

# PG Ventures Harnesses CATALYST Data Through AWS Data Exchange to Build Innovative Environmental Monitoring Tool.

**PG Ventures, the digital innovation arm of TSR Poland, discovered the powers of CATALYST's ground displacement data when exploring solutions on AWS Marketplace.**

What followed was a collaboration – made possible through AWS Data Exchange – in which expertise, tools, opportunity, and inspiration all came together to develop a way to monitor and measure soil subsidence resulting from underground mining activities.



**PG Ventures discover potential of CATALYST ground displacement data through clear-sky thinking.**

Based in Poland, PG Ventures was founded in 2019 by the leadership of established metal recycling company TSR Poland to explore and develop new digital lines of business.

It began by applying digital tools to what it already knew—the scrap metal business.

Amongst its first solutions was SCREC, a digital tool which uses satellite images to measure and assess scrap metal piles in mill scrap yards.

Effective with clear skies, improvements were needed to enhance its capabilities through all weather day night imaging, so the search began for the solution.

When the PG Ventures team discovered global ground displacement data available from CATALYST through AWS Data Exchange, a lightbulb went off.

“The Interferometric Synthetic Aperture Radar (InSAR) data that CATALYST had wasn't right for SCREC,” says Christoph Schmidt, co-founder of PG Ventures.

“But we realized it could be applied to another problem—measuring ground subsidence related to mining.”



### **Realising PG Venture's Vision with minimal impact on resource or process.**

Subsidence is a significant issue in many countries, including Poland, Germany, Czech Republic, and the United Kingdom. Decommissioned underground mines are collapsing, resulting in ground subsidence.

This can cause structural damage to residential and commercial buildings built on the affected ground. These events are forecast to increase as climate change targets reduce coal consumption.

Locating the exact areas affected using independent monitoring techniques has presented many challenges in the past due to a lack of transparency and accountability.

**"A colleague of ours in Poland was dealing with damage to her home caused by subsidence,"**

Schmidt and his team already had personal experience with subsidence, something he said led to them seeing the potential for innovation. "A colleague of ours in Poland was dealing with damage to her home caused by subsidence," says Schmidt.

"She was at a real disadvantage in making a claim against the mining company because she didn't have access to data to support her claim. It was a very unbalanced process.

"So, we realized, if we could get the right data, we could develop a tool to make the information available to anyone. Using AWS Data Exchange proved the perfect way for us to ingest that data."

PG Ventures approached CATALYST about using its data, but at first there was a problem - the format CATALYST was using.

"We had our own tool and interface. We were serving it ourselves on AWS, but it wasn't right for Christoph," says Kevin Jones, vice-president of product for CATALYST.

"PG Ventures wanted the displacement data made available through endpoints so it could do its own interactive analysis.

"PG Ventures needed a solution to easily extract, transform, and load displacement data into its own systems and run fast and efficient queries on the data."

In response CATALYST used AWS Data Exchange to deliver what Schmidt needed without undertaking a complicated development and data engineering process.

"We knew we could build our own API, and we could," says Jones. "But the time and cost to develop and then maintain that didn't make sense when, using AWS Data Exchange, we could securely and easily transfer and host the data feeds.

"The framework was already there, we just needed to configure it. It made a lot of sense from our perspective."

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### **The Results Go Beyond Business Performance To Provide Powerful Environmental Insights To The Public.**

With The Underground Mining Damage Ground Displacement Project (UMD), as the proof-of-concept is currently called, PG Ventures is now able to use CATALYST data to offer historical and continued monitoring information to analyze the impact of ground displacement.



This means soil movements are tracked over time and will provide up-to-date and accurate information of the threats to infrastructure, residences, and businesses.

As well as their own ground displacement monitoring, Schmidt also now sees exciting benefits in making the data available to more people:

“We see a real value in giving people this tool,” he explains.

“The data was there, our analytical tools were there, but we needed a way to bring them together, and we found that by using AWS Data Exchange.”

“For instance, commercial and residential real estate owners did not have the access to data needed to assess any potential damage or the potential right for compensation,” he explains.

“Instead, they had to rely on the proprietary data owned by mining companies. Property owners were forced to accept compensation without independent evidence. In some cases, they were even forced to pursue the matter in court.”

The company is now validating results against other ground displacement measurements to ensure accuracy and improve its models.

PG Ventures was founded with the goal of innovation and, thanks to inspiration and the right tools, it is ready to put government, business, and the public on an equal footing with mining companies.

### About Catalyst

CATALYST is a PCI Geomatics brand, which has been introduced to put our leading edge technology into the hands of decision makers. CATALYST provides proven algorithms rooted in photogrammetry and remote sensing to offer engineers, environmental management, and other professionals accessible earth data measurements on a reliable basis derived with leading edge, scalable software solutions and platforms. We're a startup – with hundreds of algorithms, scalable solutions, and decades of experience.

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