

IAF SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Integrated Applications End-to-End Solutions (2)

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CONNECTIVITY FOR GREEN VALUE

Abstract

As the climate crisis becomes unignorable, it is imperative that new services are developed addressing not only the needs of customers but take into account its impact on the environment. Society is currently experiencing a green transition, which is revolutionising business models, technology innovation and use, consumption and offering of applications, and sharing of knowledge involving both human and machine spheres. The Telecommunication and Integrated Application (TIA) Directorate of ESA is supporting the green transition through the Green Value and Sustainable Mobility Framework (GVSM). Each of the topics covered in the GVSM framework, and their diverse markets, entail both commercial opportunities and technical challenges. The integration of innovative space and non-space digital technologies and infrastructures are required to optimally develop and deploy commercially sustainable solutions addressing the diversity of use cases. Satellite connectivity, including future 5G networks, and digital technologies such as Digital Twin, AI, Machine Learning and cloud-based applications are key enablers of the green transition. GVSM main objectives are: • Support the emergence of green services leading to decarbonisation of the major Green House Gas (GHG) generating sectors (e.g. transport, energy, industry), establishing Space as part of a green ecosystem of users, Industry (space and non-space) and institutions engaged in the green transition; • Coordinate new public-private partnership projects (PPPs), developments (technology, products, systems, and applications) and deployment of solutions addressing EU Green Deal areas. • Demonstrate the benefits of connectivity infrastructure (small-sat constellations, IoT, optical communication) as enabler of sustainable green services. • Through demonstration and validation opportunities prove that space-based solutions can deliver innovative space-powered business propositions addressing the climate and environmental challenges in all the thematic areas relevant to ESA Member States green targets. Thus paving the way towards the deployment of operational systems. • Assess the environmental “green” impact of developed systems, technologies and applications according to different indicators, including CO2 reduction. GVSM activities will contribute to the objective of the ESA Agenda 2025 “Make Space for Europe”, and especially to the “Space for Green Future” accelerator, bringing forward the contribution that connectivity and integrated applications can make to support all sectors of the Green economy, while also stimulating and accelerating the growth of a competitive European Downstream and Upstream Industry. The paper will describe how services which leverage on connectivity, space and digital technologies, covered in the GVSM framework, are pivotal for the decarbonisation and for the achievement of the green transition.