AES Sul Proves the GIS-SAP Integration Business Case

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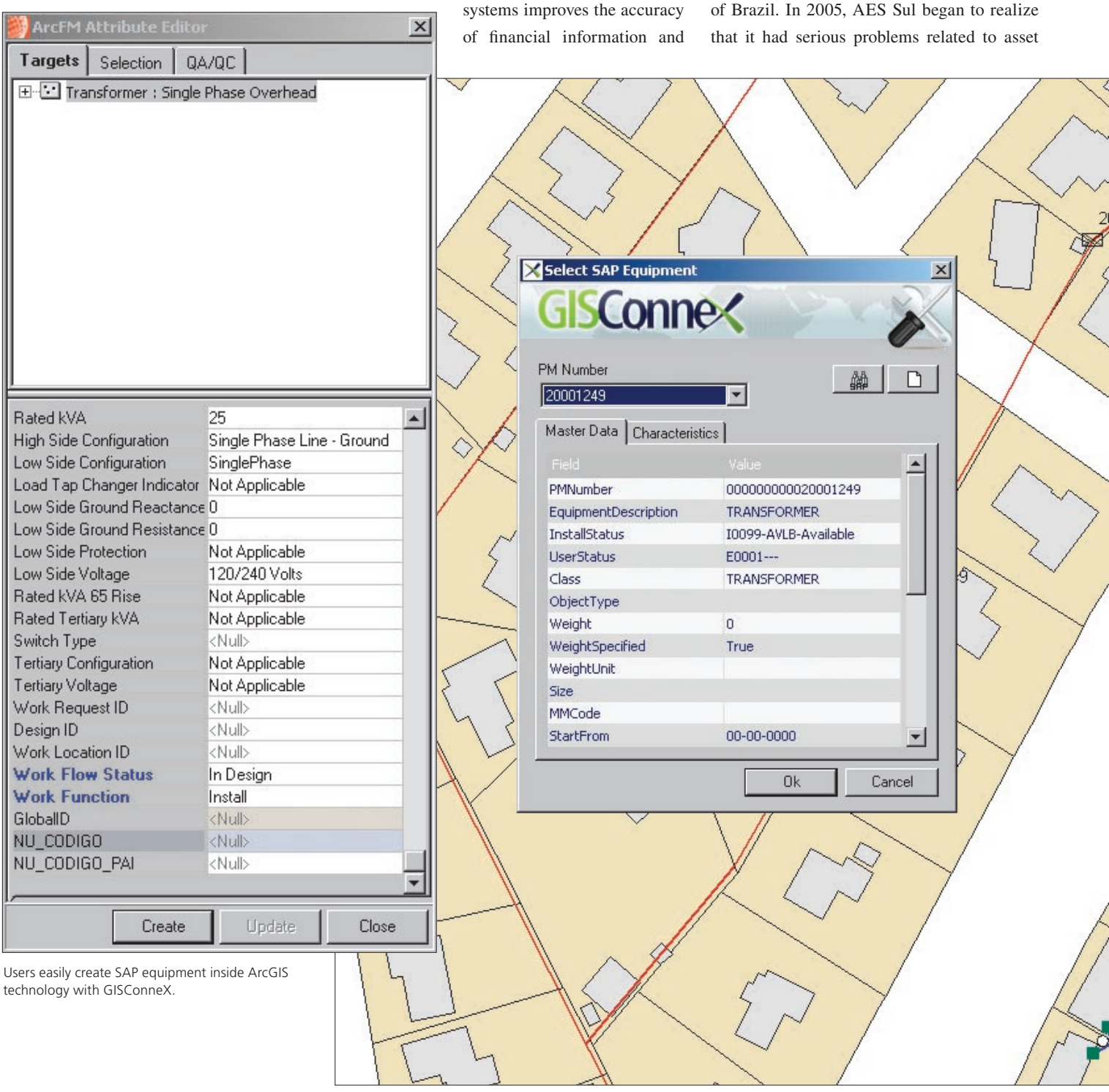
Asset and work management are directly linked to a utility's core business. Assets that are not properly maintained have a direct impact on profitability and efficiency. Finding the right balance between maintenance costs and operational efficiency is one of the key challenges that utilities face today. However, maintaining assets means not only ensuring that they are operational but also maintaining accurate asset information. One of the key elements for a successful asset management strategy is data integrity between enterprise resource planning (ERP) from SAP and GIS technology from ESRI. Data integrity between these two systems improves the accuracy of financial information and prepares the utility for the scrutiny of improved compliance and governance.

