assignment status message received.	dateTime	No	dateTime	2014-06-20T20:17:52	Yes

5.5.2.15 Sector Assignment Reconstitution [DBRTSI] – Diagram



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5.5.3 Operational Data Publication Service Data Elements and Diagrams

5.5.3.1 ERODP Service: targetNamespace

The targetNamespace that applies to all messages in the Operational Data Publication Service is:
us:gov:dot:faa:atm:enroute:entities:flightdata

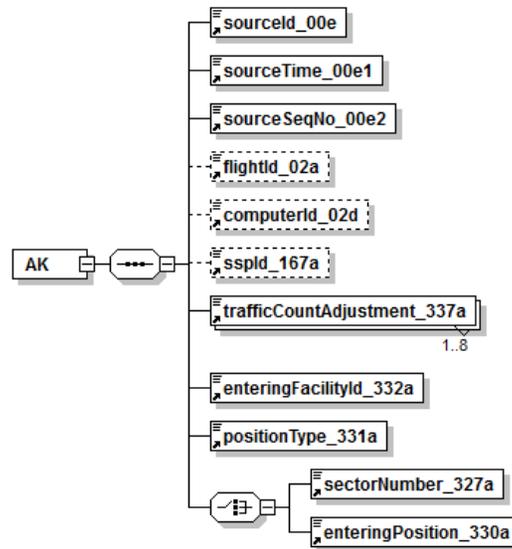
5.5.3.2 Traffic Count Adjustment [AK] – Data Elements

Element Name [AK]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	"\d{10}" Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001, where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be	ERAM Computer	string	No	"([0-9][A-HJ-NP-Z0-9]{2})"	020	Yes

Element Name [AK]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	Identification (Computer ID).			<p>"([0-9]{2}[A-HJ-NP-Z0-9])"</p> <p>The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O, as specified by the pattern above.</p>		
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	<p>"\d{1,4}"</p> <p>One to four digits.</p>	24	No
trafficCountAdjustment_337a	To be assigned	This element provides the traffic count adjustment data for the AK message.	string	No	<p>"[A-Z]{4}[+]\d{3}"</p> <p>where the first four characters must be one of the following subcategory contractions:</p> <p>ACDD Air Carrier Domestic Departures ATDD Air Taxi Domestic Departures GADD General Aviation Domestic Departures MIDD Military Domestic Departures ACDO Air Carrier Domestic Overs ATDO Air Taxi Domestic Overs GADO General Aviation Domestic Overs MIDO Military Domestic Overs ACOD Air Carrier Oceanic Departures ATOD Air Taxi Oceanic Departures GAOD General Aviation Oceanic Departures MIOD Military Oceanic Departures ACOO Air Carrier Oceanic Overs ATOO Air Taxi Oceanic Overs GAOO General Aviation Oceanic Overs MIOO Military Oceanic Overs VFRC VFR Traffic Count</p> <p>The "+/-" character specifies either incrementation (plus) or decrementation (minus) of the current count.</p> <p>The last three digits specify the value to be applied, in the range 001-999.</p>	ACDD+001 Add one air carrier domestic departures	Yes

Element Name [AK]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					This element can be included in a message from one to eight times.		
enteringFacilityId_332a	To be assigned	This element specifies the facility identifier. Each ERAM facility has a unique one letter identifier.	string	No	"[A-Z]" A single letter identifying the entering facility.	F is the facility identifier for the Ft. Worth ERAM. W is the facility identifier for the Washington ERAM.	Yes
positionType_331a	To be assigned	This element specifies the type of the entering position.	string	No	"[R D A S]" The position type is specified using a single letter as follows: R – R-position console D – D-position console A – A-position console S – AT Specialist	R D A S	Yes
sectorNumber_327a	To be assigned	This element specifies the sector number. It is used when the element positionType_331a specifies one of the letters R, D, or A. Otherwise, the element enteringPosition_330a is used.	string	No	"\d{2}" Either this element or enteringPosition_330a can be included in the AK element, but not both.	50	Yes, if elem. enteringPosition_330a is not included in the msg.
enteringPosition_330a	To be assigned	This element contains the position number identifying the entering position. It is used when the element positionType_331a contains the letter S.	string	No	"[A-Z][1-9]" The position number must begin with a letter, followed by a one digit identifier in the range 1 to 9. Either this element or sectorNumber_327a can be included in the AK element, but not both.	G2	Yes, if elem. sectorNumber_327a is not included in the msg.

