Station Registers

beyond
all expectations

"The application is useful because it increases the efficiency of obtaining information related to station exploitation."

Valeriu Nastasoiu - Station Chief

"The application allows to directly inform the persons interested in data related to station operations, without the need of involving operating staff."

Vasile Fogas - Chief of Operation Center

"The application creates a unique platform, structured with data and records, remotely available."

Adrian Cucu - Chief of Teleconducting Center

"The application simplifies the work of station operating staff, by eliminating double records."

Nicolae Stanese - Station Chief

NC TRANSELECTRICA is the Romanian Transmission and System Operator (TSO) which plays a key role in the Romanian electricity market. The company manages and operates the electricity transmission system and provides electricity exchanges among countries of Central and Eastern Europe, as an UCTE member (Union for the Coordination of Transmission of Electricity) and ETSO (Association of European Transmission and System Operators).
NC TRANSELECTRICA is responsible for electricity transmission, system and market operation and ensuring the security of the Romanian power system. It also serves as the main link between the electricity supply and demand, by always matching power generation with demand.

PROBLEM

As part of the exploitation of the electrical stations from TRANSELECTRICA National Company, the operation staff is required to record techno-operative and administrative data, by filling information in several specific registers on paper support. Periodically, based on this data, certain reports are being generated (data processing being preceded of course by a sequential browsing of the register pages and selective introduction of data in an electronic format.) The problem consists in the inefficiency of this method, because of the need to travel to the stations to retrieve information, and extra time consumption by reintroducing data in an electronic format.

CHALLENGE

Creating an informational system to filter, catalog and store data in an electronic format. Through validation executed automatically at the time of introduction, the system will have to ensure data quality (in the sense of correctness, completeness and consistency) which will subsequently facilitate the automatic data generation. The system needs to be able to quickly find any information recorded before, and to generate all reports and accounts that are currently prepared during exploitation activities. The approach needs to be flexible, considering other possibilities for generating additional reports by request, to solve efficiently and effectively various issues related to station exploitation

SOLUTION

Outlining the informational system has generated a web application scheme that can manage a unique database, with remote access. The system initially served the Timisoara branch, as part of a pilot project, with the possibility of further use in other subsidiaries.
A team was set up for the new project; together they analyzed all system aspects and through a joint effort they established the details for development. Starting from the organizational system model they developed a rigorous and well established control system for accessing information.
As opposed to the complexity of the application, they have developed a simple interface, so that the users can get easily familiarized with the mode of operation. Although they analyzed and shaped each register, they constantly had in mind keeping a unity between application interfaces and mode of operation.
Retrieving information is done intuitively, similar to browsing pages out of a register. It can be a simple, chronological browsing, but the application offers superior possibilities of retrieving information, by transforming this browsing in an "assisted" search: the user specifies certain filters (created by imposing simple or compound queries), and by applying those filters only the records that correspond to the requirements are displayed. This way, the application can merge or separate data from all stations, by request. All resumed information displayed on the screen can be listed (with interactively selected queries) or exported in Excel worksheets
The operative staff will frequently use the data entry modules, therefore the interaction with the forms has to be efficient and comfortable (this was achieved by prefilling all deductible information and by offering lists of options), but also to ensure error prevention for data inputs (since the database content – and the accuracy of reports issued by the application – depend directly from the data introduced here). In this regard, the application executes a formal validation, displaying error messages when incomplete data is being saved and by highlighting the areas/ categories with missing data. In addition to verifying omissions, the system executes complex validations (regarding consistency) when attempting to record information in the database.

RESULTS

This combination of simple and complex needed considerable efforts, but the result was a success: starting with the launch of the first register, the operative station staff adhered to the proposed working mode; the familiarization was quick, leading to the database filling with needed information. Therefore, it also led to the possibility of generating the desired summaries, confirming the advantages of this application over the classical approach. Other registers were added almost naturally to the existing ones.
The application is currently expanding, but it is worth mentioning that this success would not have been possible without the openness and support of our users, throughout development and implementation stages. Their observations contributed to a fast reparation of dysfunctions, and suggestions received contributed to the fine adjustments that draw the final outline of the application.