AES Sul is an electric distribution company and a subsidiary of AES Brazil. The company operates an electric distribution network serving more than one million customers in the metropolitan, central, and western areas of Brazil. In 2005, AES Sul began to realize that it had serious problems related to asset



Users easily create SAP equipment inside ArcGIS technology with GISConneX.

management. Inventory data was inadequate from the point of view of accounting as well as network operation. Without geographic information, it was difficult to identify assets in the field. Field operations were annotated on paper forms, and a lot of people were involved in the time-consuming process of updating data. Finally, network data inventory was not compliant with current regulations that required proper and accurate accounting of assets, very similar to International Financial Reporting Standards (IFRS).

This challenging scenario presented the right opportunity for AES Sul to promote the necessary investments in GIS and GIS-SAP integration. A significant investment was required: almost $7.5 million had to be spent on PDA equipment, software licenses, development, training, field survey, mapping/satellite images, consulting, internal infrastructure, change management, and other internal costs.

To prove the business case, AES Sul had to be able to link the business benefits sought with GIS and GIS-SAP integration to the organization's strategic goals and objectives, proving how and when that investment would deliver tangible benefits. AES Sul needed a project that would jointly take all these aspects into account and maximize return on investment (ROI).

In April 2006, AES Sul decided to implement the CONTA COMIGO project, targeting improvements in the quality of network service, customer service, and compliance. The project included a significant investment in asset inventory, financial reconciliation, and IT technology infrastructure.

AES Sul began with a review of its asset registration and network maintenance processes. The next step was a review of the data model and the development of business rules that would be validated by GIS and SAP. Finally, ArcGIS and ArcFM Designer were integrated with SAP Product Lifecycle Management (PLM) based on a NetWeaver platform for project management and network maintenance.

By the end of 2008, after the second round of the rate revision process led by the regulatory agency, it was possible to account for ROI in CONTA COMIGO for the period of April 2006 to April 2008. Based on the ROI-IMG methodology, developed by Imagem Geosistemas e Comércio Ltda., ESRI's distributor in Brazil, under global financial analysis standards, the utility reached a 130 percent internal rate of return (IRR) and an ROI of 200 percent with a payback in three years.

Quantitative benefits could be measured in terms of compliance with regulations, thus helping AES Sul avoid fines. The company was also able to justify appropriate rate increases, achieve greater accuracy in the maintenance of network inventory data, and reduce

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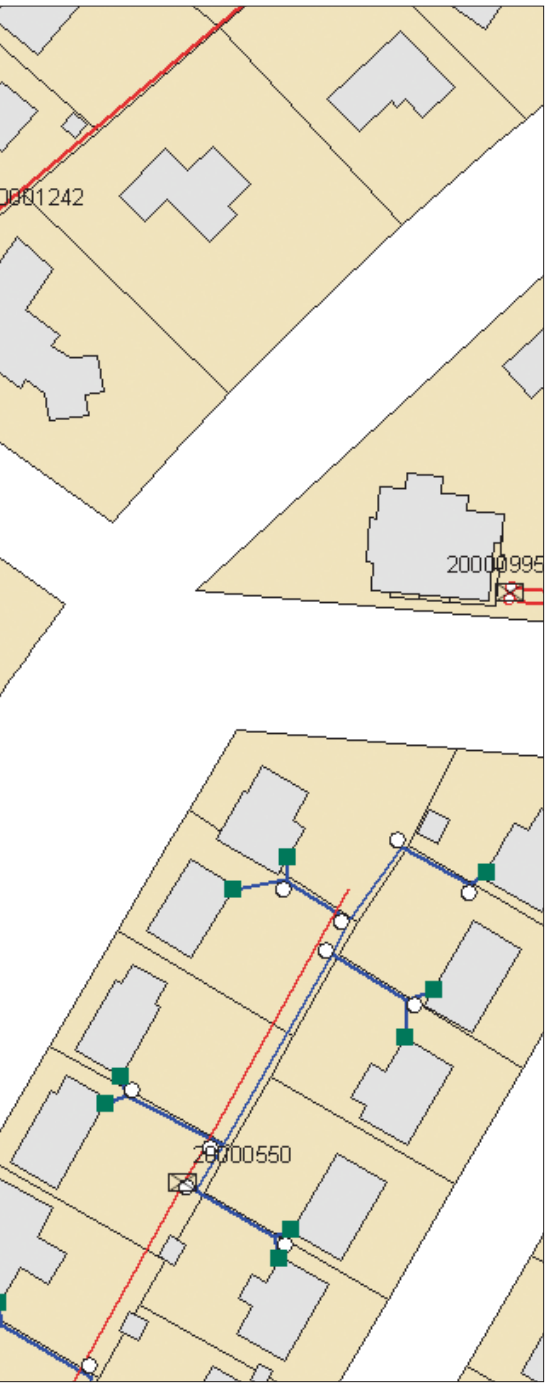

