Geospatial Information Systems Day

Virtual event

Speech

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Distinguished guests,

Dear participants,

Thank you very much for the opportunity to deliver a speech on the occasion of the Geospatial Information Systems Day.

Let me start by introducing the ITU.

The International Telecommunication Union[1] (ITU) is the UN Specialized Agency for ICT and is at the very heart of the ICT sector. It manages allocation of global resources like radio-frequency spectrum and satellite orbital positions, to create a seamless global communications system that is robust, reliable, and constantly evolving.

Virtually every facet of modern life – in business, culture, or entertainment, at work and at home – depends on information and communication technologies.

Today, there are around seven billion mobile phone subscribers, close to five billion people with access to television, and tens of millions of new Internet users every year. Hundreds of millions of people around the world use satellite services – whether getting directions from a satellite navigation system, checking the weather

[1] From https://www.itu.int/en/about/Pages/vision.aspx

forecast or watching television from isolated areas. Millions more use video and audio compression every day in television sets, computers, mobile phones music players and cameras.

The global international telecommunications network is the largest and most sophisticated engineering feat ever created. We use it every time we log on to the web, send an e-mail or SMS, listen to the radio, watch television, order something online, travel by plane or ship – and of course every time we use a mobile phone, smartphone, tablet or a computer.

Ladies and gentlemen,

Geospatial data are one of the key enablers of the ICT sector, and this is why the ITU has been very interested in and committed to the work of the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM).

I take this opportunity to acknowledge the UN-GGIM for its achievements in addressing global challenges regarding the use of geospatial information.

The ITU has been participating since the beginning in the work of the UN Geospatial Network[2], as a Member of its Steering Committee.

I am pleased also to mention that ITU has been cooperating with the UN Geospatial Network to produce two episodes[3] of the Talking Tech interview series: Girls and Women in ICT, which will be released today on occasion of the GIS day to showcase the important work of two Geospatial experts working in the UN system.

The ITU has also engaged in direct cooperation with the World Geospatial Industry Council (WGIC) since 2019 to accelerate the implementation of the 2030 Agenda for Sustainable Development, focusing particularly in the area of ICTs and geospatial technologies[4].

To give an indication of the importance of geospatial data for ICT development I will just mention a few examples.

ITU plays a leading role in managing the radio spectrum and developing globally applicable standards for IMT-2020 (5G). Fifth-generation[5] mobile technology, or 5G, promises to act as the connective tissue of tomorrow's digital economy, linking everything from smartphones to wireless sensors to industrial robots and self-driving cars. Therefore, 5G telecommunication infrastructure must be stable, secure, reliable, and interoperable to support an enormous volume of applications and services.

Very accurate geospatial data will be essential for 5G deployment[6], which will require denser telecommunication networks – more base stations placed selectively and strategically-when implemented in the millimetre wave bands. Both accurate geographical data and advanced spatial analytics will be crucial to ensure that these radio networks are cost-effective and efficient. 5G base stations will require nanosecond synchronization to improve the positioning accuracy for smart transportation and intelligent traffic management systems.

More generally, radio-meteorological geospatial data are instrumental for the development of ITU recommendations, the equivalent to international standards, on radio wave propagation prediction methods for the planning for radio communication services. These methods also make use of digital terrain elevation models and features on the surface of the Earth to perform radio wave propagation predictions thus ensuring optimum and efficient use of the radio spectrum.

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[5] ITU News: "How geospatial technology will boost 5G and shape smart cities and communities", Malcolm Johnson, ITU Deputy Secretary General

[6] https://www.itu.int/en/mediacentre/backgrounders/Pages/geospatial.aspx

In fact, telecommunication systems provide the means to perform and gather geospatial data on meteorological, Earth and solar observations, which, besides their primary purposes, also provide the possibility to enhance telecommunication services.

