Systemic Framework for Enterprise Architecture & Transformation

Architecture Properties

Introduction

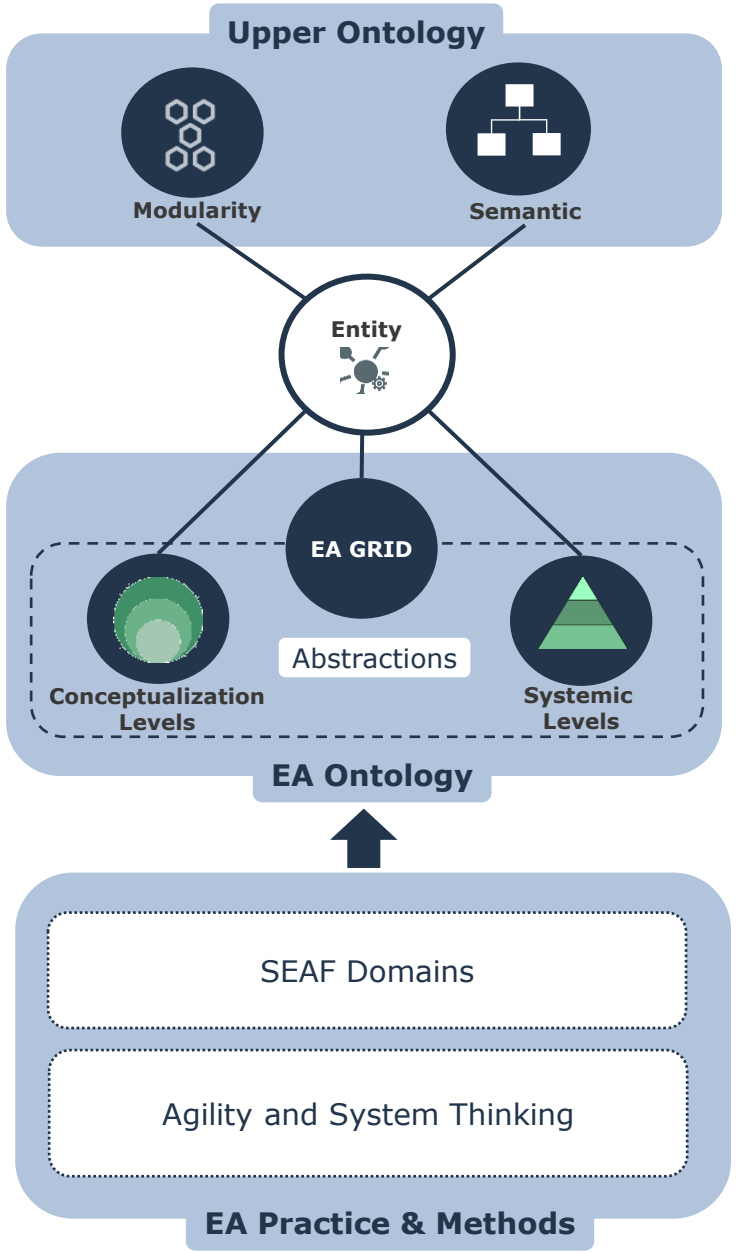
- This document is an integral component of the SysFEAT architectural framework. It provides foundations to address the challenges posed by Enterprise Architecture in the 21st century, which include :
  - Increasing complexity in system structures and behaviors.
  - Growing intricacy in architecture, management and governance of these systems.
  - The mission of the framework is to demystify these complexities, ensuring they are comprehensible to a broad audience, thereby facilitating the design and management of complex-systems across all scales, from micro-systems to enterprise level systems.

- Enterprise Modeling refers to the overarching language and conceptual framework used to describe, understand, and communicate the complex structures and dynamics of an enterprise.
- It integrates both the operating aspects of the enterprise (how it functions and interacts within its ecosystem), the transformational aspects (how it evolves and sustains over time through initiatives, asset management) and how these transformations are governed to ensure effectiveness, efficiency and reliability.

