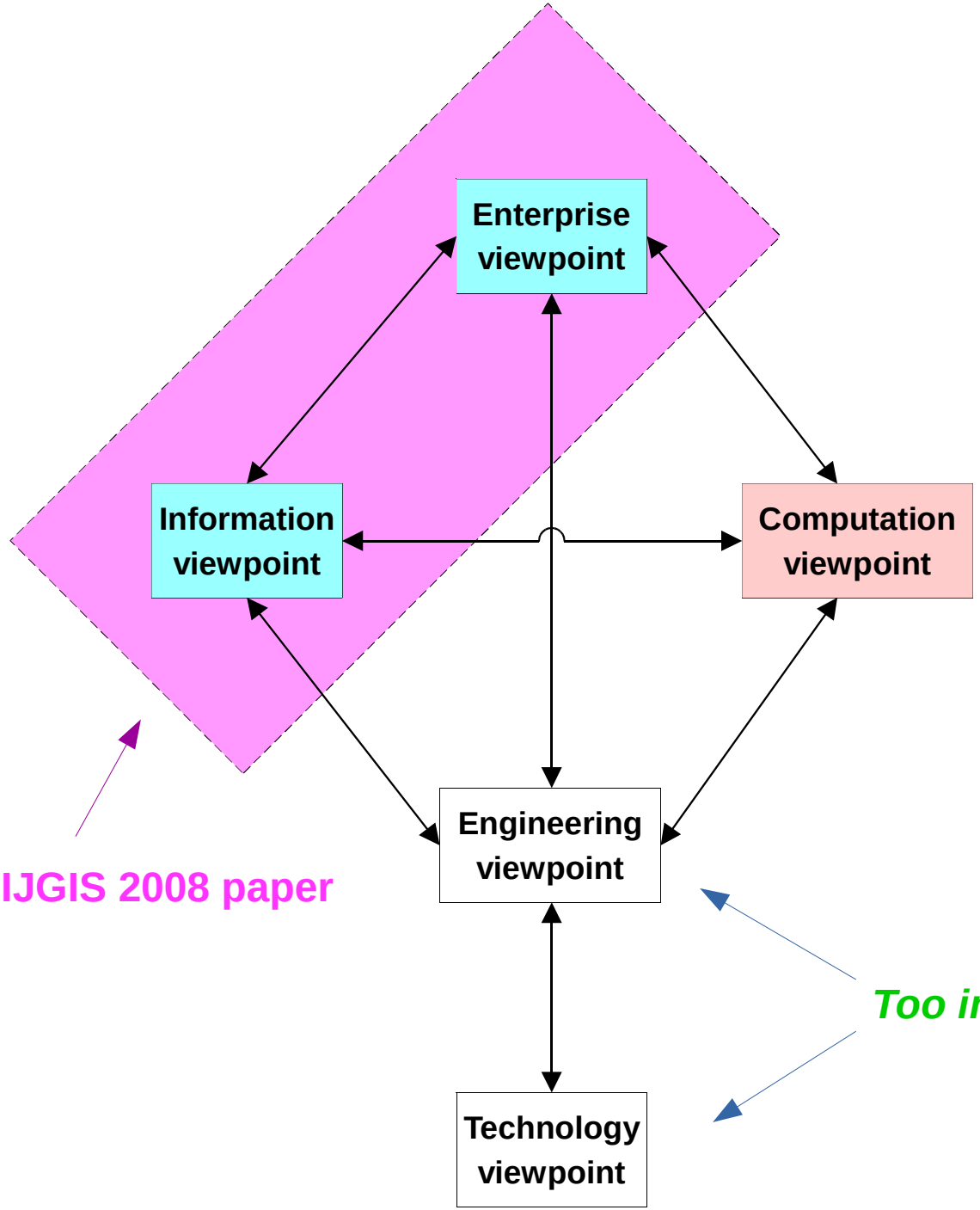



ISO/IEC 10746-1:1998, *Reference Model for Open Distributed Processing (RM-ODP)*

Used by ISO/TC 211 and OGC

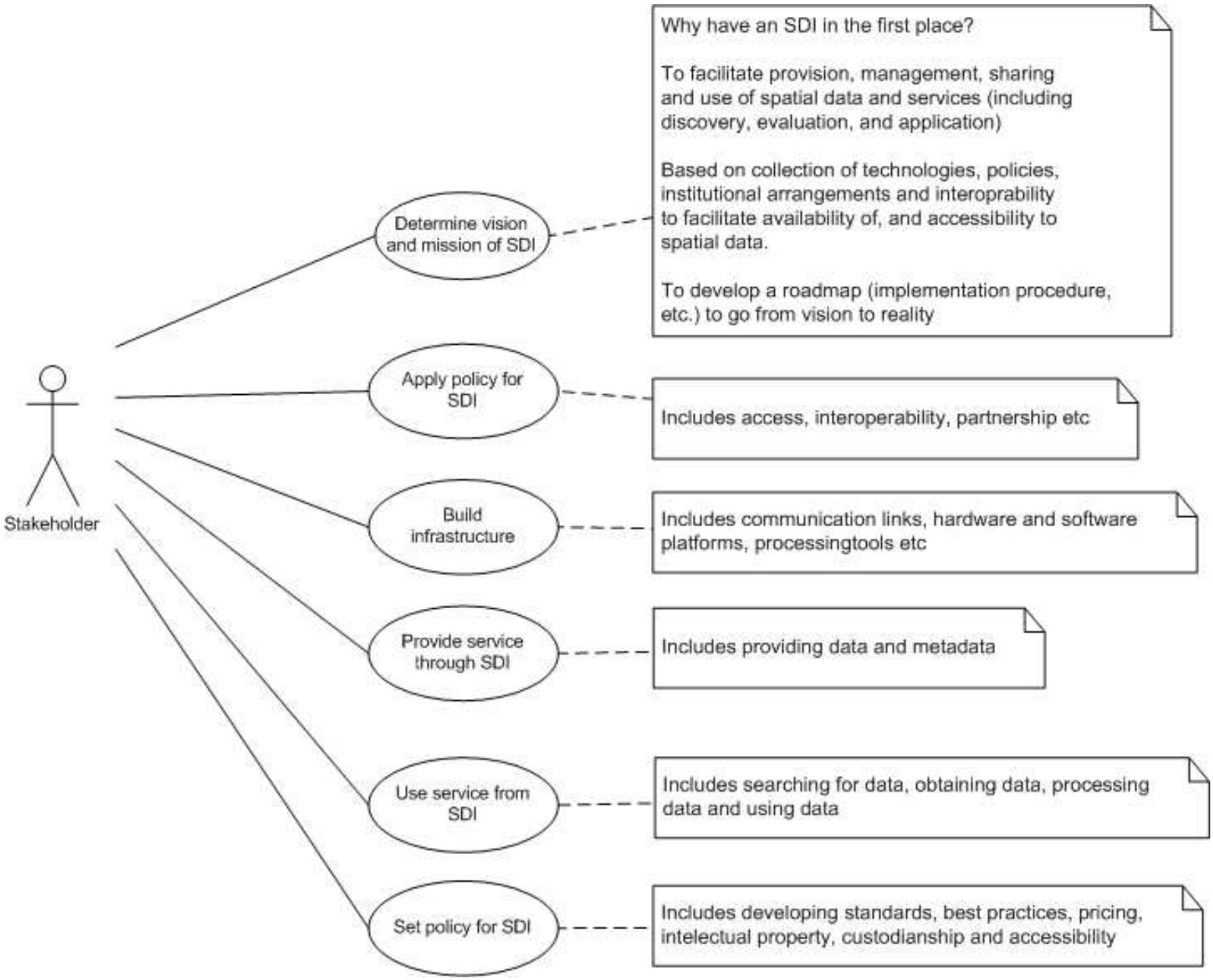
**IJGIS 2012 paper**

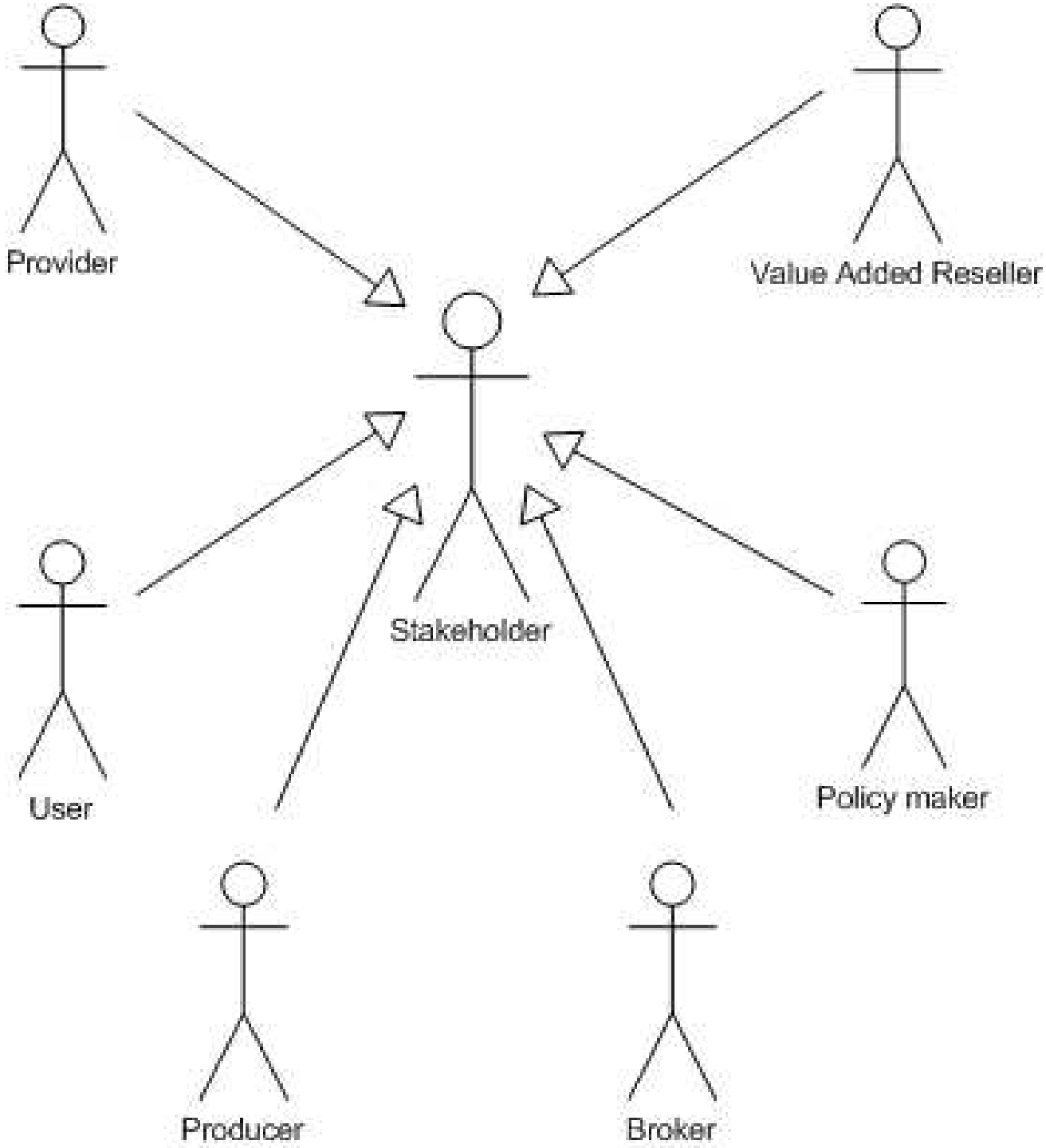
**IJGIS 2008 paper**

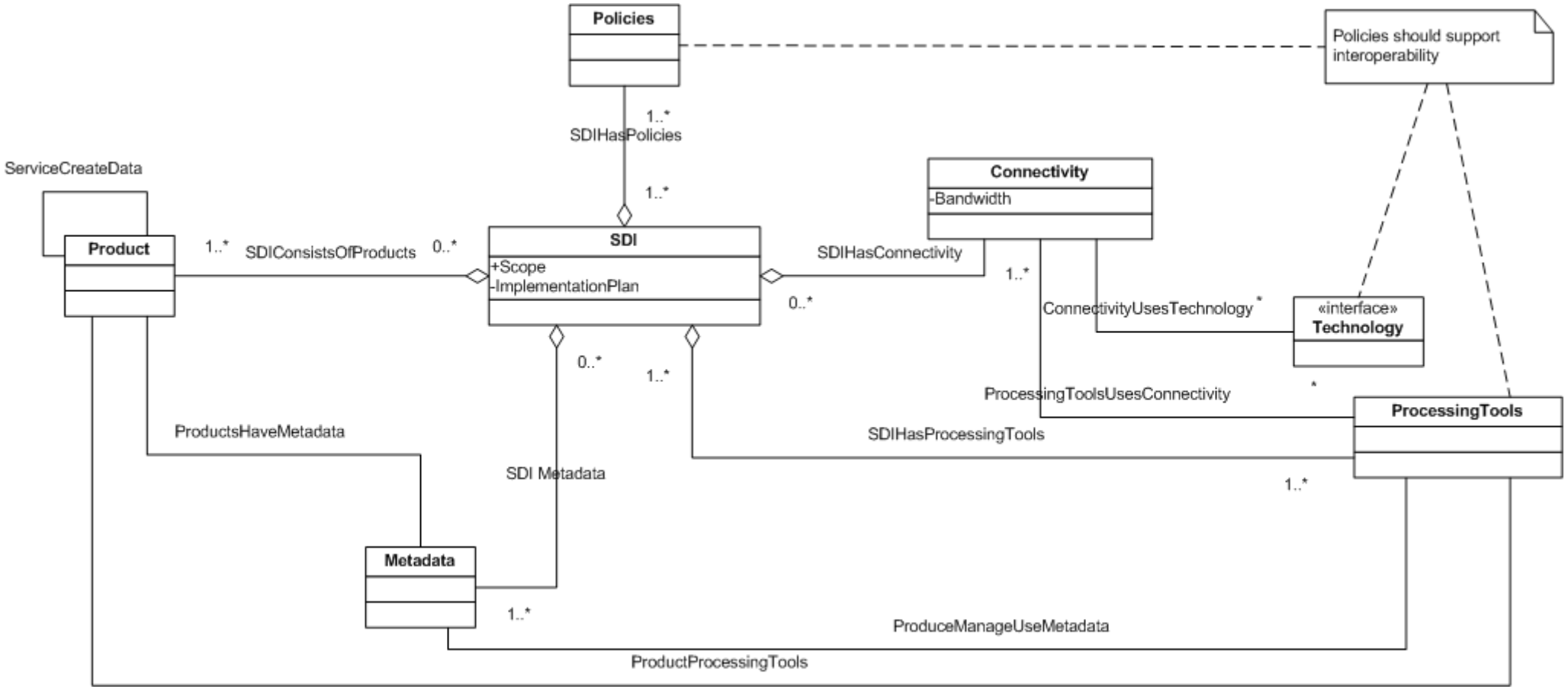
***Too implementation specific?***

# RM ODP

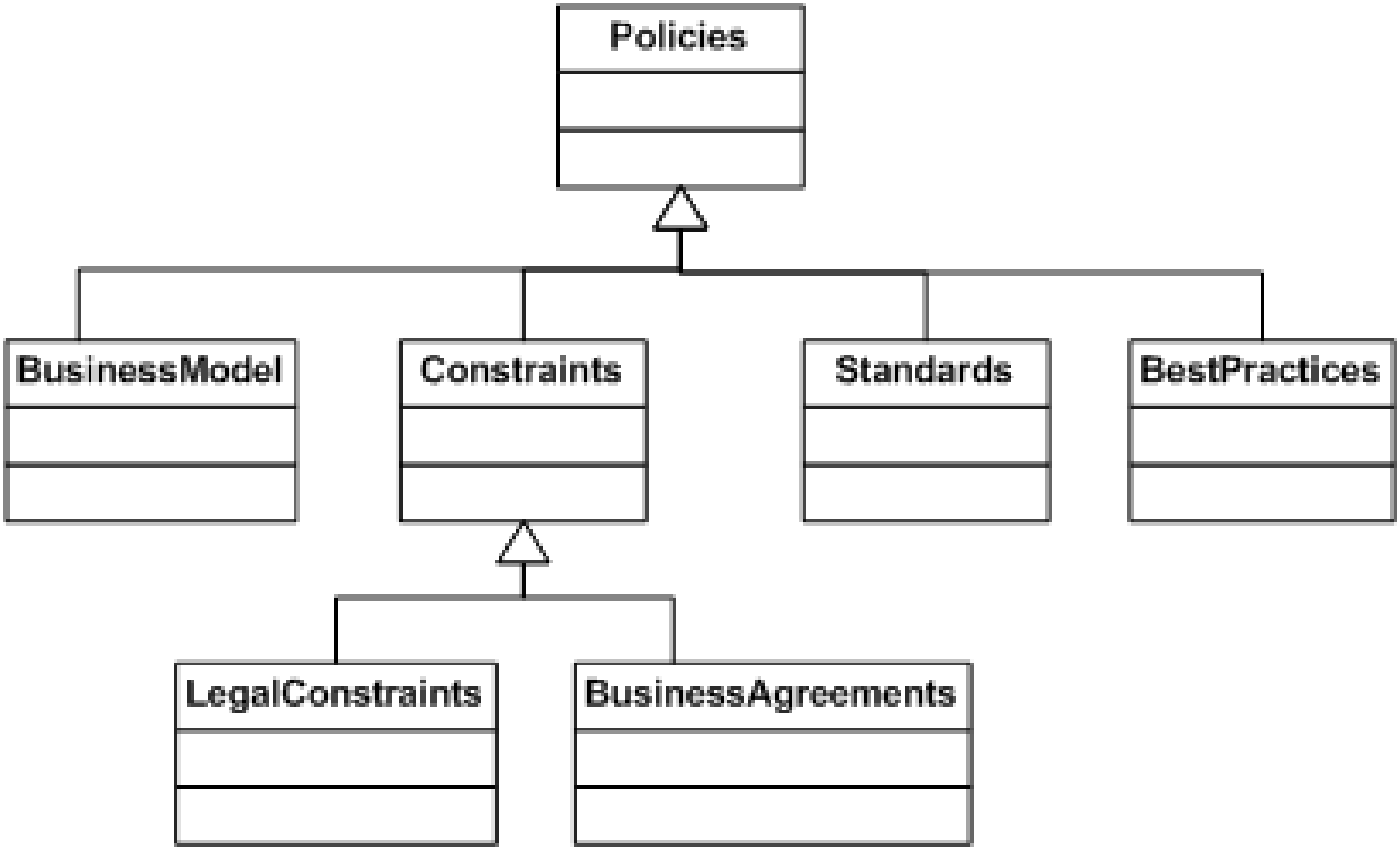
- Enterprise viewpoint
  - Purpose, scope and policies for an SDI; relationship of an SDI to its environment, its role and the policies associated.
- Information viewpoint
  - Semantics of information and information processing incorporated into an SDI; could define conceptual schemas (formal descriptions of the model) and methods for defining application schemas.
- Computational viewpoint
  - Functional decomposition of the SDI into a set of services that interact through interfaces; captures the details of these services and interface definitions without regard to distribution.
- Engineering viewpoint
  - Mechanisms and functions required to support distributed interaction between the services and data within a system (i.e. the SDI); concerned primarily with the interaction between distinct services and data; chief concerns are: communication, computing systems, software processes, and the clustering of computational functions at physical nodes of a communications network.
- Technology viewpoint
  - Specific technologies chosen for the implementation of an SDI.

