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# B0-AMET Implementation

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**Interregional APAC/EUR/MID Workshop on 'service improvement through integration of AIM, MET and ATM information'**

*EUROCONTROL, 2-4 October 2017*





## B0-AMET Implementation

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



## BO-AMET Implementation - status

Global, regional and local meteorological information:

- a) forecasts provided by world area forecast centres (WAFC), volcanic ash advisory centres (VAAC) and tropical cyclone advisory centres (TCAC);
- b) aerodrome warnings to give concise information of meteorological conditions that could adversely affect all aircraft at an aerodrome including wind shear; and
- c) SIGMETs to provide information on occurrence or expected occurrence of specific en-route weather phenomena which may affect the safety of aircraft operations and other operational meteorological (OPMET) information, including METAR/SPECI and TAF, to provide routine and special observations and forecasts of meteorological conditions occurring or expected to occur at the aerodrome.

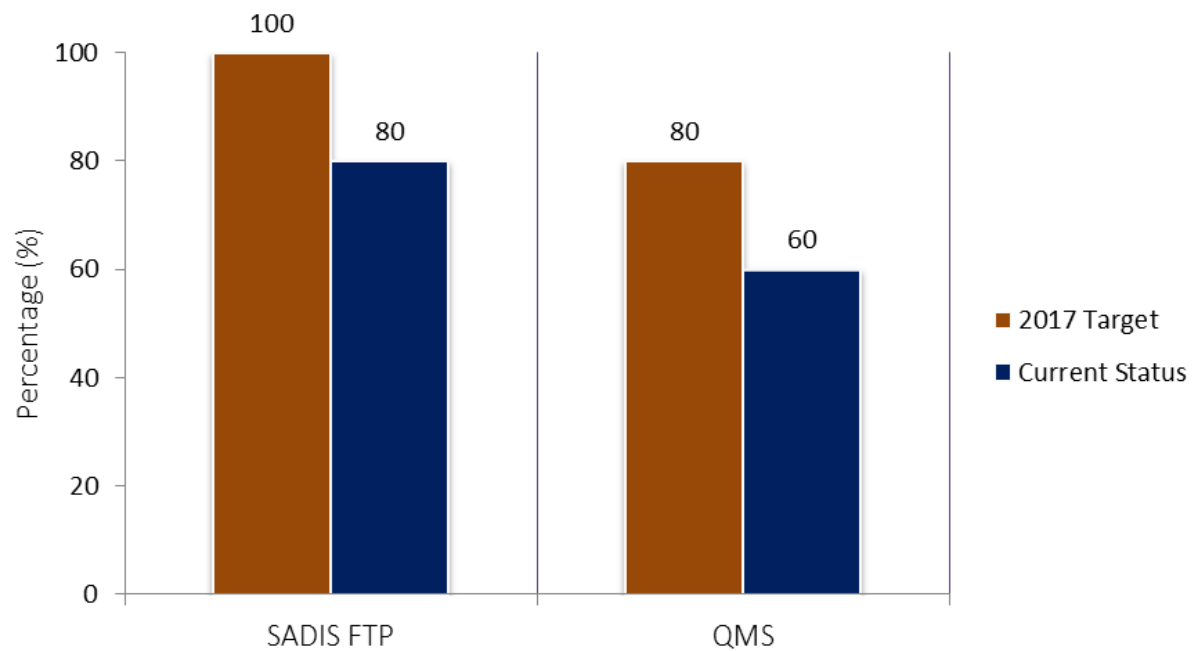


**B0 – AMET: Meteorological information supporting enhanced operational efficiency and safety (MID)**

Elements	Applicability	Performance Indicators/Supporting Metrics	Targets
SADIS FTP	All States	Indicator: % of States having implemented SADIS FTP service Supporting metric: number of States having implemented SADIS FTP service	90% by Dec. 2015 100% by Dec. 2017
QMS	All States	Indicator: % of States having implemented QMS for MET Supporting metric: number of States having implemented QMS for MET	60% by Dec. 2015 80% by Dec. 2017



