PCF DATA MODEL: DESCRIPTION AND EXPLANATORY NOTES

GUIDANCE

Released November 2026
Released Version: 1.1

Catena-X
Your Automotive Network

Internal

Introduction

Purpose of this Document

This document describes the data aspect model according to which PCF data shall be exchanged compliant to the Product Carbon Footprint Rulebook Version 4 of Catena-X. It is based on the current versions at the time this document was created: Catena-X PCF Data Model v10.0.0 and Catena-X PCF Rulebook Version 4 (All relevant links are listed in the appendix at the end of this document).

Purpose of the PCF Data Model

The Catena-X PCF data model specifies the information that must be provided by suppliers in order to participate in the PCF data exchange in the Catena-X network. Besides the actual PCF value, additional information is required to support the interpretation and verification of PCF data received and to provide all the necessary data for quantifying customer PCFs in the subsequent value chain.

In this context it should be mentioned that the PCF covers one environmental impact and no overall statements on the environmental performance of the product can be given. Comparisons of PCF are only possible under certain criteria if all relevant information is reported

Content and structure of this document

The first part describes the individual attributes of the PCF data model. The focus here is on the functional description; although the technical aspect is also taken into account, it takes a back seat in this document. For the more technically oriented readers (e.g. software developers), please refer to the corresponding documentation in Tractus-X and GitHub (see appendix).

In the second part, individual selected topics are presented in more detail:

- PCF Lifecycle and corresponding data attributes
- Definition of time periods

The annex at the end of the document contains references to other sources of information (documents, websites).

Internal

Semantic description of data model v10.0.0 attributes

Structure of the attribute overview

The semantic description of the Catena-X PCF Data Model attributes is outlined in the table below which is structured as follows:

- **Headlines**: conventional denomination of the key sections of the data aspect model.
- **Field Labels**: conventional denomination of the data fields of the data aspect model.
- **Technical Field Names**: technical name adopted in the PCF Data Exchange Platform of Catena-X.
- **Mandatory, Optional, Default**: characterization of the data field indicating whether it's defined as mandatory (M) or optional (O) for a compliant PCF data exchange. Default (D) indicates that the data field has to be filled with a defined default value (by the user or automatically by the data exchange tool). If a data field is defined as mandatory starting from a given year (202X), the nomenclature M202X[1] is used. Mandatory under Condition (Mif) or Optional under condition (Oif) indicates a data field which is mandatory/optional only upon fulfillment of a certain condition as outlined in the Functional Description.
- **Type**: characterization of the typology of data required for a compliant PCF data exchange (e.g., string, value).
- **Functional Description**: brief description of the data field, with respective purpose, requirements, relationship to other data fields as well as to other guidelines, standards and initiatives.
- **Technical Specification**: additional technical description for a compliant formatting of the data field.
- **Catena-X Compliant Value List**: applicable list of values in the data field for a PCF data exchange that is compliant to the Catena-X methodology (as defined in the Catena-X PCF Rulebook v4.0 and the Catena-X PCF Verification and Program Certification Framework).[2]
- **Sample Values**: example of data field values with compliant formatting.

Note: Several terms used in the attribute overview are detailed in the chapter "Explanatory Notes". Explanations can be navigated to via embedded links in the respective terms of the attribute overview.

[1] M202X means that the technical implementation in a data exchange solution shall be mandatory by the start of year 202X at the latest. Additionally, the reporting of the data field through the data provider

[2] As this document is intended to provide assistance for the application of the PCF data model in the context of Catena-X, only those values are listed here that ensure conformity with the methodology defined in the Catena-X rules and regulations. In other systems that use the same or a similar PCF data model (e.g. TfS), other value ranges may be permitted. For reasons of simplicity and clarity, however, these are not listed here.

Internal

Attribute overview

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
	Scope of PCF Form							
1	Data model and version	specVersion	M	Array of strings (According URN: name and version of data model)	Specification of the PCF format/data model (name and version number), which is used. The required data input fields will be tailored accordingly. The data model and version can be selected independently of the standard or guidance document you followed during the assessment of the PCF. Always select latest data model, if your data supports it. Please note: To ensure compatibility, interoperability and security, especially in a decentralized data space, Catena-X e.V. has defined a procedure for managing versions and changes to the Catena-X standards. As part of this release management, older versions of standards (and therefore also of the PCF data model) can be defined as "deprecated". Detailed information on this is available on the Catena-X e.V. website (https://catenax-ev.github.io/release-management).	Closed value list. The version of the specification for the given reporting standard. (can be autofilled by application)	urn:io.catenax.pcf:datamodel:version:10.0.0; urn:io.catenax.pcf:datamodel:version:9.0.0;	urn:io.catenax.pcf:datamodel:version:10.0.0
2	Partial or a full PCF declaration	partialFullPcf	D	string (value list)	This attribute is an indicator for partial or full PCF (Product Carbon Footprint) declaration. A partial PCF (cradle-to-gate) covers the emissions from resource extraction until the product leaves the gate of your organization (optionally including the distribution stage). This is defaulted for PACT, Catena-X or TFS. A full PCF (cradle-to-grave) covers the complete life cycle of the product from resource extraction all the way to end-of-life stage.	Closed value list	cradle to gate	cradle-to-gate
	Company and Product Information							
	Company Information							
3	Company name	companyName	M	string (free text)	State the (legal) name of the company supplying the product and reporting the PCF (data owner). The name under which the company signed up with Catena-X (via Business Partner Management service).	The name of the company is the Product Footprint Data Owner, with value a non-empty String.		My Corp

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
4	Company Ids	companyIds	M	string array (According URN: as defined by TfS and WBCSD)	Company identifier according to the technical and business context you are reporting your data in. It is mandatory to provide the BPNL (Business Partner Number Legal, corresponding to the company name) according to Catena-X. Each value of this set is supposed to uniquely identify the PCF Data Owner and should be in the following format: E.g. urn: BPNL000000000DWF. Additionally, it is recommended to enter the name of the main domain (e.g. company.com) as a second value.	A non-empty set of CompanyIds. Each value of this set is supposed to uniquely identify the ProductFootprint Data Owner. Each entry should be according to URN: including domain name of the organization issuing the identifier, the entity and identifier-type and the identifier. E.g.: urn:fpi: ww.myCompany.com: org-id:401765^{1} , urn:fpi: ww.myCompany.com: suborg-id:401765-DE, urn:fpi: ww.BusinessPartner-Company.com:org-id:ABCD1234, urn:fpi:duns.dnb.com: duns-number:12-345-6789, urn:fpi: ww.bzst.de:VAT-number:DE99999999	at least BPNL; additional ones are permitted	urn:bpn:BPNL000000000DWF
	Product Information							
5	Product name	productNameCompany	M	string (free text)	Trade name of the product to make it recognizable by the receiver of the PCF information. For prospective PCFs, this may be a preliminary name.	The non-empty trade name of the product.		EthanolX
6	Product identifiers	productIds	M	string array (According URN: as defined by TfS and WBCSD)	A set of several relevant product identifiers can be provided including e.g. manufacturerPartID, customerPartID, GTIN, ISPN-number or any product specific identifier. At least one ID must be specified. For prospective PCFs, this may be a preliminary product id.	A non-empty set of Product Ids. Each of the values in the set is supposed to uniquely identify the product. What constitutes a suitable product identifier depends on the product, the conventions, contracts, and agreements between the Data Owner and a Data Recipient and is out of the scope of this specification. Each entry should be according to URN: including domain name of the organization issuing the identifier, the entity and identifier-type and the identifier.		urn: mycompany.com: product-id:401765, urn: mysupplier.com: SupplierComponent-id: ABCD1234, urn: registry.cas.org: cas-number:71-43-2 urn: gtin:4712345060507

