

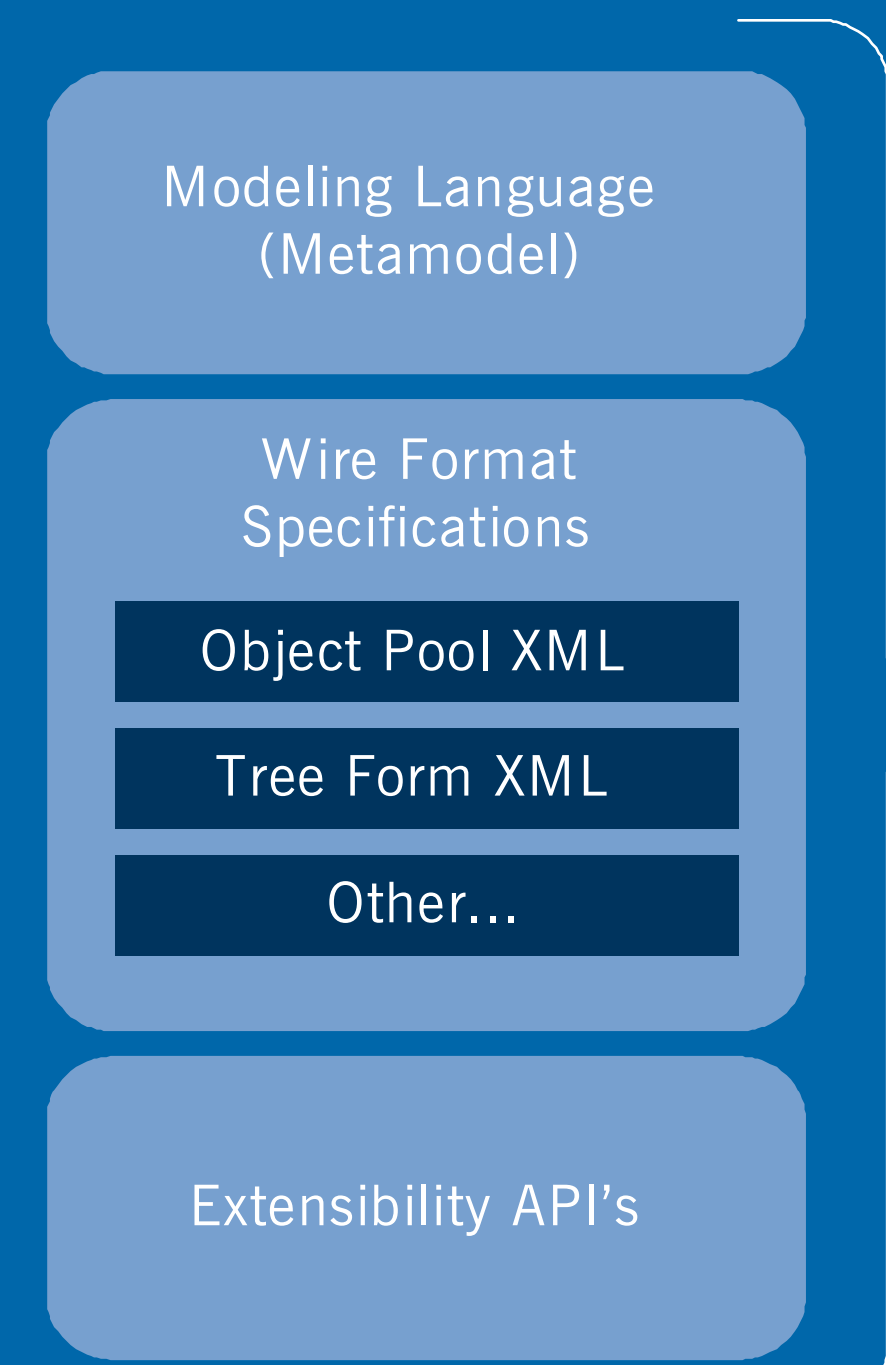
# MODeX

## Model-Oriented Data eXchange

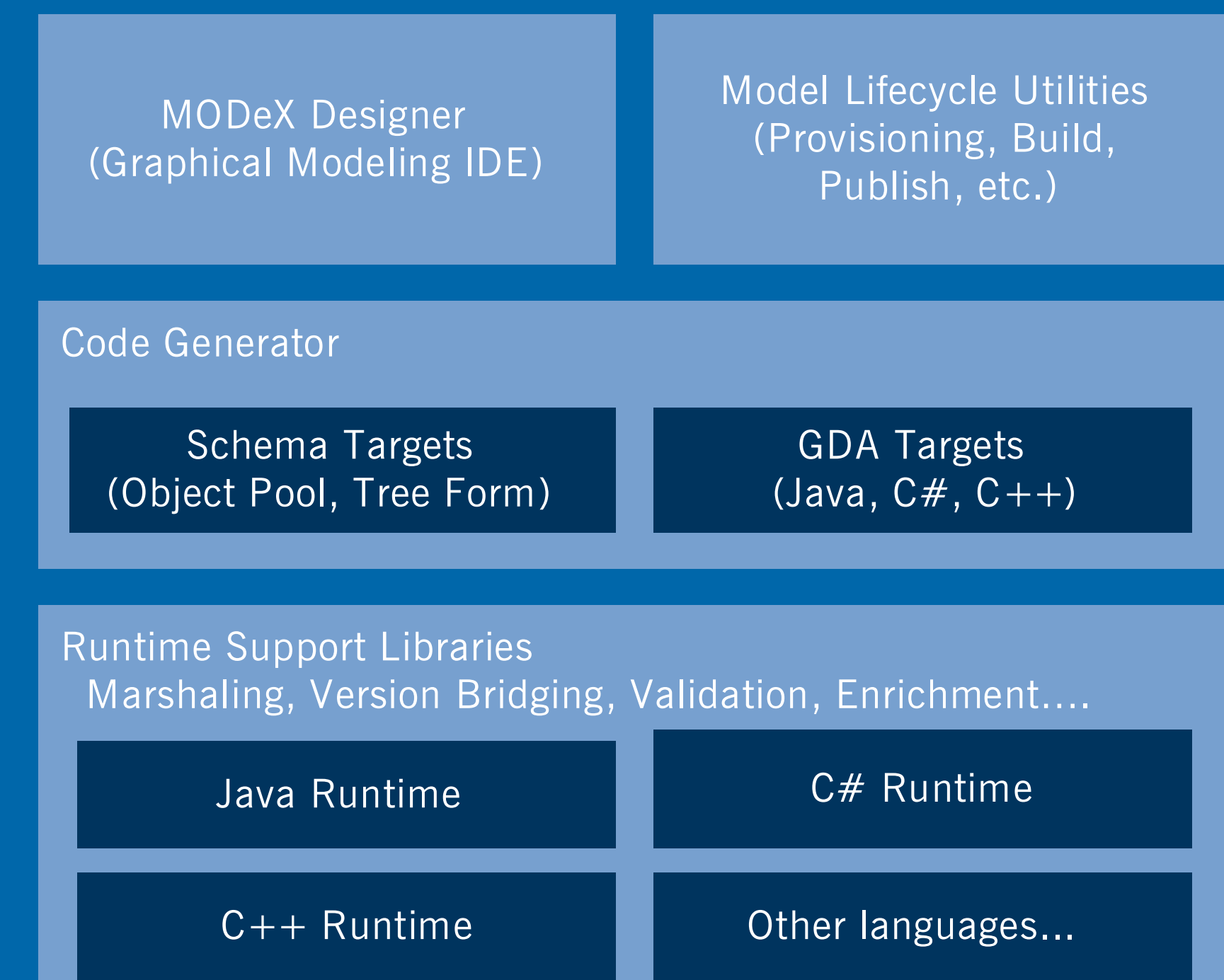
**Challenge: Create a domain-specific modeling language for enterprise data integration**

MODeX is a model-driven solution for Enterprise SOA. Where general-purpose SOA and MDD toolsets focus on developer productivity, MODeX is additionally concerned with enterprise-scale issues like versioning, standardization, and reducing long-term barriers to system integration.

