

INTERAGENCY OPERATIONS ADVISORY GROUP

Work Plan 2010

1 Introduction

The overall scope of the Interagency Operations Advisory Group (IOAG) is to undertake activities to establish a multi-agency coordination related to space cross support and space communications. A specific IOAG goal is the achievement of full interoperability among member space agencies.

To achieve these goals, some permanent objectives are defined in the IOAG Terms of Reference; the InterOperability Plenary (IOP) has also assigned some specific ones, as described in Section 2.

This Work Plan details the IOAG work objectives for 2010 and defines an associated implementation plan. The work objectives for the next several years are also identified in a less detailed format, so as to highlight the need for continuity in some tasks or the objective to initiate new activities. However, it is anticipated that the IOAG work plan will be updated on an annual basis; in particular, to be more accurate on medium term objectives and on the implementation schedule.

The IOAG work plan 2010 responds to 3 overarching strategic objectives:

- Establish all elements of the IOAG organization required to make it fully operational, in particular in its role of international focal point for matters related to cross support in the space communication and navigation domain.
- Continue effective and value added use of the IOAG in 2010 with achievements which further the goals of IOAG and are of mutual benefit to the participating Agencies and to the interfacing organizations.
- Increase the visibility of IOAG by communicating its existence and purpose to relevant international groups and organizations.

2 Objectives

The objectives of IOAG are defined in its Terms of Reference and are also driven by the IOP-2 communiqué (see Annex-1).

The IOAG work for 2010 has been classified into four activity lines: (i) core tasks (section 3), (ii) tasks performed in collaborations with other existing international groups/organizations (section 4), (iii) improvement of IOAG internal processes (section 5); and (iv) reporting activities (section 6).

The tables in Annex-2 define the tasks, identify the activities, the implementation approach and the expected outcomes for the tasks of the year 2010 and their continuation in the following ones, as applicable. The connection between the core tasks and both the objectives assigned by the IOP-2 or the ones in the IOAG Terms of Reference are also identified.

3 Core Tasks 2010

IOAG tasks are classified as core tasks if their implementation is primarily performed by IOAG (and not other unrelated working groups) and if they lead within 2010 to clearly identified and concrete outcomes.

Three core tasks have been identified for 2010:

- Core 10.1 = Improvement of presentation and visibility of the IOAG Mission Models, Communication Assets and Standards Infusion Plans
- Core 10.2 = Initial definition of a multipoint Cross Support Service Catalog
- Core 10.3 = Draft definition of a Solar System Internetwork Operations Concept and candidate Architecture (IP and DTN)

It is noted that, as the IOAG Terms of Reference and the IOAG Procedures Manual were revisited in 2009, there is no plan to update or maintain them in 2010.

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Also, the recent endorsement of the IOAG Service Catalog # 1 is to be noted as this was a key objective assigned by the IOP-2.

4 Tasks in collaboration with other organizations

The role of IOAG with existing groups, as directed by the IOP-2, will be primarily to coordinate the aspects to space communications and navigation, for ensuring the consistency of the tasks conducted by the different communities.

Four strategic tasks have been identified for 2010:

- Liaison 10.1 = Definition and implementation of a liaison with the International Space Exploration Coordination Group (ISECG) to collect their requirements in the domain of Space Communications and Navigation.
- Liaison 10.2 = Definition and implementation of a liaison with the International Lunar Network (ILN) to collect their requirements in the domain of Space Communications and Navigation.
- Liaison 10.3 = Continuation and improvement of the existing liaison with the Consultative Committee for Space Data Systems (CCSDS) to better convey the requirements from the IOAG and the users' communities in a timely manner relative to the domain of the standards for Space Communications and Navigation. Joint meeting, London, to clarify position and interfaces between IOAG and CCSDS.
- Liaison 10.4 = Continuation and improvement of the existing liaison with the Space Frequency Coordination Group (SFCG) to better convey the requirements from the IOAG and the users' communities in a timely manner relative to the domain of the frequencies and spectrum for Space Communications and Navigation.

As a first activity for all of the tasks listed below, the identified organizations and working groups need to be approached for consolidating the tasks objectives and work to be performed. It has to be verified what can be achieved within 2010.

