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BITA challenge with Facet-based Model Mapping Method

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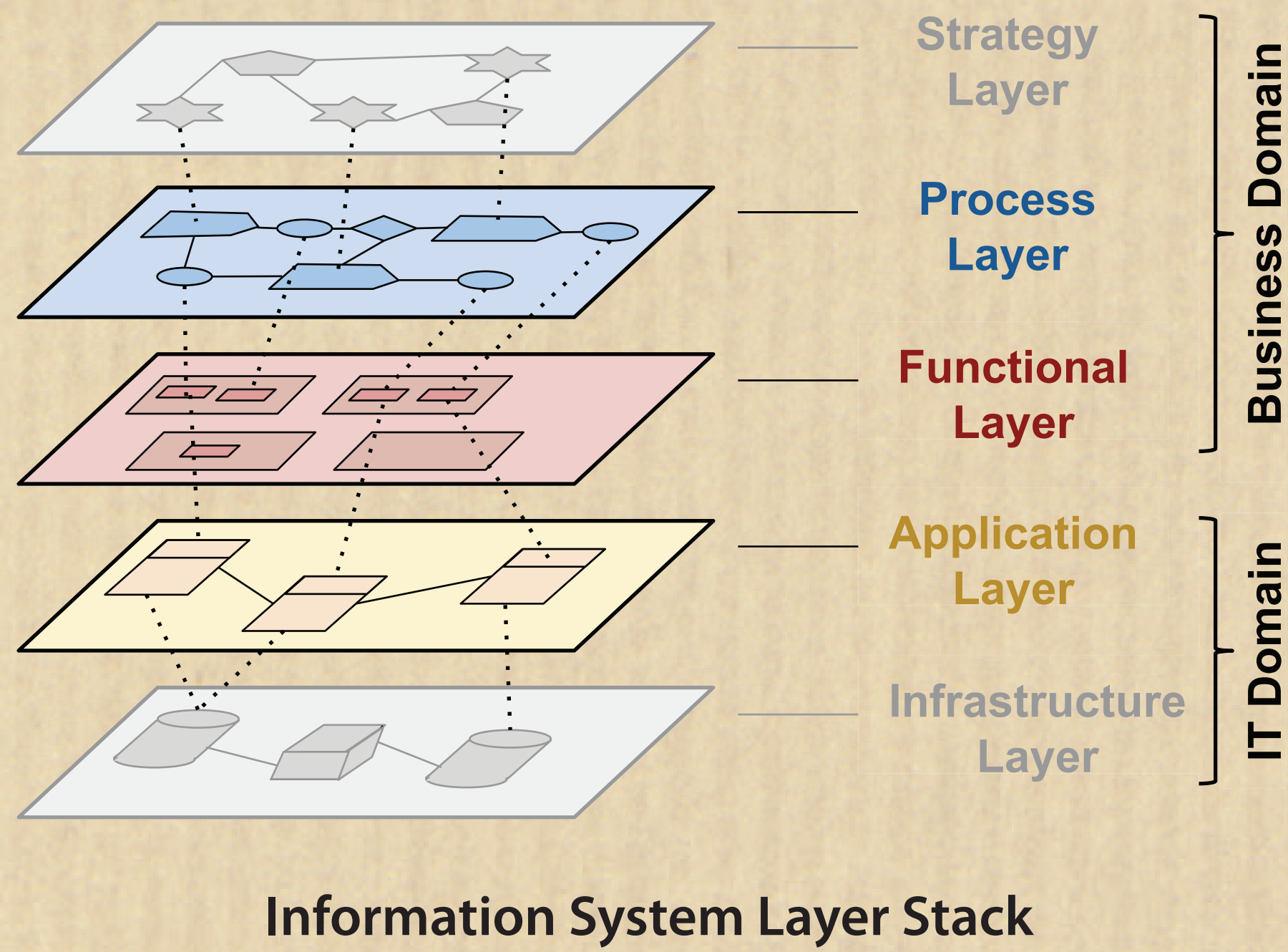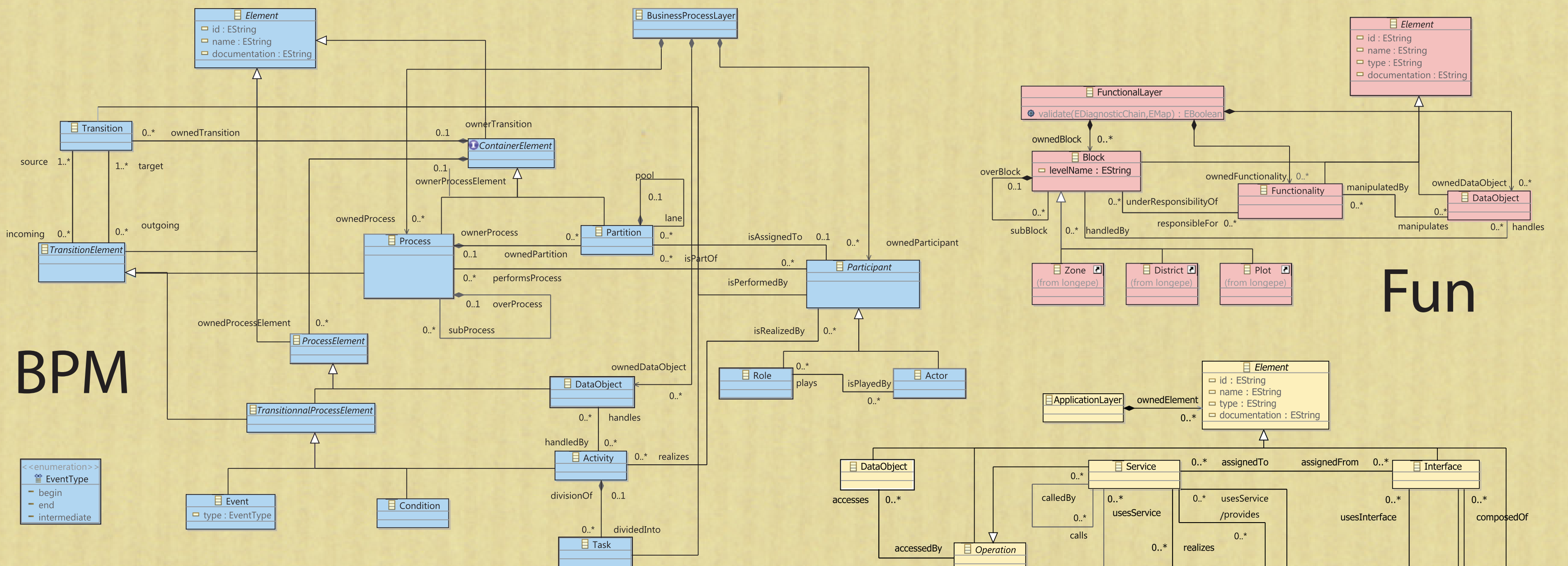
Information System Challenges