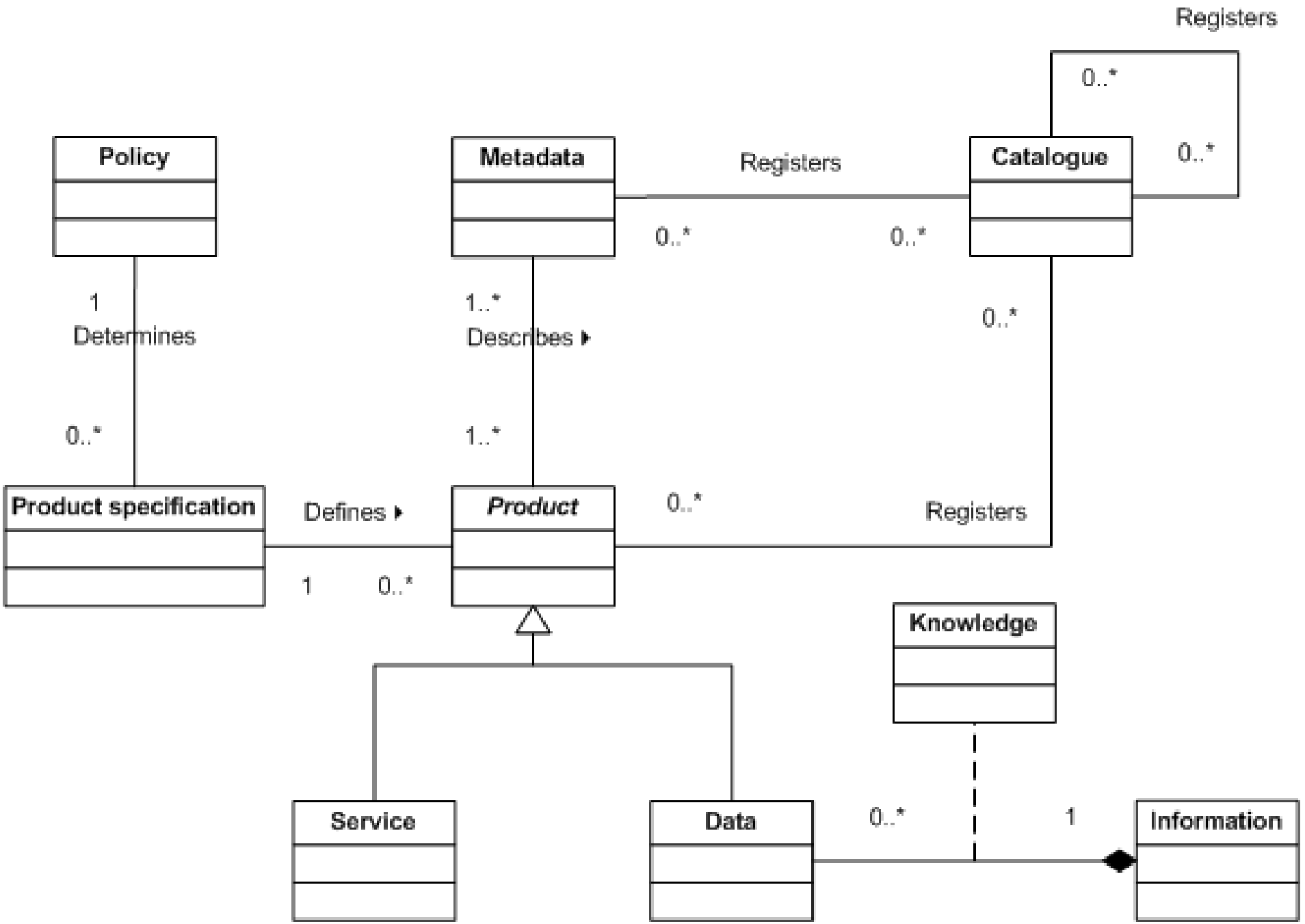

Why have an SDI in the first place?
To facilitate provision, management, sharing and use of spatial data and services (including discovery, evaluation, and application)
Based on collection of technologies, policies, institutional arrangements and interoprability to facilitate availability of, and accessibility to spatial data.
To develop a roadmap (implementation procedure, etc.) to go from vision to reality
Determine vision and mission of SDI
Stakeholder
Apply policy for SDI
Includes access, interoperability, partnership etc
Build infrastructure
Includes communication links, hardware and software platforms, processingtools etc
Provide service through SDI
Includes providing data and metadata
Use service from SDI
Includes searching for data, obtaining data, processing data and using data
Set policy for SDI
Includes developing standards, best practices, pricing, intelectual property, custodianship and accessibility


