Kaleidoscope 2020

Virtual event

Monday, 7 December 2020

Opening Remarks

Mario Maniewicz

Director, Radiocommunication Bureau

Director of the ITU Telecommunication Standardization Bureau,

Distinguished guests,

Ladies and Gentlemen,

It is a pleasure for me to welcome you to the Kaleidoscope 2020.

We have been hearing so much about digital transformation lately, but who better than the academia and research centers to tell us what the future will look like!

In the ITU, we benefit from the work of researchers, a bit more down the road when we develop standards.

The ITU-R and the ITU-T have a history of collaboration in the development of globally harmonized standards. In particular, in areas of video compression and broadcasting, and more recently on Intelligent Transport Systems communication standards, and IMT-2020 radio and network standards. We have worked together in the past and will continue working together in the future.

The nature of the work that takes place in the ITU Radiocommunication Sector, however, is focused specifically on radiocommunication services. Our role lays on the development of international regulations and standards and on the global management of radio-frequency spectrum and satellite orbits.

Let me share with you a bit of our work related to mobile communications. The World Radiocommunications Conference of 2019 revised the international treaty governing the use of spectrum and orbits and identified additional millimeter wave bands for International Mobile Telecommunications-2020, or 5G.

In addition, just a couple of weeks ago, the ITU-R successfully concluded an important milestone. We adopted a draft new Recommendation on the detailed specifications of the terrestrial radio interfaces of IMT-2020. Three radio interfaces are now part of the new 5G standard.

This is, however, a continuous standardization process. So, in the next years, new radio interface technology proposals may be submitted to the ITU, and existing 5G radio interface specifications will then be updated.

Currently, we are seeing increasing interest and more and more announcements about 5G auctions and rollouts. Nevertheless, academia and research communities are years ahead and have already begun studies on 6G!

ITU-R Working Party 5D will also initiate work on future technology trends for "IMT towards 2030 and beyond".

It is your role, the role of universities, industries, and research communities, to propose new software and hardware developments for the next generation of mobile services. 6G research will look into new use cases, and new disruptive technologies that can improve performance beyond what we have today for 5G.

Several new mathematical models will be considered, as well as machine learning techniques for network optimization, artificial intelligence for handover strategies (as we will hear in one of the presentations), and physical layer advancements to improve spectral efficiency gains. The possibilities are

countless, but technology still needs to evolve and mature to form a new 6G standard.

Interestingly, the same techniques and technologies that can be embedded in mobile equipment and used to ameliorate communication networks, also rely on these networks to function.

It is a two-way road.

- For example, artificial intelligence software, cloud services and other applications depend on a reliable and fast broadband connection to drive the digital transformation of industries and of society.
- Augmented reality and immersive experiences used for tourism, learning or agriculture (as we will also hear during the conference) receive content based digital information from the Internet through broadband connections.
- And last, but not least, the Industrial Revolution or Industry 4.0, as it is being called, entrusts radio services to connect devices and machines to the Internet of Things.

Finally, I want to highlight that there are countless technologies that can be used to provide connectivity. I highlighted here the 5G and 6G technologies included in the Kaleidoscope programme, but it is up to the academia and research communities to come up with accessible solutions that provide connectivity to all people around the world. And this can be done using both wireless and wired technologies, terrestrial and space services. We count on your contribution to make this happen.

You have an exciting programme ahead of you, and I wish you a very fruitful event.

Thank you very much.