- The following slides present the foundations of enterprise modeling.

Foundations of enterprise modeling

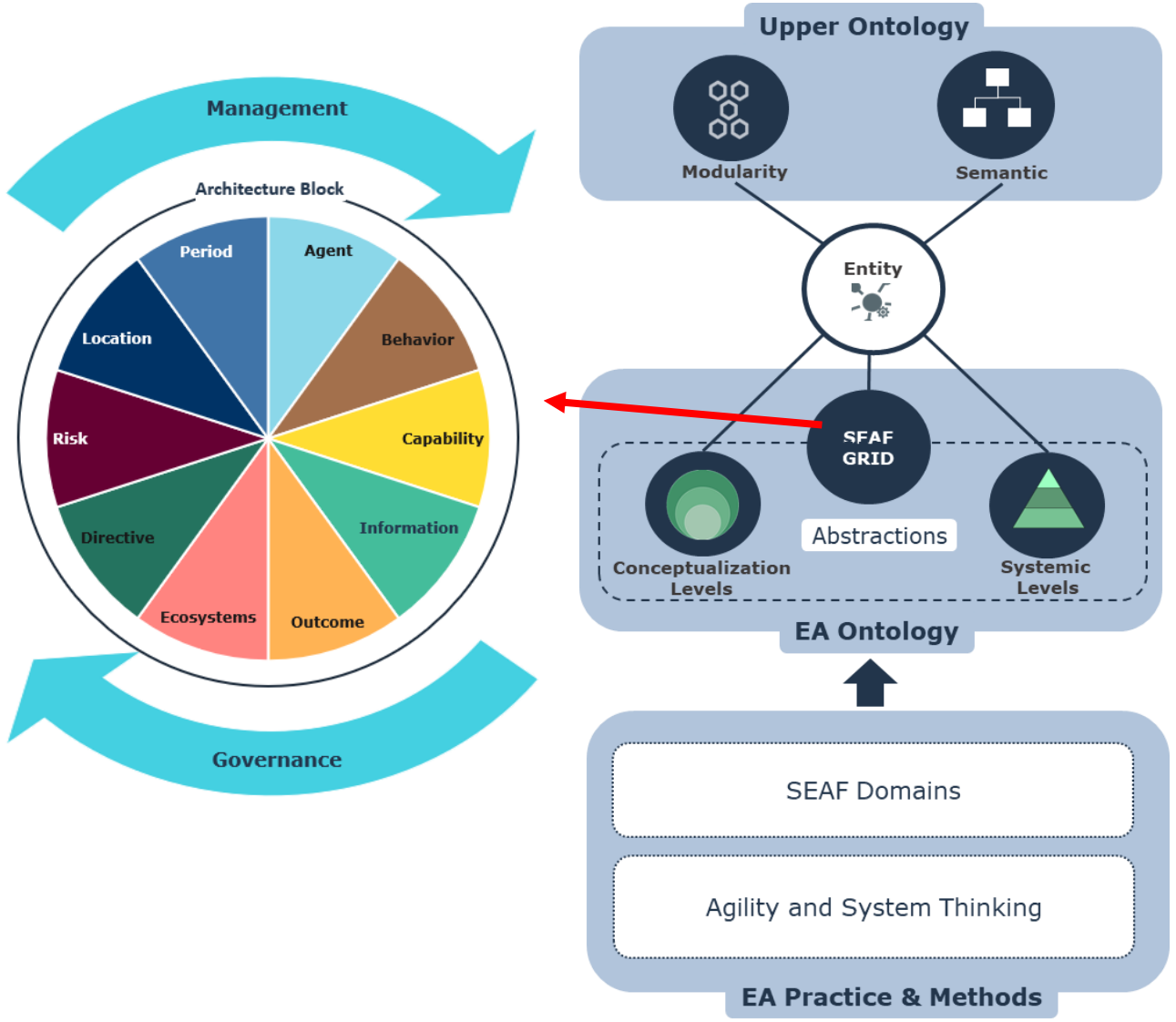
- **Modularity** provides the syntax for building robust, manageable, and scalable architectures, based on the principles of composability and packaging.
- **Semantic** provides robust capabilities for classifying and composing entities, from time-bound entities (individuals) to families of concepts, enabling effective representation of meaning.
- The **EA GRID** serves as the overarching language that describes why and how a system operates and interacts within its ecosystems.
- **Abstractions** organizes systems and concepts in degree of abstractions, including systemic levels and conceptualization levels.
- **EA Domains** formalize the various disciplines that make-up EA, ranging from enterprise road-mapping to System ArcDevOps.
- **Agility and System Thinking** ensure that the enterprise evolves and sustains over time through governed initiatives, architected for flexibility and responsiveness in complex and dynamic business environments.



