SMART ENERGY

ENERGY & UTILITIES

Smart Solutions for a Digital World
More than 140 Utilities worldwide support their key business processes using Indra Solutions

indracompany.com
InGEN is a comprehensive and modular solution capable of fully supporting the processes involved in energy management, for Generation & Distribution companies and other energy market participants.

InGEN integrates, on a common and unified vision, the whole energy management business, from operating plants to the generation portfolio management and operation in energy markets.

This integrated view of the energy management is based on more than a decade of accumulated experience with implementations in multiple countries, managing all types of generation technologies and operating under different types of energy markets.

**Real-time Connectivity:** Robust connectivity with process variables.

**Analytical capability:** Allows analysis from basic levels (plant and hourly detail) to fully aggregated levels (Country / Company and monthly / yearly breakdown).

**Modularity and Scalability:** The modularity of the solution architecture allows easy escalation on both functionality and number of managed assets.

**Globality:** Geographic assets management with multi-zone, multi-connection, and multilingual capacities.

**ERP Integration:** Full integration with ERP systems.
Asset Management

Energy companies are subject to increasing quality, safety and environmental constraints that, in a highly competitive arena, call for the maximization of asset reliability, efficiency and flexibility, while operation and maintenance costs are reduced.

An asset management system is a major contributor to improving the return on investment and maximizing the company profitability. Asset Management is a data intensive process requiring procedure definition and the implementation of tools to gather, manage, analyze and share the information that, as a result, becomes an integral part of the production process itself. With the goal of meeting these challenges and with the background of a sound business and technology knowledge, Indra has an integrated offering of both products and services to help its customers define, implement and accomplish the Smart Asset Management.

Indra’s proposal combines the business expertise, the technical experience and the capabilities to develop, implement and integrate information systems (owned or third-party’s), to define and deliver the best solution for each customer. Indra’s offering includes consulting services to assess the current situation, define the Asset Management-related objectives, set up an action plan to identify resources and the scheduling to reach the desired goals, develop the necessary methodologies and procedures or assist the customer during the implementation, assessment and improvement of the Asset Management system. Besides, Indra’s portfolio incorporates technical support services, training and remote monitoring services.

DIGITAL TRAINING

New technology trends provide a lot of possibilities and advantages for training not only industry new professionals and get them promptly ready to perform complex operations, but also in the case of experienced workers to keep them updated and close to the cutting edge technologies they have to use in their daily jobs.

Indra’s digital training portfolio involves the use of new immersive technologies (training simulators, serious games, gamification) and other digital platforms (virtual or augmented reality) for professional training activities.

Some of the initiatives and services that Indra’s Digital Training unit provides to Energy and Utilities companies are based on:

Training simulators

This is the most established Digital Training area so far since the use of simulators in training environments dates back several years ago. The target of training simulators is replicating the facility operation environment as accurately as possible so that regular or emergency situations can be re-created in a risk-free environment. Simulators are used in instructor-led training sessions and are mainly targeted to the facility operation personnel.

Serious Games

A Serious Game is a game designed for a primary purpose other than pure entertainment mainly oriented to training. Under the ‘Serious Games’ denomination several applications are grouped sharing a common philosophy: replicate field scenarios to train the company personnel in situational awareness. Some of them may involve 3-D scenarios, others will refer to personal equipment to be used in certain operations, etc. Their main application areas are equipment maintenance and H&S requirements.

Training of maintenance personnel or field operators in charge of the local operation on the equipment has resulted in so-called “3D Serious Games”. These games make possible an immersive training for the trainees using a detailed 3D representation within a virtual reality environment. These games are classified into the “First-Person” category, in which the user can carry out actions requiring a certain degree of skillfulness in a detailed 3D environment and into the “Point and Click” category more focused in H&S practices where the user is able to visualize his location in a simplified version of the industrial facility.

Gamification

Using gamification techniques (i.e., gamelike elements) and simulation models it is possible to train the company staff at different levels and help them apprehend and understand business concepts difficult to be grasped in a traditional learning environment (classes, self-study, etc.). The main objective of these applications is to offer a risk-free hands-on experience platform to consolidate the previously acquired trainee’s knowledge.

SOLUTIONS FOR THE SMART ASSETS MANAGEMENT

<table>
<thead>
<tr>
<th>KPI’s</th>
<th>ANALYTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATION AND MAINTENANCE</td>
<td>MONITORING AND ANALYSIS</td>
</tr>
<tr>
<td>Advance maintenance</td>
<td>Performance monitoring</td>
</tr>
<tr>
<td>Warehouse and spare parts</td>
<td>Energy efficiency</td>
</tr>
<tr>
<td>Maintenance management</td>
<td>Prognosis</td>
</tr>
<tr>
<td>Safety and Environment</td>
<td>Predictive monitoring</td>
</tr>
<tr>
<td>Operation management</td>
<td>Condition monitoring</td>
</tr>
</tbody>
</table>

INTEGRATION AND DATA MANAGEMENT

INSTRUMENTATION AND CONTROL

SMART ENERGY
**InGRID** supports current and future requirements of the grid transmission & distribution companies through a modular solution based on five basic principles:

**Geo-referenced Information:** All modules are supported on GIS advanced features, allowing a clear view of the grid status, as well as all the relationships among its elements.

