

# **International Academy of Astronautics**

## **Commission V Report on Meeting**

**Paris  
Monday 21, March 2016**

### Attendance:

Elisabeth Back-Impallomeni (Chair), Bernhard Schmidt-Tedd (Co-Chair), Isabelle Duvaux-Bechon (Secretary), Corinne Jorgenson (Past Chair), Christophe Bonnal, Max Grimard, Zvi Kaplan, Oana Neagu, Marius-Ioan Piso, Serge Plattard, Nicola Rohner-Willsch, Lesley-Jane Smith, Alexander Soucek, Sergei Teselkin, and Zhenjun Zhang.

### **1. Welcome**

After a welcome from the Commission V Chair, Elisabeth Back-Impallomeni, meeting participants introduced themselves.

### **2. Agenda Approval**

The meeting's agenda was adopted as distributed by e-mail on 21 March 2016 and on paper at the meeting. It is available on the IAA website.

### **3. Adoption of Commission V Meeting in Paris, France (March 2015)**

The minutes of the previous Commission V meeting held on 23 March 2015 in Paris were adopted (there was no meeting of the Commission at IAC in Jerusalem). They will be available on the IAA website.

### **4. IAA Cosmic Studies**

#### **4.1 Current Studies**

##### **4.1.1 International Cooperation on Space Weather (SG 5.9)**

This study has been formally transferred to Commission I under

number 1.15.

#### **4.1.2 Orbital Debris Removal: Legal, Political, Policy, and Economic Considerations (SG 5.10)**

Lesley-Jane Smith presented the status of the study group. She is Co-Chair with Stephan Hobe and Ray Williamson. 17 other people are contributing. The study is moving on progressively and the first draft is mostly complete except for conclusions and recommendations. It will be complete for review by the study group by 15 July 2016 and is planned to be available for external review by 1 December 2016.

#### **4.1.3 Comparative Assessment of Regional Cooperation in Space: Policies, Governance and Legal Tools (SG 5.11)**

Elisabeth Back-Impallomeni presented the status of the study. 23 people contribute to the study. The first draft is planned to be available by the summer 2016.

#### **4.1.4 Dynamics of Space Exploration: Strategies and Future Outlook (SG 5.12)**

Serge Plattard presented the status of the study. The draft study was made available in February 2016 and is now in the polishing phase and is to be submitted in June 2016. 18 authors contributed to the study. One of the conclusions is that there are still too many initiatives in the world for space exploration and it will be proposed to build a Council for space exploration with a coordinating role, that would meet at regular intervals at high political level to elaborate consensus on the guidelines to be followed, also on the question of space transportation to share properly the burden and make it cheaper with adequate launchers. This Council would be fed by work done by existing exploration study groups and inputs from industry.

Following questions, Serge Plattard indicated that the Russian and Chinese inputs were only second source as there was no declared interest to participate in the study from Russian or Chinese experts. Sergei Teselkin and Zhenjun Zhang will help provide names to support the study.

An addition suggestion was to explore the possibility to complement the study with a dedicated web site that would allow maintaining up to date information on the matter as the concepts and ideas were evolving quickly and in order to answer to the “dynamics” included in the title of

the study. This would imply permanent updating work and some analysis with the IAA Office on the feasibility and status of such web site (approval, peer review...). Serge Plattard will investigate.

#### **4.1.5 Space Systems as Critical Infrastructure (SG 5.13)**

Marius-Ioan Piso presented the status of the study that is aiming at elaborating a qualitative and quantitative assessment of the degree of criticality of space systems as essential infrastructures for the Earth civilization. The draft study is almost ready and it will be soon sent to reviewers. It is expected that the final review will be at the time of the IAA meetings in Guadalajara.

#### **4.1.6 Reference report on Space Debris (SG 5.14)**

Christophe Bonnal presented the status of the study that is now completed at 99%. The aim is to have a situation report as a reference concerning space debris, not a position paper with recommendations. The first draft was to be finalized on 22 March and July 2016 is planned for its availability for peer review. It could be envisaged to plan a revision of the report when something major happens or becomes available.

#### **4.1.7 Space Traffic Management: Towards a Roadmap for Implementation (SG 5.15)**

Alexander Soucek presented the status of the study. The team has now gained some momentum and the study will be discussed at the Legal Subcommittee of COPUOS in April. Even if there is interest from the community at large, what is covered by “space traffic management” (STM) is not always clear nor standard, with different technical or regulatory views. In addition, many academic research were made recently. For the purpose of this study, and following the 2006 IAA study, STM means “the set of technical and regulatory provisions for promoting safe access into outer space, operations in outer space and return from outer space to Earth free from physical or radio-frequency interference.” Recent diplomatic initiatives were taken that could be considered as precursor or contain elements of STM. The main message is that STM cannot be ensured at domestic level and that cooperation will be the key. The study is an academic exercise that will explain how it could work and be organized, building on existing treaties and organizations. Full draft planned for March 2016 for discussion in Commission V in May and

final draft for peer review in June 2016. Publication could be in September 2016.

## **4.2 New study proposals**

IAA Vice-President Perminov asked in the preparatory meeting that each Commission identifies at least two new studies.