The SEAF GRID in the Architecture Framework landscape

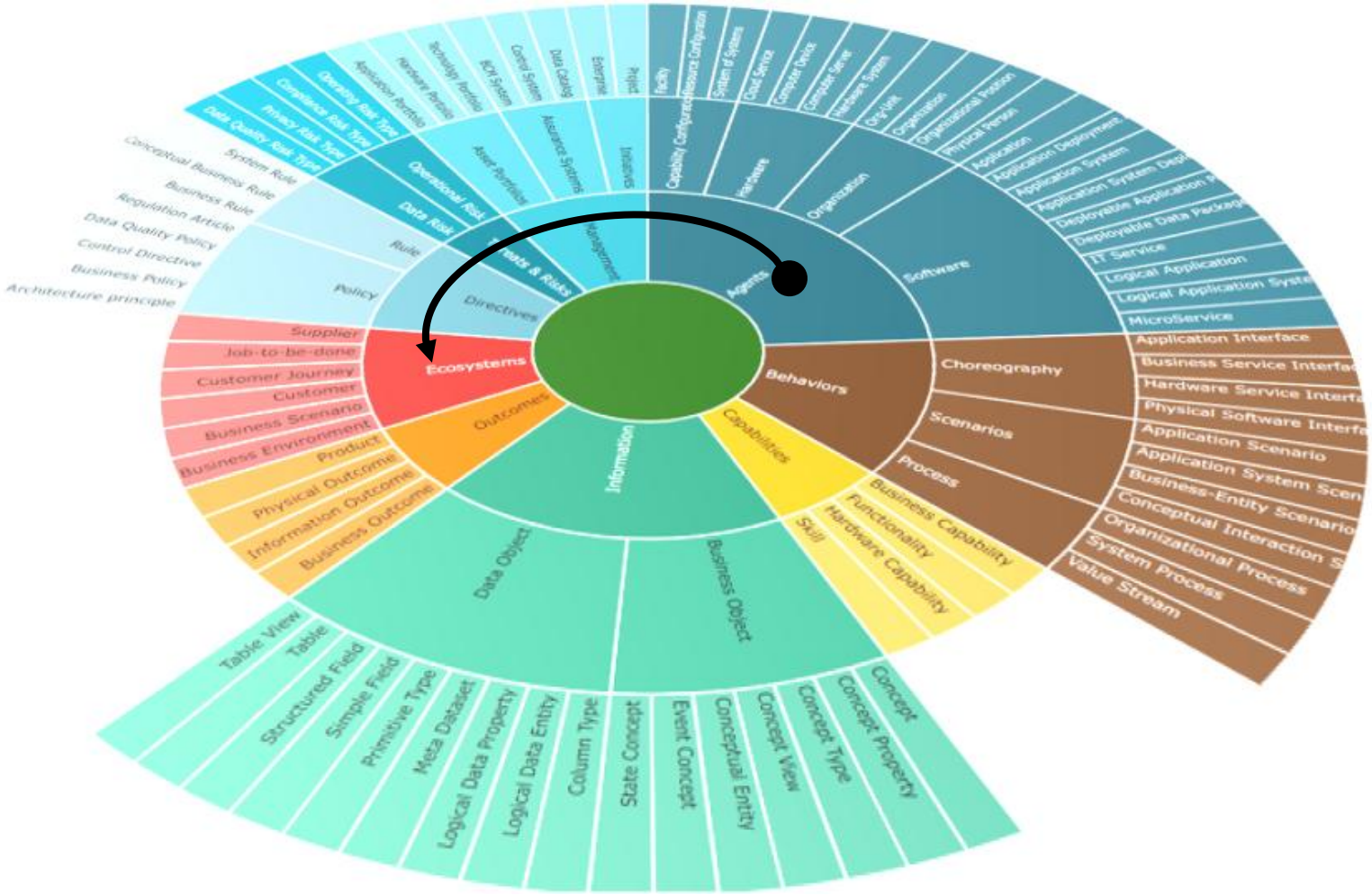
- The EAF GRID provides a description of the Operating Semantic of the architecture framework,
  - *from Capability fulfilled by Agents who act and interact (Behavior) in their Operating Eco-Systems to produce Outcomes that benefit (value) to other Agents.*

