



International Conference on Smart Systems and Technologies

Real Time Solutions in Telecom, Energy and Medicine



Adcon d.o.o.

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SIP

Development of B2BUA for IMS.

IM-SSF functionality allowing legacy IN services to be executed on 4G network.

Realization of advanced call control features like: MRF integration, forking, preconditions...

TELECOM



SOLUTIONS

Intelligent Network Services like Online Charging Service, Number Translation Service, Virtual Private Networks, MultiSIM etc.

Telecommunication platform development including SLEE and Protocol Handlers (SS7, SIP, DIAMETER).

CUSTOMERS

Solutions that we work on are used by millions of people every day!



EXPERIENCE

Providing End2End telecom solutions for more than a decade.

Product development and Customer Project deliveries.

Responsible for all phases of project: Consulting, Design, Implementation, Verification, Integration, Acceptance, Maintenance.

EXPERTISE

Service and platform design and development.

In-depth knowledge of telecommunication systems (GSM, IMS) and protocols (SS7, SIP, DIAMETER,...).

Automated Acceptance Testing.

System Integration.

COMMUNITY

Co-Founder and Board Member of the Osijek Software City.

Local Java Code Camp initiator.

IAESTE partner for student exchange programme.



30+ employees
>70% university degree

DIGITAL MEDICINE

We are working in co-operation with a foreign partner on product development in field of digital medicine.

Currently we are at the very end of the three-year research phase. The start of the development phase is expected to be early in 2018.

Some of the features are:

- Electronic Health record
- Interactive and cross connected platform for medical supported services solution
- Highly adoptive, intuitive and self-learning BI engine
- Personal vital Health portal

REAL TIME PLATFORMS

Expertise in development of High Availability, High Performance and Scalable platforms.

We are working on platforms that guarantee 99,999% uptime (5 minutes downtime per year).

ENERGY

Experience and knowledge of building real time platforms that we've gathered throughout a years in telecom sector are now used to build exciting solutions in energy.

Some of the applications and solutions that we've been working on:

- scalable multivendor smart metering headend
- convergent billing solution for smart metering
- Revenue Assurance and Load Analysis solution for distribution networks
- self-learning home automation project controlled by dynamic tariff changes

SEGIP

Research Project with goal to create Middleware IT platform for Smart Grid orchestration.

Key features are:

- Rapid application development
- Communication layer abstraction
- Multi-Domain API and Knowledge Representation
- Scalability

AMI HES

Development of platform for smart meter management and meter readout collection.



Start of cooperation on SEGIP project.

Student Practical Work

Designed by Freepik





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Smart Electrical Grid Integration Platform

SEGIP



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Introduction

Based on years of experience, Adcon Ltd. finds new strategic direction in the energy sector, which is targeted by the development of the Smart Electrical Grid Integration Platform (SEGIP).

EU and the Alps Adriatic region has the most devastating data on the efficiency or degree of development of the power grid. The common denominator in these networks is exceptionally low productivity and usability of available resources, large and unidentified losses when transferring in some cases over 50%, unplanned acquisitions and additional energy consumption in case of expected or occurring shortages, which has adverse effects on the economic performance of the business as well as the element of environmental protection as the most valuable resource available.

That is why we see the need to develop a SEGIP platform that will enable increased energy efficiency at a high level through the use of smart power grids.

Overview

SEGIP as a technologically proven application and integration IT platform is a system that enables mediation in advanced power network management, and provides real-time decision-making and negotiation support with distributed management with a maximum allowable delay of just a few milliseconds, enabling integration of self-regulatory distributed energy sources that represent the future of EES.

The key aspect of the platform is to create a middleware that will in the correct way make abstraction of different systems that will integrate and allow the separation of the application layer from the layer of integration of particular external systems. The emphasis is on a significant increase in the level of support for all stakeholders in a complex chain of electrical grid, from planning and production, supply and distribution, and local factors. Only by linking all network actors we can contribute to improved planning, monitoring and analysis of all business processes, activities and other economic factors. SEGIP has introduced innovation in the way of managing power generation and production by changing it to proactive approach and timely data-driven decision-making.