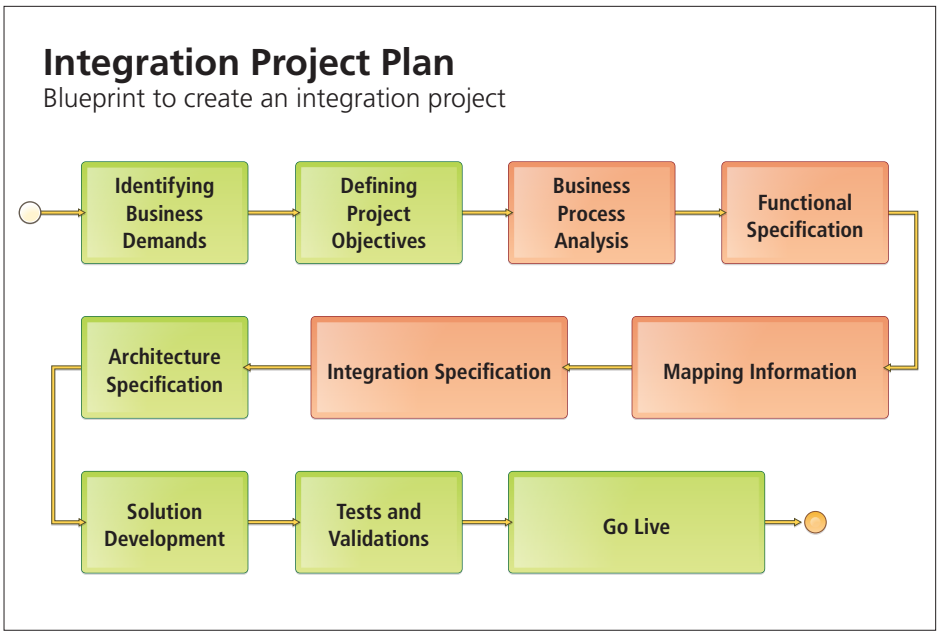

Blueprint to Create an Integration Project

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AES Sul Proves the GIS-SAP Integration Business Case

asset management work by an average of 75 percent. Since implementation, the utility has seen greater efficiencies in network project design and construction; a reduction of overlapping projects, thereby reducing redundancy in field crew deployment; an increased utilization of IT assets with increased efficiencies; and marked cost avoidance by eliminating the need to acquire or install metal ID plates for about 800,000 assets.

In the context of current governance and the global economic climate, there has been an increased demand to improve accountability, business efficiencies, competitive advantage, and resource utilization. As a result, executives are seeking more sophisticated approaches to prioritizing and targeting investment in GIS technology and proving how and when that investment will deliver tangible benefits to their organizations.

To substantiate the business case for GIS and GIS-SAP integration, organizations must be able to link the specific benefits of integration initiatives to the organization's strategic goals and objectives. The business case must illustrate a systematic delivery of benefits through a well-structured program that delivers value to the business core of the organizations.

Emerging financial standards such as IFRS dictate more detailed asset accounting. These regulations will change depreciation models and the granularity of asset accounting, providing a very compelling business case to integrate GIS with SAP.

Generation of revenue is the most important item in a business case. The best lens on this topic focuses on justifying rate cases. Utilities must account for and justify proper management of their assets as a portion of their case to receive a rate increase. This was very much the case with AES Sul. Moreover, the common perspective is that integration of GIS with both operational and business systems is critical to a successful smart grid implementation.