- A complementary GRID (EA GRID - Technology Concepts) provides a classification of Technology Assets that facilitate Business Assets in their production/consumption of Business Outcomes.



Agents interact and act in Eco-systems

- Ecosystems define how Outcomes are co-produced with Partners.
- Ecosystems define Conditions under which Outcomes are co-produced.



Categorization & Qualification

Categories – Measures – Measure Types

Qualification Intent

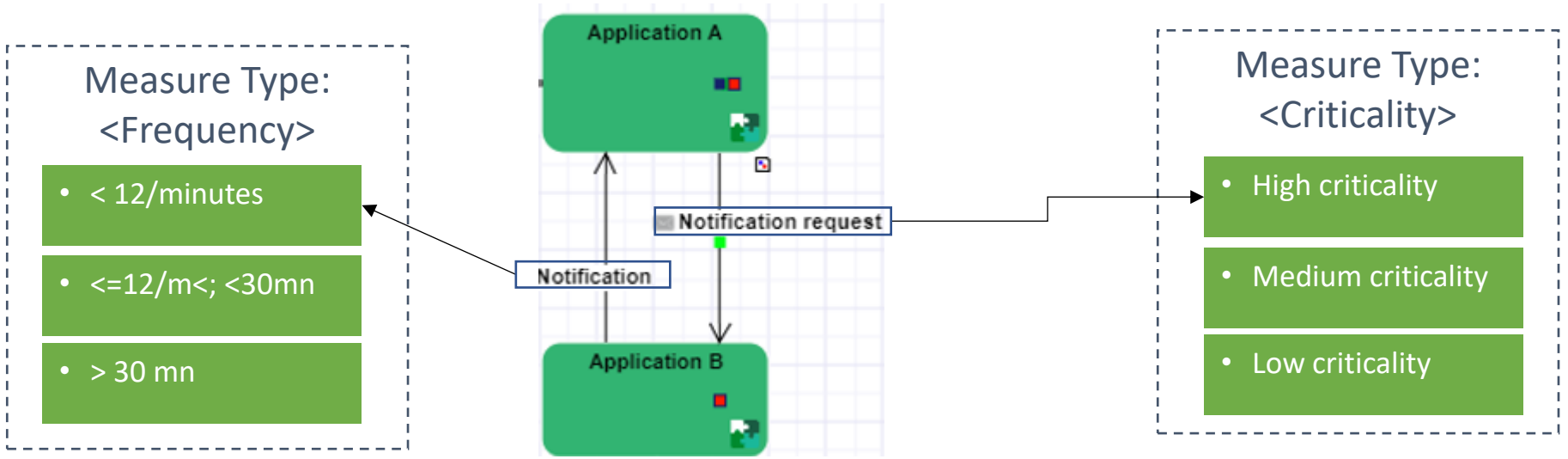
- Purpose
  - Provide a generic qualification feature (measure types, environment conditions) for all repository building blocks.
  - Organize the various qualifications in flexible hierarchical meta-data frameworks that can be extended by customers.

