



Business values and drivers for a SAP-GIS integration in EAM



Investigation at Customers SAP/GIS Integration:

Results



Source: Project Sagres, SAP

Customer Interaction	
250	Customers who supposedly did a SAP/GIS integration
21	Worked <i>only</i> with BW
50	Interviewed or materials viewed
4 (7)	Contextual interviews conducted

Customer Breakdown	
50%	Utilities
15%	Public Sector
8%	Oil & Gas
Rest	Others

Integrations	
80%	Did an integration around Enterprise Asset Management
95%	Small, homegrown integrations
100%	Experienced benefits, want to expand it
100%	Want standard SAP packages, not homegrown software



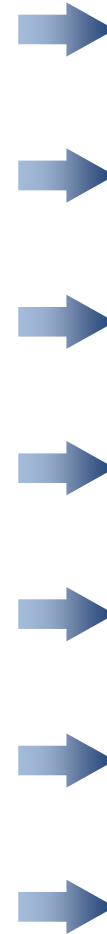
- Aquarion Water, CT
- CenterPoint Energy
- City of Phoenix
- City of Richmond
- City of San Antonio
- City of San Diego
- City of Tacoma
- Energen/Alagasco
- Gwinnett County, GA
- Hartford MDC
- Imperial Irrigation District
- Morris Communications
- Marin Municipal Water District
- Newport News Water Works, VA
- Omaha Municipal Utility District
- Oklahoma Gas & Electric
- PA Turnpike
- PEPCO
- PSE&G, New Jersey
- Schindler Elevator
- Aena, Spain
- AES Sul - Brazil
- Alinta Gas
- British Petroleum
- British Waterways
- German Waterways
- Canal, Spain
- Conaprole, Chile
- Cape Town
- Denmark Oil & Gas Network
- Energen
- GeoNIS
- German Defense Forces
- Hellenic Military
- Interconexion Electrica,
Colombia
- Israel Government
- KEPCO
- Metrogas, Chile
- Ministry of Environment, Spain
- Denmark Oil & Gas [DONG]
- Shell Oil
- Siemens Medical
- Sky Harbor Airport, Phoenix
- Water One, KS
- NESAs
- New Zealand Defense Forces
- City of Ottawa, Canada
- PDO, Oman
- Pidpa, Belgium
- Hanson, Australia
- Port of Montreal
- Portugal Highways
- Spanish Ministry of Environment
- Saudi Aramco
- Hamburg Waste Management
- Wales and West Utilities
- Waterways Authority of NSW
- Welsh Water
- And many more ...



