2022

Report from the CGMS WGI Task Group on RFI

Presented to CGMS-53 Working Group I session, agenda item 7.1

Coordination Group for Meteorological Satellites

Agency CGMS, version 2, Date 25 Mar 2025

Executive summary of the WP

Working Group I tasked the TGRFI (Task Group on RFI detection, monitoring and mapping) to continue pursuing the establishment of a proposed set of best practices for CGMS-53 based on the common aspects of the approaches already adopted by members and to explore the potential / existing uses of AI/ML and pattern recognition in RFI detection.

This presentation outlines the Task Group status, describes its activities in the past year and the plans for the coming period.

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TGRFI Membership

The current membership of the TGRFI, including guests:

Organization	Name	
CMA	NIE	Jing
CMA	WU	Shengli
ECCC	Alec	Casey
ESA	Yan	Soldo
EUMETSAT	Markus	Dreis
EUMETSAT	Simon	Elliott
EUMETSAT*	Karolina	Nikolova
KMA	Dohyeung	Kim
NOAA*	Beau	Backus
NOAA	Skip	Dronen
WMO	Jesse	Andries
Guest	Phillippe	Tristant

*Note that Karolina Nikolova is the rapporteur and Beau Backus chairs the task group.

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TGRFI Terms of Reference

The tasks of the TGRFI team for this year are:

- Analyze the inputs provided by CMA, EUMETSAT, KMA, and NOAA on spectrum concerns and activities on RFI detection, monitoring, and mapping and…

- Continue to pursue the establishment of a proposed set of best practices by CGMS-53 based on the common aspects of the approaches already adopted by members.

- Continue to explore the potential / existing uses of AI/ML and pattern recognition in RFI detection.

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TGRFI Meetings

The TGRFI team met five times this cycle.

Meeting	Date	Comments
Intersessional #1	22 Oct 2024	First meeting. Reviewed documents and path forward.
Intersessional #2	13 Nov 2024	Discussed member input. Identified AI/ML capabilities should also be included in RFI Best Practices.
Intersessional #3	10 Jan 2025	Document summary and scope addressed.
Intersessional #4	5 Feb 2025	Explored uses of AI/ML and pattern recognition for RFI detection. Continued work on Best Practices.
Intersessional #5	10 Feb 2025	Additional meeting added to provide additional time for completing work on document and report.

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TGRFI Upcoming Activities

The Task Group's next requested tasks are to :

- Complete a draft proposed set of best practices for data communications (e.g. DCS) RFI for the next cycle, based on the common aspects of the approaches already or planned for adoption by members for endorsement by CGMS-54.

- Identify RFI detection and mitigation related AI/ML and pattern recognition projects that may overlap between organizations or require some level of cognizance between organizations.

- Six intersessional meetings have been tentatively planned.

  - The first is scheduled on 29 July 2025.

  - The remaining are tentatively planned for 11 September, 16 October, 27 November, 15 January, and 12 February 2025.

  - Additional dates may be scheduled based on the progress made by the team.

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Key issues of relevance to CGMS:

➢ "CGMS Agency Best Practices for RFI Detection, Monitoring, and Mapping for Remote Passive Sensors" to be considered for endorsement

➢ Report "Explore Potential Future and Existing Uses of AI, ML and Pattern Recognition for RFI Detection and Mitigation in Remote Sensors"

➢ Request TGRFI continue with best practices work on data communications RFI and further exploration into AI/ML and pattern recognition developments.

➢ Reference to HLPP 2.2 Radio Frequency (RF) Protection.

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To be considered by CGMS:

➢ CGMS WGI is invited to:

  ➢ Consider and approve the updated TOR for TGRFI

  ➢ Review and, if appropriate, approve for CGMS-53 Plenary endorsement the "Best Practices for RFI Detection, Monitoring, and Mapping for Remote Passive Sensors"

  ➢ Review the Report "Explore Potential Future and Existing Uses of AI, ML and Pattern Recognition for RFI Detection and Mitigation in Remote Sensors" and, if appropriate, recommend the report to CGMS-53 Plenary

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