

**Panel 5: Cooperation and capacity building in space law and policy for
the benefit of developing countries with special regard to the
concept of integrated education and training**

**Introduction to Panel 5 of the 10th UNOOSA Workshop on Space Law in
Vienna, 5 to 8 September 2016 by Christian Brünner**

I.

The topic focuses upon three core elements of space related strategies. These are cooperation and capacity building, both for the benefit of developing countries.

II.

The space related foundation of two of the three elements was already laid at the beginning of the development of space law. Principle one of the Declaration 1962 of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space says, that the exploration and use of outer space shall be carried out for the benefit and in the interest of all mankind. Article I and article III of the Outer Space Treaty add the promotion of international cooperation and understanding.

Since then numerous relating documents and regulations, hard law as well as soft law, like policy declarations, guidelines and resolutions have been added. Outstanding is the Declaration 1996 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. Point 2 of the annex of the declaration (a soft law document) can be seen as an interpretation of the respective provisions of the Outer Space Treaty. It clarifies that cooperation is not mandatory.

Furthermore, I mention the UNGA Resolution “International Cooperation in the Peaceful Uses of Outer Space”, then decisions and recommendations of the Legal Subcommittee and its Working Group on the Review of International Mechanisms for Cooperation in the Peaceful Exploration and Use of Outer Space. But cooperation for the purpose to meet the needs of developing countries is not only laid down in legal documents. There exist facts in favor of these countries. I just name the evolution and the development of small satellites, including cubesats. These satellites have lowered the barriers for the developing countries to participate in space activities and are a driving force for the democratisation of space activities. This political “principle” has to be made concrete. One way could be to identify the needs of the

respective developing country, than to look for possible cooperating partners in going forward to use space services, and at the end match the two sides. A proper implication for their understanding could be the Regional Centers.

Capacity building in space law through education and training, the third element of the outlined strategy, was added by the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE I) in 1968. It was introduced to the legal Subcommittee in 2008 upon an initiative by South Africa and was transformed into a regular agenda item a few years ago. The numerous activities and observations dedicated to this topic can be looked up in the reports of the Legal Subcommittee since 2008. Recently UNCOPUOS identified as a capacity building for the 21st century as a thematic priority under the overarching theme „50th anniversary of UNISPACE“.

III.

One common and indispensable element of cooperation and capacity building is the cross-sectorial approach. Cooperation takes place and has to take place between nations and institutions, governmental and nongovernmental, between private and public actors, between

businesses, between researchers and technicians in all fields which are relevant for a concrete space project.

The cross-sectorial approach in capacity building in space law and policy has its theoretical and practical basis in two facts. First, space has manifold dimensions which are furthermore interdependent. I line out a political, societal, economic, technological and human dimension, the latter including ethical aspects. Second, human activities always involve regulatory activities.

In this context two more facts have to be taken into consideration. Law is embedded in society and politics (see *Outer Space in Society, Politics and Law*, edited by Christian Brünner and Alexander Soucek). That means that law is a product of societal and political deliberations and decisions. Law is furthermore an instrument for steering human behaviour in such a way as to realise social goals, and avoid what is undesirable. This „steering function“ is not just connected with hard law, with binding law, but also with soft law (non – binding regulations like policy documents, guidelines and resolutions), furthermore with state practice because this practice may have a model function. Both facts

have to be taken into consideration when we interpret regulations. I call this the functional method.

How important it is to link in time for instance technical aspects with legal ones

shows the development of the unmanned aircraft (“drone”) Eurohawk.

Because of the lack of an anti-collision system to protect airliners, the

European Aviation Safety Agency applying relevant regulations would

only certify the Eurohawk to fly over unpopulated areas. The necessity

of a “holistic” project-management shows the case of the Viennese High

Tech Hospital North. The insufficient availability of adequately trained

technical personnel is causing problems.

IV.

What is needed if we talk about a cross-sectorial approach?