- BITA: Business- IT alignment
- Two-way navigation through stacked layers
- Assisted tooling to align with semantic defintion
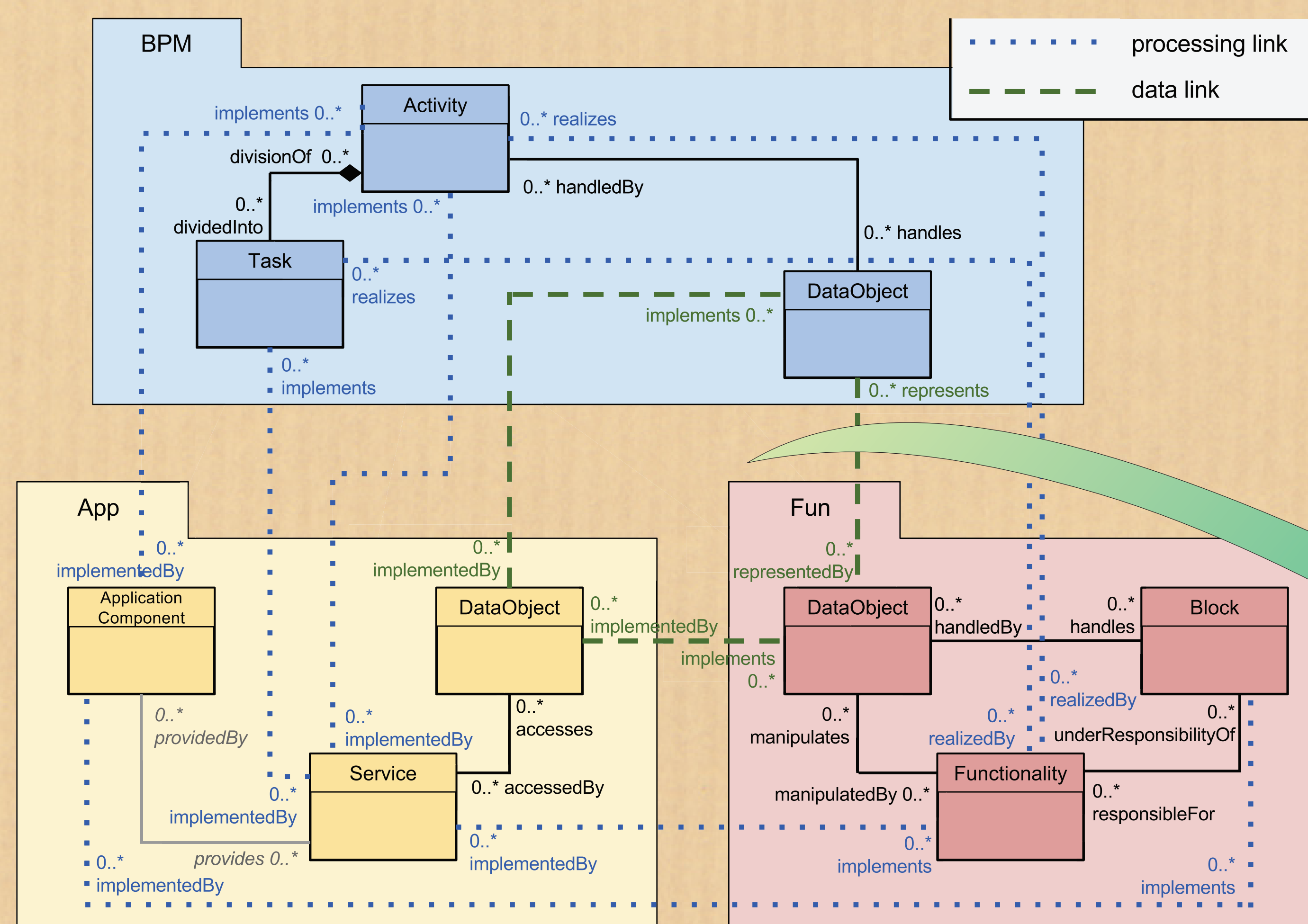- Using metrics to drive Information System (IS)