5.5.3.3 Traffic Count Adjustment [AK] - Diagram



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5.5.3.4 Instrument Approach Count Adjustment [AC] – Data Elements

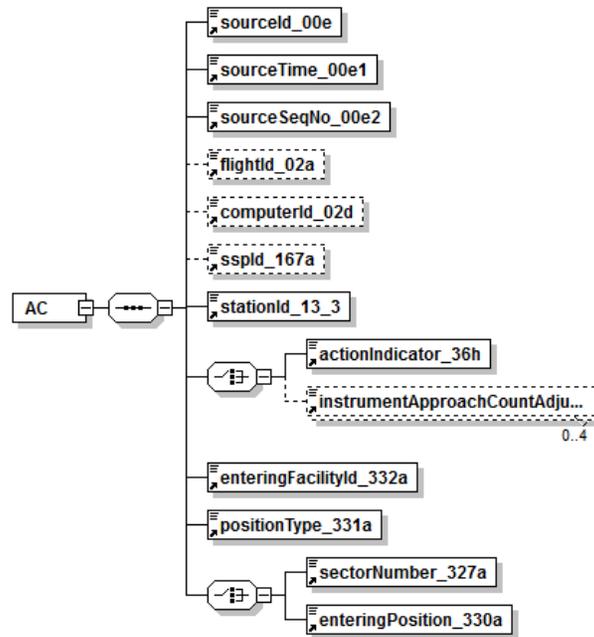
Element Name [AC]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (hhmmss) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are the sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element,	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format hh_mm_ss, where: hh stands for the 2-digit-	23_59_35 that represents 23:59:35 UTC	Yes

Element Name [AC]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		sourceId_00e.			hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.		
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O , as specified in the pattern above.	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four digits.	24	No
stationId_13_3	To be assigned	This element specifies a reporting airport.	string	No	"[A-Z0-9]{2,5}" Two to five alphanumeric characters.	AUS	Yes
actionIndicator_36h	To be assigned	This element shows the status of the instrument approach count.	string	No	"(AUTO) (ON) (OFF)" It can have one of the following values: AUTO — count instrument approaches based on stored weather ON — count instrument approaches regardless of stored weather OFF — do not count instrument approaches	AUTO ON OFF	No

Element Name [AC]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					Either this field or the following field, <i>instrumentApproachCountAdjustment_338a</i> , can appear in element AC, but not both.		
instrumentApproachCountAdjustment_338a	To be assigned	This element specifies the Instrument Approach Count Adjustment Data used in the AC element. It specifies the data subcategory, the adjustment type (increment or decrement), and the value to use in the adjustment of that subcategory.	string	No	<p>"((AC) (AT) (GA) (MI))[+ -]\d{2}"</p> <p>The first two letters represent the alphabetic subcategory contraction as follows: AC (air carrier) AT (air taxi) GA (general aviation) MI (military)</p> <p>The following character, + /-, specifies the adjustment type: increment or decrement.</p> <p>The last two digits specify the value to be applied to the alphabetic subcategory in the range 01 - 99.</p> <p>There can be zero to four occurrences of this element in the AC element.</p> <p>Either this element or <i>actionIndicator_36h</i> can appear in element AC, but not both.</p>	AC+03 In this example an air carrier count is incremented by 3.	No
enteringFacilityId_332a	To be assigned	This element specifies the facility identifier. Each ERAM facility has a unique one letter identifier.	string	No	<p>"[A-Z]"</p> <p>A single letter identifying the entering facility.</p>	F is the facility identifier for the Ft. Worth ERAM. W is the facility identifier for the Washington ERAM.	Yes
positionType_331a	To be assigned	This element specifies the type of the entering position.	string	No	<p>"[R D A S]"</p> <p>The position type is specified using a single letter as follows: R – R-position console D – D-position console</p>	R D A S	Yes