5 Initiatives for improvement of IOAG internal processes

In many areas of IOAG activities, the flow of information within the IOAG, with external organizations of interest and with the agencies or their partners is critical with respect to the overall efficiency of the organization. The special tasks assigned to the Secretariat for an improvement of the tools and methods used in the various procedures of the IOAG are also identified as "Processes 10.1" in the Annex-2.

6 Reporting Activities

IOAG will develop a synthetic annual report to inform the participating Agencies about the activities and achievements of IOAG. The IOAG Chairman will develop this annual report, with the support of the Secretariat, utilizing inputs from all participating Agencies and reporting in particular on the execution of the 2010 activities as described in the present work plan.

The Annual Report will be deposited on the public web site of IOAG in the first quarter of 2011.

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ANNEX-1: REMINDER ON IOAG OBJECTIVES

According to its Terms of Reference, areas for consideration for the IOAG objectives and activities include:

- ToR (a) Identifying the space and ground networks support capabilities needed by potential cooperative programs and projects to achieve their scientific objectives.
- ToR (b) Maintaining a list of interoperable facilities and services operated by the space agencies.
- ToR (c) Promoting the use of internationally recognized standards in the design and implementation of cooperative flight programs including: spacecraft, ground and space networks.
- ToR (d) Monitoring the work of relevant standards organizations and assisting in the agreement, adoption and implementation of new standards by space agencies.
- ToR (e) Identifying inconsistencies in the data transmission, capture, handling, and processing systems used by agencies. The IOAG should inform relevant standards organizations (such as the CCSDS or the SFCG) of these inconsistencies, using methods described in the IOAG Procedures Manuals, as well as the IOP Members, inviting them to undertake the development of new international standards.
- ToR (f) Establishing priorities for the implementation of systems and services needed to achieve full interoperability and enunciating policies furthering interoperability. Such priorities should be passed to relevant organizations and to the IOP Delegations.
- ToR (g) Assessing the resources needed to implement these requirements and urging IOP Delegations to make these resources available within their agencies.
- ToR (h) Defining and maintaining a reference architecture that will enable interoperability and cross support across space agencies (this could be the Space Internetworking Strategy Group (SISG) Operations Concept and Architecture document).
- ToR (i) Encouraging the distribution of communication and navigation techniques to accelerate the deployment of interoperable solutions.

At the 2nd InterOperability Plenary meeting (IOP-2) which was held on 8 to 10 December 2008 in Geneva, the objectives of the IOAG for the upcoming years were established. As the parent organization of the IOAG, the IOP-2 then adopted the following resolutions that task the IOAG on some additional and specific objectives:

- IOP 2 (1). 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, and approves the amended IOAG Terms of Reference dated June 2007. IOAG participating Agencies should strive to comply with the IOAG's strategic guidance.
- IOP 2 (2). The IOP considers it as strongly beneficial for the IOAG to admit Membership of those Agencies having significant and relevant missions and assets respectively requiring and providing space communications and navigation cross-support. The IOAG is encouraged to invite observers from other Agencies to participate in IOAG meetings as deemed necessary.
- IOP 2 (3). Furthermore, IOAG organizational processes should be adapted to collect and process in a timely manner all the space communications and navigation requirements of other international space coordination groups (e.g., the International Space Exploration Coordination Group [ISECG], International Lunar Network [ILN], and international Mars exploration, inter alia), and to provide strategic guidance to the relevant standardization organizations (i.e., the Consultative Committee for Space Data Systems [CCSDS] and the Space Frequency Coordination Group [SFCG]).

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- IOP 2 (4). The IOAG's ground-based Cross Support Service Catalog should be completed and agreed by all IOAG participants in order to establish a common basis across the Agencies for the consolidation of ground-based cross support by 2011. Agencies should agree to implement IOAG recommendations for missions which may benefit from cross-support and/or international cooperation. It is an IOAG goal to have a plurality of the participating Agencies capable of providing ground-based cross support of an agreed common IOAG Service catalog by the end of calendar year 2015.
- IOP 2 (5). In order to achieve an enhanced end-to-end cross support service catalog that will provide the platform of standardization for extending cross support into space, the IOAG should prioritize the requirements relevant to space communications interoperability and cross-support and should urge the CCSDS to adjust their work accordingly. In this regard, the IOP-2 endorses IOAG Resolution 12.9.1. IOP-2 recognizes the authority of the IOAG to prioritize future work as necessary.
- IOP 2 (6). The IOAG's Space Internetworking Strategy Group (SISG) should formalize a draft Solar System Internetwork (SSI) Operations Concept and candidate architectural definition in time for IOAG-13 and should prepare a mature architectural proposal for review and endorsement at the third InterOperability Plenary meeting (IOP-3). At that time, the IOAG is requested to present an enhanced service catalog for endorsement. The IOP Agencies should ensure representation from their programs and projects to work with SISG to identify potential missions which may benefit from adoption of the SSI-related standards, leading to a gradual build up of in-space and ground-based space internetworking infrastructure.
- IOP 2 (7). In the course of its deliberations, the IOP-2 was encouraged by the progress made to date, and stressed the importance of safeguarding the achievements made throughout the past years in cross-support and interoperability, in particular, maintaining compatibility with prior recommendations.