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
7	Product description	productDescription	O	string (free text)	A brief description of the product (for example functions and technical parameters) to help identify the correct product. Product IDs are not always unique across organizations or at times insufficient to identify the correct product. This information can provide additional context to secure a correct match between the purchased product and its PCF declaration.	The free-form description of the product and other information related to it such as function, and technical parameter.		Ethanol, 95% solution
8	Product classification	productClassifications	O	array: urn (string)	A list of classification or category identifiers in URN format. Use well known urn's here or adhere to recommended urn: pact: format. For example, UN CPC, CAS Number, CN-Code etc. (see annex) For communication use URN format (see sample values).	Each entry should be according to URN: including domain name of the organization issuing the classification, the entity and classification system-type and the class/identifier.		urn: cpc:49129 urn: cas:9003-07-0 urn:cn:3926.90.97
9	Declared unit	declaredUnitOfMeasurement	M	string (value list; Unit ISOCODE + "piece")	The declared unit serves as reference to which the inputs and outputs in the PCF calculation are related (e.g. kg of product, piece of component, MJ electrical energy). The PCF is declared per declared unit amount of the product: Example BEV (same product as Example2): -Declared unit amount: 1 -Declared unit: Piece -Product mass (kg) per declared unit: 2300 -Total PCF including bio uptake: 15000kg CO2e Example BEV (same product as Example1): -Declared unit amount: 2300 -Declared unit: kilogram -Total PCF including bio uptake: 15000kg CO2e	Closed value list. The unit of analysis of the product. See Data Type DeclaredUnit for further information.	piece; kilogram; liter; cubic meter; kilowatt hour; megajoule; ton kilometer; square meter; hour; megabit second	piece
10	Quantity (of declared unit)	declaredUnitAmount	M	decimal	The quantity (amount) of the declared unit as numerical value. The PCF refers to this declared unit amount, not to one unit by default. The PCF is declared per declared unit amount of the product: Example BEV (same product as Example2): -Declare unit amount: 1 -Declared unit: Piece -Product mass (kg) per declared unit: 2300 -Total PCF including bio uptake: 15000kg CO2e Example BEV (same product as Example1): -Declare unit amount: 2300 -Declared unit: kg -Total PCF including bio uptake: 15000kg CO2e	The amount of Declared Units contained within the product to which the PCF is referring to. The value MUST be strictly greater than 0.		1

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
11	Product mass [kg] per declared unit amount	productMassPerDeclaredUnit	M	decimal	The mass of the product per declared unit amount in kilogram, (e.g., the declared unit of a circuit board is one piece; one piece represents 0.123 kg). Product mass excluding packaging.	This is required, especially if piece is selected.		0.123
	PCF Assessment and Methodology							
	PCF Assessment Information							
	ID and Version							
12	PCF ID	Id	M	string (According UUID v4)	This ID is used to identify a specific PCF. Therefore, it has to be a globally unique value, following the UUID V4 specification, and should be defined at the time of declaration of the PCF. This is usually done automatically by the calculation- or sharing tool. Example generator, in case your tool does not automatically generate the PCF ID: https://www.uuidgenerator.net/version4 In case of update a new PCF ID is required.	Automatically generated number (UUID V4). The product footprint identifier has to be a global unique value. In case of manual entry it can be generated by applications like www.uuidgenerator.net/version4		3893bb5d-da16-4dc1-9185-11d97476c254
13	Previous PCF IDs	precedingPfIds	O	string array (According UUID v4)	This is a list of previously submitted product footprint identifiers in submitted order, starting with the latest submitted PCF. This chain therefore reflects the history of a PCF.	If defined, MUST be non-empty set of preceding product footprint identifiers (UUIDs V4)		9c5b94b1-35ad-49bb-b118-8e8fc24abf8
14	PCF version	version	D	value (integer; 0..2^31-1)	This is only a technical parameter that ensures comparability with PACT 3.0.0, but is not used in Catena-X. For PCF data exchange via Catena-X, it must therefore be set to the default value "0".	The version of the Product Carbon Footprint. Default is 0.	0	0
15	PCF status	status	D	string (value list)	This is another technical parameter that ensures comparability ("deprecated" only used in PACT; and it may also be used in internal systems) but is not used in Catena-X. Therefore, it must be set to the default value "active".	Closed value list. In Catena-X, just "active" is allowed.	Active	Active
16	Retrospective or prospective PCF types	retroOrProspectivePcfType	M	string (value list)	Four types of PCFs (see PCF Rulebook v4.0 chapter 5.2.1) shall be indicated in the data model: This is to identify if the PCF refers to a product that is already in series (retrospective) or a PCF for a product before SOP (prospective PCF), both based on the rules defined in the Catena-X PCF rulebook v4.0. For the type "progressive PCF", these rules do not necessarily apply anymore, as here also more ambitious assumptions can be used that might be part of a bilateral agreement between supplier and customer.	Closed value list	Retrospective PCF; Prospective PCF without forerunner; Prospective PCF of further developed product with forerunner; Prospective PCF for current product for future production date	Retrospective PCF

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
	Boundary Specifications							
17	Cut-off rule	exemptedEmissionsPercent	M	decimal (Range 0-10)	Applied cut-off criteria in percentage of total emissions. This specifies which percentage of emissions were excluded from the PCF in total, to reduce efforts in data collection of irrelevant processes. E.g. the Catena-X PCF Rulebook v4.0 requires that the cut-off should not exceed 3% (97% impacts to be considered). To determine this, supplier data is assumed to be 0% cut-off.	Value has to be between 0 and 10	Decimal number between 0.0 and 3	3
18	Exemption rules: explanation	exemptedEmissionsDescription	O	string (free text)	If cut-off criteria are applied, this text field should be used to document the rationale behind the exclusion of specific PCF emissions. Potential cut-offs are defined in the Catena-X Rulebook v4.0.	Free Text field		No exemption
	Technology							
19	Important unit processes and used technologies	boundaryProcessesDescription	O	string (free text)	Brief description of the significantly contributing manufacturing steps of the product (including general description of used technologies). This attribute is only included for compatibility reasons with TfS/PACT in the Catena-X data model. No filing is required as part of a data exchange via Catena-X. Instead, the general comment field "Comment" (see section 1.1) should be used as needed.	The processes are attributable to each Lifecycle Stage. Example text value: Electricity consumption included as an input in the production phase		e.g. EAF route for steel production
20	CCS/BECCS applied	ccsTechnologicalCO2CaptureIncluded	M	boolean	Declare if CCS/BECCS (incl. geological storage) technology has been employed. BECCS stands for bioenergy with carbon capture and storage.	Boolean value. TRUE in case of CCS/BECCS technology applied	FALSE	FALSE
	Geography							
21	City/state as country subdivision	geographyCountrySubdivision	O	string (ISO 3166-2 Subdivision Code)	The location of factory gate(s) refers to the last manufacturing step. It is the location where the product is produced. State the country subdivision as subdivision code according to ISO 3166-2 (example: Germany, Bavaria = DE-BY); https://www.iso.org/ glossary-for-iso-3166.html	Closed value list. If present, the value MUST conform to data type RegionOrSubregion. See § 4.2.1 Scope of a Carbon Footprint for further details. Additionally, see the closed value list. Pathfinder Framework Section 6.1.2.2.	Value List according ISO 3166	DE-BY
22	Geography country	geographyCountry	O	string (ISO 3166-2 alpha-2 country code)	The location of factory gate(s) refers to the last manufacturing step. It is the location where the product is produced. State the country as country code according to ISO 3166-1 alpha-2 (example: US: =United States, FR: =-France); https://www.iso.org/glossa-ry-for-iso-3166.html	Closed value list. "If present, the value MUST conform to data type ISO3166CC. See § 4.2.1 Scope of a Carbon Footprint for further details. Example value in case the geographic scope is France"	Value List according ISO 3166	DE

