

Intelligent Enterprise meets “Science of Where”

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10 September, 2018

THE BEST RUN



The Esri & SAP journey

Customer Impact



Innovation Track Record



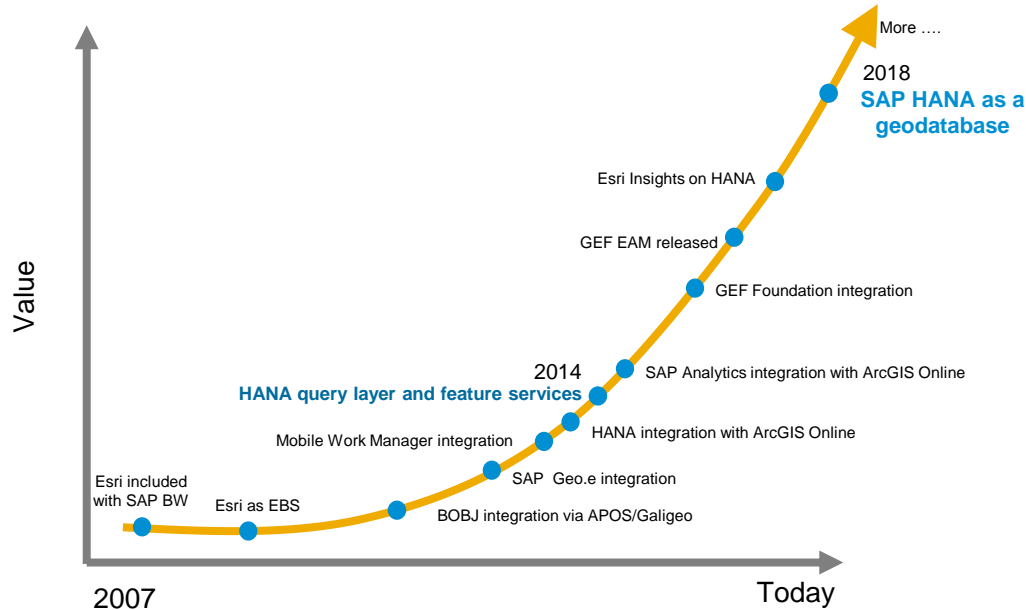
Customer Outcomes



Drive new use case patterns



Embed spatial throughout all businesses processes



Improve Business Insight & Value



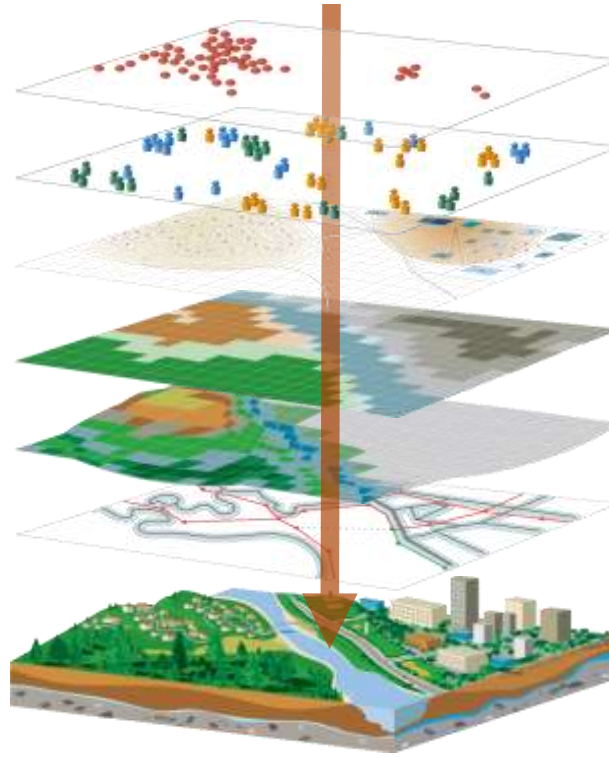
Operationalize



Drive Innovation

GIS Organises Geographic Information

Location is a context
we all understand



Events

Field crews, customers

Assets, Facilities

Analysis, Territories / Predictive Incidents / etc.

