

eCustoms Framework

An industry solution platform for customs administrations



eCustoms Framework—what for?

The eCustoms Framework (eCF) is an integrated set of industry models describing and designing an innovative, future-proof, trend-resistant, flexible customs enterprise by applying standard methods. It serves as a blueprint for customs modernization by guiding customs administrations in the identification of modernization components and their integration on a standard platform. The eCF is the basis for the eCustoms Integration Suite (eCIS), our portfolio of modular software assets that support the various functional areas of a customs administration. These modular, lightweight, future-proof solutions can be introduced incrementally and offer a range of different entry points to start transformation of eCustoms. Our eCustoms solutions can be integrated seamlessly by a standardized set of models that catch industry commonality and still allow variance.

eCF and eCIS benefits

- Industry models based on best practices and a wealth of customs administrations experience serve as a blueprint for modernization.
- COTS solutions offer best practices and industry standards.
- Localization through configuration and extension of functional scope to support national requirements.
- Prior investment protection by our component-based portfolio, allowing integration with an existing environment on a platform of choice—the eCF does not require an “all or nothing” decision.
- Incremental modernization so there is no need for “big bang” transformations.
- eCF is continuously maintained and updated as industry trends, legislation and technologies evolve.

Seamless, incremental transformation for future-proof solutions

The vision behind eCF is to allow multiple independent solution providers to supply software components that can be integrated seamlessly on a platform of choice. These solutions could range

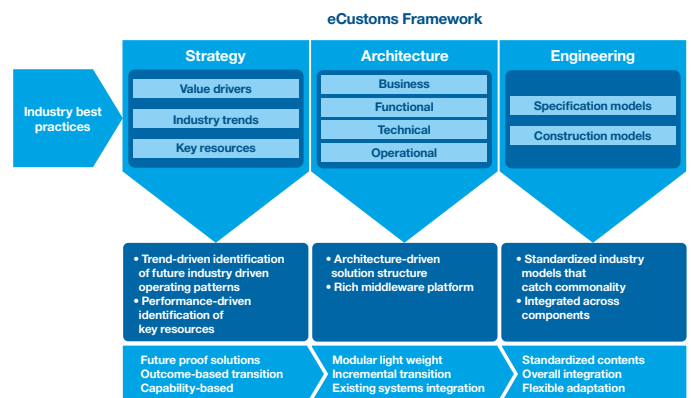


Figure 1: The eCustoms Framework

from import/export to transit to entry/exit to tariff management to inspections. The integration is based on open principles of a service-oriented architecture (SOA) in which the components offer well-defined services that can be reused across solutions. The advantages of the SOA-based integration include customization options that range from simply adapting business rules to full control of components in a development environment. This approach supports incremental transformation through a step-by-step introduction of components that may originate from various sources and are supported by a standards-based platform.

The packaging of the functionality in the components is driven by the analysis of long-term industry trends. As a result, components are future-proof and can be used as independent entry points to achieve transitions with clearly targeted benefits.

Architectural priorities

- Flexibility
- Modularity
- Scalability
- Openness
- Portability
- Extendibility
- Security
- Reliability
- Reusable common components
- Integration
- Uniform presentation layer

How is the framework constructed?

The framework consists of artifacts that address three levels of a customs business and IT landscape. At the strategic level, industry vision and blueprint documents from the World Customs Organization (WCO) and the European Union (EU) served as input to define the operating models of future customs administrations, and the key resources required to support them. At the architecture level this analysis is used to develop business, functional, technical and operational architectures. These architectures allow identifying the solution components, the underlying technical components from the middleware platform and the infrastructure they are deployed in, in a future-proof way. At the engineering level process, service and information models are established that standardize the detailed contents of the solution components. The information model of key components is based upon the WCO data model version three and is sufficiently rich to support future industry transformation driven by increased information sharing between customs and end-to-end supply chains.

