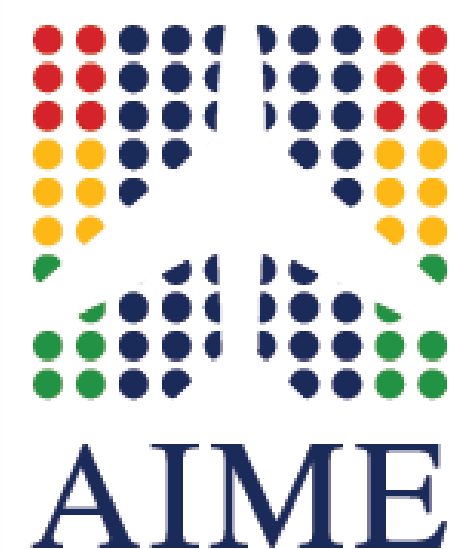


NG AVIATION

AERONAUTICAL INFORMATION MANAGEMENT ENVIROMENT

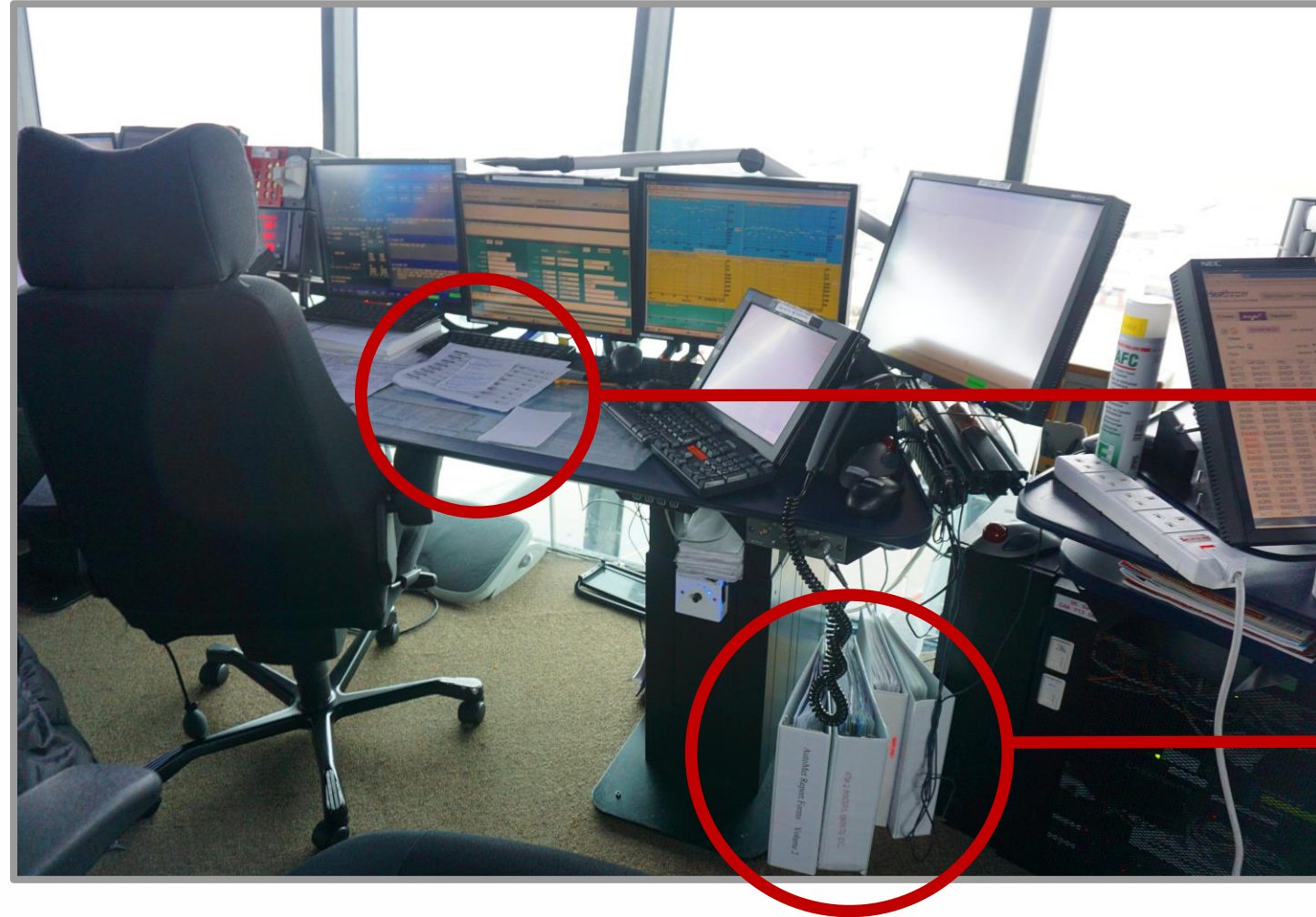


We are focusing on the development of unique software and service solutions according to the new ICAO and EASA requirements for aviation stakeholders (airports, air navigation service provider, airlines) with the aim to ensure and improve safety in aviation.



