

Integrated Multi-Client Platform for Smart Meters

End-to-End Smart Energy Services Platform



Helping you efficiently deliver your smart device programs using our proven system and processes whilst ensuring end user satisfaction.

Success of a smart metering program is wholly dependent on the utility's ability to efficiently and effectively manage meter deployment and operations, meter connectivity, track work orders, control field services, and have live information on service levels.

Smart Energy Services Platform (SES Platform) provides highly detailed information about energy consumption that is useful to both energy providers and energy users. Utilities want to manage supply and forecast demand more profitably, while customers want greater control over usage and costs, and the ability to see the impact of their appliances on their own carbon footprint.

Utilities can now achieve this greater degree of control with Capgemini's end-to-end SES Platform, which manages smart meters and smart information. It

can be operated in a number of smart metering business scenarios:

- **Software-as-a-Service (SaaS)**
- **IT Integration** (software plus project management)
- **Managed Business Services** – end-to-end managed services.

As a multi-client, multi-language platform, SES Platform is configurable to take into account the different functional and regulatory requirements.

Why SES Platform?

- SES Platform provides a single view of your evolving meter estate (Electricity, Water or Gas), integrating systems used by all ecosystem members (field services, telecommunications, call centers, logistics, etc.).
- SES Platform combines the learning from deployment of more than 15

million smart meters, capitalizing on more than ten years of implementation experience, which is built into the product.

- SES Platform Open Architecture will integrate with any Meter, Head-end and Master Data Management system, and any ERP (including SAP and Oracle).
- SES Platform operates as SaaS, making set-up rapid and inexpensive – you choose how much or little you use. Pre-configured integrations simplify set-up; flexible work flows allow you to adapt our industry leading best practice modules to your processes.

SES Platform

SES Platform is an integrated work flow engine with seven modules associated with the smart energy market (see Figure 1):

Figure 1: SES Platform Modules



▪ **Field Force Automation**

Client software enables mobile devices to be used for Work order handling, stock handling, palletizing, and stock taking. Route optimization using GPS is available for positioning and navigation. Scanning of labels from pallets and devices, and print bar code labels. Photos taken may be attached to work orders. Real time communications with the Server, offline mode is available when required. The software may be updated remotely.

▪ **Work Order Management**

Involves work order creation (issued internally or externally), technical planning, work order planning, distribution to field service organizations, assignment to resources, performing work orders in the field and export of work order results.

▪ **Smart Device Management**

Collect meter data and manage remote and manually entered meter readings. Maintain an asset register that contains information about installation sites and devices, as well as a meter data register that is accessible in the system.

▪ **Service Operations**

Monitor meter performance and communication status through analysis of collected and delivered values, and how measure points and multi-points are communicating.

▪ **Customer Management**

Customer Services may be managed by the field service organization and/ or by an external customer service organization. Handle incoming and outgoing customer phone calls and emails, time reservations, customer service requests and mailings.

▪ **Material Traceability & Logistics**

Plan, monitor, and controls flow of smart meter devices and material through the supply chain, from manufacturer and warehouse to client site, until they are mounted in the field; transportation, inventory, warehousing, material handling, packaging, stock site and material management. When scanning devices and pallets, the same PDA used by technicians in the field when performing work orders is used.

▪ **Resource Management**

Administration of system users (including technicians), their skills, qualifications, and access privilege,

user roles, teams, skills to perform specific work orders, tools and instruments used when performing work orders, and resources availability.

The work flow engine has several base capabilities:

1. Reporting

Predefined reports for roll-out & operations, billing, service level agreements (SLAs), material logistics and customer contact.