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
23	Geography with region or subregion	geographyRegionOrSubregion	M	string (value list)	Region of the supplier production site according to ISO 3166 (Example: "Global", "Europe", "Eastern Europe")	Closed value list.	Africa; Americas; Asia; Europe; Oceania; Australia and New Zealand; Central Asia; Eastern Asia; Eastern Europe; Latin America and the Caribbean; Melanesia; Micronesia; Northern Africa; Northern America; Northern Europe; Polynesia; South-east-ern Asia; Southern Asia; Southern Europe; Sub-Saharan Africa; Western Asia; Western Europe; Global	Europe
	Time							
24	Reference period start	referencePeriodStart	M	date time (ISO 8601; UTC Time zone)	Start of time period of data collection for primary data sources (this does not refer to publication dates of secondary data). For prospective PCFs the reference period should be equal to start of production.			2021-11-20T08:30:00.000Z
25	Reference period end	referencePeriodEnd	M	date time (ISO 8601; UTC Time zone)	End of time period of data collection for primary data sources. For prospective PCFs the reference period ends and should be one year after reference period starts.			2022-11-20T08:30:00.000Z
26	Date of issue	created	M	date time (ISO 8601; UTC Time zone)	The time stamp at which the PCF has been declared, independently of when or if it has been shared. This equals the validity period start, unless specified separately.			2023-11-20T08:30:00.000Z
27	Validity period start	validityPeriodStart	O	date time (ISO 8601; UTC Time zone)	The validity period is the interval during which the product (carbon) footprint is declared as valid by the data provider. The "start" and "end" attributes define this interval. For retrospective PCFs the validity period start must be equal to or greater than the reference period end.			2022-11-20T08:30:00.000Z
28	Validity period end	validityPeriodEnd	M	date time (ISO 8601; UTC Time zone)	Time stamp declaring the expected end of the use period for this declaration or date of expected update (i.e. when does the data validity period end?). In Catena-X there is no standard for the length of the validity period, but it should be a year or more. The Catena-X PCF Rulebook v4.0 requires an annual review of the PCF value (and an update if there are relevant changes). For prospective PCFs, the validity period end should be equal to the reference period end.	Resolving attribute: 5 years after "reference period start"		2025-11-20T08:30:00.000Z

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
	PCF Methodology							
	Standards							
29	Cross-sectoral standards applied	crossSectoralStandards	M	string array (value list)	Cross-sectoral standards the PCF calculation is based on (multiple entries are possible). Please note: the PCF can be calculated according to another standard than the standards which define the communication format.	Closed value list. Several values possible	ISO 14067; Pathfinder v1; Pathfinder v2; Pathfinder v3; GHG Protocol Product; PAS 2050; ISO 14040-44; PEF; Other	ISO 14067
30	Product or sector rules	productOrSectorSpecificRules	M	string array (value list & free text)	Name the most specific rule (sector specific guidance frameworks, such as product category rules (PCR), are sets of rules how to calculate and document life cycle assessments. They provide product category specific guidance and enhance comparability between assessments of the different suppliers for the same category (sector). The same applies to Product Environmental Footprint Category Rules (PEFCR). For retrospective PCFs this can be any PCR that passed the sector guidance acceptance process. For prospective PCF this has to be Catena-X Rulebook v4.0 or higher	Open value list. If there is no specification available (e.g. if the data set is from another initiative), default as "unspecified".	At least one of the following: Catena-X Rulebook V1; Catena-X Rulebook V2; Catena-X Rulebook V3; Catena-X Rulebook V4; Additional values allowed: TfS Guideline V1.0; TfS Guideline V2.0; TfS Guideline V3.0; World Steel LCIA methodology report; International Aluminum Good Practice Guidance PCF v2.0; European Aluminum Methodological Guidance Rev. 8; no product or sector rule applied	Catena-X Rulebook V4
	GWP Characterization Factor Details							
31	IPCC report version of GWP values	ipccCharacterizationFactors	M	string (value list)	The IPCC (Intergovernmental Panel of Climate Change) frequently releases (GWP) global warming potential values for climate gases related to CO_2. These GWP values are released in Assessment Reports (AR), which are numbered. The AR number can be used to track the age and accuracy of the GWP values used in reporting. The reports can be found here: https://www.ipcc.ch/assessment-report/ar6/	Closed value list	AR6	AR6
	Allocation in Foreground (Own Processes)							
32	Allocation rules used	allocationRulesDescription	O	string (free text)	Describe the allocation rules applied to your foreground data (e.g., physical, economic allocation).		Value must be in accordance with Catena-X PCF Rulebook v4.0 (Allocation hierarchy)	mass allocation

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
33	Allocation approach used for waste incineration with energy recovery	allocationWasteIncineration	M	string (value list)	Material recycling and waste treatment with energy recovery are considered separate and not equal. Catena-X follows the Polluter Pays Principle which is equivalent to the reverse cut-off approach.	Closed value list	polluter pays principle	polluter pays principle
34	Calculation approach for material recycling	allocationRecycledCarbon	O	string (value list)	Declare which approach for material recycling has been applied. Possible options: not applicable/empty, cut-off, cut-off plus, upstream system expansion (USE).	Closed value list	If not empty: cut-off	cut-off
	Mass balancing Information							
35	Mass Balancing used	massBalancingUsed	M	boolean	If mass balancing (credit method) is used, select "TRUE". If rolling average (equal distribution of different inputs among outputs) is used, select "FALSE". If both is used, select "TRUE".	Boolean value. TRUE in case of mass balancing applied	TRUE; FALSE	TRUE
36	Free attribution in mass balancing	freeAttributionInMassBalancing	Mif M if "Mass Balancing used" = "TRUE"	boolean	Apply mandatorily only if in "Mass Balancing used" the option "TRUE" has been selected.	Required, if massBalancingUsed = TRUE	TRUE; FALSE	FALSE
37	Mass Balancing Certificate Scheme	massBalancingCertificateScheme	Mif M if "Mass Balancing used" = "TRUE"	string (value list & free text)	Declare which certification scheme has been used for mass balancing. Apply mandatorily only if in "mass balancing used" the option "TRUE" has been selected.	Open Value list. Required, if massBalancingUsed = TRUE	REDcert2; ISCC+; …	ISCC+
	Data Sources and Quality							
38	Primary Data Share (PDS)	primaryDataShare	M 2027	decimal (Range 0-100)	Share of primary data in the final PCF. For prospective PCF this shall not be communicated or set "0"			7.2
39	Secondary data source and version	secondaryEmissionFactorSources	M	string array (free text)	Which secondary data sources and versions have been used (e.g. databases such as ecoinvent)?	unspecified can be a value, if not available		ecoinvent 3.8
40	Technological representativeness	technologicalDQR	M 2027	decimal (Range 1-5)	The degree to which the data reflects the actual technology(ies) used. Refer to Table 6 in chapter 7.2.5.1 of CX PCF Rulebook v4.0 for the rating (1-5) and the DQR Guidance document in the CX Library. For prospective PCF this shall not be provided.	Value has to be between 1 and 5. Fractions are allowed.		2.0
41	Temporal representativeness	temporalDQR	M 2027	decimal (Range 1-5)	The degree to which the reference period of the data set is close to the issue date. Refer to Table 6 in chapter 7.2.5.1 of CX PCF Rulebook v4.0 for the rating (1-5) and the DQR Guidance document in the CX Library. For prospective PCF this shall not be provided.	Value has to be between 1 and 5. Fractions are allowed.		2.0

