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## **NAV WG Report to MOIMS**

The Hague, Netherlands  
Fall 2023

David Berry (NAV WG Chair)  
Frank Dreger (NAV WG Deputy Chair)

# MOIMS/Nav Meeting Demographics



Agency	NAV WG	
CNES	1	Alain Lamy
CNSA		
CSA		
DLR	1	Ralph Kahle
ESA	5	Frank Dreger, Vitali Braun, Jose Miguel Lozano, Daniel Fischer, Klaus Jurgen Schulz
JAXA	3	Hideaki Hinagawa, Kiyoshi Hamada, Miriam Sawczuck
NASA	6	David Berry, Juan Crenshaw, Cheryl Gramling, Julie Halverson (virtual), Dan Oltrogge (virtual), Patrick Zimmerman
ROSCOSMOS		
UKSA	1	Brian Swinburne
Others	2	Julien Bernard (SANA), Robert Rovetto (Ontologos)
<b>Total</b>	<b>19</b>	
<b>Meeting Duration</b>	<b>5 days</b>	
<b>Agency Diversity</b>	<b>6</b>	

# NAV WG Executive Summary



## **Achievements for this meeting cycle:**

- Completed participation in the special LunaNet briefing 08-Nov-2023. Nav WG member Cheryl Gramling was a main presenter; she has been assigned an action item to prepare a "Concept Paper" discussing potential new and/or existing CCSDS Navigation WG standard(s) that will support LunaNet.
- Completed discussion of Conjunction Data Message V.2 Pink Book comments from internal technical + proofreading review of Pink Book P1.0.6
- Completed Reconfirmation of Pointing Requests Message now that recent Corrigendum has been published
- Continued discussion of plans for content updates in Tracking Data Message V.3 draft
- Resumed discussion of Navigation Events Message in preparation for initial draft
- Continued discussion of NDM/XML V.4 Pink Book draft 3.0.1 and issues with the document schedule
- Completed review of the Concept Papers for 2 potential new projects, and completed preparation of proposal for new project for one of them ("Fragmentation Data Message") and requested CMC Poll.

## **Working Group Status:**

Active, "High Momentum" with very good attendance.

## **Interaction with other WGs:**

- Met with CSTS/TD WG to discuss changes in the Tracking Data Message that will affect the 922.2 Blue Book.
- Met with a representative of SANA Operator Team to discuss various topics related to Nav WG use of SANA

## **Problems and Issues:**

- Room was a bit small for the size of our group, but we managed. Some audio difficulty with virtual attendees.

# NAV WG Executive Summary



## Resolutions agreed upon this meeting:

- NAV-01: The Navigation WG thanks ESA/ESTEC for the fine meeting facilities, refreshments, and audio/visual support!
- NAV-02: To "Reconfirm" the Pointing Request Message 509.0-B-1
- NAV-03: To cancel the Draft Project "Navigation Hardware Message" and remove it from the IOAG-CCSDS Product Agreements. (The need for this document has been superseded). See column "IOAG Priority" at link <https://cwe.ccsds.org/fm/Lists/Projects/AllOpenChartersWithDraftProjects.aspx>, Charter : 2.02 Navigation Working Group
- NAV-04: To create a new project "Fragmentation Data Message" (already a Draft Project, CMC Poll needed)

## Further Resolutions anticipated in the next 6 months:

- NAV-05: To submit the Conjunction Data Message Pink Book 1.0.7 for Secretariat Data Processing and Agency Review
- NAV-06: To submit the Navigation Data Messages/XML Specification Pink Book 3.0.x for Secretariat Data Processing and Agency Review
- NAV-07: To create a new project "Navigation Functions Message"

# NAV WG Executive Summary



## Planning (only approved Projects):

Area & WG name	CCSDS Ref Nr	Document Title	Status / Comments	Start and / or Target Publication Date
MOIMS NAV	503.0	Tracking Data Message (TDM) Version 3 Revision	Very good progress. Spent considerable time discussing planned tracking data message changes in preparation for Pink Book 2.0.2 draft. Had joint meeting with CSTS working group regarding CSTS/TD (tracking data) real time application.	Start date: 06-May-2019 End date: 30-Aug-2026
MOIMS NAV	504.0	Attitude Data Message (ADM) 5 Year Review Revision	No discussion in this meeting, but overall very good progress because the document is currently in CESA "Approval to Publish" polling.	Start date: 16-Apr-2015 End date: 31-Dec-2023
MOIMS NAV	505.0	Navigation Data Messages XML Specification Version 4 Revision	Acceptable progress. Discussed issues with the schedule due to the gap between publishing the ADM and this companion document.	Start date: 06-Jan-2023 End date: 15-Jan-2025
MOIMS NAV	507.0	Navigation Events Message (NEM)	Refresher presentation for this deprioritized project was discussed in these meetings. "End date" likely needs an extension.	Start date: 07-Nov-2017 End date: 30-Nov-2024
MOIMS NAV	508.0	Conjunction Data Message 5 Year Revision	Very good progress. Completed discussion of issues raised to date during internal review of Pink Book P1.0.6, prepared Pink Book 1.0.7 to be submitted for Secretariat Document Processing and Agency Review.	Start date: 14-Jan-2019 End date: 30-Nov-2024
MOIMS NAV	509.0	Pointing Request Message	Completed publication of revised Blue Book with planned Corrigendum, approved plan to Reconfirm the Blue Book.	Start date: 11-Apr-2023 End date: 06-Nov-2023
MOIMS NAV	<<To be chosen by Secretariat>>	Launch Data Message	No discussion in this meeting. Lead Editor current commitments are being completed, then this effort will start in earnest.	Start date: 01-Aug-2023 End Date: 01-Dec-2025

# NAV WG Upcoming New Work Items



Area and WG name	CCSDS Ref Number	Document Title	Target Start / Publication Date	Resources Needed (total, Editor, Proto 1, Proto 2)				Comments Rationale What if not started?	
				TOTAL	EDITOR	PROTO1	PROTO2		
MOIMS NAV	<<To be chosen by Secretariat>>	Fragmentation Data Message	01-Jan-2024 30-Nov-2026	2024	6	6	0	0	Current variety of non-standard analyses will persist.
				2025	6	2	2	2	
				2026	14	2	6	6	

# NAV WG Issues for CESG/CMC



## Minor Issue Related to CCSDS Draft Projects and Concept Papers

- Note that the CCSDS A02.1-Y-4 "Organization and Processes for the Consultative Committee for Space Data Systems" states in 6.1.1 "Every CCSDS document (or family of related documents) starts out as a CCSDS concept paper".
- A02.1-Y-4 contains extensive discussion about the purpose, content, etc. of concept papers, but there is no current way to associate a concept paper with a Draft Project on the CWE when a CMC Poll is requested (<https://cwe.ccsds.org/fm/Lists/Projects/AllOpenChartersWithDraftProjects.aspx>).
- It seems logical that a Concept Paper could be attached to the Draft Project form.