



Euriware adds **Pertinence Suite™** to its strategic services designed to improve the business performance of its customers. A spent fuel reprocessing plant belonging to **Areva** provides a first concrete example of the advantages offered by this flagship product.

Key Issues

- Understanding a phenomenon that calls upon maintenance work during part of the fuel reprocessing process implemented in the La Hague plant.
- Improving the overall quality of the spent fuel reprocessing process.

The Solution

- Pertinence Suite™: Process Rules Discovery™, Operation Advisor™ and Performance Traker™ modules.

Expected Advantages

- For Areva

- Planning of maintenance operations that are optimised in relation to real maintenance needs.
- Reduction of maintenance costs.

- For Euriware

- Addition of Pertinence Suite™ enabling the company to provide its customers with better solutions designed to improve their business performance.

Areva

- World energy leader providing technological solutions for producing nuclear energy and transporting electricity in reliable conditions.
- Focused on innovation to improve CO2-free energy production solutions and to provide electricity transport in cleaner and more cost-effective conditions.
- 61,000 collaborators worldwide.

“Pertinence Suite™ has been added to our range of innovative tools designed to improve the business performance of our customers. We were convinced of its advantages thanks to its concrete contribution to the Areva project, which involved understanding a complex phenomenon that first had to be sustained and then optimised. Its remarkable capacity to compare intelligent hypotheses with the cold hard facts also proved to be extremely valuable.”

Frédéric Jeanmart, IT Business Manager at Euriware

“We came across Pertinence Suite™ within the scope of our technology watch programme,” explained Frédéric Jeanmart, IT Business Manager at Euriware. “As an IT service company, we provide our customers with services designed to improve their business performance, ranging from basic consultancy to the implementation of concrete solutions, particularly ‘learner’ computer systems. We are always on the look-out for innovative tools capable of enhancing our range of solutions. Pertinence Suite™ was identified as one of the most appropriate tools for providing the best solution for our project with Areva – of which we are a wholly-owned subsidiary. We were able to confirm the qualities of this tool in the field: it is user-friendly, powerful and suited to a multitude of industrial purposes.”

This project led by Euriware focuses on part of the shearing & dissolution process implemented in the Areva NC waste reprocessing plant in La Hague. This process involves shearing and dissolving spent fuel from Areva customers – French and foreign electric utilities – to recover more than 95% of all reusable materials: uranium and plutonium. Part of the process is carried out in a device – the continuous rotary dissolver – which requires regular maintenance work to remain operational. “Owing to the broad variability of the input characteristics, which have increased over the past years due to more diversified fuels, this maintenance work is now practically impossible to model even though the physicochemical reactions are well-known,” stated Frédéric Jeanmart. “Areva NC therefore cannot plan its periodic maintenance work on the basis of the real needs which are impossible to predict. This means that neither the maintenance operations nor the recurring costs are optimised: not only does the rotary dissolver – and thus the industrial process – have to be shut down, but there is also the real cost of spare parts and labour to be taken into account.”



Euriware

- Wholly-owned subsidiary of Areva specialised in IT services and consulting.
- Expertise centred on the successful combination of its three core business activities: consultancy, systems integration, and evolutionary outsourcing.
- €237 million in sales revenue.
- 2,100 employees in France.
- Fields of expertise: industrial performance, product data & life cycle management, information system security, and integration of ERP solutions.

About Intercim

Intercim is a global leader in Manufacturing Operations Management (MOM) solutions for the aerospace & defense, automotive, pharmaceutical and semiconductor industries. Our flagship product, the Pertinence Suite powered by Velocity, is a truly innovative software solution that bridges the gap between product design and supply chain. Our unique technology empowers distributed teams to collaborate on process planning, execution and quality to reduce manufacturing costs, time to market and cycle time. With 25 years experience Intercim operates from offices throughout the US and in Europe. Its customers include industry leaders like Airbus, Ball Aerospace, BMW, Boeing, Honeywell, Intel, Sanofi Pasteur. Partnerships with Dassault Systèmes, SAP and Microsoft support the company in its mission to provide operational excellence for all.

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Identification of 4 influential parameters including one unacknowledged by Areva experts

Keen to continuously improve its industrial processes and the quality of its services, Areva NC asked its service provider Euriware to investigate the phenomenon in an attempt to further understanding and eventually find a way of optimising the maintenance work. "After having assessed all our available tools, Data Mining in particular, Process Rules Discovery™ by Intercim was identified as being the best tool for the issue," said Frédéric Jeanmart. "It was chosen not so much for its powerful algorithms – which do have equivalents – but more for its integration into a number of functions specifically targeting industrial processes, thus helping us to save time." Following extensive knowledge acquisition with the help of ETL tools, the knowledge engineers at Euriware finally chose 83 parameters from some 300 available input parameters related to the process. These parameters were submitted to Process Rules Discovery™, as were 1,040 fuel samples. Used iteratively, Process Rules Discovery™ was able to identify 12 influential parameters, four of which could be exploited. The approach also called upon the collaboration of Areva NC experts to validate the results and conclusions.

"Incidentally, Process Rules Discovery™ actually discovered one of the four parameters for which the experts were convinced had no effect on the phenomenon engendering maintenance work. Thanks to the comparison between intelligent hypotheses from the experts and the actual facts provided by Process Rules Discovery™, we were able to shake up our preconceived ideas, and not only identify but also validate a rule set that can be used to optimise maintenance work."

Industrial application with high return on investment

Following phase 1 which involved understanding the phenomenon, Areva NC and Euriware launched phase 2 through the operational implementation of the rules on an industrial level using the Operation Advisor™ and Performance Tracker™ modules to monitor indicators on a permanent basis. The objective was to audit the process in real-time to make sure that the rules remain valid and sound the alarm in the case of major divergence. As the input parameters change over time, e.g. as soon as a customer gives Areva NC a new fuel, the rules have to be analysed and adjusted permanently. Phase 2 should be operational in several weeks and will unquestionably generate a high return on investment. This phase also falls within the risk management strategy valued by Areva. Euriware was one of the first company to test the Operation Advisor™ module and it proved to be a great help in assessing this return on investment thanks to its capacity for simulation," added Frédéric Jeanmart. "We worked in partnership with Intercim and our feedback helped to improve the module."

In conclusion: "The success of this first project including Pertinence Suite™ has thoroughly convinced us of its advantages in terms of improving business performance levels. Its user-friendliness especially facilitated our work sessions with the Areva experts, by helping us to gain their trust in the results and to reach a consensus between their knowledge and the established rules. We now have other projects on the horizon and will once again be banking on Pertinence Suite™."