Integrations



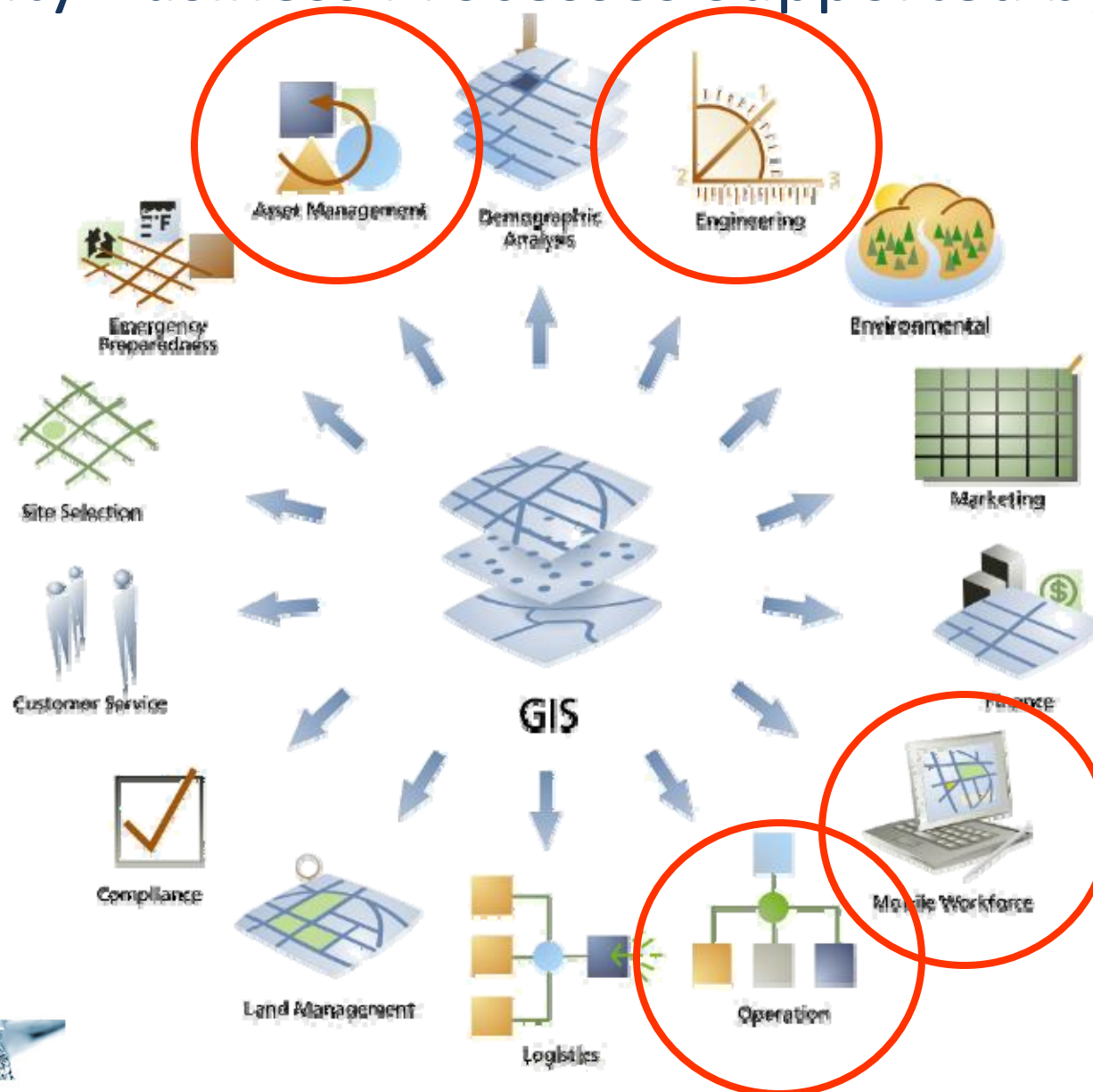
EAM is covering the entire Asset Life Cycle



 Asset Maintenance	 MRO Procurement & Inventory
 Human Resources	 Inspection & Calibration
 Asset Health Monitoring	 RFID and Mobile Devices
 Project Management	 Materials Requirements Planning
 Core Financials	 Financial Optimization & Reliability Reporting



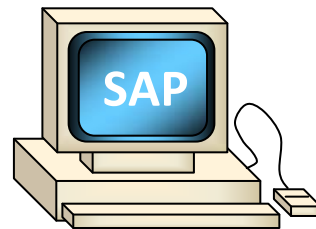
Utility Business Processes Supported by GIS



Limits between the two systems

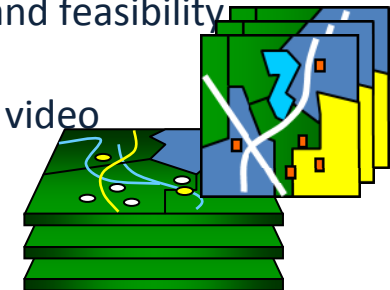
- What's in SAP:

- Financials
- Master data (equipment, professionals, trucks, etc.)
- Costs (equipment, cables, workforce, etc.)
- Equipment life cycle information
- Crews' and professionals' profiles – HR
- Customer info – CCS
- Service orders
- Notifications



- What's in GIS:

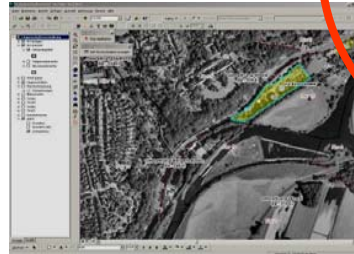
- Location (functional location, equipment, work order, notification, etc.)
- Geographic data (network, streets, coordinates, images, roads, trees, etc.)
- Dispatch, routing, tracking vehicles
- Engineers' and technicians' workspaces
 - That is, projects: network expansion requires a GIS to simulation and feasibility analysis
 - Project tool video
- Weather



