ICAO PARIS UNITING AVIATION

B0-DATM Implementation

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Interregional APAC/EUR/MID Workshop on '*service improvement through integration of AIM, MET and ATM information*'
(EUROCONTROL HQ, Brussels, 2-4 October 2017)

B0-DATM Implementation

- ***Status***
  - *Implementation statistics*
- ***Challenges***
  - *What are the biggest obstacles in implementation*
- ***Lessons learned***
  - *How to best facilitate States in future implementation*

Performance Improvement Area 2:
Globally Interoperable Systems and Data – Through Globally Interoperable System Wide Information Management

Block 0	Block 1	Block 2	Block 3
B0-FICE **Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration** Supports the coordination of ground-ground data communication between ATSU based on ATS Inter-facility Data Communication (AIDC) defined in ICAO Doc 9694.	**B1-FICE** **Increased Interoperability, Efficiency and Capacity though FF-ICE, Step 1 application before Departure** Introduction of FF-ICE Step 1, to implement ground-ground exchanges using common flight information reference model, FIXM, XML and the flight object used before departure.	**B2-FICE** **Improved Coordination through multi-centre Ground-Ground Integration: (FF-ICE/1 and Flight Object, SWIM)** FF-ICE supporting trajectory-based operations through exchange and distribution of information for multicentre operations using flight object implementation and IOP standards.	**B3-FICE** **Improved Operational Performance through the introduction of Full FF-ICE** All data for all relevant flights systematically shared between air and ground systems using SWIM in support of collaborative ATM and trajectory-based operations.
B0-DATM **Service Improvement through Digital Aeronautical Information Management** Initial introduction of digital processing and management of information, by the implementation of AIS/AIM making use of AIXM, moving to electronic AIP and better quality and availability of data.	**B1-DATM** **Service Improvement through Integration of all Digital ATM Information** Implementation of the ATM information reference model integrating all ATM information using UML and enabling XML data representations and data exchange based on internet protocols with WXXM for meteorological information.		
	B1-SWIM **Performance Improvement through the application of System-Wide Information Management (SWIM)** Implementation of SWIM services (applications and infrastructure) creating the aviation intranet based on standard data models, and internet-based protocols to maximize interoperability.	**B2-SWIM** **Enabling Airborne Participation in collaborative ATM through SWIM** Connection of the aircraft an information node in SWIM enabling participation in collaborative ATM processes with access to rich voluminous dynamic data including meteorology.	
B0-AMET **Meteorological information supporting enhanced operational efficiency and safety** Global, regional and local meteorological information provided by world area forecast centres, volcanic ash advisory centres, tropical cyclone advisory centres, aerodrome meteorological offices and meteorological watch offices in support of flexible airspace management, improved situational awareness and collaborative decision-making, and dynamically-optimized flight trajectory planning.	**B1-AMET** **Enhanced Operational Decisions through Integrated Meteorological Information (Planning and Near-term Service)** Meteorological information supporting automated decision processes or aids involving: meteorological information, meteorological translation, ATM impact conversion and ATM decision-making support.		**B3-AMET** **Enhanced Operational Decisions through Integrated Meteorological Information (Near-term and Immediate Service)** Metoeroligical information supporting both air and ground automated decision support aids for implementing weather mitigation strategies.

B0-DATM - Description

(Service improvement through digital aeronautical information management)

- **Initial introduction of digital processing and management of information, by the implementation of AIS/AIM making use of AIXM, moving to electronic AIP and better quality and availability of data.**
- **Benefits:**
  - **Interoperability:** Essential contribution to interoperability.
  - **Safety:** Reduction in the number of possible inconsistencies. Module allows for better data quality, safe guarding and validation of the data throughout the process, and harmonization/ synchronization with adjacent States, as necessary.

B0-DATM elements

APAC	EUR	MID

• All Roadmap Phase 1 Steps (Consolidation)
• Regional Priorities
  • Quality (Phase 1)
  • Training (Phase 3)
  • Agreements with Data Originators (Phase 3)
  • Electronic AIP
  • (Phase 2)
Reference:
- Guidance Manual for AIS in the Asia/Pacific Region – Appendix A
	• INF 04 (Integrated briefing)
	• ITY-ADQ (Quality of aeronautical data/information)
	Reference:
	- EUR ASBU implementation monitoring report 2016
		• AIXM
		• eAIP
		• QMS
		• WGS-84
		• eTOD (area 1 & 4)
		• National AIM Impl. Plan (to include DNOTAM)
		Reference:
		- MID Air Navigation Strategy
		- MID AN Report 2016