Element Name [AC]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
					A – A-position console S – AT Specialist		
sectorNumber_327a	To be assigned	This element specifies the sector number. It is used when the element <i>positionType_331a</i> specifies one of the letters R, D, or A. Otherwise, the element <i>enteringPosition_330a</i> is used.	string	No	"\d{2}" Either this element or <i>enteringPosition_330a</i> can be included in the AC element, but not both.	50	Yes, if elem. <i>enteringPosition_330a</i> is not included in the msg.
enteringPosition_330a	To be assigned	This element contains the position number identifying the entering position. It is used when the element <i>positionType_331a</i> contains the letter S.	string	No	"[A-Z][1-9]" The position number must begin with a letter, followed by a one-digit identifier in the range 1 to 9. Either this element or <i>sectorNumber_327a</i> can be included in the AC element, but not both.	G2	Yes, if elem. <i>sectorNumber_327a</i> is not included in the msg.

5.5.3.5 Instrument Approach Count Adjustment [AC] - Diagram



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5.5.3.6 Sign In Sign Out [SY] – Data Elements

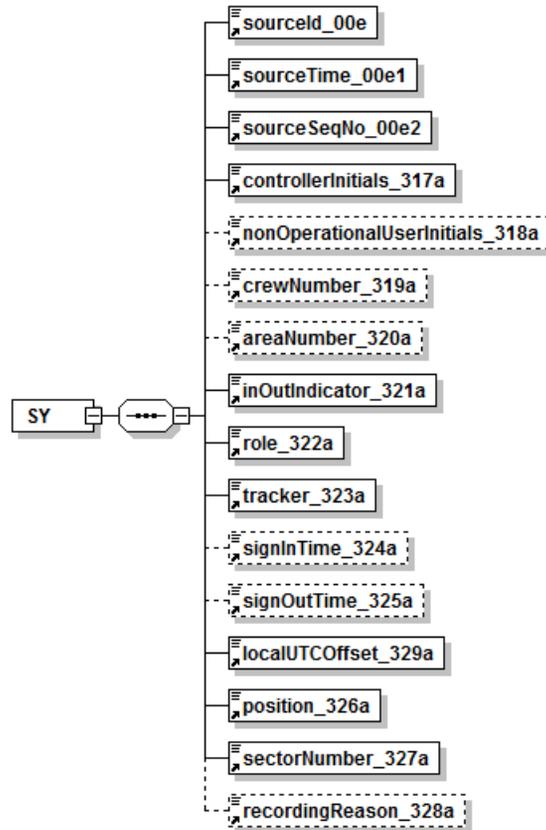
Element Name [SY]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits represent the sequence number of the	Yes

Element Name [SY]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
						message (9001).	
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
controllerInitials_317a	To be assigned	This element specifies the controller initials for a sign in/sign out action.	string	No	"[A-Z]{2}[A-Z0-9]?" The format is two letters followed by an optional alphanumeric character.	PD	Yes
nonOperationalUserInitials_318a	To be assigned	This element specifies the non-operational user initials for a sign in/sign out action.	string	No	"[A-Z]{2}[A-Z0-9]?" The format is two letters followed by an optional alphanumeric character.	LB	No
crewNumber_319a	To be assigned	This element specifies the crew number associated with the user(s) at the time of a sign in or sign out action.	string	No	"\d" The format is a single digit.	7	No
areaNumber_320a	To be assigned	This element specifies the area number in a sign in or sign out action. The area number is an adapted value correlating a defined area to a sector, i.e., the target position for a sign in/sign out action.	string	No	"\d" The format is a single digit.	5	No
inOutIndicator_321a	To be assigned	This element specifies the type of message in a sign in or sign out action. The type can be either a sign in: I or sign out: O.	string	No	"[IO]" The letter I or O.	I O	Yes
role_322a	To be assigned	This element specifies field contains the task of the user in a sign in or sign out action,	string	No	"[OT]" Either the letter O or T.	O T	Yes

