

IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Interactive Presentations - IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (IPB)

Author: Dr. Christopher Vasko
European Space Agency (ESA), The Netherlands

Dr. Harald Hauschildt
European Space Agency (ESA), The Netherlands

Mr. Josep Maria Perdigues Armengol
European Space Agency (ESA), The Netherlands

Dr. Kasia Balakier
European Space Agency (ESA), United Kingdom

AN EXCITING NEW DAWN FOR ESA'S HYDRON DEMONSTRATION SYSTEM

Abstract

HydRON (High throughput Optical Network) is a project of the European Space Agency (ESA) and has been ongoing since 2019. The ambitions of HydRON is to extend high-capacity terrestrial networks into space, seamlessly and by interconnecting all kind of space assets across different orbits and terrestrial networks (i.e., 3-dimensional optical network). The targeted capacity performance is orders of magnitude greater compared to today's satcom systems (terabit/sec in contrast to gigabit/sec), exceeding capabilities and partially building on optical communication technologies which went to scale in the past two decades.

This paper will present a recent update of 2024 developments of the HydRON Demonstration System concept (HydRON-DS), including a discussion of the ideas discussed and elaborated as a part of the agency's Call for Proposals in Q3 2023.