# LEGAL ASPECTS OF THE ISECG NON-BINDING COORDINATING MECHANISM

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In 2007, fourteen of the world's space agencies published the Global Exploration Strategy as a vision for shared, cooperative, and coordinated human and robotic exploration of the solar system, and subsequently established the International Space Exploration Coordination Group (ISECG). In furtherance of the Global Exploration Strategy, the 2011 publication of the Global Exploration Roadmap encompasses the first iteration of the ISECG's international efforts to define feasible and sustainable exploration pathways to the Moon, near-Earth asteroids, and Mars. The ISECG "Coordinating Mechanism" (as found in the 2007 Global Exploration Strategy and the ISECG Terms of Reference) is a non-binding tool between space agencies to share information and priorities on space exploration, increase synergies though coordinated efforts, and reduce or eliminate duplication of efforts. The non-binding nature of this cooperation meets the interests of space agencies beholden to domestic governmental oversight, and while some may dismiss the use of non-binding "soft law" as without enforcement provisions, the ISECG's Coordinating Mechanism relies on voluntary compliance and programmatic feasibility and adaptability. As such, its four principles for further work are that ISECG coordination be open and inclusive, flexible and evolutionary, effective, and of mutual interest. This paper will look at the nature and use of "soft law" in cooperative space activities, aiming to parse out some of the strengths of non-binding mechanisms such as the ISECG's Coordination Mechanism, and how this approach to cooperation might aid subsequent and more formalized multilateral and bilateral collaboration on specific space projects and programs.

## I. INTRODUCTION

In 2006, fourteen of the world's space agencies established the International Space Exploration Coordination Group (ISECG), and in 2007 finalized the Global Exploration Strategy as a vision for shared, cooperative, and coordinated human and robotic exploration of the solar system.[*] In furtherance of the Global Exploration Strategy, the 2011 publication of the Global Exploration Roadmap (GER) encompasses the first iteration of the ISECG's international efforts to define feasible and sustainable exploration pathways to the Moon, near-Earth asteroids, and Mars. An updated iteration of the GER was published in August 2013.

This paper will discuss the ISECG Coordination Mechanism as described in the 2007 Global Exploration Strategy and ISECG Terms of Reference, first by discussing other instances of successful "soft law" in outer space activities, and why soft law which conforms to the interests of actors is more likely to be successful than hard law which conflicts with actor's aims.

### I.I The ISECG Strategy and Roadmap

The founding documents of the ISECG endeavor are the Global Exploration Strategy and its Terms of Reference. The Global Exploration Strategy lays out the rationale for the coordinated and collaborative human and robotic exploration of the solar system, with gaining new knowledge, economic expansion, human exploration, and global partnership as organizing themes. The Global Exploration Strategy states unequivocally that as a framework for coordination it:

> *"does not propose a single global programme. Rather, it recommends a voluntary, non-binding forum, the international Coordination Mechanism, through which nations can collaborate to strengthen both individual projects and the collective effort."*[†]

While the non-binding nature of the ISECG's Coordinating Mechanism might alienate positivist-minded legal scholars, the strengths and benefits of such a framework will be apparent upon comparisons to other sources of space law, and with an understanding of the interests of actors (here, space agencies and states) in the effort to engage in international cooperation.

This Coordinating Mechanism is a voluntary partnership which preservers each space agency's right to autonomous decision-making. It is intended to aid the identification of scientific standards for interoperability and methods to share data and analyses, aid in identifying common services and developing shared infrastructures, and even assess the requirements of international legal agreements.[‡] The specifics of the Coordinating Mechanism were simultaneously laid out in ISECG Terms of Reference.

[*] International Space Exploration Coordination Group, 'The Global Space Exploration Strategy - The Framework for Coordination', 2007

[†] *Ibid* at 2.

[‡] *Ibid* at 22.

