



B3i CASE STUDY

Enabling and Accelerating Insurance and Reinsurance Industry Transformation with Distributed Ledger Technology

Powered by Corda Enterprise, B3i's Fluidity platform delivers a new infrastructure that eliminates reconciliation pain points in treaties and accounting, boosting transparency and bringing complete contract certainty. Fluidity currently hosts 'B3i Reinsurance', the first live reinsurance blockchain application.



Corda Enterprise is an excellent general-purpose DLT solution that can be applied to any use-case. At B3i, we are building an insurance platform on top of Corda, to enable an ecosystem of interoperable applications, transforming insurance into a DLT native insurance industry.

Alessandro Spadoni
Chief Architect, B3i



B3i's Reinsurance solution (B3i Re) — at a glance

Platform: R3's Corda Enterprise

Application builder: B3i, the Blockchain Insurance Industry Initiative

Shareholders include:
Achmea, Aegon, Africa Re, Ageas, Allianz, AXA, CPIC, Deutsche Ruck, Generali, Hannover Re, IRB Brasil Re, Liberty Mutual, Mapfre Re, Munich Re, SBI Group, SCOR, Swiss Re, Tokio Marine Holdings, VIG Re, Zurich

“ 76% of the participants said the application has a positive impact on auditability and contract certainty

About B3i

B3i Services was created in 2018 and is 100% owned by a diverse consortium of 20 leading participants in the global insurance market. Its mission is to improve efficiency and value in the insurance industry by using blockchain technology to develop standards, protocols and network infrastructure that removes friction in value chains and risk transfer processes. B3i's shareholders and participants believe that by acting together, the industry can optimize and automate market-wide processes and generate significant savings in time and cost.

The industry problem

Value chains **across the insurance industry** are hampered by a high degree of manual processing and reconciliation, with multiple parties—insurers, brokers, reinsurers and more—using different systems, and communicating about contracts via a wide range of channels. The result is high costs, slow turnarounds and frequent errors—all of which impact the end customer experience. This is a data-hungry and file-driven industry, and nowhere are these challenges more prevalent than in reinsurance, where inefficiency, contract uncertainty and operational risk impact all players along the value chain.

The solution

B3i chose R3's **Corda Enterprise** to build its platform, B3i Fluidity. B3i Reinsurance (B3i Re) is the first Distributed Ledger Technology (DLT) application for the reinsurance market, focusing initially on the Property Catastrophe Excess of Loss (Cat XoL) market. The B3i Re application represents the reinsurance industry's first move into the DLT era, and the first solution developed and deployed on B3i Fluidity. Using the solution, all participants in the reinsurance value chain can access a single version of the truth to automate the end-to-end lifecycle of a reinsurance treaty.

The outcome

In mid-February 2020, B3i customers—including participants from nine insurers, five major brokerage firms and 12 reinsurers—performed the first live reinsurance placements on the platform. The solution made the placement process much easier for complex treaties and transactions, including some of the world's most complex Cat XoL treaties. When asked about the impact on their business, 76% of the participants said the application has a positive impact on auditability and contract certainty.

