Lessons Learned from IGA/ISS for Future Space Exploration
-a new agenda for US-Japan civil space cooperation-

Ms. Motoko Uchitomi
Univ. of Tokyo
* Based on her personal views
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1. **ISS**: The biggest space international partnership among 16 countries.

Values: Science, Technology, Political, Diplomatic, international understanding, Industry, commercial, educational, culture & art, global vision, future vision....

-Japan is the “Gate” for AP countries to join the ISS =
Many countries, including developing countries, are interested in the cooperation in future space exploration for Moon/Mars as post ISS. It is meaningful, but on the other hand, difficult to implement such a multinational cooperation, since its framework will be complicated. Therefore, basic mechanisms for international cooperation including legal conditions are indispensable.

The Legal Subcommittee (LSC) of the UNCOPUOS

「Review of international mechanisms for cooperation in the peaceful exploration and use of outer space」
※US Proposed the agenda.

Prof. Setsuko Aoki (Keio University, Japan) is the chairman of WG
LSC WG work plan 2013-2017

Purpose of the WG
To review various mechanisms employed by Member States to conduct international collaboration with a view to identifying common principles and procedures. This information could be helpful to Member States as they choose relevant mechanisms to facilitate future cooperative endeavors.

2013/2014 exchange of information

2015 examination in the working group (WG) to develop an understanding of the range of collaborative mechanisms. Request the Secretariat to prepare a report identifying the legal issues commonly addressed in the existing agreements.

2016 WG reviews the Secretariat report

2017 WG finalizes its report to the LSC UNGA resolution?

* 2017 is the 50 years Anniversary of the Outer Space Treaty!
3. Fundamental Conditions from Space Treaties and UNGA Resolutions
Balancing Investor's benefits and Consideration for developing countries （1/2）

(Outer Space Treaty (OST))

Preamble ・・・ Recognizing the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes, ・・・ Believing that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development, ・・・

**Article I**  The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind. Outer space, including the Moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies. ・・・

**Article V** ・・・ States Parties to the Treaty shall regard astronauts as envoys of mankind in outer space ・・・

**Article IX** ・・・ with due regard to the corresponding interests of all other States Parties to the Treaty. ・・・

There are terms to restrict the freedom of space activities because only developed countries (in 1960’s US and former USSR) can enjoy the freedom.
(Annex of Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of all States, Taking into Particular Account the Needs of Developing Countries)

2. States are free to determine all aspects of their participation in international cooperation in the exploration and use of outer space on an equitable and mutually acceptable basis. Contractual terms in such cooperative ventures should be fair and reasonable and they should be in full compliance with the legitimate rights and interests of the parties concerned as, for example, with intellectual property rights.

3. All States, particularly those with relevant space capabilities and with programmes for the exploration and use of outer space, should contribute to promoting and fostering international cooperation on an equitable and mutually acceptable basis. In this context, particular attention should be given to the benefit for and the interests of developing countries and countries with incipient space programmes stemming from such international cooperation conducted with countries with more advanced space capabilities.

5. International cooperation, while taking into particular account the needs of developing countries, should aim, inter alia, at the following goals, considering their need for technical assistance and rational and efficient allocation of financial and technical resources:

(a) Promoting the development of space science and technology and of its applications;
(b) Fostering the development of relevant and appropriate space capabilities in interested States;
(c) Facilitating the exchange of expertise and technology among States on a mutually acceptable basis.

Consideration for developing countries:
1. On an equitable and mutually acceptable basis
2. Contractual terms should be fair and reasonable
3. Taking into particular account the needs of developing countries; the development of technology, capacity building and exchange of expertise and technology.
Prohibition of national appropriation /Treatment of natural resources

(OST Article 1)
There shall be freedom of scientific investigation in outer space, including the Moon and other celestial bodies, and States shall facilitate and encourage international cooperation in such investigation

(Article 2)
Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.

(Agreement Governing the Activities of States on the Moon and Other Celestial Bodies)
- The Moon and its natural resources are the common heritage of mankind
- States Parties to this Agreement hereby undertake to establish an international regime, to govern the exploitation of the natural resources of the Moon as such exploitation is about to become feasible.
- An equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries which have contributed either directly or indirectly to the exploration of the Moon, shall be given special consideration.

- Natural resources have been utilized for scientific purposes.
- Utilization of natural resources will stimulate motivation of governments and private entities to invest space exploration.
- Therefore, international rules to regulate them are required.
(OST Article 6 **States Parties** to the Treaty **shall bear international responsibility for national activities** in outer space, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. **The activities of non-governmental entities in outer space**, including the Moon and other celestial bodies, **shall require authorization and continuing supervision by the appropriate State Party to the Treaty.** · · · ·

**National space law with licensing regime for private space activities is necessary to implement space treaties.** Japan is aiming at getting Diet approval **in 2016. (Basic Space Plan #3)**
OST Article 9: Prevention of adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter

Application of planetary protection policy established by COSPAR → Legal obligation is desirable.

