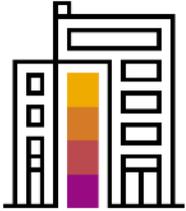


# SAP Innovation Awards 2021 Entry Pitch Deck

Embellishing Existing Analytics with GIS Functionality in the Cloud

Open Grid Europe GmbH

PUBLIC



## Company Information

---

<b>Headquarters</b>	Essen, Germany
<b>Industry</b>	Oil and gas
<b>Web site</b>	<a href="http://www.oge.net/en/us">www.oge.net/en/us</a>

Open Grid Europe GmbH (OGE) is the operator of the longest-regulated supraregional natural-gas transmission network in Germany, with assets that include 27 compressor stations and 9,000 miles of pipeline. Our company plans, constructs, maintains, and repairs pipeline systems, as well as leading concept design, project management, engineering, and implementation efforts. Our customer base includes shippers, downstream network operators, and connection customers.

Enabling the energy supply in Germany today and optimizing the energy mix of the future is only possible with the involvement of OGE. We have the infrastructure to move natural gas today and green gases in the future. For decades, we have supported our customers with the utmost reliability and transparency. We understand the major questions of the 21st-century energy transition and continue to support ongoing research for new answers.

# Integrating Analytics and GIS

Open Grid Europe GmbH



**This new geodatabase on SAP HANA Cloud is a dramatic improvement that provides us with insights that were impossible to draw before. We took our geospatial capability to the next level by enriching it with the contextual information in our business and operational data and moving everything off premise.**

Stefan Vancraeynest,  
Project Manager for IT Applications,  
Open Grid Europe GmbH

## Challenge

We needed to future-proof operations to prepare for the transition to new energy sources, notably hydrogen gas. We wanted to provide field workers and other stakeholders with a unified view of asset information, scale up our SAP HANA implementation by moving to the cloud, and replace licensed analytics software that was out of date.

## Solution

We overhauled our geospatial data capabilities to augment a clear view of KPIs on our pipelines. The SAP HANA Cloud data platform helps break down data silos and create a single cloud-based integration environment that can unite SAP Web IDE and the SAP Conversational AI service with the latest geographic information system (GIS) functionality from Esri.

## Outcome

We created the first scalable version of SAP HANA Cloud that can run as an Esri geodatabase. We can use 2D or 3D maps to monitor all stations and pipelines and zoom in to get more detailed information about operations and maintenance. Schematic views and profile views provide immediate insights that weren't available before.

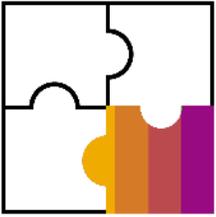


**12 weeks**

To meet the project schedule

**3**

Databases integrated in the new solution



## Participating Partner Information

---

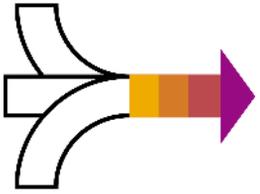
### AED-SICAD GmbH

**AED-SICAD GmbH helped integrate and scale Esri technology within the established landscape.**



“As a subsidiary of VertiGIS, one of Europe’s leading GIS application companies, and an SAP silver partner, AED-SICAD GmbH was pleased to offer expert consulting advice to the SAP and OGE team on integrating the Esri ArcGIS solution, certified to run on SAP HANA. Our three-way solution is a revolutionary unification of the power of Esri and SAP HANA Cloud that my company can leverage to help other companies across Europe prepare for the energy revolution.”

Dr Holger Schade, CEO, AED-SICAD GmbH



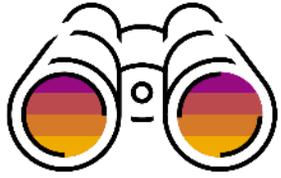
## Business Challenges and Objectives

---

OGE's massive pipeline network includes more than 30 compressor stations that pressurize gas for further transportation along the network. To optimize station maintenance, we already used a non-SAP on-premise geospatial database to feed into ArcGIS, a powerful mapping and analytics platform from Esri. But the existing geospatial data was siloed, and context was lacking, with data from downstream partners remaining separate from the geospatial data. SAP, NIS, and AIS databases operated in parallel with no connections. A holistic understanding of all data was impossible. Plus, our on-premise deployment of SAP HANA required large amounts of maintenance, with two full-time employees constantly monitoring databases.

