SMOS
Smart Metering Operations Suite

For more than a century, GE has provided Utilities around the world with robust and reliable solutions that maximize the operational efficiencies of the electric grid. Continuing that legacy, GE provides SMOS, a set of software tools to manage and operate a Utility’s smart meter estate. SMOS is designed for high volume, high performance, low latency, and scalability.

SMOS is a scalable headend solution that delivers the functionality required to communicate with, operate and manage your smart meters.

Key Benefits
• Improved business efficiency and reduced risk through out-of-the-box integration with other GE products and the use of open standards to communicate with third party meters and products
• Automated reporting that reduces manual work and meets regulatory compliance requirements
• Ease of implementation with out-of-the-box integration with standards-based smart meters from GE as well as other third party providers
• Enables customer engagement via multi-channel display technology
• Provides revenue protection by combining high quality data with robust business application support

Functionally-Rich Enterprise Application
Working with standards-based smart meters and communications systems, SMOS features a variety of applications to meet your deployment needs.

Robust Enterprise Solution
• Modular headend solution
• Scalable, flexible architecture enables multi-protocol and multi-communication support
• Secure, multi-tenancy architecture supports solution as a service delivery
• Can be delivered as a high availability solution
• Global language support available

Application Flexibility
• A full suite of applications from meter to back office applications
• Delivers data to and from business systems such as billing and customer service
• Integrates with GIS and FFA applications to reduce deployment costs and risks
• Provides a modular solution that supports the different energy market modules in Europe
• Integrates with existing applications such as smart consumer portals and workflow management

Interoperable and Standards Compliant
• Supports GE’s electric IEC® Smart Meters and G4 ZV gas meters
• Delivers interoperability with international meters through open standard communication protocols including IEC 62056 (DLMS/COSEM)
• Provides support for a broad range of communications including 2G (GPRS), PLC Prime, 3G, 4G, P2MP, and Ethernet
The Challenge: A Smart Meter Data Collection System that Encourages Consumer Engagement

In order to realize many of the benefits of smart metering, periodic time of use data will need to be acquired, processed, securely stored and made available to consumers and other market participants in a timely manner. Having this information available enables the consumer to be informed about how they are using energy.

With suitable help, information and financial incentives, consumers can be encouraged to use less energy or shift some of their energy usage to a time of day when both the demand and the carbon intensity of the grid is lower. This implies that the “Smart System” implemented must be capable of processing large volumes of daily time of use messages from domestic energy consumers in an overnight processing window.

A Utility’s smart meter data collection system is also expected to process high volume “spikes” of messages generated from communication intensive business processes such as network outage notification, tariff updates, firmware updates or when large numbers of messages require processing after the recovery from system or network problems. The solution must be capable of responding to these communication spikes and should prevent these spikes from causing a noticeable drop in message transaction rates.

The Solution: GE’s SMOS Headend Solution

GE’s SMOS provides a scalable enterprise smart metering software solution. SMOS is a meter and transaction management system for smart metering operations, providing a single solution to manage a mixed meter estate and supporting a wide range of on-demand business processes.

SMOS provides Utilities with a system that offers flexibility and modular architecture. It was designed for high flexibility, supporting a broad range of both GE and third-party standards-based smart meters and communication systems. SMOS also features a variety of applications to meet your deployment needs and deliver benefits including:

- Modularity to support only the functionality needed by the customer
- Interoperability by using open standard protocols
- Reduced risk and cost of mass deployments with intelligent use of integrated GIS and Field Force Automation applications
- Engagement with consumers via multiple channels with in home displays, SMOS consumer portal and mobile devices
- Improved customer service by having real time access to field force schedules, meter configuration and operational status

SMOS Applications

With more than 20 applications, SMOS offers rich functionality to meet your implementation objectives.

**Meter Applications**
- HAN management
- Meter management
- Smart data viewer
- Tariff administration
- SIM administration
- Meter data export
- Alarm propagation

**Customer Applications**
- Customer management module
- Smart consumer portal
- Customer marketing application
- Workflow management application

**Back Office Applications**
- Reporting management module
- Deployment management module
- Operational logs
- AMI SAP interface management
Simple Navigation through a Standard User Interface

Current load profile data available at regular intervals

Accurate and timely event logs

Daily billing and usage information

Smart consumer portal providing access to granular consumption data and exception management pre-sets
SMOS in AMI Deployments

As part of a standards-based AMI deployment solution, SMOS provides visibility to data retrieved from network management services, network of Access Points and devices. SMOS also provides the back-office integration functions that deliver data from across the network to operational core systems, such as Outage Management Systems and other applications.

AMI Example: SMOS as an Integral Component to GE’s Grid IQ™ AMI Point-to-Multivpoint (P2MP) Solution

High Level Network Features

- Simple, Elegant “Star” Topology
- Rapid deployment
- Predictable latency
- High capacity access point
- Long Range – Less Infrastructure
- Supports AMI and DA in one network
- Supports Public or Private WAN
- Security by Design
- Connections to Enterprise Apps
- Battery powered devices – water & gas

The Grid IQ AMI P2MP solution is more than just a wireless communication link, it is a metro scale, end-to-end wireless solution containing:

- Wireless modules (endpoints) that are used for simple and standardized integration with the endpoint devices.
- Access Points (APs), which are mounted on mountain tops, pole tops, towers, rooftops, and other elevated sites, providing field installed network infrastructure.

- SMOS endpoint data management, seamless integration into back-office systems and publication of network management status and alarms related to network components.
- Security Key Management Server (KMS), which is responsible for providing end-to-end security features.

GE Digital Energy

Elizabeth House
1 High Street, Chesterton
Cambridge, CB4 1WR
United Kingdom
Tel: +44 (0) 1223 301144
Fax: +44 (0) 1223 311145

2018 Powers Ferry Road
Atlanta, GA 30339
United States
Tel: 1-877-605-6777 (toll free in North America)
678-844-3777 (direct number)
gedigitalenergy@ge.com

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