B0-DATM Status - APAC

- **Asia/Pacific Region AIM Transition Table**
- Measures progress against the *ICAO Roadmap for Transition from AIS to AIM*
- Maintained by AIS – AIM Implementation Task Force
- https://www.icao.int/APAC/Documents/edocs/AIS%20AIM%20Implementation%20Table.pdf

Australia	√	√	√	√	80%	√	√	√	80%	Link		√	80%		50%	20%	10%	70%	75%				5%
Bangladesh	√	√	65%	√	√	√	70%	√		Link			60%			20%				20%			
Bhutan	√	50%	√	10%	70%	50%	20%		20%	50%			90%	90%	20%	80%	20%	40%	70%	25%	50%	√	
Brunei Darussalam																							
Cambodia	√	√	√	10%						Part						70%		40%					
China	√	√	√	√					40%	Link	95%							√	√		√		
Hong Kong, China	√	√	√	√	√	√	√		√	Link		√	√					40%					
Macao, China	√	√	√	√						Link								√	√				
Cook Islands	√	√	√							Link								√					
DPR Korea	√	√	√	√	√	√	10%					15%	15%						√				
Fiji	√	√	√	√			√	√	√	Link			√			√	√	√					
India	√	√	√	√	√	√	√	√	√				√										
Indonesia	√	√	√	65%	50%	50%	50%	20%	20%	Link		30%	30%	10%		80%		60%	20%	10%	20%		
Japan	√	√	√	√	√	√	√	√	√	Link	20%	√	60%		80%	40%	60%	√	√		20%	20%	
Kiribati	√		√																				
Lao PDR	√	√	√																				
Malaysia	√	√	√	√	√	√	√	√	√	Link	√	50%	50%	50%	√	√	√	√	50%		50%		
Maldives			√							Link													
Marshall Islands																							
Micronesia																							
Mongolia	√	√	√	√	√	√	√	√	√	Link	√	√	√	√	√	30%	√	√	√		√		
Myanmar	√	√	√				√	√	√	Link	√	√	√	√	√	√	√	√		√	√	√	
Nauru																							
Nepal	√	√	√										30%	30%									
New Zealand	√	√	√	√	√	√	√	√	75%	Link		√	80%	15%	80%								
Pakistan	√	√	√	√	√	√	50%	√	50%	Link	40%	40%	40%	40%	√	√	√	25%	√	50%	40%	20%	
Palau										part													
Papua New Guinea	√	√	√	√				√									10%						
Philippines	√	√	√	50%	√	50%	√	√	√	50%													
Republic of Korea	√	√	√	√	√	√	50%	√	√	Link	50%	√	60%	50%	60%	15%	√	√	√	80%	40%	√	
Samoa	√		√							Link													
Singapore	√	√	√	√	√	√	√	√	√	Link	√	√	√	√	√	√	√	√	√		√		
Solomon Islands	√		√																				
Sri Lanka	√	√	√	95%			40%			Link		10%	10%			25%	25%	20%	35%				
Thailand	√	80%	60%	50%	40%	30%	20%	20%	20%	Link	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	