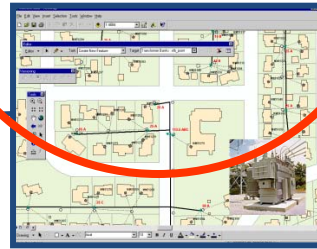
Extending the SAP Enterprise with GIS Functionality

Real Estate

Right of Way
Lease Mgmt
Facility Mgmt



Asset Management
Asset Inventory
Network Documentation
Connection Management



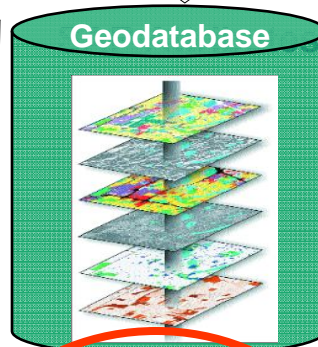
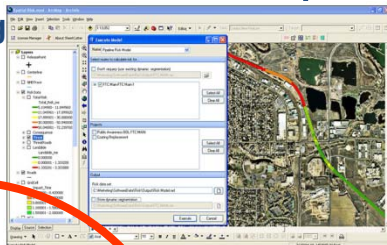
Maintenance

Notifications/Work Orders
Maintenance Planning and History
Analysis and Reporting



