Material Declarations to Collect Supplier Data for the EU SCIP Database

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Agenda

- Introduction
- EU SCIP Database and Requirements
- Collecting Supply Chain Data
- Material Declaration Standards to Support SCIP Submissions
  - IEC 62474
  - IPC-1754
- Mapping Supply Chain Data to the SCIP database
- Summary

About ECD Compliance

- Consulting and technical support on global environmental regulations
  - Global regulatory requirements/changes
  - Impact on products and markets
  - Education and training seminars
  - Development of compliance programs
- Environmental standards
  - Representation, consulting, and implementation of standards
  - IEC/TC111 – Environmental Standardization
    - IEC 62474, IEC 63000
  - IPC E-31 Supplier Declaration Subcommittee (IPC-175x standards)
  - ISO/IEC JTC1/SC39 – Sustainability, IT & Data Centres
  - Ecolabel standards: IEEE 1680.X, NSF, UL
  - ISO/TC207 – Circular Economy
- Eco-labels and sustainability programs
  - EPEAT and Voluntary programs
- Environmentally Conscious Design (ECD) and Circular Economy
  - Ecodesign , energy efficiency, LCA

EU Substances of Concern in Products (SCIP) Database

- Directive (EU) 2018/851 revises the EU Waste Framework Directive (WFD)
  - ECHA mandate to develop and operate the database
  - Members States to transpose the Directive into regulations that require manufacturers, importers, and distributors (the duty holders) to submit information about products into the database.
- Reporting obligations take effect on January 5, 2021 (based on timeline in WFD)
  - Information needs to be submitted into SCIP database for products that are:
    - placed on the EU market and
    - if they contain one or more REACH Candidate List substance(s) as per REACH Article 33.

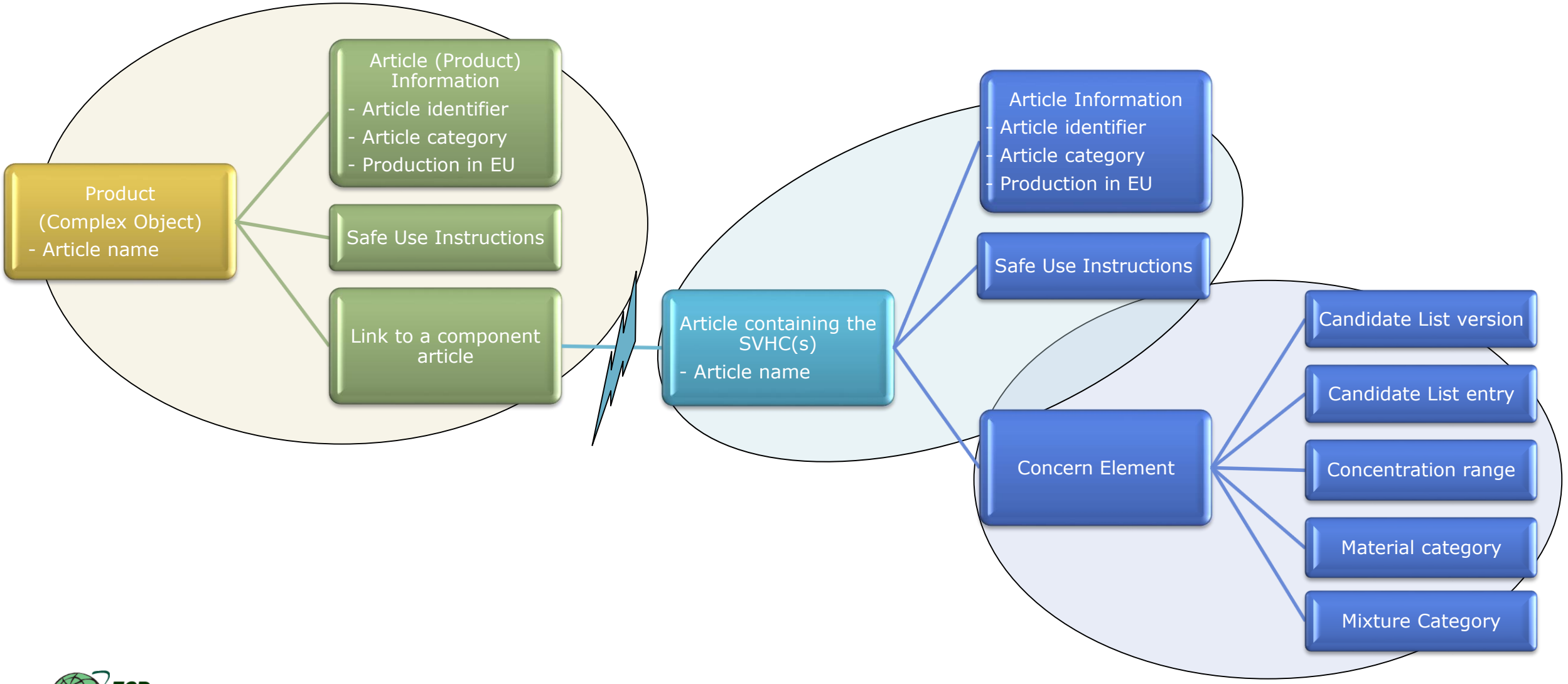
Directive (EU) 2018/851, Article 9 (Prevention of Waste)
1. Member States shall take measures to prevent waste generation. Those measures shall, at least:
(i) promote the reduction of the content of hazardous substances in materials and products, without prejudice to harmonised legal requirements concerning those materials and products laid down at Union level, and ensure that any supplier of an article as defined in point 33 of Article 3 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council (*) provides the information pursuant to Article 33(1) of that Regulation to the European Chemicals Agency as from 5 January 2021;

What Information Needs to be Submitted into SCIP?

- On September 9, 2019, ECHA published the "Detailed information requirements for the SCIP Database"
- What information needs to be provided:
  - administrative contact details
  - information that allows the identification of the article;
    - Article name, Primary Article Identifier (EAN, GPC, ECHA Article ID, part number, etc.), Article Category (CN code), Production in EU
  - "Concern Element"
    - the name, concentration range and location of the Candidate List substance(s) present in that article; and
  - other information to allow the safe use of the article, including as waste.

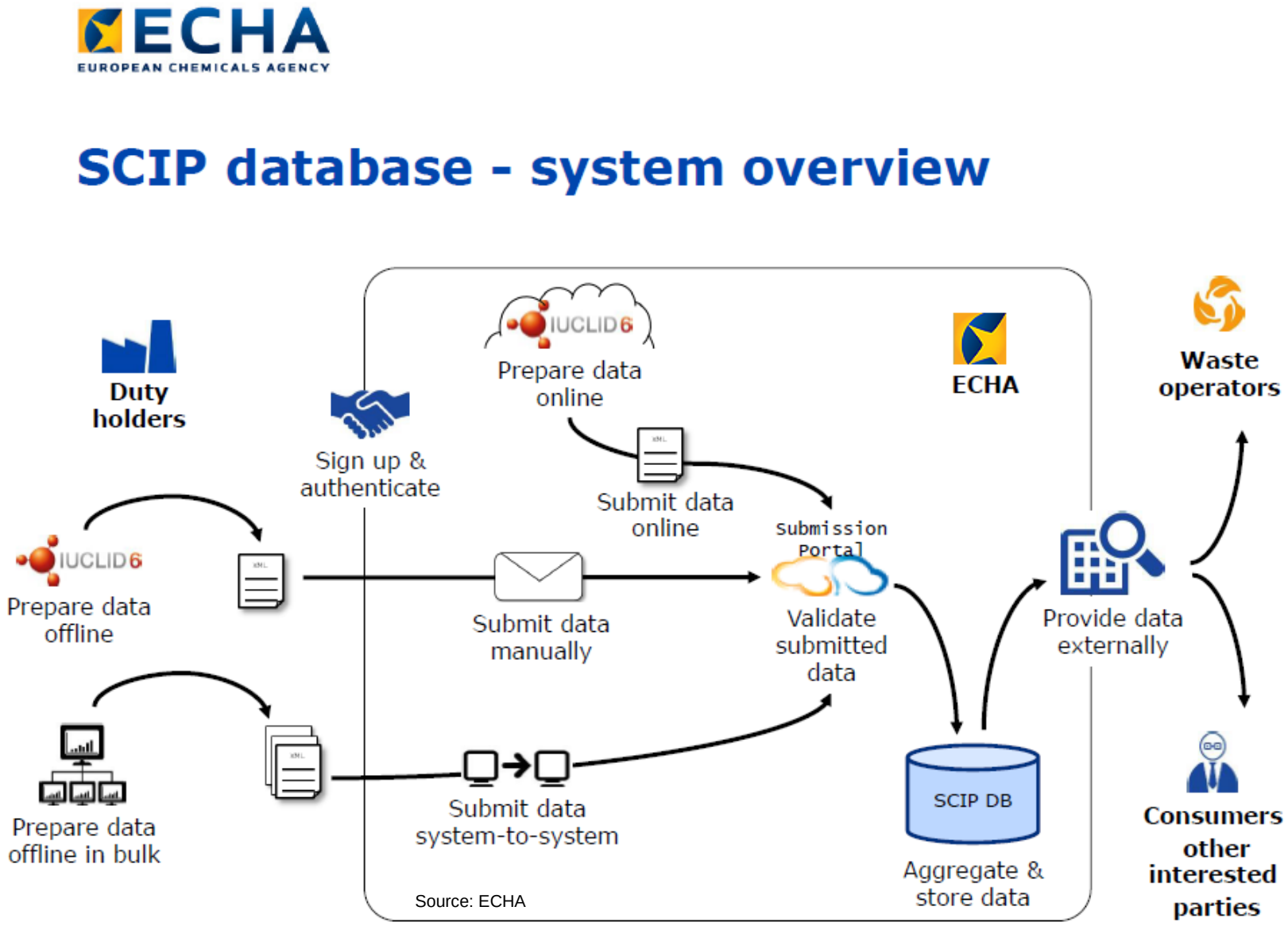
- Other Optional information is recommended:
  - Picture, characteristics (weight, size, colour, etc.), Dissembling instructions,
  - If the SVHC is a substance group, then identification of specific substance

Simplified Minimum Information Requirements?



SCIP Submission

- ECHA described three ways to submit into SCIP Database
  - web-based user interface;
  - offline using the ECHA IUCLID tool;
  - system to system for bulk uploads.



