

BearingPoint®

Abacus Regulator

A platform for data collection, data management, and supervisory workflows for central banks and supervisory authorities



We help regulators focus on what's important

Abacus Regulator is the result of **more than 25 years of experience** in regulation and is used by several central banks and supervisory authorities. We introduced the solution to the market in 2014, and it has evolved with market trends to become the **SupTech enabler** for regulators.

Abacus Regulator is a flexible platform for **data collection, data management, and supervisory workflows** for central banks and supervisory authorities. It provides essential functionalities for collecting, analyzing, and disseminating prudential and statistical reports for both national and supranational requirements. We help regulators consolidate the growing data collections as well as supervisory workflows so that they can **focus on their core activities and primary tasks**, such as maintaining the integrity of the financial system and providing consumer protection.

Addressing common challenges for regulators



Comments gathered by BearingPoint RegTech from 2018 to 2020 from different central banks and supervisory authorities.

In the run-up to the development of our latest product generation, we exchanged views with our existing customers as well as with the representatives of central banks and supervisory authorities to more fully understand the current and future challenges and offer suitable solutions.

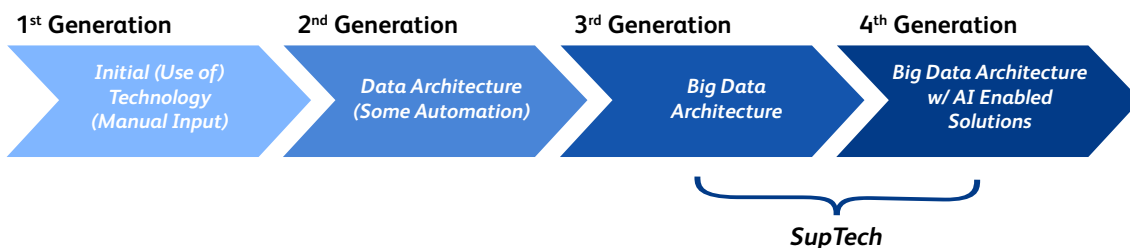
In recent years, many new data collections have been defined by national and supranational supervisory authorities, which have to be processed and organized. The business and IT architecture of regulators have mostly grown based on bespoke solutions. The following key challenges should be highlighted in that context:

- **Data silos:** In most cases, data from individual data collections is distributed over a plethora of different applications and bespoke developments and often can only be merged manually. Thus, unified and comprehensive data analysis is hindered.
- **Maintenance:** Updating existing data collections is often associated with extensive effort and is cost intensive. Critical resources for maintenance are sometimes no longer available as the systems were developed many years ago.
- **Time-to-market:** Integrating new data collections into existing solutions usually proves time-consuming and is complicated by inflexible and outdated software architecture.
- **Extensibility:** Existing regulatory solutions are often designed in monolithic and earmarked ways, making it difficult to integrate additional features that reflect the evolving needs of regulators.
- **Sustainability:** Many regulators see that their current business and IT architecture are no longer suitable for future requirements, such as granular data and short feedback cycles in holistic data analytics.
- **Performance and scalability:** For larger regulators, the increasing number of (ad-hoc) data collections poses a performance challenge, leading to longer feedback cycles to the supervised entities.
- **Digitalization:** Some workflows are still paper-based, which leads to longer processing times, less transparency, and a higher susceptibility for errors.

SupTech answers the challenges

The Bank of International Settlement (BIS) distinguishes between four different generations of technology used by regulators. Most of the challenges described above are mainly related to the first and second generation which are currently predominant in the market.

From the third generation onwards, the BIS refers to them as SupTech, where SupTech is “the use of innovative technology by supervisory agencies to support supervision.”¹



With the latest product generation of BearingPoint RegTech’s **Abacus Regulator**, we support regulators in advancing to the third generation.

¹ Resource: [FSI Insights on policy implementation No 19: The suptech generations: November 2019.](#)

A solution for data collection, data management, and supervisory workflows

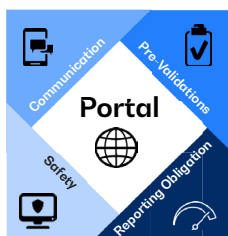
Abacus Regulator consists of a modern Big Data platform that combines two complimentary approaches. On the one hand, the product can offer an out-of-the-box solution for data collection and data management and, on the other hand, it provides capabilities for client-specific extensions, SupTech as well as national and supranational reporting.