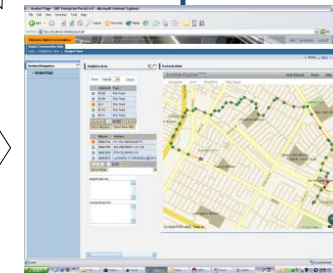
EH&S

Hazardous Material Mgmt
Safety
Reporting



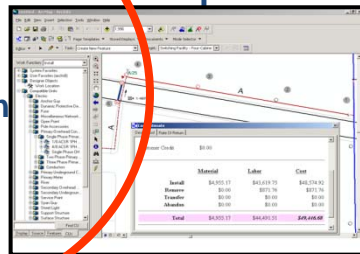
Logistics

Planning
Routing
Site Loc



Projects

Planning
Design
Construction

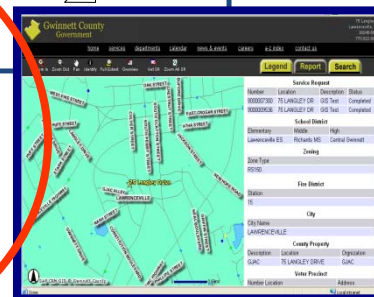


Mobile

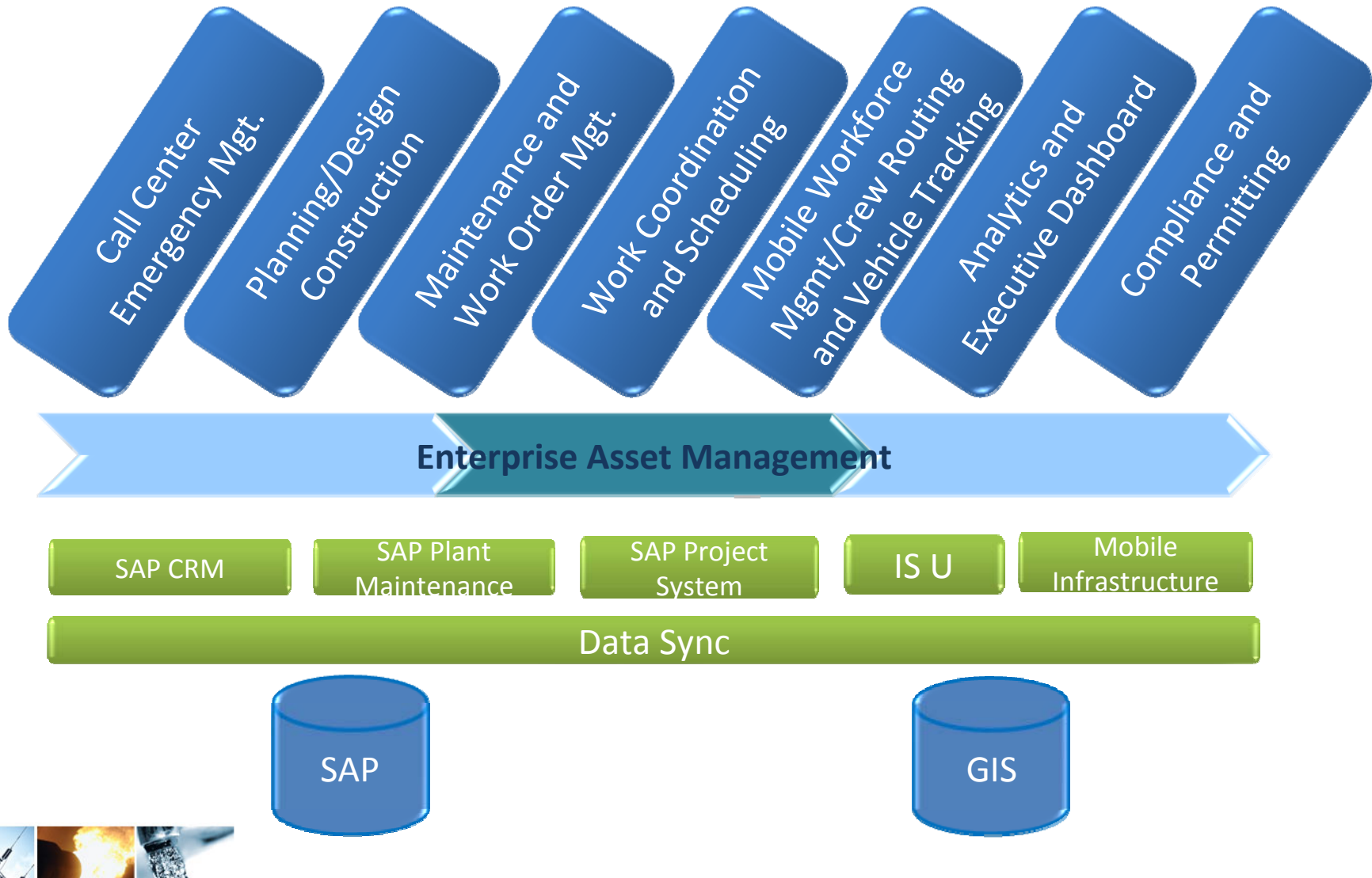


CRM/Call Center

Address Loc
Service Req
Analysis and Reporting



GIS Integration Scenarios with SAP EAM

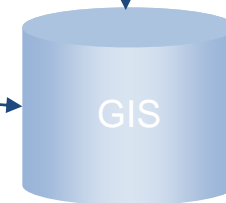
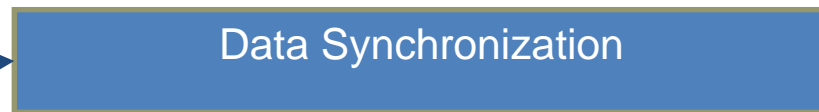
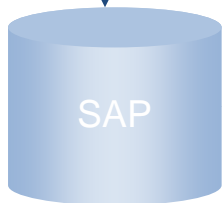
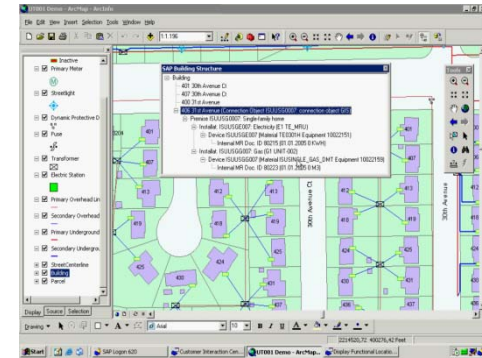
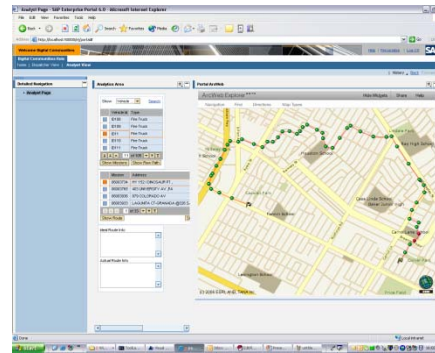
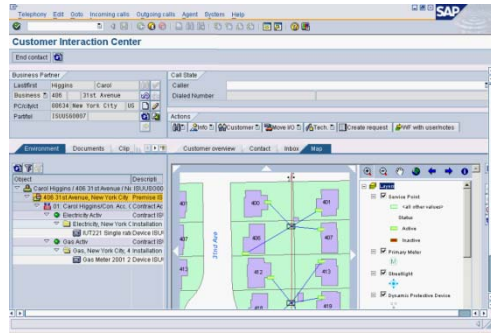


