CAMUNDA

Clearstream: Orchestrating D7 Digital Securities Services supported by Camunda

clearstream

Key Benefits
• Extended product scope, covering more than 95% of the related issuance volume in the German market.
• Increased issuance capacity:
   - Mass issuance capacity up to 40,000 issuances per day enabled by the new API
   - More than 1.8 million (Sep 2025) digital issuances issued since D7 Generation2's launch in June 2024
   - ~20bn EUR of value represented by these digital issuances-more than on any other securities digitization platform globally.
• Increased customer satisfaction
• Streamlined issuance process for larger issuances
• Full straight-through processing vision
• Higher business agility and better scalability

Camunda Product

See how global post-trade services provider Clearstream made digital securities issuance and redemption services faster, more efficient, and more scalable through Camunda-powered process orchestration and automation in its innovative D7 digital securities platform.

As process automation, digitization, and AI rapidly advance, businesses must future-proof their enterprise architectures to remain agile and competitive, particularly in industries where customer expectations have increased and compliance to stringent regulations is required. The old ways of monolithic platforms that have limited customization capabilities for business-critical processes just won't cut it anymore.

That's why global post-trade services provider Clearstream chose Camunda when building the second generation of its innovative D7 digital securities platform to orchestrate the platform's newly designed microservices architecture. With this flexible, scalable architecture powered by Camunda 8 and Google Cloud services, Clearstream has made the issuance and redemption services processes of digital securities faster, more efficient, and more scalable.

The challenge

Clearstream is a provider of global post-trade services. It runs the leading securities and funds servicing ecosystems for Deutsche Börse Group.

Clearstream operates three central securities depositories (CSDs), which act as the start and end points of a securities transaction.

- The start is when a security is issued; that is, the issuance of custody of the global securities certificate, which can happen either physically or electronically. Clearstream's D7 digital securities platform can now also make that issuance digitally, where the issuance is tokenized to create a smart digital object that can then be processed in the post-trade environment.
- The end is at post-trading; once the buyer and seller have reached an agreement, the actual transfer of securities and money to the securities accounts at the customer's bank takes place in post-trading, which is referred to as "settlement."

   The central securities depository then stores the securities securely in its vault on behalf of the customer and also supervises further actions while the security is in the vault, known as asset servicing.

Clearstream realized its previous D7 Generation1 platform's architecture, due to the large size of the German issuance market, was quickly reaching its limits in terms of scalability. There was also a lack of end-to-end process visibility in the IT architecture, which made it difficult to monitor and to address process problems or errors at the back end. These challenges meant that the D7 platform needed to transform in order to deliver on the needs of Clearstream and the expectations of their clients.

The solution

The Clearstream team decided to further innovate its digital post-trade platform to enable mass issuance by introducing a fully microservices-based architecture, D7 Generation2, with Camunda as the central business process orchestrator. This core architectural enhancement to Clearstream's D7 platform increased business agility and visibility into processes, while also supporting improved process scaling to handle large volumes and more complex workflows. This addition to Clearstream's D7 platform increased business agility, visibility into processes, and supported process scaling to handle large volumes and more complex workflows.

D7 Generation2 now supports a wider range of complex Retail Structured Products (RSP), covering more than 95% of RSP issuance volume in the German market. The enhanced platform architecture, developed in cooperation with Google Cloud, brought improvements designed to make the issuance process faster, easier, and more efficient.

Besides the extended product scope, the main benefits are increased issuance capacity, a full straight-through processing vision and a streamlined issuance process for large volumes.

These benefits enable Clearstream to operate with more agility than before, as it is easier to integrate additional microservices into the overall infrastructure, enabling much better scalability.

"One of the main reasons we moved to a microservices architecture centrally orchestrated by Camunda was to support the scalability requirements from a CSD with large volumes," confirms Julia Blankenberg, Vice President and Head of Cloud Office, Tools and Orchestration.

Incorporating Camunda as the process orchestration engine within D7 offered numerous benefits, including:

- Scalability
- Process transparency
- Clear boundaries of functionality within microservices compared to monoliths

Choosing Camunda

The Clearstream team chose Camunda for D7 based on its position as a flexible, composable, intelligent platform for end-to-end process orchestration across the enterprise. This functionality, plus competitive licensing costs, translates into faster value realization, enhanced control and transparency, and increased business agility for Clearstream to adjust as needed—all while maintaining cost efficiency and avoiding vendor lock-in.

Camunda's Project Success Acceleration Program was also a benefit to the Clearstream team, throughout the project.

"We were really happy with the support provided by the Camunda experts – from the relationship side to BPMN quality assurance and to the technical support," Blankenberg shared.

The results

- Extended product scope: D7 Generation2 now supports a wider range of complex Retail Structured Products (RSP), covering more than 95% of the related issuance volume in the German market.
- Increased issuance capacity
  - The new API enables mass issuance of up to 40,000 issuances per day.
  - More than 1.8 million (as of September 2025) digital issuances issued since D7 Generation2's launch in June 2024, representing roughly 20bn EUR of value—this is more than on any other securities digitization platform globally.
  - Overall, the issuance end-to-end processing time was significantly reduced, and processing time within Camunda is now less than one second.
- Increased customer satisfaction
  - Increased customer satisfaction through increased issuance capacity.
  - Customers experience faster service through lower average processing time, as more batch-driven

processes can be processed than in the legacy system, which impacts overall processing time.
- Streamlined issuance process for larger issuances
  - Harmonized data model: a harmonized data model has been introduced to adhere to international market standards. This paves the way for geographical expansion and technical innovation such as tokenisation.
- Full straight-through processing vision
- Higher business agility: easy integration of additional microservices into the overall infrastructure (resulting in better scalability)

What's next?

Clearstream plans to continue iterating on the D7 platform; it is a multi-year project which adheres to the overall Clearstream roadmap, with the main target to broaden its product offering related to asset classes and markets. The team wants full product coverage for all customers over time. The plan is to add more and more products onto the platform, with Camunda continuing to serve as the core orchestrator to new processes and business functionalities.

With its flexible microservices architecture with Camunda's foundational process orchestration at the core, Clearstream has found a winning formula to innovation within a highly complex, stringently regulated, and customer-dependent industry.