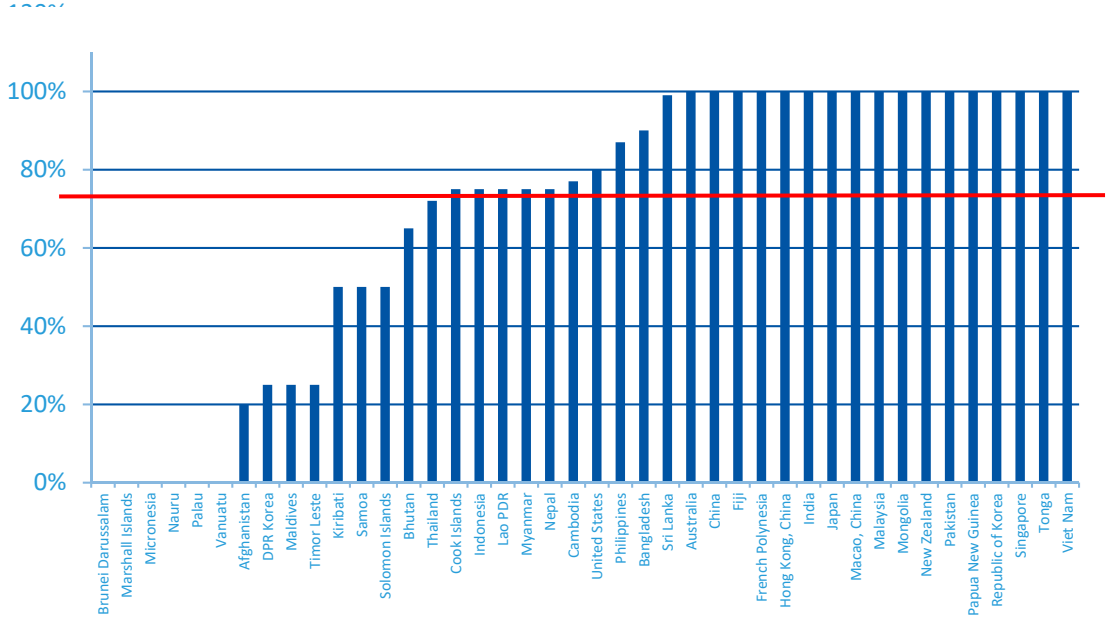
B0-DATM Status - APAC

Roadmap Phase 1 Steps

71% Implementation

Regional Expectation:

Immediate Implementation



B0-DATM Status - APAC

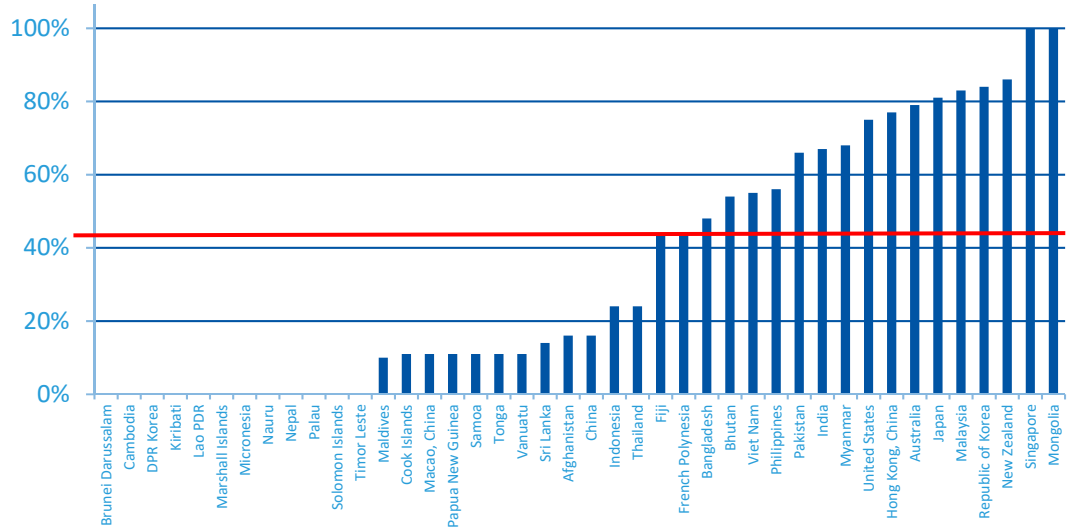
Roadmap Phase 2

44% Implementation

Regional Expectation:

Immediate Implementation

To be updated with new Regional AIM Plan (2018)



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B0-DATM Status - APAC

- **Implementation of Regional Priorities:**

- **Quality: 20 Administrations fully implemented**
  7 Administrations partly implemented
  55% (estimated) Regional implementation

- **Training: 10 Administrations fully implemented**
  11 Administrations partly implemented
  15% (estimated) Regional implementation

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B0-DATM Status - APAC

- **Implementation of Regional Priorities:**

- **Agreements with Data Originators:**
  9 Administrations fully implemented
  7 Administrations partly implemented
  30% (estimated) Regional implementation

- **eAIP:** **24 Administrations web-accessible AIP (mostly PDF)**
  4 Administrations eAIP from digital database
  6 Administrations eAIP (digital) partly implemented
  16% (estimated) Regional implementation eAIP

B0-DATM Status - APAC

- **Overall**
  - **Generally poor progress**
  - **Failure of many States to implement pre-existing AIS requirements**
  - **Poor development of legislation and regulation**
  - **States procuring AIM systems without attending to the fundamentals**
    - **Quality**
    - **Timeliness**
  - **Some States excellent progress**