---

We needed a central integration layer to unite our databases and provide a complete overview of all our data, whether from SAP, third-party, cloud, or on-premise sources. We sought a business partner with GIS expertise and an IT service provider to maintain updates. And we wanted to institute self-service and simplified management capabilities for our staff, since maintaining on-premise databases and managing updates to the system were increasingly time-consuming. We kicked off our Asset Data Integration System (ADIS) project to analyze these concerns and define requirements to address them.



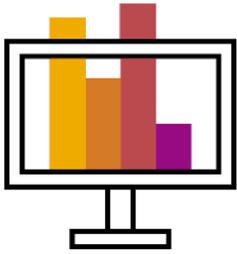
## Project or Use Case Details

---

SAP HANA Cloud offered the high-performance processing we need to transform our data landscape and support ADIS. With the multi-model processing engine introduced in SAP HANA Cloud, we can analyze data transactions in real time with state-of-the-art analytics and connect all our diverse data sources painlessly. Collaborating with us from the very beginning to help set the scope of the project, a team from the SAP Database Migration Factory program helped us come to value with SAP HANA Cloud within 12 weeks.

As an added benefit of the cloud implementation, SAP now takes care of all application management, and we can scale our computing and storage capabilities on demand, without up-front costs, using the handy cockpit.

The robust spatial engine in SAP HANA Cloud offers us the power to quickly process and analyze the geospatial data essential to our view of performance across miles of pipelines, many in hard-to-reach rural areas. Because of the central integration layer in ADIS, all our database services extend to the new Esri ArcGIS data.



# Benefits and Outcomes

---

## Business or Social

- The ability to monitor pipelines in real time even in remote areas keeps the transmission process safer for the environment.
- Our streamlined operations keep us fit to serve our consumers optimally today and tomorrow.

