

# CV Objects

The archetype of a modern environmental research infrastructure has a brokered, service-oriented architecture. Core functionality is encapsulated within a number of key resources which can be accessed by means of externally-facing gateway services. Interaction by external agents with internal resources is overseen by one or more brokers (often closely integrated with the gateway) charged with validating requests and providing, where needed, an interoperability layer between otherwise heterogeneous components. The Computational Viewpoint of the ENVRI RM provides a set of models which can help in the design, implementation, maintenance, and evolution of the systems and services that RIs provide for accessing data.

The CV prescribes a number of types of computational object for which there should be instances present in or around a research infrastructure in order to ensure that particular [Appendix A Common Requirements of Environmental Research Infrastructures](#) are supported. The grouping of CV objects into sets is based on the software architecture that is expected to be implemented when providing access to data and other related resources during the research [Model Overview](#) (evident in the RIs analysed as part of the [The ENVRI and ENVRIplus Projects](#)) projects. Consequently, the presentation of CV objects is arranged as five sets corresponding to each of the architectural layers of RI systems (note however, that this should not be read as prescriptive and that other groupings are possible):

- **CV Presentation Objects:** computational objects that facilitate access to RIs by human users.
- **CV Broker Objects:** computational objects that act as intermediaries for access to data held within the data store and facilitate performing semantic interpretation and routing of queries.
- **CV Service Objects:** computational objects that offer programmatic access to distributed systems and resources (internal and external).
- **CV Component Objects:** computational objects that provide access to back end objects.
- **Back End Objects:** computational objects that encompass the RI's systems and resources for accessing research data and derived data products.

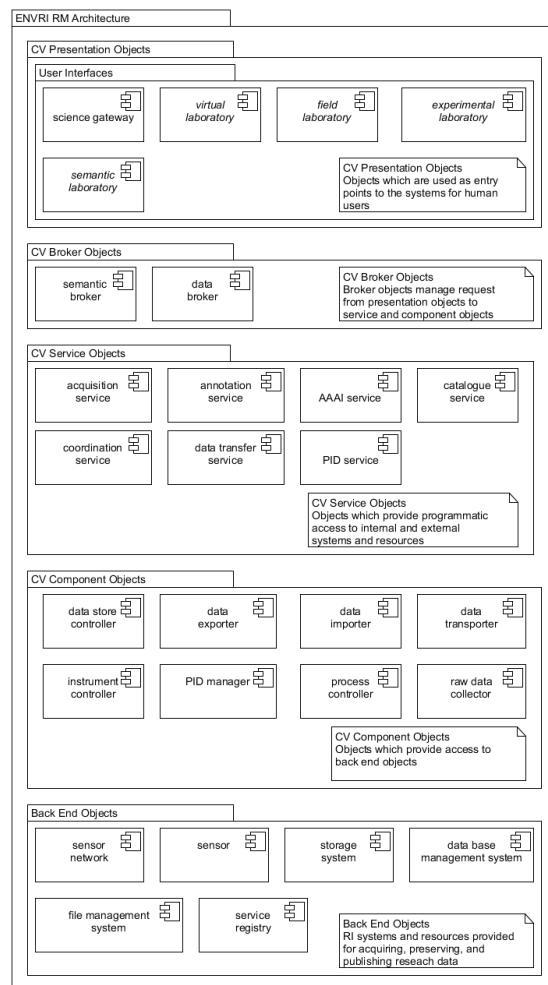
The set of CV components included in the ENVRI RM comprises the computational objects that are common to many RIs. The set is not closed, so each RI can include the additional components they require to completely model their systems. The set does not contain compulsory items, so each RI can exclude objects and interfaces that are not relevant for them.



## Note

Before proceeding, the reader may wish to study the pages on [How to read the Model \(Computational Viewpoint\)](#) and [How to use the Model \(Computational Viewpoint\)](#).

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Notation