The product consists of four different components: the Data Collection Platform, the Portal, Integrated Analytics and optional curated Standard Regulatory Content for data collections within the European System of Financial Supervision (ESFS).

Data Collection Platform

The Data Collection Platform is the core of Abacus Regulator. It includes basic functionalities such as efficient horizontal workload scaling with Kubernetes, Big Data capabilities based on a data lake approach, a Business Process Model and Notation (BPMN) 2.0 compatible workflow engine including decision automation, accessibility and interaction via standard application programming interfaces (APIs), extensibility via a microservice architecture as well as comprehensive versioning of regulatory content so that the system can comprise multiple versions simultaneously. Further key features are:

- **Reporting Manager:** Provides a searchable view of scheduled reporting obligations of supervised entities and the corresponding submission status.
- **Data Collection Management:** European and national data collections can be deployed, used, and managed on one single platform. Submitted data can be visualized, and validation results can be explored.
- **Content Development Kit (CDK):** The CDK allows regulators to define and deploy their own (ad-hoc) data collections, including data models, templates, workflows, web forms, validation rules, and more. The CDK is based on modern DevOps methods and tools, such as versioning, continuous integration, and deployment and code reviews. The CDK is built on well-established standards, e.g., Git and BPMN 2.0.



Portal

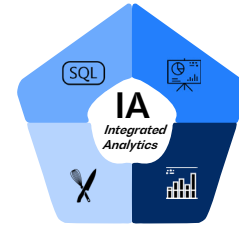
The Portal is the central interface between supervised entities and regulators. For the former, it offers functionalities for the administration of submissions (e.g., the reporting schedule) and the filing of the submissions, such as file upload or an application-to-application interface.

- **Reporting Obligations and Calendar:** Reporting entities are provided with an overview of their reporting obligations and submission deadlines in the Portal. Submitted data can be visualized in the reporting templates. The status of a submission is displayed in the overview and includes validation results.

- **Pre-Validations:** The Portal allows supervised entities to run pre-validations on their reports prior to a final submission to the regulator, reducing unnecessary exchanges between reporting entities and regulators as well as resubmissions.
- **Communication:** The Portal offers different options for the submission processes: file upload, application-to-application (A2A) interfaces, or online forms.
- **Safety and Independence:** The Portal is isolated from the platform, which increases security for both reporting entities and Regulators.

Integrated Analytics

Integrated Analytics provides direct access to fact data of the data collections registered in the Data Collection Platform as well as to meta data from the data collection process (e.g., when a submission arrived or which validation errors have occurred). Furthermore, the data can be visualized, and the visualizations can be summarized in dashboards.



Integrated Analytics allows regulators to build intelligence around data objects in the platform and consists of four main functionality pillars:

- **SQL Lab:** Users can query data registered in the Data Collection Platform via SQL and visualize the results.
- **Dashboards:** Custom dashboards dynamically summarize multiple SQL queries and visualizations, providing essential information at a glance.
- **Slice & Dice:** Attributes can be dynamically rearranged in a pivot-like visualization to access and present different data based on the requirements of the regulator.
- **Visuals Catalogue:** Our integrated Visuals Catalogue lets regulators choose the type of graphical representation they need, depending on the type and amount of data.

Standard Regulatory Content (European System of Financial Supervision)

In addition to the Data Collection Platform components, optional curated Standard Regulatory Content is also offered for specific ESFS data collections, in particular:

- EBA ITS CRD IV
- EIOPA Solvency II
- EIOPA Pension Funds

These include the validation rules as published by the corresponding authorities EBA and EIOPA for the applicable Data Point Model (DPM) versions as well as the visualization of the submissions in accordance with the regulatory requirements.



System Architecture and Technical Functionality

Abacus Regulator is an integrated, modular platform. The components of our solution can be combined according to the most common needs of regulators. It is built using modern concepts and technology invented for running production workloads in massive

parallel (cloud) environments. Technological advances like lightweight containers, which support the packaging of code and all its dependencies independent of infrastructure, take software delivery and deployment to a new level and allow running different versions of software simultaneously. We use tools with a well-established track record in software development, providing the four-eyes principle on changes, instant testability, and cryptographically secured traceability to manage the constant change of regulatory logic. Abacus Regulator was designed with horizontal scalability and performance as well as significantly increased transparency and improved integration of supervisory processes in mind. The key feature of the platform is an extensible, scalable, and robust system architecture.