Element Name [SY]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		either an operational role: O or a training role: T.					
tracker_323a	To be assigned	This element specifies the responsibilities of the user in a sign in or sign out action, either handoff controller (Y) or not handoff controller (N).	string	No	“[YN]” Either the letter Y or N.	Y N	Yes
signInTime_324a	To be assigned	This element specifies the date and time for a sign in action. Current system time is always used for a sign in action except for those initiated at the AT Specialist Position, which may optionally include date and time as part of the sign in message. When both element <i>signInTime_324a</i> and <i>signOutTime_325a</i> are included in a sign in/sign out action, the user is signed in and automatically signed out at the same position.	dateTime	No		2014-06-20T20:17:52	No
signOutTime_325a	To be assigned	This field contains the date and time for a sign out action. Current system time is always used for a sign out action except for those initiated at the AT Specialist Position, which may optionally include date and time as part of the sign out message.	dateTime	No	dateTime	2014-06-20T20:17:52	No
localUTCOffset_329a	To be assigned	This element specifies the local UTC time offset, i.e. the number of hours, plus or minus, that local midnight occurs relative to UTC midnight.	string	No	“[+-]\d{2}” The format consists of a plus (+) or minus (-) sign followed by two digits.	-06	Yes
position_326a	To be assigned	This element specifies the target position, i.e., the position where a sign in/sign out action occurs. The position that a user is attempting to sign into is	string	No	“[RDAN]” The format is one letter, and the allowed values are: R – R-position console	R D A N	Yes

Element Name [SY]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		defined as the target position, and is determined by either the sector position that the command is entered from (R-, D-, or A-positions), or the sector position contained in a SISO message entered at the AT Specialist position.			D – D-position console A – A-position console N – Pseudo position		
sectorNumber_327a	To be assigned	This element specifies a two-digit sector number. When used in a sign in/sign out action designating an "N" position, the sector number is not checked to determine if it is adapted in the center.	string	No	"\d{2}" Either this element or <i>enteringPosition_330a</i> can be included in the AC element, but not both.	50	Yes
recordingReason_328a	To be assigned	This element specifies the reason for recording a sign-in/sign-out action. The reason for the action must be one of the following: 0 - Sign In/Sign Out entered from a Sector Position 1 - Sign In/Sign Out (less than two time fields) entered from an AT Specialist Position 2 - Sign Out due to a resectorization 3 - Forced Sign Out due to another Sign In 4 - Automatically Signed Back In 5 - Sign In/Sign Out due to a Sign In with two time fields from an AT Specialist Position.	string	No	"0-5" The format consists of one digit, in the range 0 - 5.	0 1 2 3 4 5	No

5.5.3.7 Sign In Sign Out [SY] - Diagram



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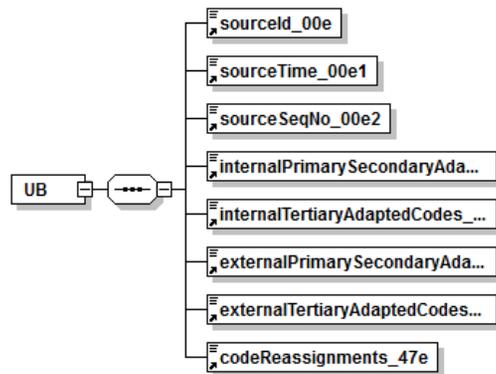
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5.5.3.8 Beacon code Utilization [UB] – Data Elements

Element Name [UB]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are the sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	“\d{4}” Four-digit number in the range [0000-9999].	9001	Yes
internalPrimarySecondaryAdaptedCodes_47a	To be assigned	This element specifies the peak number of internal primary and secondary codes and the total number of adapted codes.	string	No	“\d{4}/\d{4}” The format is a four-digit number followed by a virgule, followed by another four-digit number.	0020/0417	Yes
internalTertiaryAdaptedCodes_47b	To be assigned	This element specifies the peak number of internal tertiary codes and the total number of adapted codes.	string	No	“\d{4}/\d{4}” The format is a four-digit number followed by a virgule, followed by another four-digit number.	0000/0000	Yes
externalPrimarySecondaryAdaptedCodes_47c	To be assigned	This element specifies the peak number of external primary and secondary codes and the total	string	No	“\d{4}/\d{4}” The format is a four-digit number followed by a virgule, followed by another four-digit number.	0020/0417	Yes