DIGITAL AERONAUTICAL DATA – FROM PAPER TO DIGITAL DATA

Digitalize your paper with AIME



Paper NOTAMs

Digital NOTAMs

Paper AIP

AIXM 5.1 Data



Static Information

Real Time Data





New ICAO Annex 15



RTCA 200B

Data Processing
Data Quality Monitoring

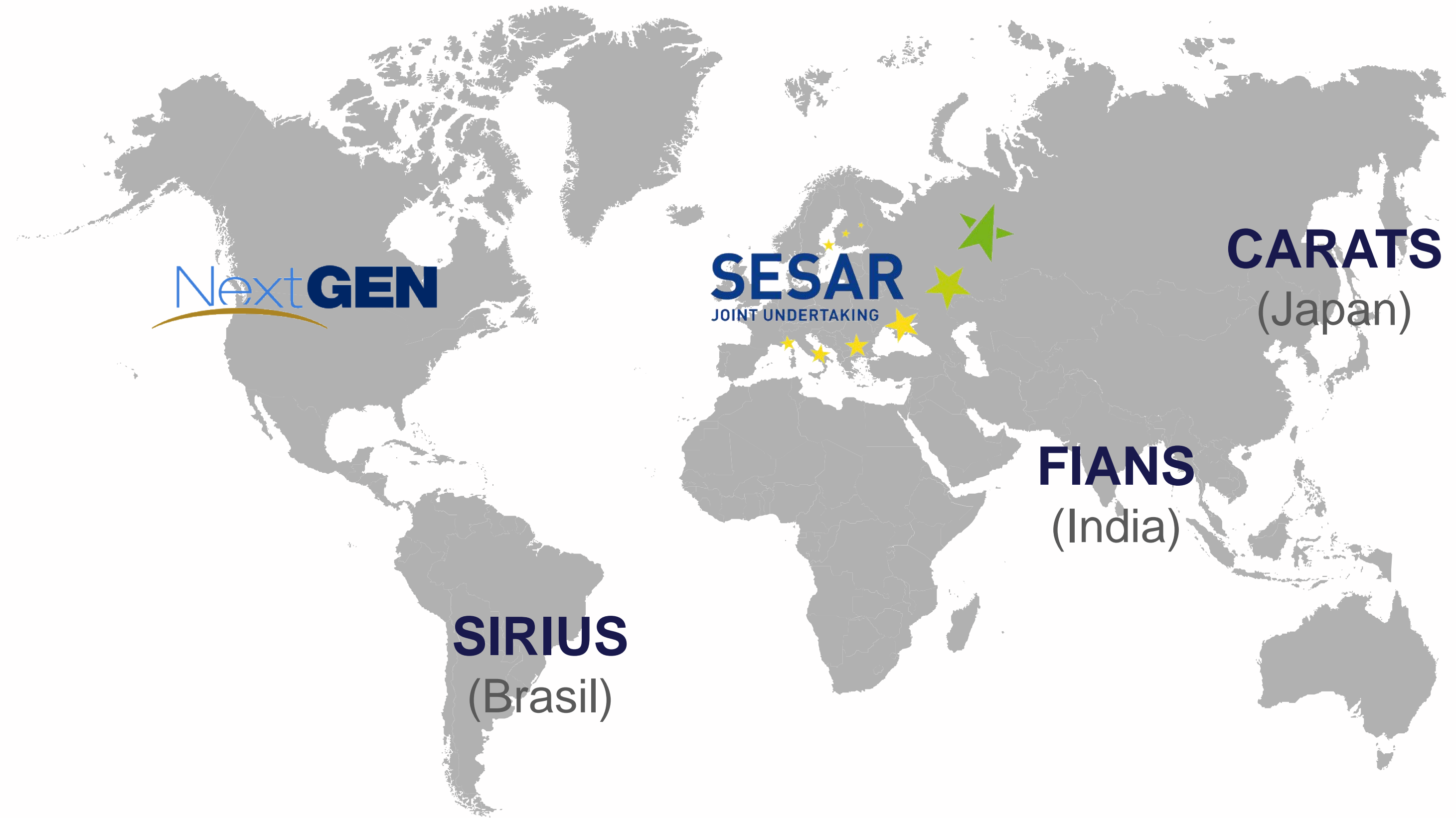
RTCA 272D

Aerodrome Mapping
Database

RTCA 291C

Electronic Terrain
and Obstacles

The transition from paper products to digital data is a **critical pre-requisite** for the implementation of any current or future ATM or air navigation concept that relies on the accuracy, integrity and timeliness of data.





AIME DATA CREATOR

Achieve aviation data of excellent quality to be easily created and delivered for aviation players

AIME software application for creation, validation and distribution of aeronautical digital data

