

# **International Academy of Astronautics**

## **Summit Declaration**

**Friday 18 September 2015  
Mexico City, Mexico**

### **Preamble**

The International Academy of Astronautics (IAA) has been playing a catalytic role in organizing summit meetings of heads of space agencies since the first meeting in Washington DC in November 2010. At this first meeting four key areas of cooperation were identified: robotic exploration, human spaceflight, climate change and disaster management. The second summit in Washington DC in January 2014 discussed the issues relating to robotic exploration and human spaceflight. These summits have produced many peer-reviewed studies and focused conferences in support of the summit activities.

On 18 September 2015, leaders of space agencies around the world gathered in Mexico City, Mexico for the International Academy of Astronautics (IAA) Heads of Space Agencies Summit, hosted by the Mexican Space Agency. In preparation for the summit, the IAA received inputs from academics, other experts and space agency representatives on the subject of enhancing global collaboration in the following two areas: climate change and disaster management. Based on these inputs, the IAA sets forth below its findings and recommendations which have been welcomed by the heads of these space agencies.

### **IAA Summit Declaration**

1. Heads of space agencies from around the world took part in the Summit on Climate Change and Disaster Management, organized by the International Academy of Astronautics and hosted by the Mexican Space Agency (AEM), in Mexico City on 17-18 September 2015. They recognized the tremendous contribution of satellites to climate change studies and disaster management support and expressed their determination to enhance their efforts to strengthen the role of space in these fields in support of political decisions taken at the UN Conferences Of Parties.

2. As stated by the Intergovernmental Panel on Climate Change (IPCC), "Observations of the climate system are based on direct measurements and remote sensing from satellites and other platforms" For over 30 years, satellites have been continuously measuring the Earth's atmosphere and surface at every point on the globe thanks in large part to international cooperation and coordination. Satellite observations are an essential tool for understanding the evolution of our climate, informing mitigation efforts and helping develop adaptation strategies on local and regional scales. Satellite observations also can play a key role in the direct monitoring of forest management and GHG emissions. Satellite observations are the key element of a global measuring system aimed at verifying the reality of commitments taken in line with the United Nations Framework Convention on Climate Change (UNFCCC).

3. Combining measurements derived from operational programmes and research and development, Earth observation satellites contribute considerably to developing an in-depth understanding of the physical processes involved in climate change and efforts to model those processes. Numerical climate models depend on in-situ and space-based observations to reproduce the complexity of the various components of the climate system (atmosphere, oceans, ice, land surfaces etc) and to project future climate scenarios that depend on various socioeconomic factors, including the future actions of humans.

4. Earth observation and space-based technologies are already playing a crucial role in generating relevant information to support informed decision-making in risk and vulnerability reduction and to address the underlying factors of disaster risk. The Sendai Framework for Disaster Risk Reduction calls for enhanced access to, sharing of, and use of non-sensitive data and information, communications and geospatial and space-based technologies and related services through international cooperation, as well as continued and strengthened in-situ and remotely sensed Earth and climate observations. Regional mechanisms must be established in African and South American regions for disaster management. Developed countries should assist those nations without the space resources for capacity building.

5. Beyond the Earth observation satellite systems offer other useful applications relating to climate change and disaster management, like navigation/positioning and telecommunications. In combination and in some cases in conjunction with terrestrial systems, these integrated applications are used to reduce the carbon footprint of systems and activities on ground, at sea and in the atmosphere, including transport, land use, agriculture, and energy management. As such, they are an efficient tool for climate change mitigation. The international cooperation will reinforce the use of these space applications for climate change mitigation and disaster management, for instance by defining interoperability protocols and standards to allow the best use of any satellites, whatever their origin.

6. No single agency or state alone can address the broad needs of monitoring Earth's climate. International coordination is therefore imperative if we are to succeed in maintaining and augmenting an operational Global Climate Observing System (GCOS). More than half of the key climate parameters identified by the GCOS and required to sustain the work of the United Nations Framework Convention on Climate Change and the IPCC are observed globally from space. International coordination bodies such as the GCOS, the World Meteorological Organization, the United Nations Office for Outer Space Affairs (UNOOSA), the Group on Earth Observation, the CEOS (Committee on Earth Observation Satellites) and the Coordination Group for Meteorological Satellites already work together, each making their own unique contribution, enabling continuity of data from Earth observation satellite missions to be planned in advance and ensuring the best use of space assets to reduce our vulnerability and improve our common future under climate change.

## **IAA Closing Remarks**

The success of this summit demonstrates that many global challenges are better solved by countries working together. Politicians and decisionmakers face competing priorities, while space agencies have to balance new aspirations and the constraints of programmes, budgets and national interests. In addition, more countries have embarked on spacefaring activities or are expanding them. International collaboration and cooperation has therefore become imperative in order to sustain these activities. This summit is the visible demonstration of the support of these space agencies for the international community on the issues of climate change and disaster management.

The IAA has been playing a role as catalyst since the first Summit in 2010 and has produced many peer-reviewed studies and focused conferences in support of the summit activities. It has also contributed to the enlargement of international cooperation by bringing additional countries into the discussions. The IAA should form a working group with members from the spacefaring nations to periodically review the adequacy of space based observation and communication systems. The recommendations of this group ensuring continuity and augmenting capacity should be submitted to the heads of space agencies concerned.

The Academy remains committed to engaging in dialogue with all the heads of space agencies with periodic summits and preparation of more independent studies to support discussions. Partnerships with other existing bodies working on the same issues are also being engaged and the IAA will continue to act as a catalyst to better serve the space community going forward.