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INTERNET IN SPACE! DEVELOPING EUROPEAN CAPABILITIES: PUSHING FOR THE NEXT
GENERATION OF OPTICAL TELECOMMUNICATION TECHNOLOGIES

Abstract

In the recent years, the global SatCom market showed as steady decline in customer demand. The multibillion EUR market is one of the cornerstones of the traditional commercial space market and is predominantly impacted by the steady rise of broadband internet services. Optical communication technologies have the capacity to revolutionize SatCom. Optical communication in space in the Tbps range seem technologically feasible in the coming years. Such data rates meet or even exceed current trends derived from system architectures for 5G, IoT concepts or manned lunar and deep space missions. The European Space Agency is engaged in stimulating the European space industry to address this matter by various initiatives to develop the next generation of optical telecommunication technologies. The European Space Agency has already established first installations in orbit and demonstrated the feasibility of optical telecommunication technologies, and positioned European industry at the forefront of a global race. Various activities are being pursued in this field by the global space community, from precision ranging to optical data transport and quantum communication technologies. This paper aims to introduce the main initiatives driven by the European Space Agency and its main stakeholders in this field, and in particular under the special programmatic line called Scylight in the Telecommunication and Integrated Applications Department.