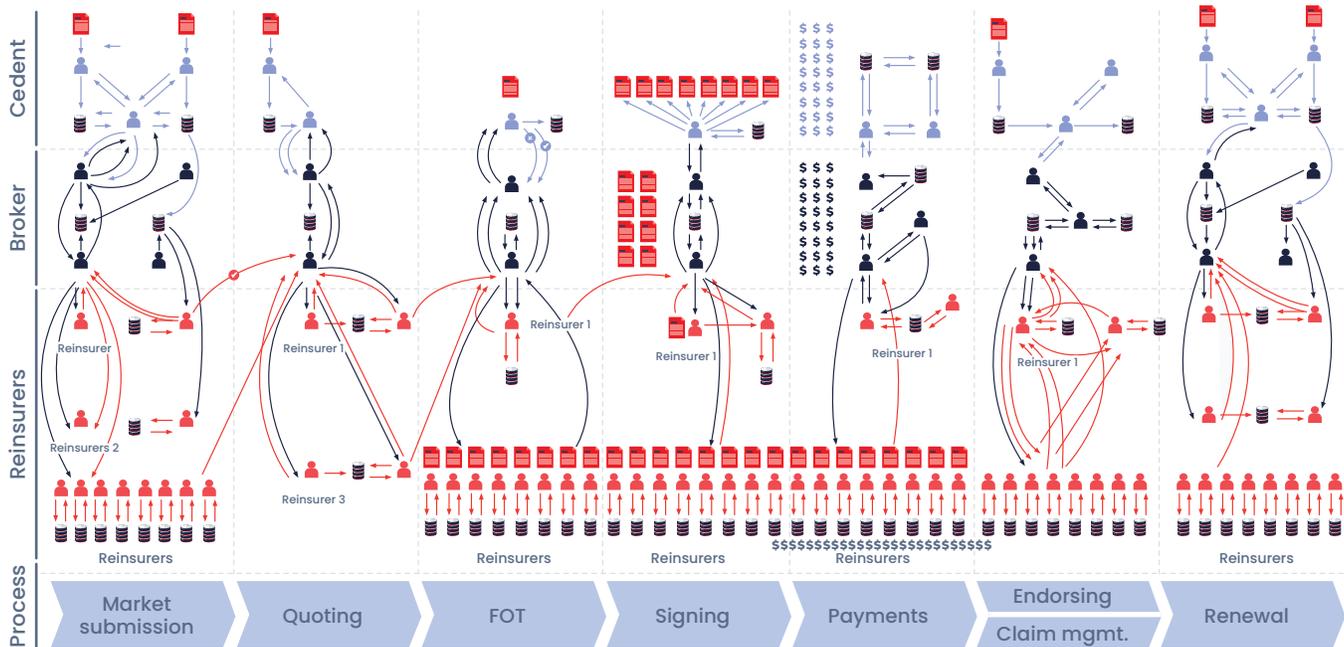
The pain point

The insurance and reinsurance value chain: an urgent need for transformation

B3i, the Blockchain Insurance Initiative, was set up by a consortium of leading global insurance and reinsurance companies. Their goal was to develop an industry-wide perspective on the fast-emerging blockchain technology that was already transforming many other sectors. B3i's members held a roundtable to discuss insurance use cases for blockchain, and established that this technology could be used to create and deliver significant value for the industry as a whole.

The insurance value chain links capital with risk. Insurers, brokers, reinsurers and other participants aid the flow of this capital but—over time—data gaps, inconsistencies and high levels of manual processing in multi-party transactions have emerged. With many participants involved in transactions, a more harmonious solution was needed to address industry-wide problems. DLT is ideally suited to bringing the transparency and automation needed, by providing a single version of truth that all authorized participants can access throughout the process, without centralizing data in one place.

Fig. 1: Insurance has an admin problem. The complexity of a *single* transfer of risk.



Consequences for the Insurance Industry

Compounded over time and born by all parties in the transaction

High effort

Significant effort is required by all participants in a transaction to receive information, process data and communicate with each other.

Poor data quality

Unstructured and manual information exchange degrades data quality and prevents the creation of digitally native insurance products.

Operational risk

High degrees of manual data processing, handoffs and general lack of transparency increase operational risk.

Nowhere is friction more prevalent than in reinsurance. Alessandro Spadoni, Chief Architect at B3i, explains: “We all came to the first B3i meeting with potential use cases that we felt were a good fit with DLT’s unique characteristics. When we discussed them, the sector that came most strongly to the fore was reinsurance. It consists of business networks with many separate companies using different technologies, interacting largely via phone and email, and burdened with wasteful file management and reconciliation processes.”

Delivering the solution

A collaborative operating system for re-insurance

B3i’s industry-wide remit was key: while reinsurance was the first use case to be tackled, the company’s transformation mandate is much broader—encompassing the whole insurance industry. B3i’s Antonio di Marzo explains: “Our strategy is to not to create just a single product, but to enable the development of interoperable solutions that are relevant for the entire insurance and the reinsurance market, end-to-end.”