The 2007 ISECG Strategy and 2012 Roadmap reflect the understanding of the world's leading space agencies that while Mars is the ultimate destination for both human and robotic exploration, there are many preparatory scientific and technical capabilities to be matured and many risks to be mitigated beforehand. Consequently, the Roadmap examines possible exploration pathways - beginning with the International Space Station (ISS), and encompassing the next twenty-five years of exploration activities.[§]

The Global Exploration Roadmap allows space agencies to be informed of possible synergies and collaborative opportunities with international partners. It does this by creating an international framework for discussions between agencies, and includes the following three core elements:

- *Common goals and objectives*
- *Long-term human exploration scenarios*
- *Coordinated exploration preparatory activities*

The ISECG's non-binding coordinating mechanism allows space agencies to share information and views on these roadmap elements. These coordinating activities will allow agencies to be better informed when making near-term programmatic decisions for their respective programs and projects. The ISECG's common goals and objectives for the human and robotic exploration of the solar system are:

*The Search for Life* – determine if life is or was present outside of Earth and understand the environments that support or supported it.

*Extend Human Presence* – Explore a variety of destinations beyond low-Earth orbit with a focus on continually increasing the number of individuals that can be supported at these destinations, the duration of time that individuals can remain at these destinations, and the level of self-sufficiency.

*Develop Exploration Technologies and Capabilities* – Develop the knowledge, capabilities, and infrastructure required to live and work at destinations beyond low-Earth orbit through development and testing of advanced technologies, reliable systems, and efficient operations concepts in an off-Earth environment.

*Perform Science to Support Human Exploration* – Reduce the risks and increase the productivity of future missions in our solar system by characterizing the effect of the space environment on human health and exploration systems.

*Stimulate Economic Expansion* – Support or encourage provision of technology, systems, hardware, and services from commercial entities and create new markets based on space activities that will return economic, technological, and quality-of-life benefits to all mankind.

*Perform Space, Earth, and Applied Science* – Engage in science investigations of, and from, solar system destinations and conduct applied research in the unique environment at solar system destinations.

*Engage the Public in Exploration* – Provide opportunities for the public to engage interactively in space exploration.

*Enhance Earth Safety* – Enhance the safety of planet Earth by following collaborative pursuit of planetary defense and orbital debris management mechanisms.

Concurrently, the ISECG's common human exploration scenario includes two pathways along a common strategy: Asteroid Next, and Moon Next. With the shared ultimate destination of Mars, these pathways differ primarily in their order of the next human exploration destinations. However, each path contains opportunities for technological and scientific development for eventual Mars exploration. The ISECG focuses on exploration scenarios that are both technically feasible and programmatically implementable.

2013 Iteration of the Roadmap

In August of 2013, the ISECG updated its Global Exploration Roadmap,[**] which refined the mission scenario to include a single reference mission, focusing on a "stepwise evolution of critical capabilities" for multiple destinations, but leading to the ultimate destination of Mars.[††] The second iteration of the roadmap combines the two previous mission scenarios into one, with the common goal of Mars but does not give a prescriptive pathway to get there.

The non-binding nature of the ISECG is expressed in both the initial framework document, the Global Exploration Strategy, and it the Terms of Reference.

[§] International Space Exploration Coordination Group, 'The Global Exploration Roadmap - September 2011', 2011.

[**] International Space Exploration Coordination Group, 'The Global Exploration Roadmap - August 2013', 2013.

[††] Bernard Hufenbach, Kathleen C. Laurini, Naoki Satoh, Jean-Claude Piedboeuf, Christian Lange, Roland Martinez, Roland Wargo, Juergen Hill, and Francois Spiero, 'The 2nd Iteration of the ISECG Global Exploration Roadmap' (International Astronautical Federation 2013).

What the ISECG produces is the roadmap which is non-binding in nature, but which reflects the good-faith negotiated plans, capabilities, and interest of the various stakeholders. One benefit that the GER has over national plans is that it is the shared, internationally negotiated plans for the various space agencies, rather than the single plans of a single space agency subject to domestic political uncertainly. This international nature certainly makes it a stronger document than merely another national plan which changes or is cancelled after falling behind budget after a number of years. It informs collective planning and also increasing engagement from all stakeholders and interested parties.

