

Atos Smart Grid Suite

connected smart grid futures

ready for data-driven business



Smart energy. Powering progress

Atos
Worldgrid

“Atos is extremely well positioned to manage the utilities industry’s present and future needs.”

IDC MarketScape: IT Service Providers in the EMEA Utilities Market, Analysts: **Roberta Bigliani** and **Gaia Gallotti**, May 2013



Opportunity is data-driven

What makes the new world of the smart grid so different? More than anything else, it's the shift to data-driven business. It's the data which allows you to **build better relationships with your customers**; which gives you **control over the low voltage network**; which allows you to **optimize distribution and the mix of renewables**.

These data-driven opportunities are open to every forward-thinking utility company. But with the opportunities, come challenges ...

Transparency and security

With your domestic and commercial clients, you need to establish exceptional transparency in all billing and relationship management - but you need to do so while maintaining the highest standards of data security and privacy.

Storage and transaction scalability

Every smart meter installed or electric vehicle charging point now delivers a constant stream of real-time data. But it's not just the data volumes which are exploding - it's the transactions too: the periodic batch processes of the past are replaced with high-intensity near real-time processing - demanding unprecedented scalability.

Automation

You need to automate and industrialize the collection and processing of vast volumes of machine-to-machine data generated both by devices in the home and by those across the distribution network.

Actionable intelligence

You also need to provide multiple data views for the many different professional roles within your organization and across the partner eco-system - helping everybody from the strategic planner to the third party field service engineer do their jobs smarter and more effectively.

Robust interoperability

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The good news? Atos Smart Grid Suite

Welcome to the Atos Smart Grid Suite! ASGS meets each of these challenges head-on - helping forward-thinking utility companies implement effective smart grid and smart metering strategies without sacrificing existing systems and without the need for major capital investment or mega IT projects.

ASGS gives you the means to collect, compile and deliver the data needed for payment and billing systems. You can use the data to develop smart new services too, designed both for the customer and for radically improved grid control. ASGS provides the foundation you need for scalable and future-proof technical operation of your entire smart metering infrastructure. And it does all this at the lowest cost of operation.

With ASGS, you bridge the previously separate worlds of Operations Technologies (OT) and Information Technologies (IT) - ensuring that secure and effective communication between them supports your own transition to becoming a Smart Utility.

Inside ASGS

ASGS is the new smart grid nerve center. The suite enables you to collect and process all smart meter data, aggregating it with all commercial and operational systems. The success of your smart metering strategy is only as good as the information and communication infrastructure which supports it.

By choosing ASGS as your central system, you gain a platform from which to deliver both core and value-added services. Meter data and asset management, outage and workforce management and grid management are all embedded within ASGS, while back office billing and customer care functions are supported with integrated data feeds.

ASGS combines both leading third party technologies and Atos Worldgrid specialist components. ASGS is completely "device-agnostic" and can be used in conjunction with all leading smart meters, concentrators, and networking components.

ASGS becomes the key to effective operation for any smart utility - it's the bridge which allows new intelligence to be revealed and new services designed and delivered.

ASGS delivers four essential functions:

ASGS Core

This is the foundation layer. It delivers all Automated Meter Management functions, together with the requisite communications infrastructure.

Value-added services

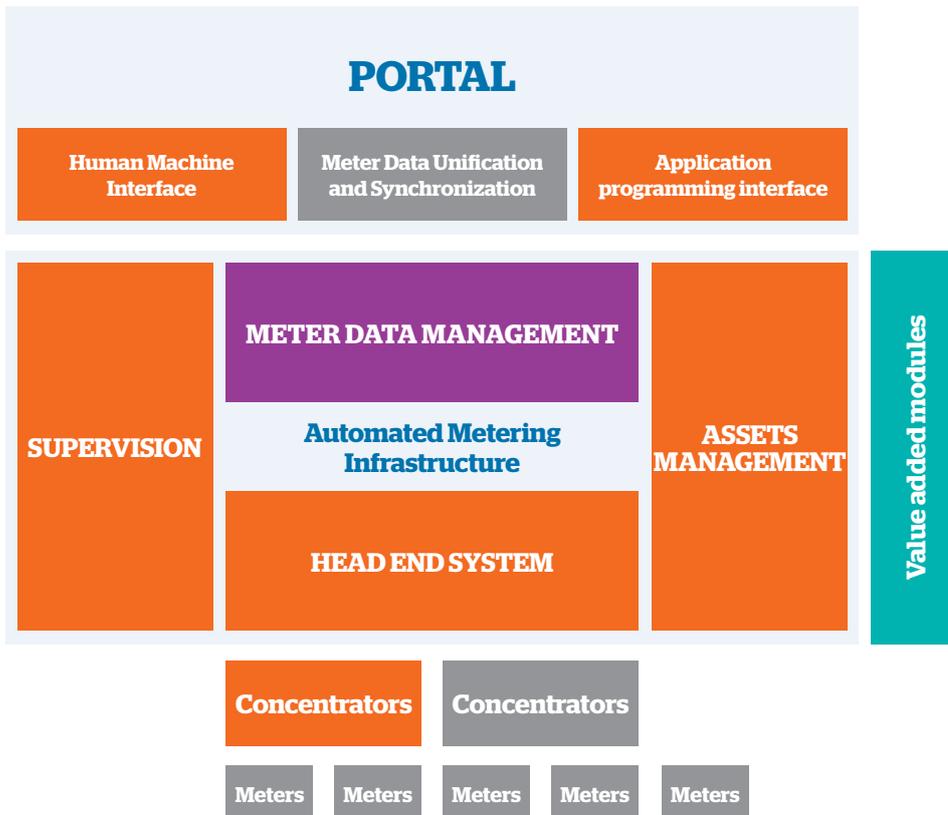
The ASGS value-added services provide Meter Data Management (MDM) services. These include validation, fraud and loss detection, and data aggregation from across the smart meter network.