### B0-AMET Status of implementation in the MID Region





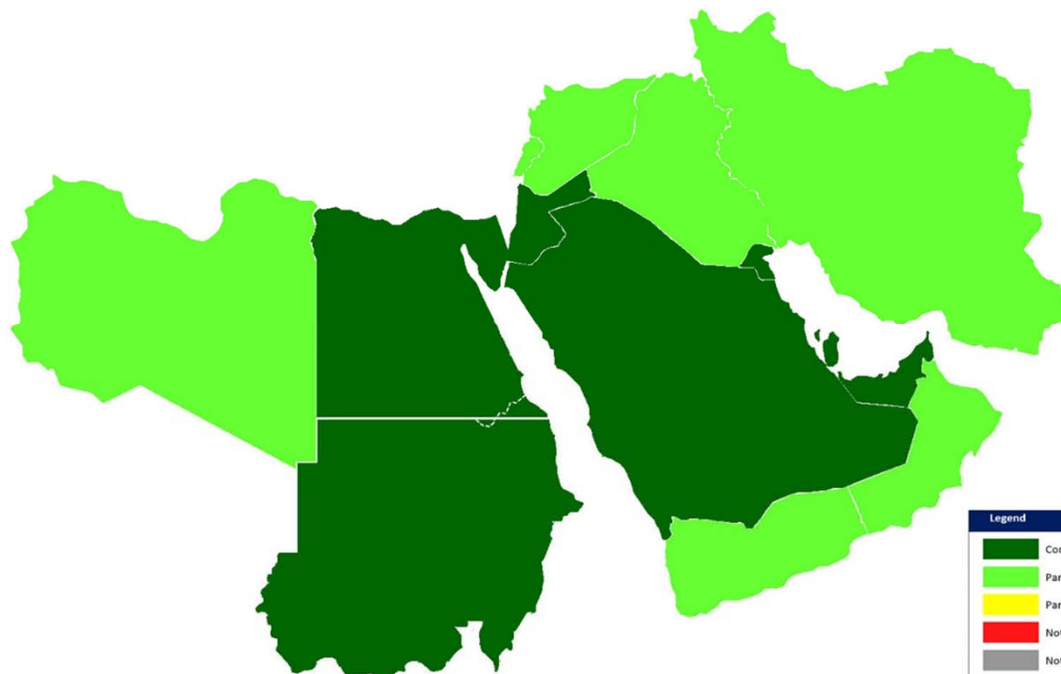
## B0-AMET Implementation - status

Module	Elements	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0-AMET	SADIS FTP	Green	Green	Red	Green	Green	Green	Green	Red	Green	Green	Green	Green	Red	Green	Green
	QMS	Green	Green	Green	Red	Green	Green	Red	Red	Red	Green	Green	Green	Red	Green	Red

The progress for B0-AMET is acceptable (with approximately 70% implementation).



### B0-AMET Status of implementation in the MID Region



Legend	
Dark Green	Completed
Light Green	Partially Completed (50%+)
Yellow	Partially Completed/Late (50%-)
Red	Not Started/Not Implemented
Grey	Not Applicable
Light Grey	Missing Data