Element Name [UB]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		number of adapted codes.					
externalTertiaryAdaptedCodes_47d	To be assigned	This element specifies the peak number of external tertiary codes and the total number of adapted codes.	string	No	"\d{4}/\d{4}" The format is a four-digit number followed by a virgule, followed by another four-digit number.	0000/0000	Yes
codeReassignments_47e	To be assigned	This element specifies the number of code reassignments since midnight.	string	No	"\d{4}" The format is a four-digit number in the range of 0000 – 9999.	0020	Yes

5.5.3.9 Beacon code Utilization [UB] - Diagram



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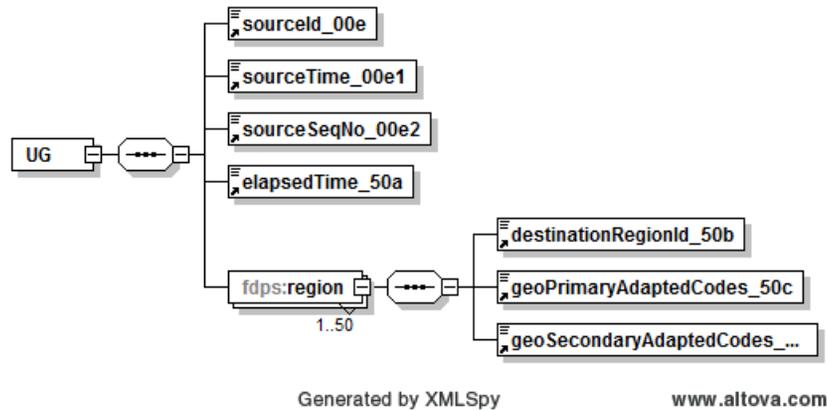
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5.5.3.10 Geographic Beacon Code Utilization [UG] – Data Elements

Element Name [UG]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are the sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	“\d{4}” Four-digit number in the range [0000-9999].	9001	Yes
elapsedTime_50a	To be assigned	This element specifies the elapsed time since the last report in minutes.	string	No	“\d{4}” Four-digit number in the range [0000-1440].	1220	Yes
region	To be assigned	This element groups the following three elements: <i>destinationRegionId_50b</i> , <i>geoPrimaryAdaptedCodes_50c</i> , and <i>geoSecondaryAdaptedCodes_50d</i> .	group	Yes	This element may be included between one and fifty times in a UG element.		Yes
destinationRegionId_50b	To be assigned	This element specifies the destination region identifier.	string	No	“\d{2}” Two digit string.		Yes
geoPrimaryAdaptedCodes_50c	To be assigned	This element specifies the peak number of geographic primary beacon codes and the total number of adapted primary codes for the region. Its format is a four-digit	string	No	“\d{4}/\d{4}” The format is a four-digit number followed by a virgule, followed by another four-digit number.	0045/0315	Yes

Element Name [UG]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		number flowed by a virgule, followed by another four-digit number.					
geoSecondaryAdaptedCodes_50d	To be assigned	This element specifies the peak number of geographic secondary beacon codes and the total number of adapted secondary codes for the region.	string	No	"\d{4}/\d{4}" The format is a four-digit number followed by a virgule, followed by another four-digit number.	0045/0315	Yes

5.5.3.11 Geographic Beacon Code Utilization [UG] - Diagram



5.5.4 General Information Publication Service Data Elements and Diagram

5.5.4.1 ERGMP Service: targetNamespace

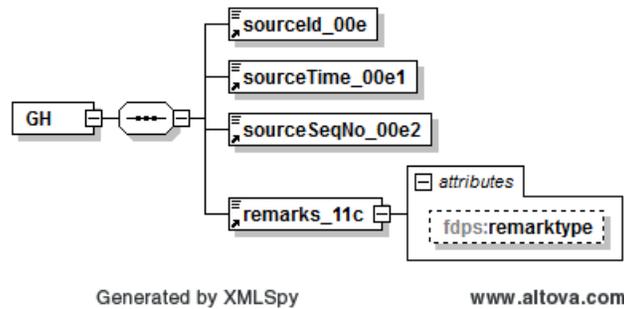
The targetNamespace that applies to all messages in the General Information Publication Service is:
us:gov:dot:faa:atm:enroute:entities:flightdata

