

*Global Information  
Management*

# Status Report: AIXM

*Presented By: Allen Proper, FAA*

*Date: August 25, 2015*



Federal Aviation  
Administration



## **AIR TRANSPORTATION INFORMATION EXCHANGE CONFERENCE**

**Global Information Management**

**August 25-27, 2015**

**NOAA Auditorium and Science Center • Silver Spring, MD**

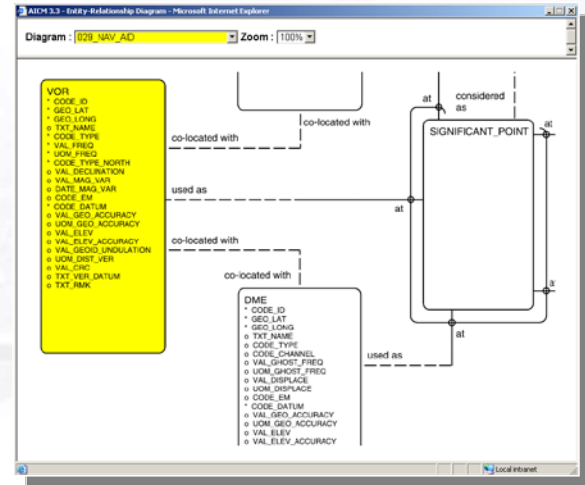
# Content

- AIXM versions in use
- AIXM Change Control Board activity
- FAA perspective



# AIXM 4.5

- Published: 2005
  - Entity/Relationship
  - Custom XML schema
  - Core AIP data
- Usage:
  - European AIS Database (EAD) and European national systems
  - Around 20 other AIS national systems world-wide



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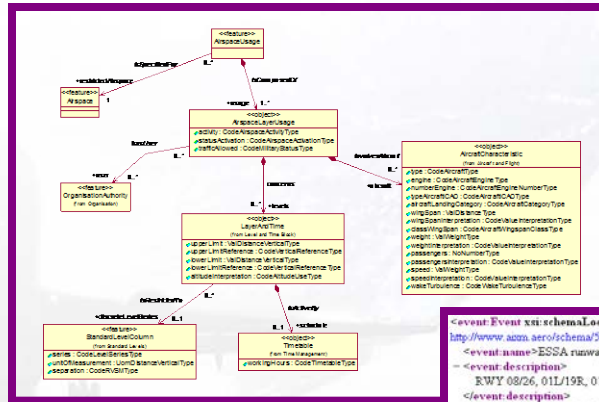
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...

