Use Case: Exchange of a Product Definition with Export Control information based on Security Classification and Export License
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Aim

The aim is to enable the exchange of complete as-designed and as-planned product definition that includes explicit export control information, which is:

1) Security Classification:
- For confidentiality: restricted, secret, etc., or Country CaveAt, etc.,
- For regulation: standardized regulation (EAR, UE control list, etc.) or company specific dictionary of classes,
- For other legal purpose: commercial marking, required personnel qualification, etc.

2) Export License:
- It is the official authorization to share product data between organizations based on authority agreements (DGA, MoD, etc.),
- It is issued by an authorising organization to one or multiple authorised organizations (or persons) for a given time: who, when and where.

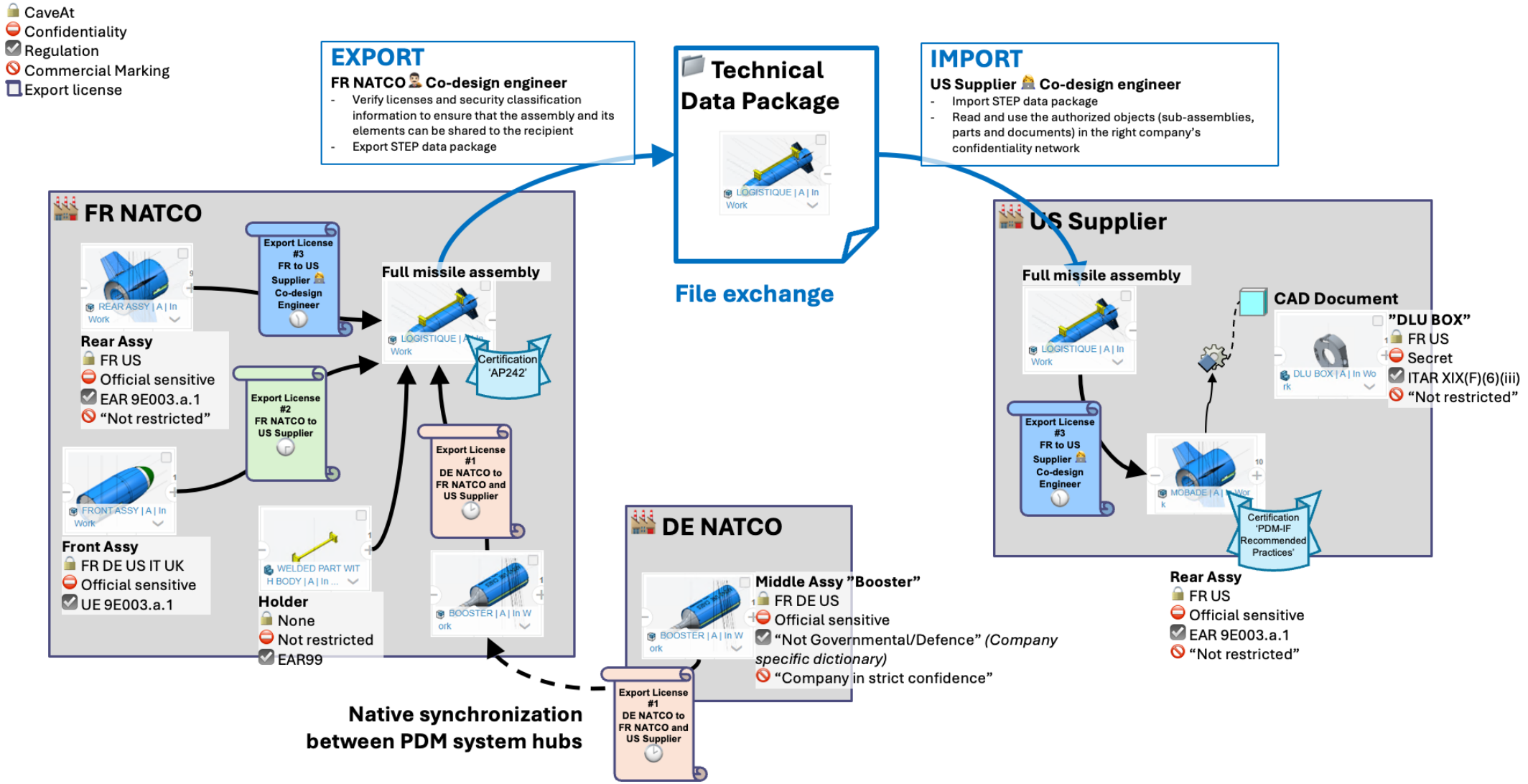
This export control information is assigned to specific objects in the product structure data, for example: a PDF document, a specific Part Version, or an entire sub-assembly
The exchange is made between OEM, supplier, partner organizations, especially international:

- At export, the export control information tells if the product data can be shared to the recipient (its identity, location, organization, qualification, etc.),
- At import, the export control information tells if the product data can be read and used in the recipient's organization network.

