SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
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DRONES FOR REMOTE SENSING: ANALYSIS OF CURRENT AND FUTURE APPLICATIONS

Abstract

Drones, characterized by a rapid technological development in recent years, are gaining market acceptance and popularity. With a rising payload capability, drones equipped with imaging and sensing devices are widely used as an integrative application in disaster management, urban planning and other Earth monitoring applications. Their lower altitude and rapid deployment, low complexity and cost, non-orbital flight characteristics and high manoeuvrability can give drones a significant edge over the more complex satellite.

For the purposes of this report, a drone was defined as:

'a reusable unmanned vehicle flown terrestrially or in space, controlled remotely or flying autonomously, using on-board flight plans, sensors, positioning systems or controls'.

This report focuses on drone remote sensing applications in climate studies, resource management and disaster management. Drones are considered as a complementary tool to satellites with respect to exploiting the synergies between them and in some cases as a viable substitute. In assessing the forward trends for drone capabilities, payload and structural technologies were explored including the design, materials, power, cost, size, and flight autonomy. Future market trends and commercial viability in existing and new service markets that address specific user requirements in an innovative way were also considered. Furthermore, an assessment of the international legal frameworks on drone use identified the gaps in legislation, paving for new policy recommendations.