Information System Layer Stack

Three Generic Architecture Enterprise Meta-Models

BPM

Fun

App

BPM depicts the IS business processes: *actors, activities, tasks and data.*
Fun depicts the functional view: *blocks/sub-blocks and data stores.*
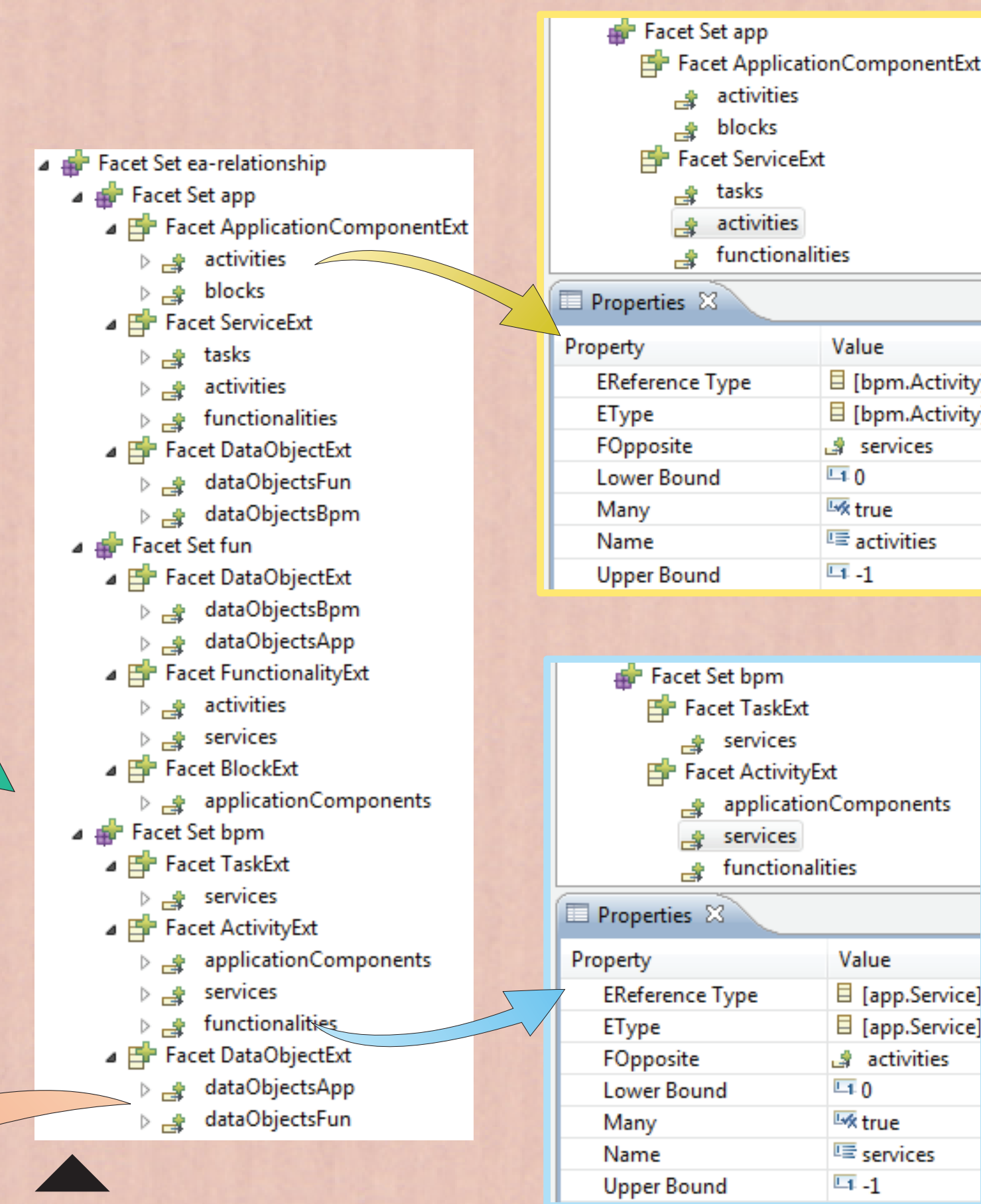**App** depicts the software architecture: *application components, services and data.*