Such information must be immediately evident to any consumer of a data; therefore it must be in standardized human-readable and computer-interpretable form.

Use case diagram

The diagram below illustrates the use case process within a scenario with file exchange and systems synchronisation.


CaveAt
Confidentiality
Regulation
Commercial Marking
Export license
EXPORT
FR NATCO Co-design engineer
- Verify licenses and security classification information to ensure that the assembly and its elements can be shared to the recipient
- Export STEP data package
Technical Data Package
LOGISTIQUE | A | In Work
IMPORT
US Supplier Co-design engineer
- Import STEP data package
- Read and use the authorized objects (sub-assemblies, parts and documents) in the right company's confidentiality network
File exchange
FR NATCO
REAR ASSY | A | In Work
Rear Assy
FR US
Official sensitive
EAR 9E003.a.1
"Not restricted"
Export License #3 FR to US Supplier Co-design Engineer
Full missile assembly
LOGISTIQUE | A | In Work
Certification 'AP242'
Export License #2 FR NATCO to US Supplier
FRONT ASSY | A | In Work
Front Assy
FR DE US IT UK
Official sensitive
UE 9E003.a.1
WELDED PART WITH BODY | A | In ...
Holder
None
Not restricted
EAR99
Export License #1 DE NATCO to FR NATCO and US Supplier
BOOSTER | A | In Work
DE NATCO
BOOSTER | A | In Work
Middle Assy "Booster"
FR DE US
Official sensitive
"Not Governmental/Defence" (Company specific dictionary)
"Company in strict confidence"
Export License #1 DE NATCO to FR NATCO and US Supplier
Native synchronization between PDM system hubs
US Supplier
Full missile assembly
LOGISTIQUE | A | In Work
Export License #3 FR to US Supplier Co-design Engineer
MOBADE | A | In Work
Certification 'PDM-IF Recommended Practices'
CAD Document
DLU BOX | A | In Work
"DLU BOX"
FR US
Secret
ITAR XIX(F)(6)(iii)
"Not restricted"
Rear Assy
FR US
Official sensitive
EAR 9E003.a.1
"Not restricted"

Actors

- OEM (ex: “FR NATCO” or “DE NATCO”): Responsible for preparing and providing the technical data package.
- Supplier Partners (ex: US Supplier): Responsible for consuming the technical data package and integrating it into their systems.

Preconditions

The OEM is able to produce a valid technical data package from its information system, which includes:

- Multilevel assembly structure;
- Master data of each assembly/component part and documents;
- 3D positioning of each part;
- References to 3D geometry and associated documents;
- References to security classifications and export license information.

The supplier is able to validate and import the technical data package into its own system.

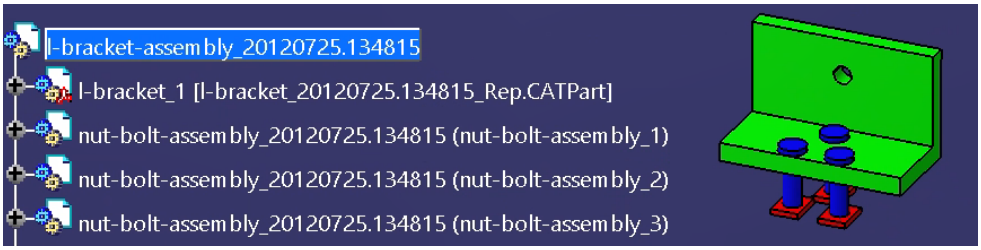
Description

The use case addresses two main aspects:

1) Security Classification (see example diagram: Security Classification):
Security Classification ensures compliance with external and internal regulations and security policies. It is based on:

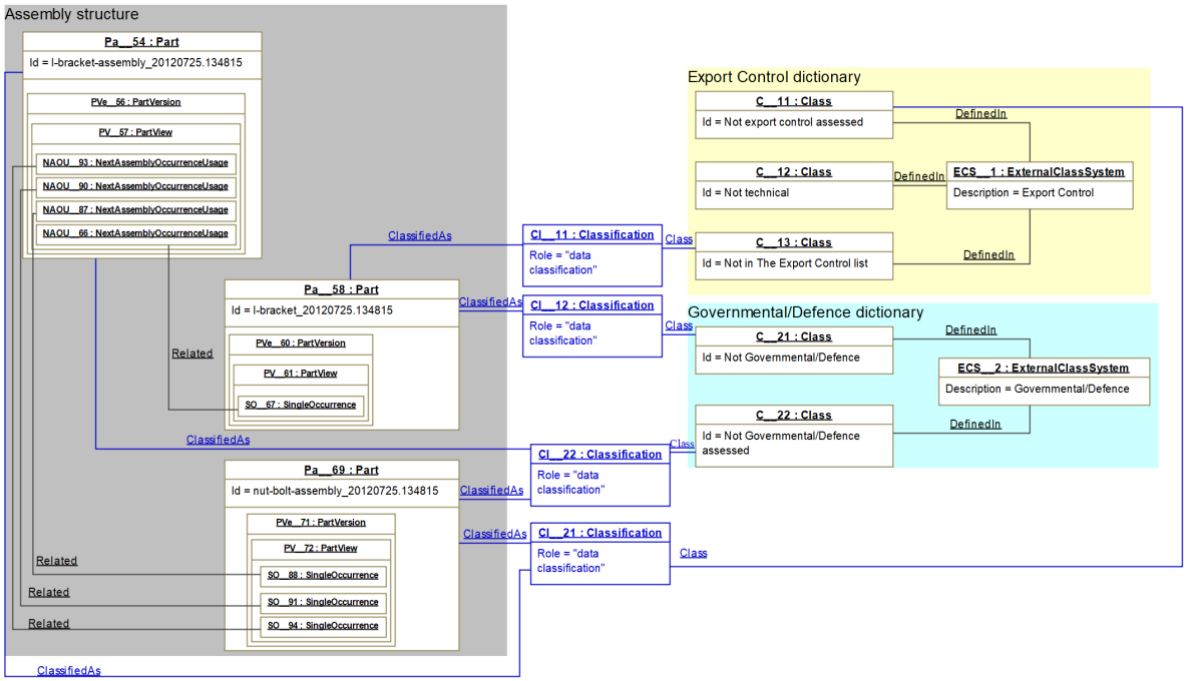
- Standardized national or international regulatory dictionaries (e.g., classification codes, such as ECCN);
- Confidentiality level classes (e.g., not restricted, official sensitive, secret, etc.);
- Commercial Marking (not restricted or company in strict confidence);
- Other company-specific classifications (e.g.: commercial marking, required personnel qualification, etc.);
- Country, organization, and person CaveAt (data access restriction);
- Export license relevance (“is a license applied?”), that shall be consistent with the export licenses;
- Assignments to parts, documents including CAD documents, and product classes.

Example: The figure below shows product structure elements that correspond to a 3D mock-up.



The diagram below highlights:

- A classification dictionary containing multiple security classes;
- Assignments of these classes to different product elements coming from the product structure;
- The ability to apply classification at various levels of the structure, ensuring that (sensitive) data is properly marked and controlled.



2) Export License (see example diagram: Export Control):
Export licenses are official documents that specify who, when and where some information of the assemblies, parts, configuration/change objects, documents including CAD, etc., is authorized to be read and used, based on authority agreements. They have the following attributes:

- A name and an identifier;
- An authorizing country, organization and/or person;
- One or multiple authorized countries, organizations and/or persons;
- A validity timescale: start date of validity, end date of validity;
- A validity status: active, inactive;
- The reference to the product structure element to which it applies.