System will effectively link the full range of services from airport to flight planning, airport operations planning, air traffic control and flight separation assurance while continuing to maintain the safety and security of the travelling public and lessening the environmental impact on the planet and its population.



Creation of digital data



Validation and verification of data



Support for temporal and permanent changes



Distribution of data to local / European database



Viewer of 3D digital AIXM 5.1 data of the airport able to integrate the position of GNSS monitoring system. Actually, navigation solution of monitoring the actors at the aerodrome surface is provided by fusion of positioning data with static maps.

 **Next Generation platform**
Real-time airport

Digital NOTAM messages implementation in real time digital AIXM 5.1 of maps airport.

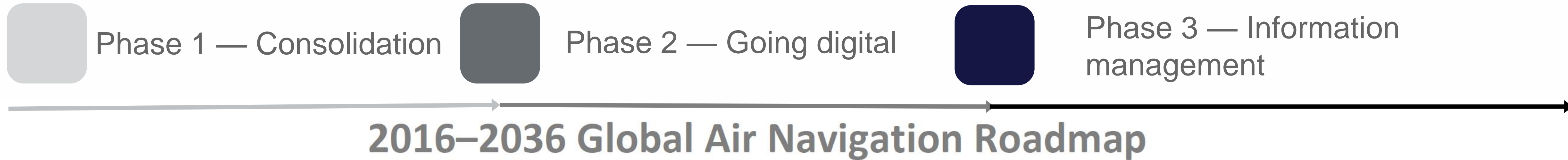
 **Ground Movements Monitoring possibility**
A-SMGCS

Monitoring of movements of aircraft and other mobile vehicles at the airport using GNSS and integration into the digital map.