I address only a few desiderata:

1. Combined research
2. Cooperation between all relevant actors in the public and in the private sector and between all relevant disciplines
3. Development of projects and missions in which all relevant disciplines are integrated

4. Outreach to the public („open space“ and “open data”) in the sense of participatory space, including widespread information and broad education.

In this context I would like to put your attention to the ESA initiative „The citizens’ debate on space for Europe”. The initiative intends to involve more actors, especially citizens, in choices that will respond to societal challenges, put space at their service and encourage coming generations through space innovation, space exploration and international space cooperation. Similar initiatives should be launched in other regions and especially in developing countries.

5. Assessment of the effectiveness and efficiency of technologies and regulations. I propose an assessment of the regulatory pace by using methods which are development in social sciences.
6. We need initiatives in order to build up a space culture which is oriented towards the human dimension and the multifold purposes of space activities in developing our societies, furthermore towards the peaceful use of outer space and the use for the benefit of all mankind. Especially the educational system and the civil society are being challenged by this desideratum.

V.

In education sciences and education policies, the cross-sectorial and, in the end, holistic approach is content of a concept which is called “integrated education”. Qualifications have to be developed by education. In the European Qualifications Framework for Life-long Learning qualifications are defined by learning outcomes in the fields of knowledge, skills and competences. The concept aims at connecting skills and knowledge from multiple sources and experiences, applying skills and practices in various settings, utilizing diverse points of view and understanding issues and positions contextually.

As far as cooperation is concerned, it is crucial – especially in the context of developing countries – to know and understand the societal and political deliberation and decision-making processes which set the scene of cooperation. Furthermore, one has to be familiar with the culture in the respective country.

VI.

Which concrete conclusions could be drawn from what I said before for capacity building in space law and policy?

I address only a few desiderata:

1. Curriculum development in a way that technical subjects as well as social and political studies should be integrated in legal study programs and vice versa. Part of the curriculum should be the training on defining projects, solving cases and simulating decision-making processes.

I propose to review curricula whether they fulfill this desideratum. As far as the UNOOSA Education Curriculum on Space Law (2014) is concerned, I propose to integrate basics of space technology as well as basics of social and political sciences as an extra module after the module 1, dealing with basic concepts of international law and space law.

A space related summer school has been held in Alpbach every year since 1975 (the European Forum Alpbach is an interdisciplinary platform for science, politics, business and culture.) The format of the Summer School 2016 provides an overview on the global water cycle and its scientific challenges covering the role of current satellite missions. Unfortunately, relevant legal aspects are not integrated in the program.

2. Improvement of governance and management of education institutions and systems, for instance regarding the necessity to strengthen the relations between education and the economic, societal and political environment. The respective cooperation should take place in concrete projects.

3. Development of integrated educational programs for all educational levels and for continued education, furthermore training of educators on all these levels. A good example is the Summer University “Graz in Space” organized by the Space Research Institute of the Austrian Academy of Sciences and the Institute of Physics of the University of Graz.
4. The practical application of space technology is multifold. Relevant skills should be trained in vocational training programs.
5. Capacity building takes place not only on an individual and societal level but also on an institutional one. Units in public administration, research promotion agencies, space agencies, non-governmental organizations like economic and industry associations etc. should be familiar with organizational aspects and the content of capacity building. A strong cooperation between administrative units, responsible for education, research, innovation and economy is necessary.
6. A vademecum or checklist should be devised, preferably by UNOOOSA. This document should list necessary steps to strengthen capacity building in space law and space policy. The list should cover all three levels, the individual, the societal and the institutional level. The list should be adapted to the concrete situation of a concrete country.

A good example for the integration of technical and legal aspects is the upcoming book “Space Missions: Two Sides of the Same Coin – A Cross-Educational Handbook for Space Lawyers and Engineers”, edited under the auspices of the Space Generation Advisory Council by Anja Nakarada Peculjic from ESPI and Martin Losekamm from the Technical University Munich. Another example, with a focus on cases, is offered by “Space Law Essentials, consisting of a textbook and a casebook” published by Alexander Soucek, Anita Rinner, Hannes Mayer, Yvonne Karimi-Schmidt and Christian Brünner.