Example: The diagram illustrates the concept of export licenses applied to product data. It shows:

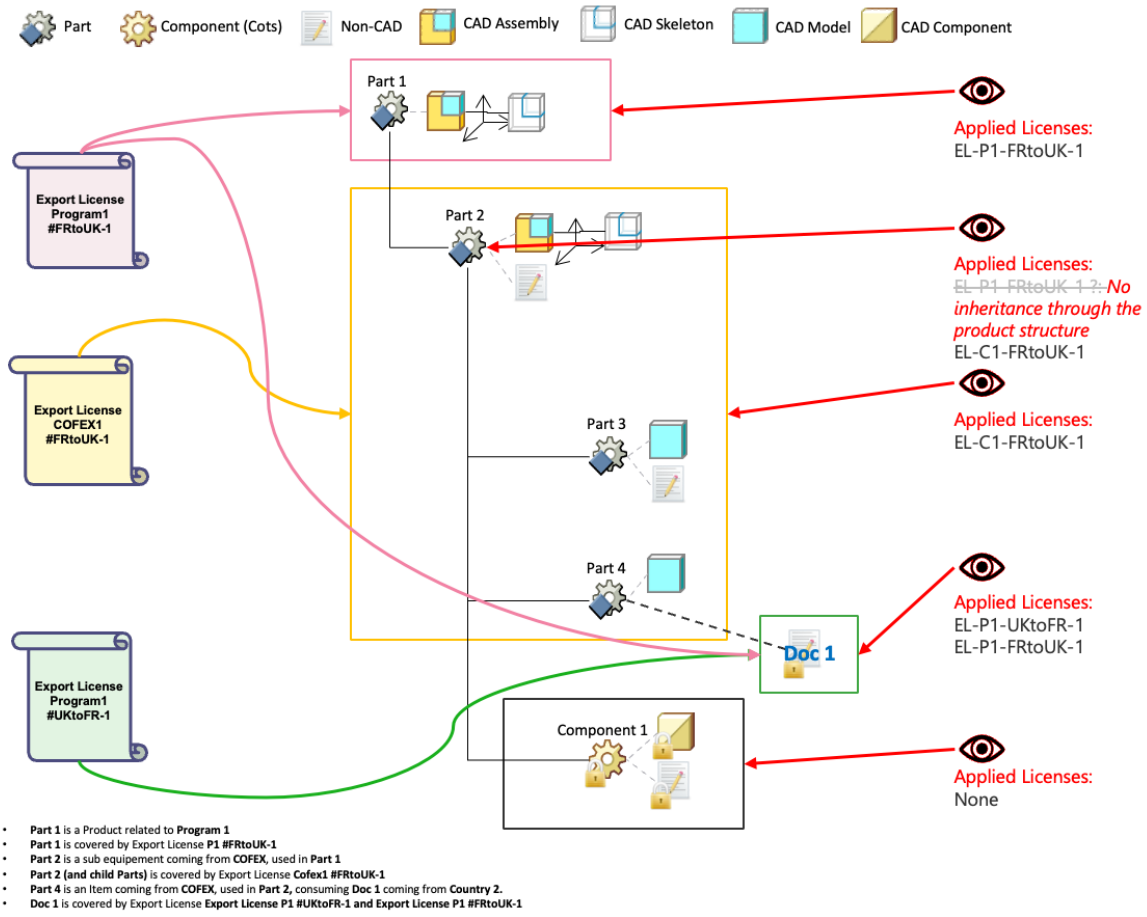
- Export licenses objects with attributes such as license ID, authorized countries, and validity dates;
- Product structure with parts, components, CAD model, etc.;
- The license assigned to these specific product elements or group of them;

– Example of the status of the license applied to some of the elements.

Id	123414 / EL-P1-FRtoUK-1
Name	876890 / Container P1-FR
StartDate	2025/01/01
EndDate	2026/08/01
Status	Active
Authorizing Org	NATCO FR
Authorized Org	NATCO UK
Applies To	Part 1 and linked elements

Id	EL-C1-FRtoUK-1
Name	... Container P2-FR
StartDate	2025/01/01
EndDate	2026/08/01
Status	Active
Authorizing Org	NATCO FR
Authorized Org	NATCO UK
Applies To	All elements in COFEX container

Id	EL-P1-UKtoFR-1
Name	Container P1-UK
StartDate	2025/01/01
EndDate	2026/08/01
Status	Active
Authorizing Org	NATCO UK
Authorized Org	NATCO FR
Applies To	Doc 1



Postconditions

The supplier can interpret and apply the Security Classification and export license information to ensure compliance during design, manufacturing, and collaboration activities.

Benefits

- Access to data is controlled according to the defined classifications and licenses;
- Enables compliant data exchange across organizational and national boundaries;
- Provides a structured approach to manage regulatory constraints during product lifecycle collaboration.

Out of Scope

- Copyright and intellectual property protection
- Encryption and cyber security