Value-added business modules

These are independent of the core system, and can be added as required. They include business functions such as meter roll-out supervision or the management of pre-paid customer accounts.

Integration capacity

ASGS has been designed for effective and easy integration with the external applications on which you rely. These include both off-the-shelf business applications and the many highly customized applications still used within most utility companies.



ASGS is designed to deliver comprehensive integration with your existing operational and business information systems. This ensures that all activity is actively validated according to accurate and timely information.

Key areas of integration include:

- ▶ **Billing and Customer Care Management**
- ▶ **Meter Data Management**
- ▶ **Enterprise Asset Management**
- ▶ **Workforce Management**
- ▶ **Geographic Information System**
- ▶ **Network Operation Center**
- ▶ **Outage Management**
- ▶ **SCADA**

ASGS provides an end-to-end Automated Metering Infrastructure (AMI), ready for the immediate adoption of smart grid practices. Not only does ASGS enable secure and reliable communication with meters and concentrators; it is also ready to manage the new data flows for additional grid components, such as car charging points, smart domestic and industrial devices, and the entire spectrum of local renewable generation systems.

Through ASGS you will achieve:

- ▶ **Control of the low voltage network** through software embedded in the concentrators
- ▶ **Immediate visibility of energy quality**, processing and resolving outages, voltage variations and power management issues automatically.
- ▶ **Direct connection with SCADA** industrial control systems **and field service devices**
- ▶ **Complete GIS integration** - combining topology and performance data for smart analysis and decision-making
- ▶ **Readiness for the imminent explosion in e-vehicles** and their associated charging points.

Atos Smart Grid Suite at a glance

Advanced supervision - automation boosts management quality

- ▶ Driven by correlation rules
- ▶ Supporting utility process workflows
- ▶ Easily customized information screens
- ▶ Ready for immediate control room adoption

Scalability and performance

- ▶ Advanced Metering Infrastructure (AMI) decentralized to spread and optimize loads
- ▶ Scalable capacity from restricted pilot to mass roll-out
- ▶ Collect, manage, control and display diverse data types and volumes
- ▶ Tested to 42 billion data points per hour

Added value functions

- ▶ Meter Data Management (Atos or tier)
- ▶ VEE (Validation, Edition and Estimation)
- ▶ Data aggregation
- ▶ Outage management and energy quality monitor
- ▶ Fraud and loss analysis
- ▶ Managing pre-payment contracts
- ▶ SAP connectivity

Core functions

- ▶ Two-way communication and data collection from smart meters
- ▶ Asset management, monitoring and reporting tools
- ▶ Smart grid event supervision

User interfaces and web portals

- ▶ Interface ergonomics designed to meet different business and user profiles
- ▶ Customize the "tree view" according to required geographical, operational or business activity

Optimized roll out tools

- ▶ Complete service monitoring and work order management toolsets
- ▶ Full logistic support and installation follow-up
- ▶ Common access for authorized installation companies
- ▶ Performance indicators deliver timely roll-out intelligence

Interoperability and flexibility

- ▶ Validation laboratory for metering devices, to test complex interoperability scenarios
- ▶ External connectivity designed in with Meter Data Unification and Synchronization (MDUS) and APIs in place
- ▶ Flexible and open to integrate new devices and new business processes (based on Oracle SOA architecture and database)

Security and confidentiality

- ▶ Data integrity checked and validated at all levels
- ▶ Communication with external systems, users and devices secured through end-to-end security mechanisms
- ▶ Customer data confidentiality assured

Massively scalable - Powerful processing

We have designed ASGS to meet your need for massive scalability. The tools you adopt to manage the new world of smart metering and smart grid must be fully future-proofed. Whether you are running a pilot of just a few thousand smart meters or rolling out nationwide, you need a system that will flex to the task without strain.

