SAP Esri Spatial Hackathon

Palm Springs, California, March 3rd - 5th, 2018

Hinnerk Gildhoff / January 9, 2018

Disclaimer

This presentation outlines our general product direction and should not be relied on in making a purchase decision. This presentation is not subject to your license agreement or any other agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or to develop or release any functionality mentioned in this presentation. This presentation and SAP's strategy and possible future developments are subject to change and may be changed by SAP at any time for any reason without notice. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. SAP assumes no responsibility for errors or omissions in this document, except if such damages were caused by SAP intentionally or grossly negligent.

Agenda

- SAP & Esri
- Challenges
- Software, Data & Hints
- Get started

SAP HANA Architecture

All Devices

SAP, ISV and Custom Applications

SAP HANA® Platform

On premise | Cloud

Application development

- Web server
- JavaScript
- SAP Fiori® user experience(UX)
- Graphic modeler
- Application lifecycle management

Advanced analytical processing

- Spatial
- Graph
- Predictive
- Search
- Text analytics
- Streaming analytics
- Series data
- Business functions

Data integration and quality

- Data virtualization
- Extract, load, transform and replication
- Data quality
- Apache Hadoop and Apache Spark integration
- Remote data sync

Database management

- Columnar store – Transaction and analytical processing
- Multicore and parallelization
- Advanced compression
- Multitenancy
- Multitier storage
- Data modeling
- Openness
- Administration and security
- High availability and disaster recovery

ONE Open Platform | **OLTP + OLAP** | **ONE Copy of the Data**

SAP HANA Spatial

Solution overview

Business Applications

Analytics

GIS

Advanced Applications

Mobile

Spatial Data Types

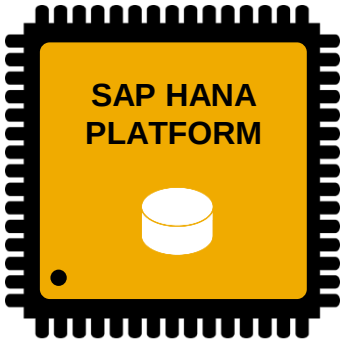
Natively store 2D, 3D and 4D vector data types (x, y, z, m)

Spatial Functions

Over 80 native SQL based geospatial functions

Spatial Content

Geospatial content including administrative boundaries and postal codes, SHINE starter content



Mapping Services

Mapping API delivered; open to any mapping service

Application Services

Quickly develop and deploy custom geospatial solutions

Geocoding & Integration Services

Ability to geocode, cleanse, merge, and provision data

Native support of spatial data types, storage, processing, analysis, and services

