

PIPELINE INFRASTRUCTURE MONITORING IN THE NETHERLANDS

What it is about

In the Netherlands, ground subsidence can cause gas and water pipelines to break right where they enter houses. This is a particular problem and in the area around Rotterdam it can be so severe that soil levels can change by as much as 1m within a few years. Gas pipelines can be subject to very significant movement leading to a risk of rupture at the point of entering houses with threats of gas leakage and even explosions. Satellite images can show hot spots where

ground movement is taking place and thus provides for a targeted replacement programme: the maintenance strategy has now become focused on areas of higher risk. Instead of replacing pipes and connections in a whole district, pipes serving individual houses or streets can be targeted that are more prone to risks. The result is a better investment of resources by the pipeline operators and less risks to consumers from gas leaks or disruption from major water leaks.



What we found

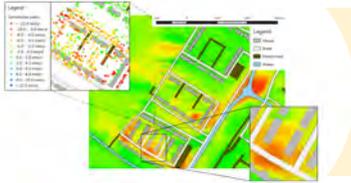
- Benefits are felt throughout the whole value chain and SkyGeo helps to deliver a more efficient and robust public service, serving especially the general public.
- Maintenance companies profit also from better strategic information allowing for further cost reduction, lower insurance costs (as the number of calamities will go down) and better standing with clients.
- Although very high resolution commercial satellite imagery is necessary for this application, it is only the combination with the free-of-charge Sentinel-1 data that makes this case economic.

PIPELINE INFRASTRUCTURE MONITORING IN THE NETHERLANDS



The Satellite Data

Copernicus Sentinel-1 provides free-of-charge frequent all-weather, day-and-night C-band radar images over the Netherlands.



The Service Provider

The Dutch service provider SkyGeo benefits from employment and revenues.

€500k pa



The Primary User

Infrastructure management companies Stedin in Rotterdam and Oasen are able to perform better maintenance and infrastructure assets management.

€11.1m pa



Secondary Beneficiaries

Municipalities can better plan maintenance activities in their territory.

€3.3-6.6m pa



End Use Beneficiary

Citizens benefit from risk reduction in their households and less maintenance work.



Total benefits: €15.2-18.3m pa

About the project

Through a series of case studies, EARSC aims to gather quantitative evidence that the usage of Copernicus Sentinel data provides an effective and convenient support to various market applications. These studies are undertaken in the

frame of the project "Assessing the detailed economic benefits derived from Copernicus Earth Observation data within selected value chains: a bottom-up study survey", under an assignment from the European Space Agency.

Download the full report from the project website



<http://earsc.org/sebs>

