Statement from the International Virtual Observatory Alliance (IVOA)
Meeting of the Scientific and Technical Subcommittee of the UN Committee on the Peaceful Use of Outer Space, Vienna, Austria, 29 Jan to 9 Feb 2018

Madame Chair, distinguished delegates, as this is the first time the International Astronomical Union has the floor at this meeting, let me express our confidence that the work of the committee will be successful under your able leadership.

Distinguished delegates, the science of astronomy has a long tradition of international cooperation. It is obvious that observations of the universe have to be conducted without regard of national borders.

Successful international cooperation depends on the development of standards and conventions, which are being followed by the participants. First and foremost we have to be able to read all the data, which are being produced by the contributing observatories. This was achieved through the development of the FITS standard more than 30 years ago.

In recent years this approach has been extended to science data archives of space missions and of ground based telescopes. Observations of the sky by means of increasingly powerful ground-based and space telescopes produce a rich and ever larger volume of publicly available digital data. We refer to data collected by the Hubble Space Telescope, the X-ray and Infrared observatories in space, by the large telescopes on high mountain tops, by arrays of antennae and dishes that detect radio and millimeter wave emission. And now, spectacularly, instruments that detect gravitational waves.

These data belong to the entire humanity. The data in our archives constitute a tremendous Virtual Observatory for scientists and astronomers to investigate our universe. This digital sky of data covers our solar system, planets around far away stars, stars, galaxies, cluster of galaxies, and is being used to understand the physics, and to unravel the properties and evolution of the Universe itself. These data allow the entire human community to better understand our place in the universe and to marvel at the complexity of the cosmos. They are used successfully as a way to teach students in all countries an appreciation of science and mathematics.

To access these complex and rich data sets, we need more sophisticated standards than FITS. To this end, the astronomical community with the help of data and computer scientists created the International Virtual Observatory Alliance (IVOA).

Constituted in 2002, the IVOA has now been joined by 21 national and international Virtual Observatory projects worldwide. IVOA standards are in use in the major astronomical archives and data centers. IVOA standards allow the astronomy data to be completely FAIR (Findable, Accessible, Interoperable and Reusable). Since the exploitation of FAIR data is now a major societal endeavor, the cooperation on the

development and use of standards, and shared data and tools, can be considered as a successful experiment for capacity building that will benefit the entire world.

The IAU has deployed teaching toolkits based on these standards that are used in outreach in developing world countries.

The UN-Open Universe Initiative would be a new important project to make use of IVOA standards and join the IVOA collaboration.

Madame Chair, distinguished delegates. The system which I described is available to everyone. It has the potential to aid the UN in the effort of capacity building. Please find information material on IVOA on the table just outside the room. Please direct any questions you might have to myself or to Rudi Albrecht of the Austrian delegation.

Madame Chair, distinguished delegates. On behalf of the IAU I thank you for the opportunity to present the IVOA to you.

Presented by:
Dr. Mark Allen (Vice-Chair of the IVOA) on behalf of the IVOA members
Director, Centre de Données astronomique de Strasbourg, FRANCE
mark.allen@astro.unistra.fr

IVOA Contact:
Dr. Giuseppina Fabbiano (Chair of the IVOA)
Senior Astrophysicist
Harvard-Smithsonian Center for Astrophysics, USA
gfabbiano@cfa.harvard.edu

www.ivoa.net