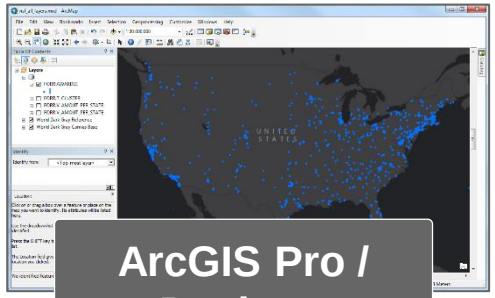

esri
THE
SCIENCE
OF
WHERE

SAP HANA Spatial

Esri Applications

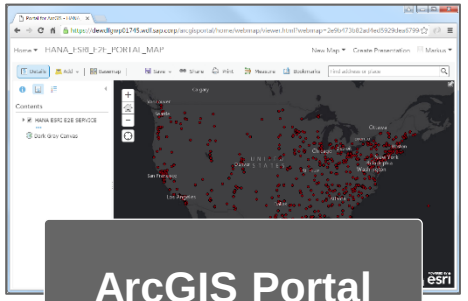
ArcGIS Online

SAP Cloud Platform

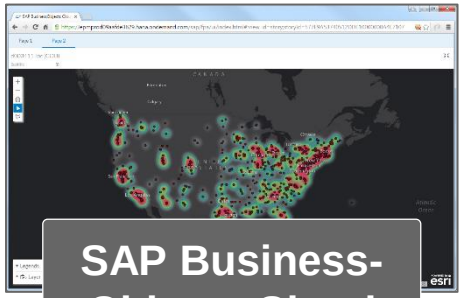


ArcGIS Pro / Desktop

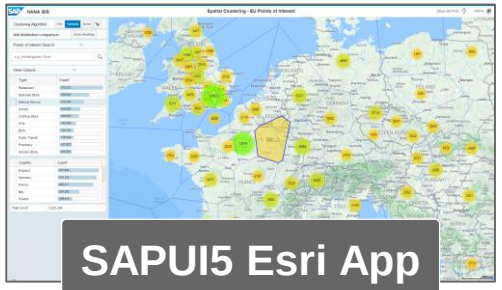
Query Layer



ArcGIS Portal



SAP Business-Objects Cloud



SAPUI5 Esri App on XSA

ODBC

Map Service, Feature Service

ArcGIS Enterprise

ODBC

csv, shapefile upload

SAP HANA

Extended Application Services

Hackathon Topics

Challenges

Challenge #1
Spatial & Graph

Process and visualize topologies and networks. Combine the capabilities of SAP HANA and Esri for innovative approaches to network analytics (e.g. utility network model, tracing, graph script).

Challenge #2
Sustain, create, optimize

Improve and optimize daily business using spatial analytics while also meeting sustainable development goals (e.g. sustainable supply chain management)

Challenge #3
Geo machine learning

Illustrate how AI and machine learning can benefit from the spatial dimension. How can we use machine learning in spatial analytics to solve major challenges (e.g. weather anomalies)?

Judging Criteria: Relevance, Innovation, Visual Experience, Presentation

Software & License

How to get started

SAP HANA and ArcGIS Pro

http://go.esri.com/SAPHANA-ArcGISPro

HANA Express

https://www.sap.com/cmp/ft/crm-xu16-dat-hddedft/index.html (download)

https://www.sap.com/developer/tutorials/hxe-gcp-getting-started-launcher.html (GCP)

https://www.sap.com/germany/developer/tutorials/hxe-setup-aws-azure.html (AWS)

https://www.sap.com/developer/tutorials/hxe-azure-open-suse.html (Azure)

ArcGIS trial

http://www.esri.com/arcgis/trial

Open Data - Content

#1 Spatial & Graph

https://github.com/caesar0301/awesome-public-datasets#geospace-gis

http://wiki.openstreetmap.org/wiki/TIGER & http://product.itoworld.com/map/main

https://www.ordnancesurvey.co.uk/business-and-government/products/os-open-map-local.html

http://snap.stanford.edu/data/index.html

INFO: https://help.sap.com/viewer/f381aa9c4b99457fb3c6b53a2fd29c02/2.0.02/en-US

#2 Sustain, Create, Optimize

http://www.un.org/sustainabledevelopment/sustainable-development-goals/

https://hub.arcgis.com/pages/open-data & https://livingatlas.arcgis.com/de/#s=0

http://geodata.grid.unep.ch/

http://www.fao.org/geonetwork/srv/en/main.home

INFO: http://www.esa.int/Our_Activities/Preparing_for_the_Future/Space_for_Earth/ESA_and_the_Sustainable_Development_Goals

#3 Geo-ML

https://earthexplorer.usgs.gov/

http://sedac.ciesin.columbia.edu/

https://scihub.copernicus.eu/dhus/#/home

https://aws.amazon.com/de/public-datasets/spacenet/

https://devportal.yaas.io/services/earthobservationanalysis/latest/

INFO: https://www.coursera.org/learn/machine-learning

File Formats

Binary

CSV

Shapefiles (shp)

Layer Package (lpk)

Portal Items (pitems)

