

SESAR		Initial							LOC	
INF11.2		Cb-global capability and service								
REG	ASP	MIL	APO	USE	INT	IND	NM	MET	AIS	USP

Subject matter and scope

Cb-global capability uses data on cumulonimbus (Cb) clouds from geostationary satellites to detect, track, and nowcast thunderstorms in order to provide pilots an overview of the current weather hazard situation beyond the limited view of the on-board radar. It is relevant for the upper airspace en-route and enables a pilot to strategically plan a safe and smart flight route around the thunderstorms well ahead in time instead of flying tactical manoeuvres and searching for gaps between the thunder cells.

These Cb-global data are provided through the Cb-global service to be used in the cockpit. Hence, the service provides MET hazards information to the flight management operation of a civil airspace user operation centre allowing to improve flight planning.

Cb-global capability is a mature technology, developed during previous European research. SESAR expands this and addresses the delivery of Cb-global data through SWIM technical infrastructure. The data does not require real-time delivery so the service can be supported by SWIM technical infrastructure yellow profile.

The use of Cb-global as an additional strategic planning tool brings operational benefit. This benefit increases if the Cb-global information is used both in the air and on the ground for a common information sharing and common decision making.

It should be noted that other solutions were developed by MET Service Providers in SESAR1 and are already included in the SWIM Registry, which provide harmonised and consolidated observations and forecasts of enroute weather hazards for aviation.

Applicability Area(s) & Timescale(s)

Applicability Area (Note yet defined)			
Timescales:	From:	By:	Applicable to:
IOC used for Analytics functioning only - not for implementation planning	01/07/2022		
FOC used for Analytics functioning only - not for implementation planning		31/12/2030	

References

European ATM Master Plan

Ol step -	[POI-0048-MET]-MET Service provision for Convection Cell Information										
Enablers -	METEO-12c	METEO-14	METEO-22	SVC-047	SVC-048	SWIM-APS-06b					
Legend:	WXYZ-001	Covered by SLoA(s) in this objective	WXYZ-002 zzz	Covered by SLoA(s) in another objective Objective covering the enabler			WXYZ-003	Not covered in the Implementation Plan			

Applicable legislation

None

Essential Operational Changes

Digital AIM and MET Services

SESAR Solution

PJ.18-04b-02 - Cb Global capability and service

ICAO GANP - ASBUs

- none -

Deployment Programme

- none -

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European Plan for Aviation Safety

- none -

Operating Environments

Airport
En-Route
Network
Terminal Airspace

Stakeholder Lines of Action (SLoAs)

SLoA ref.	Title	From	By
INF11.2-USE01	Consume Cb-Global Service		
INF11.2-MET01	Upgrade systems to provide Cb-Global Capability		
INF11.2-MET02	Upgrade systems to provide Cb-Global Service		
INF11.2-MET03	Provide Cb-Global Service		

Description of finalised and deleted SLoAs is available on the eATM Portal @ https://www.eatmportal.eu/working/depl/essip_objectives

Expected Performance Benefits

Safety:	Enhanced safety.
Capacity:	-
Operational Efficiency:	-
Cost Efficiency:	Increased cost efficiency. Potential fuel savings.
Environment:	-
Security:	Enhanced security.

Detailed SLoA Descriptions

INF11.2-USE01	Consume Cb-Global Service	From:	By:
		-	-
Action by:	MET Providers		
Description & purpose:	Airspace Users may choose to upgrade their systems to be able to consume the Cb-global service via SWIM, noting that other solutions for identifying enroute weather hazards are also available on the SWIM Registry.		
Supporting material(s):	SJU - SESAR Solution PJ.18-04b-02: Data pack for Cb-global capability and service Url : https://sesarju.eu/sesar-solutions/improved-met-information-services		
ATM Master Plan relationship:	[SVC-047]-MET Hazard Enroute Observation Service [SVC-048]-MET Hazard Enroute Forecast Service [SWIM-APS-06b]-Provision of SWIM enabled G/G and initial Ground to Air Meteorological Information services		
Finalisation criteria:	1 - Systems are upgraded to consume Cb-global service via SWIM.		
INF11.2-MET01	Upgrade systems to provide Cb-Global Capability	From:	By:
		-	-
Action by:	MET Providers		
Description & purpose:	A MET Services Provider may choose to upgrade their systems to be able to compile data for a METHazardEnrouteObservation and METHazardEnrouteForecast services. This entails to further enhance all functionalities of the 4DWxCube and MET-GATE FB including satellite data to provide thunderstorm cell detection and tracking including forecasts. Systems need to be able to take the satellite data and products and prepare the METHazardEnrouteObservation and Forecast service payload. According to operational needs or filtering requirements from subscription process, the services will be adjusted and transferred via YP to the customer.		
Supporting material(s):	SJU - SESAR Solution PJ.18-04b-02: Data pack for Cb-global capability and service Url : https://sesarju.eu/sesar-solutions/improved-met-information-services		
ATM Master Plan relationship:	[METEO-12c]-Compile data for METHazardEnrouteObservation and METHazardEnrouteForecast services		
Finalisation criteria:	1 - Systems are upgraded.		
INF11.2-MET02	Upgrade systems to provide Cb-Global Service	From:	By:
		-	-

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Action by:	MET Providers		
Description & purpose:	A MET Service Provider may choose to upgrade their systems to be able to: <ul style="list-style-type: none"> • Collect and consolidate information about convection phenomena with focus on thunderstorm objects. • Abstract and process input data like radar, satellite and lightning data to derive convection cells. for the purpose of providing the Cb-Global Capability. 		
Supporting material(s):	SJU - SESAR Solution PJ.18-04b-02: Data pack for Cb-global capability and service Url : https://sesarju.eu/sesar-solutions/improved-met-information-services		
ATM Master Plan relationship:	[METEO-14]-C07 Cb (thunderstorm) nowcasting [METEO-22]-Processing of Convection Cell detection		
Finalisation criteria:	1 - Systems are upgraded.		
INF11.2-MET03	Provide Cb-Global Service	From:	By:
		-	-
Action by:	MET Providers		
Description & purpose:	A MET Service Provider may choose to provide Cb-Global Service via SWIM Yellow Profile and in particular: <ul style="list-style-type: none"> • A MET Hazard Enroute Observation Service, handling actual significant weather phenomena for immediate assessment by consumers • A MET Hazard Enroute Forecast Service, handling Nowcast (D -2hours, 3D, Probability factor) and Forecast (d-2 hours to 7days, 3D, Probability factor) of significant weather phenomena for assessment by consumers. 		
Supporting material(s):	SJU - SESAR Solution PJ.18-04b-02: Data pack for Cb-global capability and service Url : https://sesarju.eu/sesar-solutions/improved-met-information-services		
ATM Master Plan relationship:	[SVC-047]-MET Hazard Enroute Observation Service [SVC-048]-MET Hazard Enroute Forecast Service [SWIM-APS-06b]-Provision of SWIM enabled G/G and initial Ground to Air Meteorological Information services		
Finalisation criteria:	1 - Cb-Global Service ia available via SWIM Yellow Profile.		

