

**IN THE PIPELINE – SATELLITES WILL CHECK GAS TRANSMISSION
INFRASTRUCTURE FROM SPACE**

A £2.5million (4 million Euro), remote sensing, pipeline monitoring project, being driven by Advantica Technologies Ltd and the European Gas Research Group GERG with 17 collaborating partners, has gained approval for funding from the European Commission 5th Framework Research and Technology Development programme, FP5.

PRESENSE - Pipeline REmote SENsing for Safety and the Environment - aims to further improve the safe and secure transmission of gas in Europe's extensive high pressure gas mains transmission systems, by assessing the potential benefits of remote monitoring techniques and processes.

The project will involve the development of mathematical modelling software, image processing software and the evaluation of detector instrumentation. A remote monitoring system will beam images to earth from satellites in space, mapping the route of a pipeline and identifying key threats to pipeline safety and security.

Russ Pride, project manager, at Advantica, says there are three key areas which hold particular interest for European pipeline operators participating in the programme; "Our top priority is to assess how satellite monitoring from space could be used to identify and anticipate third party interference, such as tractors and large earth moving equipment, to the pipeline network. The second area of concern is land movement or landslip and the third is gas leakage.

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“Current pipeline monitoring is undertaken routinely using a number of techniques, the most common being “flying-the-line” in helicopters or fixed wing aircraft with trained observers on board. This happens with regular frequency but is expensive and has the inherent safety concerns of all helicopter flights.”

PRESENSE brings together several of the major European gas utilities and expertise from a number of the European space research agencies, together with organisations with specialist capabilities in information computing technologies such as image analysis, data management and dissemination. This provides a unique forum where new approaches to pipeline monitoring and the resulting benefits can be fully explored.

Russ Pride continues: “A number of sensing techniques including Synthetic Aperture Radar (SAR) in various processing forms, Lidar, Infra Red (IR) and optical surveillance technologies will be developed into systems whose performance and benefits when combined with data fusion methods will be assessed.”

It is expected that the two and a half year programme will commence at the end of the year or early in 2002. Several of the partners will provide state-of-the-art monitoring equipment that will be flown over pipeline test sites to assess the performance of new techniques and the processing of multi-sensor data sets.

Results will be compared with imagery collected from current satellite instrumentation to enable the technology limits of the various approaches to be compared. The pipeline operator companies will provide access to their pipeline right-of-ways and will develop models for the risk and cost benefits of the various approaches considered.

The consortium, managed by Advantica Technologies Ltd, on behalf of Transco – operator of the gas network in Great Britain - comprises the following partners:-

- Six further European gas & oil pipeline operators, including BP (UK), Distrigas (BE), Gasunie (NL), Gaz de France (F), Ruhrgas and VNG (D), all of which manage extensive pipeline infrastructures within Europe and beyond.
- Four “Remote Sensing Technology Developers”, mainly from the aerospace and remote monitoring industries of Europe, comprising NERC (BGS) from the UK, CS from France, DLR from Germany and TNO from the Netherlands, that will provide expertise in the areas of surveillance platforms & equipment to provide primary data on recognition and analysis of known features on the pipeline.
- The University of Nottingham which will provide vegetation stress analysis activities.
- Two further providers of remote sensing technologies and services, AES from Germany and NPA from the UK.
- A further grouping of three technology infrastructure providers, bringing further IT support for the project, comprising Definiens from Germany, ISS from the UK and NLR from the Netherlands.

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“By the end of the project, we are confident that we’ll be able to demonstrate the capabilities of remote monitoring from space and the huge benefits of the system for the European gas utilities as compared to current methods of network monitoring,” concludes Russ Pride.

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Note to Editors - Advantica at a glance

- Advantica is part of the Lattice Group – the infrastructure technology group which also includes Transco.
- With origins in British Gas, Advantica is a leading provider of technology and engineering services to customers in gas, pipelines and associated industries internationally.
- Advantica recently made two acquisitions: RISX – the Aberdeen-based risk management consultancy; and US-headquartered Stoner Associates – the number one network simulation software company in the US.
- Stoner specialises in providing off-the-shelf products for the gas, oil, petroleum and water industries primarily in the US where two thirds of its approximate 550 clients are located. Stoner software is also used by clients in 48 countries outside North America.
- With Stoner's excellent products and extensive client base, the acquisition will make a significant contribution to Advantica's future success in the US.
- Advantica now employs 1,000 people worldwide – predominantly in the UK and North America. The company's largest office is located in Loughborough, UK.
- Advantica's turnover is predicted to be £94million this year.

CAPTION

One meter resolution optical image from the "Ikonos" satellite of a Transco gas holder just south of the Millennium Dome in London.

Image taken by ©SpaceImaging and supplied by one of the participating organisations, NPA.

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