…

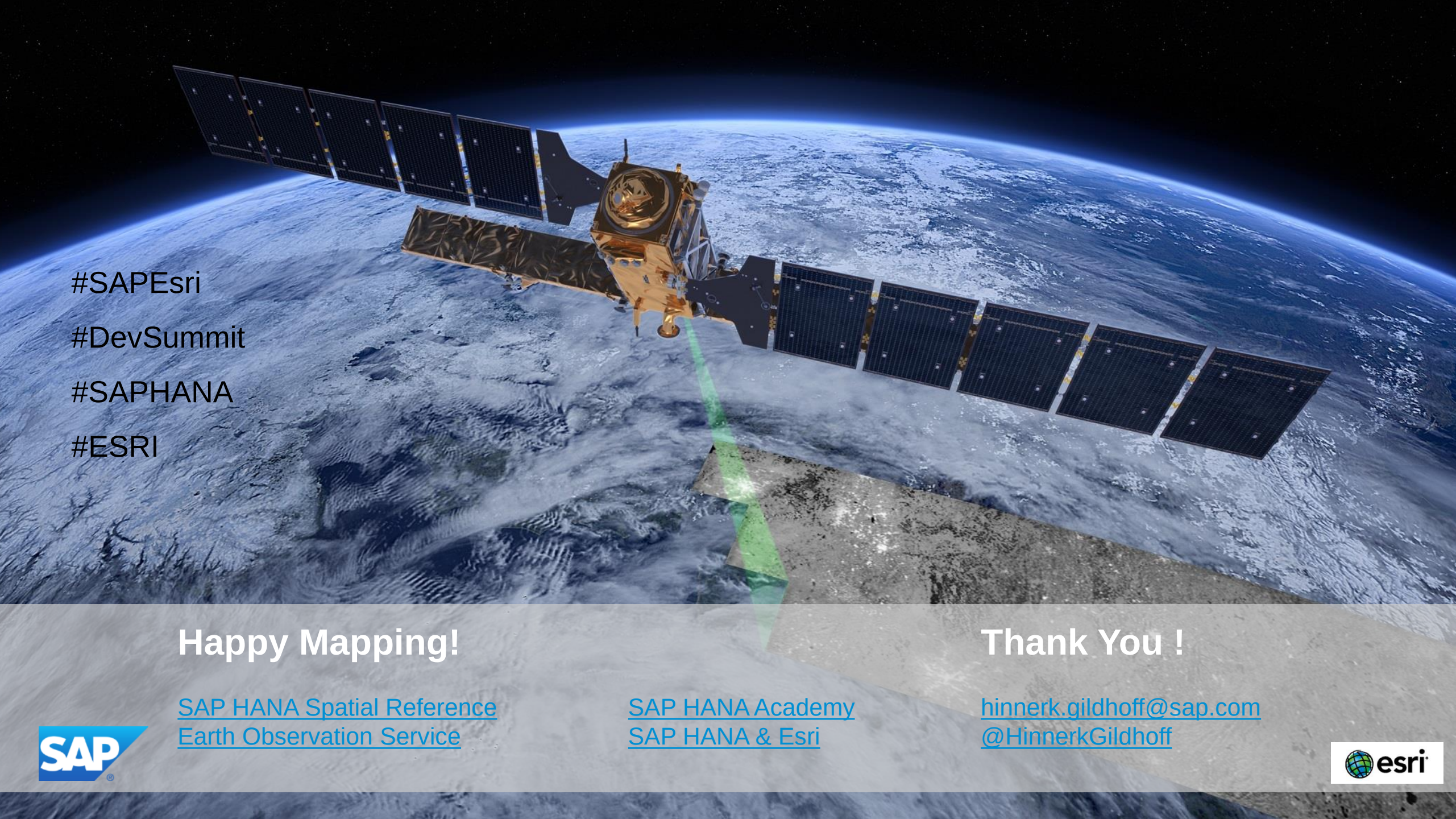
Hints

HANA Metadata

https://mdocs.sap.com/mcm/public/v1/open?shr=49-zNvliGiOEG-yVSKnWD-NxVzKFWrRQgjJ8xP4pS2I

Helpful Links

https://events.sap.com/sap-esri-hackathon/en/learn-more#helpfullinks



#SAPEsri

#DevSummit

#SAPHANA

#ESRI

Happy Mapping!

[SAP HANA Spatial Reference](#)
[Earth Observation Service](#)

[SAP HANA Academy](#)
[SAP HANA & Esri](#)

Thank You !

hinnerk.gildhoff@sap.com
[@HinnerkGildhoff](#)