SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Integrated Applications End-to-End Solutions (1)

Author: Mr. Marco Giancarli
Techno Sky, Italy, m.giancarli@technosky.it

Mr. Olivier Becu
European Space Agency (ESA), The Netherlands, olivier.becu@esa.int
Mr. Amnon Ginati
European Space Agency (ESA), The Netherlands, amnon.ginati@esa.int
Mr. Antonio Monteleone
Nextant SpA, Italy, antonio.monteleone@nextant.it
Mr. Ferdinando Sautto
Techno Sky, Italy, f.sautto@technosky.it

SPACE SERVICES BENEFITS IN AVIATION SYSTEM

Abstract

Current trends in air transportation show that the General Aviation traffic will expand in the future. The development of regional and small airports is expected to become a priority in the near future. In this respect, new National and European transport policies aim at increasing people's mobility and at the same time reducing transportation time and costs, and environmental impact by transferring air traffic towards areas/sites served by minor airports. As a matter of fact, there is, in Europe, a considerable number of aircrafts used for business and/or private tourism that would utilize minor airports if these airports were properly equipped and "facilitated" by adequate support services. This limitation is mainly due to the absence of traditional support dedicated to surveillance, air navigation services such as Instrumental Landing System and control tower services, typically too expensive for small facilities with limited and sparse traffic. In this context, TechnoSky – an Italian company leading in air navigation services – is in charge of an innovative project in partnership with the Integrated Applications Promotion (IAP) programme of the European Space Agency. The S2BAS (Space Services Benefits in Aviation System) demonstration project aims to develop, deploy and demonstrate the provision of an integrated set of satellite-based cost-effective services targeted to small and regional airports (both "manned" and "unmanned"). The set of integrated satellite-based services includes i) the provision of GNSS (Global Navigation Satellite System) based navigation assistance in the terminal area to assist flight approaches; ii) an advanced way for the production and distribution of up-to-date Obstacle Charts by mean of satellite based Earth Observation data; iii) the management of remote airports through VSAT communications, including the monitoring of real-time air traffic in the vicinity. It is anticipated that the unique added-value and cost-effectiveness of satellite based solutions applied to this purpose will pave the way for an operational roll-out of mentioned services after the completion of the project. When available at operational level, it is foreseen that the S2BAS services will support the growth of both commercial and tourist air traffic, and will contribute to the development of civil aviation as an alternative to road and rail transportations. This paper will present the results obtained and the challenges faced during the first phase of the project, will provide technical insights about the space assets mobilized and will discuss the added-value and sustainability of the proposed solution with respect to the end-users' needs.