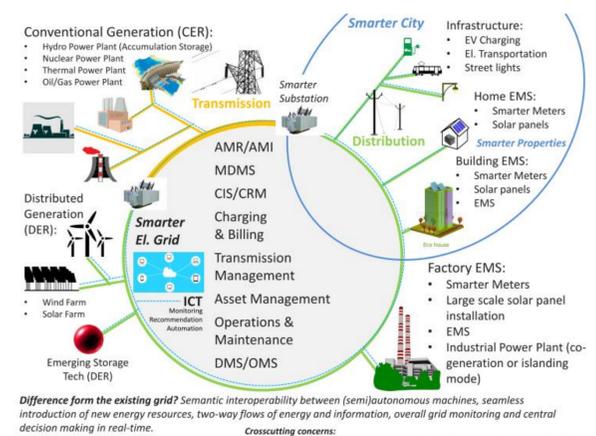


Figure 1. Overview of Smart Grid Concept

Architecture

The platform functions as a cloud-based central service middleware system that integrates existing AMI (advanced metering infrastructure), AMI HES (advanced metering infrastructure head end systems), MDM (meter data management), CRM (customer relationship systems), implementing C & B (charging and billing system), 3rd party systems etc. It merges information from the segments of generation, transmission and distribution of electricity and receives information from all in one central system.

The SEGIP platform is positioned in the last three zones of the SEGAM model, operation, enterprise and market zone. It is positioned in the yellow information layer and works in both directions to the top functional and business layer, where it facilitates and simplifies application integration, and downstream layers where it connects to existing AMIs, MDMs, CRMs, and similar systems.



Planned functionality

Our solution, compared to other similar products, achieves the following comparative advantages:

- accelerate deployment and integration into existing user systems
- Using innovative plug-in modules to improve the overall efficiency of existing systems, provide more transparent business operations and reduce unnecessary losses or idle due to improper or inadequately utilized capacity and resources
- automated quality control of the model maintains relevance and enables faster adaptation to changes
- Using Big Data technology, we will significantly accelerate and improve the system by heuristic methods artificial intelligence
- Improve results by integrating mutual control, monitoring and management processes operational risks and values with scoring mechanism prioritizing relevant events and discarding non-essential events
- introduction of "transaction" visualization, their dynamic connectivity on client- services level and the ability to present trends, we will further enhance the detection of potentially harmful events and facilitate their analysis and prevention

Smart Grid Architecture Model SGAM

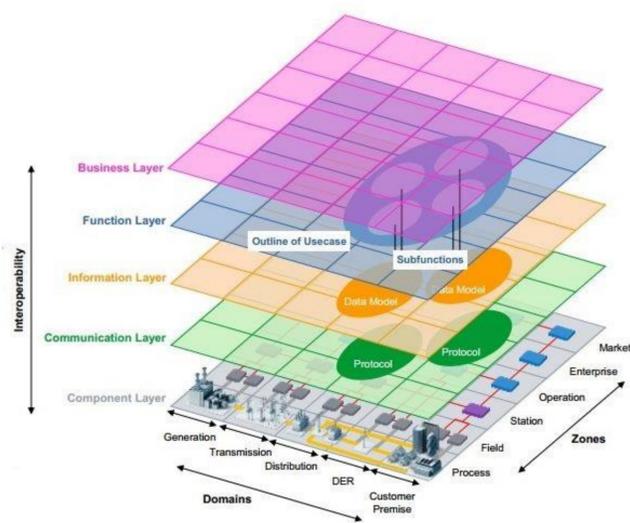


Figure 2. CEN/CENELEC/ETSI Joint Working Group on standards for Smart Grids

Challenges

The energy sector is subject to revolutionary changes for various reasons: climate change, pollution, distributed and fluctuating generation, capacity shortages, transmission network and storage constraints, deregulation of the market and new regulatory requirements, increased cost pressures on communal services, etc.

What we identify as the biggest threat is the lack of solutions which encompasses and integrates all aspects of smart power management in a manner that we suggest this project.

The power grid is made up of a handful of different stakeholders and other factors. Production, supply and distribution, consumers are just some of the actors and sub sectors that make up the energy grid. Each of these subsectors consists of a whole range of existing solutions that are extremely difficult to categorize or singularly list even in a national system, and especially at a global level.

Goals

The basis for the development of SEGIP products and plans for commercialization is based on broad access to a complete power system with all factors and stakeholders.

Combination of open flexible application platform, integration platform with finished standardized modules and an open, standardized programmable interface for integration with power systems, support for integration with telecom platforms, the ability to combine several AMI solutions at all levels of power, and support for distributed intelligent smart grid management on a broad geographic area makes SEGIP a unique solution on the world market.