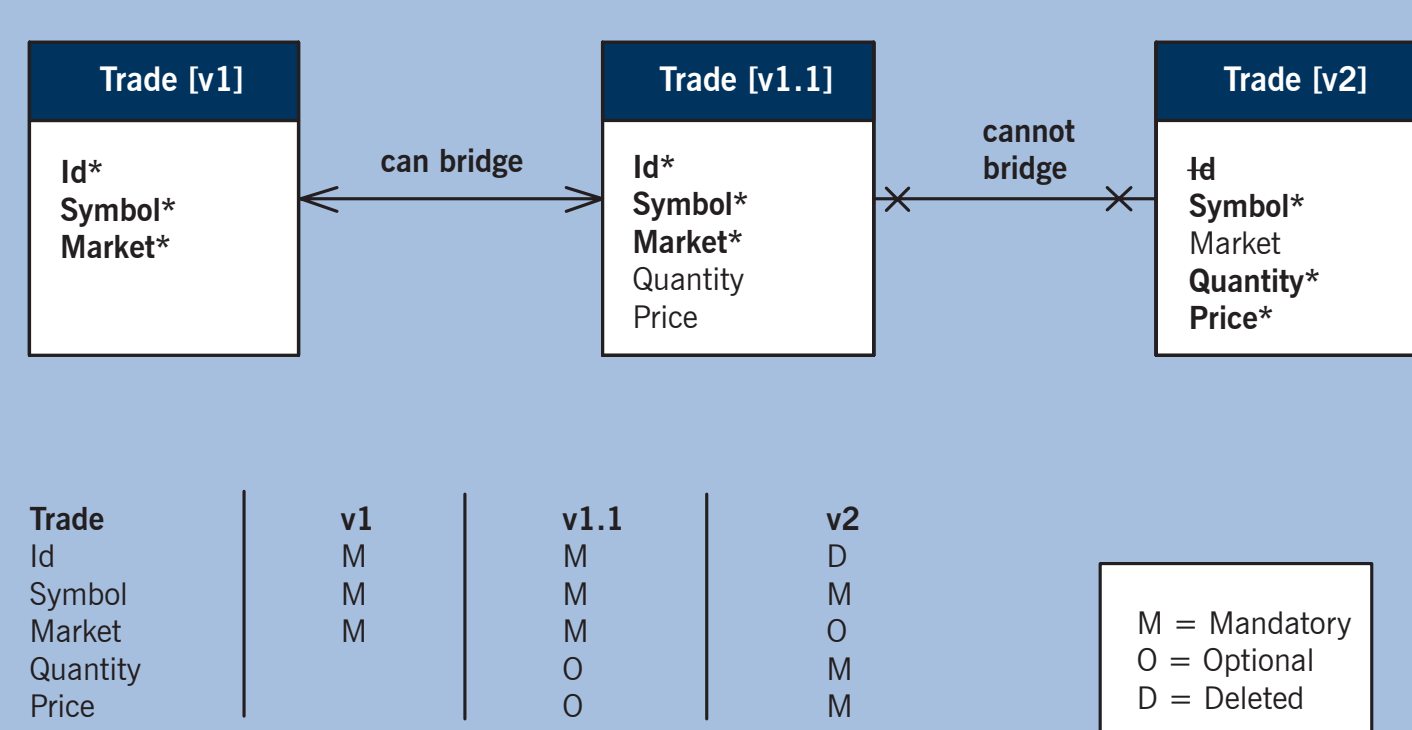
### Specifications



### Core Technologies



### Versioning



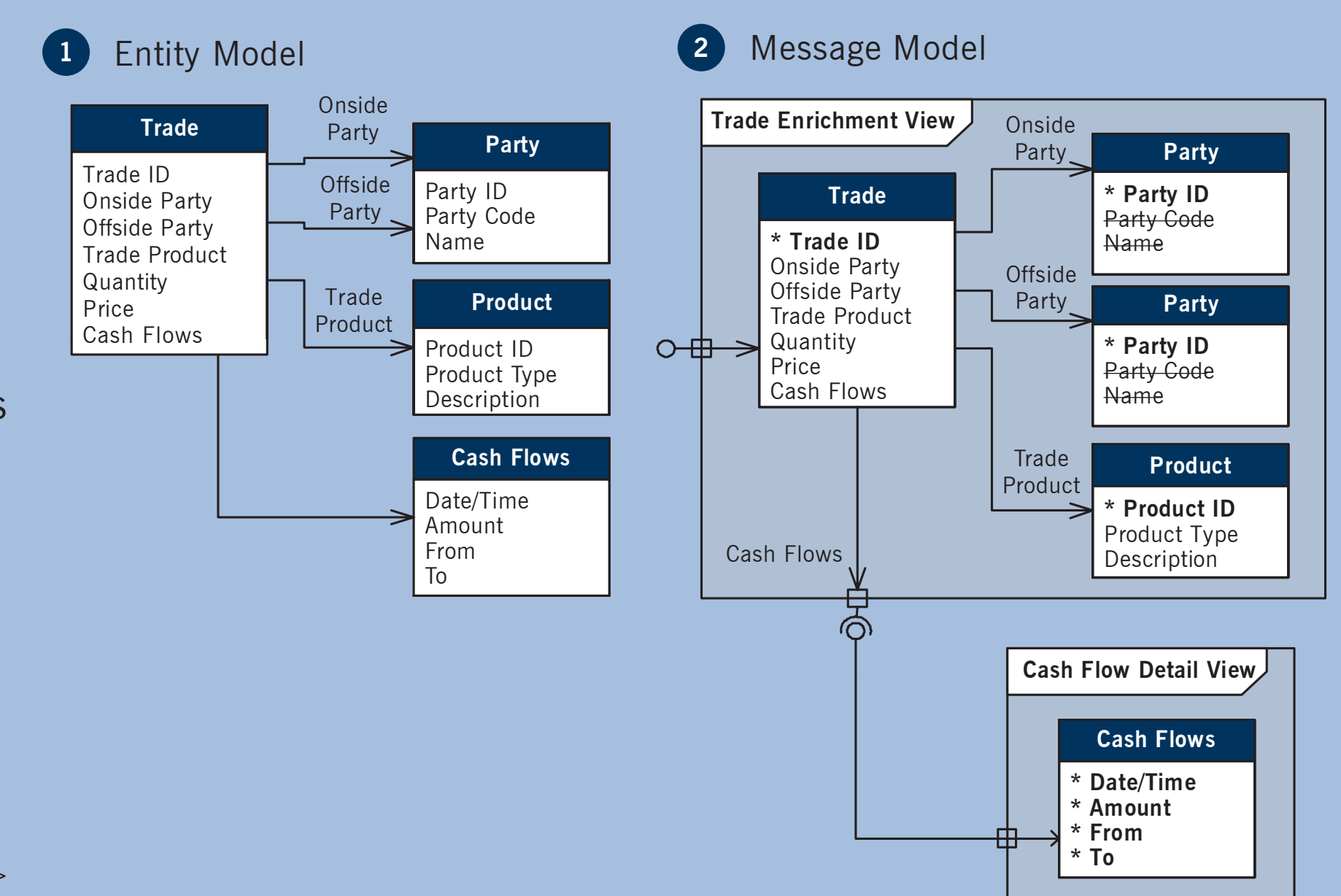
Minor versions can add optional fields. Runtimes support minor version bridging, and unknown field data pass-through.

Major versions can completely alter fields: add, remove, delete, change optional/mandatory status. Does not work with existing contracts, but tooling can allow smoother major version migration.

Modeling tool maintains multiple copies of Entity for every version, minor or major.