## IT (optional)

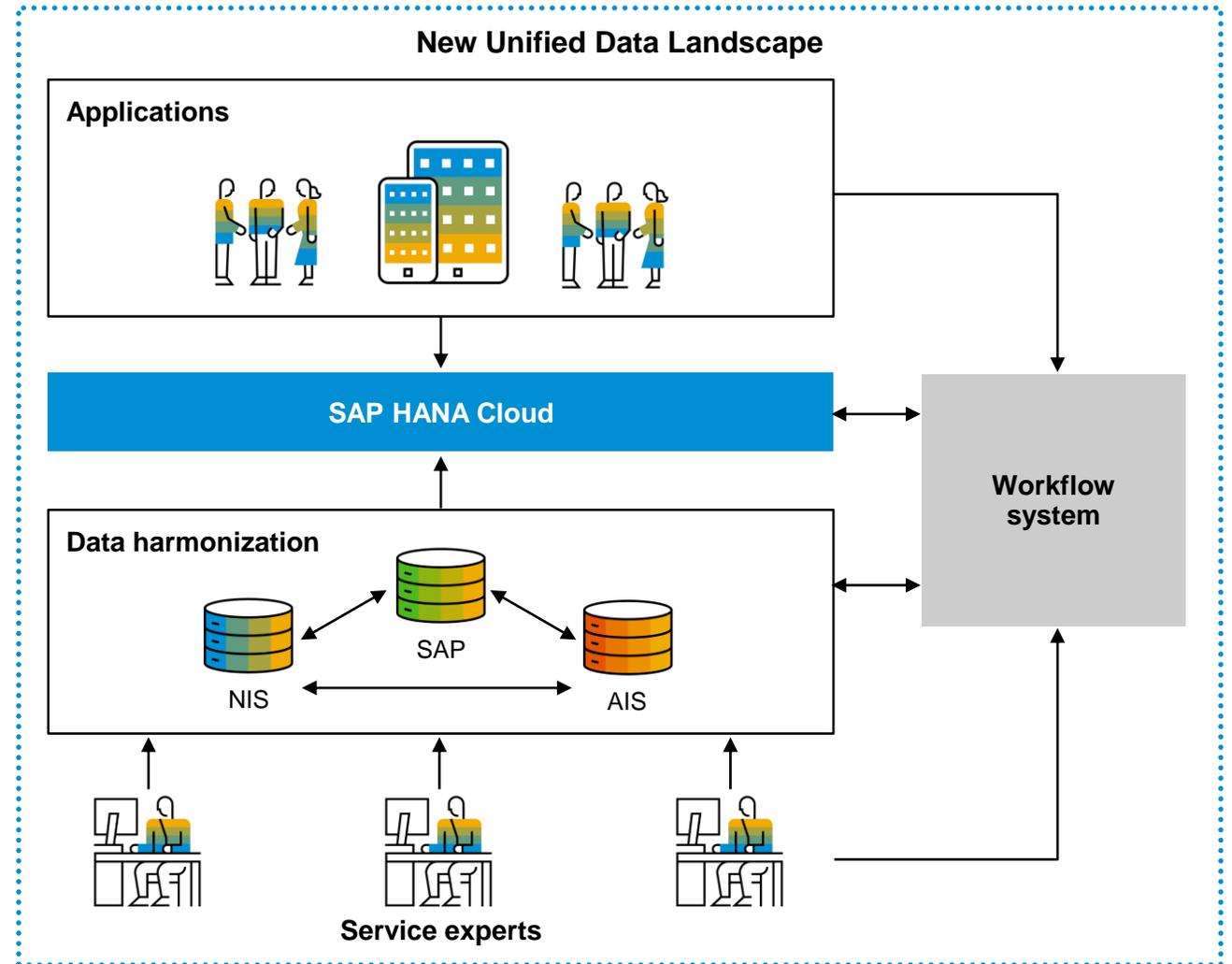
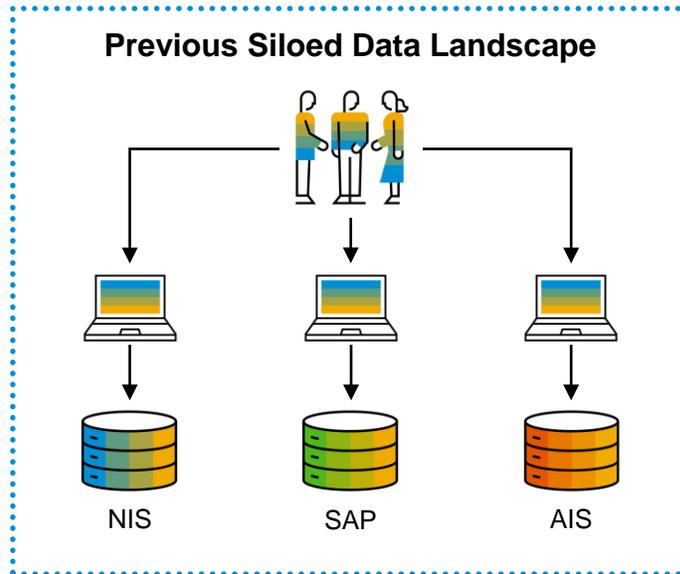
- Cloud computing slashes the local system maintenance and software update load.
- Clear GIS-enabled analytics give all stakeholders the information they need with little or no IT intervention.

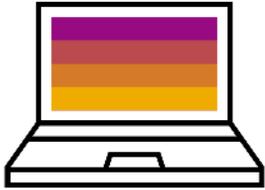
## Human Empowerment

- Field workers have solid guidance in locating pipelines and identifying maintenance and repair needs.
- All stakeholders have immediate transparency into pipeline operations through a user-friendly cockpit.