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ANNEX-2 : DETAILED DEFINITION OF THE TASKS

WP-Core-10.1: Improvement of presentation and visibility of the IOAG Mission model, Communication Assets and Standards Infusion Plans

Definition	<p>The IOAG Cross Support Mission Models and the Communication Assets list were adapted following IOAG-13 to provide sufficient information to identify the major parameters and services that these missions require.</p> <p>A reference IOAG Mission Model was also agreed at IOAG-13 to detail the known missions in flight or planned in the Earth, Moon, Mars or other destination's domains.</p> <p>There is a need to clearly point out the services and supporting standards agreed upon by the IOAG Member Agencies. Such services and standards must be clearly known and their infusion status must be provided by all Member Agencies. The approved Service Catalog #1 will serve in 2010 as a reference for this activity and the Agencies will report on their infusion status and plans according to a common template developed after IOAG-13.</p>
Related Objectives	<p>ToR – (a), (b), (c)</p> <p>IOP2 (1), (3), (7)</p>
Activities	<ol style="list-style-type: none">1. Collect the inputs from the IOAG Members to fill the IOAG tables with information pertaining to assets and missions of their Agencies.2. Collect the inputs from the IOAG Members to fill a table showing the infusion status of the recommended standards in their Agency.3. Display the above elements in the public pages of the IOAG web site, for information of the agencies, the standard organizations or the user communities.4. Keep the above elements up to date on the website.
Implementation	<p>The IOAG Secretariat is responsible for collecting the inputs from the Agencies. The Secretariat is also in charge of managing these elements and their subsequent updates on the website. This will be coordinated via email with the objective to have all information available on the website at IOAG-14.</p> <p>The Heads of Delegations will ensure that the information required to fill these tables is provided in due time by their Agency. They will provide updates as required so that the information on the web pages is always current.</p>
Expected Outcomes	<ul style="list-style-type: none">- Current and complete IOAG cross support mission model table, IOAG communication assets table available on the public website- Current and complete IOAG mission model table available on the private website- IOAG services and standard infusion tables collected from all Agencies available on the private website (referring to Service Catalog #1 only)- A plan on how to display (later) a synthesis of such infusion tables on the website
Next steps	<p>It is likely that in the initial definition of the new tables, the cross support services realization are mainly those required by the current point to point and simple multipoint internetworking cross support scenarios, which will later be enhanced with the elaboration of the Solar System Internetwork (SSI) Operations Concept and Architecture.</p> <p>Based on the draft recommended cross support services (and their associated standards) in the multipoint internetworking Cross Support Service Catalog,</p>

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the said IOAG Service Catalog # 2, IOAG will have to define new templates for the IOAG tables.

Such tables should then replace the current standards infusion table.

To keep the tables up to date is a collective permanent action of the IOAG delegates, under the coordination by the secretariat. It will be a pre-requisite for the new members to provide the information related to their agency before they are formally admitted to IOAG.

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WP-Core-10.2 : Initial definition of a multipoint Cross Support Service Catalog