Supporting universal access, the ITU has developed Interactive Transmission Maps which provide tracking backbone connectivity over 20 million kilometres of global terrestrial networks involving nearly 550 operators which can help to shape infrastructure strategies to connect underserved or disconnected communities. For example, Giga, the ITU and UNICEF initiative to connect every school to the Internet by 2030, relies on geospatial infrastructure data available on the ITU Maps.

As a part of its standardization activities[7] to support IoT and Smart Cities & Communities, in 2020 the ITU has approved a Recommendation on the SensorThings[8], which is the OGC Application Programming Interface (API) which provides an open, geospatial-enabled and unified way to interconnect the Internet of Things (IoT) devices, data, and applications over the Web.

The ITU has also developed a Technical Report[9] to "Identify call location for emergency service", which provides guidance on provision of the different technologies to identify the call location of fixed and mobile devices for emergency services. Such information can save vital seconds for first responders and reduce mortality due to the lack of timely arrival of emergency services.

Just one month ago, the ITU established a Focus Group on AI and IoT for Digital Agriculture. This Focus Group will work closely with FAO to address the challenges within the agricultural sector, and conduct the preparatory work for best practices related to the use of AI and IoT in supporting data acquisition and handling,

[7] https://ggim.un.org/meetings/GGIM-committee/10th-Session/documents/2020_UN-Geospatial-Network-Blueprint.pdf

[8] https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=14375

[9] https://www.itu.int/en/myitu/Publications/2020/08/06/09/14/Identify-call-location-for-emergency-service

improving modeling based on agricultural and geospatial data, and delivering interventions related to the optimization of agricultural production processes.

In addition, the AI for Good Summit, organized by the ITU, in partnership with 38 UN Sister Agencies, XPRIZE Foundation, ACM and co-convened with Switzerland , is now organizing a series of events on Geospatial AI (GeoAI), the emerging scientific discipline at the intersection of geospatial data and artificial intelligence.

These events are organized in cooperation with our Geospatial partners, the UN Geospatial Network, the UN GGIM Academic Network, the UN Open GIS Initiative, the OGC, and the WGIC.

In keeping with the concept that “everything happens somewhere”, making sense of the spatiotemporal context of real-world phenomena is becoming an increasingly important part of the solution for almost every problem facing humankind. The spatial computing required for this purpose includes for example the analysis of vehicle locations for routing taxis and delivery vehicles, using satellite imagery for locating a landslide, detecting changes in crop patterns, predicting locations at high risk due to hurricane, or mapping the spread of covid-19 through mobile phones.

The GeoAI Discovery Channel will feature several topics including Basics of GeoAI; Education and Capacity Building; Machine learning and Citizen Science, Disaster Response, Climate Change, Intelligent Transport systems, Smart Cities, 5G and Digital Twin Earth.

The GeoAI Challenge will aim to accelerate democratization of the use of AI around the globe in the geospatial domain and engage participants from the private sector, academia, national and international organizations to solve problems of relevance for the SDGs. Furthermore, there is the public benefit from new datasets being released in the public domain along with these challenges. These datasets are expected to advance the state of GeoAI solutions for the relevant problems beyond the challenges too.

Dear participants,

As you can see, the ITU is at the forefront of the digital revolution that accelerates progress towards every United Nations Sustainable Development Goals.

Geospatial data coupled with powerful geospatial analyses are key to providing effective and efficient telecommunication services and applications now and for the future.

This is why a close relationship with the geospatial community is welcomed as it will help us to ensure that the potential and requirements of geospatial data, services, and technologies is well understood and integrated in ICT systems and applications, which are at the basis of the fourth industrial revolution.

The ITU Membership comprises 193 Member States and over 900 companies, universities, research institutes and international and regional organizations. In fact, several organizations of the geospatial community are already members of the ITU, for example, the Open Geospatial Consortium (OGC) and the Airbus Group.

I invite you also to follow the work of the International Telecommunications Union so that together, we can leverage the power of the technology to improve the lives and productivity of people and businesses everywhere.