Different Types of Users – Same Platform

SAP User

Composite User

GIS User



SAP – ESRI Integration

- Extend SAP with Geographical Intelligence
- Extend ESRI with Core Business Intelligence



Benefits of Integration

- Benefits customers have realized
 - Increase Productivity – work in a single workspace
 - Two clicks to data
 - Find right asset more quickly
 - Initiate transactions more accurately
 - Thematic display of assets based on SAP attributes
 - Work planning - View asset location with respect to field teams
 - Improve Data Quality and Consistency
 - Single source of spatial master data
 - Assets on books matching assets installed
 - Reduced data entry and errors
 - Support Decision Making (Enable Spatial Queries and Optimization)
 - GIS geometry and topologic functions enable spatial queries
 - GIS network, location/allocation, and other functions optimize routes, supply locations, etc.
 - Better logistics, resource management
 - Improved Collaboration
 - Common operating picture
 - Faster and better decision making
 - Internal and external stakeholders



Benefits of Integration

- Benefits customers have realized
 - Save Time
 - Creation of **equipment**, notifications, work orders
 - Give More People Access to SAP Data and Functions
 - Increase SAP utilization
 - Leverage SAP and GIS Investments
 - Automate Workflows
 - Graphical selection and assignment of assets and tasks
 - Calculations in GIS update SAP
 - Mass change object data in SAP
 - Automatically relate new SAP objects to GIS features
 - Reduce Costs/Save Money
 - Assign the right amount of work to the right crew
 - Avoid installation of signs in poles
 - Attend regulatory demands (prove investment in the network)
 - Avoid penalties by regulatory agencies



Benefits of Integration

- Overall 12% - 18% cost reduction
 - Improved Visibility
 - Improved Work Planning and Scheduling
 - Planned/Preventive Maintenance
 - Identify Problems and Weak Points
 - Breakdown/Emergency Maintenance
 - Work Selection and Assignment
 - Improved Coordination of Resources
 - Resource/Location Conflicts
 - Human
 - Material
 - Equipment
 - Optimize Tasks and Partners
 - Inform and coordinate with Partners
- Training: 10% - 15% reduction
- Data Access/Navigation: 10% - 50% time reduction



IMAGEM Software International LLC

- A Software Company Committed Exclusively to SAP and ESRI
- Provider of Packaged Integration Application: GISConneX
- Focus on the Utilities Market (Electric, Gas, Water, Oil & Gas)
- Global Company, Based in Redlands (CA)
 - Business Office: Spain
 - Development Center: São Paulo
 - Subsidiary of Imagem (Brazilian ESRI and M&M Distributor)
- SAP Software Solution Partner
- ESRI Business Partner



Reference case: AES

- ❖ AES-Sul: Electric Distributor in Brazil

 - ❖ 1.8 million customers

- ❖ Impact Awards 2007 Brazil:
Best SAP project of the year

- ❖ Project:

“GIS and SAP: two different worlds integrated with SAP NetWeaver”

- ❖ Board of Judges:

São Paulo University, Gartner Group, SAP Brazil, and ASUG

Photo: Sandra, AES Sul project manager, receives the prize from SAP Brazil president.