Definition	<p>The multipoint internetworking Cross Support Service Catalog defines the cross support services for a communication scenario involving two or more spacecraft, still in a point to point configuration for the end to end communications.</p> <p>The two spacecraft scenario, also called relay scenario, involves typically a relay orbiter and a lander spacecraft. The Agency A lander control center communicates to the agency B orbiter control center, which communicates to Agency B orbiter, which communicates to Agency A lander (ABBA scenario). This scenario exposes two cross support interfaces:</p> <ol style="list-style-type: none"> 1. Agency A lander control center to Agency B orbiter control center interface 2. Agency B orbiter to agency A lander (Relay Link Interface) <p>The IOAG Service Catalog # 2 will list the services and protocols over the above interfaces to be used for a cross support.</p> <p>This is clearly a step towards a more complete catalog, to be called “multipoint internetworking Cross Support Service Catalog” that will also address those services required to extend the above configuration to several orbiters and landers with internetworking features.</p>
Related Objectives	<p>ToR (e), (f), (h). IOP2 (5)</p>
Activities	<ol style="list-style-type: none"> 1. Elaborate the draft catalog, in agreement with the related outcomes of SISG activities. 2. Review this document at IOAG level. 3. Submit the document to CCSDS for information with an associated recommendation in case existing standards have to be modified or new standards have to be developed.
Implementation	<p>The above activities (1) is to be conducted before and at the IOAG-14, taking into account the related inputs and proposals from the SISG.</p> <p>Status of activities (2) and (3) will be reviewed at IOAG-14 to check the consistency with the SISG presentation.</p>
Expected Outcomes	<p>Draft Service Catalog # 2, covering the multipoint Cross Support scenario.</p>
Next steps	<p>The IOAG will identify candidate missions that could implement multipoint cross support and make sure that the IOAG inputs are available in due time for those.</p> <p>The scope of work of the CCSDS Cross Support Service Architecture Working Group has to be refined after delivery of the final SISG SSI Operations Concept in 2011.</p> <p>Other services will be added to the catalog at a later stage, as their definition becomes available and as prioritized by the IOAG in the next years.</p> <p>Endorsement of the final Service Catalog # 2 will be by the IOP-3 (in 2011-2012).</p>

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WP-Core-10.3 : Initial definition of the architectural elements of a Solar System Internetwork	
Definition	<p>The IOP-2 has established the objective of an advanced proposal for a Solar System Internetwork (SSI) at the IOP-3 (in 2011-2012); this includes a mature architecture and an enhanced service catalog. As a first step in that direction, a draft SSI Operations Concept and a candidate Architecture definition are expected at IOAG-14.</p> <p>IOAG-12 had confirmed the Space Internetworking Strategy Group (SISG) as a working group of the IOAG to address these issues. The IOP-2 has assigned some priorities to the works of this group in the upcoming years.</p> <p>This is clearly the step towards a final and complete IOAG catalog of services, to be called “multipoint internetworking Cross Support Service Catalog” that will extend the previously defined catalogs (two previous tasks) to cover missions requiring internetworking services.</p>
Related Objectives	<p>ToR (e), (f), (h). IOP2 (6)</p>
Activities	<ol style="list-style-type: none"> 1. Augment the participation to the SISG and call for contributions of more IOAG Agencies. Also, Agency representatives in the SISG are required to represent the Agency’s future projects. 2. Maintain the liaisons to the ISECG and ILN so as to convey the requirements of these user communities as inputs to the SISG works (refer to the tasks WP-Liaison-1 & 2 for the implementation of this activity). 3. Document the draft SSI Operations Concept and present the results to the IOAG-14. 4. Document the draft SSI candidate architecture taking the draft SSI Operations Concept as an input. 5. Elaborate on the next steps in terms of roadmap towards the IOP-3 and beyond. 6. Review and validate the produced documents at IOAG level. 7. Identify potential missions that may serve as demonstrators for the SSI-related standards.
Implementation	<p>The above activity (1) is to be conducted by the Heads of Delegation. The Secretariat will send reminders according to the updated status.</p> <p>The SISG is tasked to conduct the activities (3) and (5) as the in Space Cross Support scenario is the first one on the way to a more complete internetworked scenario.</p> <p>At IOAG-13, a liaison statement has been issued to the CCSDS to ask them to develop the said draft SSI candidate architecture, thus delegating to this Committee the task (4). Response from the CCSDS Management Council is expected before IOAG-14, where it will be processed.</p> <p>The activity (6) is expected to be conducted at IOAG-13 as a result of the presentation of the intermediate report of the SISG. The activity (7) may be initiated in 2010 or 2011, taking into account the opportunities reported by the IOAG Members; nevertheless, it is likely that such opportunities need be continuously explored in the next years.</p>
Expected Outcomes	<p>Draft SSI Operations concept and agreement of CCSDS to develop a draft candidate architecture</p>
Next steps	<p>After the IOAG-14 and pending the resolutions and actions to be decided then, the following activities may be anticipated:</p> <ul style="list-style-type: none"> - continue the definition of a SSI concept of operations and architecture to be

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reviewed at the next IOAG meetings before the IOP-3.

