

IV Information Management Constraints

The IV of the ENVRI RM provides the means for specifying constraints which describe the set of rules governing data management. The set of models used for describing constraints are part of the static schemata in ODP [37]. In the ENVRI RM information management constraints establish mechanisms to:

1. avoid loss of data around measurements and observations.
2. provide information about the meaning of data.
3. make data and metadata available for external use.

The IV of the ENVRI RM provides three types of management constraints:

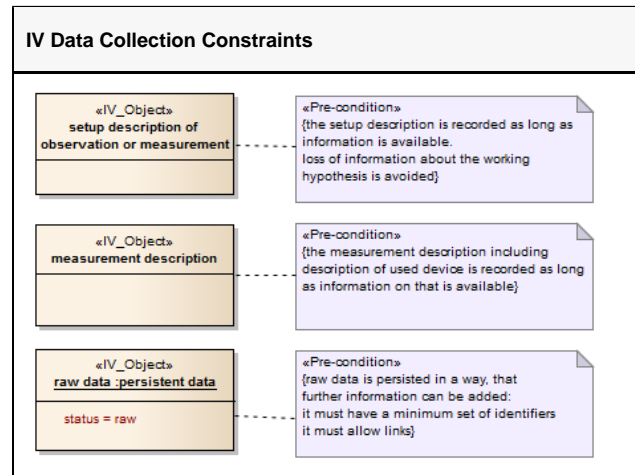
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Data Collection Constraints

The constraints applied to data collection are illustrated in the figure below. The application of these constraints helps to avoid data loss or wrong interpretation.

Observing these three rules together ensures that data can be correctly interpreted and reduces the risk of data loss. This is because the rules guarantee that the original data can be retrieved and interpreted correctly through the lifetime of the information objects derived from them.

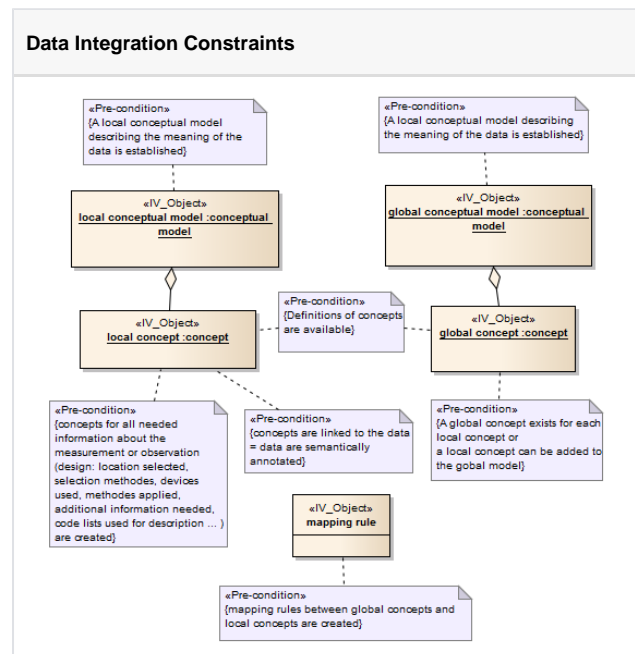
The rules guarantee the availability of the rationale for collecting (1st rule), the details about the how collection proceeded (2nd rule), and the original data collected.



Data Integration Constraints

The constraints for data integration are illustrated in the following figure. Data integration constraints support the correct interpretation of data, helping external data users correctly interpret and map the semantics of data.

The observation of these rules makes possible integrating data within a RI and the outside world. This requires adding a special type of metadata, a local conceptual model and then mapping the data to a global conceptual model. Mapping data to global semantics may include simple tasks such as conversions of units, but can also need sophisticated transformations such as code lists cross-referencing or measurement descriptions, and data provenance.



Data Publication Constraints

Constraints for data publication are illustrated in the following figure. The constraints specify conditions necessary for preparing the data to be publicly accessed.

Data Publication Constraints

