Conferenza Nazionale AMFM GIS Italia 2018

La piattaforma Esri per la Digital Transformation del settore Utility

Michele Ieradi

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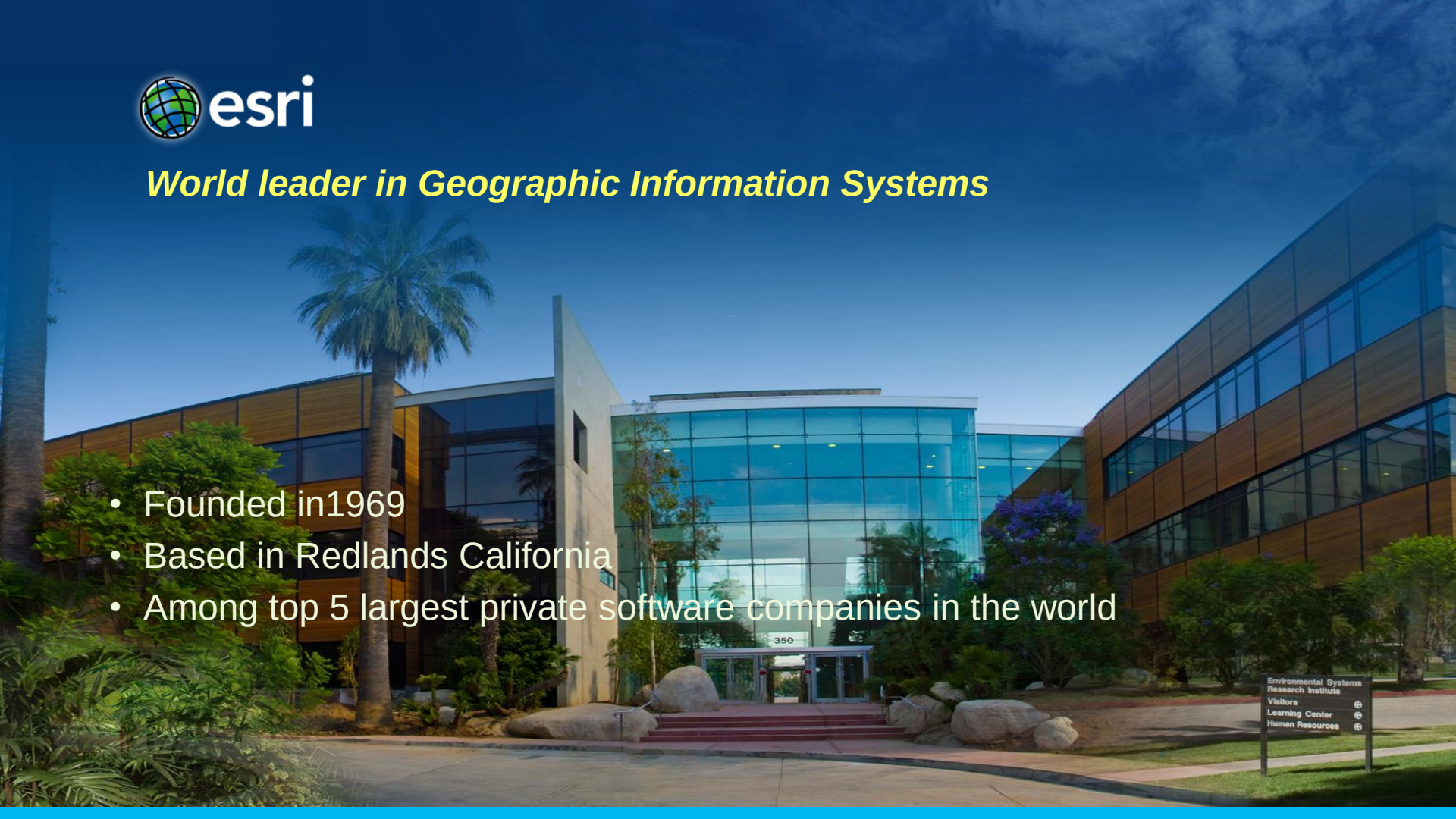
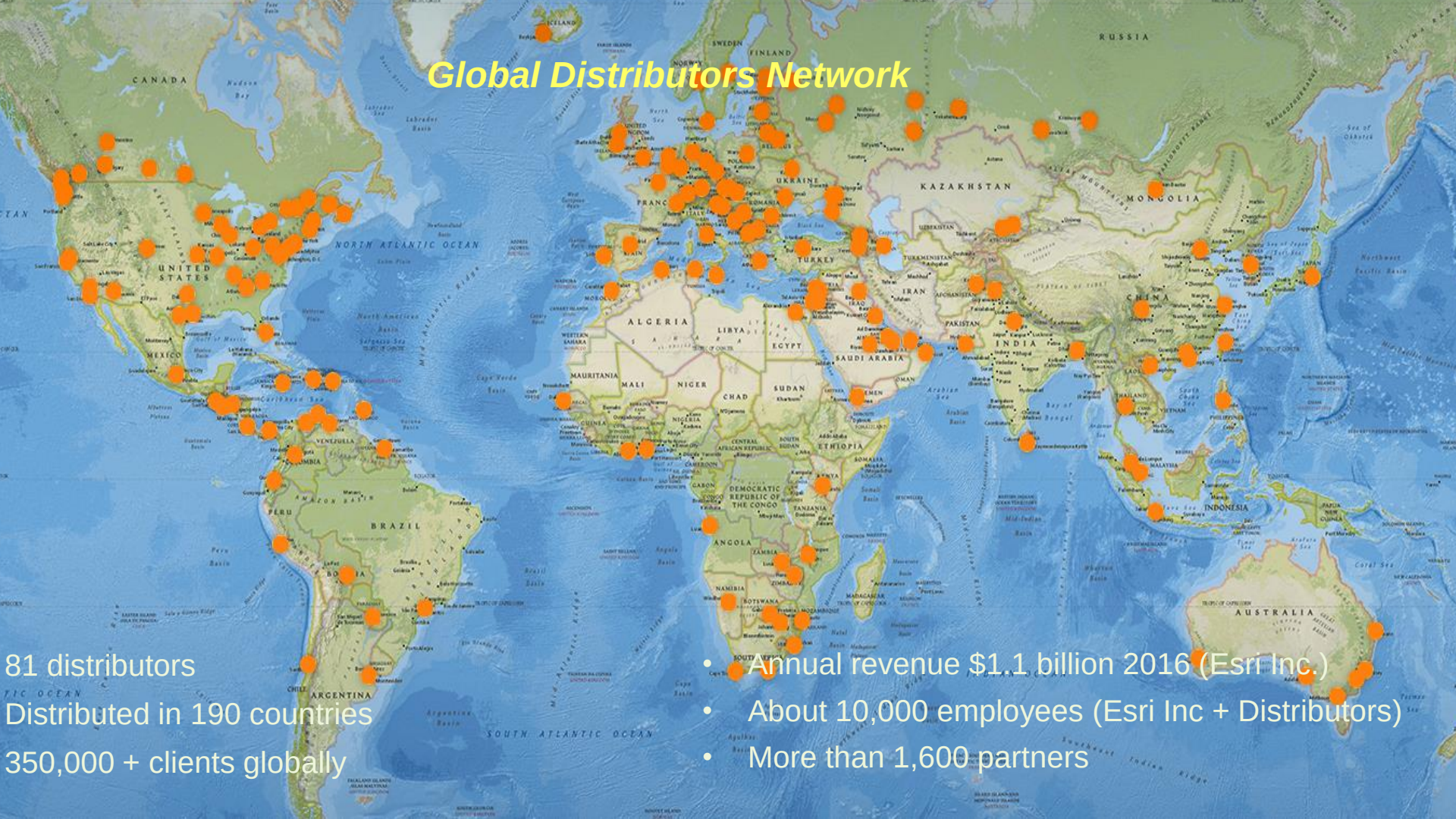