- submit the draft documents to CCSDS as an input to their works.

The IOAG will continue to seek demonstrator opportunities but will also make sure that the lessons learned from the implementations will be injected in the process of definition of the services and architecture.

For the longer term but as much in advance as possible, the IOAG will also identify potential missions that may benefit from adoption of SSI-related standards, in order to build up an internetworking architecture.

The final product will be an enhanced IOAG service catalog, relying on a global operations concept, a mature architecture and a governance concept for the SSI.

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WP-Liaison-10.1: Definition and implementation of a liaison with the ISECG

Definition	<p>The IOP-2 has identified the International Space Exploration Coordination Group (ISECG) as a crucial organization to interface with the IOAG and to represent the user community of the Space Exploration missions. The requirements from this community, in the domain of the Space Communications and Navigation, should be collected by the IOAG and aggregated to the general context of the requirements the IOAG manages with its mission model.</p> <p>The associated scenarii, operations concept and elements of architecture will be of value for the work of the IOAG in the definition of its future cross support contexts.</p> <p>ISECG meetings in 2009 with IOAG attendance (Yokohama and Den Hagen) had already been the occasion of contacts between representatives of the IOAG and the ISECG.</p>
Related Objectives	<p>ToR (a), (b). IOP2 (1), (3).</p>
Activities	<ol style="list-style-type: none"> 1. Identify points of contact to reach a common understanding of mutual benefits expected in this cooperation, including the interfaces and the procedures that will enable the two organizations to exchange the information needed on both sides. 2. Start the exchanges of information as required, according to the schedule constraints identified on either side in their on-going activities. A list of the issues to be addressed in the short, medium or long term, under this liaison, should be established and later be updated, to be used as support for the reporting on both sides. 3. Contribute to each other's activities with liaison statements, documents, presentations in meetings, as appropriate and according to opportunities.
Implementation	<p>The activity (2) is to be conducted by the initial points of contact, with the support of the two Secretariats. The exchanges of information should initially focus on the short term needs of the organizations, such as the IOAG activities conducted in the SISG.</p> <p>The activity (3) should be completed on the occasion of IOAG-14 or of an ISECG meeting before the end of 2010.</p>
Expected Outcomes	<p>A joint communiqué defining the ISECG – IOAG relationship.</p> <p>An initial exchange of information on the activities of each organization that may be of short term interest for the other organization.</p>
Next steps	<p>The liaison with ISECG being potentially permanent, the activity (3) is expected to be continuous and the exchanges will be as frequent as required and the reporting to either organization will be made, at least once a year, on the occasion of an ISECG or an IOAG meeting (or videoconference).</p> <p>The two organizations may later wish to enter a more formal relationship and have a joint Memorandum of Understanding (MOU).</p>

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WP-Liaison-10.2: Definition and implementation of a liaison with the ILN

Definition	<p>The IOP-2 has identified the International Lunar Network (ILN) as a crucial organization to interface with the IOAG and to represent a user community for the missions to the Moon. The requirements from this community, in the domain of Space Communications and Navigation, should be collected by the IOAG and aggregated to the general context of the requirements the IOAG manages with its Mission Model.</p> <p>The associated scenarii, operations concept and elements of architecture will be of value for the works of the IOAG in the definition of its future cross support contexts.</p> <p>The ILN has a Communications working group (WG 2) which addresses these particular domains of interest of the IOAG and of the SISG in which ILN representatives were invited in 2009.</p>
Related Objectives	<p>ToR (a), (b). IOP2 (1), (3).</p>
Activities	<ol style="list-style-type: none"> 1. Identify initial points of contact to reach a common understanding of mutual benefits expected in this cooperation, including the interfaces and the procedures that will enable the two organizations to exchange the information needed on both sides. 2. Start the exchanges of information as required, according to the schedule constraints identified on either side in their on-going activities. A list of the issues to be addressed in the short, medium or long term, under this liaison, should be established and later be updated, to be used as support for the reporting on both sides. 3. Contribute to each other's activities with liaison statements, documents, presentations in meetings, as appropriate and according to opportunities.
Implementation	<p>The activities (2) are to be conducted by the initial points of contact, with the support of the two Secretariats. The exchanges of information should initially focus on the short term needs of the organizations, such as the joint activities conducted in the SISG.</p> <p>The activity (3) should be completed on the occasion of IOAG-14 or of an ILN regular meeting before the end of 2010 (or latest, early 2011).</p>
Expected Outcomes	<p>A joint communiqué defining the ILN – IOAG relationship.</p> <p>An initial exchange of information on the activities of each organization that may be of short term interest for the other organization. This should include the ILN reports from their WG2 on Communications.</p>
Next steps	<p>The liaison with ILN being potentially permanent, the activity (3) is expected to be continuous and the exchanges will be as frequent as required and the reporting to either organization will be made, at least once a year, on the occasion of an ILN or an IOAG meeting (or videoconference).</p> <p>The two organizations may later wish to enter a more formal relationship and have a joint MOU.</p>

