

# CASE STUDY

**CROSSKEY MIGRATE FROM TRADITIONAL IBM i CHANGE MANAGEMENT TO ARCAD FOR DEVOPS, ACCELERATING DELIVERY SPEED BY A FACTOR OF 3 AND IMPROVING TEAM PRODUCTIVITY BY 25%.**



## THE CUSTOMER



**Crosskey Banking Solutions Ltd.**, wholly owned subsidiary of Ålandsbanken, is a leading software vendor and SaaS provider for the financial industry in the Nordic and Baltic regions, with offices in Mariehamn, Stockholm, Helsinki and Turku. Crosskey expertise covers everything from traditional banking to eBanking, card & mobile payments and capital markets, serving customers right across the Nordics. ♦



## APPLICATION LANDSCAPE

At the heart of Crosskey's modular application suite is a top modern, state-of-the-art core banking system developed on IBM i over time to meet customer requirements. Closely aligned with advances in IBM i technology, Crosskey teams have evolved this core RPG application to include a loans module, an eBanking system and card management module written in Java for Linux. All new development is coded in modern Free Form RPG and Fully Free, easing application maintenance and future-proofing the application for future generations.

There are 35 RPG developers in all at Crosskey, spread across four teams. The Rational Developer for i (RDi) environment is standard for all IBM i development. All teams operate and interact using agile methods and Jira for project management.

SQL was a strategic technology choice at Crosskey, to open up applications to external access. All new requirements are implemented in SQL, and all RPG accesses are made via SQL. Stored procedures are exposed to the Java interfaces using Web services. ♦



## THE CHALLENGE

For over a decade Crosskey had been relying on a traditional 3rd party change management tool for their RPG development.

This tool was falling behind the technology advances in the IBM i platform itself. In particular, limitations in the 3rd party product generated several critical challenges during application development:

- certain objects such as SQL and ILE required significant manual effort. For example, SQL tables and constraints had to be managed outside the tool
- managing parallel versions for specific customers was very complex and time-consuming
- the number of target environments was limited
- compliance issues: teams encountered difficulties assigning different authorities in different libraries
- application build and deploy required manual intervention, increasing the risk of errors in production
- in-house developed scripts were costly and difficult to maintain ♦



## THE SOLUTION

After a thorough vendor evaluation and Proof of Concept (PoC), Crosskey selected the ARCAD for DevOps solution to replace their existing traditional change management tool.

The primary drivers behind the selection of ARCAD for DevOps were:

- **100% automation of IBM i application Build & Deploy**
- **Full support for ILE and SQL objects**
- **Parallel versioning and automated source compare & merge**
- **Easy-to-use RDi plugins** with enhanced graphical capabilities
- **Unlimited number of environments** at each level
- ARCAD metadata repository: **rich dependency/cross-reference** information at developers' fingertips.



Some Crosskey customers have specific requirements to manage, making application deployment more complex. Parallel branches of development must be merged into a unified release before final transfer to production. With several customer-specific versions in parallel, ARCAD delivered the advanced automated source compare and merge features that Crosskey needed to replicate common enhancements in a controlled way.

All Crosskey customers have at least a test and stage environment besides production, and some have additional intermediary environments. It was therefore critical for the Crosskey delivery process to allow an unlimited number of environments at each level, which only ARCAD for DevOps was able to provide. ♦



## IMPLEMENTATION

Following their ARCAD purchase Crosskey opted for on-site team training. The development teams were quickly autonomous and configured their own environment with very little ARCAD intervention. Loading the ARCAD repository revealed anomalies such as unused components and uncompiled sources. Crosskey wanted to start with a very clean repository and used the ARCAD Audit tool to cleanup and load 33,000 components. ♦



## RESULTS

Since migrating to ARCAD for DevOps, IBM i teams at Crosskey have achieved each of their DevOps objectives. The teams estimate they have **reduced delivery times by a factor of 3** and already saved **25% of developer effort thanks to the greater automation and modern interface**.

Sebastian Vestberg, Application Manager at Crosskey states "We have made major time savings by using ARCAD solutions. We are delivering 3 times faster and thanks to the build & deploy automation in ARCAD our developers are freed to focus on innovation and value-add".

Crosskey teams appreciate the modern feel of the plugins, and powerful and easy-to-use graphical interface with built-in cross-referencing. Application reliability in production is secured thanks to automated recompilation and deploy.

Specific achievements with ARCAD for DevOps include:

### AUTOMATED DEPLOY AND INSTALL

ARCAD for DevOps manages this parallel development automatically, including compare and merge, deploy to production sites and integrity-checking of the installed system. This way Crosskey can keep track of which application version each customer is actually running.



[www.arcadsoftware.com](http://www.arcadsoftware.com)

ARCAD for DevOps also automates the installation of Crosskey applications on customer sites, including the bringing down of apps and subsystems on the target system to avoid locks on in-use objects. ARCAD provides error reports and activates Crosskey processes before and after deploy.

### CONTINUOUS DELIVERY: DevOps

Full deployment automation means that Crosskey have already increased the frequency of deliveries, to 6 major releases per year plus a series of special minor releases (similar to technology refreshes). This approach has accelerated their time-to-market, reduced deployment risk, and increased end-user satisfaction.

### COMPLIANCE

Crosskey need to stay ISO 9000 compliant, and the promotion of applications to test and production is carried out by a specific team of technical architects. With ARCAD for DevOps, Crosskey have achieved a truly auditable release process. A designated Release Manager is responsible for validation and QA and will dialog with the customer to decide on distribution timing for each release. ♦



*"With ARCAD, deployments are so much smoother, better organized and more secure than before. There is no longer any risk of leaving any production-ready items out of the release package."*  
Sebastian Vestberg, Application Manager



## Next Steps

The Crosskey team are now looking at ARCAD's DROPS for multi-platform application deployment, in order to automatically manage the dependencies between the IBM i and Linux components of their application. Continuous test automation using ARCAD iUnit and ARCAD Verifier is also under consideration.

**"ARCAD is a product we can grow with. The solutions are continually evolving, and their close partnership with IBM means that we can stay at the leading edge of technology"**.

**"We made the right move and I would recommend ARCAD to any shop with IBM i DevOps needs"**, concludes Sebastian Vestberg. ♦