

# INNOVATION OF REMOTE SENSING TECHNOLOGY FOR THE KOREA LAND MONITORING

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## ABSTRACT:

In 2006, Ministry of Construction and Transportation proposed "the Roadmap for R&D Innovation in Construction and Transportation" to explore the vision and strategy for industry of construction and transportation. "Intelligent National Land Information Technology Innovation Project" amongst VC-10 projects, which aim to develop the world foremost technology, was selected.

Of 5 core projects in Intelligent National Land Information Technology Innovation Project, the "National Land Monitoring R&D Project" is planned to establish infrastructure structure for integrated monitoring system in order to monitor national land periodically or in real time, and aims to develop core and utilization technology for improving efficiency and effectiveness of decision making process in various fields such as national land management, environment maintenance and disaster management and so on.

The "Innovation of Remote Sensing Monitoring" of 3 sub-projects in National Land Monitoring R&D Project is to firmly construct monitoring infrastructure in achieving such goals as spaceborne and airborne data process technology for periodic and real-time change detection over national land and beyond, integrated monitoring system with ground-borne data in many different application fields, and legal and policy maintenance for national land management and public welfare.

The Innovation of Remote Sensing Monitoring Project (2007.9.11~2011.6.26) consists of 7 major sub-projects and each sub-project comprises several unit projects. The 7 major sub-projects are "Spaceborne Monitoring on Land Cover Property", "Legal and Policy Preparation on Real-time Spaceborne Monitoring", "Change Detection Technique with Satellite/Aerial Imagery", "Automatic/Semi-automatic Technique for National Land Information Extraction", "Situation Analysis and Decision Making Support Technique", "Establishment of Test-Bed and Its Application", "Real-time Spaceborne Monitoring System Development".

The sub-project of Change Detection Technique with Satellite/Aerial Imagery includes 5 unit projects such as multi-temporal high-resolution stereo satellite imagery, multi-spectral high-resolution satellite imagery, mid-resolution and low-resolution satellite imagery, hyper-spectral satellite imagery, and multi-resolution satellite imagery fusion. The Automatic/ Semi-automatic Technique for National Land Information Extraction consists of 4 unit projects: automatic/semi-automatic technique for information extraction, multi-sensor fusion, airborne and spaceborne lidar, and airborne and spaceborne SAR. The Situation Analysis and Decision Making Support Technique comprises 3 unit projects such as decision making technique, real-time monitoring analysis, and real-time monitoring decision making technique. The Establishment of Test-Bed and Its Application contains 4 unit projects: test-bed for high-resolution satellite imagery, test-bed for low-resolution satellite imagery, visualized monitoring technique with multi-resolution satellite imagery, and customized software development. The last sub-project of Real-time Spaceborne Monitoring System Development includes several unit projects that consist of hardware and software development.

The Inha University, principal research institute, as well as 9 universities, 1 research institute and 1 private company participate in the project. In addition, 4 foreign institutes such as York University, Ohio State University, Purdue University and GEOIDE NETWORK collaborate with Korean research group.

The goal of Innovation of Remote Sensing Technology is to improve and develop land monitoring technology and ultimately is to support the decision making in efficient and effective manner for national land, environment and disaster management, and public safety.