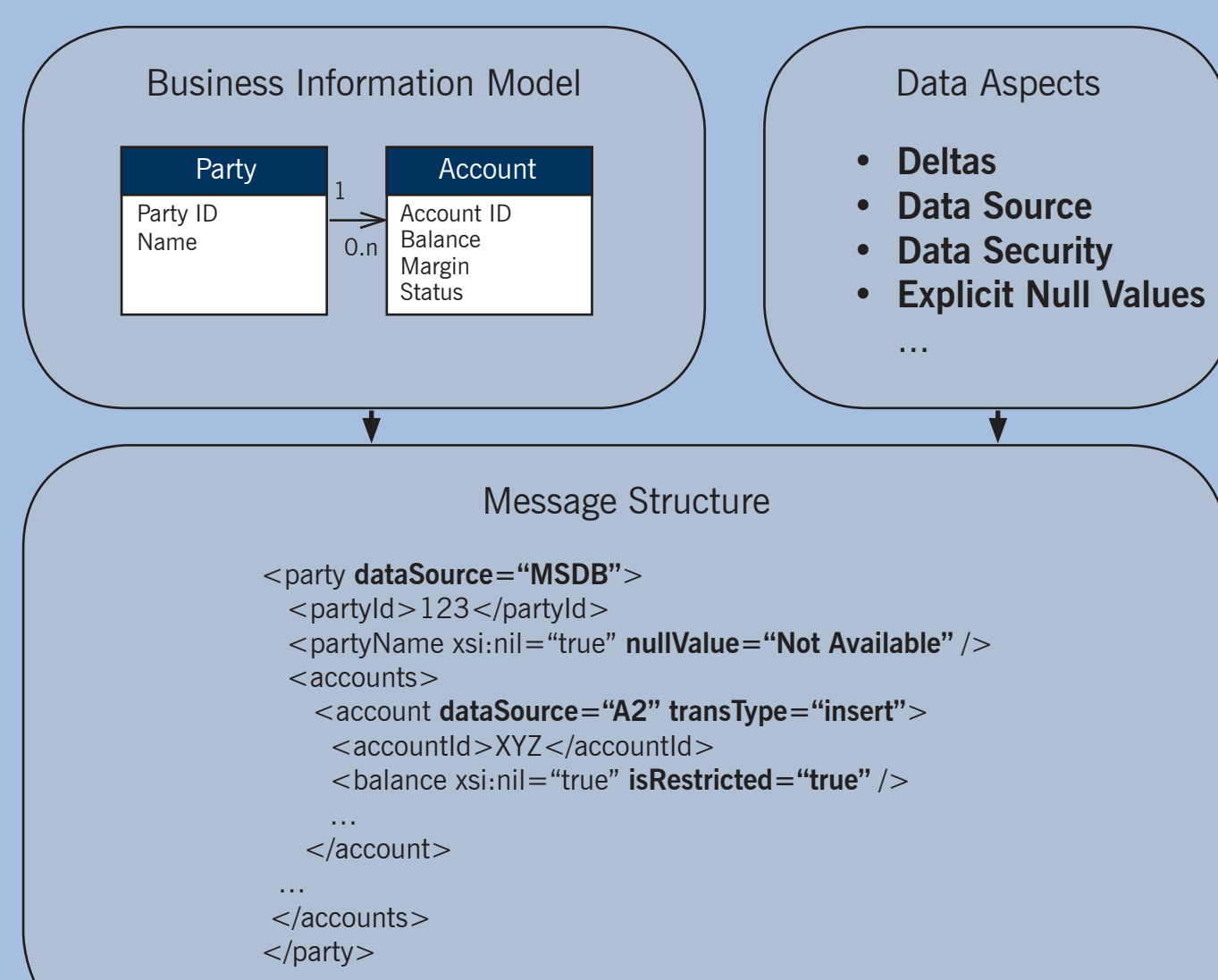
### Message Contracts

- Building blocks for message contracts
- Specified in terms of the underlying entity model
- Allows presence constraints: optional, required, excluded
- Extensible to allow additional constraints