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
42	Geographical representativeness	geographicalDQR	M 202 7	decimal (Range 1-5)	Geographical representativeness. The degree to which the data reflects the actual geographic location of the manufacturing processes within the inventory boundary (e.g., country or region). Refer to Table 6 in chapter 7.2.5.1 of CX PCF Rulebook v4.0 for the rating (1-5) and the DQR Guidance document in the CX Library. For prospective PCF this shall not be provided.	Value has to be between 1 and 5. Fractions are allowed.		2.0
	Verification and Ceritification Shares							
43	PCS	programCertificationShare	O	decimal (Range 0-100)	PCF Program Certification Share (PCS) indicates the share of the PCF result which was calculated by PCF program certified suppliers.			50.50
44	3PVS	productVerificationShare3rdParty	O	decimal (Range 0-100)	Third-party Product Verification Share (3PVS) represents the share of the PCF result which is based on verified data from an independent third-party verifier.			0.00
45	2PVS	productVerificationShare2ndParty	O	decimal (Range 0-100)	Second-party Product Verification Share (2PVS) represents the share of the PCF result which is based on verified data from a second party verifier.			0.00
46	1PVS	productVerificationShare1stParty	O	decimal (Range 0-100)	First-party Product Verification Share (1PVS) represents the share of the PCF result which is based on verified data from a first party verifier.			0.00
	General							
47	Comment	comment	O	string (free text)	This text field can be used to provide the recipient of the data with additional information or instructions on the calculation that is not represented by the existing attributes of the data model.			
48	Legal Statement	pcfLegalStatement	O	string (free text)	In case your organization defined certain legal conditions which apply to the publication of this PCF, you can state the legal disclaimer in here. The text might include an URL link to the legal disclaimer of the PCF provider. For Catena-X this only refers to legal requirements, not negotiated automatically among the EDCs.			The provided PCF data does not imply any warranties.
	Product Life Cycle Stages and Emissions							
	Production Stage							
49	GWP total incl. bio. Uptake	pcfIncludingBiogenicUptake	M	decimal (Unit kg CO2e)	**Position T1**= = A+C+D(negative contribution) +E+F+G(negative contribution) +H. Letters refer to individual emission categories below. This also refers to the -1/+1 approach. "GWP total inc. bio. uptake" may be set equal to "GWP total excl. bio. uptake" if the product has no or a neglectable biogenic carbon content.			1.90

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
					General cut-off criteria applies as criteria for neglectability. Consistency of biogenic uptake and Biogenic carbon content should be provided.			
50	GWP total excl. bio. uptake	pcfExcludingBiogenicUptake	M	decimal (>=0; Unit kg CO2e)	**Position T2**= = A+C+E+F+G (negative contribution) +H. Letters refer to individual emission categories below. This the 0efers to the 0/0 approach.			2.90
51	GWP fossil	fossilGhgEmissions	O	decimal (>=0; Unit kg CO2e)	**Position A:** includes all fossil emissions, including industrial processes, stationary/mobile combustion and fugitive emissions. This position includes the fossil emissions associated to land management (A1: "GWP fossil land management") which cannot be documented as a separate emission category in the Catena-X data set, but is part of PACT and TFS			0.5
52	GWP biogenic emissions other than CO2	biogenicNonCO2Emissions	O	decimal (>=0; Unit kg CO2e)	**Position C:** non-CO2 biogenic emissions related to agricultural activities. It encompasses emissions as described in PACT v3.0: CH4 emissions from livestock and manure; CH4 emissions from biomass burning and fires; CH4 emissions from rice production; CH4 emissions from transformation and degradation (e.g., combustion, digestion, composting, landfilling). It must be noted that N2O from land management activities are not included in this position and are reported in position A.			1.0
53	GWP biogenic CO2-uptake (biogenic CO2 contained in the product)	biogenicCO2Uptake	O	decimal (<=0; Unit kg CO2e)	**Position D (negative contribution):** Biogenic CO2 uptake. The CO2 which was absorbed from the atmosphere during the growth period of the biomass and of which the C is now bound in the product as biogenic carbon content.			-1.00
54	GWP land use change (LUC, excluding iLUC)	landUseChangeGhgEmissions	O	decimal (>=0; Unit kg CO2e)	**Position E:** Emissions from LUC constitute a release of GHG emissions due to a change in land use from one land use category or subcategory to another, such as primary forest to agricultural land, or peat land (type of wetland) to cropland. This position encompasses dLUC (direct land use change) emissions. If that data is not available, companies should account for LUC using statistical land-use change (sLUC) emissions. iLUC emissions are excluded. Refer to PACT v3.0 for details.			1.40

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
55	GWP land Management CO2 Emissions	landManagementBiogenicCO2 Emissions	O	decimal (>=0; Unit kg CO2e)	**Position F:** Carbon stock losses occurring within the same land use category or subcategory due to agricultural practices such as tillage, field preparations, pruning and harvest. Land Management CO2 emissions measures biogenic CO2 emissions from a net loss in carbon stock within one land use category or subcategory. This includes impact on the land-carbon pools, including above- and below-ground biomass, dead organic matter, and soil carbon pools. If the carbon stock increases within the same land use category and the conditions to report removals are met, this may be calculated as a Land management CO2 removal (position G). Refer to PACT v3.0 for details.			0.00
56	GWP land Management CO2 Removals	landManagementBiogenicCO2 Removals	O	decimal (<=0; Unit kg CO2e)	**Position G (negative contribution):** Land management removals are net CO2 removals resulting from net increases to carbon stored in land-based carbon pools (biomass, dead organic matter and soil carbon pools) due to ongoing land management practices. This extra net carbon stock is gained over the crop rotation or crop cultivation cycle (e.g., multiple years for perennial crops and multiple years in a rotation that includes annual crops). Refer to PACT v3.0 for details.			0.00
57	GWP aviation emissions (upstream)	aircraftGhgEmissions	O	decimal (>=0; Unit kg CO2e)	**Position H:** Aviation emissions which have occurred in distribution stages upstream.			0.0
	Packaging Stage							
58	Packaging emissions included	packagingEmissionsIncluded	M	boolean	Packaging emissions (covering all emissions related to the preparation and packaging of your products) are included in the system boundary. According to the Catena-X Rulebook v4.0 this attribute shall always be included. Therefore, this attribute is "TRUE" per default. packaging stage emissions are included in the production stage emissions (avoid double accounting!)	In the API this field is outside the Group "packing" and specifies in case of TRUE to include the group "packaging"	TRUE	TRUE
59	Packaging GWP total incl. bio. uptake	packagingPcfIncludingBiogenicUptake	O	decimal (Unit kg CO2e)	**Position T1=** = A+C+D (negative contribution) +E+F+G (negative contribution) +H. Letters refer to individual emission categories below. This is also the -ed to as the -1/+1 approach. "GWP total inc. bio. uptake" may be set equal to "GWP total excl. bio. uptake" if the product has no or a neglectable biogenic carbon content. General cut-off criteria applies as criteria for neglectability. If provided, consistency of biogenic uptake and Biogenic carbon content should be provided.			0.20