The core framework artifacts are:

- **Business process map and component business model:** business process framework and business competency and capability overview.
- **Functional architecture:** functional assets and their internal architectural construction.
- **Technical architecture:** technical products and their internal architectural construction.
- **Operational model:** the infrastructure architecture in which the functional and technical software assets will be deployed.

eCF principles

- Service oriented architecture (SOA)
- Maximal reuse of core services
- Use of an enterprise service bus
- Business rules repository
- Modularity
- Platform independence
- Three layers: strategy, architecture and engineering

The resulting set of solutions based upon this framework contain the properties that the upcoming transformation requires—modular, lightweight, future-proof solutions that can be introduced incrementally and offer a range of different entry points. And the solutions are integrated seamlessly by a standardized set of models that catch industry commonality and still allow variance.

Functional solutions

- Import
- Export
- Transit
- Entry
- Exit
- Tariff management
- Risk management
- Authorized economic operator
- Inspections
- Single window
- eCustoms gateway

Foresight is required in the changing world of customs

With its future-proof solutions and flexible characteristics, the eCustoms Framework can help clients be far-sighted in today's fast changing customs environment. The increasing connectivity of countries caused by globalization reveals several challenges and significantly impacts customs business.



Customs organizations around the world control the flow of goods within increasingly global and integrated supply chains. This is the real time lifeline of today's modern enterprises in a world in which threats are proliferating and are more difficult to track. In this environment the role of customs is rapidly shifting from a primary focus on revenue collection aimed at protection of economic interests, to trade facilitation and reduction of administrative burden as well as a significantly increased role in safety and security. This shift implies that customs agencies both lead and follow a major transformation in the industry.

A changing business environment

- Changing legal requirements
- Regional integration
- Political agreements
- Trade facilitation
- Security
- National requirements

The customs environment is changing due to globalization, fraud, integration of supply chains and geo-political instability.

eCustoms enables the utilization of information systems to clear goods, collect customs duties, control the flow of goods, animals, personal belongings and hazardous items into and out of countries, and provides an effective tool against crime and fraud. It started years ago with replacing paper-based customs procedures with electronic operations, and now aims at creating an efficient and modern customs environment which facilitates trade as well as enhances security at borders.

Although many countries already use electronic declarations, legacy systems may be monolithic, not fully integrated or interoperable, and not always flexible enough to accommodate the changes as demanded by the evolving customs environment, including national and international directives. As a result, countries are modernizing their systems and operational environments to move towards eCustoms.

Technology driven change

- Legacy systems are not flexible enough to accommodate change
- Emerging hardware platforms
- Evolving IT expertise
- Obsolete technologies
- New technologies: analytics, social media and cloud
- Changing maintenance agreements and licensing policies
- Application rationalization

A strong partnership

IBM has joined forces with IBM Business Partner Intrasoft International. The combination of these two companies will provide you with a tight, efficient and commitment-driven delivery team and governance model. Intrasoft's competitive advantages include:

- In-depth knowledge of the customs business and technical details.
- Recognition by numerous EU member states' customs administrations as a reliable and reputable contractor.
- Efficient operations with the European Commission's DG TAXUD (Taxation and Customs Union) and with the numerous member state administrations in the context of consulting activities and training.
- The execution of projects for the development of other national systems, such as transit systems and export control systems.

As a market-leading customs solutions architect, integrator and service provider, IBM and Intrasoft have the capabilities necessary to not only help implement eCustoms solutions but also to provide services necessary to transform current systems and architectures, and to support and guide your organization through change and transformation. This approach is incremental, introducing solutions that can be integrated seamlessly with existing systems.

IBM and Intrasoft have the global experience, comprehensive instrumentation and technology expertise, and cost-effective methodologies to help customs administrations improve asset management and optimize their supply operations to realize business value. We bring together sophisticated analytics, technical expertise and a strong partner ecosystem to develop and deliver innovative customs solutions. Our highly skilled consultants have a proven track record in planning, building and deploying complex incremental global solutions for customs agencies of all sizes and complexities. They have the added ability to customize solutions to meet local requirements if needed, and guide clients through large-scale transformation programs in all industries.

IBM Centers of Excellence, proof-of-concept engagements, and research "First-of-a-Kind" projects conducted with clients demonstrate innovation and proven ability in solution implementation. Our customs solution portfolio has been developed and continuously refined with clients around the world.

For more information

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You can also visit the following website:

ibm.com/smarterplanet/us/en/government/ideas



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