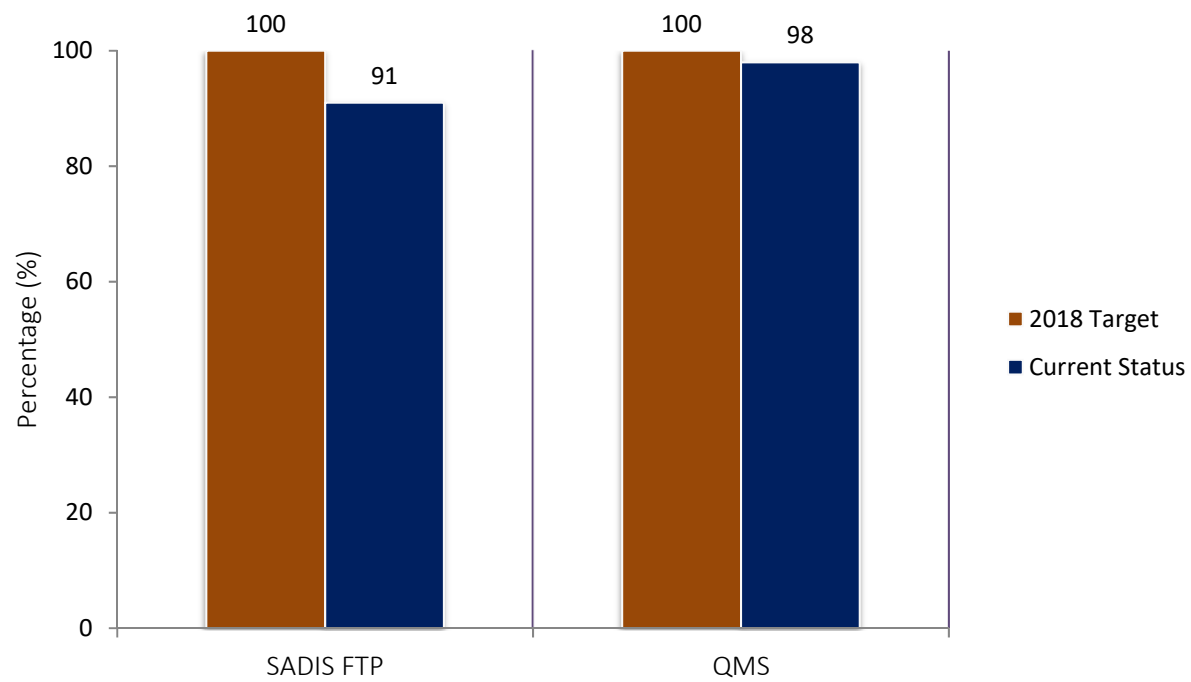


B0 – AMET: Meteorological information supporting enhanced operational efficiency and safety (EUR)			
Elements	Applicability	Performance Indicators/Supporting Metrics	Targets
SADIS FTP	All States	Indicator: % of States having implemented SADIS FTP service Supporting metric: number of States having implemented SADIS FTP service	100% by Dec. 2018
QMS	All States	Indicator: % of States having implemented QMS for MET Supporting metric: number of States having implemented QMS for MET	100% by Dec. 2018
VAAC	France, United Kingdom	Indicator: % of VAACs in or serving the EUR Region that provide Annex 3 volcanic ash products (Volcanic Ash Advisories (VAA) and Volcanic Ash Advisories in Graphic Form (VAG)) Supporting metric: number of States hosting a VAAC having implemented VAA/VAG	100% by Dec. 2016
VONA	Italy, Russian Federation, Spain	Indicator: % of Volcano Observatories in the EUR Region that provide volcano observatory notice for aviation (VONA) as per the Handbook on the International Airways Watch (IAVW) (Doc 9766) Supporting metric: number of States with Volcano Observatory having implemented VONA	100% by Dec. 2016