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
60	Packaging GWP total excl. bio. uptake	packagingPcfExcludingBiogenicUptake	O	decimal (>=0; Unit kg CO2e)	**Position T2=** = A+C+E+F+G (negative contribution) +H. Letters refer to individual emission categories below. This is also referred to as the 0/0 approach.			0.20
61	Packaging GWP fossil	packagingFossilGhgEmissions	O	decimal (>=0; Unit kg CO2e)	**Position A:** Includes all fossil emissions, including industrial processes, stationary/mobile combustion and fugitive emissions. This position includes the fossil emissions associated to land management (A1: "GWP fossil land management") which cannot be documented as a separate emission category in the Catena-X data set, but is part of PACT and TfS.			0.20
62	Packaging GWP biogenic emissions other than CO2	packagingBiogenicNonCO2Emissions	O	decimal (>=0; Unit kg CO2e)	**Position C:** Non-CO2 biogenic emissions related to agricultural activities. It encompasses emissions as described in PACT v3.0: CH4 emissions from livestock and manure; CH4 emissions from biomass burning and fires; CH4 emissions from rice production; CH4 emissions from transformation and degradation (e.g., combustion, digestion, composting, landfilling). It must be noted that N2O from land management activities are not included in this position and are reported in position A.			0.00
63	Packaging GWP biogenic CO2-uptake (biogenic CO2 contained in the product)	packagingBiogenicCO2Uptake	O	decimal (<=0; Unit kg CO2e)	**Position D (negative contribution):** Biogenic CO2 uptake. The CO2 which was absorbed from the atmosphere during the growth period of the biomass and of which the C is now bound in the product as biogenic carbon content.			0.00
64	Packaging GWP land use change (LUC, excluding iLUC)	packagingLandUseChangeGhgEmissions	O	decimal (>=0; Unit kg CO2e)	**Position E:** Emissions from LUC constitute a release of GHG emissions due to a change in land use from one land use category or subcategory to another, such as primary forest to agricultural land, or peat land (type of wetland) to cropland. This position encompasses dLUC (direct land use change) emissions. If that data is not available, companies should account for LUC using statistical land-use change (sLUC) emissions. iLUC emissions are excluded. Refer to PACT v3.0 for details.			0.00

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
65	Packaging GWP land Management CO2 Emissions	packagingLandManagementBiogenicCO2Emissions	O	decimal (>=0; Unit kg CO2e)	**Position F:** Carbon stock losses occurring within the same land use category or subcategory due to agricultural practices such as tillage, field preparations, pruning and harvest. Land management CO2 emissions measures biogenic CO2 emissions from a net loss in carbon stock within one land use category or subcategory. This includes impact on the land-carbon pools, including above- and below-ground biomass, dead organic matter, and soil carbon pools. If the carbon stock increases within the same land use category and the conditions to report removals are met, this may be calculated as a Land management CO2 removal (position G). Refer to PACT v3.0 for details.			0.00
66	Packaging GWP land Management CO2 Removals	packagingLandManagementBiogenicCO2Removals	O	decimal (<=0; Unit kg CO2e)	**Position G (negative contribution):** Land management removals are net CO2 removals resulting from net increases to carbon stored in land-based carbon pools (biomass, dead organic matter and soil carbon pools) due to ongoing land management practices. This extra net carbon stock is gained over the crop rotation or crop cultivation cycle (e.g., multiple years for perennial crops and multiple years in a rotation that includes annual crops). Refer to PACT v3.0 for details.			0.00
67	Packaging GWP aviation emissions (upstream)	packagingAircraftGhgEmissions	O	decimal (>=0; Unit kg CO2e)	**Position H:** Aviation emissions which have occurred in distribution stages upstream.			0.00
	Distribution Stage							
68	Distribution Stage	distributionStageIncluded	M	boolean	The value 'TRUE' shall be selected, if emissions related to the outbound transport of your products are included in the system boundary. Mandatory, if transport is paid by reporting company. Distribution stage emissions (outbound) are to be reported separately from the production stage emissions.	2	TRUE; FALSE	TRUE
69	Distribution stage GWP total incl. bio. uptake	distributionStagePcfIncludingBiogenicUptake	O	decimal (Unit kg CO2e)	**Position T1**= = A+C+D (negative contribution) +E+F+G (negative contribution) +H. Letters refer to individual emission categories below. This also refers to the -1/+1 Approach. "GWP total inc. bio. uptake" may be set equal to "GWP total excl. bio. uptake" if the product has no or a neglectable biogenic carbon content. General Cut-off criteria applies as criteria for neglectability.			0.15

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)	Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
70	Distribution stage GWP total excl. bio. uptake	distributionStagePcfExcludingBiogenicUptake	O	decimal (>=0; Unit kg CO2e)	**Position T2**= = A+C+E+F+G (negative contribution) +H. Letters refer to individual emission categories below. This also refers to the 0/0 approach.			0.15
71	Distribution stage GWP fossil	distributionStageFossilGhgEmissions	O	decimal (>=0; Unit kg CO2e)	**Position A:** Includes all fossil emissions, including industrial processes, stationary/mobile combustion and fugitive emissions. This position includes the fossil emissions associated to land management (A1: "GWP fossil land management") which cannot be documented as a separate emission category in the Catena-X data set but is part of PACT and TfS.			0.15
72	Distribution stage GWP biogenic emissions other than CO2	distributionStageBiogenicNonCO2Emissions	O	decimal (>=0; Unit kg CO2e)	**Position C: N**on-CO2 biogenic emissions related to agricultural activities. It encompasses emissions as described in PACT v3.0: CH4 emissions from livestock and manure; CH4 emissions from biomass burning and fires; CH4 emissions from rice production; CH4 emissions from transformation and degradation (e.g., combustion, digestion, composting, landfilling). It must be noted that N2O from land management activities are not included in this position and are reported in position A.			0.00
73	Distribution stage GWP biogenic CO2-uptake (biogenic CO2 contained in the product)	distributionStageBiogenicCO2Uptake	O	decimal (<=0; Unit kg CO2e)	**Position D (negative contribution):** Biogenic CO2 uptake. The CO2 which was absorbed from the atmosphere during the growth period of the biomass and of which the C is now bound in the product as biogenic carbon content.			0.00
74	Distribution stage GWP land use change (LUC, excluding iLUC)	distributionStageLandUseChangeGhgEmissions	O	decimal (>=0; Unit kg CO2e)	**Position E:** Emissions from LUC constitute a release of GHG emissions due to a change in land use from one land use category or subcategory to another, such as primary forest to agricultural land, or peat land (type of wetland) to cropland. This position encompasses dLUC (direct land use change) emissions. If that data is not available, companies should account for LUC using statistical land-use change (sLUC) emissions. iLUC emissions are excluded. Refer to PACT v3.0 for details.			0.00