AIS TO AIM Phases



INFORMATION MANAGEMENT	BLOCK 0	2018	BLOCK 1	2024	BLOCK 2	2030	BLOCK 3
AIS/AIM	B0-DATM		B1-DATM				
CAPABILITIES	AIS-AIM Enhanced quality Paper --> Digital data availability		Digital Data exchange & services, shorter update cycles		Electronic Charts, Digital Briefing, In Flight updates		
ENABLERS	Digital NOTAM						
	eAIP, AIXM						

Global Air Navigation Plan (ICAO Doc 9750) for aeronautical information services (AIS) to aeronautical information management (AIM)



Relevant ICAO Annexes and Docs

The following ICAO annexes are essential for the AIS to AIM transition:

- Annex 4 – Aeronautical charts
- Annex 14 – Aerodromes
- Annex 15 – Aeronautical Information Services

Relevant ICAO documents are amongst others:

- Doc 7383 - Aeronautical Information Services Provided by States
- Doc 8126 - Aeronautical Information Services Manual
- Doc 8697 - Aeronautical Chart Manual
- Doc 9674 - WGS 84 Manual
- Doc 9750 - Global Air Navigation Plan



Phase 1 — Consolidation

Steps will be taken to strengthen a solid base by enhancing the quality of the existing products

P.04 - Monitoring of Annex differences

P.03 - AIRAC adherence monitoring

P.17 - Quality

P.05 - WGS-84 implementation



Phase 2 — Going digital

The main focus will be on the establishment of data-driven processes for the production of the current products in all States. States that have not yet done so will be encouraged “to go digital” by using computer technology or digital communications and introducing structured digital data from databases into their production processes.

P.02 - Data integrity monitoring

P.01 - Data quality monitoring

P.06 - Integrated aeronautical information database

P.07 - Unique identifiers

P.08 - Aeronautical information conceptual model

P.15 - Aerodrome mapping

P.11 - Electronic AIP

P.14 - Obstacles

P.13 - Terrain



Phase 3 — Information management

During Phase 3, steps will be taken to enable future AIM functions in States to address the new requirements that will be needed to implement the Global Air Traffic Management Operational Concept in a netcentric information environment.

P.09 - Aeronautical data exchange

P.21 - Digital NOTAM

P.10 - Communication networks

P.12 - Aeronautical information briefing

P.16 - Training

P.19 - Interoperability with meteorological products

P.20 - Electronic aeronautical charts

P.18 - Agreements with data originators

3 | AIME

AIS to AIM Roadmap

According to the ICAO Roadmap AIME follows all phases that means Consolidation, Going Digital and Information Management. In the following table find explanation how AIME concrete solves each step from ICAO Roadmap:

AIME Supports transition from AIS TO AIM

Steps ICAO AIM Roadmap	AIME	Explanation
P-01 — Data quality monitoring	AIME fully follows data quality process according to the ICAO Annex 15 and RTCA DO 200 B and RTCA DO 201 A. For identification of data quality process AIME was design under the ADQ EUROCONTROL Guidance.	AIME automatizes data quality processes in the terms of verification and validation process. Data quality monitoring in AIME software is based on DQR and HL (Data Quality Monitoring and Harmonised List) of ICAO Annex 15 which AIME fully ensure data quality check.
P-02 — Data integrity monitoring	AIME is automatically checking data integrity according to the AIXM 5.1 XML Schema.	In the case of data integrity failure AIME has Error Detection function.



P-03 — AIRAC adherence monitoring	AIME stores AIXM data in state centralised database and each feature element has unique UUID according to the ICAO Annex 15.	AIME uses request management solution for requesting change of the data in the terms of permanent or temporal changes which ensure that whole data chain is adherence.
P-05 — WGS-84 implementation	NG Aviation provides service for conversion from various reference systems by measurement and computational techniques.	AIME primarily works with WGS 84 which is required for AIXM 5.1 usage.
P-06 — Integrated aeronautical information database	AIME is able to submit request of data change to state database (if available) or in the case if database is not established already NG Aviation provides this type of service.	
P-07 — Unique identifiers	Based on the fact that AIME uses AIXM 5.1 UUID is atomically ensure that all	UUID is part of the AIXM schema and generation of UUID is part of the AIME software.