Alignment Meta-Model Relationships

- processing link
- data link

Data and process links are defined between:
- business domain: functional **Fun** and process **BPM** meta-models
- IT domain: application **App** meta-model
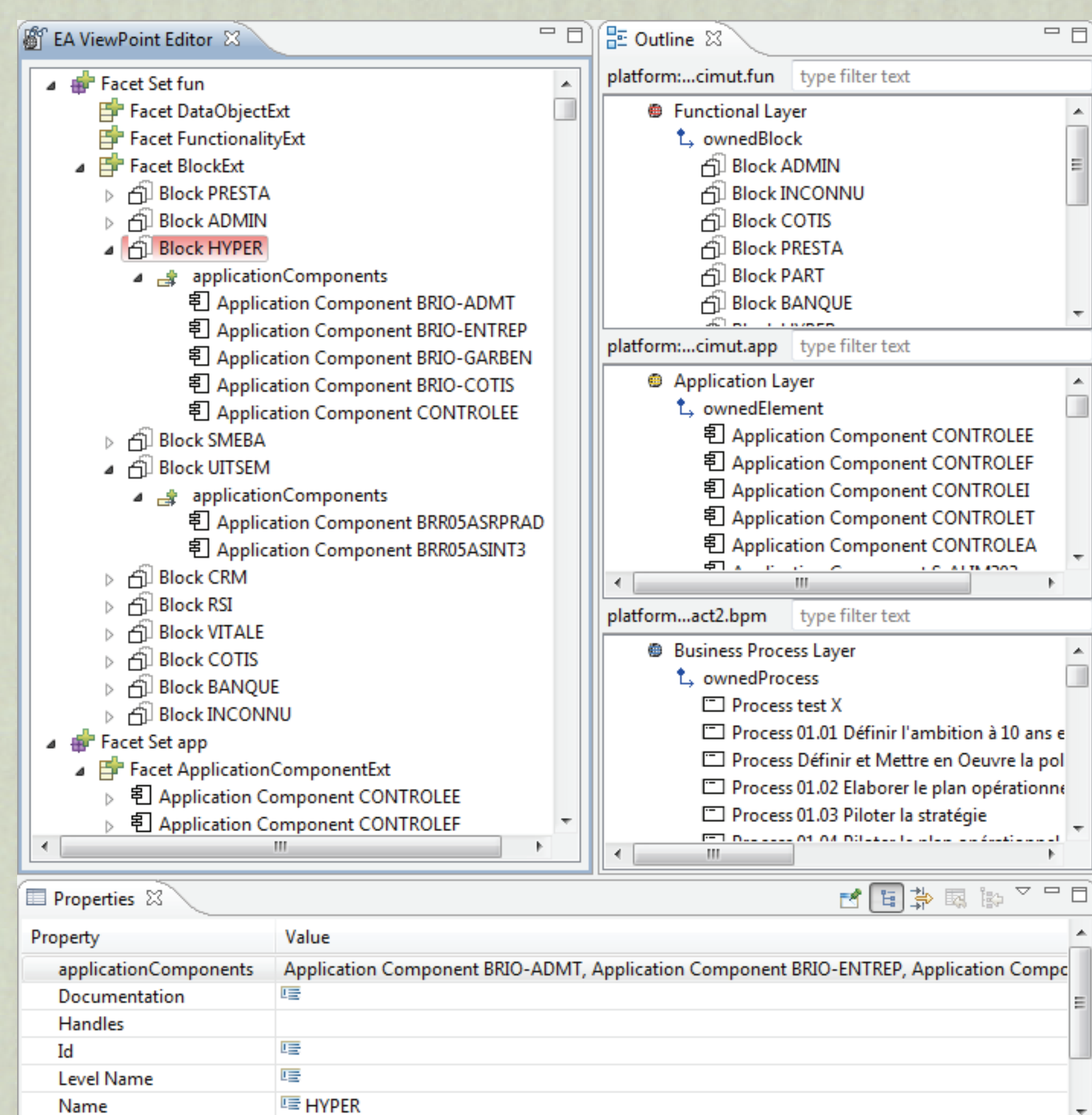
Facet Definition