When thinking about GIS-SAP integration, it is necessary to define a suitable integration design for each utility. For achieving that integration design, one must thoroughly understand cross-business needs by reviewing functional requirements, identifying current gaps and issues, analyzing areas for process improvement, and designing optimal business processes. A secondary requirement is to define the most suitable technology for realizing the GIS-SAP integration.

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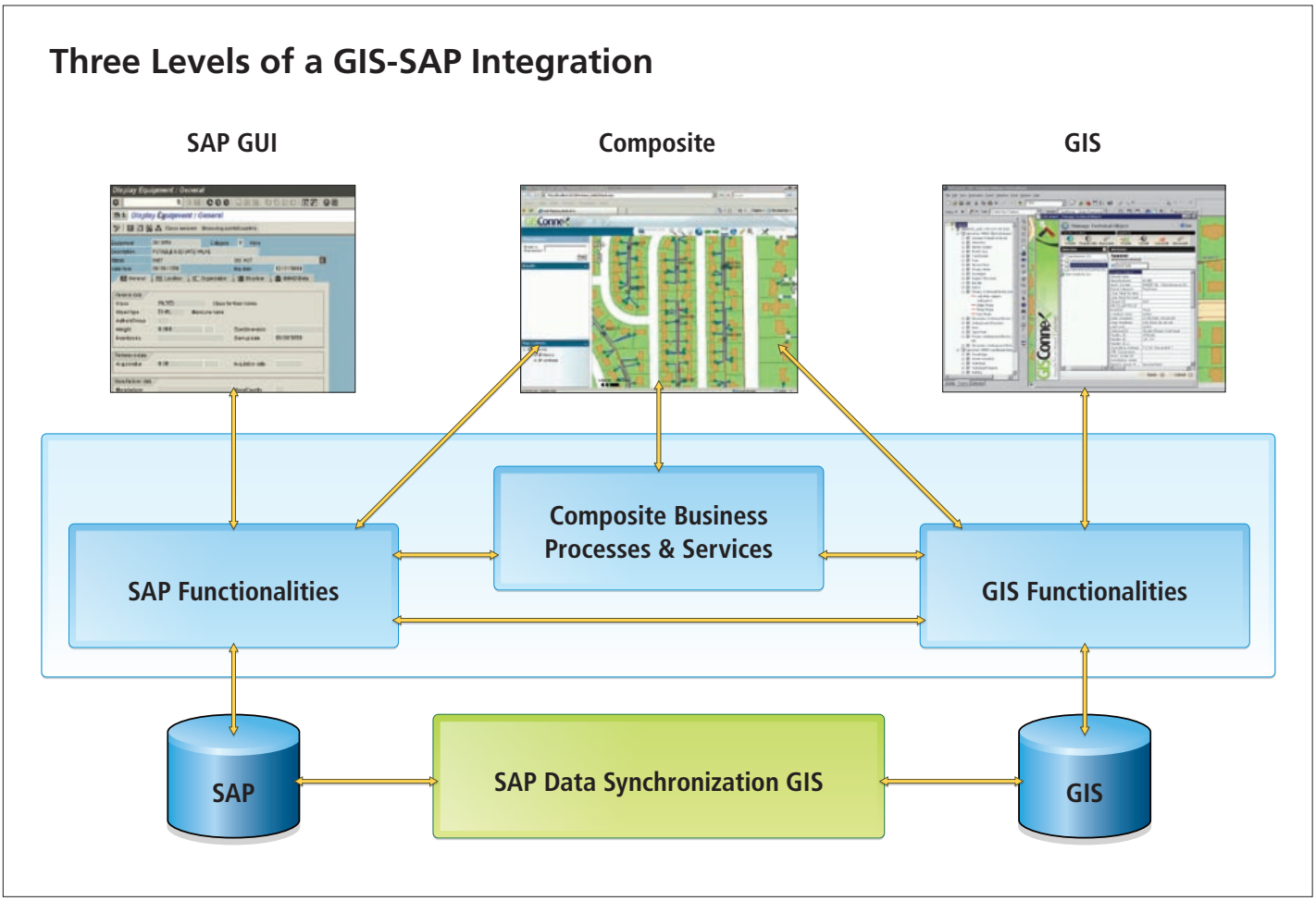

Three Levels of GIS-SAP Integration