

# IOAG TERMS OF REFERENCE

Issue 4.0 dated February 2014



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***For the***

***Interagency Operations Advisory Group  
(IOAG)***

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## **PREAMBLE**

Budget and workforce constraints have required all space agencies to explore methods for increasing their efficiencies. One approach is to increase cooperative programs wherein two or more international space agencies jointly design, build, launch, and operate a space flight mission. Frequently, one space agency designs, builds, and launches a spacecraft, integrating instruments from both agencies, while another agency provides tracking, data capture, and possibly even operations support. In a multiple-agency model, these functions can be distributed over several separate agencies.

This trend towards increased international cooperation was recognized and the Inter Agency Consultative Group (IACG), the Consultative Committee for Space Data Systems (CCSDS), and the Space Frequency Coordination Group (SFCG) were formed to address specific matters arising from increased inter-agency cooperation. These groups have produced many successful cooperative programs and standards, which have mitigated risks and reduced the operating costs for all participating organizations.

While great progress has been made, complete interagency interoperability has yet to be achieved. Complete interagency interoperability for cross-support is needed to realize the additional economies resulting from an ability to share the large capital investments made by each agency in mission support systems. For that purpose the first Inter-Operability Plenary (IOP) Meeting was convened in 1999 in Paris. Six agencies met to agree upon a framework to achieve interoperability. The IOP established an Interagency Operations Advisory Group (IOAG) to resolve issues associated with achieving interagency interoperability.

The IOAG provides a forum for identifying common needs across multiple agencies for coordinating operations topics in the domain of space communications, navigation, and mission operations. These operations topics include policy high level procedures, technical interfaces and other matters related to interoperability. The IOAG was founded by the IOP to: 1) understand issues related to inter-agency interoperability in space operations and other space communications and navigation matters; 2) identify solutions complying with IOP policies; and, 3) inform the IOP regarding specific actions assigned by the IOP. The IOAG shall rely primarily on technical work already completed by other organizations developing standards and interoperability agreements for space systems such as the CCSDS and SFCG. Moreover, when a deficiency is discovered, the IOAG may recommend to such standards organizations that they include these missing areas in their plan of work.

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The IOAG is intended as a forum for issues and needs related to interoperability and cross support that extend across multiple agencies. Items involving only two agencies are better covered in existing bilateral venues, such as Interagency, Tracking, Communications, and Operations Panels (ITCOPs). IOAG member agencies holding bilateral discussions with other agencies, whether they be IOAG members or not, should report those results to the IOAG.

## **PURPOSE**

These Terms of Reference (TOR) establish the framework agreement under which the IOAG shall operate. The Objectives below, when read in combination with the *IOAG Procedures Manual*, define the scope of IOAG activities and the methods used to accomplish that work.

## **OBJECTIVES**

The IOP charges the IOAG to continue as the international focal point for fostering and leading interoperable space communications and navigation matters for cross support of spaceflight missions. The IOAG will undertake activities it deems appropriate related to multi-agency space operations. A specific IOAG goal is the achievement of full interoperability among member space agencies. This goal will be obtained by holding periodic meetings in accordance with the procedures set forth in the *IOAG Procedures Manual*. The following activities support IOAG objectives by identifying cooperative programs and projects proposed by IOAG member agencies and other organizations in the context of potential candidates for space communications cross-support. Specific objectives are:

- a). Identifying the space and ground communication and navigation support capabilities needed by potential cooperative programs and projects to achieve their scientific objectives, and maintaining a corresponding cross support mission model.
- b) Identifying the space and ground mission operation systems and services needed by potential cooperative programs and projects to achieve their scientific objectives, and maintaining a corresponding cross support mission model.
- c) Maintaining a catalog of recommended cross supported services and associated interoperable ground and space facilities deployed and operated by the space agencies.
- d) Promoting the use of internationally recognized standards (for communications, navigation, and mission operation standards) in the design and implementation of cooperative flight programs including spacecraft, ground and space based communication assets.

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- e) Monitoring the work of relevant standards organizations and assisting in the agreement, adoption and implementation of new standards by space agencies.
- f) Based on identified future cross support scenarios, or based on practical experience and feedback from actually performed cross support, IOAG shall ascertain inconsistencies in cross support services and standards, and inform relevant standards organizations (such as the CCSDS or SFCG), using methods described in the *IOAG Procedures Manuals*, inviting them to update existing standards or to develop new international standards.
- g) Establishing recommendations for priorities for the implementation of cross supported services and associated interoperable ground and space facilities needed to achieve full interoperability and enunciating policies furthering interoperability. Such IOAG priorities and policies should be passed for consideration to relevant organizations and to the IOP Delegates, using methods described in the *IOAG Procedures Manual*.
- h) Assessing the resources needed to implement these requirements and inviting IOP Delegates to make these resources available within their agencies.
- i) Working with other bodies (such as CCSDS) to establish technical or reference architectures that will enable operations interoperability and cross support across the member space agencies.
- j) Encouraging the sharing and distribution of operational techniques to accelerate the deployment of interoperable solutions.

Other specific objectives may be added to the TOR as they are identified.

These Terms of Reference can be modified by record vote at any regularly scheduled IOAG meeting or following a polling via email. The modification is deemed approved if a quorum of IOAG member agencies are present or are represented by absentee ballot, provided that a majority of the member agencies (at least 60%) vote in favor of such changes. Proposed changes shall be submitted, in writing, to all Delegates of record not later than two weeks prior to the start of an IOAG meeting.

## **MEETING PROCEDURES AND PROCESSES**

Meeting procedures, processes, and roles are fully described in the IOAG Procedures Manual.