AES Sul Challenges

- ❖ Difficult in locating the assets in the field
- ❖ No information about asset geographic position
- ❖ Asset data not adequate (accounting and network operation)
- ❖ Data is redundant and inconsistent (GIS and SAP)
- ❖ Need to address new regulatory requirements
- ❖ Lengthy process with several steps done by different people
- ❖ Business processes include manual interfaces with high error rates

GOALS

- ❖ Better support for field services
- ❖ Better management in the information flow of assets from and to the field



AES Sul Solution

- ❖ Increment and integrate current GIS and SAP
 - ❖ Processes revision and improvement
 - ❖ Desktop application to keep records integrated (PM-GIS)
 - ❖ Mobile system for inventory maintenance (PM-MI-GIS)
 - ❖ Project tool implementation (PS-GIS)

Assets Data Field Collection

**Accounting X Physical (GIS)
Reconciliation**

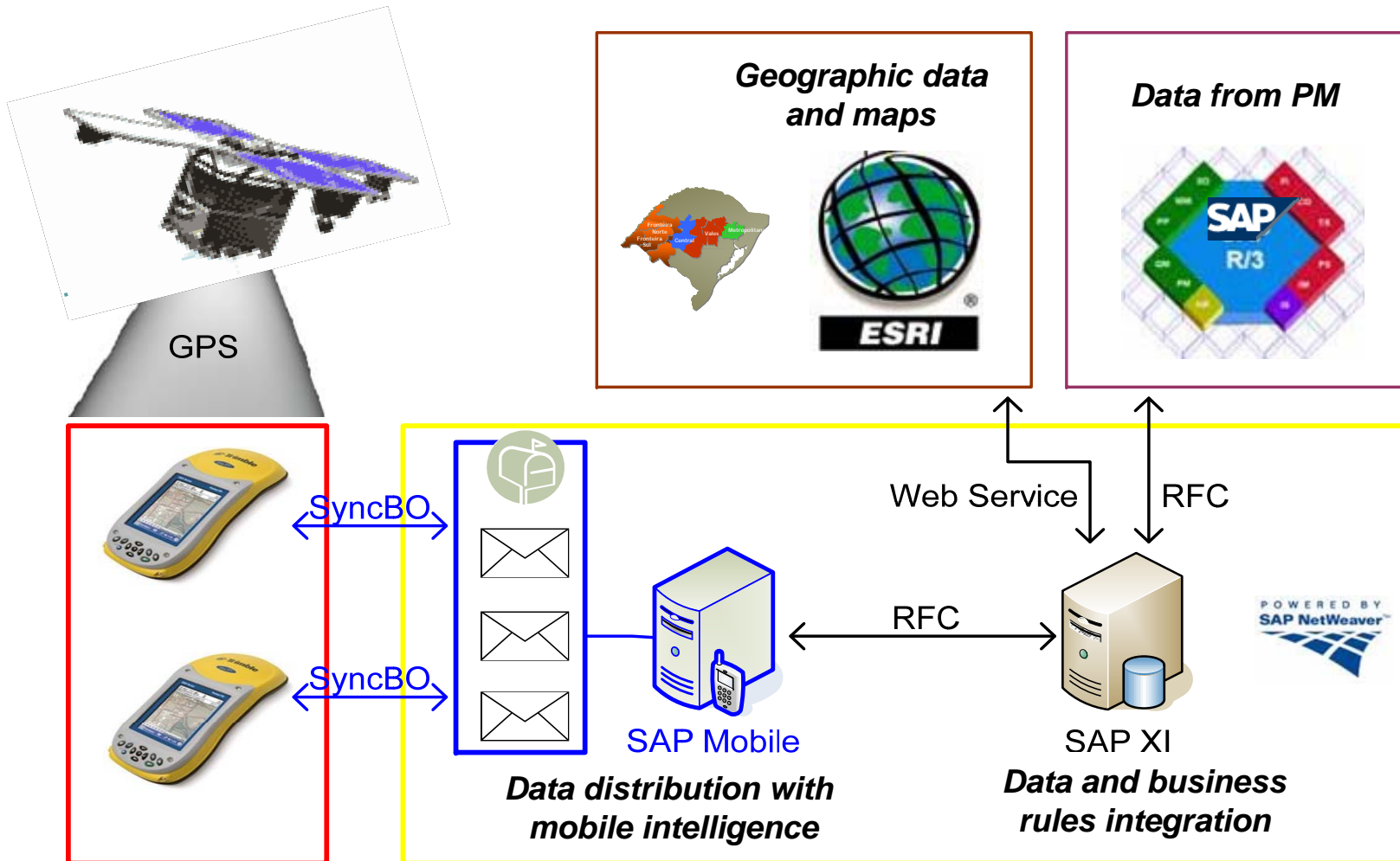
Executive Reporting for Regulator

**Regulatory Agency
Compliance Audit**

Technology and Process



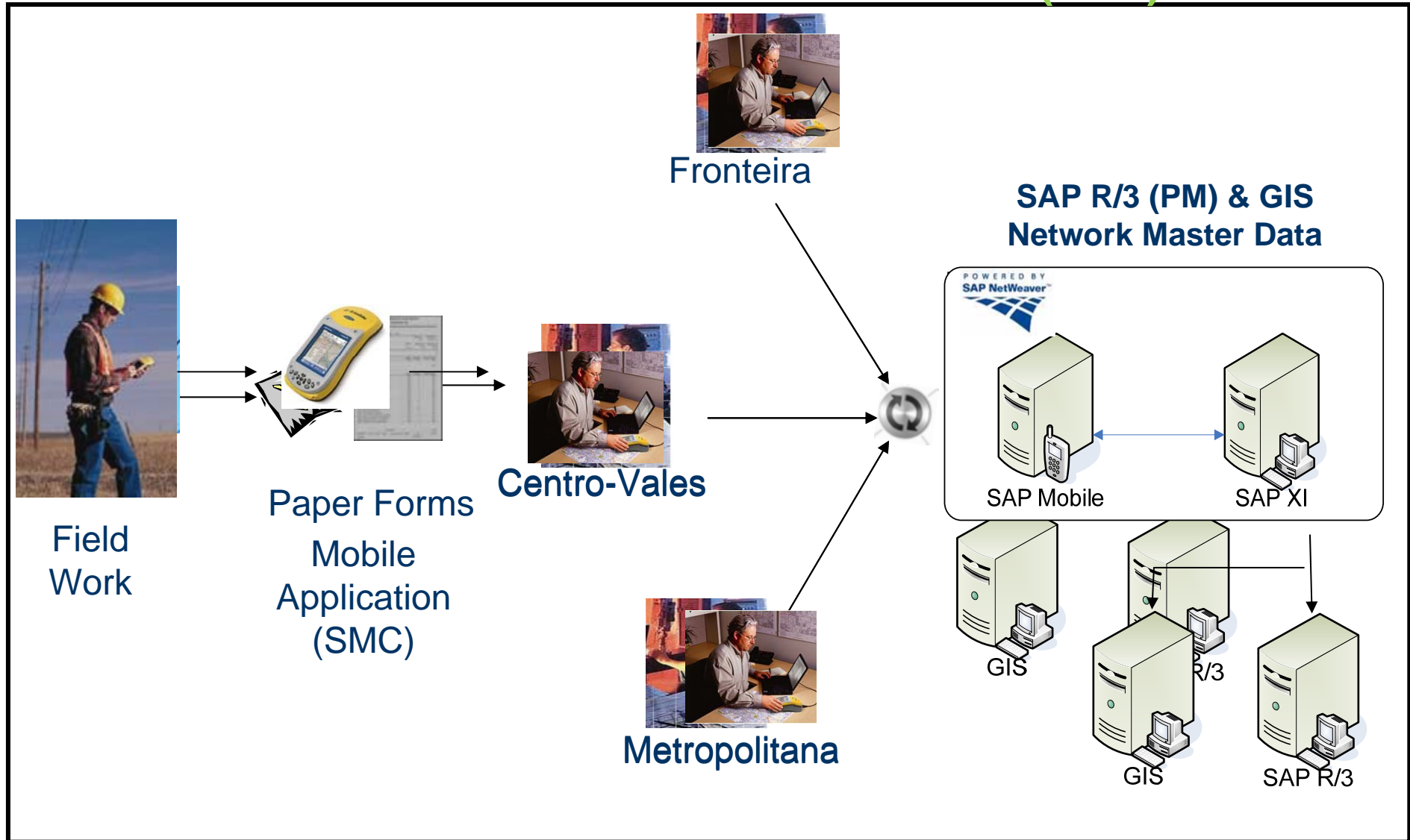
Solution Architecture



**SMC application
offline**



Network master data maintenance (as it was) Network master data maintenance (new)