5.5.4.2 General Information [GH] – Data Elements

Element Name [GH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are the sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	“\d{4}” Four-digit number in the range [0000-9999].	9001	Yes
remarks_11c	To be assigned	This element specifies the text message that is sent to a specified position. The length is limited by the input device (up to 300 characters). The General Information (GH) element provides general	string	No	String of one to 400 characters. It has an attribute called <i>remarktype</i> with the possible values of <i>interfacility</i> or <i>intrafacility</i> .		Yes

Element Name [GH]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
		information/free text remarks to ATM client applications. ERAM sends a GH message to a specific ATM client application or to all ATM client applications via ATM IPOP, as indicated by destination address routing. The Center-TRACON Automation System (CTAS) can input a GH message to a position in the ERAM facility.					

5.5.4.3 General Information [GH] - Diagram

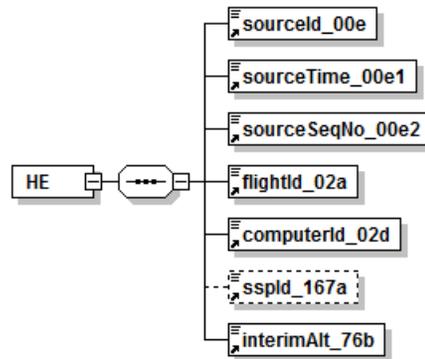


5.5.4.4 Interim Altitude Status Information [HE] – Data Elements

Element Name [HE]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4	Yes

Element Name [HE]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
						digits are the sequence number of the message (9001).	
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O .	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
interimAlt_76b	To be assigned	The aircraft altitude in hundreds of feet.	string	No	"\d{1,3}" One to three-digits.	240	Yes

5.5.4.5 Interim Altitude Status Information [HE] – Diagram



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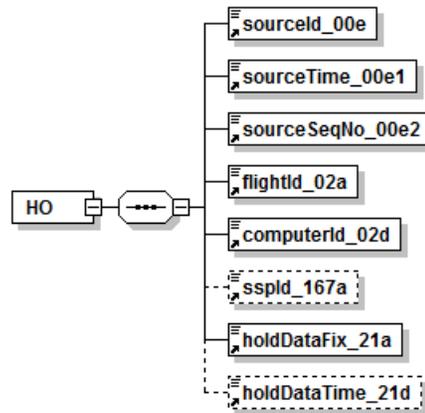
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5.5.4.6 Hold Status Information [HO] – Data elements

Element Name [HO]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are the sequence number of the message (9001).	Yes
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“[0-2]\d[0-5]\d[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be	This element specifies the message	string	No	“\d{4}”	9001	Yes

Element Name [HO]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned	sequence number component of the sourceId_00e element.			Four-digit number in the range [0000-9999].		
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O.	020	Yes
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
holdDataFix_21a	To be assigned	Hold Fix. Specifies the position location for the flight to Hold along the filed route of the flight.	string	No	"([A-Z0-9]{2,5}) ([A-Z0-9]{2,5}\d{6}) (\d{4}[A-Z]?/\d{4,5}[A-Z]?)"	TXK OKC270015 3500N/94000W	Yes
holdDataTime_21d	To be assigned	Hold Time. Specifies the time the flight can expect further clearance at the hold fix specified in element holdDataFix_21a.	dateTime	No		2014-10-30T17:20:00	No