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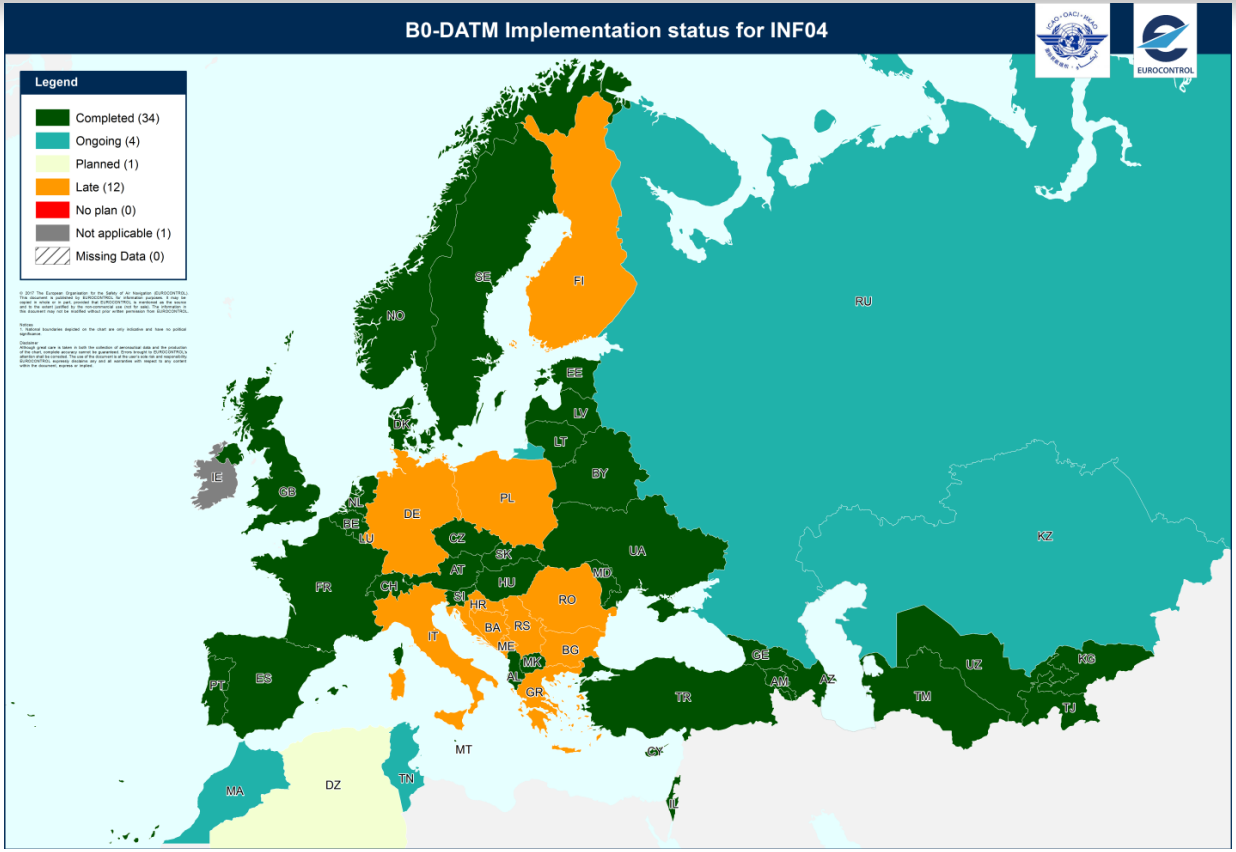
B0-DATM Status – EUR/NAT

