

LAND BORDER MONITORING WITH REMOTE SENSING TECHNOLOGIES

R. Malinowski^a K. Bielinska^{*a}

^a Space Research Centre, GMES, Bartycka 18a, 00-716, Warsaw, Poland

Technical Commission VII Symposium 2010

KEY WORDS: Land Cover, Detection, Decision Support, GIS, Satellite, Analysis, Classification, IRS

ABSTRACT:

Land Border Monitoring (LBM) activity is one of many thematic areas that constitute the LIMES project (Land and Sea Integrated Monitoring for European Security). The project is co-founded by the European Commission within the 6th Framework Programme as one of the projects that are related to the security domain of GMES program (Global Monitoring for Environment and Security). The main aim of that project was to do research and develop applications and services that intend to utilise the Earth Observations (EO) technology to increase the security in EU. The LBM activity is located within the Land and Infrastructures Monitoring cluster that is focused on developing the remote sensing applications in land domain like critical infrastructure monitoring (nuclear power stations, pipelines, harbours etc.), big event planning and land borders monitoring. As its name indicates LBM insists on monitoring the land borders of the EU and this is related to the eastern border of the EU from the Finnish – Russian border in the north to the Bulgarian border with Turkey in the south of Europe. Within three years of the ongoing project the research allowed to reveal some evident limitations of the remote sensing technology in the field of monitoring land borders. The RS technology also does not fully meet the requirements of the authorities responsible for the security domain of border monitoring (Border Guards, Frontex Agency). Despite the technological limitations, the project provided products that interest the potential End Users. During the work on services several different processing steps were applied. These include both remote sensing processes (orthorectification, classification of satellite optical and radar imagery) and spatial modelling and analysis. All products were developed for the test area of the Polish – Ukrainian border. The coverage of given product depends on its use and characteristics.

TOPIC: Remote sensing applications

ALTERNATIVE TOPIC: Operational remote sensing programs