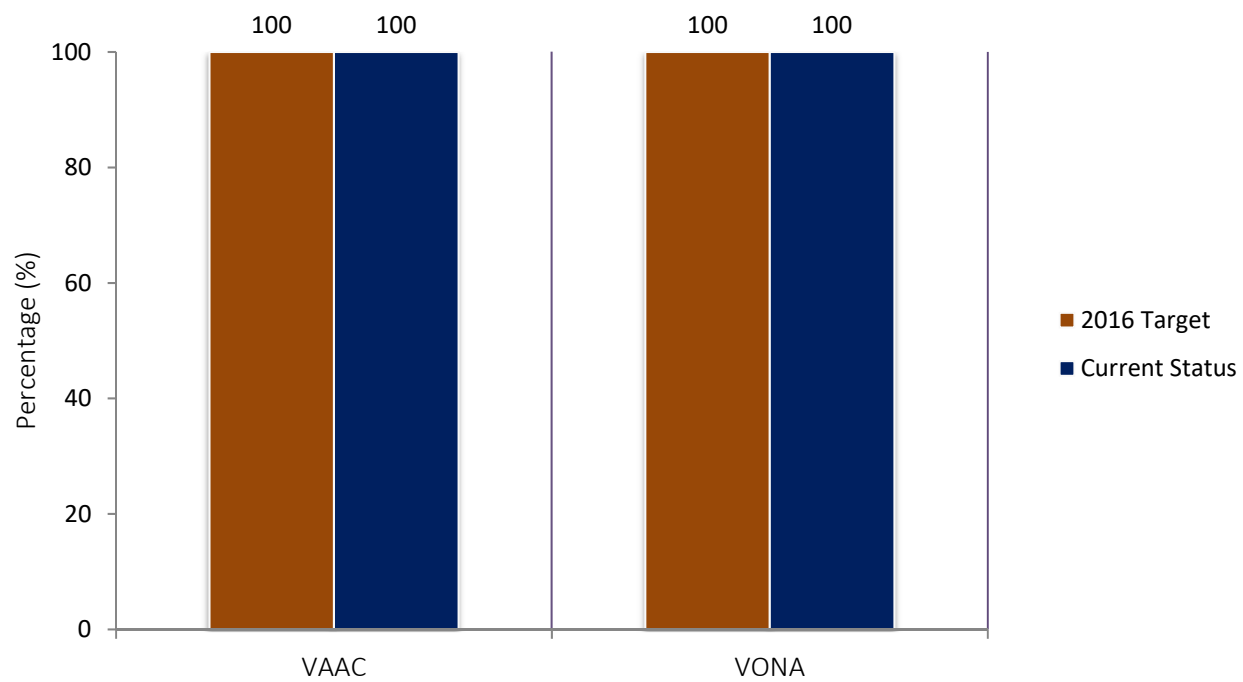


### B0-AMET Status of implementation in the EUR Region





### B0-AMET Status of implementation in the EUR Region



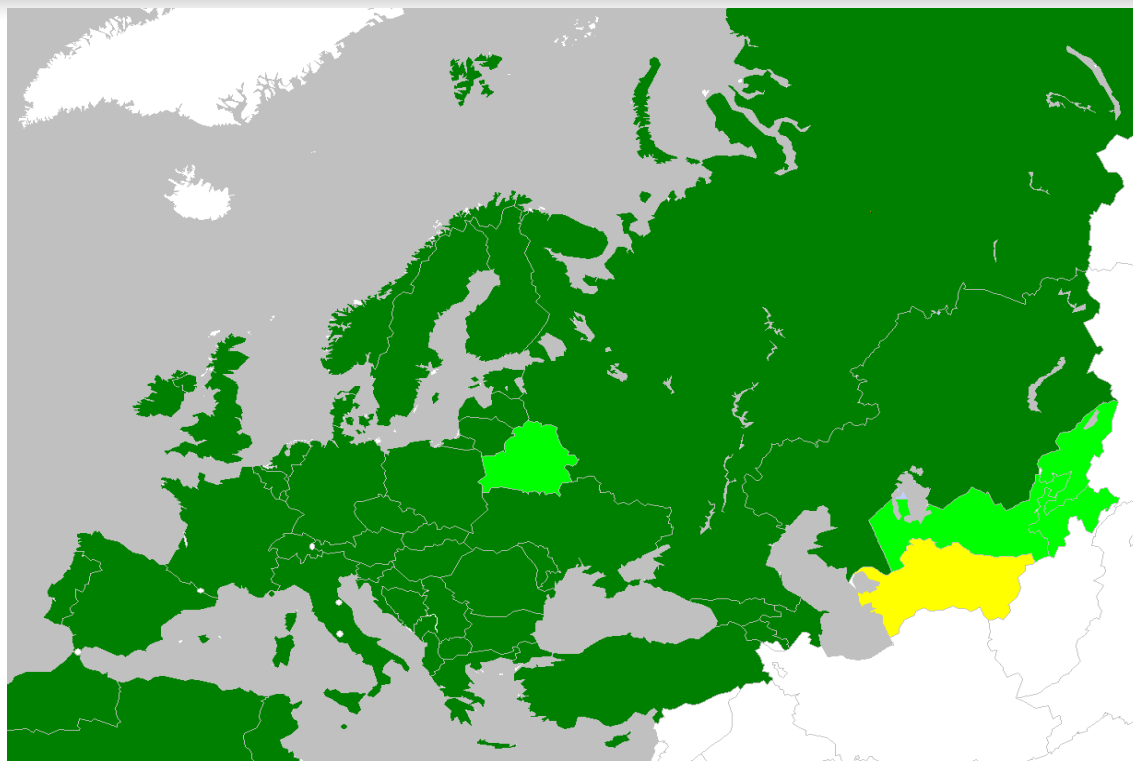




Module	Elements	Morocco	Netherlands	Norway	Poland	Portugal	Republic of Moldova	Romania	Russian Federation	Serbia	Slovakia	Slovenia	Spain	Sweden	Switzerland	Tajikistan	
B0-AMET	SADIS FTP	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
	QMS	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
	VAAC																
	VONA								█				█				

