



Maximizing Clinical Availability and Performance with System Connectivity

Elekta

Elekta is a human care company pioneering significant innovations and clinical solutions for treating cancer and brain disorders.

The company develops sophisticated, state-of-the-art tools and treatment planning systems for radiation therapy, radiosurgery, and brachytherapy. Additionally, the company creates workflow enhancing software systems across the spectrum of cancer care. Headquartered in Stockholm, Sweden, Elekta is a \$750 million company that employs approximately 3,500 employees worldwide.

The challenge

For over 30 years Elekta has been responsible for introducing many market leading, critical technological advances in radiation oncology. Elekta's Linear Accelerators support a range of pre-configured and optional delivery techniques, providing the physician with the flexibility to tailor the treatment to suit the needs of each individual patient. Remote access was unavailable on complex devices and Elekta was unable to understand machine performance based on real data, which meant the company could not respond immediately to customer problems. This, in turn, meant that Elekta was unable to detect and solve problems on the spot, restricting the company to a reactive service model.

A typical patient treatment schedule could require daily treatment for a period of 4-6 weeks, making machine uptime extremely important. Given the complexity of the device and the amount of data that would need to be collected, it was obvious that an automated solution was required. The infrastructure would need the ability to manage the data volume from the devices and also provide a platform that would scale in both size and complexity.

"When a customer buys a service agreement, what they are buying is system uptime. They are buying the ability to consistently deliver treatment... patient to patient," says Martin Gilday, Vice President of Services at Elekta. "Service is not simply a single engineer with a trunk load of parts, but a full portfolio of technical expertise delivered via multiple channels...it's a big change in the way that you think about service."

The buy vs build decision

Elekta's success has been built upon innovative engineering, which led to a culture of in-house work. As the company matured and grew, it realized that this was not necessarily the most effective way of working. With the complexity of the product itself, internal engineering expertise would be crucial to solve the company's service challenges.

While the product itself was unique, the methodologies and best practices of accessing and servicing the product were based on industry standards. When customers have service issues that need to be resolved, machine data must be collected and interpreted, and engineers need a deep level of skills and understanding. An integrated solution that brought the data, knowledge, and skills together in a highly connected environment was required.

"Customers see connectivity as providing efficiency gains," says Bruce Fullerton, Vice President of Service and Support. "Their key performance indicators are based around how many customers they can treat in a given space of time."

The solution

Elekta chose PTC® Axeda® software as the technology behind Elekta IntelliMax™, an Intelligent Device Management (IDM) system. The system directly addresses three significant challenges faced by healthcare providers: reducing operational costs, improving customer service, and increasing equipment uptime.

Implementing PTC Axeda software and remote connectivity enables a clear information display on Elekta's device dashboard, helping with the knowledge comfort level of individual users. Additionally, the ability to trigger notifications based on alarms allows for predictive maintenance, which means that potential issues can be identified, and possibly resolved, almost immediately before they cause a service interruption. If an engineer needs to visit a customer site, potential solutions can be identified in advance, assisting the Field Service Engineer (FSE) in resolving the problem when they first arrive.

Together, PTC Axeda software and the Elekta Intellimax tool enable a number of valuable service strategies and processes. Automated alerts will advise the FSEs of potential problems, which can be used to diagnose the machine. The use of Intellimax can be integrated into Elekta's Service Desk environment and enable an immediate response to customer service requests.

"Connecting our devices has become an enabler for predictive maintenance," says Gilday. "This means that we can identify and resolve potential issues before they become a service interruption to our customers. If a problem does occur, we can investigate the issue, identify potential solutions, and assist the FSE to swiftly resolve the problem."

The results

Implementing a new global service management application has greatly enhanced the quality of data that Elekta receives about product performance. The company is now able to pinpoint exactly where customers are having the biggest challenge, and by utilizing business intelligence analytics it can get duty and condition cycles associated with many key system components. Having this data allows Elekta to predict the number of hours before a component nears its end-of-life. In turn, this enables the company to identify the optimum usage before a part needs to be replaced. Any necessary parts can then be replaced at the customer's convenience, without impacting patient treatment schedules.

“Service can absolutely become a differentiator for medical device manufacturers; it has in many other high tech industries,” says Gilday. “By harvesting machine data and using predictive analytics on the usage patterns and lifecycle of the systems, we can pre-position spares closer to machines where we know that a part is coming to the end of its duty cycle. This predictive support model truly maximizes the availability of the systems, providing an enhanced service experience for the customer and enabling them to deliver improved patient care.”



We rely on PTC Axeda software to provide us the high level of availability and performance that we need in order to deliver this critical service to our customer.”

Martin Gilday, Vice President, Services

Challenge

A lack of product performance data to identify potential machine problems led to a reactive support model with unidentified or unresolved issues that became a system interruption and inevitable customer downtime

Solution

Centralized remote monitoring and management of devices created an environment that enabled proactive and preventive services

Results

- 20% of service requests resolved remotely without the need for an onsite visit
- Increased system uptime and patient throughput
- Improved product design through machine reliability data analysis

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J4887- Eleka-CS-EN-0115