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# AIXM 5.0

- Published: MAR 2008
- UML Model
- GML Schema
- Full AIP/NOTAM data
  - Including obstacle, airport mapping, etc.
- Metadata
- Extensibility
- Usage:
  - Partially, by FAA and NGA



```

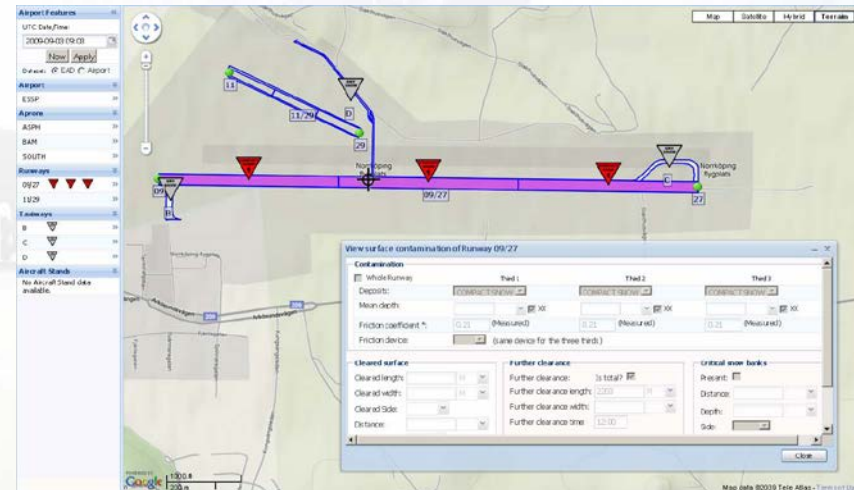
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  <event-name>ESSA runways closed</event-name>
  <event-description>
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```



# AIXM 5.1 (current)

- Published: FEB 2010
- Update of AIXM 5.0
  - Usage/availability model
  - Notes vs. descriptions
  - Other adjustments to facilitate Digital NOTAM encoding
- Usage
  - *see AIXM Wiki*  
[www.aixm.aero/wiki](http://www.aixm.aero/wiki)
    - *Data Sources*



# AIXM 5.1 Usage

WIKI: xwiki » SPACE: Main » PAGE: XML\_Tags

## Aixm AIXM 5.1 Aeronautical Information Exchange Model

A partial inventory only ...

EXPORT ▾ MORE ACTIONS ▾ ANNOTATIONS

AIXM Wiki - Home » AIXM 5.1 - Data sources (XML)

### AIXM 5.1 - Data sources (XML)

Last modified by EDUARD POROSNICU on 2015/04/28 10:09 [Comments \(0\)](#) · [Attachments \(32\)](#) · [History](#) · [Information](#)