INF04 - Implement integrated briefing

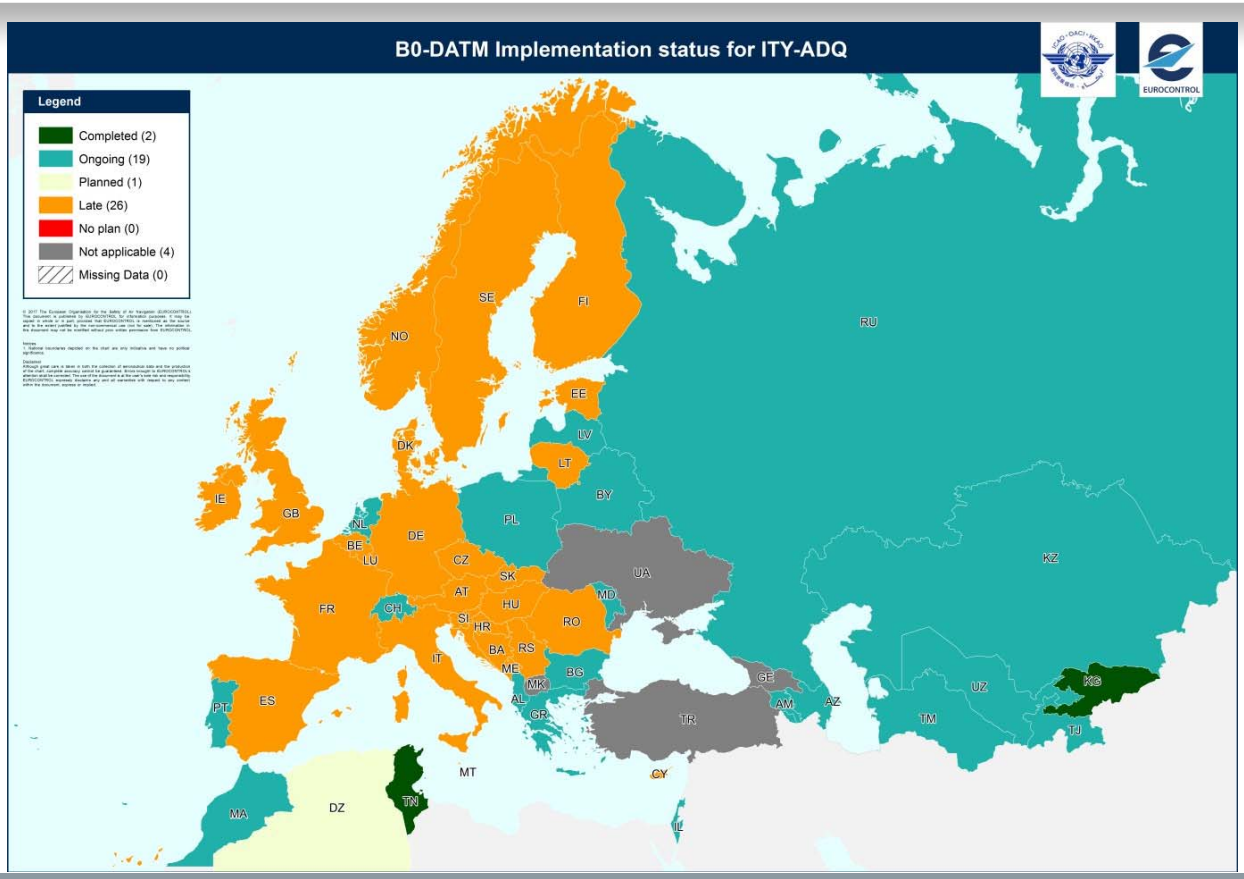
Completed: 65%
Ongoing: 8%
Planned: 2%
Late: 23%
No plan: 0
Not applicable: 2%
Missing data: 0



