DocumentID	241397
Vortragstitel	Mission Concepts for Future Earth Observation Applications
Autoren	F. te Hennepe, G. Hofschuster, M. Bonerba, W. Sun, R. Ernst, S. Strauß
Preisträger	
Vortragssprache	englisch
Seiten	7
Veranstaltung	Deutscher Luft- und Raumfahrtkongress 2011
Veranstaltungsort	Bremen
Veröffentlicht in	Deutscher Luft- und Raumfahrtkongress, Tagungsband - Manuskripte, 2011; Seite 1163 - 1170; DGLR e.V.; Bonn; 2011
Stichwörter	Earth Observation
	Applications

Abstract

This paper outlines near-future Earth Observation concepts, which are currently under investigation on national and/or European level by OHB-System. These concepts comprise a wide selection of applications ranging from atmospheric science and research to operational security service constellations with very high resolution. Several of these concepts will be presented in this paper, including maritime surveillance, monitoring of biological and atmospheric constituents and security services:

- SAR and optical missions with very high resolution of below 1m are particularly suitable for dual-use and reconnaissance applications. In such conceptual systems, the timeliness of the data obtained and therefore a fast system response time is the main user requirement to be considered.
- GMES – The Security Core is a system of systems that will allow generation of ready-to-use customized products based on a combination of Earth observation, telecommunication and navigation tools provided from space-, airborne- and ground-based assets. OHB has developed two concepts to compliment existing systems to improve security over Europe. The two concepts utilise different observation methods, from different altitudes in order to address the different spatial and temporal resolution needs required of security applications.
- Earth Explorer Core Mission is a dedicated ESA programme to improve the understanding of the planet Earth and its changes. In the current stage of this programme (EECM #7), OHB is responsible for designing the platforms of: BIOMASS – forest biomass, CoReH2O – ice and water cycle characteristics, and PREMIER – link trace gases, radiation, chemistry and climate in the atmosphere.
- CarbonSat is a satellite system for global coverage of atmospheric CO2 and CH4 distributions. An international, operational constellation of multiple satellites is proposed to provide highly accurate products and services related to emission "hot spots " and regional densities on at least quarterly basis as an operational service.
- Space-based Automatic Identification System (AIS) Constellation consists of small AIS satellites, dedicated to receive logistic and navigation data from ships. The satellite system will enable global ship detection as a complementary improvement on the existing terrestrial system, improving maritime security applications.

For the versatile selection of missions a common factor is that high performance can be achieved with small satellites, which enables low overall cost and short

development time of the operative system. In addition to the key features of the mission platforms, the paper will outline the mission concepts.