Provider
Value Added Reseller
Stakeholder
User
Policy maker
Producer
Broker



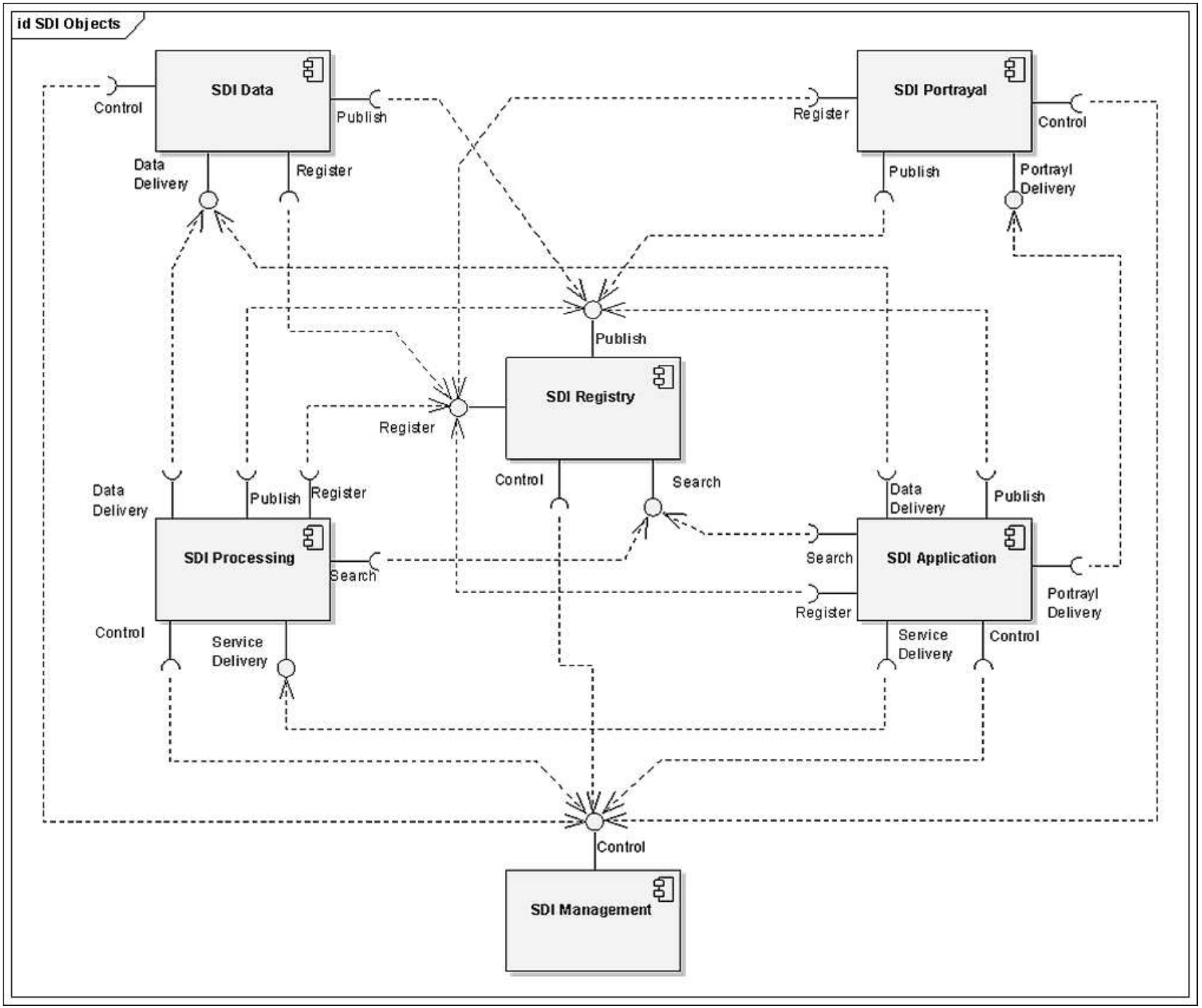

Enterprise viewpoint of an SDI