EMF Facet is open-source project to extend a meta-model (MM) without intrusion. It provide a mechanism to add virtually attributes and references to and between existing concepts.
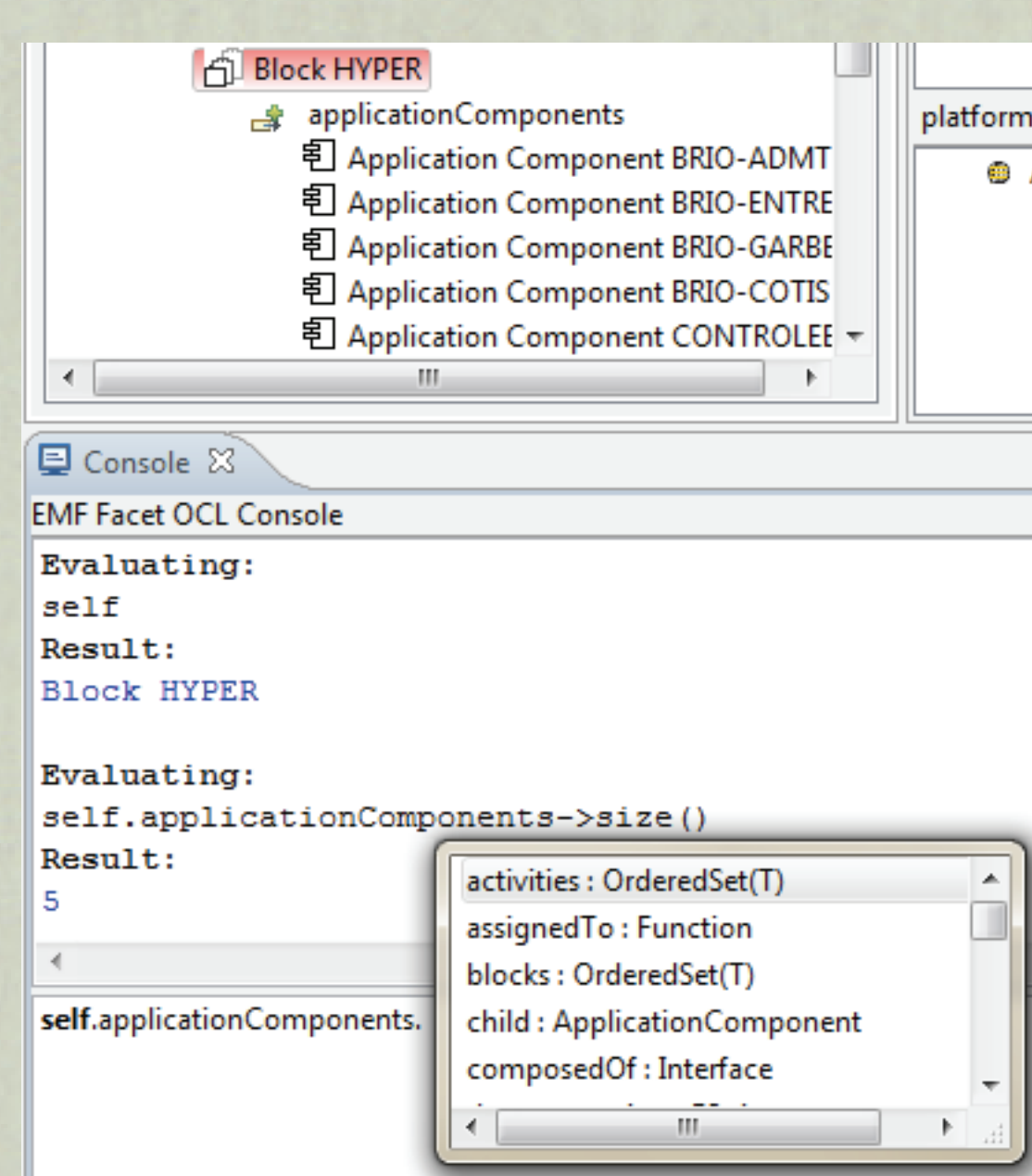

EMF Facet has originally limitations for weaving: virtual features calculated only by query, no manual assignment. We contribute to the project by modifying the MM and engine:
- manual values of FacetReference and FacetAttribute
- add reflexive reference fOpposite
- improve serialization mechanism

Example: definition of reflexive references *activities* and *services* between **Activity** from BPM and **Service** from App

Tooling at Model Instance

Our developed Eclipse Plugin weaver assistant:
- right, models to weave ; left, the result
- creation of specific link using Facet definition
- tree-like browser and quick search of concepts
- links created by drag & drop

Contribution to EMF Facet project to extend OCL query engine:
- navigation in new Facet features
- auto-complete to assist query writing
- calculation and list from concepts

Results

- Feasability of the alignment model with Facet method
- Contribution submitted to open source Eclipse EMF Facet
- Full coverage of concepts contained in EA models

Perspectives

- Analyser to identify misalignments with help from our OCL console
- Compute Dependency Structure Matrix (DSM)

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