AES Sul Benefits

- Benefits after GISConneX Mobile
 - 100% of network assets geo-referenced
 - Redundant data minimized/eliminated
 - SAP & GIS integrated and combined in one user interface
 - Business rules enforced across processes
 - Leaner, faster (75%!), reliable network master data updating
 - Minimize errors, less re-work, increased integrity
 - Higher-quality data
 - Uniform procedures among different teams and regional offices
 - Significant costs avoided:
 - Network asset tagging in field: \$8 million savings
 - Assurance that all assets are in physical and accounting databases
 - Compliance with regulatory standards, mitigating governance consequences, and supporting rate cases to the PUC



GISConneX in the EAM Process

SAP IS-U

Industry Solution for Utilities

SAP PS

Project System

SAP PM

Plant Maintenance

Call Center & Emergency Management

Planning Design Construction

Maintenance & Work Order Mgmt

Work Coordination & Scheduling

Mobile Workforce Mgmt/Crew Routing & Vehicle Tracking

Analytics and Executive Dashboard

Compliance & Permitting

Customer Management (SAP CCS)

Project Design (SAP PS)

Work Management (SAP PM)

Mobile

GISConneX

Asset Data Management (SAP PM)



Asset and Work Management Optimization

Increased Profitability

- ✓ Mobile Work Management
- ✓ Faster and efficient interaction with asset information
- ✓ Process automation

- ✓ Work Management (WM)
- ✓ Integrates asset maintenance information
- ✓ Provides capabilities for better asset-related work analysis
- ✓ Maintenance Planner acts proactively

- ✓ Asset Data Management (ADM)
- ✓ Information integrity between ESRI GIS and SAP objects
- ✓ Single management environment to manage data
- ✓ Two way access to critical business information

Process Optimization

Information and User Interface Integration



Asset Data Management (ADM)

✓ Functionalities

- Create functional location
- Remove functional location
- Find functional location
- Display functional location attributes
- Install equipment
- Creates equipment
- Replace equipment
- Uninstall equipment
- Find equipment
- Display equipment attributes
- Create service point
- Mass attribute update
- User posts to SAP



Work Management (WM)

✓ Key Features and Benefits

- Extend SAP asset and work management functionality through geographic intelligence
- Provides map interfaces within the SAP GUI and on the Web through a composite application:
 - Web >>> **Work Browser**
 - SAP GUI >>> **Maintenance Planner Workbench**
- Improves the efficiency in creating, changing, and displaying notifications and work orders using the GIS interface
- Enables managers to make better maintenance related decisions based on location
- Helps to generate more assertive preventive plans



Work Browser

SAP-ESRI Composite Application

✓ Functionalities

- Create notifications based on GIS maps.
- Browse work orders and notifications, allowing searches with GIS filters.
- Browse work orders and notifications, allowing searches with any SAP filters.
- Browse the network functional locations and equipment.
- Access maintenance history for technical objects.
- Find address.
- Run network traces.



GISConneX EAM Mobile

✓ Key features and functionalities

- Map enabled mobile application
- Integrate SAP with GIS in the field using the Syclo platform.
- Visualize equipment, notifications, and work orders in the field (handhelds)
- Create notification based on maps in the field and post to SAP and ESRI (off/online)
- Update work orders based on maps in the field and post to SAP and ESRI (off/online)



GISConneX - Benefits

- Accelerates integration project
 - Packaged integration – ready to deploy
- Ensures integration of Best Practices
 - Expertise in GIS-ESRI and SAP technologies
 - Expertise in integration projects
- Decreases risks
 - Proven solution with ongoing support
- Saves money
 - Doesn't waste time and resources to test and develop a custom solution



GISConneX - Benefits

- Ensures integration solution continuity
 - Product maintenance for different versions (SAP and GIS) and updating of technology
- Ensures data integrity
 - Data synchronized, improved data quality, reduced latency
- Ensures adaptation to customer's requirements
 - Provides configuration options
 - Provides scalable architecture
- Ensures technology market standards
 - Integration platform, Web services



– Data integrity and security

What Is Possible



Contact

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Enjoy Atlanta!