B0-DATM Status – EUR/NAT

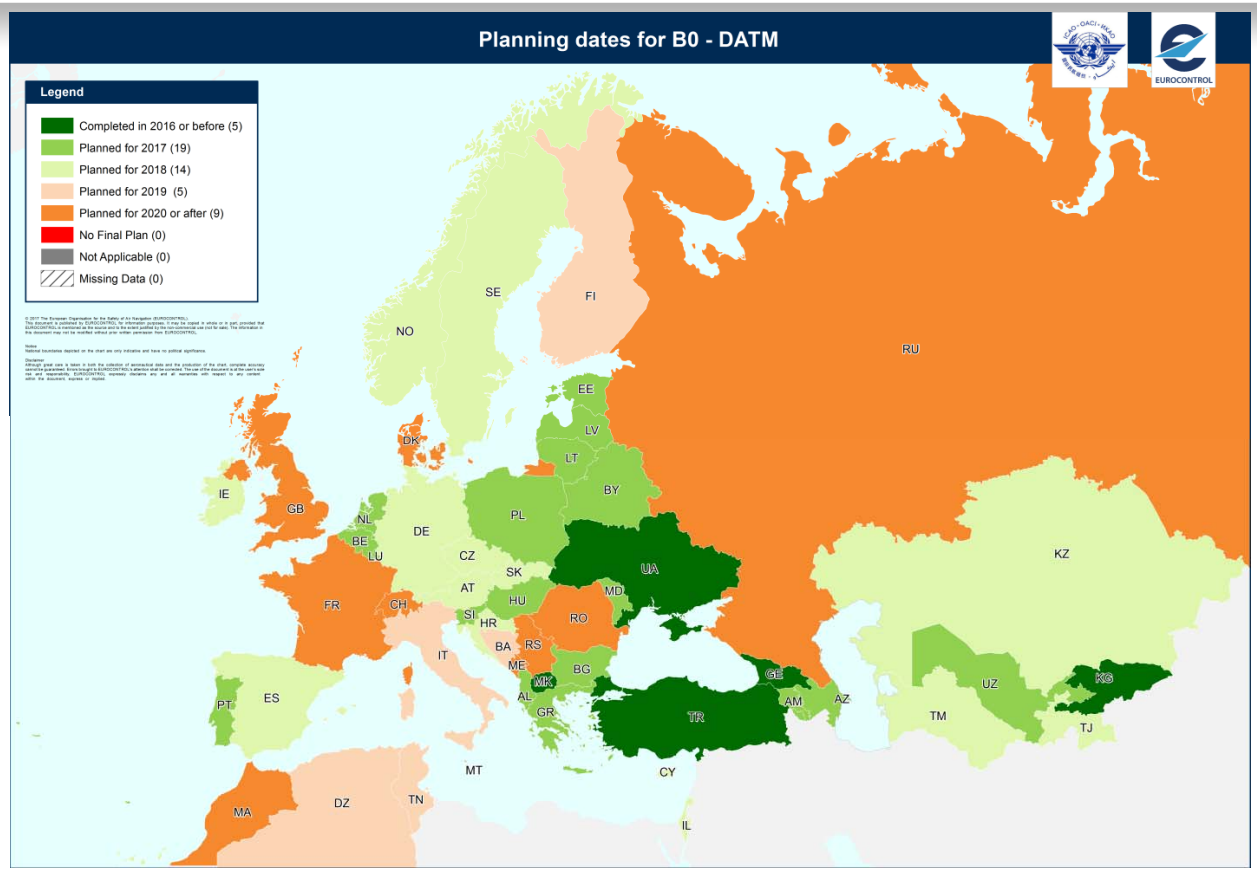
ITY-ADQ - Quality of aeronautical data/ information

Completed: 4%
Ongoing: 37%
Planned: 2%
Late: 50%
No plan: 0
Not applicable: 7%
Missing data: 0

