

Keynote 02: Triple Play: AI, MV, and HTC

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ABSTRACT

At the beginning of the 21st century, with the convergence of communication networks, the term Triple Play, which included voice, video, and data services, became a popular term for the provision of services by next-generation networks. At that time, this approach meant the unity of the convergent network and the universality of the services provided to the user. Now, about a quarter of a century after that time, the development of communication networks is taking place in the direction of creating various kinds of universes based on artificial intelligence technologies. Even urban universes have appeared as a development of smart cities. At the same time, the design Artificial Intelligence (AI) plus Metaverse (MV) was considered quite popular for some time. At the global standardization symposium in New Delhi in October 2024 during WTSA-24, it was proposed to supplement this dual with a holographic type of communications (HTC). This was necessary because there is a fairly widespread opinion that society will become holographic by 2030. This proposal was made by the ITU-T Focus Group Leader Richard Lee in 2018 at the first meeting of the focus group. Considering the great potential of holographic universes and the development of technologies in the field of providing holographic telepresence services, it seems useful to use the triune design of AI + MV + HTC at present. The report further discusses the development of artificial intelligence in the field of communication networks, the transformation of metauniverses into holographic network universes (HolNetVerse), work in the field of creating various terminals for holographic interactions and implementing telepresence services, the creation of holographic universities, the creation of holographic cities using the example of St. Petersburg, the development of a telepresence suit with parametric feedback, the capabilities of such telepresence suits together with a network universe for remote rehabilitation of patients using the example of recovery for children with upper limb injuries. All these applications show how effective the use of the new Triple Play AI + MV + HTC can be.

BIOGRAPHY



After graduating from Leningrad University of Telecommunications in 1974, A. Koucheryavy joined Telecommunication Research Institute LONIIS, where he worked till October 2003 (from 1986 to 2003 as the First Deputy Director). Dr. A. Koucheryavy holds Professor position at the Bonch-Bruевич St. Petersburg State University of Telecommunications (SUT) since 1998. There, in 2011 he became a Chaired Professor in “Telecommunication Networks and data transmission” department. Dr. A. Koucheryavy was an advisor of the Central Science Research Telecommunication Institute (ZNIIS) from 2003 to 2010. Co-founder of the International Teletraffic Seminar (1993, 1995, 1998, 2002); founder of the model network for digital networks at LONIIS (1997); co-founder of the model network for packet networks at ZNIIS (2004); co-founder of the Internet of Things

Laboratory (2012) and Quality of Experience and IPTV Laboratory (2014) at SUT. Chair of the Scientific school on teletraffic theory in LONIIS (1990 – 2003); Founder and scientific school chair “Internet of Things and self-organizing networks” in SUT (2010 up to now); Steering committee member of IEEE technically co-sponsored series of conferences ICACT, NEW2AN and ICFNDS, Chair of ICACT 2020 International Steering Committee. SG11 ITU-T vice-chairman 2005 – 2008, 2009 – 2012. WP3/WP4 SG11 chairman 2006 – 2012, WP4 SG11 vice-chairman 2015-2016, Chairman of SG11 from 2016 up to March 2022. Co-founder of International Testing Center for new telecommunications technologies at ZNIIS under ITU-D competence. Host and technical program committee member of the “Kaleidoscope 2014” at SUT. Founder of the model network for telepresence services in SUT (2021). Honorary member of Popov’s society (2002).