HAYABUSA
Space environment preservation

Prohibition of harmful contamination in space (OST Article 9)
Space debris mitigation guidelines of the Scientific and Technical Subcommittee of the COPUOS (2007) ← IADC guidelines
International Code of conduct for outer space activities
Long-term sustainability of outer space activities (UNCOPUOS STSC)
Agreement between Japan and USA concerning SSA (information sharing for avoiding collisions between the space debris) (2013)
4. Lessons Learned from IGA/ ISS
① Fundamental principles of cooperation based on IGA

(1) Compliance with International Law (Article 2)
- Space treaties (except for Moon Agreement)
- Registration/Jurisdiction and Control • Ownership (Article 5 & 6)
  - Register by oneself & Remain the ownership
  - The transfer of real property with the prior concurrence of the other Partners

(2) Peaceful Purpose / Scope / Utilization (Article 1, 9)
- Each Partner may use and select users for its allocations;
  - Use of a user element proposed by a non-Partner or private entity with the consensus among all Partners through their Cooperating Agencies.
  - The Partner providing an element shall determine whether a contemplated use of that element is for peaceful purposes
(3) Management Mechanisms (Article 7 and 23)
- USA: overall responsibility (Centralized Management)
  ※ Relating to the application of the US Law
  - Consensus method and Obligation to perform in good faith
  - Consultation at MCB at the top.

(4) Fund & Cost sharing (Article 15 etc.)
  - Equitable share of whole common cost (Japan; 12.8%)
  - Best efforts to obtain approval for funds
  - Obligation of consultation in the funding problem
  - Best efforts to minimize operations costs
  - Minimize the exchange of funds in the implementation of Space Station cooperation through the use of barter
  - Balance of contribution and benefit sharing

(6) Crew (Article 11)
  - Compliance with the “Crew Code of Conduct”.
Conditions to facilitate cooperation

(1) Cross-Waiver of Liability (Article 16)
   - Risk mitigation between the Parties

(2) Customs and Immigration (Article 18)
   - Cross exemption of customs (Cost mitigation)

(3) Exchange of Data and Goods (Article 19 and 20)
   - Rules to protect confidential data etc.
③ Application of domestic laws

(1) Jurisdiction and Control（Article 5）
  - State of registry has Jurisdiction and Control

(2) Intellectual Property（Article 21）
  - State of registry’s law

(3) Criminal Jurisdiction（Article 22）
  - Change from territoriality principle to nationality principle in the new IGA(1996)
④ Promotion of third Parties and private entities

(1) Ownership of Elements and Equipment (Article 6)
   ・ The transfer of ownership of elements and equipment with the prior concurrence of the other Partners.

(2) Utilization （Article 9）
   ・ Each Partner may use and select users for its allocations;
   ・ Use of a user element proposed by a non-Partner or a private entity with the consensus among all Partners through their Cooperating Agencies.

(3) Evolution（Article 14）
   ・ Encourage the addition of capability (each regarding and consensus)

※ Treatment of the state sovereignty of the third Party is a challenge (esp. Criminal Jurisdiction).
MCG (Multilateral Commercialization Group) Lessons Learned

- Purpose: Industry collaboration for
  - efficient outreach (Win-Win)
  - various future commercial activities

- By branding of the ISS and calling for sponsors

- tried to set industrial collaboration framework and general rules for commercialization (Legal challenge)
  - List of minimum prohibited activities

- Equitable Rule for sharing cost and benefit is the key
  (revenue for common activities / non-distribution model)
Bridges to people’s daily life are indispensable to get support:

=Indirect segments are keys (commercial, educational, cultural etc.)

a case: Space Art initiatives in Japan

http://beyond-spaceart.net/

Prof. Takuro Osaka “Spiral Top”

“Tanegashima Space Art Festival”

“Star light illumination at space center”

http://www.takuro-osaka.com/other_art/space_art_spiral_top.html
Personal Proposal: “Space Exploration Ambassadors”

- A male and a female opinion leaders from each participating country (ex. Designation at ISEF #2)
- Engaging in domestic & global outreach for future space exploration (including unified effort for global campaign)
- Adding civil views for future space exploration programs
  - As common activities of whole human beings (citizens)
  - For sustainability of the program from commercial perspectives
  - From the planning phase (concurrent engineering)

*International Space Exploration Forum (ISEF)*

1st ISEF (January 2014 @Washington)

2nd ISEF will take place in Japan in 2016 or 2017.
Conclusion

- Creating legal framework for future space exploration is a challenging and exciting task.
- Consideration for the diversity is necessary
  - challenge by/for all human beings (common basis at UN)
  - practical & equitable agreement by the Participants
- US-Japan collaboration is a key to achieve it!
  ex. UN COPUOS WG / ISEF

*Univ. of Tokyo has been promoting network among space policy & law researchers in collaboration with GWU/SPI, ESPI, ISU & other universities, and initiated SPLANAP(Space Policy & Law Network in Asia-Pacific) & Space Vision Committee in The Japan Society for Aeronautics and Space Science)