Elevation, Demographics, Aerial & Drone Imagery

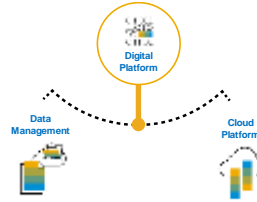
Utility Network, Roads, Rivers

Holistic View

SAP's Digital Platform: SAP HANA Data Management Suite

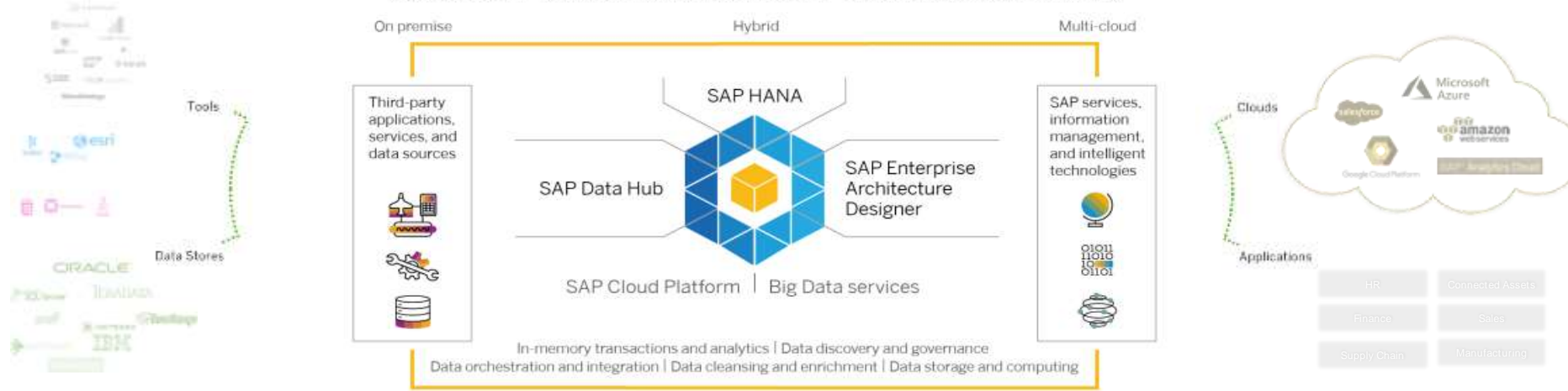
Unified data management to capture real-time value from different types of data

Best-in-class digital platform for new app development, extensions, and integration



SAP HANA Data Management Suite

Trusted data | Connected, intelligent data | Cloud architecture flexibility



What if you could

Drive insight to action by:

...running complex 40M row spatial joins in 50ms?

Accelerate

...mashing up IoT, spatial and transactional data in one place?

Innovate

...managing your business data, ArcGIS geodatabase and live data in a trusted, unified landscape?

Simplify

You now can. It's here, it's real. How?

SAP HANA

Cloud, Multi-Cloud,
On-Premise, Hybrid



Advanced Analytics
Engines



Esri ArcGIS
geodatabase



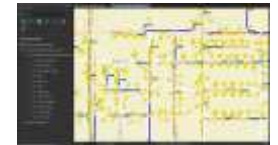
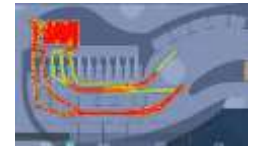
SAP Analytics