**Modularity and Interoperability:** Standards-based interoperability, enabling integration with call centers, business systems, management systems, measurement, and other agent’s systems, providing operators and managers with a complete and holistic grid view.

**Real-Time:** Integrated with SCADA systems and field devices through our real-time platform (**iSPEED**), enabling distributed intelligence, real-time monitoring and decision making.

**Smart technology:** Includes advanced analytical and simulation capabilities to allow fast grid diagnosis and effective identification and implementation of optimal resolution strategies.

**Smart Grid support:** Ready to support coordinated demand response, distributed generation, storage and active grid elements.

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**ACTIVE GRID MONITORING**

Smart meters, Distributed generation, inverse power flows, new digital prosumers, storage and operation closer to the limits are radically modifying the conditions under which distribution grids operate impacting their reliability and efficiency.

The combination of these business challenges with massive volumes of information generated by the new distribution grids and the big number of assets to monitor and control down to the customer level, require the convergence of Information and operation Technologies (IT+OT) into a common grid monitoring platform for the active management of the grids.

Indra’s **Active Grid ecosystem** supports the dynamic operation of a distribution grid where intelligent grid assets, connected consumers and new distributed energy resources continually interact in a more reliable and efficient grid operation.

**The Active Grid ecosystem**

**Grid Analytics** Massive data analysis for continuous business improvement. Extend the life of your assets, continually measure, monitor and forecast key trends in your grid through massive and performing big data analyses.

**InGRID** Real Time Grid monitoring and control. Monitor, analyze and optimize the grid (HV,MV,LV) in RT using distributed and scalable technologies.

**iSPEED** Open Real Time Interoperability. Open interoperability in real time between devices, nodes, and systems in a common data space.

**NODE#1 The intelligence at the Edge.** Applied intel and Industrial Internet of Things (IoT) technologies to equip the substations with intelligence to integrate, process and dynamically assess and control risks.
InCMS - Customer management System

InCMS is an **Integrated, modular system** designed to support customer management, invoicing and collection for utilities and energy companies. Its highly configurable functional structure has been designed to meet the requirements of a dynamic market in constant evolution, which have already been covered in more than 90 implementations from 1998.

**InGRID - Smart Energy Services for Homes, Buildings & Industries**

Indra offers a comprehensive Solution to manage, supervise and control consumption, events and processes from a large number of points, remotely and in real time.

**SMART HOME**

Household and Small Businesses are able to view and manage energy consumption, anytime, anywhere, using a friendly user interface both in mobile app and via web.

**Smart Architecture for a Smart Solution.**

Based on our experience in Energy Efficiency Management and Internet of Things, Indra’s platform allows us to offer our customers an advanced system for monitoring and control based on open standards IoT-Big Data and Cloud integration.

**GATEWAY NODE#1.** The epicenter of all communications.

An intelligent gateway remotely managed based on low-power electronics, Embedded Java and a standard modular architecture, configuring a compact yet powerful machine.

**SMART BUILDING & INDUSTRY**

Customers with large amount of supply points can visualize their overall energy usage in a more accessible and interpretable way. It is able to handle these large amounts of data thanks to the synergy between Node#1 and SOFIA2 and their outstanding capabilities.
Minsait is the division of Indra specialized in innovation and digital transformation that combines business and technology capabilities in an integrated ecosystem of disruptive end-to-end solutions, FEEP, that provides new business models, keeps you constantly connected to your customers and society, optimizes your operations, and safeguards your digital footprint.

**FEEP Engage Solutions**

We develop interaction and personalization capabilities to enrich the customer experience and society through the transformation of traditional channels, the development of interactive channels and the orchestration of contact points.

**Advanced Contact Centers**

Beyond efficiency: interaction with guaranteed satisfaction.

**Excellent Sales forces**

Commercial productivity compatible with great costumer experience.

**Omnichannel experience:** Adding consistency, simplicity and interaction to multiple channels.

**Social media**

as a new research methodology to detect market and consumer insights and trends that will help us to improve customer experience and add value to the business by attracting new customers and increasing loyalty.

**Micro-segmented value proposition:** A micro-segmented go-to-market strategy to increase sales and profitability.

**FEEP Protect Solutions**

We manage risk by protecting our client’s critical assets, safeguarding the identity of our client’s digital footprint in a hyperconnected world.

- 360-degree cybersecurity: an end-to-end response to global threats
- Smart borders: Maximum efficiency and security for a global environment
- Training in cybersecurity: training new professionals in cybersecurity, practicing with live ammo
- End to-end fraud management to protect the value of organizations
- Advanced risk management that helps to protect the profitability of capital
- End to-end fraud management to protect the value of organizations

Integrate, implement and operate Solutions & Services in the short-term, considering the strategic vision in the medium-long term.
More than **140 energy companies**.

- **More than 100 million Customers** managed through Indra’s Commercial Systems.
- **More than 700 Power Plants** are managed with Indra Solutions.
- **More than 50 Utility companies** using Indra’s Grid Management Solutions.