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)		Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
75	Distribution stage GWP land Management CO2 Emissions	distributionStageLandManagementBiogenicCO2Emissions	O		decimal (>=0; Unit kg CO2e)	**Position F:** Carbon stock losses occurring within the same land use category or subcategory due to agricultural practices such as tillage, field preparations, pruning and harvest. Land Management CO2 emissions measures biogenic CO2 emissions from a net loss in carbon stock within one land use category or subcategory. This includes impact on the land-carbon pools, including above- and below-ground biomass, dead organic matter, and soil carbon pools. If the carbon stock increases within the same land use category and the conditions to report removals are met, this may be calculated as a Land management CO2 removal (position G). Refer to PACT v3.0 for details.			0.00
76	Distribution stage GWP land Management CO2 Removals	distributionStageLandManagementBiogenicCO2Removals	O		decimal (<=0; Unit kg CO2e)	**Position G (negative contribution):** Land management removals are net CO2 removals resulting from net increases to carbon stored in land-based carbon pools (biomass, dead organic matter and soil carbon pools) due to ongoing land management practices. This extra net carbon stock is gained over the crop rotation or crop cultivation cycle (e.g., multiple years for perennial crops and multiple years in a rotation that includes annual crops). Refer to PACT v3.0 for details.			0.00
77	Distribution stage GWP aviation emissions (production gate to customer gate if applicable)	distributionStageAircraftGhgEmissions	O		decimal (Unit kg CO2e)	**Position H:** Aviation emissions occurring in the reported distribution stage after the production gate until customer gate.			0.00
	Carbon Content								
78	Total carbon content	carbonContentTotal	O		decimal (Unit kg C)	Total carbon content: only important if a biogenic material is involved in the product.	kg total C		0.52
79	Fossil carbon content	fossilCarbonContent	O		decimal (Unit kg C)	Carbon content defined as "fossil".	kg fossil C		0.25
80	Biogenic carbon content	biogenicCarbonContent	O	M if "Mass Balancing used" = "TRUE"	decimal (Unit kg C)	Carbon content defined as "biogenic". It can be attributed by means of mass balancing.	kg biogenic C		0.27
81	Packaging biogenic carbon content	packagingBiogenicCarbonContent	O		decimal (Unit kg C)	Detail (if packaging included) and only optional. The biogenic carbon in the packaging should always be included in the "biogenic carbon content per DU".	kg biogenic C		0.00
82	Recycled carbon content	recycledCarbonContent	O		decimal (Unit kg C)	Carbon content defined as recycled. It can be attributed by means of mass balancing: in such a case the "mass balancing used" must be set to "TRUE".	kg recycled-C		0.00

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)		Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
	Attestation of Conformance		**O**				**object array**		
83	Attestation type	AttestationType	Mif	M if declaration of conformance is provided, otherwise not applicable	string (value list & free text)	Attestation type, which defines the type and level of trust conveyed by this attestation of conformance (PCF Program certification; PCF 3rd party verification; PCF 2nd party verification; PCF 1st party verification; ...)	open value list	PCF Program certification; PCF 3rd party verification; PCF 2nd party verification; PCF 1st party verification; Mass balance certificate; ...	PCF Program Certification
84	Conformant with cross-sectoral standards or product or sector rules	standardName	Mif	M if declaration of conformance is provided, otherwise not applicable	string array (value list & free text)	The specific cross-sectoral standards or product or sector rules (PCRs) on which the attestation of conformance is based	open value list	TfS Guideline V1.0; TfS Guideline V2.0; TfS Guideline V3.0; Catena-X Rulebook V1; Catena-X Rulebook V2; Catena-X Rulebook V3; Catena-X Rulebook V4; World Steel LCIA methodology report; International Aluminum Good Practice Guidance PCF v2.0; European Aluminum Methodological Guidance Rev. 8	Catena-X Rulebook v4.0
85	Attestation scheme standard	attestationStandard	Mif	M if declaration of conformance is provided, otherwise not applicable	string array (value list & free text)	e.g. PCF Verification and PCF Program Certification Framework	open value list	PCF Verification and PCF Program Certification Framework V2	PCF Verification and PCF Program Certification Framework V2
86	Attestation ID	attestationOfConformanceId	Mif	M if declaration of conformance is provided, otherwise not applicable	string array (free text)	e.g. unique number of the certificate or verification statement used for tracking and referencing, use UUID v4 if ID is newly generated.			4a7c4482-8431-4c31-a895-70341d2a1376
87	Link to attestation	attestationOfConformanceLink	Oif	O if declaration of conformance provided, otherwise not applicable	string (free text)	A link leading to the declaration of conformance, allowing for a manual option to verify the validity and authenticity of the declaration.	link to document on website		www.Certifierrepository_example.com/Certificate_123456

Field Nr.	Field label	Technical field name	Mandatory (M) Optional (O) Default (D)		Type	Functional Description	Technical specification	Catena-X Compliant Value list	Sample values
88	Issuer of attestation	providerName	Mif	M if declaration of conformance provided	string (free text)	Name of the issuing certifier's or verifier's legal entity	for 3rd party PCF verification and PCF program certification only		TÜV-X
89	Issuer of attestation ID	providerID	Oif	O if declaration of conformance provided, otherwise not applicable	string array (According URN: FPI as defined by TfS and WBCSD)	A unique identifier for the entity issuing the declaration, such as a Business Partner Number (BPN) or other official registration number, issued by the appointing organization or accreditation institute.	BPNL		urn: cofinity-x.com: bpn: BPNL0000000AXXXX "
90	Date of attestation	completedAt	Oif	O if declaration of conformance provided, otherwise not applicable	date time (ISO 8601; UTC Time zone)	Time stamp for when the attestation of conformity was issued			2022-01-01T00:00:01Z

Explanatory Notes

Attributes to represent the PCF lifecycle

The PCF data model contains some attributes to describe a PCF's status and its history. The use of these attributes is not intuitive in all cases, which is partly because an attempt was made to achieve standardization with other initiatives (e.g. TfS or PACT).

For better understanding, Figure 1 shows the use of the relevant attributes in an exemplary scenario. In this scenario, the PCF for a selected component is calculated and exchanged at three points in time:

- An initial calculation and declaration.
- A second calculation and declaration one year later (as part of the annual review and the obligation to report any relevant changes).
- A third calculation and declaration, again one year later.

