Detailed description of data types defined for the IEDC prototype.

At the moment of release in October 2018, the `types` tables of the IEDC contained 20 data types, which are defined and described below.

Table S19: Data types of the IEDC that have been defined so far.

Data category and description	Data type and first ID letters	Description	Layer(s)	Mandatory aspects	Optional aspects
Flow (1) Objects flowing between processes	**Flow (1_F_)**	Objects (good/ substance) flowing between processes	Mass, energy, monetary value, pieces,	[good/substance] from [process A] in [region of origin] to [process B] in [region of destination] in [time period]	
	Process inventory (1_PI_)	flows entering and leaving process, for LCI datasets	Mass, energy, monetary value, pieces,	[good/substance] from [unspecified] to [process] in [region] in [time period], or reverse direction for by-products, waste, and emissions	[age-cohort of process technology]
	Unit process inventory (1_UPI_)	flows entering and leaving process, normalized, for LCI datasets	Mass, energy, monetary value, pieces,	[good/substance] from [unspecified] to [process] in [region] in [time period] per [unit of reference output], or reverse direction for by-products, waste, and emissions	[age-cohort of process technology]
	Births_deaths (1_BD_)	flows of people being born and dying	People	[people] born/died in [region] in [time period]	[sex], [year(s) of birth of people died]
Stock (2) Object residing in a process	**Stock (2_S_)**	Objects (good/ substance) residing in process	Mass, energy, monetary value, pieces	[good/substance] in [process] in [region] in [time period]	[age-cohort of objects]
	In-use stock (2_IUS_)	Objects (good/ substance) residing in use phase	Mass, energy, monetary value, pieces	[good/substance] in [use phase] in [region] in [time period]	[age-cohort of objects]
	Population (2_P_)	Population in region	People	[residence region], [time point]	[age-group]

Material/Product property (3) Intensive (per unit) property of materials or products	**Lifetime (3_LT_)**	typically in use phase, or residence time in landfill etc.	Time	[object] in [process] in [region]	[age-cohort of object]
	Material composition (3_MC_)	m.c. of products, alloys, waste/scrap, etc.	Mass ratio	[material] in [good/substance]	[age-cohort], [production region]
	Share (3_SHA_)	share (in %) of something	Mass ratio, mass per area, mass per volume, mass per unit	[material/chemical element] in [material/good/substance]	[process], [time], [region]
	Price (3_PR_)	price data	Value per mass, value per unit	[material/good]	[time], [region]
	Intensity of use of products (3_IUP_)	service (physical or immaterial) extracted from products	Service per unit	[service category] per [object] in [process] in [region] in [time period]	[age-cohort]
	Specific energy consumption of products (3_EIP_)	energy per unit of use of products, e.g., MJ/km of vehicle driven	Energy per unit of service, energy per hour of operation	[object] in [process] in [region] in [time period] per [unit of use]	[age-cohort]
Process parameter (4) Intensive (per unit) property of processes	**Process yield (4_PY_)**	material yield of processes	Mass ratio	[material] in [input good/substance] into [output good/substance] in [process] in [region]	[technology] of [age-cohort]
	Process extensions (4_PE_)	Extension per output	per unit emissions, per unit costs, per unit resource uptake	[material/waste/substance] per [output good/substance] in [process] in [region]	[technology] of [age-cohort]
	Process costs (4_PC_)	Costs per capacity	per unit input, per unit output, emissions, per unit costs, per unit resource uptake	per [input/output good/substance] in [process] in [region]	[technology] of [age-cohort]
Process properties (5) extensive properties of processes	**Process capacity (5_CAP_)**	Capacity of processes	Mass flow, energy flow, number of items per time,	[output good/substance] in [process] in [region] in [time interval]	[technology] of [age-cohort]

General ratios (6) Ratios of quantities of types 1-5	**Per capita stock (6_PCS_)**	Stock per person, e.g., cars per capita	Mass, energy, monetary value, pieces,	[good/substance] in [process] in [region] in [time period]	[age-cohort of objects]
	Per capita flows (6_PCF_)	Flows per persion, e.g., GDP per capita	Mass, energy, monetary value, pieces,	[good/substance] from [process A] in [region of origin] to [process B] in [region of destination] in [time period]	
	Material substitution coefficient (6_MSC_)	Amount of material 1 substituted by amount of material 2.	Mass ratio	[new material/substance] per [old material/substance] in [object]	[region], [time]

Each dataset in the IEDC has a unique name (id), which is a combination of the data category number, the data type acronym, and some descriptive text, all as one word.

Examples:

1_F_WIO_Japan_Nakamura_Kondo_2002 - The Japanese waste-input-output table from the 2002 publication by Nakamura and Kondo.

4_PE_EnergyIntensity_AluminiumCycle_Liu_2012 - Specific energy consumption in the aluminium cycles from the 2012 publication of Liu et al.

3_MC_Buildings_Ortlepp_2016 - Material content of buildings from the 2016 publication of Ortlepp et al.

From the examples it is clear that the id structure helps to quickly identify data category, type, author, and some description but that it is by no means a complete description of the dataset.

At the moment, there is no routine to check whether all mandatory aspects for the different datasets are provided. There is also flexibility in the aspect description to accommodate for the large diversity of data source in our field. It is the responsibility of the authors to build meaningful and complete data models (in form of the aspect structure) of the data they submit to a database, and it is the responsibility of the data reviewers to check the correctness and completeness of the data model for each dataset submitted, and to request changes if the model is ambiguous or incomplete.