5.5.4.7 Hold Status Information [HO] – Diagram



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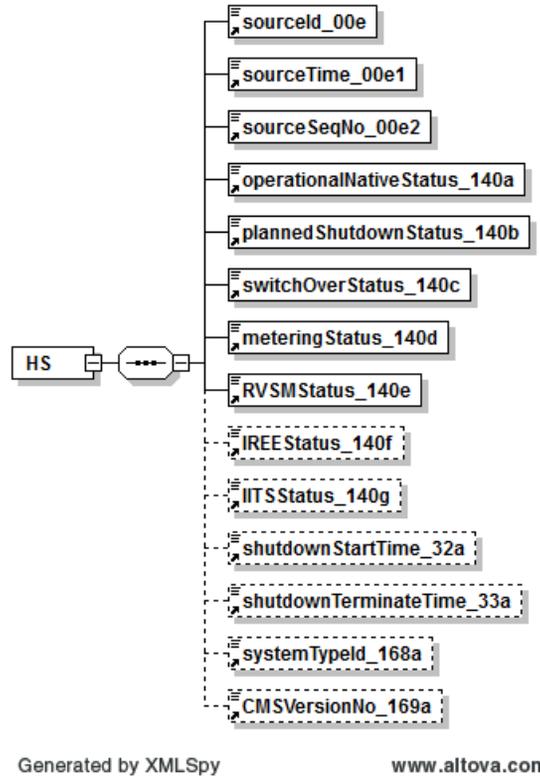
5.5.4.8 ERAM Status Information [HS] – Data Elements

Element Name [HO]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 , where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4 digits are the sequence number of the message (9001).	Yes

Element Name [HO]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	“[0-2]\d_[0-5]\d_[0-5]\d” Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	“\d{4}” Four-digit number in the range [0000-9999].	9001	Yes
operationalNativeStatus_140a	To be assigned	Status Change Indicator ON2 operational.	string	No	“[A-Z]{2}[A-Z0-9]” The permissible values are: <ul style="list-style-type: none"> INA = inactive ON2 = operational using live inputs 	INA ON2	Yes
plannedShutdownStatus_140b	To be assigned	Shutdown Status Indicator	string	No	“[A-Z]{3}” The permissible values are: <ul style="list-style-type: none"> PSE = planned shutdown entered; it requires the elements shutdownStartTime_32a and shutdownTerminateTime_33a PSA = planned shutdown activated PSN = planned shutdown not active 	PSA PSN PSE	Yes
switchOverStatus_140c	To be assigned	Status Change Indicator Channel Switch	string	No	“[A-Z]{3}” The permissible values are: <ul style="list-style-type: none"> SSW = channel switch SSO = PAS/SAS switch SSN = channel switch or PAS/SAS switch not in effect 	SSW SSO SSN	Yes
meteringStatus_140d	To be	TMAD Status Change Indicator.	string	No	“[A-Z]{3}”	DOF	Yes

Element Name [HO]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
	assigned				The permissible values are: <ul style="list-style-type: none"> DOF = parameter TMAD is OFF DON = parameter TMAD is ON 	DON	
RVSMStatus_140e	To be assigned	RVSM Status Change Indicator	string	No	“[A-Z]{2}” The permissible values are: ON = parameter RVSM is ON OFF = parameter RVSM is OFF	ON OFF	Yes
IREEStatus_140f	To be assigned	IREE Status Change Indicator	string	No	“[A-Z]{2}” The permissible values are: <ul style="list-style-type: none"> ON = parameter IREE is ON OFF = parameter IREE is OFF 	ON OFF	No
IITSStatus_140g	To be assigned	IITS Status Change Indicator	string	No	“[A-Z]{2}” The permissible values are: <ul style="list-style-type: none"> ON = parameter IITS is ON OFF = parameter IITS is OFF 	ON OFF	No
shutdownStartTime_32a	To be assigned	Shutdown Start Time	xs:time	No	Needed only when plannedShutdownStatus_140b = PSE.	09:30:00	No
shutdownTerminateTime_33a	To be assigned	Shutdown Terminate Time	xs:time	No	Needed only when plannedShutdownStatus_140b = PSE.	10:30:00	No
systemTypeIcd_168a	To be assigned	System Type Identification	string	No	“[A-Z]{4}” Permissible value is “ERAM”	ERAM	No
CMSVersionNo_169a	To be assigned	CMS version number that will contain the third through sixth alphanumeric characters of the ERAM national release name that is in use at the local ERAM facility.	string	No	“[0-9]{4}” Four digits.	0012	No