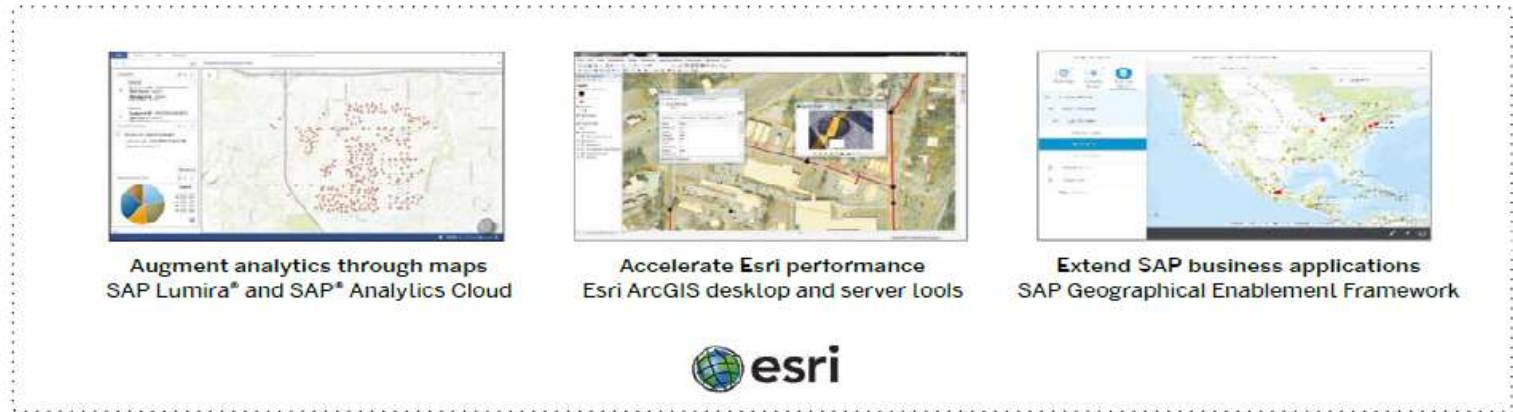
S/4 HANA



Custom Apps



Bringing it all together



Top 3 patterns of spatial enablement in governments and companies

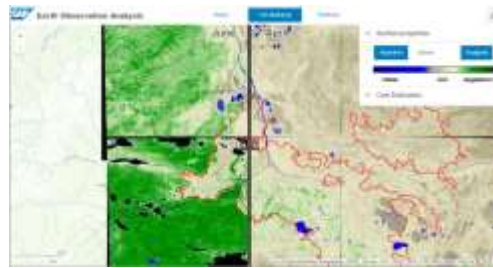
Sustainable and efficient operations



Digital farming built on SAP HANA

Resources and time to act are more constrained in the face of a growing world population

Real-time situation management and safety



Wild fire analysis with SAP HANA

Disasters happen more often, and with a bigger impact

Open and smart government



Nanjing City smart traffic with SAP HANA

Digitally experienced citizens demand the service level and customer experience they know from shopping, banking, and social media

Geographic information plays a significant role in delivering **efficient** and **effective government services** and **enabling citizens' informed decision-making** that increase **quality of life**

Examples of Customer successes



Omaha M.U.D. Looks to Geospatial Analytics to Serve Its Citizens Better

By deploying Esri's ArcGIS on the SAP HANA platform, Omaha M.U.D. aims to provide its field personnel with more timely and powerful analytics by simplifying and digitalizing its manual utility inspection system.



Bring 6 agencies to one system to respond to emergencies in real-time



5,040x
Faster

Analyze 10 million pipeline data to proactively maintain old pipe in critical locations



20 billion
Sensor data

Analyze 20 billion data points captured from sensors for smart traffic control



Visualize high-risk hot spots of the wildfires, analyze impacts, and predict risks based on historical data

City of Cape Town

Public safety with operational efficiency



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD



One System

6 agencies

8 million

residents and tourists

When facing the challenge of mass urbanization, cities need to quickly and effectively respond to emergencies and incidents with fewer resources. Cape Town enhances **public safety** by running **smarter**. The Emergency Policing and Incident Command (EPIC) solution integrates policing, fire and rescue, disaster management on a single integrated system on SAP HANA with real-time spatial mapping enabling situational awareness and insight to action.

