Tracking Spare Parts with RFID for EDF CETAC

In 2013, EDF CETAC launches a project for the setting up of a spare parts management solution by RFID to facilitate the inventory, improve the geolocation and optimize their stocks. The main objective of this project is to ensure and improve the availability rate of CETAC power station.

To answer these needs, Nexess has deployed on CETAC sites the RFID application NexCap® Mobile Assets Tracking for the management of Spare Parts.

Management, Geolocation and Tracking of Spare Parts with RFID in the Energy Industry

Nexess was selected by EDF Centre d’Exploitation des Turbines à Combustion (CETAC) - Combustion Turbines Operating Center - to provide a RFID solution to manage, track and locate their spare parts, stored in several local and regional warehouses across the country. This solution, deployed on the entire business park of the power station, should allow storekeepers of each CETAC site to have an instant overview of the entire stock of spare parts.

While most of the electricity in France comes from production of nuclear installations, EDF (Electricité de France), a leading global provider of Energy, relies on the combustion turbines of its subsidiary EDF CETAC to respond to peaks of high electricity consumption.

When these gas turbines (usually « idle ») are requested to produce additional energy, it is essential that they are operational in the shortest time, almost instantly. CETAC has 13 production units spread over 6 sites in France to answer these specific requirements. The company is also responsible for the operational maintenance of these turbines and must ensure their availability at any time. To answer this demand, the operator has a stock of spare parts, spread over each of the 8 national warehouses, which should help to be prepared for any possible material damage.
The main objective of CETAC is to maintain the level of availability of its installations at the highest level. One of the factors that have a significant impact on these level is the availability of spare parts.

Indeed, because the turbine has been inactive for some time, it is possible that starting the installation can fail due to material failure. In this case, the problem must be diagnosed quickly and the spare part identified, located and installed as soon as possible.

However, the process of tracking spare parts allowing to know the stock level, location and availability is managed through spreadsheet files that require regular manual update. In some cases, these files are not regularly updated; the maintenance teams have to multiply contacts with various internal warehouses to locate the spare part and often, to walk to the storage area to search it visually.

Seeking for a traceability solution using RFID technology, CETAC wants to guarantee and ensure the exact location of each spare part, at any time, to not impact the availability rate of the power station in case of unplanned maintenance.

"Having quickly the spare parts in the right place at the right time"

CETAC chose NexCap® Mobile Assets Tracking solution by Nexess, to carry out the monitoring of its spare parts with RFID. Nexess has an extensive experience of the traceability of sensitive material with RFID in many industries: Nuclear, Oil & Gas, Aerospace, etc.
This solution is composed of three elements:

1. RFID tags UHF EPC Gen2 from Omni-ID to identify spare parts, tools and storage locations. These tags, operating equally on metal or non-metal, were selected on the criteria of cost, performance and simplicity of installation.

2. Industrial Mobile Readers (PDA) Workabout Pro 3 from Zebra technologies, equipped with UHF RFID readers 500mW.

3. Nexcap® Software Platform, developed by Nexess with a business interface installed on mobile readers and a web interface deployed on the EDF national server accessible from any EDF workstation connected to the network.

Getting to business functions on the mobile readers, NexCap® Software Platform allows storekeepers to easily trace every spare parts movements through a friendly interface: receiving (going in stock), sending (to a company or a distant CETAC’s warehouse), borrowings, returns, etc. Thanks to the RFID reader embedded in the PDA, storekeepers can quickly identify remotely and without vis-à-vis, all data related to a spare part stored in a shelf, for example: manufacturer, part number, date of manufacture, date of revision, last movement, etc. They can also perform specific research of spare parts or tools and locate them in an instant: storage location, quantity available, etc.

All traceability data, real-time inventories and movements loggings are remotely available through NexCap® Web application.

The architecture of NexCap® allows the connection to SAP software, already deployed at EDF CETAC to manage supply flows (purchases, receipt) and accounting flows. This connection allows to integrate existing material databases from SAP® toward NexCap® and adds a real-time traceability part to the platform thanks to the RFID technology. The accounting inventory and the real inventory from the field are now on the same level.

GAINS

- **AUTONOMY**: management of 70,000 references in CETAC’s warehouses without physical presence
- **OPTIMIZATION**: optimizing the overall volume of spare parts in warehouses
- **PRODUCTIVITY**: drastic reduction of manual steps during returns/borrowings of spare parts in warehouses
- **AUTOMATION**: automatic updates and real-time inventory of the stocks
- **GEOLOCATION**: real-time geolocation of spare parts (what, where) and knowledge of their availability
NexCap® Mobile Assets Tracking
RFID Mobile Solution for the Management of Connected Objects

NexCap® Mobile Assets Tracking is a mobile RFID solution for the management of connected objects in the Industry. Equipped with mobile devices (PDA, Tablets, Smartphones), users have a library of businesses “Apps” available according to the connected objects they wish to manage and track: Tools, Spare Parts, Metrology Equipment, Fire Equipment, Containers, etc.

Each “Apps” is composed of business functionalities to manage connected objects and help users in their day-to-day activities: sending/receiving materials from stock or remote site, proceedings scheduled tasks concerning the handling of particular material, realization of controls on products submitted to regulations, etc.

Operations carried out on mobile devices (connected via Ethernet, WiFi or 3G/4G application server) are tracked and logged on NexCap® Web Platform in real time. Inventories, monitoring reports, planned field operations, dashboard alerts, etc. are all features allowing to supervise and connect the “field” to the theoretical data from information systems.

NexCap® Software Platform is a real RFID middleware allowing at the same time the connection of RFID infrastructures (Cabinets, Counters, Portals, etc.), Mobile devices or even ERP software. This software is available in SAAS (Software As A Service) or hosted on the client information system.

ABOUT NEXESS

Nexess, leader in Connected Objects for the Industry, implement RFID solutions for the Supply Chain, Manufacturing, Maintenance and Exploitation in Energy and Aerospace sectors

- Smart RFID Infrastructures: Cabinets, Counters, Portals
- Software “businesses” applications mobile or cloud (tools, spare parts, containers, etc.)
- Industrial Connected Objects (passive, active, semi-passive, tags)