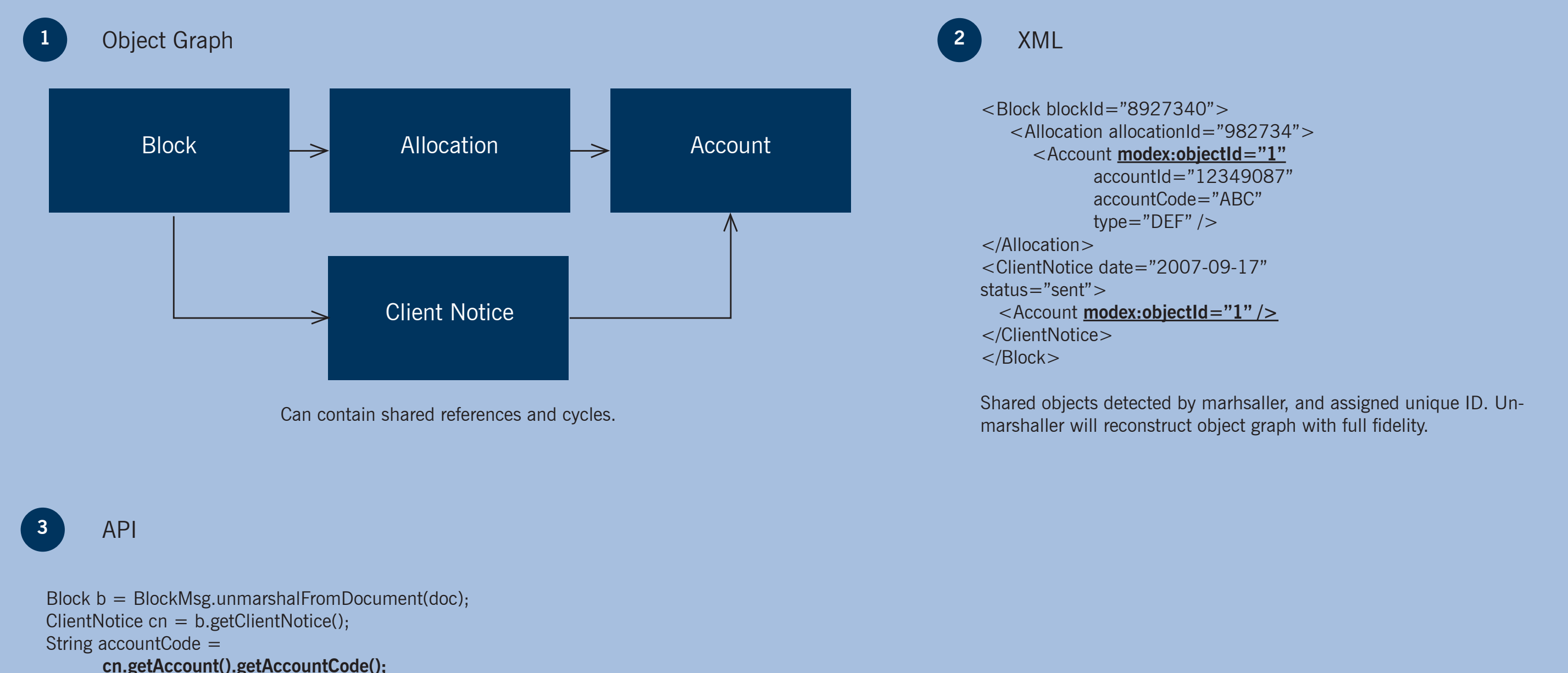


### Data Aspects

- A way of specifying cross-cutting concerns in messaging
- Allows introduction of metadata without changing the underlying entity model
- Extensible to allow new aspects to be woven in as necessary



### Full-Fidelity Messaging



### Rich Validation Rules

- Ability to extend validation beyond what schema allows.
- Templates for common validation patterns:
  - If Field 1 = X, then field 2 must = A, B or C
  - If Field 1 is populated, Fields 2 and 3 must also be populated.
  - ...
- Integration with JBoss Rules for open-ended expression of complex rules

### Federated Model Repository

- Allows loosely coupled versioning and lifecycle management across model domains.
- Each domain chooses independently which release of each model it works with.
- Domain owners coordinate on major model changes

### Data Store Integration

- Semi-Static Enumerations:** a primitive field whose values are validated against a database or data service.
- Enrichment On Demand:** dynamic lookup and population of values as object graph is traversed, and as values are requested