

Podcast for World Radio Day

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- **Why is radiocommunication so important in our wireless world?**

Radiocommunication has been a key element in the expansion of the information and communication society. It has allowed us to reach a large number of people around the world, even in the most remote and least developed areas.

The wireless world of today is based on the use of radio-frequency spectrum and satellite orbits. These limited natural resources enable the development of the digital economy.

This is more important than ever, given that access to broadband mobile services, including 5G, and access to the Internet of things requires radiocommunications.

People demand to have instantaneous connectivity on the move (in a car, or in a high-speed train) comparable to that of static connectivity (when accessing a device from home or the office). The volumes of data are soaring with the millions of text messages, tweets, and videos shared every minute... and they tend to increase with new functionalities such as Ultra-High Definition and augmented reality. The access to these applications would not be possible without wireless technologies.

In addition, Industry 4.0, smart cities, driverless cars, enhanced mobile cloud services, real-time traffic control optimization, emergency and disaster

response, smart grid, e-health, efficient industrial communications, and a series of innovations using Artificial Intelligence, all rely on radiocommunications to collect and transmit data.

Nevertheless, not only mobile services use radiocommunications. Also fixed, (TV and radio) broadcasting, amateur, space research, emergency telecommunications, meteorology, global positioning systems (such as GPS), environmental monitoring (to monitor climate change) and communication services that ensure safety of life on land, at sea and in the skies. All these essential services use radiocommunications.

- **How does ITU's radiocommunication work impact people's everyday lives?**

The ITU Radiocommunication Sector (ITU-R) plays a vital role in the global management of the radio-frequency spectrum and satellite orbits. It regulates and sets the standards for globally harmonized radiocommunications. Member States, together with spectrum stakeholders come to the ITU, conduct studies, discuss, negotiate and agree on decisions that have global impact.

And how does globally harmonized spectrum impact people's everyday lives? I would say in the quality, the price and the availability of services.

Let me try to explain. The radio-frequency spectrum is divided into frequency bands, and each band is allocated to different radiocommunication services. The ITU conducts sharing and compatibility studies to ensure services can coexist with each other. This prevents harmful interference and ensures the quality of radiocommunication services.

Regarding the prices, once a frequency band has been harmonized, the same network or user equipment can be used globally. Thus high volumes of production enable economies of scale and bring prices down. Improving the affordability of services is the path towards connecting the population that is still unconnected.

Finally, when the ecosystem is developed following international standards, this enables interoperability and interconnection of equipment, as well as roaming. Which ensures the equipment can enter global markets and services are available wherever people go, even when traveling from one country to another.

Now how do satellite orbits impact people's lives? Well satellites are behind several services that we use today such as banking systems, weather forecast systems, aeronautical systems etc. And the ITU is the only agency responsible for managing the space related assignments and orbital positions.

- **What are the key decisions to be taken at the World Radiocommunication Conference? Why are they important?**

WRC-19 will take key decisions that affect the connectivity of people and things. Such connectivity is one of the main vectors of the digital transformation the world is going through.

For example, WRC-19 is expected to decide on the allocation and identification of additional spectrum for mobile broadband (5G) in bands above 24 GHz.

These spectrum bands will provide higher throughputs and capacity, lower latency, higher reliability, and massive machine type communications compared to the current allocations in low (below 1 GHz) and medium (between 1 and 6 GHz) frequency bands.

The millimeter waves will be necessary for the development not only of mobile broadband, but also for Industrial Automation and Industry 4.0.

Expectations are high: research suggests that 5G could unlock over \$12 trillion of new revenue and 22 million jobs worldwide. Indeed, 5G will act as the connecting tissue of tomorrow's digital economy, linking anything from smartphones to wireless sensors and industrial robots to self-driving cars. Future networks will also drive substantial transformation in many development-related sectors including health, education, financial inclusion

and food security – making them a key accelerator towards the achievement of the Sustainable Development Goals.

WRC-19 is also expected to decide on the provision of additional spectrum allocation for High Altitude Platforms Systems (HAPS) and non-Geostationary Satellite Systems. The aim is to ensure these systems have enough capacity to provide connection to rural and remote areas.

In remote and scarcely populated areas, providing coverage at an affordable cost remains a challenge because of the cost of the backhaul infrastructure. Since fiber cannot be deployed everywhere to provide this infrastructure, radio relays, satellites, including non-geostationary constellations, and High Altitude Platforms (HAPS) offer great potential for the provision of solutions in these areas.