ICAO FROM AIS TO AIM ROADMAP

P-08 — Aeronautical information conceptual model	AIME fully support AICM especially AIXM in the case of the rest models (FIXM and WXXM) NG Aviation is preparing environment for these models.	AIME uses AIXM schema which ensure that data can be exchange in the same format globally and also support future ATM systems.
P-09 — Aeronautical data exchange	AIME software platform is principally designed for the data exchange purpose. For this reason, AIME users are able to create data in the aeronautical exchange model (AIXM 5.1) which is only one exchanging format which full fil requirements in ICAO Annex 15.	
P-10 — Communication networks	AIME uses communication based on the web – service technology compliant with ICAO Annex 15. The data security is provided by CRC. In the case of aeronautical information transition AIME is able to operate with AMHS.	
P-11 — Electronic AIP	This feature is planned in the terms that AIXM 5.1 data will automatically generate AIP.	



<p>P-12 — Aeronautical information briefing</p>	<p>According to fact that AIME Data creator creates also Digital NOTAM messages graphically the data in the database are updated near real time which dramatically improve pre-flight briefing.</p>	<p>AIXM 5.1 is structured format which ensure filtering of information for better effectiveness.</p>
<p>P-13 — Terrain</p>	<p>Provided by partner</p>	
<p>P-14 — Obstacles</p>	<p>AIME is providing obstacle data in AIXM 5.1 which is beneficial according to the temporality model of AIXM 5.1</p>	<p>Key component in the management of the data is not only creation but also the maintenance in case of the new obstacles or replacement of the obstacles (e.g. cranes). The AIME Data Creator is creating easily the obstacles and incorporates into the data</p>



P-15 — Aerodrome mapping	AIME provides AMDB in AIXM format which has the great benefit of digital NOTAM, advanced optimization, conversion to the another formats ARINC 816	AIME Data Creator is able to add the new features to AIXM 5.1 data, check the quality and verify the data structure automatically
P-16 — Training	NG Aviation team is certified by various organisation in Aviation and software development field (Eurocontrol, RTCA Washington, etc.)	NG Aviation provides training for AIME users in the terms of application usage and AIM.
P-17 — Quality	AIME Data Creator is validating the data based on the Data Quality Requirements from the end/user of the data. As the reference value the AIME Data Creator can use the ICAO Annex 15 or EUROCONTROL Harmonized list	AIME implements industry standard RTCA 200 B and 201 A which is strongly based on data quality monitoring



ICAO FROM AIS TO AIM ROADMAP

P-17 — Quality	AIME Data Creator is validating the data based on the Data Quality Requirements from the end/user of the data. As the reference value the AIME Data Creator can use the ICAO Annex 15 or EUROCONTROL Harmonized list	AIME implements industry standard RTCA 200 B and 201 A which is strongly based on data quality monitoring
P-19 — Interoperability with meteorological products P-20 — Electronic aeronautical charts	AIME Data Creator output - AIXM 5.1 data are interoperable with multiple 3rd party products which are able to convert data to other various formats suitable for end-user. AIME Data Creator is able to output ARINC – 816 – 2 which can be directly used in cockpits.	
P-21 — Digital NOTAM	The major benefit of AIME Data Creator is easy/to/use software application for creation of the Digital NOTAM based on the AIXM 5.1 data. AIME Data Creator is able to create NOTAM graphically and convert it to format suitable for user and submission to local or national database. AIME Viewer is the Viewer of 3D AIXM 5.1 data including NOTAM messages which is key enabler of the new A-SMGCS Level 2 systems.	

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Thank you



Achieve aviation data of excellent quality to be a easily created and delivered for aviation players