

IAF EARTH OBSERVATION SYMPOSIUM (B1)  
Earth Observation Applications, Societal Challenges and Economic Benefits (5)

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THE ITALIAN PROJECT SARDOS: A STRATEGY OF TERRITORIAL CONTROL FOR THE  
LEGALITY

**Abstract**

On February 2015, Italian Space Agency (ASI) issued an "Open Call for Small and Medium Enterprises (SMEs)" addressed to the national SMEs (including start-ups, spin-offs), with the main objectives to promote the improvement of existing applications or the development of new technologies and algorithms based on Earth Observation (EO) information. This call is based on the COSMO-SkyMed (CONstellation of small Satellites for Mediterranean basin Observation) data exploitation, which is one of the most advanced and powerful asset in EO field in which Italy plays a key role at world level. In this framework, Nemea Sistemi srl proposed an innovative project for the monitoring of illegal buildings in the Liguria Region (particularly in the Ventimiglia municipality), with successfully results. Following this positive experience, Nemea Sistemi srl applied also to the regional call issued by Sardegna Ricerche for the Sardinia Region where the source of funding is the European Regional Development Fund (ERDF) 2014-2020. The project SardOs (Sardegna Osservata dallo Spazio/Sardinia seen from space), proposed by NEMEA Sistema srl as Prime Contractor together with the University of Cagliari and another private company, KIBERNETES, was selected for funding in February 2018. The aim of SardOs is the environmental and anthropic monitoring and surveillance over the areas of 4 Sardinia's municipalities (Alghero, Capoterra, Quartu and Arzachena) identifying also the coastline profiles, the evolutionary trend of sediments in the riverbed and the buildings not present in the land registry. For the environmental monitoring purpose, SAR data from the COSMO-SkyMed mission are exploited and combined with bathymetric measurements acquired using the water drone Hydra owned by Nemea Sistemi srl. SAR data will be processed using an innovative algorithm of the University of Cagliari addressed to identify buildings not present in the land registry or not declared modifications to existing buildings. The results will be used as input to calculate the taxes claimed by the authority and not paid. The focus of this paper is to provide an overview of the value-added products, innovative services and related societal challenges and benefits proposed and commercialized by NEMEA Sistemi srl exploiting existing technologies and integrated data through the experimentation over some pilot areas to establish preventive measures for risk reduction and tribute managing in urban areas.