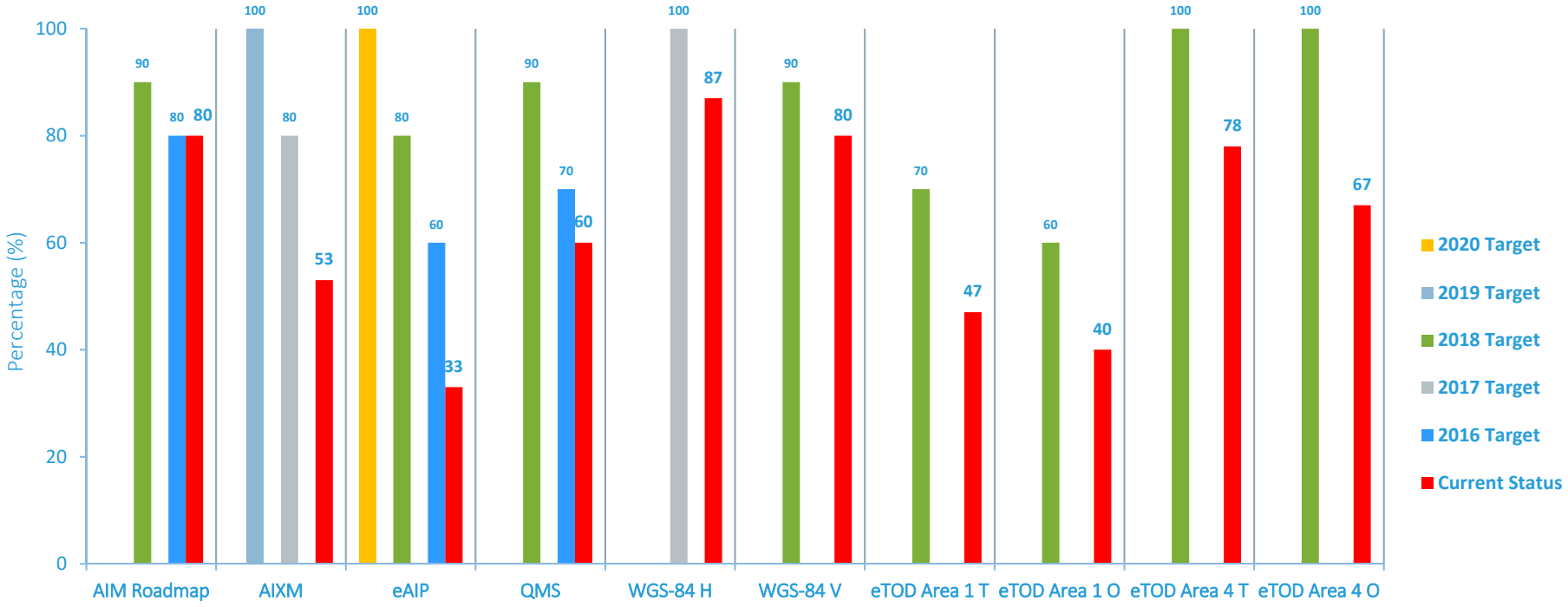


B0-DATM Status – EUR/NAT

Completed	10%
Planned for 2017	10%
Planned for 2018	52%
Planned for 2019	10%
Planned for 2020 or after	11%
Not applicable	2%
Missing Data	2%
No final Plan	3%

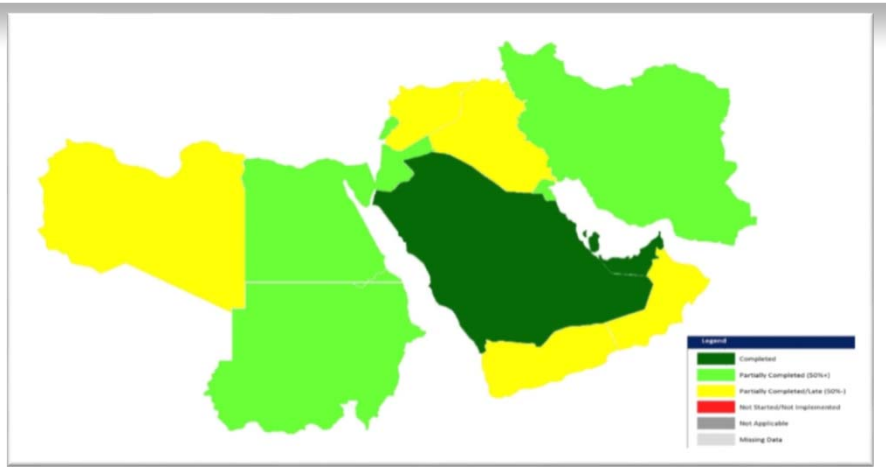


B0-DATM Status – MID



B0-DATM Status – MID

The progress for B0-DATM is acceptable (with approximately 63% implementation). eTOD Area 4 is not applicable in 6 States.



Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-DATM	National AIM Roadmap															
	AIXM															
	eAIP															
	QMS															
	WGS-84 – H															
	WGS-84 – V															
	eTOD Area 1 Terrain															
	eTOD Area 1 Obstacles															
	eTOD Area 4 Terrain															
	eTOD Area 4 Obstacles															