[Customer Video](#)

Alliander

Asset maintenance on critical locations (pipeline integrity)

alliander

Goal: Proactive asset maintenance on critical locations, such as gas pipes near sensitive buildings; enable proper planning and spatial analysis of large GIS data

Solution: Use SAP HANA to

- ✓ Load **7M geometries** from **GIS into SAP HANA**
- ✓ **Combine** spatial data with operational and maintenance data
- ✓ Share results on **custom web app** and **Esri ArcMap**

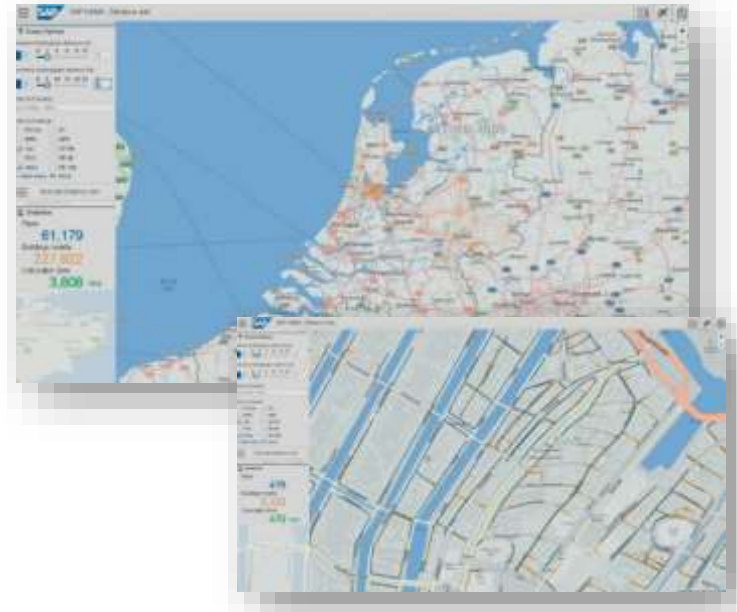
Benefits: Performance gain from 3.5 hrs to 2.5 seconds with HANA spatial processing, reducing revenue loss;

Unified platform combining asset data and GIS data linking back to asset management/work management systems

[Customer Video](#)

10 million
Pipeline assets

5,040x Faster
3.5 hours to less than 2.5 seconds



ALLIANDER

Leveraging SAP HANA Spatial and Graph to drive voltage network optimization

**Use Case 1:
Tracing in low voltage network**

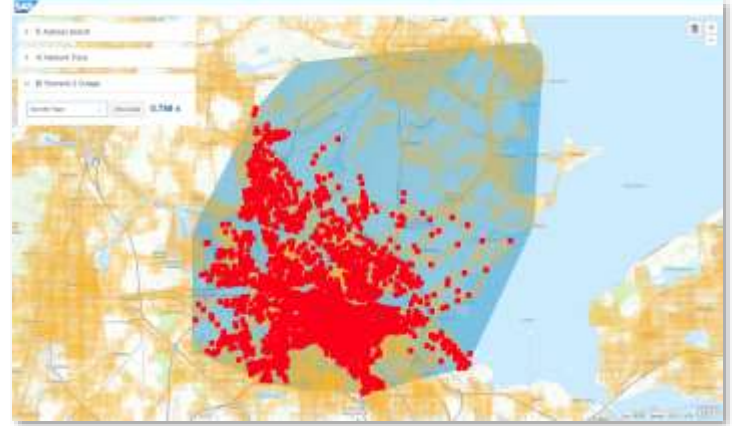


Goals

- Understand the effort to leveraged SAP HANA for applications combining spatial and graph features
- Execute a trace in low voltage network in < 15 sec
- Execute a trace in low/medium voltage network



**Use Case 2:
Outage analysis in medium voltage network**



Results

- Low voltage trace average execution time is 1-2 sec
- Very large low/medium voltage trace executes in 3:50 min

Engage to Spatially enable your Enterprise



Geodatabase in HANA adopter program



Jump start

Apply to try out SAP HANA with ArcGIS Enterprise 10.6 with a **no cost migration assessment & performance** testing consulting service from **SAP Database migration factory** program

Spatial Innovation Academy



Interactive workshop

Overview, interactive use case discussions, demos, customer stories
(1 day focused workshop)

Let's innovate!