esri
World leader in Geographic Information Systems
Founded in1969
Based in Redlands California
Among top 5 largest private software companies in the world
350
Environmental Systems Research Institute
Visitors
Learning Center
Human Resources

Global Distributors Network



81 distributors

Distributed in 190 countries

350,000 + clients globally

- Annual revenue $1.1 billion 2016 (Esri Inc.)
- About 10,000 employees (Esri Inc + Distributors)
- More than 1,600 partners

Esri Italia

- Established in Rome in 1990
- Additional office in Milan and Cagliari
- About 100 employees
- ~ 2.000 Customers in Italy
- Esri Italia Users Conference is the greater geospatial event in Italy (~ 1500 attends in 2017)

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THE SCIENCE OF WHERE

A Framework and Process

Transforming How We Think and Act . . .
. . . Creating a More Sustainable Future

The Science of Where Provides the Framework

For Managing, Analyzing, and Applying Geographic Information

Integrating People,
Processes, Things,
and Data About Them

Using the Power of Location
to Integrate Everything

ArcGIS Online

- Credit transactions
- Automatically updated
- No custom network data
- Max limits per solve

ArcGIS Enterprise

- Cost of Ownership
  - Hardware
  - Software
  - Data
  - Time
- Update yourself
- Custom network data
- Customize services
- SLA

Esri Italia Core Offering

- **ArcGIS Platform**
  (ELA, Software, Maintenance and SaaS);
- **Professional Services**
  (FFP and T&M, Certified Training);
- **Data and Content**
  (street maps, imagery, demographics);
- **Geomatic Solutions**
  (extraction of information products from Imagery data (Sat radar, drones, etc) and GNSS data).

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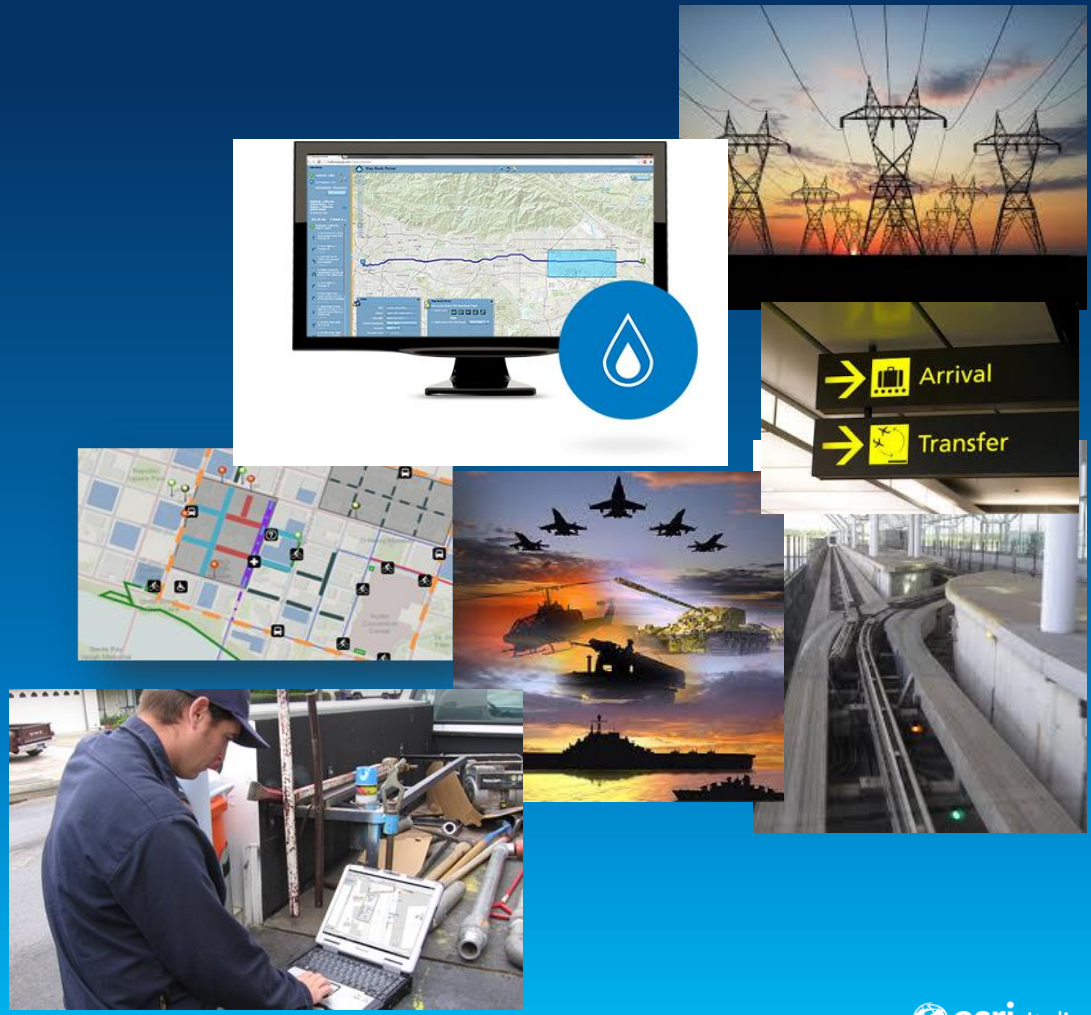
Key Sectors