- User Value
  - Capture of non-functional requirements (level of business value, level of criticality, …).
  - Formal evaluation criteria for assessments (risk, performance, ..).
  - Filtering of building blocks in reports and other rendering tools (web sites, Data-Visualization, etc).

- Deliverables
  - Qualification facility(pattern Meta-Model + tooling) that unifies all concrete categories (performance measure type, security measure types, etc.).
  - Specification for the use of qualifications in queries, creation wizards, navigation trees, forms.
  - Specification for the use of qualifications in reports.

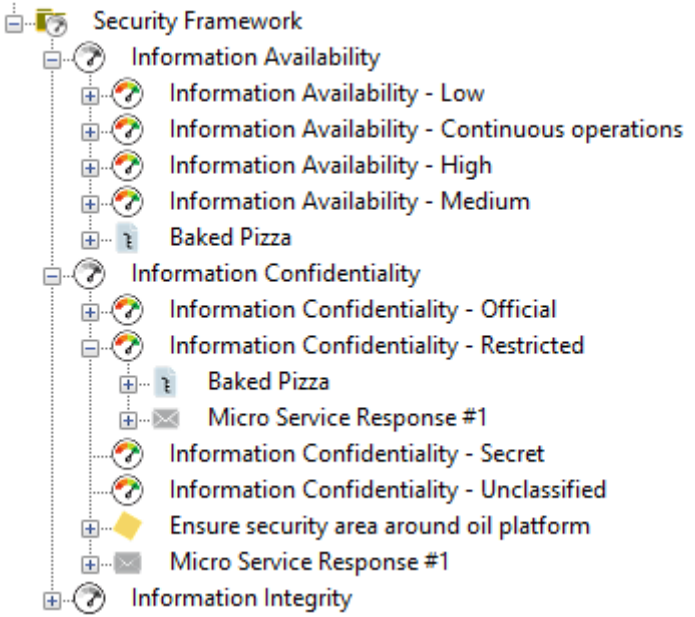
Measurement Criterion & Measurement Level

- Measurement comprise two aspects:
  - Measurement criterion and their units: criticality, frequency (message/minutes)
    - FR: Critère de mesure
  - Level of measurement: high/medium/low criticality, frequency >= 12/minutes.
    - FR: niveau de mesure
  - Measure: a value at a specific time. Measures are covered by the KRI/KPI project and are out of scope of this presentation.



Measure : Categories with measures values

- Measure Types are specific kind of categories where each category is considered as a measurement criterion with multiple values.
- For instance, “Confidentiality” is a qualification criterion for data. It has the following values: Official, Restricted, Secret, Unclassified.
- Another measurement criterion is “Sales Revenue” with has value such as “>20M$” or “>40M$”.



- Concept implementation in HOPEX:
  - “Confidentiality” is a “Measure Type”.
  - “Restricted”, “Secret” and “Unclassified” are KPIs of type “KPI Dimension”.

