

5 Fair rules on orbit – summarising introduction

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There were four speakers in this session covering a selection of issues related to what can be considered fair rules for use on orbit as well as proposals on extending and enhancing the status quo. The lively discussion following the presentations extended the scope of consideration with regard to fair rules that could or should apply both to activities on orbit and to those necessary to reach or transition through those orbits.

The session started with an interesting presentation by Wolfgang Rathgeber of ESPI on “Data Sharing Issues”. The limitations of current systems and examples of different architectures that are or have been in use for space were considered. Then some data transfer examples were presented and finally an assessment of some current concerns that lead to proposals on the way forward. It was considered that collective data acquisition using new purpose built systems could lead to improved data sharing. The development of international collaborative activities in space weather could be used as a test case for improved data sharing. A complete data policy for sharing important data would need to consider not just the technical and system architecture issues but the legal aspects, such as those arising from the Remote Sensing Principles (applicable to Earth observation systems), as well as policy and political issues. More generally it was considered that joint missions and co-funding lead to a natural sharing of data but commercial missions can naturally lead to open data policies in order to achieve their marketing goals.

The second presentation in the session was given by Lubos Perek of the Czech Republic on the matter of “Cooperation within the UN System”. The various UN bodies started collaborating on space issues in the 1970s. The main focus has been on practical applications of space, covered by the UN Office for Outer Space Affairs space applications programme, and work on mitigating natural disasters together with managing the relief effort. The presentation went on to focus on some specific issues related to the fair and responsible use of space including managing space traffic, and the transition between airspace and outer space, as well as looking at registration practices and the problems related to different organisations (ITU¹⁰⁰ and UN OOSA) registering respectively “networks” (or broadcasting positions and frequencies in space) and satellites. Problems were also seen to

arise where some countries/users do not require prior ITU approval before allowing a new satellite to be launched or re-positioned. It was proposed that the solution could lie with a space equivalent to the civil aircraft control regime (ICAO¹⁰¹) that would provide more coordinated regulation and extend registration through rules of the road to space traffic management. It was proposed during discussion that, for now, States licensing the use of space should ensure satellite registration and general compliance with the Outer Space Treaties and should also include formal checks with the ITU both at initial license screening and before approval for launch.

The third presentation was by Ben Baseley-Walker of the Secure World Foundation on the status of work on current international space security issues, e.g., UN COPUOS¹⁰² and the PAROS group of the Committee on Disarmament as well as reference to the work of the EU “Paris Group”. The top-down issues were considered to arise from the Russia/China proposals (to PAROS) for no weapons in space and those focussed on an ICAO equivalent for space. The bottom-up issues were considered as the EU Code of Conduct from the “Paris Group”, the informal working group within COPUOS and the current coordination amongst major satellite operators on situational awareness and space asset management. Overall, while the need is for full multilateral implementation of all possible confidence-building measures covering space debris, traffic management, etc., the practical route to implementation will need national, regional, civil and commercial activity to do whatever can be done as soon as reasonably possible. The key to success will be to show the various initiatives as part of a concerted effort to achieve fair and equitable use of space for all potential users of space. This will require caring for the space environment and ensuring it remains open for all humankind to use in the future without hindrance. While details of the EU initiative are not yet public it is expected that the proposals will include a wide range of confidence-building measures.

The final presentation in the fair rules on orbit session was by William Ailor of the Aerospace Corporation on “Space Traffic Control – issues and options”. The orbital debris environment was described in some detail in order to explain the projected growth in the Earth orbiting debris and thus the ever-increasing risk of collisions with active spacecraft. The need for further data to help understand and manage the near-Earth environment was explained and the various players introduced. While tools have been developed to help manage space traffic the availability of good data is still an issue. The commercial players have data for their own satellites that can be better than the general-purpose government surveillance data. While there are clearly issues of trust, liability and availability due to security and commercial confidentiality issues, greater sharing of data and the results of the many supporting tools, such as those for collision avoidance, is essential. The

presentation put “fair and responsible” in a practical context and was a good conclusion to the session on fair rules in orbit.

General conclusions from the discussion following the presentations were that fair rules on orbit should already be interpreted more generally (where complexity allows) to include not just Earth orbit but outer space in general and other special regions of outer space such as the Moon, Mars and various Lagrangian points with significant scientific and potentially commercial interest. Some delegates considered that many people do not understand some of the basics of orbital mechanics and where they apply, e.g., when ballistic trajectories in the atmosphere change so that more complex interactions need to be considered. Education and training will be an important part of the ongoing work to improve the understanding and facilitate the implementation of the growing number of supportive measures.

A simple and general plan for looking after space should be developed so that continued access, which is both fair and responsible, can be maintained. We have the Space Treaties and Principles, Guidelines, Standards and Codes of Conduct but what we also need is harmonisation and common implementation if the responsibilities embodied in these texts are to be truly fair. The results of the many proposed activities cannot be fully integrated today but it is essential we keep the full range of proposals in mind as we attempt to fairly manage the space environment in a responsible way for the future.

¹⁰⁰ International Telecommunications Union.

¹⁰¹ International Civil Aviation Organization.

¹⁰² Committee on the Peaceful Uses of Outer Space.