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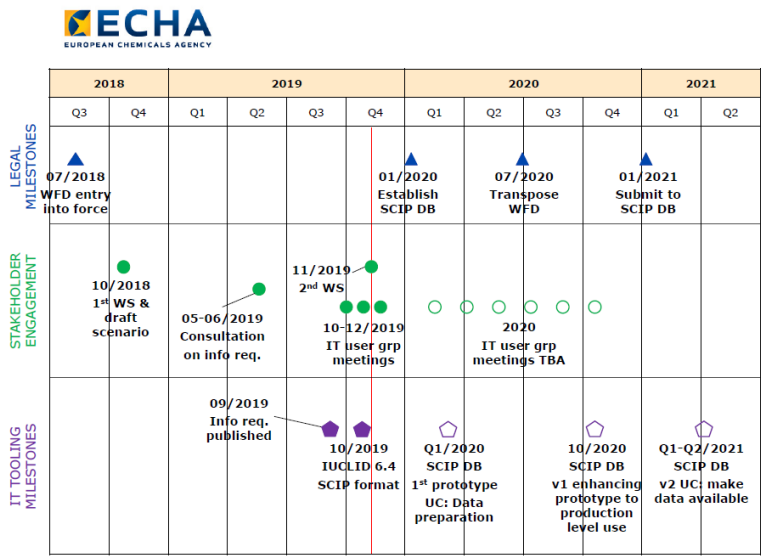
Timeline for SCIP Database Deployment

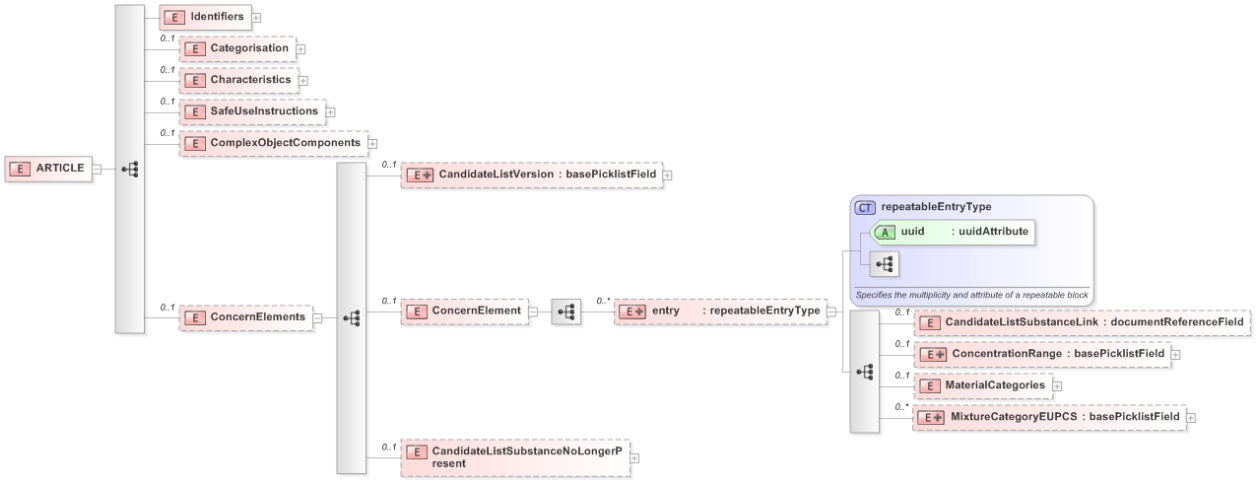
- ECHA schedule:
  - Prototype database available for testing in Q1 2020 (end of January 2020?)
  - Production database (SCIP v1) available for duty holders to start fulfilling their submission obligations in October 2020.
  - SCIP v2 with improved functionality for consumers and recyclers in Q2 2021



Source: ECHA

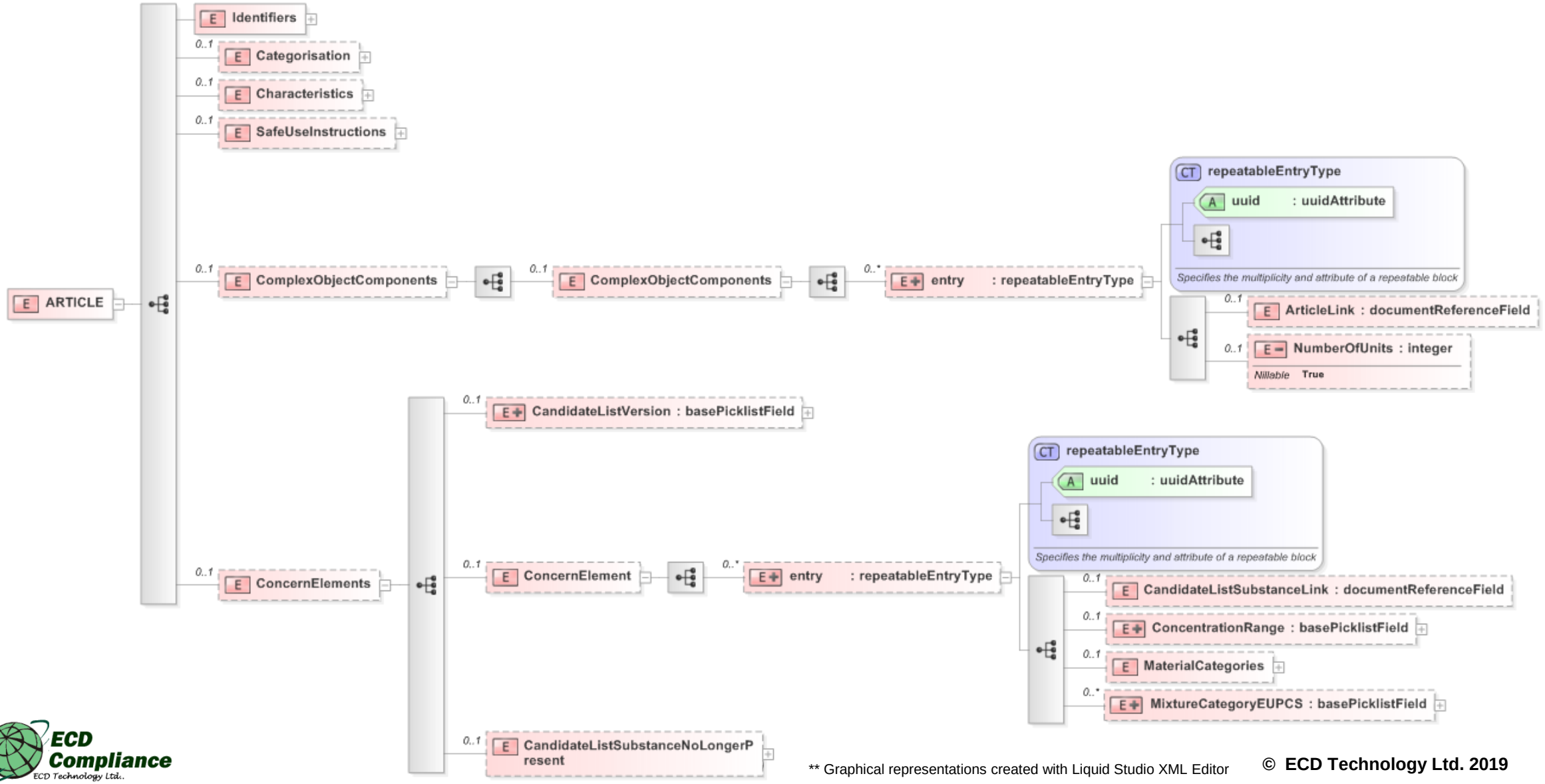
Data Format and its Importance to Manufacturers

- SCIP data format is published as part of the ECHA IUCLID 6.4 software release
- Implemented as a series of
  - XML schemas
  - picklists (drop down lists)



- Data format provides insight into what information is needed
  - Single value or multiple data fields (e.g. data type and a data value).
  - Declaring data type may needed by downstream manufacturers to interpret the data value

ARTICLE schema in IUCLID

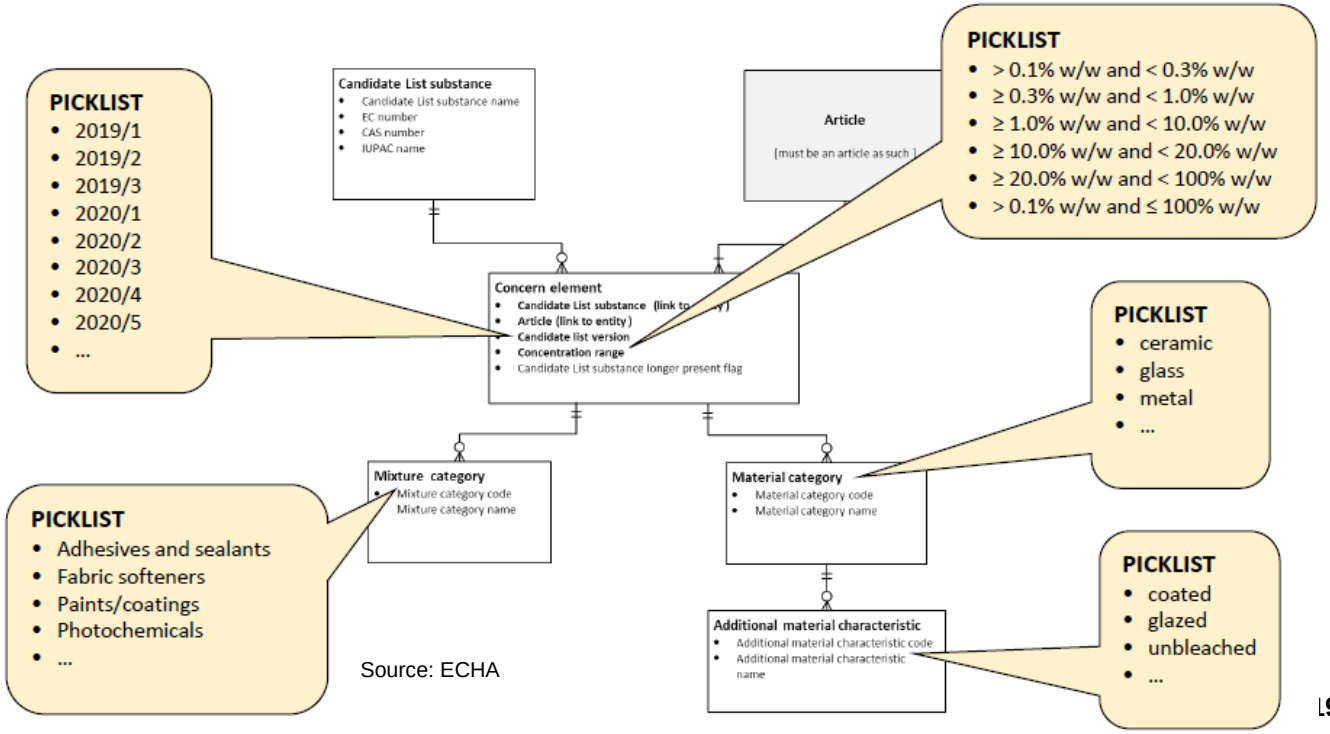


** Graphical representations created with Liquid Studio XML Editor

SCIP Picklists – ECHA Nov 12 Workshop

- Many of the SCIP Data Fields are based on Picklists
  - This improves data quality but means that manufacturers and importers will need to map data from suppliers to one of the specific picklist entries provided by ECHA.

