

6G/B6G HAPS (High Altitude Platform Station) Networks: An Evolution with a Revolutionary Impact

In this VDL, a novel wireless network architecture for 2030s (6G) and beyond (B6G) will be presented with a new access layer composed of HAPS (high altitude platform station) constellations between the satellite and terrestrial networks.

With its bird's-eye view of an entire metropolitan area, a HAPS has the potential of presenting unprecedented opportunities for integrated communications, computing, sensing, positioning, ..., in line with the emerging 6G paradigm of integrated everything.

It is worth noting that the earlier HAPS discussions have been occurring almost exclusively in the context of remote and rural regions which can arguably be served more efficiently by satellite networks. The novel HAPS vision which will be presented in this VDL, on the other hand, is mainly for urban areas towards the smart societies of the future.



Bio: Dr. Halim Yanikomeroglu is a Professor at Carleton University, Canada. He received his Ph.D. from the University of Toronto in 1998. He contributed to 4G/5G technologies and standards; his research focus in recent years has been on 6G and non-terrestrial networks (NTN). His extensive collaboration with industry resulted in 38 granted patents. He supervised or hosted in his lab around 140 postgraduate researchers. He co-authored IEEE papers with faculty members in 80+ universities in 25 countries. He is a Fellow of IEEE, Engineering Institute of Canada, and Canadian Academy of Engineering, and an IEEE Distinguished Speaker for Communications Society (ComSoc) and Vehicular Technology Society (VTS). He is currently chairing the IEEE

WCNC (Wireless Communications and Networking Conference) Steering Committee; he is also a member of PIMRC Steering Committee and ComSoc Emerging Technologies Committee. He served as the General Chair of two VTCs and Technical Program Chair/Co-Chair of three WCNCs. He chaired ComSoc Technical Committee on Personal Communications. He received several awards for his research, teaching, and service, including IEEE ComSoc Fred W. Ellersick Prize (2021), IEEE VTS Stuart Meyer Memorial Award (2020), and IEEE ComSoc Wireless Communications Technical Committee Recognition Award (2018).