The work of the ISECG has already in the elimination of duplication of efforts by various agencies, by agencies comparing what technologies they are investing in and comparing it to what other agencies are investing in, as compared to what other agencies are not investing in, with regard to common technological requirements.[‡‡]

## II. THE ISECG NON-BINDING COORDINATION MECHANISM

The non-binding nature of the ISECG is expressed in both the initial framework document – the Global Exploration Strategy, and it the Terms of Reference.[§§] The Terms of Reference contain organization matters, including the ISECG's purpose, scope, principles, membership, composition, roles of the secretariat.

The operating procedure explains that:

- The ISECG meets on a regular basis at least once a year or more frequently as necessary;
- Meetings of the ISECG will be scheduled where possible in conjunction with exploration related events;
- ISECG is chaired by the meeting host country until the following meeting, and can be co-chaired by two agencies if desired by the hosting country. The ISECG Chair, supported by the Secretariat is responsible for issuing the meeting minutes and for ensuring continuity with the next;
- Meetings are hosted by the Participating Agencies on a voluntary basis. Meeting venues will be agreed by the ISECG by consensus, upon proposal by one or more of the Participating Agency(ies). The Participating Agency(ies) proposing to host a meeting will bear local administrative costs associated with holding the meeting;
- ISECG operates by consensus;
- ISECG will establish its annual workplan;

## III. EXISTING SOFT LAW IN SPACE

A number of important sources of space law, which have impacted and shaped many years of space activities, mirror the ISECG's non-binding nature. Since the very beginning of the modern space age, States have expressed their shared concern and negotiated in good-faith to develop norms and practices.

### UNGA Resolution 1721 (XVI) B

An early United Nations General Assembly resolution from 1961 established an international registry of space objects. UNGA Resolution 1721 (XVI) B of 20 December 1961 calls upon states to register their space objects with the United Nations Secretariat. To this day, the United Nations Office for Outer Space Affairs at the United Nations in Vienna, Austria, keeps this international registry in furtherance of resolution 1721, marking over 50 years of good-faith adherence to a non-binding UN General Assembly resolution.

While the 1967 Outer Space Treaty grants states the legal right to exercise jurisdiction and control over space objects placed upon its *(national)* registry, the 1975 Registration Convention creates mandatory registration requirements on states parties to it. Considering the mandatory requirements under the 1975 Registration Convention compared to the voluntary registration requirements under 1721 (B) shows the great relative strength of this source of soft law in space activities. Indeed, OOSA keeps two registries, one in pursuance of 1721 (B) and one for the Registration Convention. The Registries largely track but to not identically mirror each other. As of 2013, the Registration Convention has 60 states bound to registration by this international instrument.[***] In contrast, the UNGA Res. 1721 (B) applies to the entire international system of states. It would be interesting to investigate notifications to OOSA by states which are not parties to the Registration Convention (i.e., non-mandatory notifications).

### 1986 Remote Sensing Principles

Following the drafting and ratification of the 1979 Moon Treaty, the 1980s saw the scaling back of

[‡‡] 3rd ISECG A.3.1 monday afternoon paper.

[§§] International Space Exploration Coordination Group, 'Terms of Reference', 2009

[***] Legal Subcomittee to to the Committee on the Peaceful Uses of Outer Space, 'Status of International Agreements Relating to Activities in Outer Space as at 1 January 2013', 2013

international space law treaty making. The modest and workable approach tended towards General Assembly resolutions, declarations, and statements of principles. Since the 1980's, this has largely been the political tendency in international space relationships. In 1986, the UN Committee on the Peaceful Uses of Outer Space had finalised the Principles Relating to Remote Sensing,