5.5.4.9 ERAM Status Information [HS] – Diagram

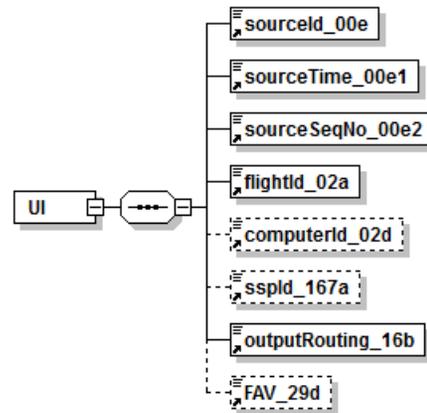


5.5.4.10 Unsuccessful Transmission Information [UI] – Data Elements

Element Name [HO]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
sourceId_00e	To be assigned	This element specifies the source identification that includes a UTC time followed by a four-digit sequence number.	string	No	“\d{10}” Ten digits, of which the first 6 digits represent the UTC time (<i>hhmmss</i>) and the last four digits, represent the message sequence number in the range [0000-9999].	2359359001 where the first 6 digits are the UTC time (23:59:35 UTC) and the last 4	Yes

Element Name [HO]	FDR Number	Element Definition	Type	Complex?	Format/Permissible Values	Example	Required?
						digits are the sequence number of the message (9001).	
sourceTime_00e1	To be assigned	This element specifies the time component of the previous element, sourceId_00e.	string	No	"[0-2]\d_[0-5]\d_[0-5]\d" Time in the format <i>hh_mm_ss</i> , where: <i>hh</i> stands for the 2-digit-hour in the range 00-23, <i>mm</i> stands for the 2-digit minutes in the range 00-59, and <i>ss</i> stands for the 2-digit seconds in the range 00-59.	23_59_35 that represents 23:59:35 UTC	Yes
sourceSeqNo_00e2	To be assigned	This element specifies the message sequence number component of the sourceId_00e element.	string	No	"\d{4}" Four-digit number in the range [0000-9999].	9001	Yes
flightId_02a	To be assigned	Aircraft ID, or flight ID (also called Call Sign).	string	No	"\+?[A-Z][A-Z0-9]{1,6}" One uppercase alphabetic character followed by one to six alphanumeric characters.	AAL20	Yes
computerId_02d	To be assigned	ERAM Computer Identification (Computer ID).	string	No	"([0-9][A-HJ-NP-Z0-9]{2}) ([0-9]{2}[A-HJ-NP-Z0-9])" The element includes a digit, followed by two alphanumeric characters with the exception of the letters I and O .	020	No
sspld_167a	To be assigned	Site Specific Plan Identifier. It is assigned by IFPA to uniquely identify a flight plan in each ERAM facility.	string	No	"\d{1,4}" One to four-digits.	24	No
outputRouting_16b	To be assigned	Adapted coordination indicator of the facility to which transmission of flight data is unsuccessful.	string	No	3-byte long string.	AD+	Yes
FAV_29d	To be assigned	FAV Airspace assignment.	string	No	"\d{4}" Four digits.	1700	No

5.5.4.11 Unsuccessful Transmission Information [UI] - Diagram



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6. Service Implementation

The JMS provider for SFDPS is ActiveMQ deployed on NEMS infrastructure. SFDPS publishes messages to a JMS queue established at NEMS. Client consumers will connect to a topic to receive data.

6.1 Bindings

The NEMS ICD describes the bindings.

6.1.1 ActiveMQ

All SFPDS connections to NEMS are through ActiveMQ.

6.1.1.1 Data format

All data published to NEMS in SimpleXML format (reference 15). Data for flight messages that were received from the ARTCC controlling the flight are also published in FIXM format (reference 16). Data for airspace messages are also published in AIXM format (reference 17).

6.1.1.2 Message protocol

The message protocol is JMS.

6.1.1.3 Transport protocol

The transport protocol is Transmission Control Protocol (TCP).

6.2 End Points

6.2.1 End Point 1

SFDPS consumers connect to NEMS using JMS to retrieve data from their subscribed topic(s). Additional details about the NEMS JMS interface may be obtained in the NEMS ICD (reference [14]).