Module	Elements	FYROM	Tunisia	Turkey	Turkmenistan	Ukraine	United Kingdom	Uzbekistan
B0-AMET	SADIS FTP	█	█	█	█	█	█	█
	QMS	█	█	█	█	█	█	█
	VAAC						█	
	VONA							

The progress for B0-AMET is acceptable (with approximately 94% implementation).



- Legend
- Completed
  - Partially Completed (50%+)
  - Partially Completed/Late (50%-)
  - Not Started/Not Implemented
  - Not Applicable
  - Missing Data



## B0-AMET Implementation – challenges/lessons learned

- **Guidance material**

- *Regional differences in some guidance (e.g. SIGMET Guide)*
  - » *Guidance templates maintained by global group for consideration at regional level*
    - *This is also true for IWXXM implementation guide*
- *English Language Proficiency for MET in EUR Region not available until recently*
  - » *Global solution preferred – however, if impasse exists; regional solutions may assist in global ones*



## B0-AMET Implementation – challenges/lessons learned

- *Implementation time*

- *Lead time for some Annex changes challenging – publication July / applicability date November (software upgrades if TAF code changes, etc...)*

- » *Increase lead time from publication to applicability (IWXXM related provisions at least 18 months)*



## B0-AMET Implementation – challenges/lessons learned

- **Information management**

- *Information overload – volcanic ash information via SIGMET and NOTAM redundant as per previous ICAO EUR/NAT Volcanic Ash Contingency Plan (VACP)*
  - » *Updated VACP: NOTAM points to existing information (VAA/VAG and SIGMET) and is in accordance with Annex 15*
- *Basic functions involving multiple disciplines, States and Regions may not easily be performed (e.g. coordination on use of airspace in volcanic ash event)*
  - » *Conduct routine exercises; identify gaps and recommendations; practice again*
    - *operations have changed approach in real-time volcanic ash events based on exercises conducted*





## B0-AMET Implementation – challenges/lessons learned

- **Design**

- *Ambiguity in interpreting some standards (use of APRX)*
  - » *Avoid ambiguities (best practices not to use APRX)*
- *Interpretation issues*
  - » *Make effort that provisions are clear in all 6 ICAO languages*
- *Cost recovery for regional MET services not sufficient*
  - » *Being considered by MET Panel in light of future regional services (space weather centres, regional hazardous weather advisory centres)*



## B0-AMET Implementation – challenges/lessons learned

- *Performance Management*

- *Monitoring requirements is a challenge in that the elements needed in monitoring are not available (e.g. machine readable ICAO Doc 7910)*

- » *METG of EANPG requesting ICAO to provide machine readable ICAO Doc 7910 to monitor implementation and populate eANP Volume III*



## B0-AMET Implementation – challenges/lessons learned

- ***Training***

- *Smaller States may have issues in resources (time and money) needed for training*

- » *Consider consolidated services*



## B0-AMET Implementation – challenges/lessons learned

- **Safety**

- *Conflicting information such as SIGMET discontinuities at FIR boundaries can have negative impact on tactical decision making and flight planning*
  - » *Coordination with border States on issuance of SIGMET well underway in EUR and will be recommended in Annex 3*
  - » *Consider consolidated services (RHWAC)*



## B1-AMET Implementation

- ***Future implementation should consider***
  - ***Guidance material – timely; harmonized globally***
  - ***Technical infrastructure – coordination between MET and COM***
  - ***Information management – required information provided in a concise manner & practice information flow***
  - ***Design – avoid ambiguous provisions; language compatible; cost recovery for regional MET services needed***
  - ***Performance management – provide necessary documents in machine readable format so monitoring can succeed***
  - ***Monitoring of requirements developed by group under METG – significant resources needed to routinely monitor***
  - ***Training – consider consolidated services to reach critical mass needed to foster environment of training***
  - ***Safety – strive for harmonization and avoid conflicting information that could jeopardize safety***



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