

## THE CCSDS NAVIGATION WORKING GROUP TECHNICAL PROGRAM 2012

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### ABSTRACT

The status of the technical program of the Consultative Committee for Space Data Systems (CCSDS) Navigation Working Group has been presented at the ISSFD meetings in 2004 and 2007 (see References 1, 2). The focus of these two papers was the set of three areas of standardization that then constituted the technical program of the working group, specifically, exchanges of orbit data, attitude data, and tracking data. Since 2007, substantial progress has been made on completing the technical program as it was then constituted and a number of new work items have been identified and added to the technical program. Accordingly, it is time for an update.

At the time of the 2004 paper, none of the three standards had been finalized, and only one was close to being approved by the CCSDS Management Committee as a CCSDS "Blue Book" international standard. By the time of the 2007 paper, one of the three standards (the Orbit Data Messages) had been finalized but was undergoing a semi-major revision; the other two standards (the Attitude Data Messages and Tracking Data Message) were relatively close to being completed. The last standard in the "big three" set of standards that were part of the initial technical program was completed in 2010. Recognizing that the works for which it had originally been chartered were nearing completion, in the fall meetings of 2008 the Working Group began considering as a regular part of its agenda further opportunities for standardization of flight dynamics information exchanges. Several ideas have emerged since that time and have been added to the Charter of the Working Group, and active development has been initiated on most of them.

This paper will include a brief overview of the CCSDS and its standards development process, as well as the current composition of the CCSDS Navigation Working Group. The bulk of the paper will describe the Technical Program of the Working Group, both those standards that have been completed and those that are currently in progress or just starting. The main topics will include things such as the current status of infusion into operations of the approved standards,

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\* In order to file this abstract prior to the deadline, the list of co-authors and required contact information will be deferred at this time. Potential co-authors from the CCSDS Navigation WG will be polled as to their interest in participating. The co-authors will be some subset of the following set of lead editors of documents that constitute the WG Technical Program: Jürgen Fertig (ESA/ESOC), Denise Kaya (USAF/JSpOC (Ret)), Duane Bird (USAF/USSTRATCOM), Francisco Martinez Fadrique (GMV), Alain Lamy (CNES), Joseph Hashmall (NASA/GSFC), Juan C. Raymond (NASA/GSFC), and Karen V. Richon (NASA/GSFC).

brief description of the new works in progress, how the new work is distributed across the participating agencies, and the notional schedule for completion of these new standards.

### References

1. Martin-Mur, Tomas, et. al, "Exchange of Standardized Flight Dynamics Data", Proceedings of the 20th International Symposium on Space Flight Dynamics, Munich, Germany, 2004.
2. Van Eepoel, John, et al., "Standardizing Navigation Data: A Status Update", Proceedings of the 20th International Symposium on Space Flight Dynamics, Annapolis, Maryland, USA, 2007.