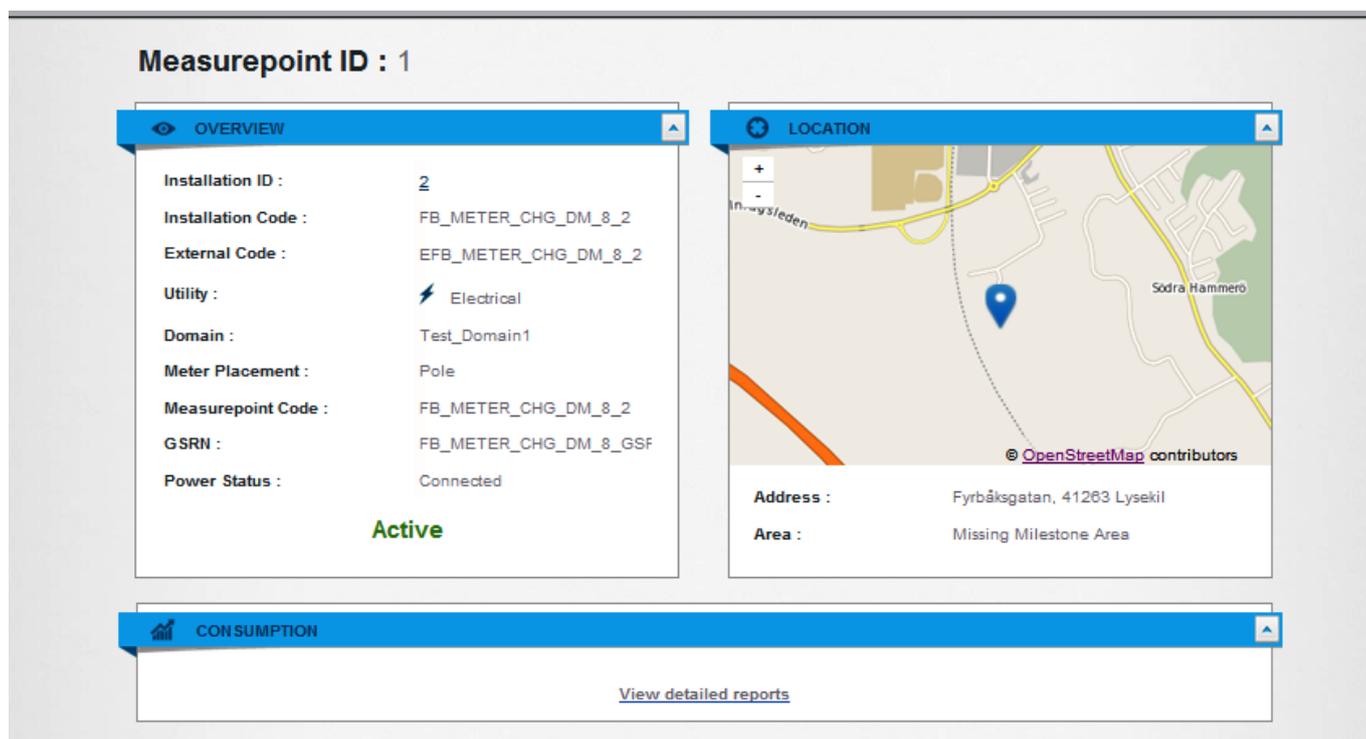
2. Enterprise Support

The system supports several utility companies in the same system through domains. It also manages different types of utilities (electricity, gas heating, and water). The “enterprise belonging to” is defined for each entity – installation site, case device customer, area, stock site, pallet, business specific system data. Users can only access data owned by the enterprise they belong to.

3. Area Management

Different types of areas can be created in the system: Region, Milestone Area, Collection Area,



Figure 2: Smart Device Installation – Current status of installation

Net Area, Operation Area, and Service Area. Areas can be created with or without coordinates. Areas with coordinates (referred to as geographical areas) can be created by defining the area in the map. Cases, work orders and installation sites (with coordinates) are updated with the corresponding geographical area automatically when created in the system. When coordinates are missing, an area belonging to it can be updated manually.

4. Language Support

Built-in language support means that all text items in the application can be translated. Supports translation of Graphical User Interface (GUI) Items (labels, buttons etc.), Messages, and System Data (static data delivered with the system). “SESP Translate” is a standalone application for language support. It is used

internally to register text items to be translated and used externally to translate text items. Translates text items, short text items (used mainly in the PDA) and a description of text items. Each customer can define their own translation of a text item in a supported language. Currently supports English, Finnish, Swedish, German, French and Chinese.

5. Map Support

Helps with operations of installation site and meters, drawing geographical areas, planning of infrastructure and work orders, assignment of work orders to technicians and teams, and navigation in the field with the PDA. Basic map functionalities include zoom (mouse scroll), scale (100 m – 160 km), soften map (0-100%), display points (measure points, multi-points, work orders etc), display

points relations, display geographical areas, focus locations and mark points in the map, color coding and legends (see Figure 2).

6. Calendar Support

Calendar support can be used in work order planning when making time reservations and when assigning work orders to resources. The calendar can be used to register and view user availability and absence, view planned and assigned work orders and cases over time.

7. System Configuration

Some system configurations can be performed in the system such as:

- Create New Case Types – based on general case group with a new name, case-specific rules and parameter configuration like average work order time, number

of calls for time reservation, set time for call (day, a.m., p.m.), notification or not

- Mailing Templates – graphical configuration of data placement (.pdf or .csv)
- Work Flow Engine – configure the order of possible activities (based on conditions and parameter settings) and configure work flow parameters
- Type Data – device types (e.g. meters, antenna)
- Deviation Handling – create new deviation codes (input to rule based “work flow engine”)

8. System Monitoring

Different types of job (e.g. exports) can be scheduled to run on specific dates and times as well as started manually. Different types of job can be monitored by the user. If a job is not started according to schedule, or if a job resulted in an error, the user is notified by e-mail. In addition to the above functionality, SES Platform includes an interface that can be used by the external system to diagnose the system and enable proactive actions. Key features are:

