

Digital Earth Embracing the Era of Big Data



The 6th Digital Earth Summit convenes in Beijing on July 7 and 8, 2016. Distinguished guests pose for a group picture at the opening.



Digital Earth is a global initiative aimed at harnessing the world's data and information resources to quantitatively describe and represent our planet, and to monitor, measure and forecast natural and human activities on earth. Today, the advent of the big data era is injecting new impetus for the study of Digital Earth, as highlighted during the session of the 6th Digital Earth Summit convened in Beijing on July 7 and 8, 2016. Whilst providing new opportunities for understanding and promoting the concept of Digital Earth, this big wave, however, is also posing great challenges.

“In the new era of big data, Digital Earth should sew together the huge, valuable Geo-data resources increasingly available to us, and perform simulation in real-time of interactions among all earth system processes in all spheres with respect to physical, biological and social science elements,” said Prof. GUO Huadong in his keynote speech at the Summit. “Digital Earth should also integrate massive, multi-spatial, multi-temporal, multi-resolution, and multi-typed earth observation and socioeconomic data, and analysis algorithms and models as well, fully encompassing the properties of big data,” he reiterated.

“Recent developments of Digital Earth, particularly the state-of-the-art technologies emerging from the backdrop of big data, are offering renewed ability for monitoring and

understanding the whole Earth system,” said CAS Vice President XIANG Libin in his address. “Digital Earth has become an important device for human beings to recognizing their mother planet and might greatly benefit human society by fulfilling its major demands,” he furthered, while expecting even more rapid a growth of this discipline.

Digital Earth Summit is a serial event hosted by the International Society for Digital Earth (ISDE). It aims to spread the concept of Digital Earth, and promote relevant applications through providing and promoting an international platform for educationists, researchers, and entrepreneurs to discuss and communicate. The Summit has been convened every two years consecutively in five countries since 2006.

The 6th Summit attracted about 300 delegates of scientists, engineers, technologists, and scholars from 30 countries. The conference covered 17 scientific sessions and recruited 197 high-quality papers dedicated to topics ranging from Digital Earth theory and technology, Earth observation, Digital Earth and citizen well-being, Digital Earth education and outreach.

Distinguished scholars were invited to give keynote presentations and speeches at the Summit to address the challenges of big data. Dr. Alessandro Annoni from Joint Research Centre of the European Commission gave a keynote speech titled “Digital Earth and new data source:



Opening Ceremony of the Summit.



Awarding of the ISDE Service Award at the ceremony to celebrate the 10th anniversary of ISDE. Prof. LU Yongxiang (first left), former CAS President and founding President of ISDE, and Prof. John van Genderen (first right), present the medals to Prof. Milan Konečný (second left), Prof. WANG Changlin (third left), and Dr. Mario Hernandez (second right), to honor their outstanding contributions to the development of the ISDE.

what is changing”. Dr. Schreier Gunter from German Aerospace Center, Prof. LI Deren from Wuhan University, Dr. Tim Foresman from Australian Queensland University of Technology, Prof. Geoffrey Boulton from CODATA, and Dr. Trevor Taylor from Open Geospatial Consortium also shared their thoughts in terms of the role of Digital Earth in global change, international disaster mitigation, technological innovation, social-economic development and education, revolving the theme “Digital Earth in the Era of Big Data”. The delegates called for intensified efforts to open data sharing, to help better understand multi-source Earth data integration, and the dynamic integration of multi-spatial, multi-dimensional Earth data.

ISDE has dedicated itself to promotion of Digital Earth since the emergence of the concept in the late 1990s. To address challenges of big Earth data, it vowed to stick to comprehensive and systematic observation of the Earth, as well as data-intensive methods for the study of Earth system models, thereby leading to increased knowledge discovery of the Earth. Relying on national spatial infrastructures and high-speed Internet, Digital Earth systems can connect multiple satellites

and geographical information centers to complete the acquisition, transmission, storage, processing, analysis and distribution of spatial data. On the other hand, big Earth data will further generate more Digital Earth products, services and applications.

During the session of the summit, a brief ceremony was held to celebrate the 10th anniversary of the host, ISDE. At the ceremony, outstanding scientists and experts working in the field of Digital Earth were presented with medals as winners for ISDE Fellowship, Special Contribution Awards, S&T Award, Service Award, Conference Organizing Award, and Honorable ISDE Members respectively, in recognition of their outstanding contributions to the promotion of this new concept.

Notably, Prof. LU Yongxiang, former President of the Chinese Academy of Sciences and founding President of ISDE, was awarded with the ISDE Fellowship due to his vanguard role in promoting the concept of Digital Earth, and his contributions to the advancement of science and technology of Digital Earth in the international community. Prof. Michael Goodchild, who contributed



ISDE Council Meeting

to the historic speech “The Digital Earth: Understanding Our Planet in the 21st Century” given by former US President Al Gore in 1998, won the same honor due to his continuous efforts invested into further development of the concept since its emergence in the late 1990s.

Prior to the Summit, a session of ISDE Council meeting was held on 6th July to decide on some important issues of the organization. Among the council decisions was the one to establish a strategic planning committee, an award committee, a project committee, a young scientists committee, and an outreach committee. In addition, the Council listened to the briefing on the preparation for the 10th and the 11th International Symposium on Digital

Earth, to be held in April 2017 in Sydney, Australia and 2019 in Florence, Italy, respectively.

As the leading international scientific organization in the field of Digital Earth, ISDE focuses on the dynamic development of Digital Earth and big data, dedicated to the exploration on the frontiers of earth observation and big earth data. With worldwide influence, it plays a key role in Digital Earth research, and the development of Digital Earth. The year 2016 witnesses its rebirth against the background of big data and its new efforts to advocate its concept of Big Earth Data. ISDE is ready for facing the challenges ahead, and will commit to strengthening the society for promoting the further development of Digital Earth. (ISDE)