

EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Applications and Economic Benefits (5)

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ORBITAL EYE: MONITORING OF LARGE-SCALE TERRESTRIAL INFRASTRUCTURE FROM
SPACE

Abstract

Orbital Eye makes use of the Pipeline Integrity Monitoring System in Space (PiMSyS) Software as a Service package. This package is specifically tailored to the needs of Oil and Gas industry, specifically monitoring of long and complex pipeline networks. This infrastructure is exposed to many dangers, some with potentially fatal consequences, so it is critical that it is closely monitored. Such vital monitoring has traditionally been performed using frequent helicopter fly-overs. With Orbital Eye and PiMSyS, accessing the same level of accurate and agile data is possible using a user friendly app on a handheld device. This paper will outline the overall achievements of Orbital Eye and PiMSyS including a high-level description of the process from satellite to customer, and a status update on the latest developments. The system in general makes use of Sentinel 1 radar observations, which are performed regularly over any given area, and tracks changes in the regions of interest. With the use of advanced algorithms, specifically optimised for pipeline monitoring, every change is evaluated to determine whether it is a potential threat and only changes that pass through a strict criteria are presented in order to minimise the number of false alarms. Radar enables the detection of features and activity independent of cloud cover and daylight at virtually any location on the Earth. This makes it possible to produce monitoring information of a constant high quality. The power behind the system, PimSyS, is ever evolving to meet expanding needs and expectations. A summary of the latest developments is presented to emphasise the ongoing advancements to this powerful system, and to indicate the future potential that it has.