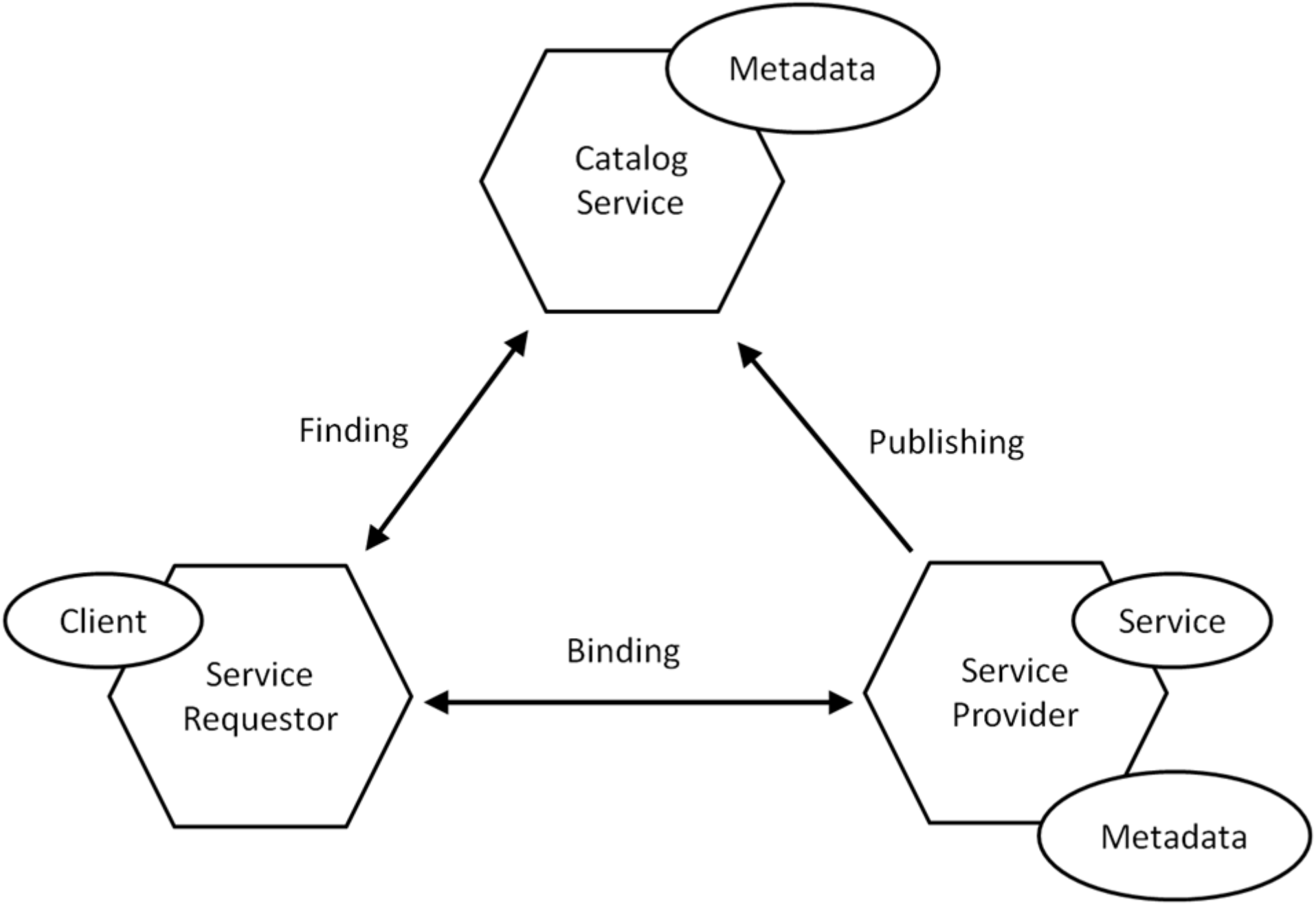

Policies
BusinessModel
Constraints
Standards
BestPractices
LegalConstraints
BusinessAgreements