The purpose of this page is to make available sample AIXM 5.1 data and also to provide links towards external AIXM 5 data sources.

If there are **other data sources** that you consider useful **to announce here**, **please send an e-mail** to [eduard.porosnicu@eurocontrol.int](mailto:eduard.porosnicu@eurocontrol.int) and we will do the necessary!

- [\[Live\] European AIS Database \(EAD\)](#)
- [\[Live\] Eurocontrol NM/CACD B2B service](#)
- [\[Live\] FAA \(USA\) NAS-R data](#)
- [\[Live\] FAA \(USA\) Airport mapping data](#)
- [\[Live\] AENA \(Spain\) Obstacle Data](#)
- [\[Live\] LGS \(Latvia\) Obstacle Data](#)
- [\[Sample\] Latvia \(LGS\)](#)
- [\[Sample\] Thales and DSNASIA \(France\)](#)
- [\[Sample\] skyguide \(Switzerland\) Data](#)
- [\[Sample\] ESRI \(old DAFIF Data\)](#)
- [\[Example\] Feature by feature](#)
- [\[Example\] Digital NOTAM Examples](#)
- [\[Example\] Donlon data set](#)
- [\[Example\] Create your own example with Excel and XSLT!](#)
  - [Obstacles \(VerticalStructure\)](#)