Example: Format defines allowed values



Source: ECHA

SCIP Picklists

- Each picklist includes a numerical ID and a text description
  - It's the numerical ID that is captured in SCIP
- Data fields using picklists include:
  - Primary article identifier (Type) (e.g. EAN, GPC, GTIN, with option to specify other)
  - Other article identifier (Type) (e.g. EAN, GPC, GTIN, with option to specify other)
  - other names (Type) (e.g. brand, model, type, with option to specify other)
  - Article categories (i.e. CN codes)
  - Produced in European Union
  - Unit of measure for characteristics
  - Candidate List Version
  - Concentration range
  - Material category, Additional material characteristics (properties)
  - Mixture category
  - Language of disassembly instructions
- Some picklists have many entries
  - Software will need to provide a systemic method for selection

	A	B
1		Name type
2	Identifier	Text
3	66247	brand
4	66248	model
5	66249	type
6	1342	other
7		Primary article identifier type, Article identifier type
8	Identifier	Text
9	66297	ECHA Article ID
10	66298	GTIN (Global Trade Item Number)
11	66299	EAN (European Article Number)
12	66300	GPC (Universal Product Code)
13	66301	JAN (Japanese Article Number)
14	66302	UDI (Unique Device Identification)
15	66303	ISBN (International Standard Book Number)
16	66304	catalogue number
17	66305	batch number
18	66306	part number
19	66307	item number
20	66308	reference number
21	66309	serial number
22	1342	other:
23		Production in European Union
24	Identifier	Text
25	2480	Yes
26	2158	No
27	66278	Unwilling to disclose
28		Height, Length, Width, Diameter

Source: ECHA

	A	B
1	Identifier	Text
2	100000	59069910 - Textiles and textile articles > Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use > Rubberised textile fabrics, other than those of heading5902 > Other > Other > Fabrics mentioned in note 4(c) to this chapter
3	100001	59069990 - Textiles and textile articles > Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use > Rubberised textile fabrics, other than those of heading5902 > Other > Other > Other
4	100002	5906999010 - Textiles and textile articles > Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use > Rubberised textile fabrics, other than those of heading5902 > Other > Other > Other > Rubberised textile fabric, consisting of warp yarns of polyamide-6,6and weft yarns of polyamide-6,6, polyurethane and a copolymer of terephthalic acid, p-phenylenediamine and 3,4'-oxybis(phenyleneamine)
		5906999020 - Textiles and textile articles > Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use > Rubberised textile fabrics, other than those of heading5902 >

Source: ECHA

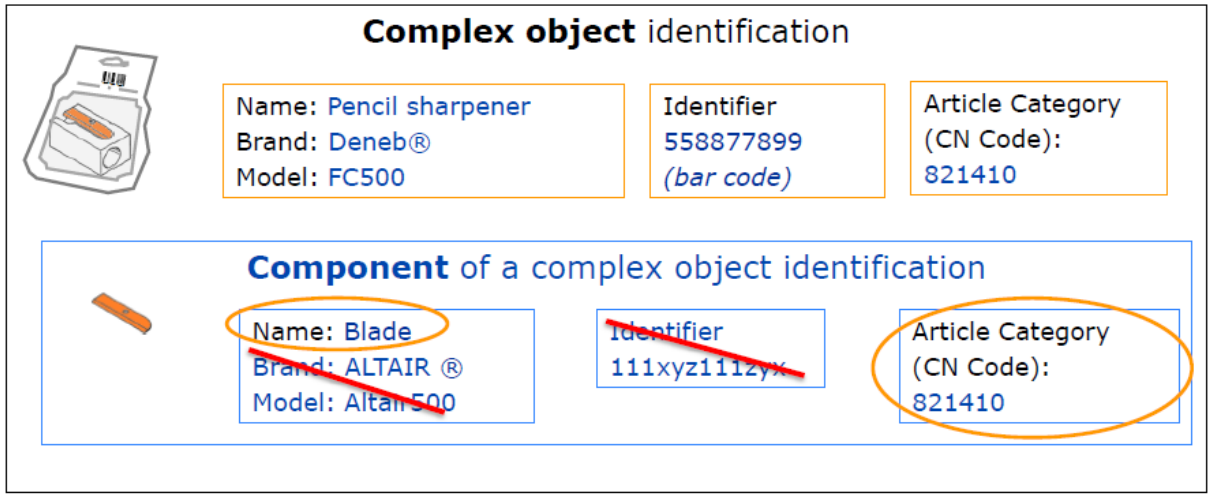
Protecting Supply Chain Confidentiality

- When a submitter links to a supplier article already in SCIP, certain data fields (that may identify the supplier) will not be visible to users

ECHA
EUROPEAN CHEMICALS AGENCY

SCIP & CBI principles (II)

Principle 2 (Corollary): Specific names (e.g. brand, model) or identifiers of components will not be disclosed.



Responsibility of supplier to not identify themselves or put confidential information in the data fields that are visible.

Source: ECHA

Moving Forward – Collecting Supply Chain Data

- Need to consider how information will be compiled for each SCIP data field
  - Internal Information
  - Supply Chain Data
  - Engineering Judgement

- Product level information should be available if submission is by manufacturer
  - Importers will need to obtain information from the manufacturer
- Information on the first article directly containing the SVHC
  - Some information is not part of normal supply chain communication
  - Many suppliers have been providing poor quality REACH information
    - This will cause problems for SCIP submissions
    - For many organizations, environmental compliance is still an after thought with no proactive effort
- Organizations that have been passive in obtaining SVHC information will need to actively work with suppliers
  - Education and training of suppliers may be necessary

What Is a Substance and Material Declaration?

Chemical Manufacturer → Material Supplier → Component Manufacturer → Assembly Manufacturer → Final Product Manufacturer

Information flows down the manufacturing chain:

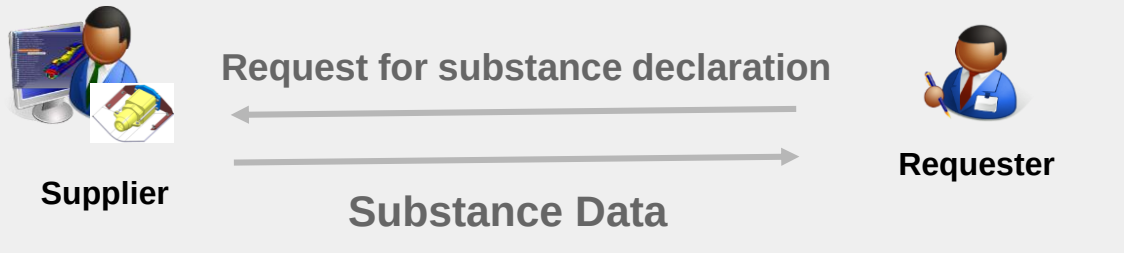
- Substance content
- Materials
- Parts
- Compliance data (potentially)

Data is Mapped to SCIP Format

Final Product Manufacturer ⇄ SCIP

For each transaction in the supply chain:

- A downstream manufacturer (requester) may request material declaration information from their upstream suppliers
- The suppliers provide the declaration to the requester



Material Declaration Standards (with near-term SCIP Support)

- The IEC 62474 and IPC-1754 Material Declaration Standards were developed specifically to support a variety of EU REACH Requirements.
  - Already support 95% of the mandatory SCIP Data requirements
  - Minor updates to support unique requirements for SCIP are underway (backward compatible)
  - Expected publication with additional SCIP support is within a couple months

- IEC 62474 Material declaration for products of and for the electrotechnical industry
  - Originally published in 2012
  - Major revision IEC 62474:2018 was published November 2018
    - Includes additional features and harmonization requests from industry
    - Updated regulatory support
  - Continuous maintenance of Data Exchange Format to add extra SCIP fields (Forecast Feb 2020)
    - no changes to IEC 62474 document

- IPC-1754 Materials and Substances Declaration for Aerospace and Defense and Other Industries
  - Published April 2018; Amendment WAM1 corrected publication issues (March 2019)
  - Amendment 2 in development for past year based on initial feedback (Forecast March 2020)
    - Perfect timing for implementing extra SCIP fields

IEC 62474 Overview and Update for SCIP

IEC 62474 - Material Declaration

- International standard for material declaration
  - Recognized by World Trade Organization (WTO) as an International Standard
- Adopted as EU Standard (EN 62474) and National Standard in multiple countries.

- Key Objectives
  - Flexible material declaration (Declaration for Compliance and/or Composition Declaration)
  - Supports regulations around the globe - enough data to assess conformity to regulations
  - Leverages industry practices and supports other standards
    - Used by IEC 63000 and EU Circular Economy Standards (e.g. EN 45552)
  - Continuous maintenance process for fast updates to market needs

- IEC 62474 AM1 will clarify capability to use other DSLs – approved by NCs
  - Already used by several industries other than EEE

IEC 62474 – What's Included?

- IEC 62474 is implemented in two parts
  - IEC 62474 document (Pdf file)
  - Online database containing specifications that need regular updates (http://std.iec.ch/iec62474)

- Declaration Procedure and Rules (in the IEC 62474 document)
- Lists (IEC 62474 online database)
  - Declarable Substance List (DSL) with reference substances
    - Declarable Substances and Declarable Substance Groups relevant to Electrotechnical products
    - Reference Substances List for the Declarable Substance Groups
  - Material Class List (MCL)
    - Material classifications – supports Environmentally Conscious Design (LCA and recycling streams)
  - Exemption Lists (EL)
    - Regulatory exemptions list for materials declaration and regulatory references
  - Supplementary Lists
    - EU REACH SVHCs that are screened out
- Data Exchange Format (DXF) (IEC 62474 online database)
  - XML schema and Developer's table -- updated April 2019 to implement IEC 62474:2018

Updates to IEC 62474 Database

- The IEC 62474 Validation Team (VT) maintains the information on the IEC 62474 Database
  - Update one to three times per year (as required)
  - Proactive screening of SVHCs (REACH Candidate List) for use in EEE
  - VT generally releases DSL update on same day as ECHA updates Candidate List
- Current Database Version:
  - Declarable Substance List: D18.00
  - Material Class List: M2.00
  - Exemption Lists: EL1.0
  - Data Exchange Format: X8.00

- In March 2019, the IEC Central Office updated the database software to improve functionality, features and usability

