



# European Synchrotron Radiation Facility (ESRF)

## Key Facts

### Company:

European Synchrotron Radiation Facility (ESRF)

**Website:** [www.esrf.eu](http://www.esrf.eu)

**Industry:** Particle Acceleration

### Products Used:

- j5 Operations Management Solutions

The European Synchrotron Radiation Facility (ESRF) is a 6 GeV X-ray source in Grenoble, France.

The accelerator complex comprises a linear accelerator, a synchrotron and a storage ring that have been routinely operating for over 20 years in a 24h/24h mode.

This source delivers 5,600 hours of X-ray beam to 43 beam lines simultaneously.

## The Problem

The ESRF operation is managed from the control room by a two-person crew rotating over 24 hours in 3 shifts of 8 hours. The crew must ensure that the beam meets the required operating specifications. Many technical and decision-assisting procedures have been set up and the crew is responsible for documenting all their observations, and for actions. Before ESRF implemented j5 Operations Management Solutions in 2004, most of their procedures were written in a template format and classified in a file.

In the control room, all events on the accelerators were handwritten in paper logbooks (**30 logbooks per year / 6,000 pages per year**). The main limitation of the handwritten logbooks was the difficulty of retrieving old information when needed. Several institutes had developed their own e-logbook and offered the possibility of sharing it with ESRF. These e-logbooks fulfilled some of the ESRF specifications but none of them satisfied their requirements in terms of flexibility. At that time, ESRF discovered that **the j5 Operations Logbook met most of their requirements**, either natively or with minor enhancements.

Another attraction of the j5 Operations Logbook was that it can use any standard database (Oracle, SQL Server and PostgreSQL). j5 Operations Management Solutions also only needed to be installed once onto a server while still allowing every user access via a standard web browser. ESRF wanted a solution that was customizable and flexible to change with their specific requirements. They found that **j5 Operations Management Solutions are extremely easy to customize to meet particular requirements** and anyone who understands the fill-in-the-form procedure can do it without coding. ESRF discovered that virtually any kind of document / file can be attached to a j5 Operations Logbook entry and these attachments can be displayed immediately from the log. j5 Operations Management Solutions can also be used to create a whole spectrum of j5 applications like custom logbooks, reports, document repositories, work permits and more and the user-interface is intuitive enough that there is no requirement for special training. Therefore ESRF decided to implement j5 Operations Management Solutions.

## How j5 Operations Management Solutions Solved the Problem

j5 applications matched the ESRF requirements closely, but a huge advantage to ESRF was the flexibility to **easily add their own enhancements**.

- The enhanced filtering and searching capability enables a user to locate a j5 Operations Logbook entry quickly by selecting options from multiple fields and locate specific text within the attached pdf files.
- Special fields allow experts to add explanations or corrective actions to j5 Operations Logbook entries.
- A gallery for screenshots was added to the j5 applications and thumbnails were shown in each entry.
- An enhanced User Permission system was created, giving fine grain control of who can perform an operation.
- Multi-key combination options were added so that a user can accurately describe situations that cover multiple overlapping areas.
- Special procedural business rules were added; for example, j5 Shift Handover forces selected users to read status information at the start of the shift.
- A powerful notification functionality was added, therefore an email or an SMS can be sent out to a selected group of recipients: for example, if the Shift Crew wants a list of recipients to be informed of any new entry or at a scheduled time during the day.
- j5 Operations Management Solutions include a real-time resource ideally suited to the connection with the ESRF Tango control system. When Tango sends events, an entry in the j5 Operations Logbook is generated automatically. Thus, any power supply problem is now automatically logged.

### j5 Operations Management Solutions have evolved to meet the special needs of ESRF:

- Filtering has been substantially improved and integrated into the main ESRF page, with custom filters making the process faster.
- The j5 Framework is tab-based for the hierarchical management of j5 applications.
- A wizard-based configuration has been added, enabling the fast creation of new j5 applications.
- New and more representative visualizations including charts, photographs and special scriptable buttons configurable through a wizard.
- LDAP authentication enables the centralized management of large numbers of users.
- Provision of standard and custom applications like j5 Control of Work, j5 Operator Rounds, j5 Alarm Management and many more.
- j5 applications can be accessed via mobile devices to allow remote access.
- There is an ability to have j5 applications within j5 applications. These are especially useful when a main event has several sub-events.
- j5 Dashboards, Reports and Views allow the scheduling of daily, weekly and monthly PDF or spreadsheet reports.
- Third-party software can access entries, while those from one j5 applications can appear on another j5 application.

## About Hexagon

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Hexagon's PPM division empowers its clients to transform unstructured information into a smart digital asset to visualize, build and manage structures and facilities of all complexities, ensuring safe and efficient operation throughout the entire lifecycle.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 3.9bn EUR. Learn more at [hexagon.com](https://www.hexagon.com) and follow us @HexagonAB.