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WP-Liaison-10.3: Continuation and improvement of the existing liaison with the CCSDS

Definition	The IOAG has established since 2004 a permanent liaison with the CCSDS. From early 2006, the CCSDS Engineering Steering Group (CESG) co-chairs serve as liaison agents between the two organizations. In turn or depending on opportunities, they attend the IOAG meetings and report on the statements that they collect on the CCSDS side, during the CCSDS Management Council meetings. Also, they convey the IOAG messages back to CCSDS Committees.
Related Objectives	ToR (c), (d), (e), (f), (g). IOP2 (1), (3).
Activities	<ol style="list-style-type: none"> 1. Continue to use the existing liaison as the main support for the exchanges between the two organizations. Adrian Hooke (NASA) and Nestor Peccia (ESA) act as liaison officers between IOAG and CCSDS. In the short term, this activity will concentrate on the cross support services and the internetworking, as discussed on both sides. A list of the issues to be addressed in the short, medium or long term, under this liaison, should be established and later be updated, to be used as support for the reporting on both sides. In 2009 some work was initiated at IOAG-13 on the opportunity for IOAG to consider the Spacecraft Monitoring and Control (SM&C) services in a future IOAG catalog of interoperable services; this work will be continued in 2010. 2. Collect the suggestions of the CCSDS for future improvements of the interface, in particular on the expectations of the CCSDS on inputs to the works of their working groups. 3. Establish processes within IOAG that enables the reception and processing of special requests from the CCSDS, in between the IOAG meetings. 4. Contribute to each other's activities with liaison statements, documents, presentations in meetings, as appropriate. 5. Joint meeting, London, to clarify position and interfaces between IOAG and CCSDS.
Implementation	<p>The activity (1) is under the responsibility of the nominated liaison officers.</p> <p>The next activities (2) and (3) will be conducted by the IOAG Chairman, together with the liaison officers and the CMC Chairman. The Secretariats on both sides will support.</p> <p>The activity (3) on the internal side will initially rely on the IOAG Chairman, as a point of contact and as the organizer of intermediate IOAG meetings (videoconferences), as required to process urgent matters.</p> <p>The activities (4) and (5) are expected to be completed at the IOAG-14 which was agreed to be a joint meeting with the CMC meeting in 2010.</p>
Expected Outcomes	Improved processes and relationship formalized in a joint communiqué between the CCSDS and the IOAG established at their joint 2010 meeting.
Next steps	<p>The liaison with CCSDS being permanent, the activity (4) is expected to be continuous and the exchanges will be as frequent as required and the reporting to either organization will be made, at least once a year, on the occasion of a CCSDS or an IOAG meeting (or videoconference).</p> <p>The need and the opportunity of joint meetings at regular pace will be discussed at the end of 2010. Depending upon the scope of such meeting, it could be a full joint session or a special interest session on a set of specific subjects. Decisions should be made after IOAG-14.</p>

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WP-Liaison-10.4: Continuation and improvement of the existing liaison with the SFCG