Data Exchange Format

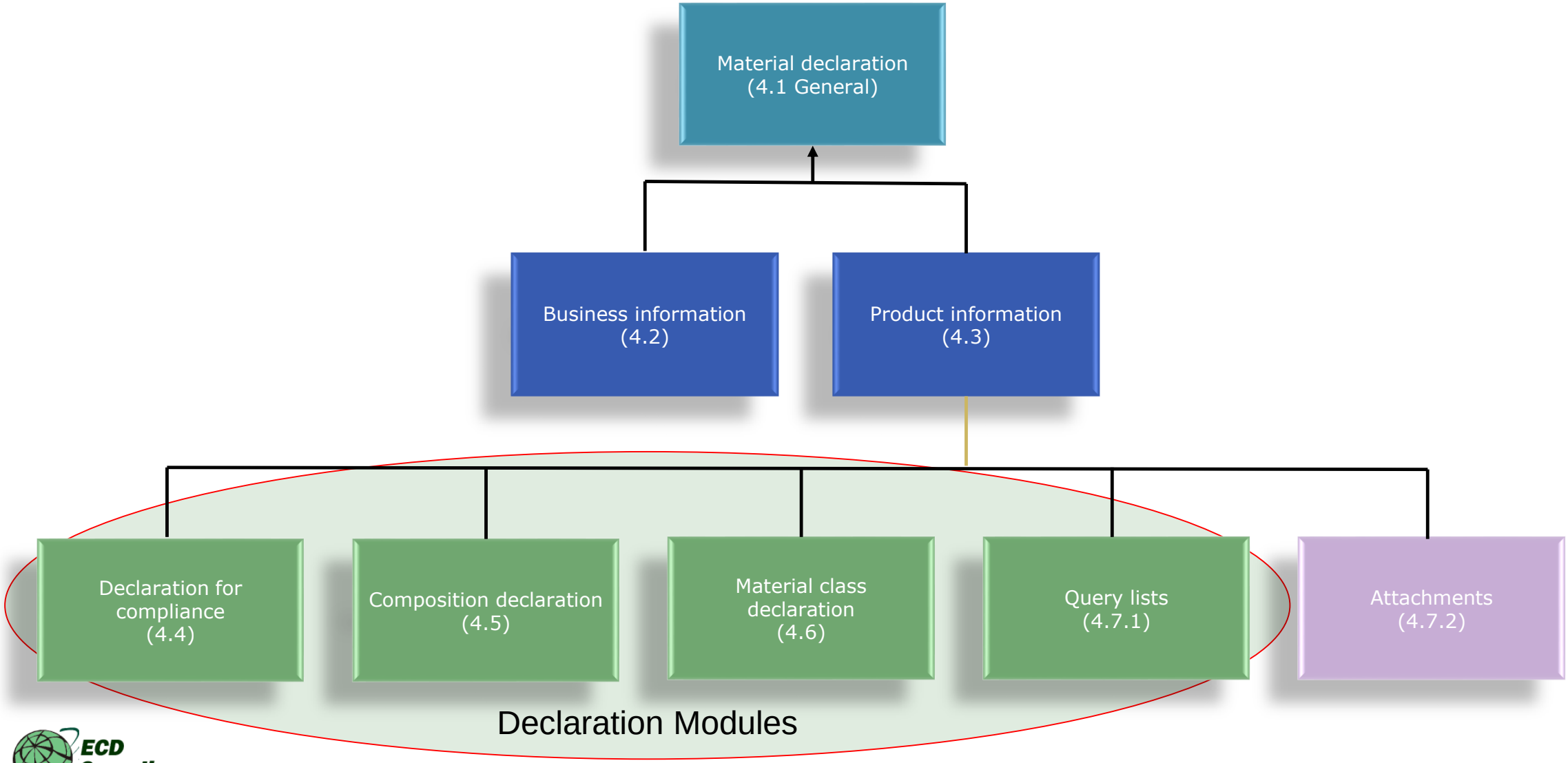
- Material Declaration is exchanged as an XML file
  - Text-based file format intended for computer to computer data transfer.
  - Shall meet the requirements of the following three specifications

- The IEC 62474 document (pdf file)
  - Specifies what information needs to be included in a declaration

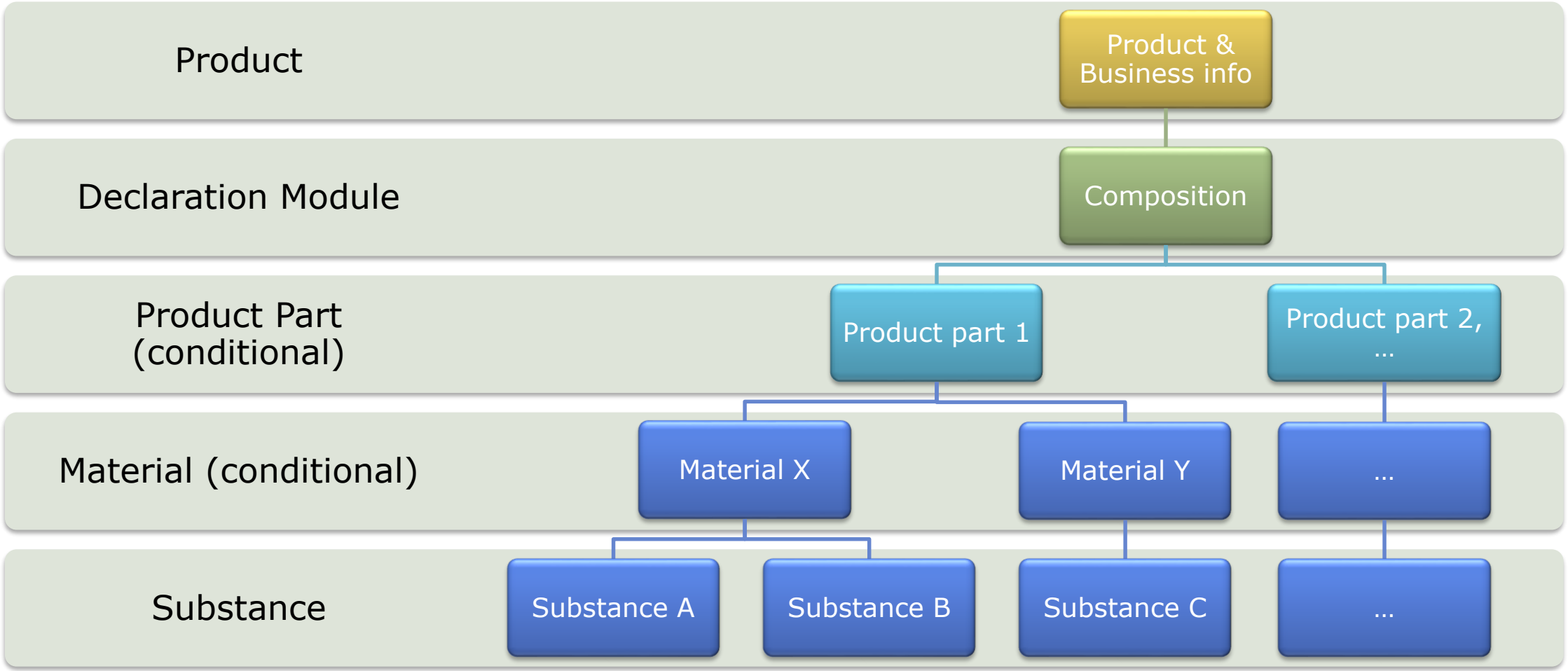
- Developer's Table
  - a definition of data fields and important supplementary requirements
  - Data format and obligation (mandatory/conditional/optional)

- XML schema
  - Specifies how the information is structured and formatted

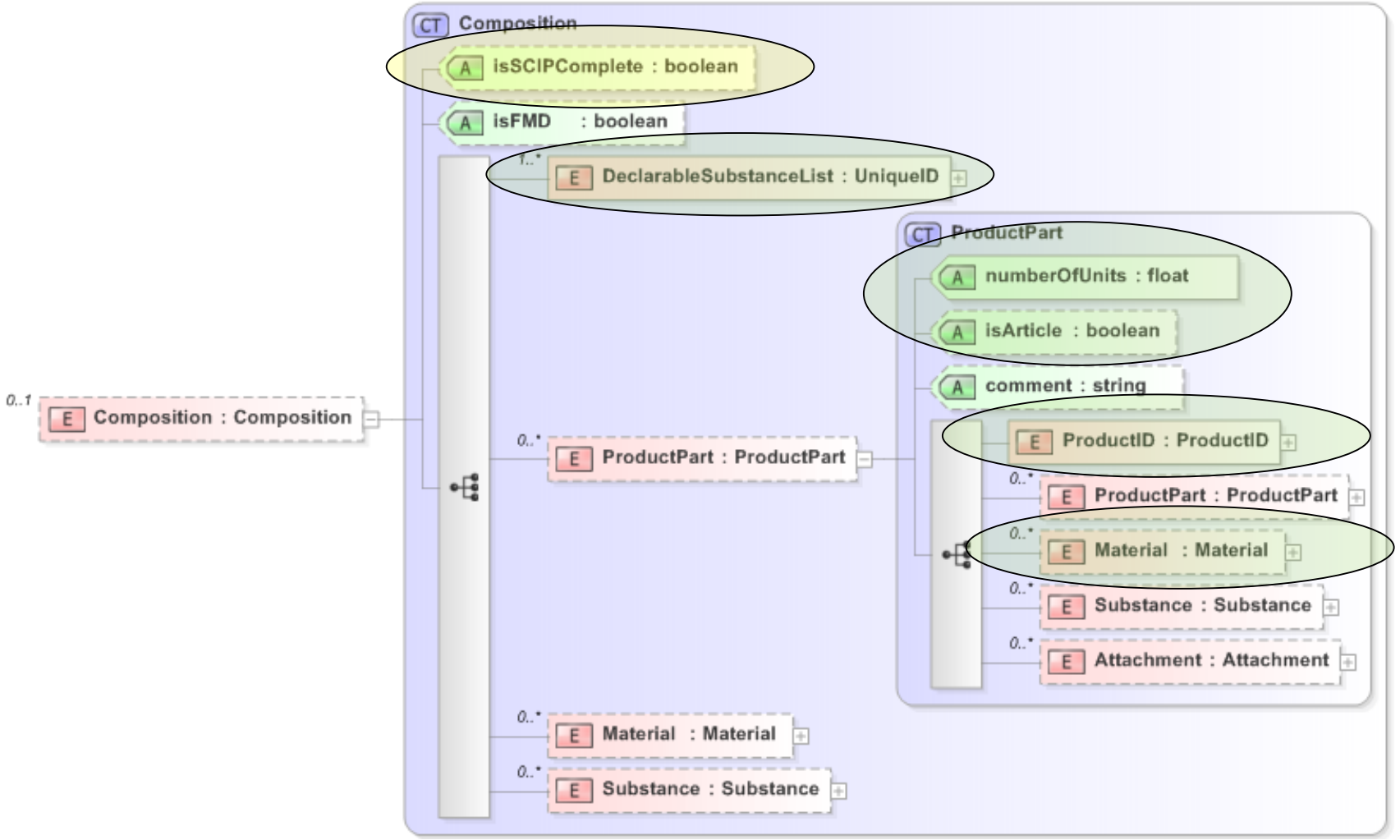
IEC 62474 Data Exchange Declaration Modules