- Utilities
- Defense & Intelligence
- Local and Central Government
- Transportation
- Commercial
- Natural Resource



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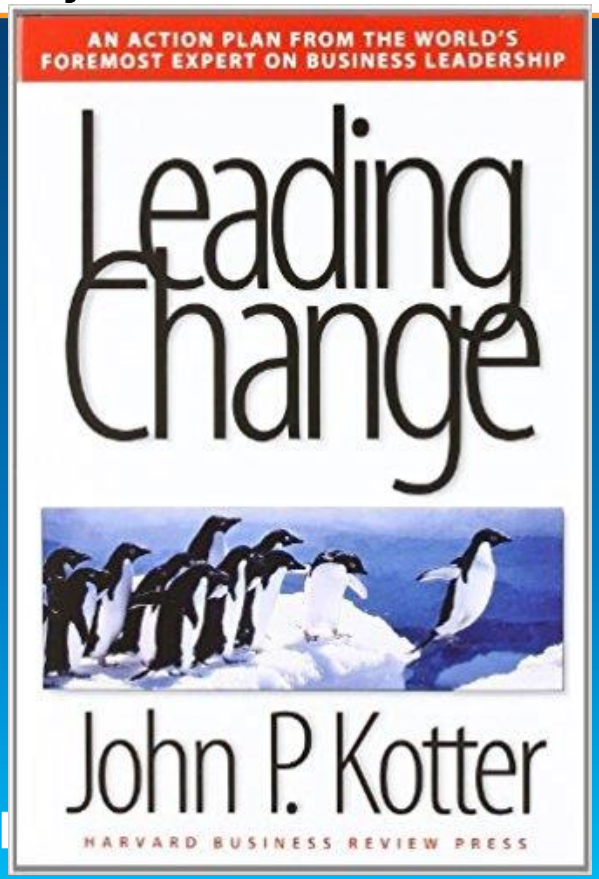
GIS and Digital Transformation in the Utility Industry – ACEA 2.0 Project User Case



Why Digital Transformation in Utility Sector?

Why digital transformation in Utilities?

- improve level of services;
- manage the assets (utilities network and infrastructure);
- integrate GIS with maintanance system and ERP;
- improve the network data quality;
- standardization of workflow;
- optimization of workforce field activities;
- build a monitoring system based on IOT data;
- build predictive maintenance models;
- build a decision support system based on real time data;

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Acea User Case

- Acea is one of the leading Italian multiutility firms, managing and developing networks and services in the business areas of water, energy and the environment.

- Referring to the water utility market, ACEA in the past few years has acquired 9 water utility companies. Each of them used different Information Systems to manage GIS, WFM, CRM,….
- At the end of 2014 ACEA started its biggest project: ACEA2.0

Project ACEA 2.0

- ACEA2.0 aims to build a unique workflow and consequently a unique Information System for all its water utilities companies.
- ACEA has chosen Esri and SAP for his technology revolutions.
- In the new workflow GIS has a central role.
- All network data born in GIS system;
- The timeline of the project is 24 months January 2015 – January 2017)

Challenges of ACEA 2.0?

- speak all the same language (8 months to define utility network model);
- adopt the same workflow;
- change the work habits of the workforce;
- train workforce in order to use mobile application instead of piece of paper;
- optimize workforce with job rotation and organization changes;
- control the social impact of the project inside and outside the company;
- manage the relationship with the trade unions;

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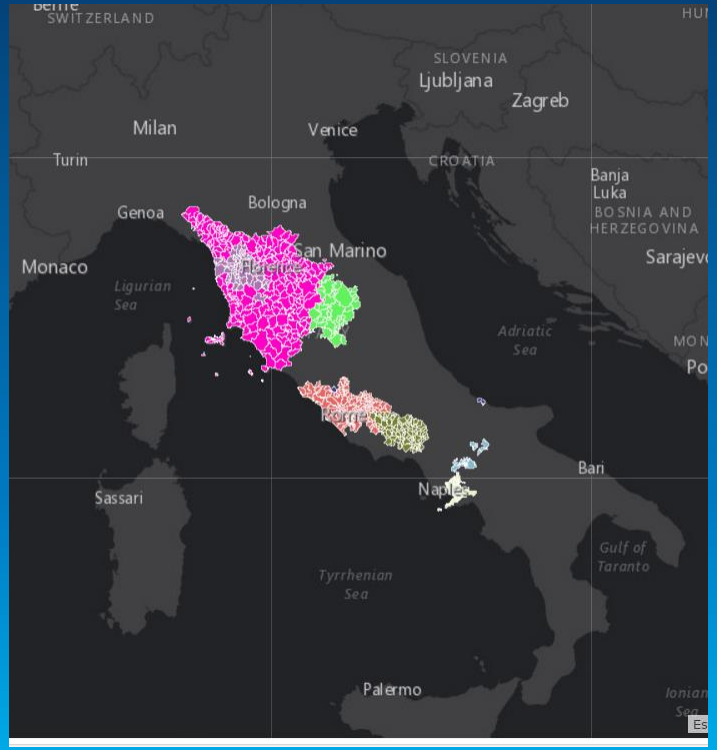
ACEA2.0: GIS Technical Goals