The ASGS engine room can be powered by Oracle Exadata and Exalogic technologies. As such, ASGS performance has been exhaustively tested in Oracle's own independent test facilities and has achieved universally impressive results.

ASGS has been stress-tested with under extreme loads and has shown itself capable of processing the results of a full day's input from

60 million meters in under four hours. This was 6.8 times faster than the previously existing benchmark.

Not only does ASGS out-perform in terms of volume and scalability. It does so with extreme efficiency. By exploiting the latest data compression and de-duplication techniques, ASGS achieves these results with a significantly reduced need for computing power - saving both time and money for our clients.

The tools and the knowledge

The Atos Smart Grid Suite is the first fully distributed system ready to help utilities manage the combined commercial and operational functions of their smart meter and smart grid investments.

All the required interfaces with specialist utility systems are in place and ready to go. But Atos is not simply offering ASGS as an "off-the-shelf" solution for smart utility operations.

The Atos Worldgrid specialists who conceived and constructed ASGS are ready to help you plan for effective adoption. With their deep experience of the processes and practices of the Utilities sector, they are ready to help you both envision your future operation as a smart utility, and manage the practical analysis and change management which will underpin successful ASGS adoption.

Building on achievement

The Atos Smart Grid Suite is the natural extension of twelve years' continuous focus on smart evolution for our utility clients.

Atos delivers its first Automated Meter Reading solutions, eliminating the cost, inefficiency and inaccuracy of traditional manual readings.

2000

We extend our vision from the meter to the grid, with our first smart grid management solutions, giving focused remote control over individual grid components.

2010

2005-2010

We introduce the first Automated Meter Management systems, allowing our utility clients to manage system upgrades and controlled trials with unprecedented agility.

2013

With ASGS, we bring all this continually evolving experience together. ASGS now bridges Operational and Information Technology systems to allow our clients to exploit the new data-driven opportunities open to Smart Utilities.

Agile engagement

The way in which you adopt ASGS as your operational and commercial nerve center will depend on your own culture and future strategy.

Atos can offer ASGS either as a fully supported service suite or as a completely outsourced business function. You can choose to host the data storage and transaction resources using your own facilities or you can entrust these to Atos. If desired, Atos can provide the entire business function on a pay-per-use basis, providing you with access to the services you have chosen, and managing all transaction processing using our own resources.

The decisions you make today may change tomorrow as conditions and ambitions evolve. But however you decide to establish your own model of ASGS use, we will stick to our founding principles: no big bang and no mega-IT projects. Costs will be transparent and controlled, and implementation measured and incremental.

Next steps

In over 30 years' experience of innovation with our utility clients, we have learned just how important continuity and risk management are. We understand that the implications of smart metering and smart grid, coupled with an increasing emphasis on customer focus and sustainability, represent a major change for utility companies.

For these reasons, we have been as careful to consider how ASGS can be adopted as to consider what it delivers. No big bangs; no mega-IT projects - and every opportunity to adopt and extend incrementally, following practical proof-of-concept.

The secure and cost-effective management of rapidly growing data volumes will be absolutely central to your transformation from utility to Smart Utility. Take some time out with Atos Worldgrid to explore how ASGS can help put you on the fast track.

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About Atos

Atos SE (Societas Europaea) is an international information technology services company with annual 2012 revenue of EUR 8.8 billion and 76,400 employees in 47 countries. Serving a global client base, it delivers Hi-Tech Transactional Services, Consulting & Technology Services, Systems Integration and Managed Services. With its deep technology expertise and industry knowledge, it works with clients across the following market sectors: Manufacturing, Retail & Services; Public sector, Healthcare & Transports; Financial Services; Telecoms, Media & Technology; Energy & Utilities.

Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. It is the Worldwide Information Technology Partner for the Olympic and Paralympic Games and is quoted on the NYSE Euronext Paris market. Atos operates under the brands Atos, Atos Consulting & Technology Services, Atos Worldline and Atos Worldgrid.

About Atos Worldgrid

Atos Worldgrid is an Atos business unit delivering sophisticated integration projects and real time Smart Energy solutions to Energy & Utilities companies across the power, water, oil & gas value chains. With 1,600 engineers and over 30 years' experience, Atos Worldgrid operates in more than 15 countries. It has in particular equipped 70 nuclear power units with its Supervision and Command & Control software in France, UK, Russia and China and delivered the world's largest smart metering system. Atos Worldgrid operates under the brands e-utile in Italy and Energy4U in Germany, and Atos Worldgrid in the rest of the world.



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