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

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SPACE 4 SMART CITIES: HOW CAN SPACE HELP BUILD SMART CITIES ON EARTH?

Abstract

The global human population reached 8.0 billion in mid-November 2022 according to United Nations and it is projected to grow around 8.5 billion in 2030, 9.7 billion in 2050 and 10.4 billion in 2100. This growth has resulted in rapid urbanisation causing problems such as traffic congestion, environmental pollution, lack of infrastructure and land degradation. City authorities and planners are increasingly adopting smart cities solutions to address these challenges. Smart cities uses information and communication technology (ICT) to improve operational efficiency, citizen welfare and provide a better quality of government service. According to Precedence Research, the global smart cities market size is expected to reach around $US7,162.5 billion by 2030$.

Data and information are the core components for implementation of smart cities solutions. Space assets such as Satellite Communications (SatCom), including future 5G/6G networks, Satellite Navigation and Satellite Earth Observation (SatEO) have a key role to play in this ecosystem as a technological enabler and support in building cost-efficient business models.

Releasing the needs and challenges for smart cities, ESA has developed portfolio of ongoing and planned activities for this specific sector. To reinforce its contribution to the smart cities ecosystem, ESA will be launching the "Task Force for Space 4 Smart Cities" bringing together stakeholders and cities representatives to facilitate the transition to smart sustainable cities by leveraging the use of space applications.

The paper will describe how services utilising connectivity, space and digital technologies, are pivotal for implementing smart cities solutions and the future vision for the Task Force.