- Implementation of a unique GIS data model for the 9 companies
  - developed from the Esri Water Utility Model
  - 2 levels of representation of the network (network level and P&I level)
  - Integration model with SAP PM
- Integration with SAP PM based on GEO.e Framework and SAP Hana
  - GIS is the master data for all SAP Function Locations
- Based on the ArcGIS Platform (v 10.3)
  - Portal for ArcGIS
  - Custom Add-ins Desktop
  - Web app based on WebApp Builder
  - Custom GIS Mobile App and its integration with SAP Work Manager

ACEA2.0: GIS Data Model

- **Implementation of a unique GIS data model for the 9 companies and migration from different GIS**
  - **ATO2 from Esri**
  - **ATO5 from Esri**
  - **GORI from Intergraph**
  - **PBA from Smallworld**
  - **Acque from Smallworld**
  - **CREA from CAD**
  - **GESESA from CAD**
  - **Umbra from TopoBase**
  - **Fiora from PostGIS**



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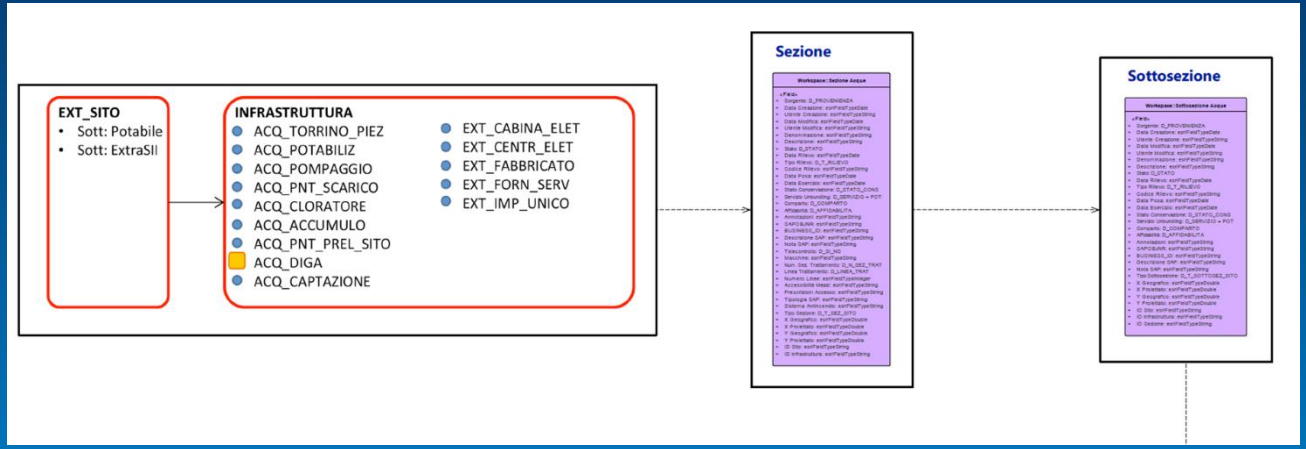
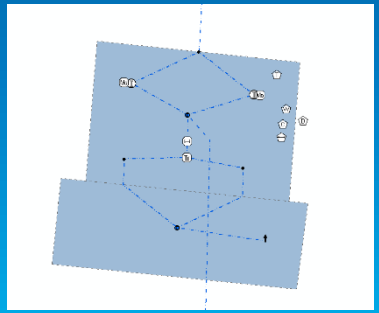
ACEA2.0: GIS Data Model

- 2 levels of representation of the network (network level and P&I level)