Bring your ideas to life

In collaboration with SAP & Esri, elaborate and prioritize your use cases, design a lighthouse scenario, and develop a solution that demonstrates the **business case with clear TCO/ ROI** calculation

One stop shop for SAP HANA Spatial resources: bit.ly/hanaspatial

Esri and SAP HANA: <http://www.esri.com/landing-pages/sap-hana>

Thank you



What is HANA? Multi-model analytics and machine learning



Performance
To handle all types of needs



Structured Data

Unified data model and SQL language across all data types



Spatial

Combine business data with geographical data



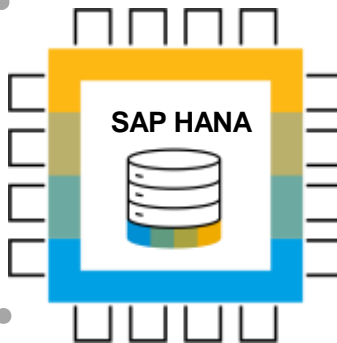
Graph

Build and analyze relationships in data on the fly



Text & Search

Full-text search, navigation, and access to structured and unstructured data



Predictive

Proactive and intelligent decisions



Machine Learning

Train machine learning models to classify images via Google Tensorflow*



Streaming

Real-time analysis of data streams



Series Data

Capture and analyze a sequence of successive data points

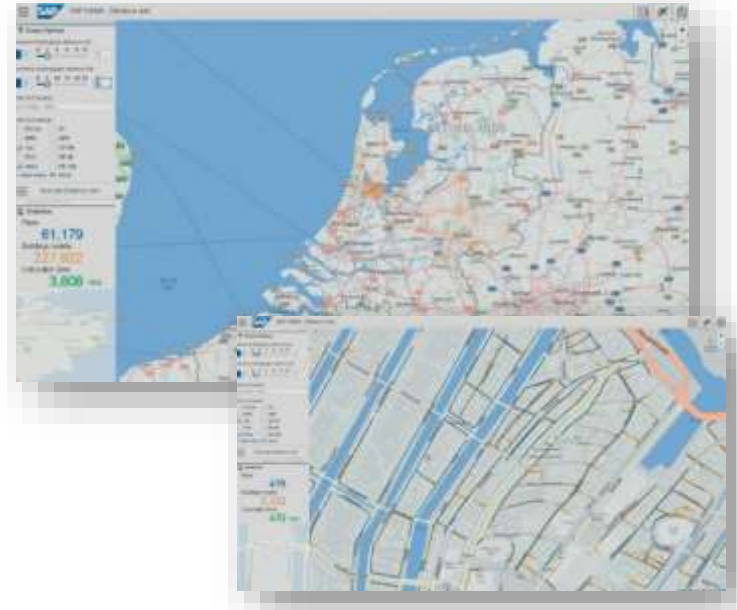


Alliander

Asset maintenance on critical locations (pipeline integrity)

alliander

Alliander is grappling with unpredictable demand due to rapid changes in customers' consumption behaviours and increasing reliance on unconventional energy sources such as solar and wind. One strategy for improving **efficiency**, **reducing maintenance cost**, and meeting regulatory compliance is to **proactively** identify and maintain old gas pipes close to vulnerable locations. Alliander uses SAP HANA Spatial to analyse and process a **large** amount of GIS data.



[Customer Video](#)

10 million
Pipeline assets

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3.5 hours to less than 2.5 seconds