



Report from the CGMS WGI Task Group on the Coordination of LEO Orbits

Presented to CGMS-51 WG-I session, agenda item 6.1
Andrew Monham (EUMETSAT)

Summary of Work Performed

CGMS-44, 45, 46 WGI	CGMS agency best practices in support to local and regional processing of LEO direct broadcast data		
CGMS Agency Best Practices in support to Local and Regional Processing of LEO Direct Broadcast data (J. Gonzales Picazo)	CGMS to consider the advantages of orbital phasing between satellites as a measure for reducing pass scheduling conflicts and maximising the amount of instrument observation collected. <i>No formal action raised in CGMS-44 / 45.</i>	CGMS-44-EUMETSAT-WP-07	24/02/2017
		CGMS-45-EUMETSAT-WP-32	30/05/2017
Update of CGMS agency best practices in support to local and regional processing of LEO direct broadcast data. (S. Burns)	WGI/AI 46.02: Present the current operational orbit maintenance strategy, input to discussion of orbital phasing between satellites as measure for reducing pass scheduling conflicts and maximising the amount of instrument observation collected, with view to producing future best practice.	CGMS-46-CGMS-WP-15	18/05/2018

- Initial discussions on advantages of LEO orbit coordination arose in the Direct Broadcast papers (above)
- Eventually led to specific action in CGMS-46 leading to progressive analysis from CGMS-47 onwards (next slides)
- Formation of dedicated Task Group following CGMS-48.
- Final Terms of Reference is provided in Annex to the Word Document

Summary of Work Performed

CGMS-47, 48, 49 WGI	System technical aspects (sharing/rationalisation of orbits) and operational aspects on the implementation of contingency plans	
Coordination of LEO orbits – An analysis (A. Monham)	Responded to A46.02. Presented analysis of drivers / constraints in coordinating LEO satellite orbits & potential gains in terms of improved mission return and ground resource usage efficiency. A47.10 raised to produce simulation algorithm A47.11 raised to produce Best Practice	CGMS-47-EUMETSAT-WP-09 19/05/2019 PPT
Coordination of LEO orbits – Outcome of simulations (A. Monham)	WGI/A48.08: The Task Group to check work performed for: <ul style="list-style-type: none"> • applicability to operational and planned missions • assess formulation of a BP on coordination of LEO orbits • determine further work required on the simulation tool 	CGMS-48-EUMETSAT-WP-04 25/05/2020 PPT
Best Practice for the Coordination of LEO Orbits – Progress and Next Steps (A. Monham)	Closed A48.08. New actions: WGI/A49.05: Issue Draft BP on Coordination of Data Acquisition for LEO Satellite Systems (with uncoordinated / variable orbital phasing) WGI/A49.06: Perform a broad SWOT analysis for maximising the return / minimising the cost taking into account new mission and reference mission concepts and associated technologies, highlighting the potential for inter-Agency cooperation	CGMS-49-EUMETSAT-WP-05 09/04/2021 PPT

Summary of Work Performed and Way Forward

CGMS-50 WGI	Coordination of LEO Orbits		
Report from the CGMS WGI Task Group on the Coordination of LEO Orbits (A. Monham)	Closed WGI/A49.06 with new action: WGI/A50.09: Work with DB group to provide consolidated SWOT analysis, including usage of emerging technologies for Low Latency Data Access from LEO satellites for both global and regional data	CGMS-50-EUMETSAT-WP-01	22/04/2022 PPT
Proposed Best Practices for the Coordination of Data Acquisition for Low Earth Orbit Satellite Systems (J. McNitt)	Closed WGI/A49.05: 3 BPs proposed for coordination of satellite systems with variable orbital phasing. WGI/A50.10: Review overlap with DB BPs (CGMS/DOC/18/1008274)	CGMS-50-NOAA-WP-05 PPT	20/04/2022 2

- Consolidated Report of the DB TG and LEO Coordination of Orbits TG provided under CGMS-51 WGI Agenda Point 4.1. *CGMS-51-WGI-WP-06*
- Proposed that TG activities merge into a single Low Latency Data Access TG covering both global and regional mission objectives.
- BPs will be consolidated under this new TG: *CGMS-51-WGI-WP-06* , *CGMS-51-CGMS-WP-02*
- Refer to CGMS-51-WGI-WP-06 for formal recommendations and proposed actions.