	1) Initial declaration of PCF	2) Annual check (and update)	3) Annual check (and update)
PCF ID	#4ax(1)	#u7c(1)	#ky5(1)
Previous PCF IDs	null	#4ax	#u7c; #4ax
PCF version	0 (def.)	0 (def.)	0 (def.)
Date of Issue	10.01.2025	08.01.2026	09.01.2027
PCF Status	Active (def.)	Active (def.)	Active (def.)
Validity period start	01.02.2025	01.02.2026	01.02.2027
Validity period end	31.01.2026	31.01.2027	31.01.2028
Product Identifiers	C01(2)	C01, Mxy(2)	C01, Mxy(2)
PCF Value(3)	100	90	80

Key Messages:

- The PCF ID is the unique identifier of a PCF (data set).
- The PCF-history of a product can be traced via the chain of Previous PCF IDs.
- The current PCF is the one with the latest Date of Issue.
- PCF Version and PCF Status are not used in Catena-X; therefore, they have fixed default values.

Excerpt from the data model with the attributes relevant in the context of lifecycle/ status/ versioning.

In orange: changed content

(1) The technical format of the PCF ID is UUID V4. For reasons of readability, a different format has been selected for this presentation.
(2) The technical format of the Product Identifiers is URN. For reasons of readability, we use a different format in this presentation.
(3) This is merely a dummy attribute, which in this example is representative of all content value attributes of the data model.

Figure 1: Example scenario of PCF data model attribute evolvement across annual declarations and updates: Initial creation (in this case: after SOP), then annual update; no particular "challenges"

The attributes are used in Catena-X in the following way:

PCF ID: This ID is used to identify a specific PCF (data set). Therefore, it must be a globally unique value. If the PCF is updated (and thus a new data set is created), a new PCF ID is required.
In the example above, three PCFs (for the same product) are calculated, each with a new ID.

Previous PCF IDs: This is a list of previously submitted PCFs of a specific product, represented by their product footprint identifiers. The list is in submitted order, starting with the latest submitted PCF. The resulting chain therefore reflects the history of a PCF.
In the example above, this looks as follows: There is no predecessor for the first PCF, the attribute contains the value "null". For the update of the PCF, the reference to the predecessor is entered ("#4ax"). For the third PCF, which still refers to the same product, the entire chain (from new to old) "#ky5" - "#u7c" - "#4ax" can be traced.

PCF version: Normally, you would expect the history of a PCF to be mapped via this attribute. However, as explained above, this is already done via the "PCF ID" and "Previous PCF IDs" attributes. Therefore, the PCF version is only a technical parameter that ensures comparability with PACT 3.0.0, but is not used in Catena-X. For PCF data exchange via Catena-X, it must be set to the default value "0" (as was done in the example above).

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Date of issue: This is the time stamp at which the PCF has been declared, independently of when or if it has been shared (see note below for the definition of the terms). In most cases this will also represent the validity period start unless this is specified separately. The latter can be seen in the example above: Here, the declaration is made in January, but the validity period only begins in February.

PCF status: This attribute would normally be used to express whether a PCF is active or valid, or whether it has expired, for example. Catena-X takes a slightly different approach by using other, additional attributes. Here the status is just another technical parameter that ensures comparability ("deprecated" only used in PACT; and it may also be used in internal systems), but is not used in Catena-X. Therefore, it must always be set to the default value "active" (as was done in the example above).

Validity period start: In Catena-X, the central instrument for expressing the validity of a (submitted) PCF is the validity period, which is defined by the Start and End attributes. This is the interval in which the product (carbon) footprint is declared valid by the data provider. In Catena-X there is no standard for the length of the validity period, but since the Catena-X PCF Rulebook v4.0 requires an annual review of the PCF value (and an update in case of relevant changes), it is likely to be set to one year or more in most cases. This is also how it was handled in the example above. In the case of a Retrospective PCF the validity period start must be equal to or greater than the reference period end (see next section on time attributes).

Validity period end: See "Validity period start" and next section on time attributes.

Product identifiers: This attribute creates the actual link between the PCF and the product to which it refers. Therefore, this list must contain at least one value; and the product must be uniquely identifiable via each of these values. What constitutes a suitable product identifier depends on the product, the conventions, contracts, and agreements between the Data Owner and the Data Recipient.
In the example above, in the first declaration there is just one product identifier "C01", which here represents a fictitious CustomerPartID. In the following declarations, this information was supplemented by a (likewise fictitious) ManufacturerPartID "Mxy".

PCF value: This is merely a dummy attribute, which in this example is representative of all content value attributes of the data model.

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Time attributes in the PCF data model

The PCF data model contains attributes to describe certain dates or time periods that are relevant in the context of PCFcalculation. Figure 2 shows a generic overview of these time periods.

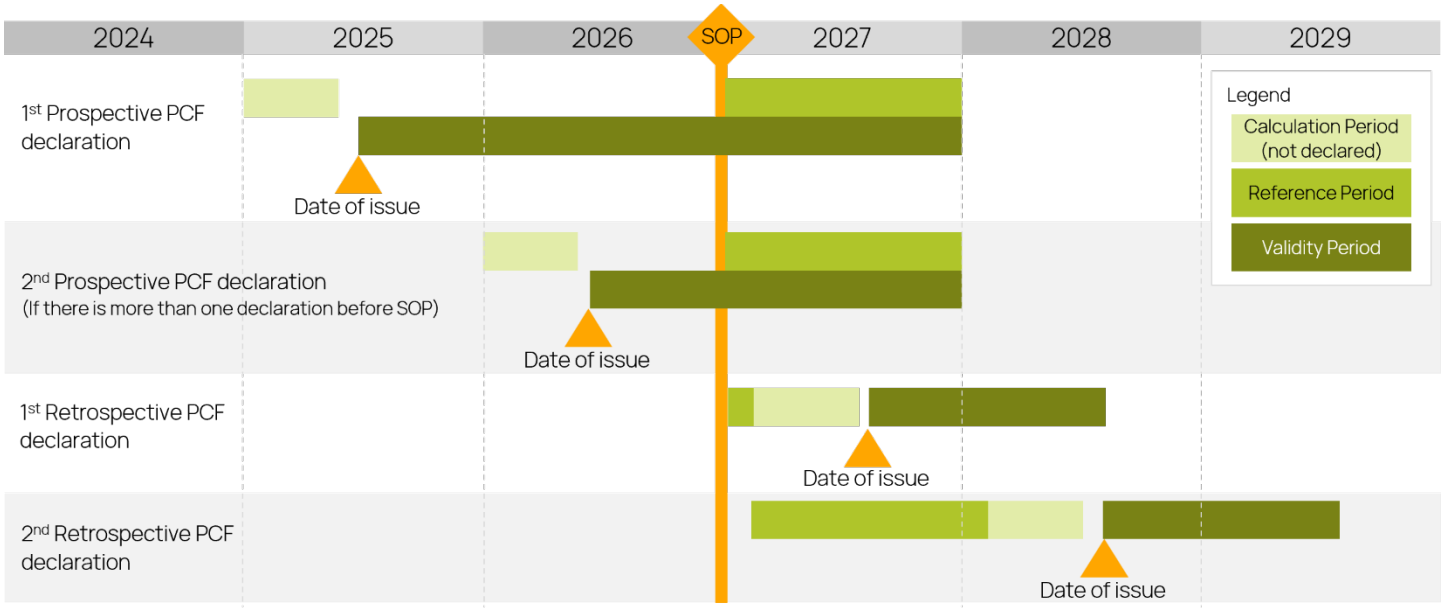

Figure 2: Overview of time attributes (Calculation Period, Reference Period and Validity Period) in PCF data model

Reference Period:

This describes the period in which primary data is measured and collected, which is then used as an input variable in the PCF calculation. In the case of a retrospective PCF, this period is in the past, i.e. before the time of calculation. Since this is not possible with a prospective PCF (which provides an outlook for the future), here the reference period is defined as the period of one year, starting with the SOP.