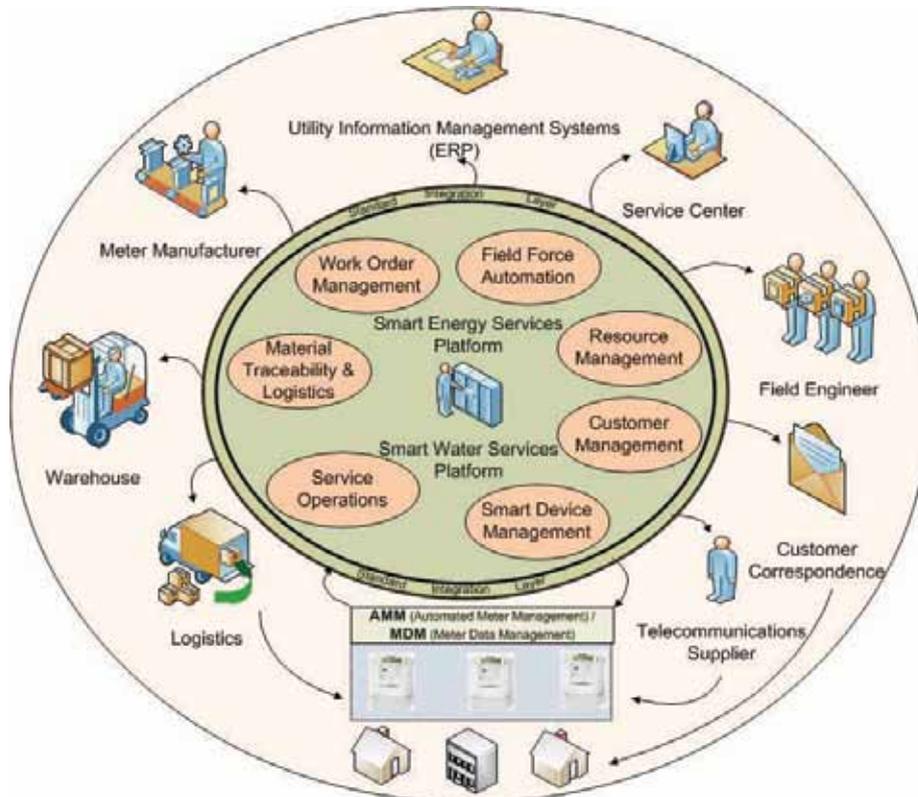
- Error Tracking – mail/SMS notification and System Error Overview for follow up

- System Performance – reports and interface for system performance request
- Scheduled Jobs – manage scheduling of jobs and Job Overview
- Monitoring of User Events – login and logout, history of downloaded and uploaded work orders, technician positioning
- System Overview – imports, exports and diagnostics

9. System Communication

Supports the following services: Web Services (Import and Export), MQ Services (Import and Export), Mail Services (Export), SMS Service (Export), File System Services (Import and Export).

Figure 3: Integrated model



10. System Interfaces

- Work Order Services
- Meter Reading Services
- Remote Services
- Power Quality Information (PQI) Data Delivery
- Collection Systems of Multiple Collection and Systems Support
- Telco Operators

SES Platform supports the following meter functions:

- Validate, Estimate, Edit (VEE)
- Theft detection
- Tamper detection
- Connect / Disconnect
- Ping

- Connections
- Load Management
- Analytics
- Communications
- Complex Events

Benefits of SES Platform

The benefits of using SES Platform span both metering field services and back-office operations:

- business process control, which is built into field service PDAs, ensures a very high level of activations
- visual support for geographical grouping of work orders means that the number of kilometers traveled is optimized, using an intuitive user interface

- remote logistical services and back office processes are fully integrated, allowing end-to-end control over supply chain and field service work, even if it is being executed by third party providers.

SES Platform provides an excellent automated control over smart energy business operations. Because Capgemini's SES Platform is designed with configurable change in mind, it can be easily configured to adapt to the changing requirements of Advanced Meter Management (AMM) between countries and over time (see Figure 3).

Why is Capgemini's Smart Energy Services Unique?

Capgemini's Smart Energy Services are real, in the market now, and already making a difference for utilities around the world. Our expertise and our resources are unmatched in the industry. In fact, only Capgemini Smart Energy Services:

- Has extensive utilities industry experience with an unequalled track record for successful innovation and delivery.
- Leads the industry in the delivery of smart energy solutions in mass deployment and production
- Offers a unique, turn-key solution called Managed Business Services, which has a usage-based pricing model

What also makes Capgemini's Smart Energy Services different from any other organization is our long-standing commitment to working collaboratively with our clients to deliver unique—and ultimately, successful—results. In fact, collaboration is central to the Capgemini philosophy and a pillar of our service delivery. From strategy development through implementation, our clients benefit from our tailored approach.

For more information about Smart Energy Services, please visit

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About Capgemini

With around 125,000 people in 44 countries, Capgemini is one of the world's foremost providers of consulting, technology and outsourcing services. The Group reported 2012 global revenues of EUR 10.3 billion.

Together with its clients, Capgemini creates and delivers business and technology solutions that fit their needs and drive the results they want.

A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

Capgemini's **Global Utilities Sector** serves the top Utilities worldwide and draws on a network of more than 8,900 dedicated sector consultants. As a leader in smart grid and advanced metering infrastructure solutions, Capgemini's **Smart Energy Services** is helping Utility customers throughout the world. Our integrated **Digital Utilities Transformation** framework empowers utilities to drastically improve their customer experience, operating and business models through disruptive technologies.

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