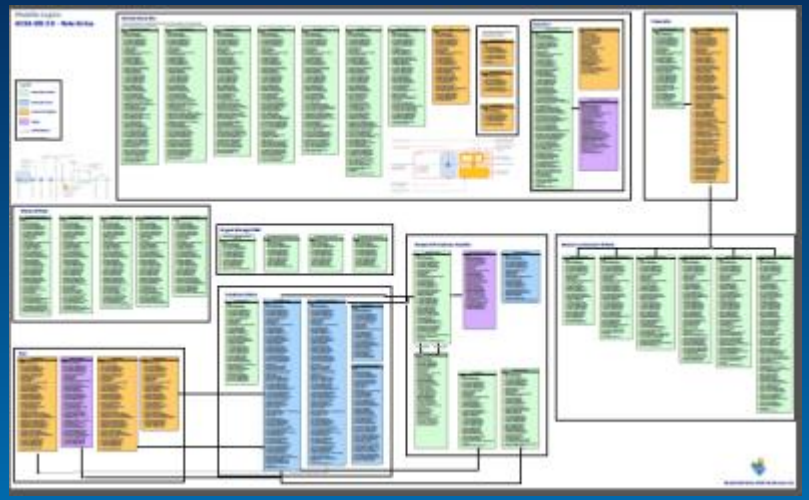


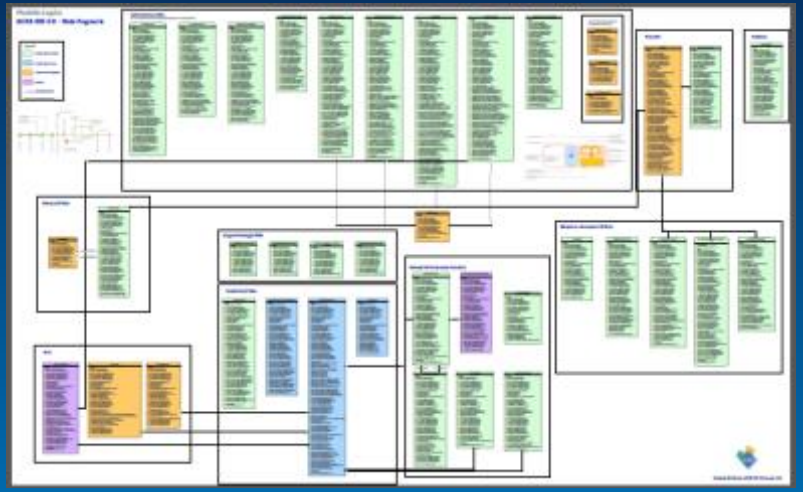
- Network level: geometric network on the real position of the utility assets
- P&I level: geometric network to represent the schematic plant of the sites