Two themes have been identified that will have to be further explored by the proposers before they can be proposed as studies, both in the frame and in view of the preparation of Unispace+50 in 2018:

- The Security issues of space activities: the past 50 years and the future 50 years - proposed by Serge Plattard and Zhenjun Zhang
- The Governance aspects of space activities: the past 50 years and the future 50 years - proposed by Bernhard Schmidt-Tedd, Zhenjun Zhang and Alexander Soucek

## **5. IAA Conferences and Symposia**

### **5.1 Current IAA Conferences**

#### **5.1.1 IAA International Conference on Climate Change and Disaster Management - Mexico City, Mexico, 17 September 2015**

Corinne Jorgenson reported on the conference. As an introduction to the Heads of Space Agencies Summit on Climate Change and Disaster Management, the IAA organized an IAA International CONFERENCE on Climate Change and Disaster Management entitled "Space Systems for the Benefit of Earth and Humankind" in Mexico City, Mexico. Dr. Jean-Michel Contant, IAA Secretary General, kicked-off the conference with opening remarks, then three keynotes were addressed by Dr. Carlos Nobre, Brazil, Dr. Ellen Stofan, NASA, United States and Dr. Simonetta Di Pippo, Director UNOOSA. The six technical sessions focused respectively on: Carbon Monitoring System, Earthquakes and Disaster Management and Big Data and Land Remote Sensing, Water and Weather, Climate Change, Disaster Management and Space in Support of People. The IAA conference was very successful and attended by over 300 participants.

#### **5.1.2 5<sup>th</sup> IAA Conference on Space Systems as Critical Infrastructures - Mamaia, Romania, August 2015**

This was the 4<sup>th</sup> IAA conference on Space Systems as Critical Infrastructures. It was held in August 2015 and was a success with some 60 participants including Academicians and some support from the national program. The 5<sup>th</sup> conference is being prepared for the last week of August 2016 along the same structure.

### **5.1.3 IAA Symposia at IAC**

Three IAA symposia at IAC are organized under Commission V in Guadalajara:

- **29<sup>th</sup> IAA Symposium on Space Policy Regulation and Economics** (IAC E3) – IAA Program Committee Chairs or representatives: B. Schmidt-Tedd/J. Masson

Bernhard Schmidt-Tedd presented the status. The number of proposed abstracts is stable compared to 2014 (there was a drop in 2015 in Jerusalem) with 109 abstracts in the 6 sessions. The new one “Enterprise Risk Management” shows a good success with 13 abstracts proposed. There is a good balance overall so it is proposed to keep the overall structure. There is a growing interest for exploration and space economy. Three of the sessions are still supporting on-going studies under the umbrella of Commission V.

- **14<sup>th</sup> IAA Symposium on Space Debris** (IAC A6) – IAA Program Committee Chairs or representatives: C. Bonnal, J-C. Liou

Christophe Bonnal presented the status. Concerning the 13<sup>th</sup> symposium last year, it is noted that it ranks #2 in the numbers of papers presented (72) and #1 in attendance (374 to 521 attendees). For 2016, there are 9 sessions including one Joint session with the Security Committee, and one proposed Plenary session on the Deployment of Mega Constellations.

- **31<sup>st</sup> IAA/IISL Scientific-Legal Roundtable** (IAC E7.6) – IAA Program Committee Chairs or representatives: K-U. Schrogl/M. Haese/N. Rohner-Willsch

Nicola Rohner-Willsch presented the status. Following the 2015 round

table on “Universities as Actors in Space”, a small jubilee brochure was edited with the support of IAA to recall the 30 roundtables that were organized. The top issue with the 2015 roundtable was the number of participants (around 20). Given the high level of speakers, this is explained by the overall lower attendance in Jerusalem. This will have to be followed in the future. 2016 theme will be “The Future of Regional Collaboration” with one keynote confirmed, 5 invited speakers and 4 unsolicited abstracts to be analyzed. The topic for 2017 in Adelaide could be around Planetary Defense.

## **5.2 New Conferences proposals**

Corinne Jorgenson recalled some of the past IAA conferences including IAA/IISL symposia:

- Space Law and Policy (Washington, USA, 2010, 3 panels),
- Space Sustainability (Toulouse, France, June 2012, 4 sessions)
- with the Heads of Agencies summit on Climate change – space based systems and their applications – technical and legal aspects (India, 2015)

The Commission could propose an IAA conference or an IAA/IISL symposium. Two ideas were expressed that are not mature enough to be presented at the SAC meeting. They will have to be further explored:

- Summary report on Space Law Research status, what was discussed and achieved, what are the emerging approaches... (proposed and to be explored by Elisabeth Back-Impallomeni)
- Disruptive Trends in Space: what are the trends on how we will do space activities in the future, new business schemes, new opportunities (mining of the Moon), new constellations (with associated debris or frequency allocation), pressure of the new actors – with a need for international regulations at global level and overall collaboration for sustainability – how can law adequately help space actors to participate and avoiding conflicts with non-space actors (proposed and to be explored by Serge Plattard and Marius-Ioan Piso)

## **6. Report from the Permanent Committees**

### **6.1 Space Debris Permanent Committee**

Christophe Bonnal presented the status of the work of the Committee. There are 51 members and 2 meetings per year are organized. Several

studies were performed or supported and it coordinates all studies related to Space Debris within the Academy.

## **6.2 IAA/IISL Scientific Legal Liaison Permanent Committee**

Was dealt with within 5.1.3

## **7. IAA Heads of Space Agencies Summit: Follow-on Activities**

Corinne Jorgenson reported on the HoA Summit that was held on 18 September 2015 in the frame of the Conference in Mexico on Climate Change and Disaster Management. It has been very successful with 25 HoA that participated. The Mexican Space Agency hosted the event and the French Space Agency (CNES) took the co-lead with IAA on the Declaration. Even though some HoA from Japan, India, Russia, or Germany were not physically present, they did welcome the Declaration and some also participated physically in the IAA Summit preparatory conference that took place in India a few months prior to the Summit. In the frame of the press coverage of COP21 in Paris, it would be interesting to receive feedback from the CNES on this work. Corinne Jorgenson will follow-up with them.

## **8. Other business**

None.

## **9. Adjourn**