

NGA Implementation of AIXM

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NGA's Mission

NGA provides high quality aeronautical information for the safety of navigation layer in the geospatial intelligence model. NGA products support the Navigation information needs in support of DoD flight crews and national decision-makers.

– Our Primary Responsibility:

Safety of Navigation Data



Our Unique Position

- NGA is an Aeronautical Data Supplier
 - No Aeronautical Data Origination
 - Adhere to International Standards for Aeronautical Data
 - Develop Aeronautical Products that support our customers' requirements



AIXM Implementation

- Create an AIXM Ingest Tool
 - Ingest Aeronautical State data
 - Harmonize with other State data
- Maintain one conflated database for all Aeronautical Navigation Information



AIXM Implementation

- Create datasets that show a single view of Aeronautical Navigation Data
 - Minimize Situational Awareness issues
- Provide them to our customers via a better means than mailing a CD/DVD.
 - Provide a service instead of a product



AIXM Ingest

- Ingest Tool in Development
 - Original Requirements based on Terminal Procedure base data
 - Navaids, Waypoints, Runways, Obstructions, etc.
 - Developed Based on 2 rules:
 1. Must have a candidate screen for analyst review.
 2. There are no more rules.



AIXM Ingest Interface

Drop down menu file can be selected

Runways requires simultaneous selection of Airports to associate correctly.



AIXM Ingest Interface

The screenshot displays the AIXM Ingest Interface. On the left, a text editor shows XML source code for an AirportDataMessage. A light blue callout box with the text "XML Source File arrives in this format" points to the XML code. On the right, a software window titled "Runways" is shown. The window has a menu bar with "Change Input File(s)", "Begin Comparison", "Ingest Entity", "Print", "Loaded Files", and "Logging On/Off". The "Begin Comparison" button is highlighted with a light blue callout box containing the text: "Begin Comparison is selected", "Application deserializes XML data", and "Then presents it in upper grid of candidate screen". The software window also features a "button2" and a status bar at the bottom showing "File: Status: AirportDataMessage,RunwayDataMessage".



AIXM Ingest Interface

ICAO	wac_innr	name	state
KNXX	0310-00503	WILLOW GROVE NAS JRB	Pennsylvania
KOQN	0357-00209	BRANDYWINE	Pennsylvania
KP72			
▶ KPHL	0357-00150	PHILADELPHIA INTL-AP	Pennsylvania
KPNE	0310-00325	NORTHEAST PHILADELPHIA	Pennsylvania
KPTW	0310-00363	POTTSTOWN LIMERICK	Pennsylvania
KVAY	0357-00312	SOUTH JERSEY RGNL	New Jersey

Match



AIXM Ingest Interface

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KPTW	0310-00363	POTTSTOWN LIMERICK	Pennsylvania
KVAY	0357-00312	SOUTH JERSEY RGNL	New Jersey

No Match



AIXM Ingest Interface

Two examples:

```

Transactions.log - Notepad
File Edit Format View Help
Input file Name: GetFeatureRequest-Airport-25NM.xml.response.aixm.xml
Input file Path: C:\aixm_misc\IPDS\samples\AIXM_Sample_2008-10-08
Input file Created: 11/18/2008 11:54:10 AM
Input file Last Write Time: 10/8/2008 9:00:10 AM

Input file Name: GetFeatureRequest-Runway-25NM.xml.response.aixm.xml
Input file Path: C:\aixm_misc\IPDS\samples\AIXM_Sample_2008-10-08
Input file Created: 11/18/2008 11:54:10 AM
Input file Last Write Time: 10/8/2008 9:01:00 AM

***Analyst: rne
***The following transaction Succeeded
***AirportHeliport K3NJ6
AirportHeliport.designator K3NJ6
AirportHeliport.name INDUCTOTHERM HELIPORT
AirportHeliport.controlType CIVIL
AirportHeliport.fieldElevation 73 FT
AirportHeliport.magneticVariation
AirportHeliport.dateMagneticVariat
AirportHeliport.servedCity R
AirportHeliport.arplLat 40.0153888888889
AirportHeliport.arplLon -74.841275
AirportHeliport.country US
AirportHeliport.stateTerritory NJ
Runway K3NJ6 RWY 02-20
Runway.length 3500 FT
Runway.width 40 FT
Runway.composition CONC
RunwayDirection K3NJ6 RWY 20
RunwayDirection.trueBearing 187.72
RunwayCentreLinePoint K3NJ6 RWY 20 THR
RunwayCentreLinePoint K3NJ6 RWY 20 DISTHR
RunwayDirection K3NJ6 RWY 02
RunwayDirection.trueBearing 7.72
RunwayCentreLinePoint K3NJ6 RWY 02 THR
RunwayCentreLinePoint K3NJ6 RWY 02 DISTHR
***End of transaction

```

```

PaperSource.log - Notepad
File Edit Format View Help
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Input file Created: 11/18/2008 11:54:10 AM
Input file Last Write Time: 10/8/2008 9:01:00 AM

The following items were not shown to the analyst - (ignored)
AirportHeliport.Identifier 4066
AirportHeliport.type AD
Runway.Identifier 5749
Runway.ArptIdentifier 4066
Runway.arptId K3NJ6
Runway.productionStatus ACTIVE
RunwayDirection.Identifier 10238
RunwayDirection.RwyIdentifier 5749
RunwayDirection.rwyDesignator K3NJ6 RWY 02-20
RunwayDirection.productionStatus ACTIVE
RunwayCentreLinePoint.RwyDirIdentifier 10238
RunwayCentreLinePoint.rwyDesignator K3NJ6 RWY 02-20
RunwayCentreLinePoint.productionStatus ACTIVE
RunwayCentreLinePoint.RwyDirIdentifier 10238
RunwayCentreLinePoint.rwyDesignator K3NJ6 RWY 02-20
RunwayCentreLinePoint.productionStatus ACTIVE
RunwayDirection.Identifier 10239
RunwayDirection.RwyIdentifier 5749
RunwayDirection.rwyDesignator K3NJ6 RWY 02-20
RunwayDirection.productionStatus ACTIVE
RunwayCentreLinePoint.RwyDirIdentifier 10239
RunwayCentreLinePoint.rwyDesignator K3NJ6 RWY 02-20
RunwayCentreLinePoint.productionStatus ACTIVE
RunwayCentreLinePoint.RwyDirIdentifier 10239
RunwayCentreLinePoint.rwyDesignator K3NJ6 RWY 02-20
RunwayCentreLinePoint.productionStatus ACTIVE
***End of ignored data

```



AIXM Data Ingest Benefits

- Data Standardization
- Resource Savings
- Drastic reduction in manual data entry errors
- Provide better Situational Awareness to our customers





Data Dissemination Services

Revolutionize Interaction with our Customers

- Product Support
- Web Services





Data Dissemination Services

- Developing WFS Functionality
 - Exploit open standards to develop full web services for data dissemination
 - Utilize/Extend AIXM schema to develop a new DoD Aeronautical Data Schema



Data Dissemination Services

- Developing WFS Functionality
 - Consolidate/Upgrade NGA's current Aeronautical Web Presence
 - Provide customer's a better means to receive, shape, and utilize Aeronautical Data



Dissemination Service Benefits

- Web Services Support
 - Better way to interact with Production Partners
 - Better way to interact with Customers
- Standards Based Architecture
 - Both WFS functionality and Schema based on International Standards
- Saving Resources
 - No more significant product upgrades
 - No need for another iteration of DAFIF™





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