This strategy shaped B3i’s approach to solution development. In line with the intention to target reinsurance as an initial step, it was decided that the first application would address the Cat XoL market.

“The Cat XoL market involves an enormous amount of manual processing during the placement process, with fifty or more actors working on the same contract, interacting by exchanging thousands of emails and many versions of files and documents using different technology solutions,” says Antonio di Marzo. “At the end of this process, each participant puts their own ‘version of the truth’ into their system, a step that’s followed by a reconciliation of credits and debits across all the parties. If any errors have crept in, as is often the case, the reconciliation can become complex and drawn-out.”

The solution provides a decentralized infrastructure for all participants in the reinsurance value chain to leverage the single version of the truth and automate the end-to-end lifecycle of a reinsurance treaty.

The size of the prize in the CAT XoL market

The market numbers highlight the size of the prize from creating a shared version of the truth in catastrophe excess of Loss. The global Cat XoL market alone transacts about US\$60bn of premiums a year, while the administration cost averages between US\$10bn and US\$15bn. Risk transfer alone costs between US\$6bn and US\$7bn a year. So the value of efficiency savings of even a few percent is significant.

As the concept for the B3i Reinsurance solution was being developed, it quickly became clear that this product was just the beginning. Alessandro Spadoni explains: “On the journey to deliver B3i’s reinsurance solution, we saw that what we were building was relevant across any kind of risk transfer. We decided to push the concept down to a platform level. Having a platform means you can build applications more quickly but—even more importantly—get interoperability across the application ecosystem. This is extremely powerful, because now you are not only considering a single source of the truth within a single use case or application, but across any number of operating applications.” So B3i began to build a blockchain-enabled platform called Fluidity to act as the foundation for all of its blockchain based solutions, and as an open development environment for third-party apps.

B3i Fluidity is designed to enable the development of interoperable and relevant solutions, accelerating the adoption of DLT across the Insurance industry.

The platform minimizes the development effort for both B3i members and third-parties, who can create insurance industry-specific solutions, powered by Corda, enabling full interoperability across the whole B3i Network.

What is Fluidity?

Fluidity is B3i's insurance platform, powered by Corda, that provides application developers with two key elements. The first is ready-made, industry-tailored components to help them build specific applications for the insurance industry. By offering this developer toolkit, Fluidity will accelerate the application design process and enables developers to avoid "reinventing the wheel". The second element is a shared infrastructure on which the application can run once it's been developed—reducing the costs of deployment and operation.

B3i has completed the first live transactions that quickly confirmed the potential of the initial Cat XoL application.