Validity Period:

In general, it can be assumed that relevant input variables of a PCF calculation will change over time. The data provider can therefore use the validity period to define the interval in which it declares the reported PCF to be valid. The data recipient should therefore only use the PCF in the specified period. In Catena-X, there is no standard for the length of the validity period, but it should be a year or more (reminder: the Catena-X PCF Rulebook v4.0 requires an annual review of the PCF value, and an update if there are relevant changes).

For retrospective PCFs the validity period start must be equal to or greater than the reference period end (which is logical, as the validity period can only begin after the data measurements have been completed during the reference period).

For prospective PCFs, the validity period end should be equal to the reference period end (as all premises and assumptions for the PCF calculation relate to this reference period and not beyond).

Calculation Period:

The calculation period is not declared in Catena-X and therefore not part of the PCF data model. However, it is shown in the chart for clarity. A PCF calculation is often not created in one day but can take a certain amount of time. The Calculation Period can only end after the Reference Period has ended (and will often only start then), and the Validity Period generally only begins after the Calculation Period has ended.

Date of Issue:

This is the time stamp at which the PCF has been declared, independently of when or if it has been shared (see note

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below for the definition of the terms). In most cases this will also represent the validity period start unless this is specified separately.

See Figure 3 for all the timeline of the stages from Data Collection to PCF Declaration and Sharing

Excursion: Definition of terms "calculate", "declare", "share"

The following terms are used frequently in this document. To avoid misunderstandings, here is a brief explanation:

- Calculation (of PCF):

  The calculation of the PCF according to the Catena-X Rulebook v4.0, based on the data from the reference period.

- Declaration (of PCF):

  In some (especially larger) companies, the result of the calculation is still subject to an internal review and approval process, which ends with the "declaration" of the PCF. In most companies (especially smaller ones), calculation and declaration are likely to coincide. In this case, calculation date and declaration date would be the same.

- Sharing (of PCF):

  Sharing means exchanging PCF data with external partners. Sharing is the only way to make information available outside your own company.

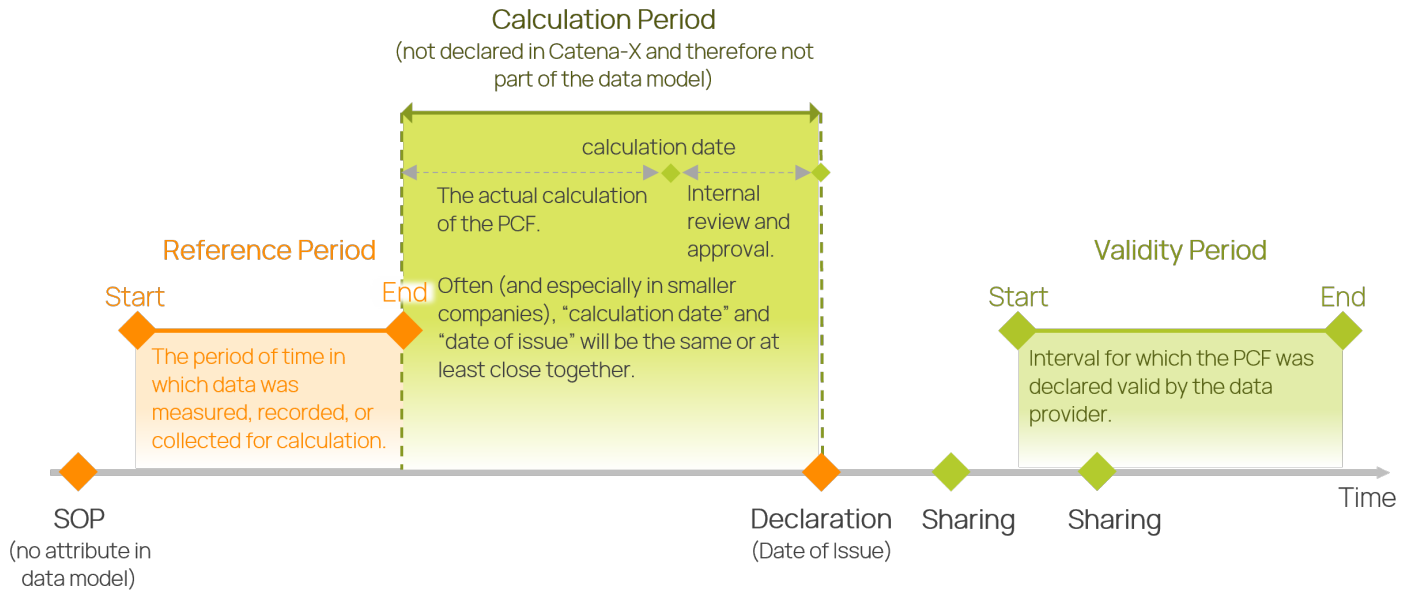

Figure 3: Stages from Data Collection to PCF Declaration and Sharing

ProductIDs

The ProductID can have multiple entries. For internal purposes during data exchange between the supplier backend systems, all known CustomerProductIDs can be included in the JSON for PCF. For sending the PCF to the customer, only the CustomerID of the recipient should remain.

Example JSON for internal supplier use

```
"productIds": [
                "urn:manufacturerPartID:PN/2510"
                "urn:bmw.com:BC2510"
                "urn:mercedes.com:MB2510"
                "urn:volkswagen.com:VW2510"
        ],
```

Example JSON for sending to customer Volkswagen:

```
"productIds": [
                "urn:manufacturerPartID:PN/2510"
                "urn:volkswagen.com:VW2510"
        ],
```

or

```
"productIds": [
                "urn:manufacturerPartID:PN/2510"
                "urn:customerPartID:VW2510"
        ],
```


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Key Changes

V1.1 Updates v9.0.0 → v10.0.0

Topic, chapter	PCF Data Model Guidance v9.0.0	PCF Data Model Guidance v10.0.0
Attribute Overview: Data Model and Version	specVerion Value list: "urn:io.catenax.pcf:datamodel:version:9.0.0"; urn:io.catenax.pcf:datamodel:version:7.0.0"	Catena-X Compliant value list: "urn:io.catenax.pcf:datamodel:version:10.0.0"; "urn:io.catenax.pcf:datamodel:version:9.0.0"

ANNEX

Documents:

Catena-X PCF Rulebook: https://catenax-ev.github.io/docs/next/non-functional/overview

Catena-X PCF aspect model: https://github.com/eclipse-tractusx/sldt-semantic-models/tree/main/io.catenax.pcf

Catena-X and TfS PCF Verification Framework: https://catenax-ev.github.io/docs/next/non-functional/overview

Additional sources of information:

Catena-X Library: https://catenax-ev.github.io/

Catena-X Campus: https://catena-x.academy/de/

Product classification or category identifiers:

UN Central Product Classification (CPC): https://unstats.un.org/unsd/classifications/Econ/cpc

CAS Registry Number: https://www.cas.org/cas-data/cas-registry

Combined Nomenclature (EU): https://trade.ec.europa.eu/access-to-markets/en/content/combined-nomenclature-0

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