Structure of Composition Declaration

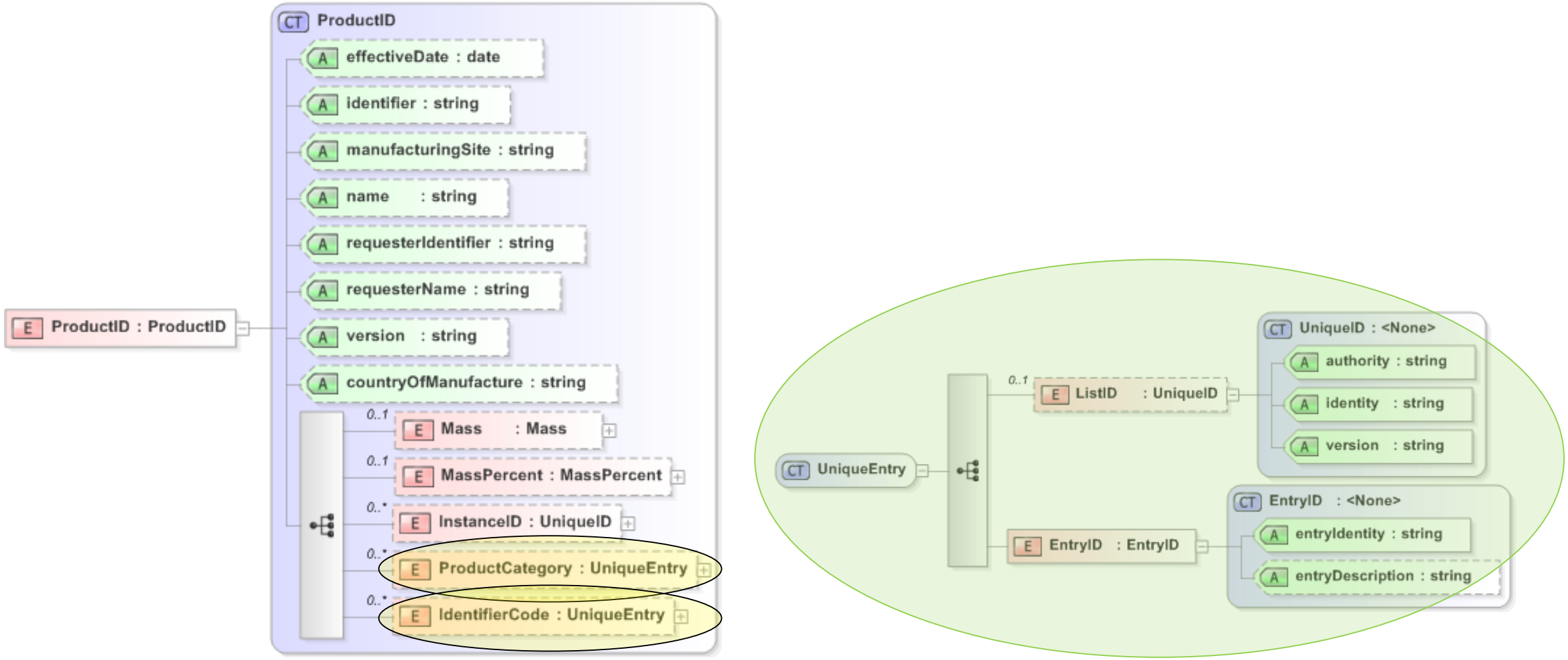


Composition Declaration for SCIP



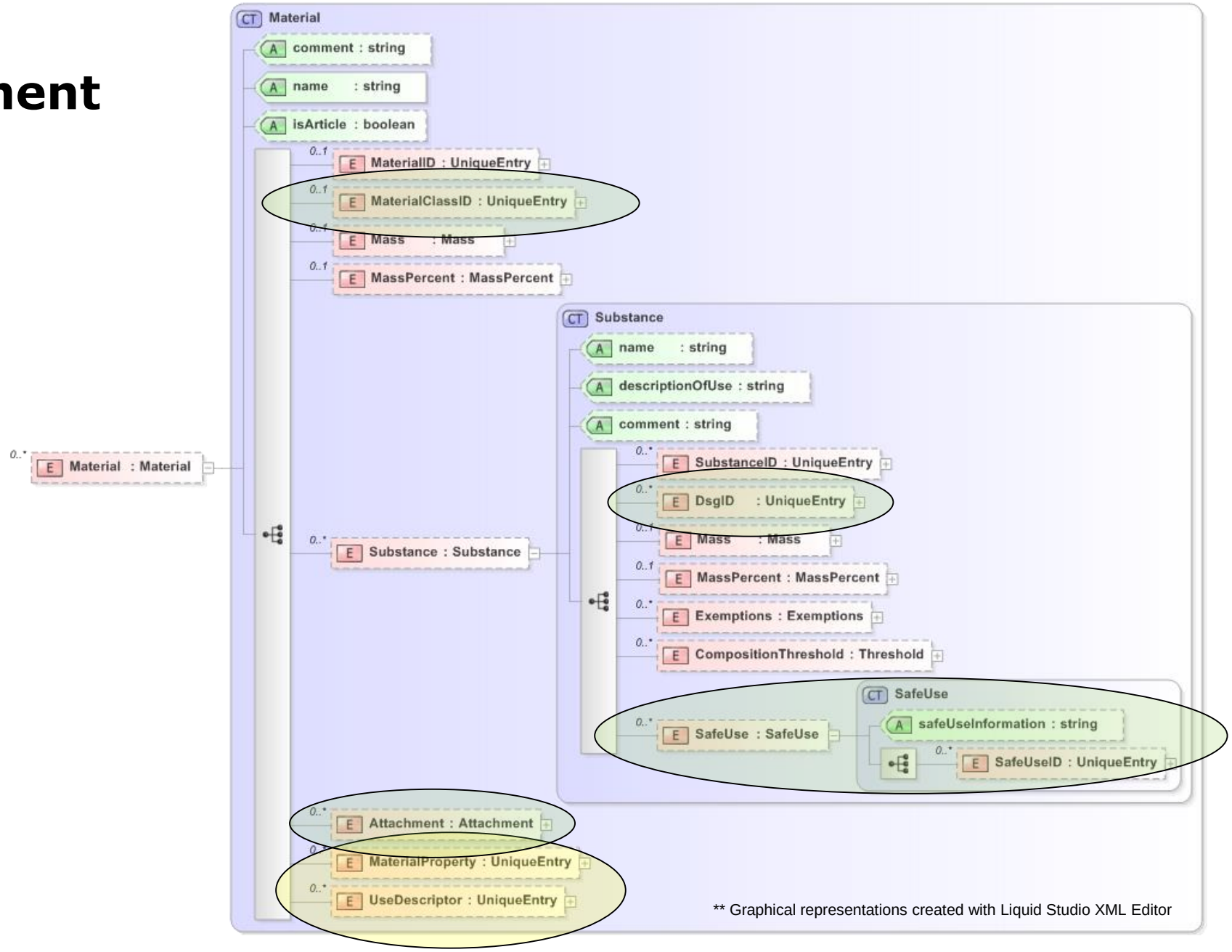
** Graphical representations created with Liquid Studio XML Editor

ProductID (Product and ProductPart)