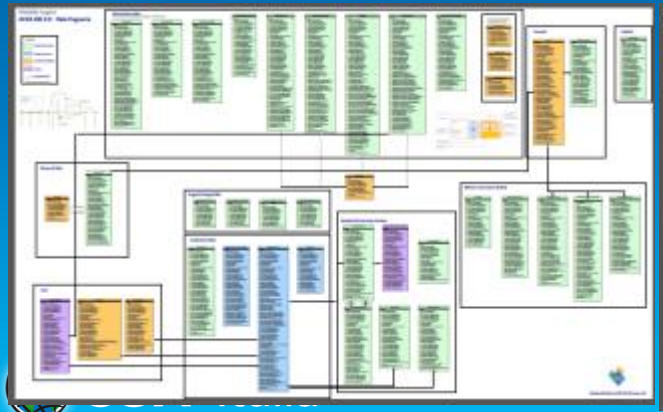


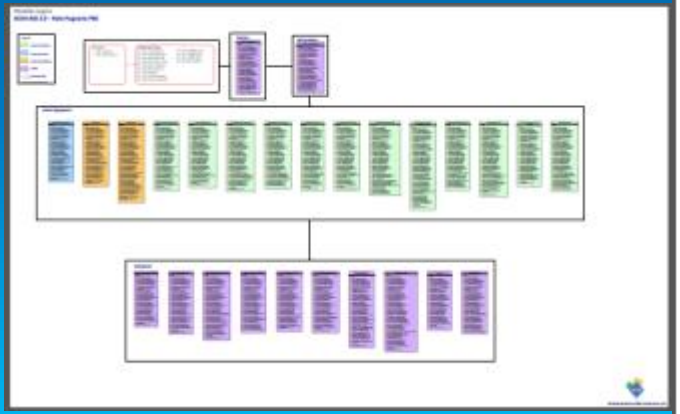
P&I

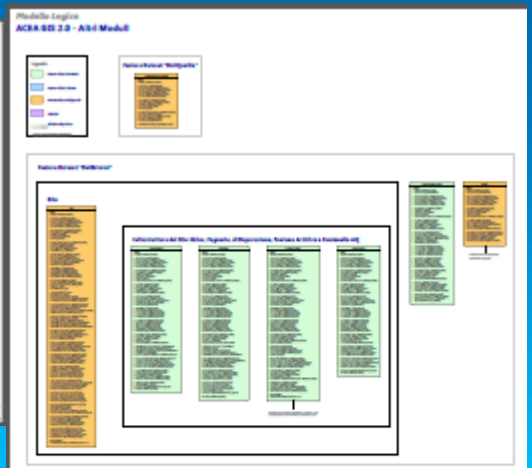
ACEA2.0: Network Data Model





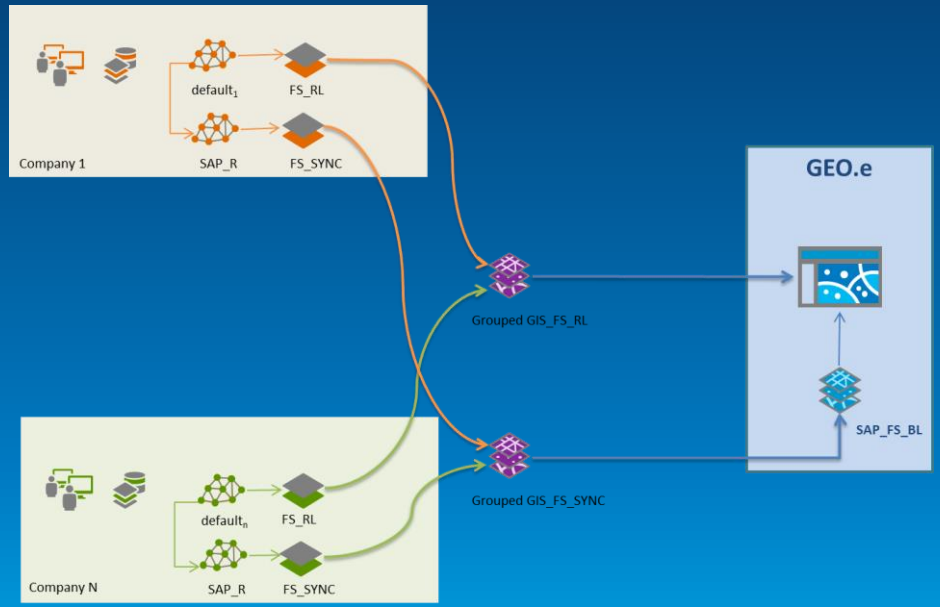






ACEA2.0: Integration model with SAP PM

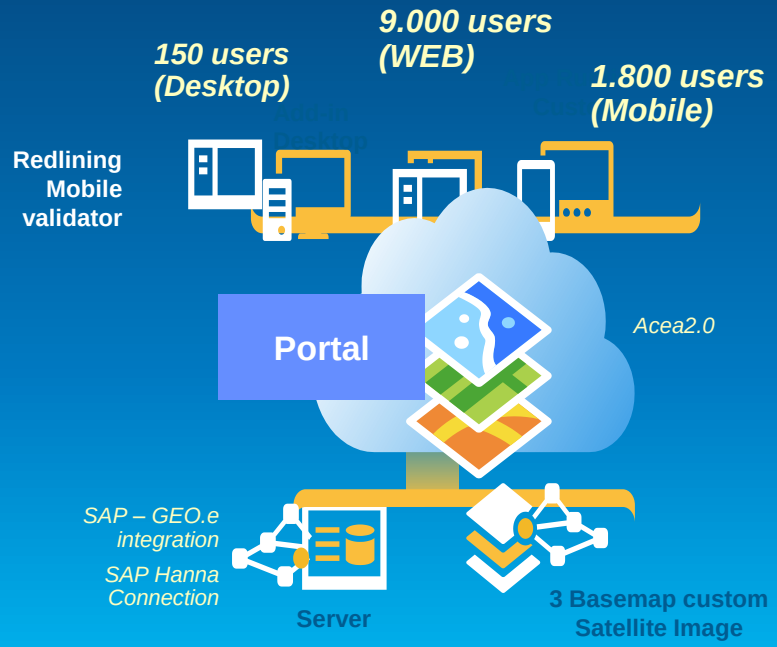
- **Based on GEO.e Framework**
  - **GIS is the master data for all the function locations of SAP PM**
  - **The number of function locations created in SAP in the initial migration is about 10,000**