  - [Airspace](#)



- [www.aixm.aero](http://www.aixm.aero)
  - Downloads
  - AIXM Wiki ([www.aixm.aero/wiki](http://www.aixm.aero/wiki))
  - AIXM Forum (around 2000 members)
  - Training resources
  - Industry implementations/support

# Content

- AIXM versions in use
- **AIXM Change Control Board activity**
- FAA perspective



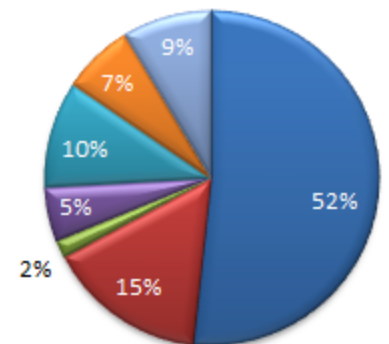


# AIXM CCB

- AIXM Change Control Board
  - Established based on the ICAO AIS-AIMSG recommendations
  - Membership implies acceptance of the Charter
    - [http://www.aixm.aero/public/standard\\_page/aixm\\_ccb.html](http://www.aixm.aero/public/standard_page/aixm_ccb.html)
  - Current situation
    - 58 members
      - including FIXM observers
    - FAA & Eurocontrol ensuring the secretariat and support

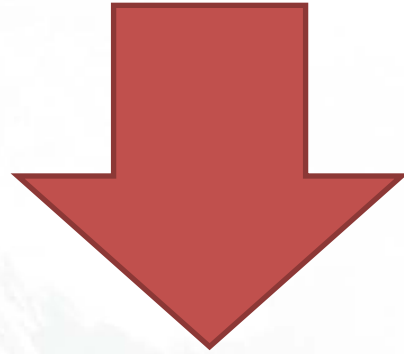
## Membership (2015/08)

Total 58



- Industry
- ANSP/State (excl. US)
- Airline
- military (NGA, RAAF, etc.)
- FAA (departments)
- Eurocontrol (departments)
- Observer (FIXM CCB)

# CCB Mandate



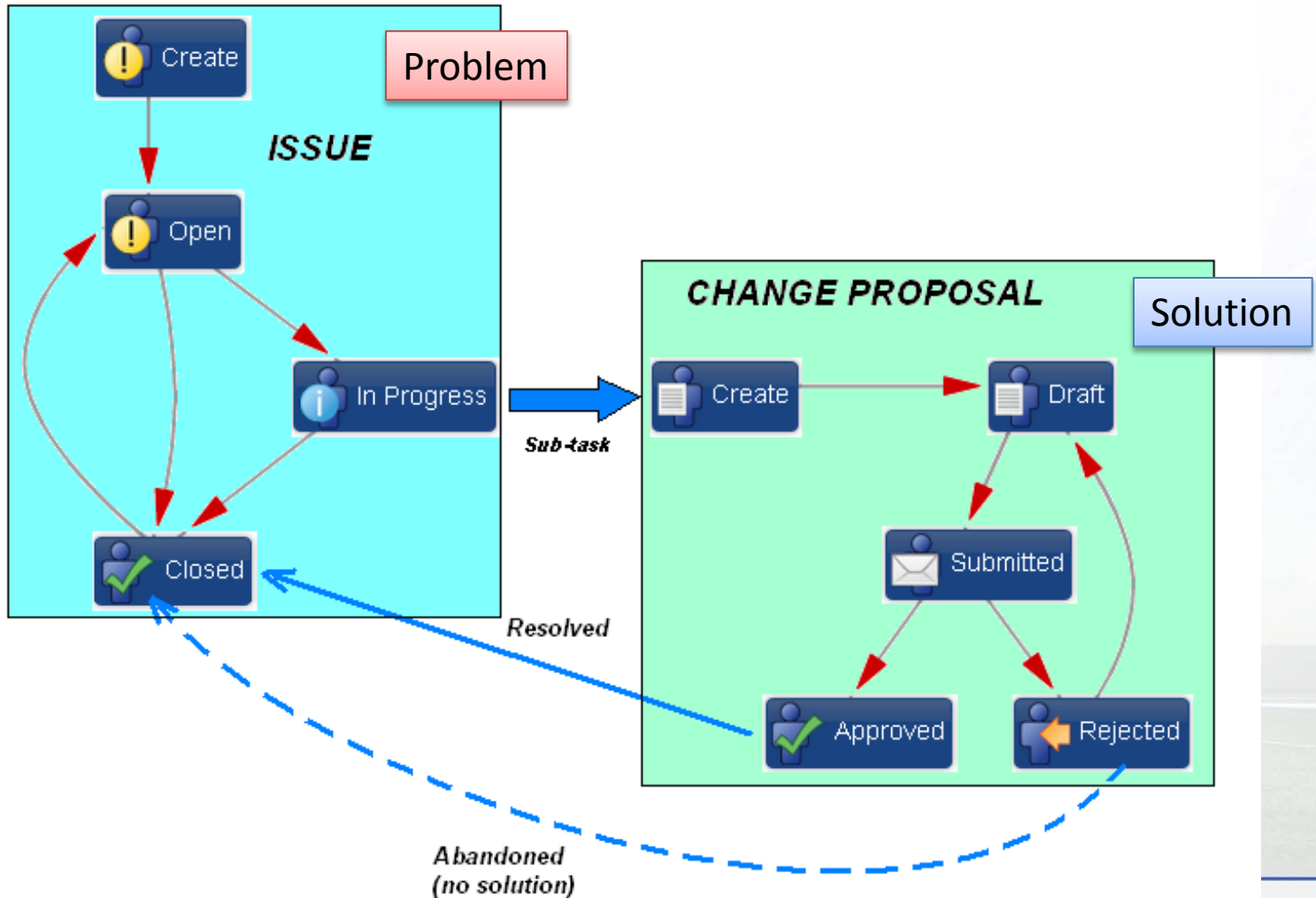
Protect  