Definition	<p>The IOAG has established since 2005 a permanent liaison with the Space Frequency Coordination Group (SFCG). From then, a member of each organization serves as liaison officer between them. The IOAG person in charge of this liaison or, when the need arises, both officers attend the IOAG or SFCG meetings and report on the statements that they collect on the other side.</p> <p>A drawback that has to be addressed in the interface is the rhythm of the meetings between the two organizations</p>
Related Objectives	<p>ToR (c), (d), (e), (f), (g).</p> <p>IOP2 (1), (3).</p>
Activities	<ol style="list-style-type: none"> 1. Continue to use the existing liaison as the main support for the exchanges between the two organizations. In the short term, this activity will concentrate on the frequency and spectrum utilization for inter satellite links, for the Earth, Moon and Mars missions. A list of the issues to be addressed in the short, medium or long term, under this liaison, should be established and later be updated, to be used as support for the reporting on both sides. 2. Collect the suggestions of the SFCG for future improvements of the interface, in particular on the expectations of the SFCG on inputs to their works. 3. Establish processes within IOAG that enables the reception and processing of special requests from the SFCG, in between the IOAG meetings. A template for such requests is to be agreed by the two organizations. 4. Contribute to each other's activities with liaison statements, documents, presentations in meetings, as appropriate.
Implementation	<p>The activity (1, 2, 3, 4) is under the responsibility of the nominated liaison officer: Enrico Vassallo (ESA).</p> <p>The activities (2) and (3) will be conducted with the support of the IOAG Chairman.</p> <p>The activity (4) is expected to be completed at the IOAG-14 or the next SFCG meeting in 2010 (or early 2011). SFCG liaison participate to correctly interpret inputs; provide comments to the mission model. Contribution to the following IOAG meeting would be an update of the established Moon/Martian missions by e-mail.</p>
Expected Outcomes	<p>Improved processes and relationship between SFCG and IOAG.</p>
Next steps	<p>The liaison with SFCG being permanent, the activity (4) is expected to be continuous and the exchanges will be as frequent as required and the reporting to either organization will be made, at least once a year, on the occasion of a SFCG or an IOAG meeting (or videoconference).</p>

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WP-Processes-10.1: Improvement of the IOAG internal processes	
Definition	<p>The IOAG Secretariat supports the organization in many of its areas of activities and plays a central role in the flow of information within the IOAG, with external organizations of interest and with the agencies or their partners.</p> <p>The tools utilized by IOAG and managed by the Secretariat need be kept as efficient as possible so as to facilitate the activities of all.</p>
Related Objectives	IOP2 (3).
Activities	<ol style="list-style-type: none"> 1. Continue to improve the IOAG website, in particular on the public side, to reflect the role, membership, activities and achievements of the IOAG. The final outcomes of the IOAG core tasks in the present Work Plan should be displayed on the public website of IOAG. 2. Continue to improve the IOAG website, in particular on the secure side, to provide tools for the members to access the documentation related to each meeting (archives or in preparation) or to contact members or liaisons. Special areas of interest are the action items (lists, elements of progress or closure), the resolutions submitted for discussion, the documents submitted for review and comments, the schedules for next IOAG videoconferences or meetings. 3. Identify how the website could be used as a support to exchange information with the organizations having liaisons with IOAG: initially, ISECG, ILN, CCSDS and SFCG. Also, the schedules of the meetings of such organizations could be integrated into a global IOAG schedule (2 years horizon). 4. Evaluate improved methods for registration to next meetings and videoconferences. 5. Identify and validate a compatible and reliable system that enables to hold videoconferences or teleconferences with all members.
Implementation	The Secretariat is in charge of all activities. The schedule of implementation of the different tasks is made by the Agency funding the Secretariat. The achievements may need an acceptance by the IOAG Chairman only or by the members, depending upon the cases.
Expected Outcomes	<p>Improved website.</p> <p>Reliable tools and processes.</p>
Next steps	New objectives will be established every year so as to improve the outreach of IOAG and its internal efficiency.

INTERAGENCY OPERATIONS ADVISORY GROUP

Work Plan 2010

ANNEX-3 RESOURCES

X: Lead Function x: Participation	Secretariat	Chairman	ASI	CNES	DLR	ESA	ISRO	JAXA	NASA	RFSA	UKSA	KARI	CNSA
CORE TASKS													
Mission model, Communication Assets and Standards Infusion	X		x	x	x	x	x	x	x	x			
Multipoint Cross Support Service Catalog				x	x	X		x	X				
Solar System Internetwork (SISG)				x	x	X		x	X		x		
COLLABORATIONS WITH OTHER ORGANIZATIONS													
Liaison with ISECG	x	X											
Liaison with ILN	x	X											
Liaison with CCSDS	x	x				X			X				
Liaison with SFCG	x	x				X							
IMPROVEMENT OF IOAG TOOLS AND METHODS													
Improvement of tools and methods	X	x							x				