# Architecture





# Deployment

**Deployment status** Live

**Date** December 8, 2020

**Number of users** 1,500

## SAP technologies used:

SAP product	Deployment status (live or proof of concept [POC])	Contribution to project
1 SAP HANA Cloud	Live	High-performance processing, transactions and analytics in the same in-memory database, application management responsibilities transferred to an SAP data center
2		
3		
4		

If you have used one or more of the services or support offerings from SAP Services and Support during the implementation or deployment phase, please indicate which one(s) below with an

SAP MaxAttention™

SAP ActiveAttention™

SAP Advanced Deployment

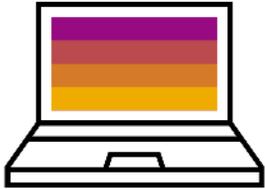
SAP Value Assurance

SAP Model Company

Others: SAP Database Migration Factory

SAP Innovation Services

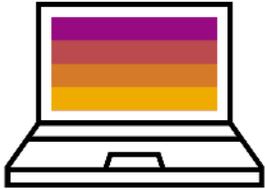
SAP Innovative Business Solutions



# Advanced Technologies (1 of 2)

The following **advanced technologies** were part of the project.

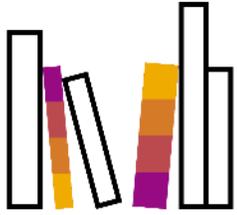
Technology or use case	Product used*	Contribution to project and how product used integrates with SAP products
<b>1 Machine learning or artificial intelligence</b> Robotic process automation, conversational AI, AI-based knowledge graph		
<b>2 Intelligent data management</b> Multi-cloud, data virtualization and governance, smart data tiering, persistent memory, data privacy	SAP HANA Cloud	Capability for import from on-premise or cloud data sources through virtualization
<b>3 Advanced and augmented analytics</b> <ul style="list-style-type: none"><li>• Real-time and streaming analytics, spatial analytics</li><li>• Natural-language query and generation</li><li>• AutoML to identify trends, patterns, outliers</li><li>• Predictive analytics (time-series analysis and forecasting, regression, classification)</li></ul>	SAP HANA Cloud	Support for Esri spatial analytics
<b>4 Data and analytics solutions in the cloud</b> <ul style="list-style-type: none"><li>• Unified data and analytics cloud platforms by SAP</li><li>• Modern and self-service data to analytics</li></ul>	SAP HANA Cloud	Handy cockpit for stakeholder self-service



## Advanced Technologies (2 of 2)

The following **advanced technologies** were part of the project.

Technology or use case	Product used*	Contribution to project and how product used integrates with SAP products
<b>5 Advanced cloud integration</b> <ul style="list-style-type: none"><li>• API economy (monetization and API marketplaces)</li><li>• AI-based or crowdsourced integration</li><li>• High-throughput, low-latency digital integration hub</li></ul>		
<b>6 Industry cloud platform</b>		
<b>7 Blockchain</b>		
<b>8 Internet of Things</b>	ArcGIS from Esri	Reading location and status of pipeline components
<b>9 3D printing</b>		



## Additional Information

---

As a key player in the energy transition, we will help prepare Germany for the energy mix of the future, in which hydrogen and other green gases will play an essential role. We will help drive necessary adaptations in the existing statutory and regulatory framework to support the inclusion of hydrogen in the mix. With our strategy OGE 2030+, we are securing our transmission business for the long run and preparing our pipeline network and our numerous compressor stations for additional gaseous energy carriers. We are developing technical innovations and new services continuing to advance digitalization and enterprise intelligence within our business.

Follow us



[www.sap.com/contactsap](http://www.sap.com/contactsap)

© 2021 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company.

The information contained herein may be changed without prior notice. Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors. National product specifications may vary.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

In particular, SAP SE or its affiliated companies have no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation, and SAP SE's or its affiliated companies' strategy and possible future developments, products, and/or platforms, directions, and functionality are all subject to change and may be changed by SAP SE or its affiliated companies at any time for any reason without notice. The information in this document is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, and they should not be relied upon in making purchasing decisions.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies.

See [www.sap.com/copyright](http://www.sap.com/copyright) for additional trademark information and notices.