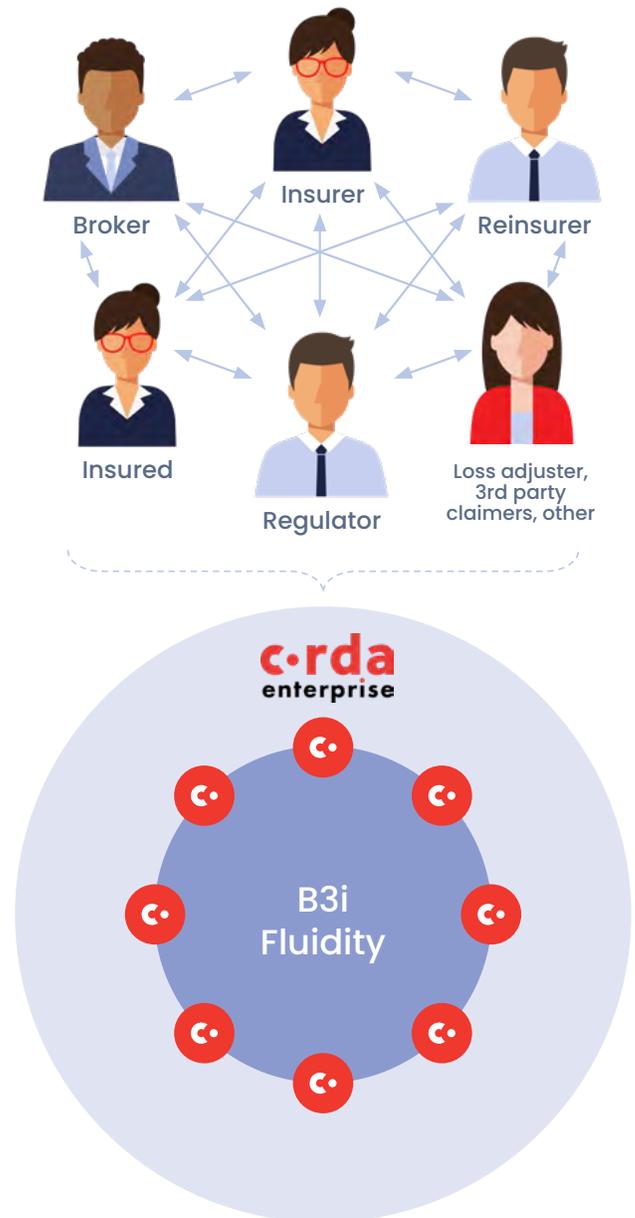
Dr. Silvio Tschudi, Senior Retrocession Manager at Allianz Re, states: "B3i's platform shows what's possible for greatly easing the placement process for all parties involved, and it's very promising. Working with our brokers and reinsurers during the placement process, across the B3i platform, has shown improved efficiencies and complete contract certainty."

The market test confirmed the B3i business case and underlined the requirements and appetite for Distributed Ledger Technologies. B3i's Antonio di Marzo says: "An interoperable DLT infrastructure, complementary to the IT architectures currently in place, is what the (re)Insurance Industry needs. The B3i reinsurance solution, together with B3i Fluidity, enables a new common layer, where existing legacy solutions or newly developed CorDapps will be able to transact seamlessly. Imagine a future where from any admin system, an underwriter will be able to receive and respond to Corda transactions such as quotation requests, or to sign a line on a treaty. B3i will bring the DLT, and the single version of the truth as close as possible to the business action.

Corda Enterprise is a fundamental enabler of such vision, and is also key to extending this interoperability to other industries such as banking and shipping."

B3i switched to Corda Enterprise from another well-known DLT solution.

Fig 2. A simpler solution: B3i Fluidity, built on Corda Enterprise, connects the insurance and reinsurance industry with a single source of truth



B3i's Alessandro Spadoni comments: "We did a very comprehensive evaluation of the various DLT platforms—and Corda Enterprise came out as the clear first choice, for two main reasons. First, the completeness of R3's vision around interoperability: we absolutely loved the concept of the Corda Network supporting the connectivity of many DLT applications across many business networks. The second was that privacy was baked into Corda architecturally from the ground up. The concerns in our industry about sharing data across the network in a potentially public way were addressed by Corda's point-to-point integration and cryptography—which means anybody can perform a transaction with the confidence that sensitive information won't be exposed to their competitors."

On top of these factors, there was good cultural alignment between B3i and R3: both started life as industry-driven initiatives to solve real-world problems, and both are looking to create open development environments that catalyze third-party innovation for enterprise users. B3i also pays testament to the outstanding support it has received from R3 throughout the development process: "On the product side, we've had very, very good interaction, which is one of the benefits of working with an enterprise software company rather than one of the other more community-driven blockchain platforms," says B3i's Antonio di Marzo.

The results achieved

Dramatic efficiency gains, reduced operational risk, accelerated cash flow

In mid-February 2020, B3i customers completed the first 30 contract placements using the B3i Reinsurance solution. Nine insurers, five major brokerage firms, and twelve reinsurers participated in the placements, in parallel to the process executed for live contracts incepting on 1st January 2020. Starting from the negotiation and placement stage, the solution provides a distributed infrastructure for insurers, brokers and reinsurers to exchange risk information seamlessly, negotiate terms and conditions and bind reinsurance agreements between multiple participants.

It also supports technical and financial accounting processes, ensuring automatic reconciliation, in near-real time.