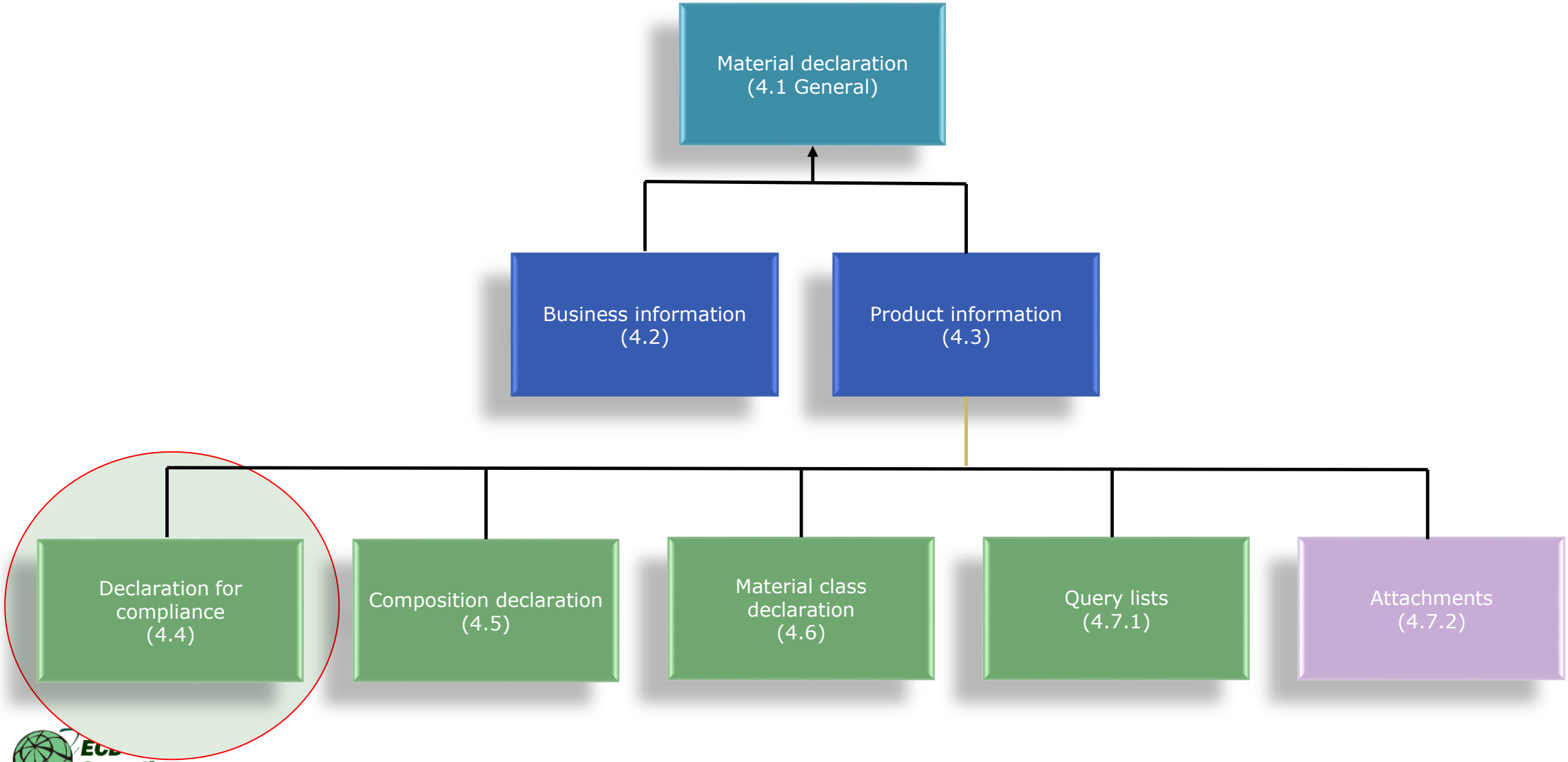


** Graphical representations created with Liquid Studio XML Editor

Material Element

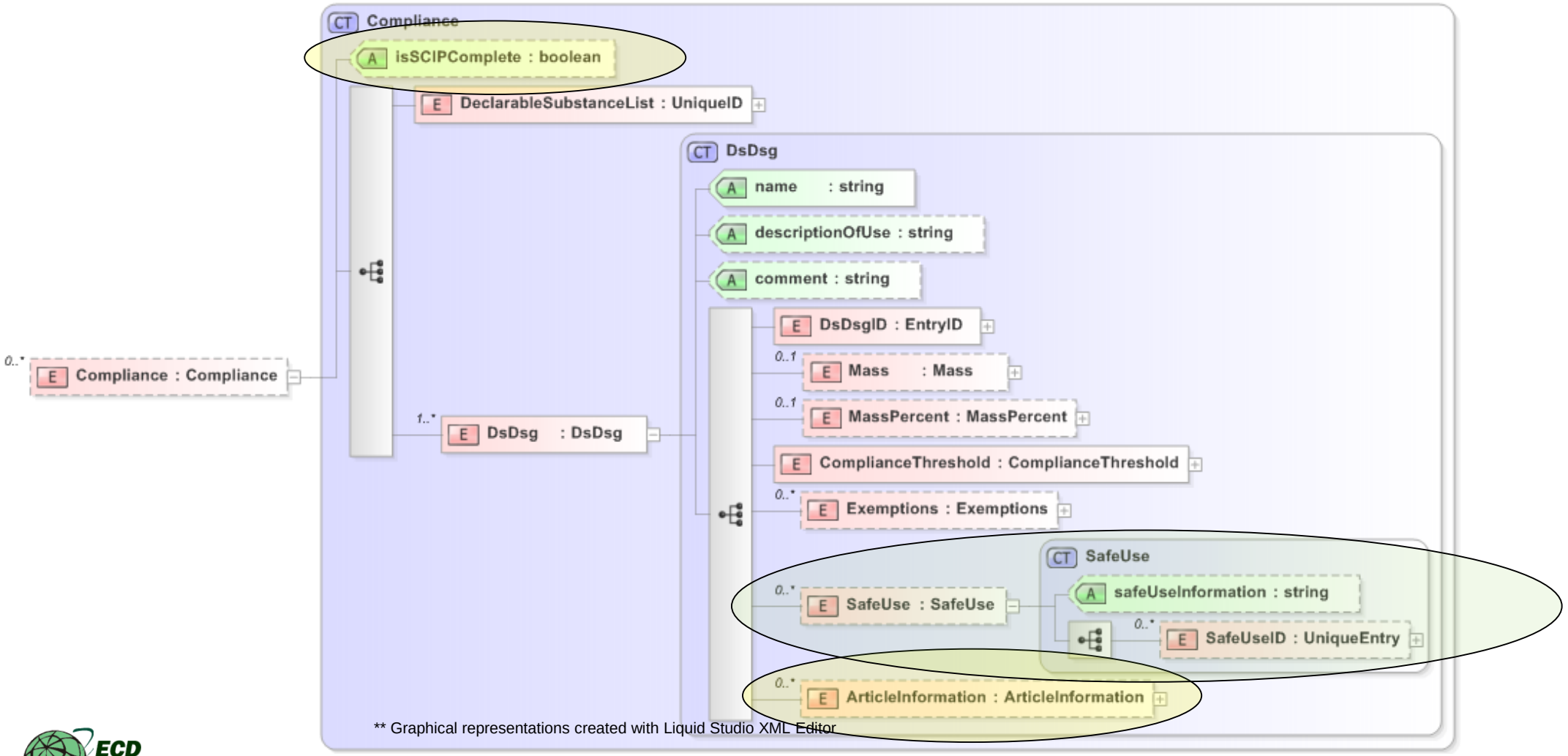


IEC 62474 Declaration for Compliance



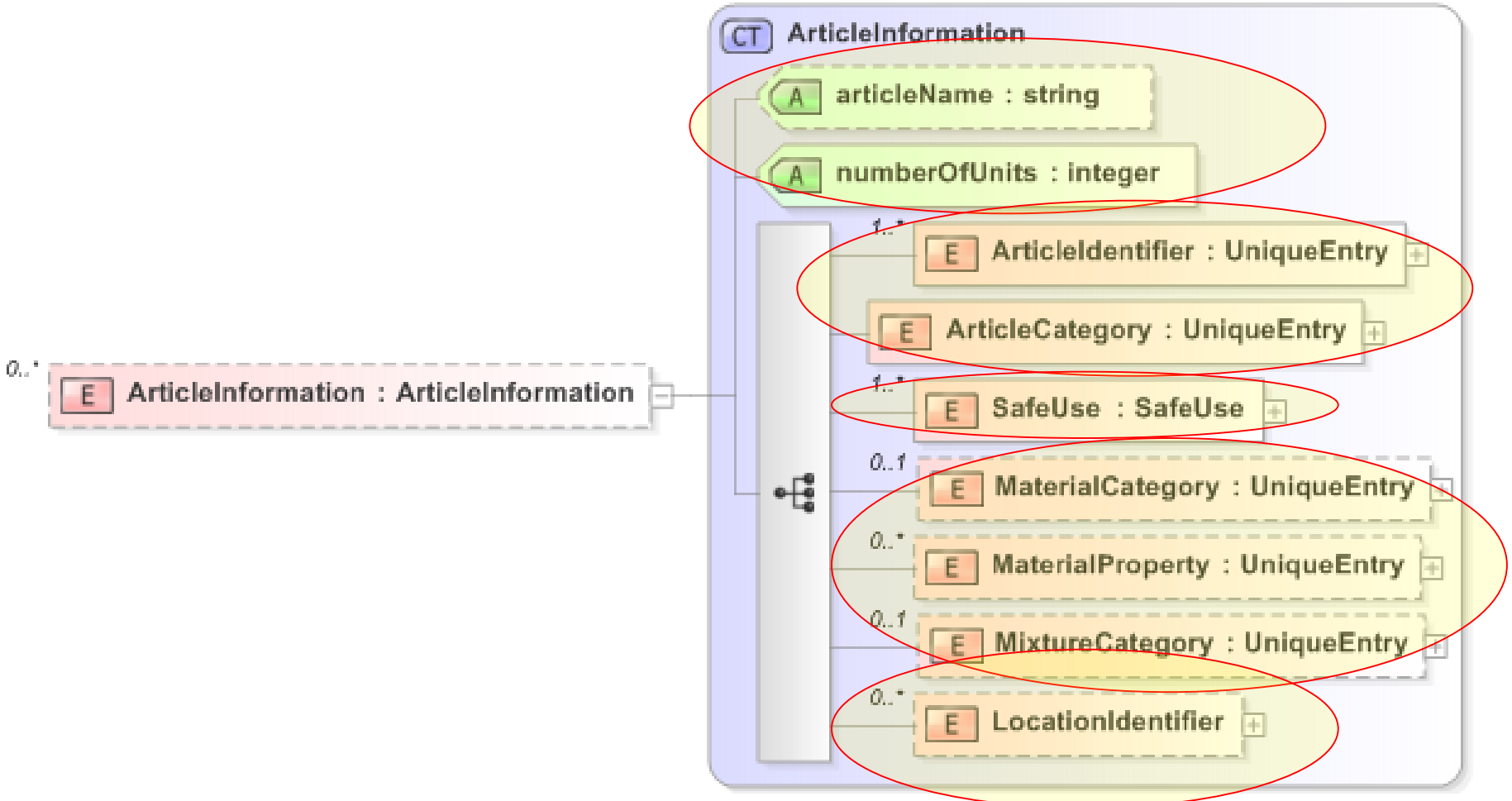
Declaration for Compliance Module

* All additions for SCIP are preliminary and are being finalized by IEC VT62474



** Graphical representations created with Liquid Studio XML Editor

Article Information in a Declaration for Compliance



** Graphical representations created with Liquid Studio XML Editor

IPC-1754 Overview and SCIP Support

What Is the IPC-1754 Standard?

- Title:
  - Materials and Substances Declaration for Aerospace and Defense and Other Industries
- Published: May 2018
  - Current Version: IPC-1754 WAM1 (April 2019)
- Objective
  - Designed to meet declaration needs that go beyond most other material declaration standards
    - needed by aerospace, defense and other industries
  - Developed by committee members of OEMs, suppliers, solutions providers from: Aerospace and Defense, Heavy Equipment, Electronics and Automotive
- IPC-1754 Standard consists of five (5) files:
  - Standards document (pdf) with the requirements and data model
  - Four XML Schemas
    - Main Schema file for declaration data exchange
    - Three schema files to specify: Declarable Substance Lists, Query Lists and Use Descriptor Lists

IPC-1754 Innovations (1)

- Support for an Industry Authority to specify key declaration requirements
- Declaration of substances used in manufacturing and maintenance processes (optional)
- Support for industries/organizations new to substance and material declarations.
  - Use of “unknown” in response to product statements or mass information.
- Use Descriptors
  - Identification of use of a substance, material or process
  - May be reported for substances in products and/or substances used in manufacturing processes

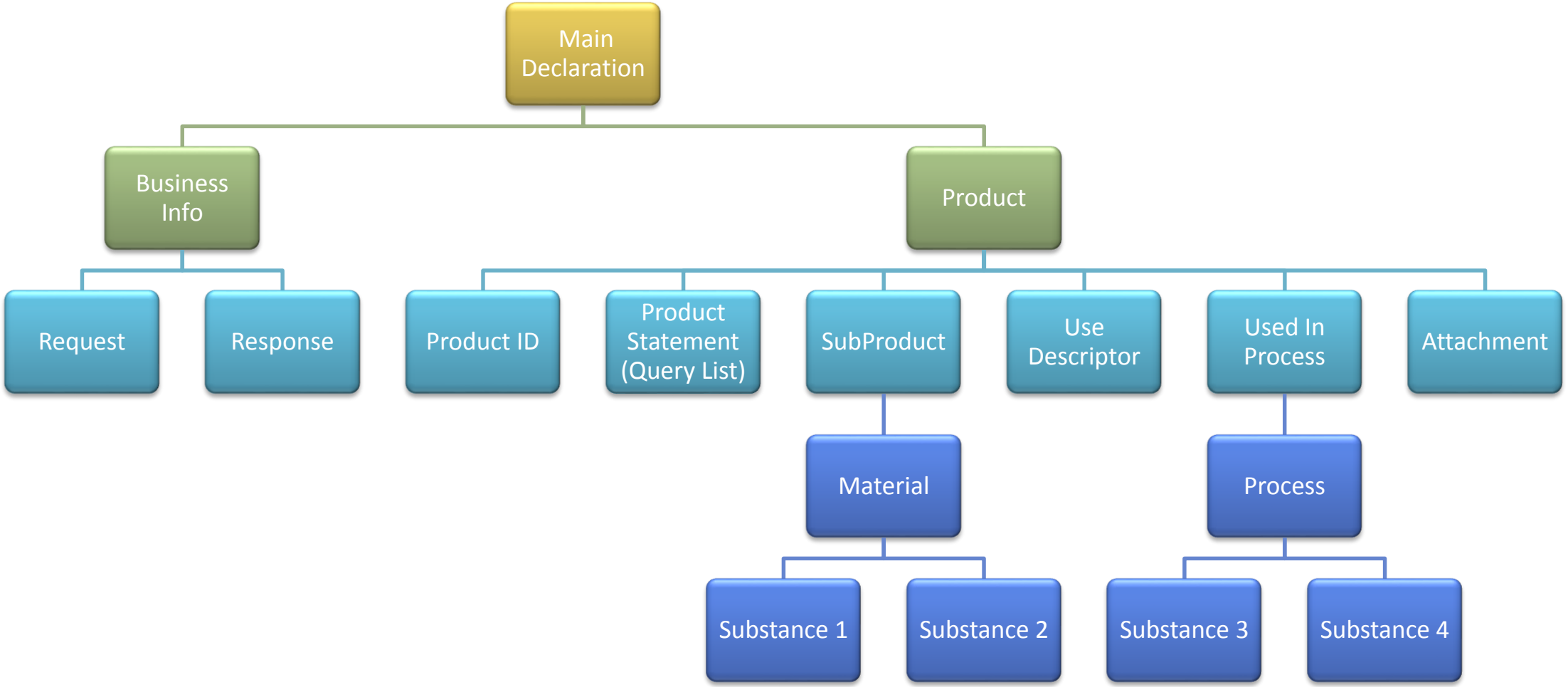
IPC-1754 Innovations (2)

- New indicators (flags)
  - isArticle
    - Supplier identifies whether the product or subproduct is an article.
  - isHomogeneous
    - Supplier identifies materials as homogeneous or non-homogeneous.
  - isFSD (Full Substance Declaration)
    - Supplier confirms a declaration has provided all substances that are constituent the product.
  - allMaterialDeclared
    - Allows the supplier to indicate that all of the materials in the product have been included.