- **SAP is the master data only for meters, which are managed in SAP Hana and published as map service**

ACEA2.0: ArcGIS Platform

- **Portal for ArcGIS**
- **Custom Add-ins Desktop**
- **Web app based on WebApp Builder**
- **Custom GIS Mobile App and its integration with SAP Work Manager**



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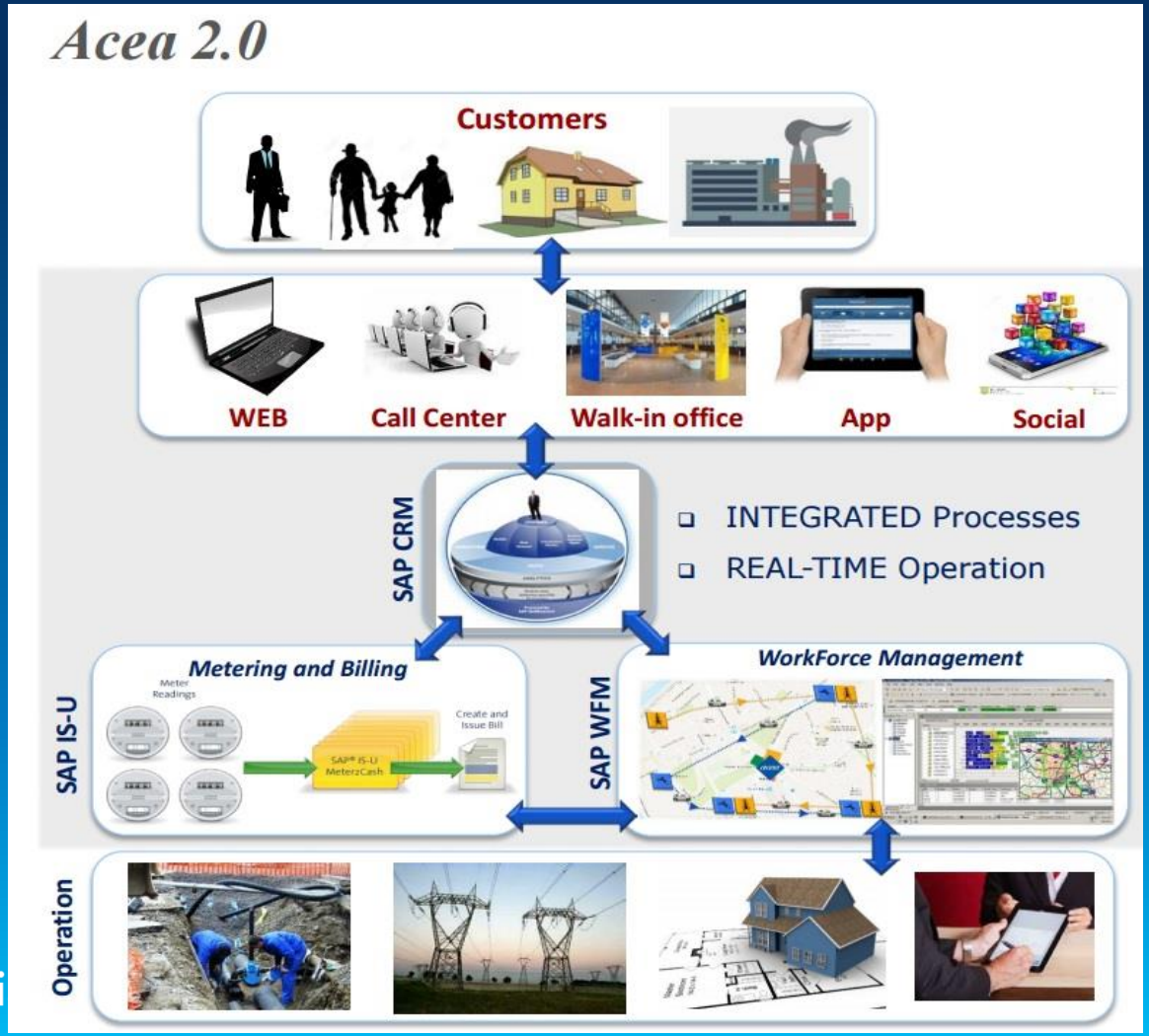
Acea

Conclusions

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