

Data Model

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Discussion

A Data Model is a [Model](#) of [Data](#). It represents selected aspects of how Data is identified, organized, related, constrained, and used for a defined purpose.

A Data Model may describe:

- Data elements and their identities
- Data types and permitted values
- [Structures](#) and compositions
- Relationships among Data elements
- [Constraints](#) governing valid Data
- Identifiers, keys, and references
- Rules for representing, storing, or exchanging Data
- Associations with governed [semantic](#) meaning

A Data Model can be expressed at different levels of abstraction. A conceptual Data Model identifies the principal kinds of Data and their relationships without prescribing an implementation. A logical Data Model provides additional Structure, types, Constraints, and relationships. A physical Data Model describes how the Data is realized using a particular storage, exchange, or processing technology.

In the SIP-RA context, a Data Model does not silently combine Data, Structure, semantics, [Interpretation](#), and [Governance](#). It identifies its represented concerns and the relationships among them so that each concern can evolve under appropriate control.

Definition

a Model that represents selected Data elements, Structures, relationships, Constraints, and associated meaning for a defined purpose

Source

Derived from the Dido Solutions definitions of [Data](#) and [Model](#), informed by [Model Driven Architecture \(MDA\)](#) and ISO/IEC 11179 metadata-registry concepts.

Note

A Data Model is distinct from the Data that conforms to it. For example, a Data Model may define the

Structure, type, relationships, and Constraints of a transaction record, while an individual transaction record contains the Data values.

A Data Model may reference semantic definitions and Interpretation rules, but those references do not make the Data Model the sole governing source for semantics or Interpretation.

Example

A logistics-readiness Data Model identifies units, personnel, equipment, supplies, locations, readiness observations, and reporting periods. It specifies the relationships and Constraints among those elements without requiring a particular database product, message format, or implementation platform.

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