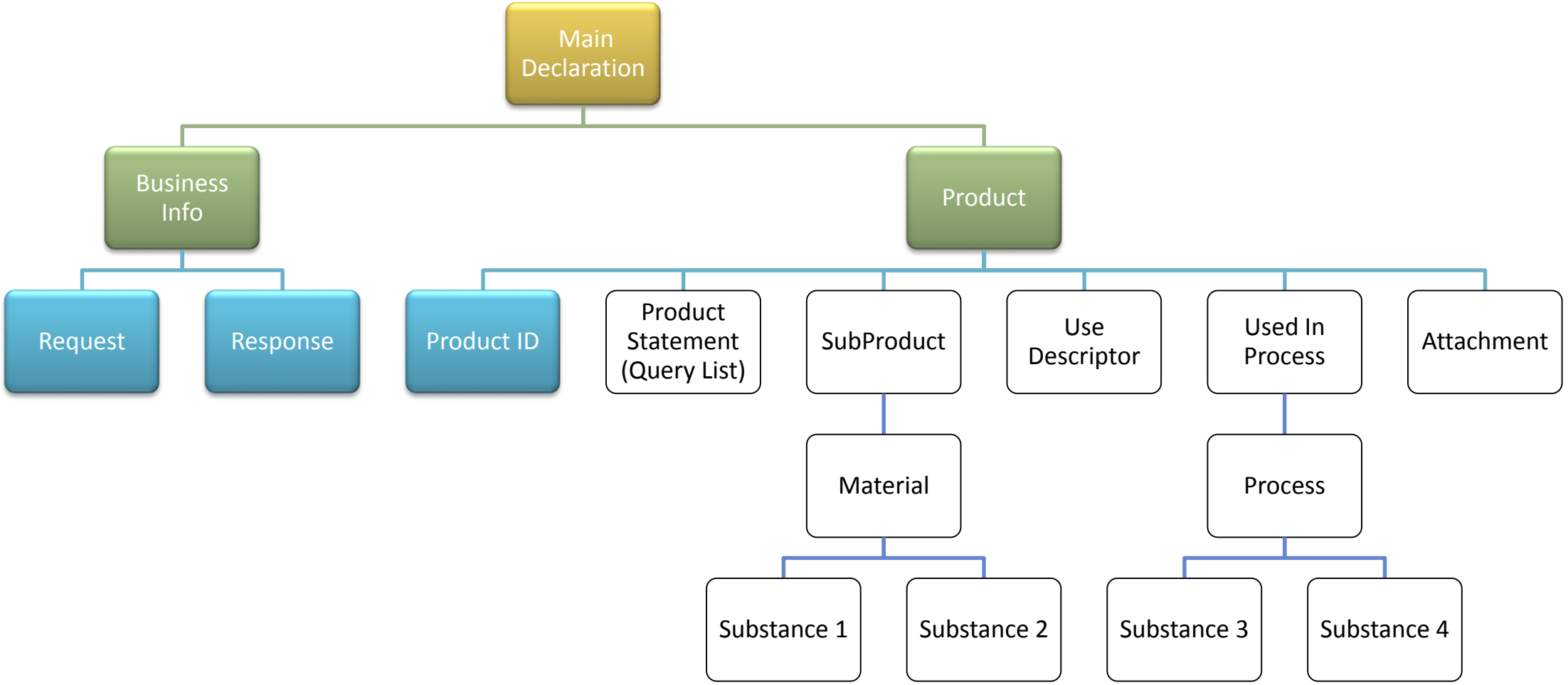
Format and Specification of Lists

- The standard specifies how an authority can create lists to be used for IPC-1754 declarations:
  - Declarable substances list (DSL)
    - Identifies substances and substance groups that a supplier is required to declare
  - Product statements that must be answered by the supplier
    - A typical statement is that a DSL substance is included in the product
    - Aerospace, Defense industry has specified 5 product statements
  - Use descriptor list

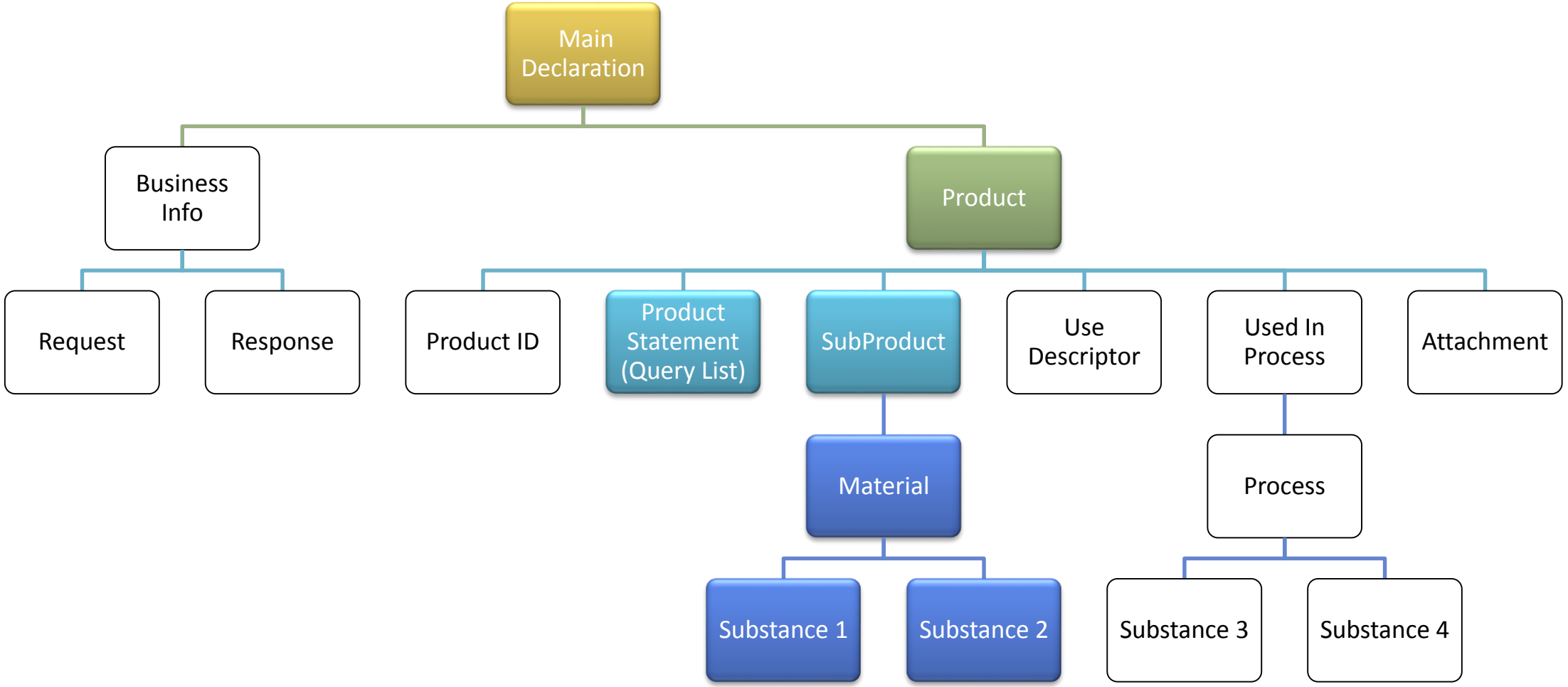
IPC-1754 Declaration Data Hierarchy



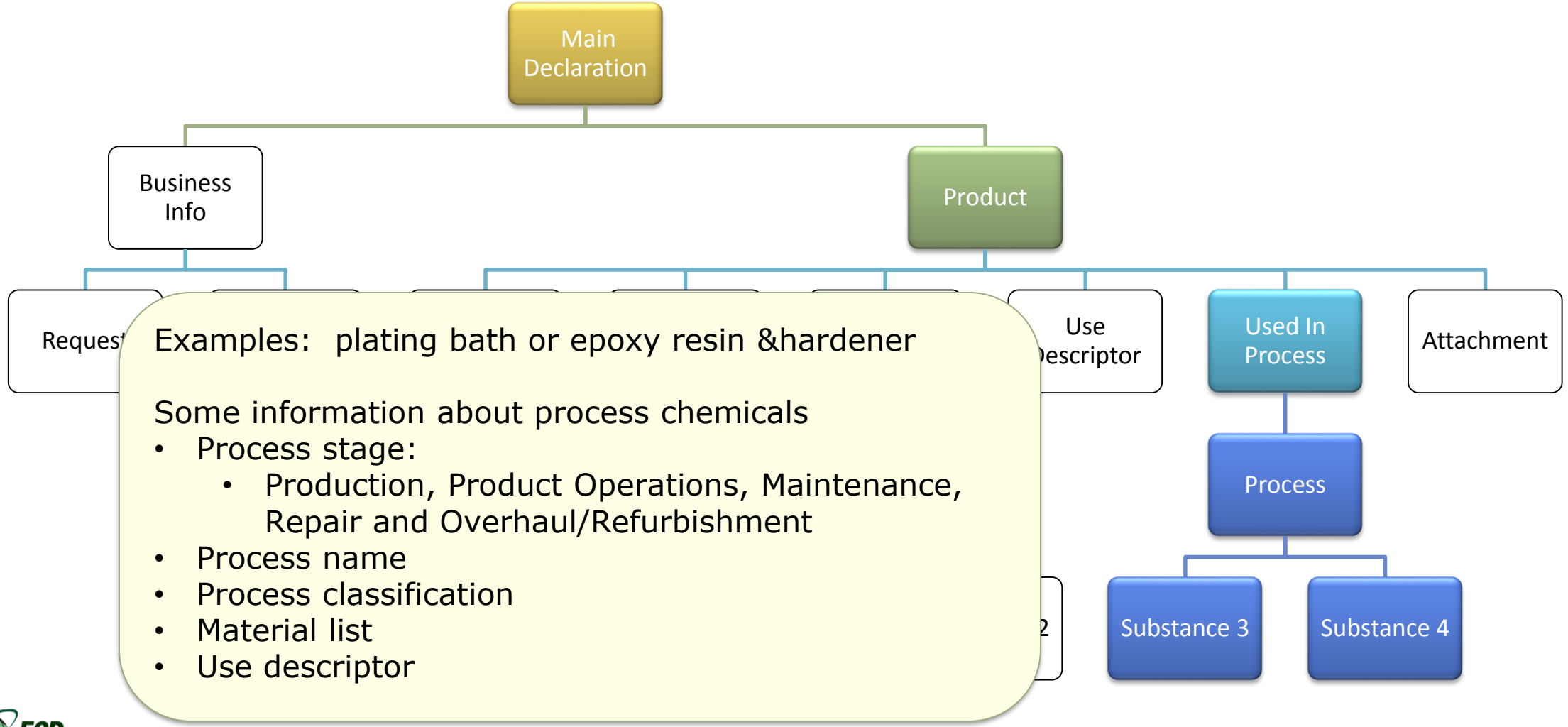
IPC-1754 – Declaration Request



IPC-1754 – Substances in Product



IPC-1754 – Substances Used in Process



Examples: plating bath or epoxy resin &hardener

Some information about process chemicals

- Process stage:
  - Production, Product Operations, Maintenance, Repair and Overhaul/Refurbishment
- Process name
- Process classification
- Material list
- Use descriptor