investments



Ensure  
progress



# CCB Process



# AIXM Release Plan

- [2015] Minor Release - AIXM 5.1.1
  - “technical release”
    - move to Sparx EA modelling environment
    - test the CCB process
    - re-align with xlink, GML, metadata standards
    - minor corrections
    - definitions
  - fully backwards compatible
    - Bi-directional mapping scripts provided

# AIXM Release Plan

- **[2015]** Minor Release - AIXM 5.1.1
  - Almost finalized
  - 15 changes, solving 21 issues
    - *UML model moved to Sparx EA*
      - *New Schema generation scripts*
    - *Spelling corrections*
    - *definitions adjustments (around 700 proposed by FAA)*
    - *Xlink schema reference*
    - *GML profile reference*
    - *Some additional entries in lists of values*
    - *Work in progress – Temporality Concept clarifications (no real changes!)*

# AIXM Release Plan

- **[2017]** Regular Release - AIXM 5.2
  - Around 40 issues already in JIRA
    - *Temporality Concept related issues*
    - *PBN procedures*
    - *route data*
    - *vertical reference systems*
    - *alignment of definitions*
  - Other work areas
    - *additional items required by ICAO SARPS changes*
    - *support for latest AMDB specs*
    - *AIP mapping gaps*
    - *other SID/STAR/Approach and*
    - *additional data items coming from various regions (US, Europe, etc.) , if relevant for international use*
      - *Otherwise -> regional extension*
    - *support for OCAS (Obstacle Collision Avoidance System)*
    - *development of coding guidelines*
    - *development/revision of mapping guidelines (ARINC 424, AIP, AMDB,...)*

# Content

- AIXM versions in use
- AIXM Change Control Board activity
- **FAA perspective**



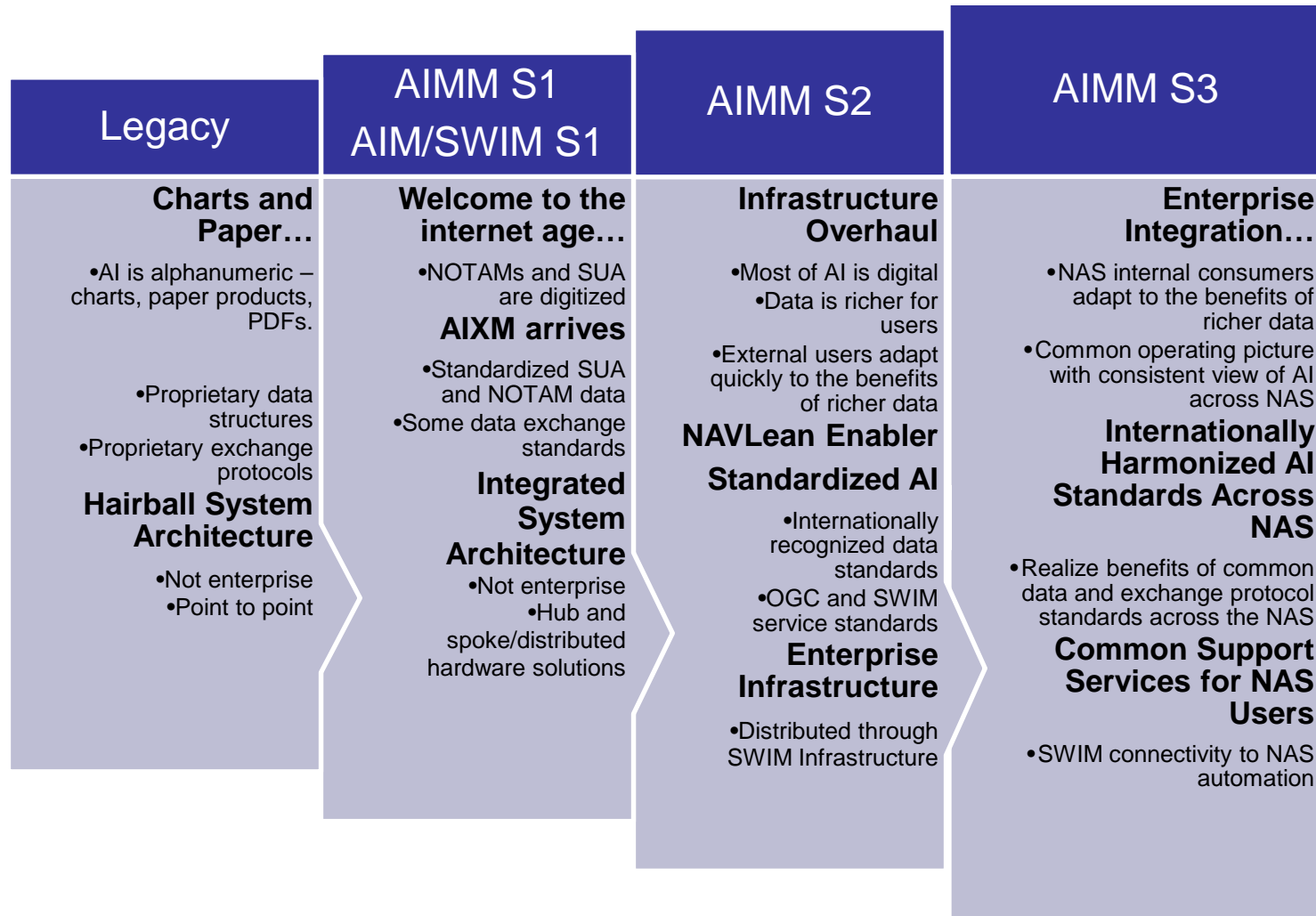
# AIM Modernization Status

- Modernizing the ingestion, integration and distribution of Aeronautical Information (AI)
- Building the Aeronautical Common Service (ACS), an enterprise-based service-oriented architecture that is the trusted source in the NAS for AI for both internal and external consumers
  - Capabilities
    - *Aeronautical Information Integration (AII)*
    - *Aeronautical Information Query and Subscription Service (AIQS)*