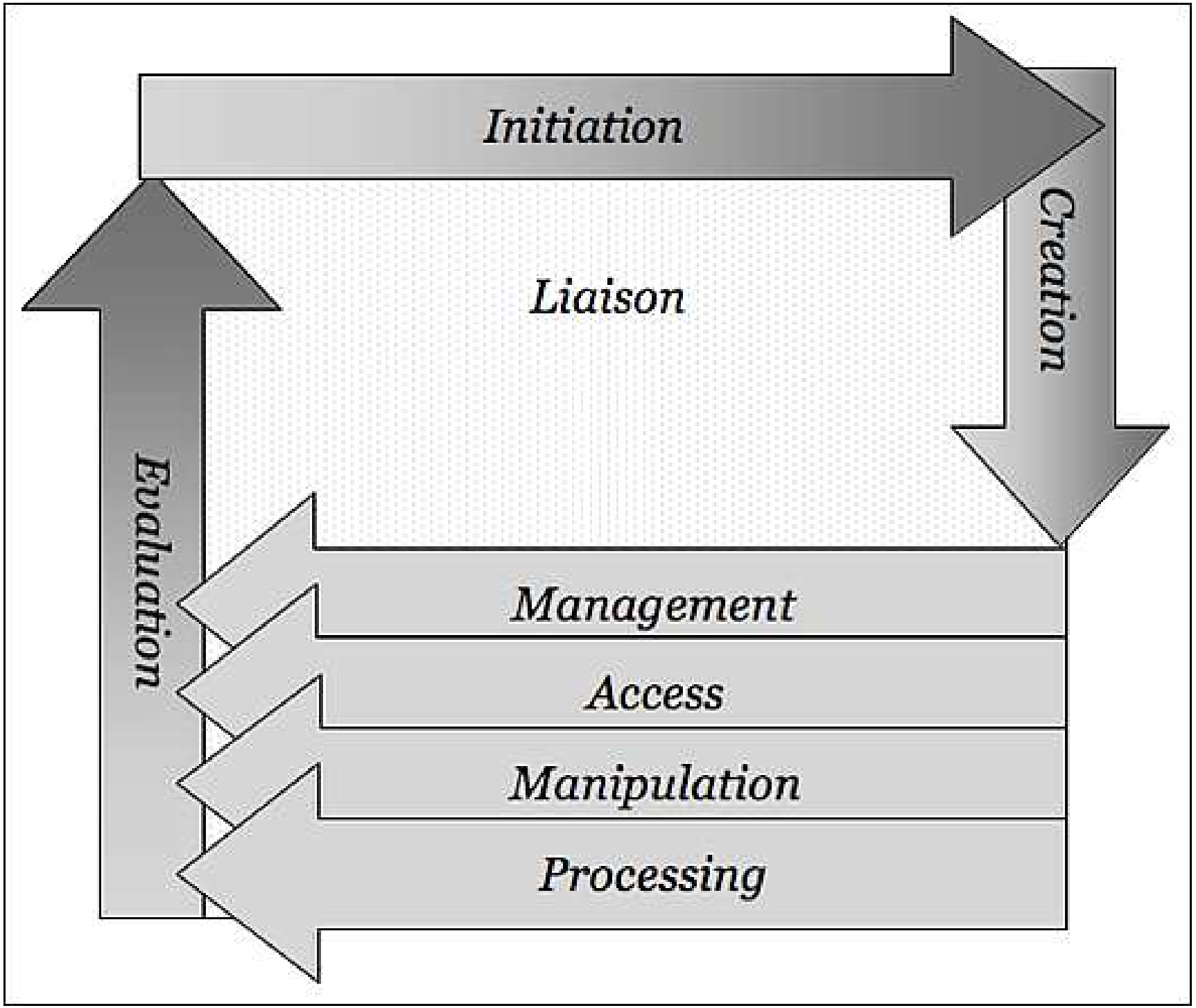



Information viewpoint of an SDI

| UML Classes | Stakeholder (Actor)<br>Activity | Policy Maker | Producer | Provider | Broker | VAR | End User |
|---|---|---|---|---|---|---|---|
| Policies | Make policy | A | P | P | P | P | P |
| | Apply policy | A | A | A | A | A | P |
| | Make business plan | - | A | A | A | A | - |
| | Use business plan | - | A | A | A | A | - |
| | | | | | | | |
| Product specifications | Consult users | A | A | A | - | A | P |
| | Stipulate requirements | P | A | P | P | A | A |
| | Translate into product specifications | - | A | A | A | A | P |
| | Obtain and implement product specifications | - | A | A | A | A | P |
| | | | | | | | |
| Product | Capture/create data (from source) | - | A | - | - | A | - |
| | Produce product | - | A | A | A | A | - |
| | Assure quality (production process) | - | A | A | A | A | - |
| | Assure quality (certification of product) | - | A | A | A | A | P |
| | Provide product | - | - | A | A | A | P |
| | Use products | - | - | - | - | A | A |
| | Maintain product | - | A | A | A | A | - |
| | | | | | | | |
| Metadata (incl. Service capability) | Produce metadata | - | A | A | A | A | - |
| | Assure quality of metadata | - | A | A | A | A | - |
| | Provide metadata | - | - | A | A | A | P |
| | Harvest metadata | - | - | P | A | P | - |
| | Search through metadata | - | - | - | A | A | A |
| | Analyse metadata | - | - | - | A | A | A |
| | Maintain metadata | - | A | A | A | A | - |
| | | | | | | | |
| Catalogue | Produce catalogue | - | A | A | A | A | - |
| | Provide catalogue | - | - | A | A | A | P |
| | Search for catalogue (incl. chaining) | - | - | - | A | A | A |
| | Search through catalogue | - | - | - | A | A | A |
| | Maintain catalogue | - | A | A | A | A | - |


id SDI Objects
SDI Data
Control
Publish
Data Delivery
Register
SDI Portrayal
Register
Control
Publish
Portrayl Delivery
Publish
SDI Registry
Register
Control
Search
Data Delivery
Publish
Register
SDI Processing
Search
Control
Service Delivery
Data Delivery
Publish
SDI Application
Search
Register
Portrayl Delivery
Service Delivery
Control
Control
SDI Management


Metadata
Catalog
Service
Finding
Publishing
Client
Service
Requestor
Binding
Service
Service
Provider
Metadata


Initiation
Creation
Liaison
Evaluation
Management
Access
Manipulation
Processing

Hjelmager, Jan, Moellering, Harold, Cooper, Antony, Delgado, Tatiana, Rajabifard, Abbas, Rapant, Petr, Danko, David, Huet, Michel, Laurent, Dominique, Aalders, Henri, Iwaniak, Adam, Abad, Paloma, Düren, Ulrich and Martynenko, Alexander (2008) 'An initial formal model for spatial data infrastructures',International Journal of Geographical Information Science, 22:11, 1295 — 1309.

Antony K. Cooper, Harold Moellering, Jan Hjelmager, Petr Rapant, Tatiana Delgado, Dominique Laurent, Serena Coetzee, David M. Danko, Ulrich Düren, Adam Iwaniak, Jean Brodeur, Paloma Abad, Michel Huet & Abbas Rajabifard (2012): A spatial data infrastructure model from the computational viewpoint, International Journal of Geographical Information Science, DOI:10.1080/13658816.2012.741239