Declaration of Process Chemicals

- Process Chemicals may be important to downstream manufacturers for several reasons
  - obsolescence management
    - Restriction of a manufacturing chemical could lead to obsolescence issues
  - REACH Authorization

- Process chemicals and process information may be included in the declaration
  - May or may not be final constituents of the products
  - May include chemicals used in manufacturing, operations, maintenance, repair and overhaul/refurbishment

Declaration Classes

- IPC-1754 Specifies Three Declaration Classes (E, F, and G)

Class E – Product Statement (Mandatory)
- Statements about the product with true/false responses provided by supplier

Class F – DSL Substance Declaration
- Declaration of only those substances that are on the Declarable Substances List
- Substances in the product or used in the manufacturing process/maintenance

OR

Class G – Extended Substance Declaration
- All requirements of class F +
- Other substances in product (optional)
- Other substances used in production and maintenance processes (optional)

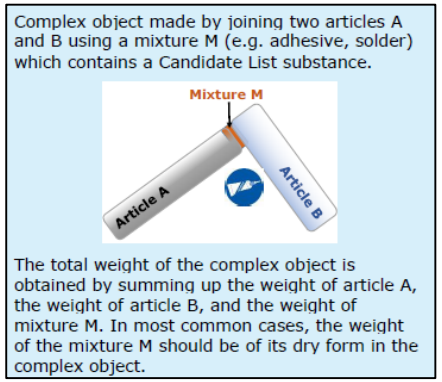
Up to full substance declaration (FSD)

IPC-1754 AM2

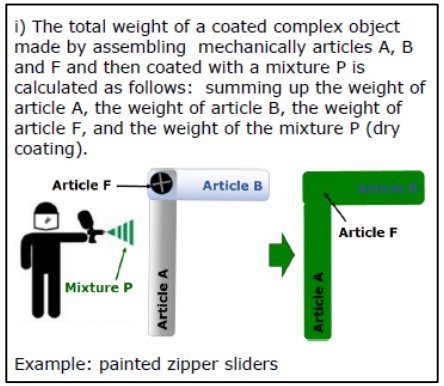
- IPC-1754 already includes extensive support for REACH and SCIP
- IPC-1754 AM2 adding features to provide interoperability for Electronics Industry
  - Support for substance Exemptions
  - Support for Substance Groups
- Additional SCIP Support
  - SafeUseInstructions added to Product
  - ProductCategoryList and ProductNumber added to ProductID
  - MaterialClassList, MaterialPropertyList added to Material
- Forecast publication March 2020

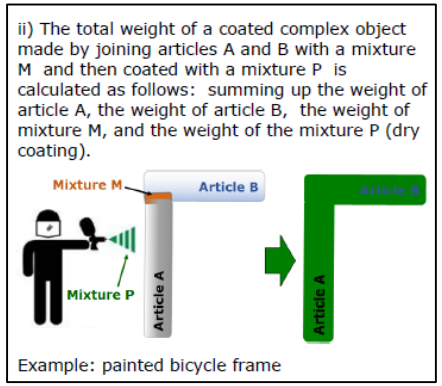
Reporting REACH SVHCs in a Declaration

- EU REACH regulation obligations to communicate information when SVHC present in an article > 0.1% (mass/mass) – Article 33, Article 7(2), and soon to include SCIP
- Interpretation of 'article' in REACH creates challenges for manufacturers
  - determining mass percent information in a substance/material declaration



Source ECHA Guidance on requirements for substance in articles, Example II



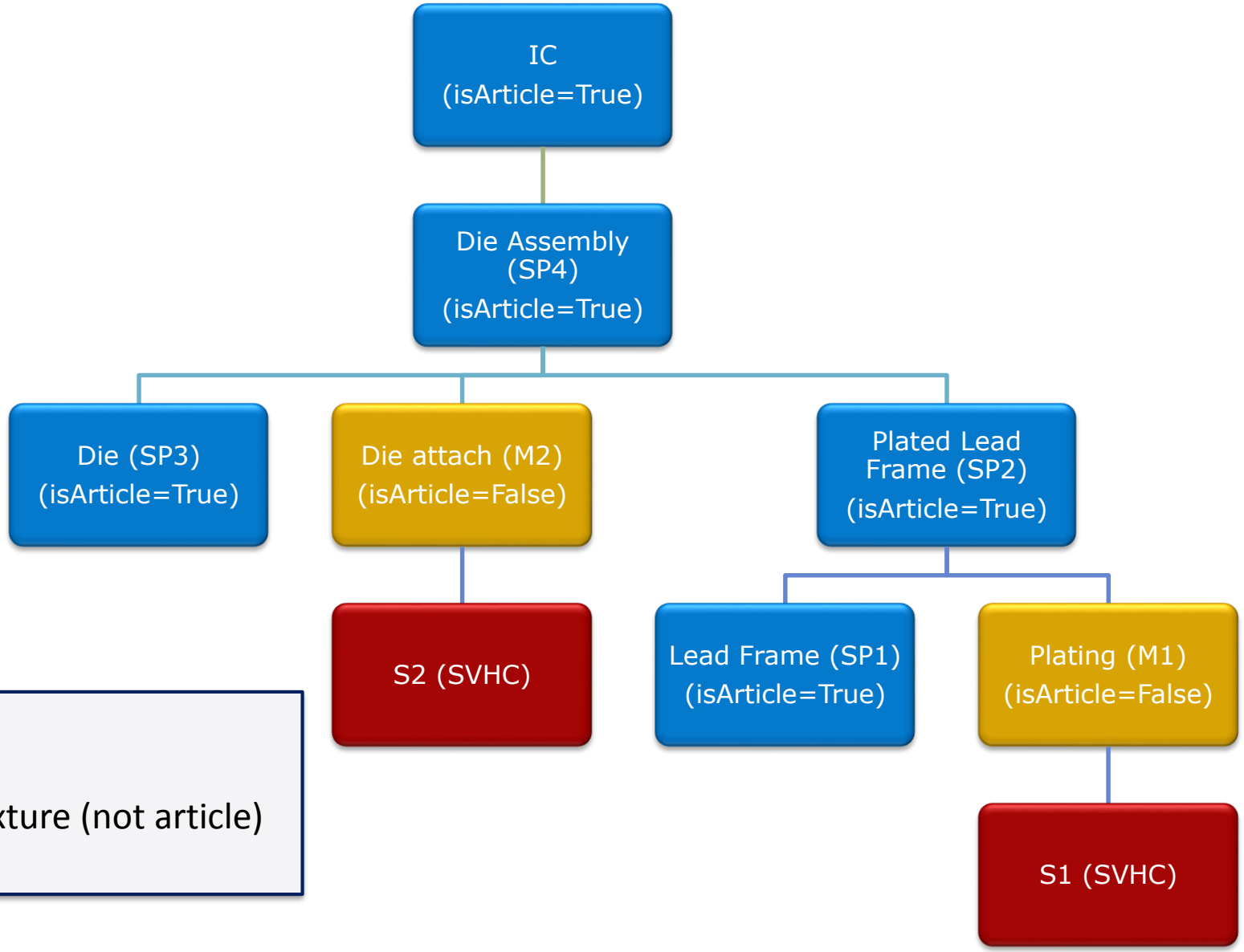


Source ECHA Guidance on requirements for substance in articles, Example III. C

- IPC-1754 and IEC 62474 already support an 'isArticle' flag for REACH SVHC assessment
  - Used with product and subproducts so that the supplier can identify an object as article or not
  - Downstream manufacturer can use the 'isArticle' flag to identify articles and assess mass percent of substance in article

Multiple SVHCs at different manufacturing stages

- Some products may include more than one SVHC.
- SVHCs may be applied at different stages during manufacturing, which may result in a complicated declaration hierarchy.



Legend
- blue=article
- orange=material that is a mixture (not article)
- Red=substance (not article)

Mapping supply chain data to the SCIP database

- SCIP information about the product (usually a complex object) is already known to the manufacturer. Material declaration is not needed for this.
  - If product placed on EU market for consumers, at least one Article identifier needs to be available to consumers
- Information on the first article
  - If supplier has already submitted article into SCIP, then downstream manufacturer needs SCIP 'submission ID' to link as uuid
  - Need all mandatory fields
    - Article name <- Product or Product Part name in material declaration
    - Primary article identifier, article category, safe use instructions, number of units,
    - Production in EU <- Product countryOfManufacture (if available) or "unwilling to disclose"
    - REACH Candidate List derived from DSL version
    - Candidate List Substance
    - Concentration range calculated from mass/mass% information
    - Material Category and Material properties from 'Material' element of declaration
    - Mixture Category from Material Use Descriptor
- Information on intermediate complex objects (if reported)
  - available from supplier product information
- Spare Parts need to be considered

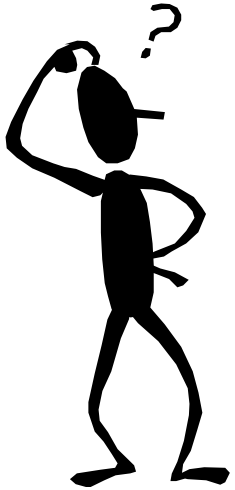
Summary

- The EU SCIP Database requirements will be a challenge for many industries
  - Removing SVHCs is ideal but not always technically possible

- For SCIP reporting, there are unresolved questions including:
  - Who is allowed to submit into SCIP db? (what about non-EU manufacturers)
  - Multi-sourcing
  - Duplication of articles in SCIP

- What do do? (no time to waste!)
  - Product manufacturers are likely missing data needed for SCIP
  - Assess existing data and determine what information is needed from suppliers
  - Develop plan to collect supplier information
    - Engineering judgement may also need to play a role
  - Engage suppliers as soon as possible – leverage standards that are available to support SCIP
    - Both IEC 62474 and IPC-1754 can be leveraged immediately (comprehensive SCIP support in Q1 2020)

- Many technical nuances – make sure you have access to technical expertise



Thank you

Questions?

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