    - *Aeronautical Information Data Analytics (AIDA)*
    - *Spatial Information Mapping (SIM)*

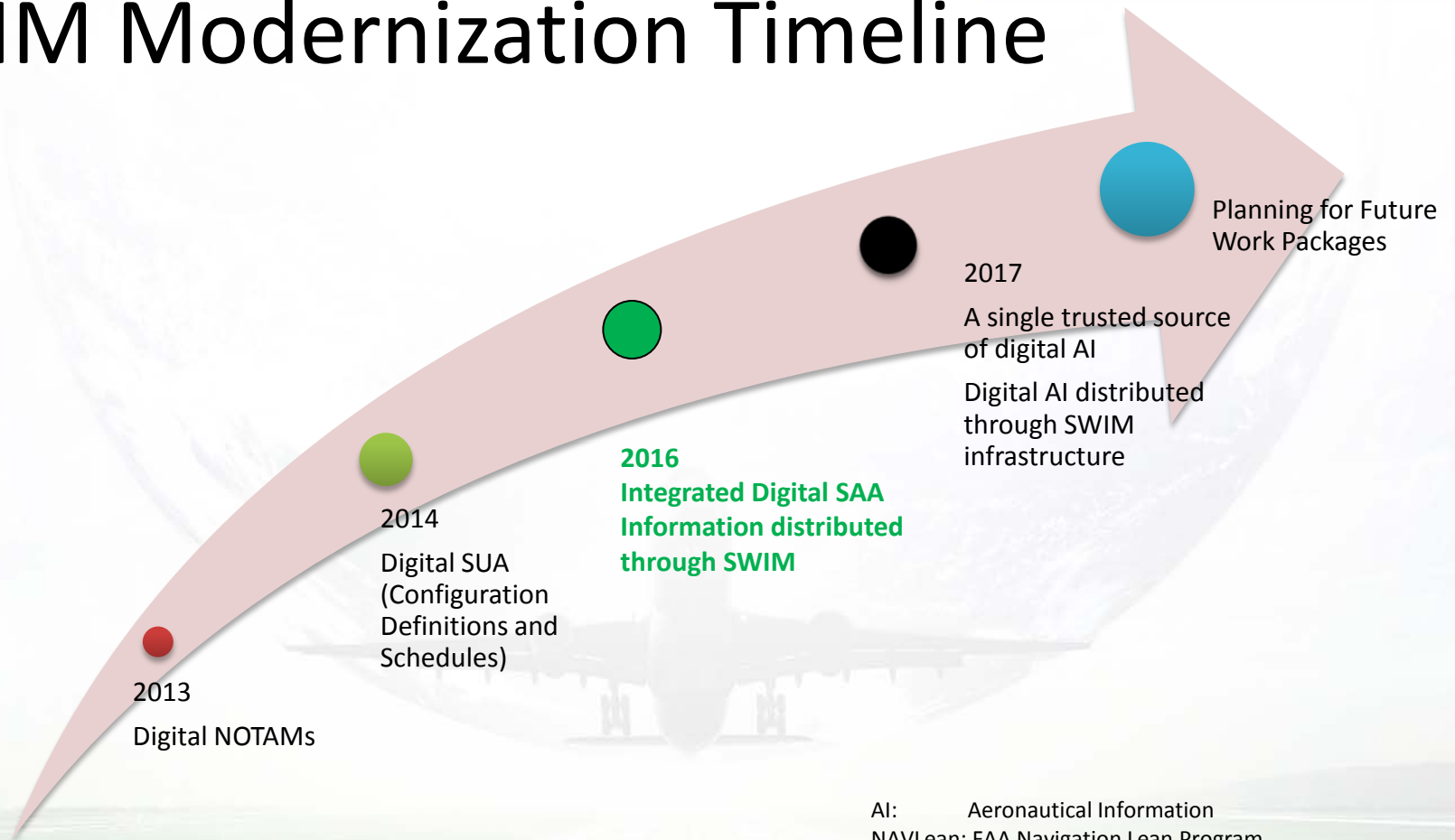




# AIMM Roadmap – A Multi-Segment Approach



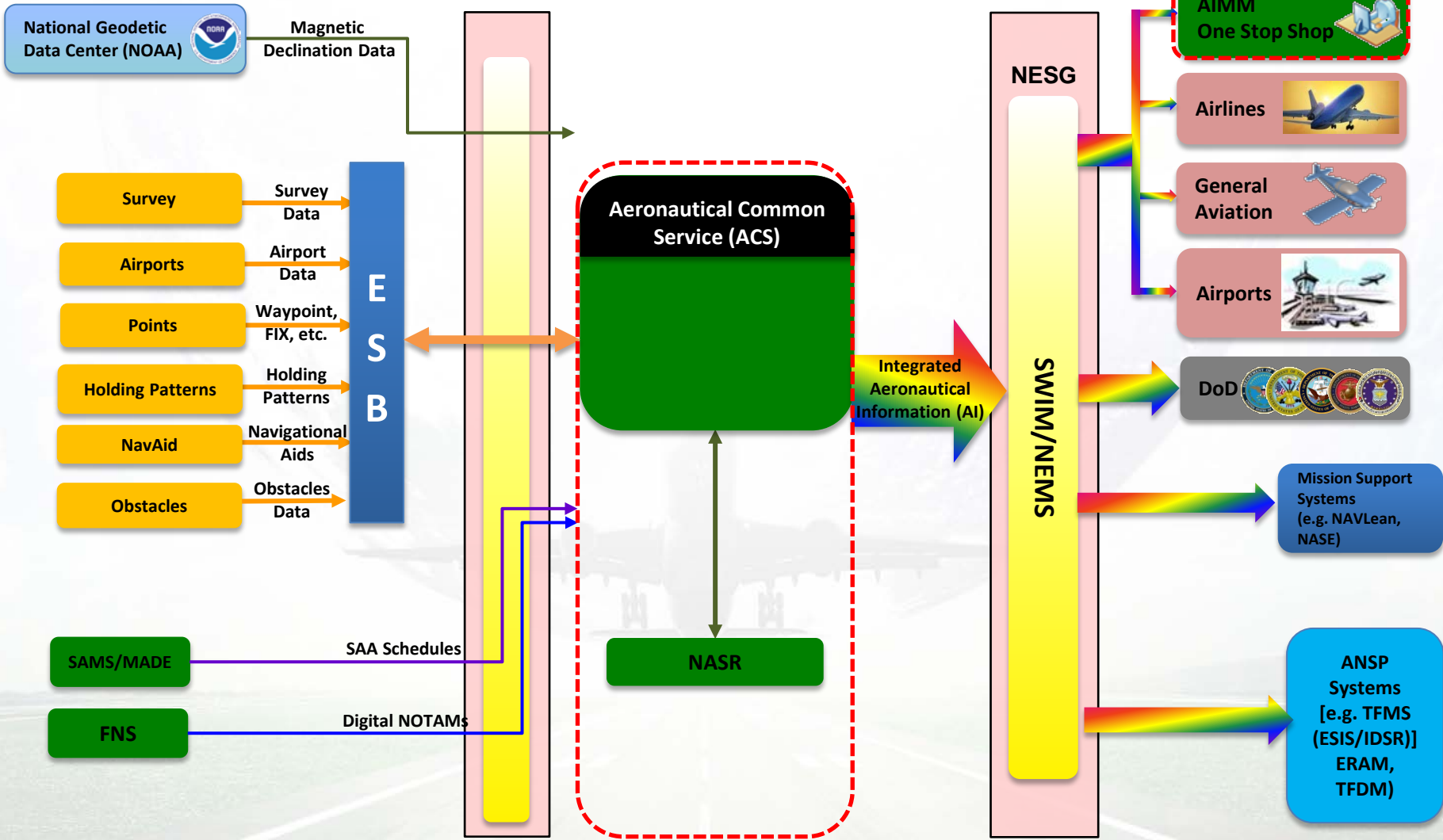
# AIM Modernization Timeline



AI: Aeronautical Information  
NAVLean: FAA Navigation Lean Program  
NOTAMs: Notices To Airmen  
SAA: Special Activity Airspace  
SWIM: System Wide Information Management  
SUA: Special Use Airspace



# Context Diagram



*Authoritative Sources*

AIM Systems      AIMM S2 System

Integrated AI includes fused SAA Schedules, SAA Definitions, NOTAM, Airport Configuration, and NAVLean data

*AI Consumers*

# The ACS

## Aeronautical Common Services (ACS) Segment 2

Business Rules

Business  
Process

Data Collection

Data Validation

Data Metrics

Web Feature  
Service

Web  
Notification  
Service

Web Mapping  
Service

Data  
Transforma-  
tion

Data Analytics



# Conclusions

- 3 versions in use (4.5, 5.0, 5.1)
- AIXM 5.1.1 – minor release (2015)
- AIXM 5.2 – regular release (2017)