ITU Kaleidoscope 2021

Virtual event

Welcome Remarks

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Mario Maniewicz
Director, Oficina de Radiocomunicaciones de la UIT

Good morning, good afternoon, and good evening to all,

I thank the TSB Director for inviting me to provide welcoming remarks at the opening of ITU Kaleidoscope 2021. It gives me great pleasure to join you today at the ITU Kaleidoscope, which is an important conference that increases the dialog between ITU, regulators, universities, industries, scientists, and research institutes.

Let me start by citing a famous quote that is very representative of this conference. Isaac Newton once said: “If I have seen further, it is by standing on the shoulders of Giants”. This quote symbolizes the beauty of scientific progress. Each new academic paper, each new project does not come alone. It builds upon previous discoveries of others.

In fact, the birth of a new technology is a result of years of research and development. Research that endures great uncertainties and risks, but also great gratification. Behind scientific production is the sharing of information, is the inspiration that comes from looking at things from the eyes of others. Is the collaboration process that gradually collects enough findings and improvement to push the technology from one generation to the next.

Dear colleagues,

The theme of this year's academic conference, *Connecting physical and virtual worlds*, could not be more timely. It brings to light the latest discussions on technological trends and on how the on-going digital transformation is blurring the distinction between our physical and virtual worlds.

As Director of ITU's Radiocommunication Bureau, some of the topics covered during this conference, are of special interest to me and to the ITU-R Sector since they deal with wireless network infrastructure. I highlight in particular Sessions 1 and 6, that consider Enabling future wireless communication systems, and Machine learning for next generation wireless networks.

The papers that will be presented during these Sessions touch upon emerging developments in wireless communication technologies. Under discussion are improvements to 5G systems, the Internet of Things, and future 6G systems - its concepts, objectives, and technologies.

Papers on the next generation of wireless networks, share insights on the convergence of computing and communications, on Neural networks, Machine intelligence, Machine learning, and Cloud-native technologies. They also exemplify the use of these mechanisms for channel estimation, scenario recognition, and scheduling.

Each project and research that will be presented today is a step forward, a contribution to what combined will form the basis of new technological developments.

Dear colleagues,

In parallel to the research that is being conducted in universities and laboratories, the ITU develops standards for new technologies. These standards ensure services are accessible, affordable, high-quality, interoperable, and secure. And for wireless networks, the standards also ensure interference free operations of radiocommunication systems.

The Radiocommunications Sector of the ITU, beside developing standards, regulates the use of radio-frequency spectrum resources and approves detailed specifications of the radio interfaces for mobile services.

This year we concluded the specifications for 5G, or IMT-2020, as we call it. And currently, we are in very early stages of discussion on IMT towards 2030 and beyond, what might become 6G. We are anticipating new use cases for mobile technology and subsequently identifying any gaps, as well as new technical enablers necessary in the 2030 timeframe.

In fact, of the ITU-R Working Parties, WP 5D, is developing a new report on “Future Technology Trends of terrestrial IMT systems towards 2030 and beyond” where aspects of the digital experience are being discussed, including multi-sensorial experiences that mix the physical, biological, and digital worlds.

Besides integrating sensing and communication, other trends under consideration include Native AI based communication, Enhanced RAN privacy, and Tera-Hertz (THz) communications.

Finally, important considerations in a post-covid era are related to the sustainability, resilience, and trust of communication networks. IMT systems towards 2030 and beyond will also consider these aspects to ensure enhanced energy efficiency, lower power consumption, as well as ways to ensure the systems are secure and can operate in case of natural disasters and global pandemics.

A new generation of mobile services will rely on hundreds if not thousands of innovations - like the ones discussed here at this conference.

Dear colleagues,

All starts with science, this systematic approach to build and organize knowledge. Scientific knowledge is shared and then applied by engineers and researchers to solve problems. The possibility of transforming our ideas into solutions brings us hope and helps us see the future with more optimism.

I invite all of you to bring your ideas, solutions, and your optimism to the work of the ITU, so that academia, research institutions, scientists, industry and regulators – together, can see further – and can define the vision and the technical requirements for future technologies. So that digital transformation of societies and economies also represents a more sustainable and developed world – for all people.

Thank you very much.