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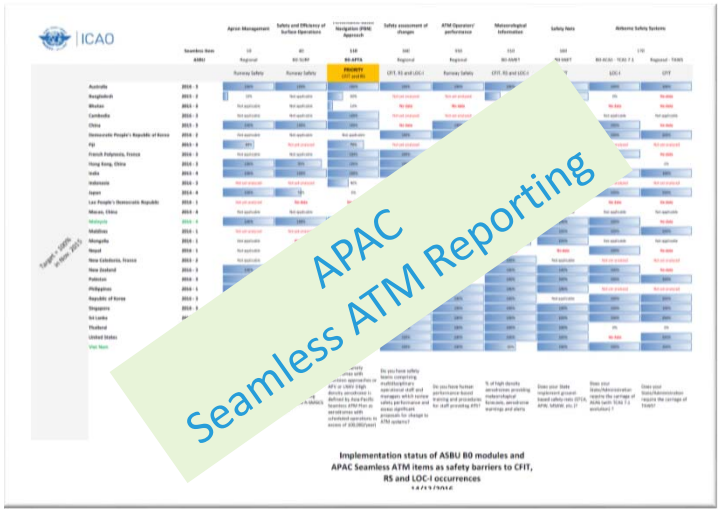
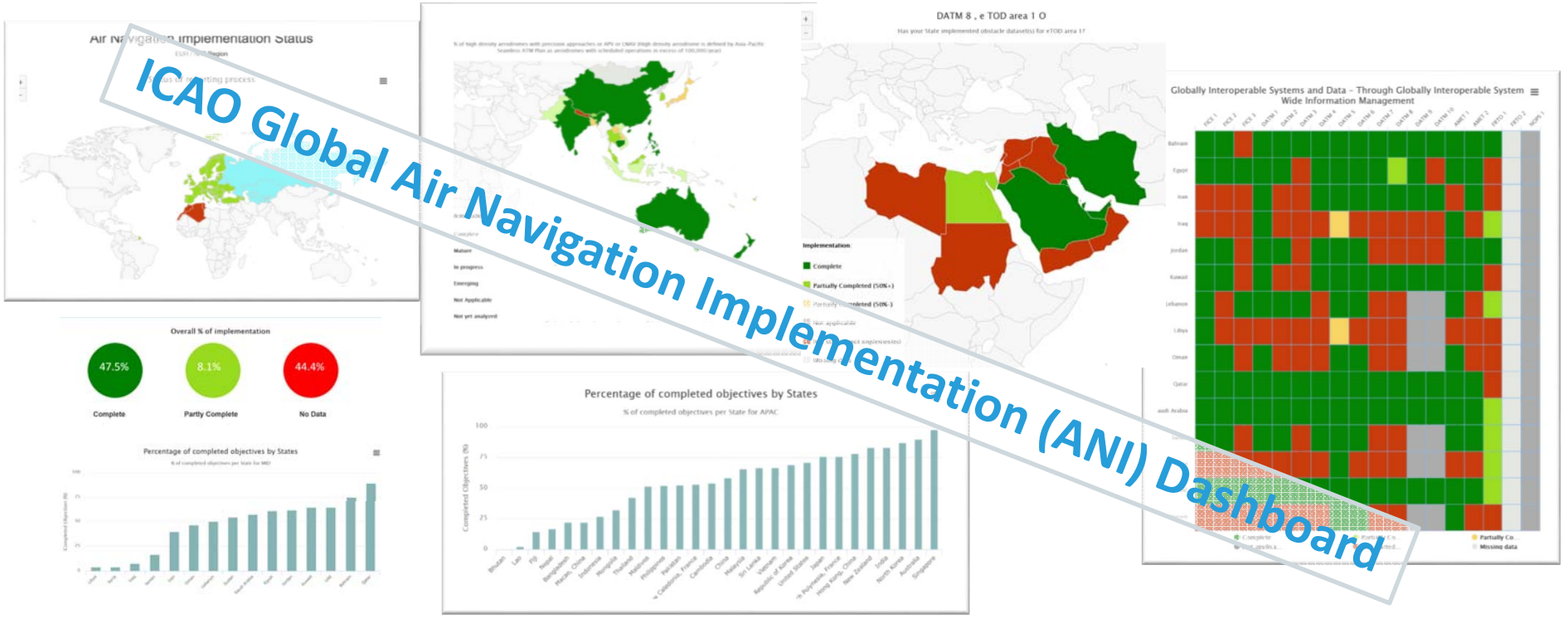
Monitoring mechanism



REGIONAL AIR NAVIGATION PLAN (eANP) Volume III

Harmonized reporting and monitoring



Challenges / Lessons Learned

IAID and AIXM

- Data exchange be considered in further update/upgrade of AIXM
- Interoperability and data exchange issues be taken into account by AIM system providers/developers
- States should carry out comprehensive study/analysis of their current situation and future needs of their Users when planning for a new AIM system or upgrade in their current system
- Involvement of all Stakeholders (ATM, PANS OPS, Flight OPS, …) in the development of plans for AIM systems in order to ensure Stakeholders' needs and future interoperability
- Difficulties in the implementation of eTOD
- Cyber security issue should be considered in the exchange of aeronautical data/information

Training of AIS/AIM Staff

- Training of AIS/AIM personnel on new AIM system is crucial in successful transition to digital AIM
- Lack or shortage of competent AIS/AIM personnel

Financial Issues

- Funding new AIM systems in particular and AIM transition/implementation, in general, is a challenge
- Higher priority should be given to AIM implementation by States' CAA/ANSP management
- Encourage States and Stakeholders to support States in AIM transition in line with ICAO NCLB initiative

SARPs and Guidance Material

- Need for review/update of the “Roadmap for transition from AIS to AIM”
- Expedite the process of issuing the Quality Manual and Training Manual
- Need for updating the AIS Manual (Doc 8126)
- Need for seminars/workshops on new PANS AIM and changes to Annex 15 (amendments 39B and upcoming 40)
- Considerations related to the costs, efforts and changes that States should take care of, when new SARPs are going to be developed/introduced
- Need for common standards/rules and more provisions/guidance for AIXM and IAID

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THANK YOU