Space Debris Mitigation Guidelines

The 2002 IADC Space Debris Mitigation guidelines and the 2007 UN COPUOS Space Debris Mitigation Guidelines (which track the IADC instrument, but are not as technical) are both non-binding in nature. The IADC guidelines are very similar to the ISECG global exploration strategy, as they were created by a sub-governmental working group focused on space activities and coordinating actions and pooling knowledge. The are non-binding and are somewhat successful, at least in terms of raising awareness, capacity building, and as Transparency and Confidence Building Mechanisms (TCBMs). The UNCOPUOS Guidelines state in *Article 3 – Application:*

> *These guidelines are applicable to mission planning and the operation of newly designed spacecraft and orbital stages and, if possible, to existing ones. They are not legally binding under international law.*[†††]

MOUs and Practical International Cooperation

Regardless of the above public international law sources of space activities, there exists a large and rapidly growing body of pragmatic and expedient instruments for space activities, and these activities are (like the ISECG), based upon and focused for international cooperation. Both NASA, an national space agency, and ESA, an international intergovernmental organization established by treaty, have entered into many hundreds of international agreements for the sharing of hardware, competencies, capabilities, services, and funds. NASA uses a variety of legal instruments to further its international engagement, from Letter Agreements, Memorandums of Understanding, and binding international space act agreements (including reimbursable, non-reimbursable, and funded). While international space act agreements are binding in nature, NASA might begin its international cooperation using the softer and non-binding Letter Agreements, MOU, and even Statements of Intent. The Non-binding nature

## IV. RATIONALES FOR SOFT LAW

While the creation of new binding sources of hard law has slackened, the creative and pragmatic use of non-binding instruments has rapidly proliferated. Why is this? It is perhaps tied with the modern atmosphere of space activities, which are subject to political whims, budgetary constraints, and also the increasing focus on public-private partnerships with non-state actors (commercial space entities). Today's space activities are conducted in an atmosphere quite different from the cold war era of large space programs for national interest.

The academic discipline of law and economics looks to the interests of actors both to explain past behaviour, and to predict future behaviour. Economic insights are useful in drafting legislation which conforms to what actors (whether individuals, companies, or states) are incentivized to do, making law easier to conform with. With an understanding that law serves people, not that people serve the law, laws can be drafted which reflects the interests of the parties it regulates.

## V. CONCLUSION

This paper has sought to analogize the ISECG's use of a non-binding coordination mechanism to the various historical and successful other sources of space law – from the very early UNGA resolution on international registration, to the various declarations and resolutions from the 1980s and 90s, and also with the vast and often overlooked (at least by academic space lawyers) practice of national space agencies in using non-binding instruments.

The non-binding nature of the ISECG Coordination Mechanism is an instance of international cooperation in space activities which conforms to today's national and international realities, both political and economic. Given the vastly complex, costly, and lengthy nature of space activities, the multiplicity of actors, and the shifting nature of political climates and economies, it is both rational and expedient that space agencies would be hesitant to accept binding laws, and would rather choose non-binding soft law instruments. These instruments (the Global Exploration Strategy, the Terms of Reference, iterations of the Global Exploration Roadmap) are negotiated in good faith, by rational actors – they expect and intend these instruments to benefit them and their national policies for space. Freedom of contract certainly explains that actors can choose the form and nature of these international instruments.

In conclusion, while academics and hard-law positivists might question or lament the non-binding nature of instruments created for international cooperation, including programmatic international cooperation which might give rise to cooperative programs (like rovers and

[†††] United Nations, *Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space* (United Nations 2010)

orbiters and sample return missions), practitioners at agencies see these methods as the best avenue to pursue both their national goals, and international goals. Given the grand and optimistic nature of the endeavour (the human and robotic exploration of the solar system) it is important to think carefully and critically, using a variety of academic disciplines (law, law& economics, International Relations theory, etc.,) to aid this grand endeavour. For internationally cooperative projects, social sciences are crucial to mission success

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