Following the placements, B3i surveyed the participants. When asked about the impacts on their business, 76% of respondents said B3i's reinsurance solution has a positive impact on their auditability and contract certainty, and 62% highlighted workflow efficiencies and reduced admin efforts. Respondents were also asked to rate—out of five—how easy they have found the application to use to date. 43% responded with a score of four or above.

Alongside the huge gains in efficiency, the participants were also delighted by the big reduction in operational risk. "Higher efficiency and lower risk are the two main benefits that customers usually highlight," says B3i's Antonio di Marzo. "From the efficiency standpoint, most insurers and reinsurers have gone through internal operational excellence transformation projects in the past ten years. But those operational gains are restricted within companies. Now they're looking to leverage our infrastructure to enable efficiency gains at the industry level, addressing the lack of integration and interoperability between companies that lead to errors, reworks, disputes and contract uncertainty."

He continues: "These industry challenges impact companies' operational risk. So, by eliminating these uncertainties, we reduce the incidence of operational risk related to different firms seeing different things and trying to reconcile these differences. In a non-integrated, non-interoperable world where you have to execute a transaction between twenty companies, if nineteen out of the twenty make a mistake in processing that transaction then the truth owned by one of them will have the same weight as any other wrong position. With DLT, there is a single version of the truth which also means a single version of the mistake. So once that's fixed, it's fixed for all."

Next steps

Going global—with an expanding range of services

With the initial phase of launching the B3i Reinsurance solution completed, B3i is well-positioned to press ahead with the roll-out of the solution across its membership—while also exploring new applications and expanding the development ecosystem around B3i Fluidity. Over time, Fluidity will be enriched with more sophisticated functionalities and components to accelerate the development of relevant and interoperable CorDapps for the industry by established vendors or startups.

B3i's Alessandro Spadoni explains: "Corda is a really excellent general-purpose DLT solution for running any kind of use case, and perfectly positioned to support the financial industry and beyond. B3i Fluidity will enable technology firms and the industry players to build new interoperable CorDapps, expanding the sphere of innovation and bringing the full ecosystem benefits to the B3i network. We anticipate that a wide spectrum of participants will want to come, build, distribute and monetize applications across the B3i network, ranging from members who want to build an application on their own or in collaboration with partners, to commercial software vendors who spot a common problem in the market that they see value in solving."

He adds that given the sheer volume of challenges facing the insurance industry globally, B3i does not see itself as the only organization needed to drive the next phase of digital transformation. "It's not in the industry's best interest to have B3i as the only agent for change," he says. "It's much better that we create the ecosystem with a strong, interoperable, platform and governance, and allow lots of participants to come in and solve problems quickly for the industry, at scale. That will create value for the industry as a whole. So that's our strategy."





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About R3

R3 is an enterprise software firm that is pioneering digital industry transformation. We deliver purpose-built blockchain technology for all types of businesses in all industries.

Developed in collaboration with our ecosystem, our enterprise blockchain platform Corda is transforming entire industries by digitalizing the processes and systems that firms rely on to connect and transact with each other. Our blockchain ecosystem is the largest in the world with more than 350 institutions deploying and building on Corda and Corda Enterprise. Our customers and partners have access to a network of leading systems integrators, cloud providers, technology firms, software vendors, corporates and banks.

To ensure our customers derive the greatest value from their investment, we provide services and support to shorten time-to-market, as well as guidance on implementation, integration and building ecosystems based on a blockchain platform. Learn more at r3.com and corda.net.

New York

11 West 42nd Street,
8th Floor New York,
NY 10036

London

2 London Wall
Place, London
EC2Y 5AU

Singapore

18 Robinson Road,
Level 14-02,
Singapore 048547

São Paulo

Av. Angélica, 2529 -
Bela Vista, 6th Floor
São Paulo - SP,
01227-200, Brazil

Hong Kong

40-44 Bonham Strand,
7F Sheung Wan,
Hong Kong

Dublin

50 Richmond St. South,
Saint Kevin's, Dublin,
D02 FK02