Extensible, scalable and robust system architecture using lightweight container technology and microservices.

Microservices by containerized applications

Abacus Regulator packages its software components into so-called containers and makes them accessible as microservices. This **microservice architecture** facilitates flexibility and extensibility of the solution with respect to client-specific functionality or integration into existing IT infrastructure, which is realized via language-agnostic custom microservices. Containers encapsulate an entire runtime environment in a lightweight package: the application itself, its dependencies, libraries, and other artifacts as well as its configuration files. Containers have become an industry standard as they offer independence from particular computing environments. They can be executed in a fully reproducible way in test and production environments, in the cloud, in private computing centers, and even on development machines.

Automated deployment and scaling

Microservices and containerized applications provide the building blocks for genuinely automated and scalable deployments. Kubernetes, the industry-leading container orchestration system, oversees running and scaling supervisory workloads. Kubernetes is battle-tested: major players in the financial and software industry have deployed large and complex systems with it. Abacus Regulator takes advantage of the capabilities of Kubernetes to automate deployment and scaling based on the type and number of incoming reports. It scales up those containers that provide the capabilities to process the reports, and it even allows the running of multiple versions of the same service simultaneously. This supports parallel processing of submissions based on different taxonomy versions; for example, re-submissions of corrected historic reports can be processed at the same time as bulk submissions of current reports. Here, Abacus Regulator automatically assigns submitted reports to the applicable taxonomy version.

Abacus Regulator – SupTech Enabler

Developed on big data, cloud-native architecture

Regulatory Consulting & Services

BearingPoint is a leading management and technology consultancy with long-term experience in the area of regulation. We work closely with regulators and actively contribute to the process of standard-setting. BearingPoint is a member of XBRL International along with other standardization bodies and works with supervisory authorities such as the ECB, EBA, and EIOPA. We combine this regulatory experience with our well-established software solution suite and consulting capabilities as well as training seminars and managed services in the area of regulation.

Rapid implementation and comprehensive customer support

Abacus Regulator users can benefit from short deployment times since it is an integrated standard solution providing both business content and maintenance of regulatory artefacts by BearingPoint, for example, reporting frameworks, XBRL taxonomies, filing and validation rules, etc. Our comprehensive customer support services include a web-based Open Ticket Request System (OTRS), and a useful online service providing documentation, downloads of software packages, and other resources. Additionally, the Abacus Regulator documentation, the roadmap, and the release plan provide numerous possibilities for current, informative and critical discourses between users and BearingPoint RegTech to collectively realize the industry leading practices in relation to regulations and our product strategy.

Why you should decide on Abacus Regulator

Abacus Regulator is the result of more than 25 years of experience in regulation. Users profit from the regulatory maintenance of the solution through BearingPoint RegTech. Abacus Regulator integrates comprehensive functionalities for supervisory and statistical data collection, analytics, and dissemination on one single platform. Abacus Regulator is suitable for various usage scenarios.

Experience

Extensive functional coverage, regulatory compliance, thought leadership in regulation



Reliability

Transparent reporting platform, regulatory maintenance through BearingPoint



Efficiency

Integrated platform for multi-jurisdictional reporting, unified data model, investment protection



Holistic Portfolio

Software & services, implementation, consulting and support from one hand



Innovation

Innovative solutions along the Regulatory Value Chain



Extensive Market Coverage

Large, stable, international client base



About BearingPoint RegTech

BearingPoint RegTech is a leading international provider of innovative regulatory and risk technology solutions (RegTech and RiskTech) and services along the Regulatory Value Chain for Financial Services.

Customers representing 6,000 firms worldwide, among them large international banks, a major part of the largest European banks, leading insurance companies as well as supervisory authorities and central banks, trust BearingPoint's RegTech products and services.

We work closely with regulators and, as a member of standardization bodies such as XBRL, we actively contribute to the standard-setting process. We combine our regulatory know-how with our well-established, reliable and forward-looking RegTech solution suite, expert consulting capabilities, as well as managed services and training seminars.

For more information, please visit www.reg.tech

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