Measure – Expected Features

- Be able to define Measure Types and associated units.
- Be able to specify single measure and measure ranges.
- Be able to apply measure specification to capabilities and all architecture blocks (processes, applications, networks, etc.).
  - Ability to deliver pizza => Time to deliver.
- Be able to apply measure values to enterprise phases.
  - Ability to deliver pizza => Time to deliver pizza = 20min
- Be able to apply measure values to architecture models
  - Business Function A + Process A => Time to deliver pizza = 15min
- Ensure measure computation

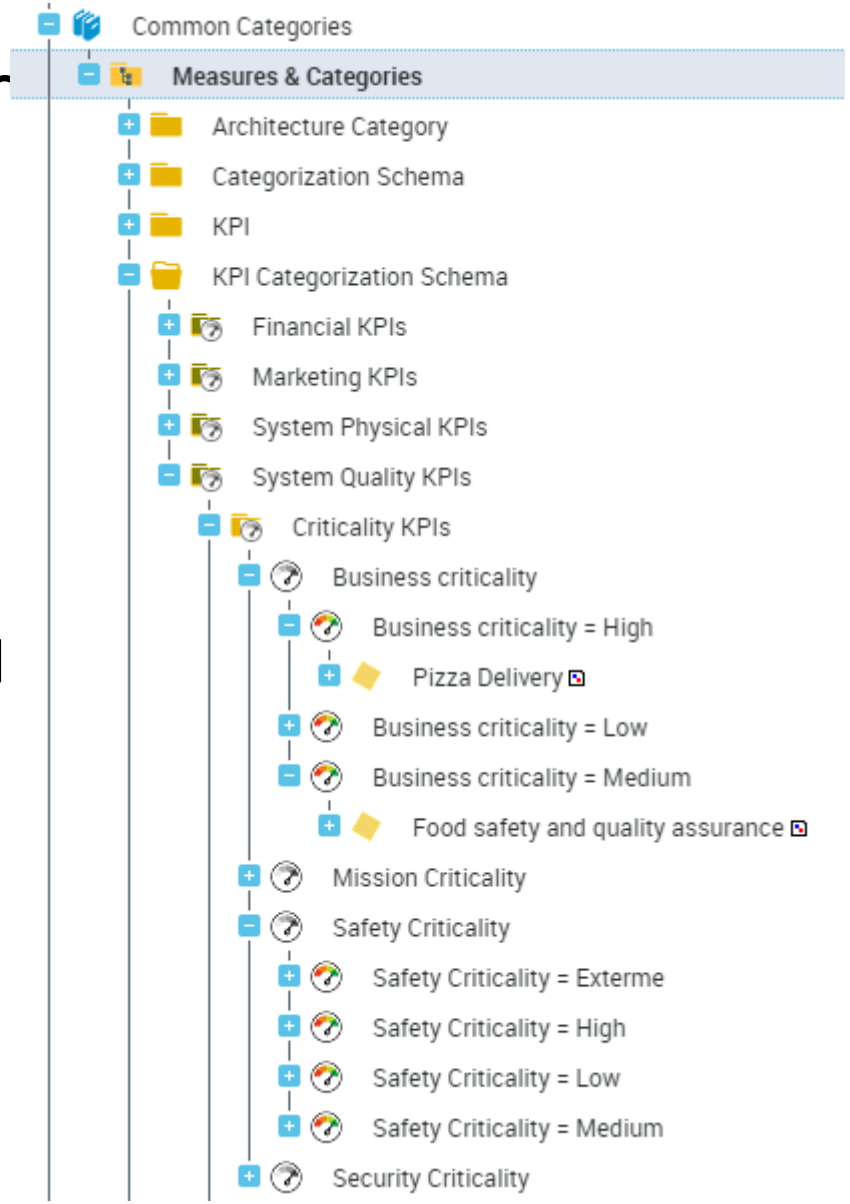
Measure Criterion – Definitions & Use cases

- Definitions
  - Measure Criterion (KPI dimension):
    - Dimensions of a physical quantity that refer to the type of units that must be used in order to obtain the measure of that quantity (Temperature in Celcius, Time to deliver in minutes, etc.).
  - Measure Level (KPI):
    - How much of something that can be quantified, either as a singular value or as range of values, according to a KPI Dimension.

- Use cases
  - Qualify stakeholder concerns (Measure Dimensions)
    - Concerns about Pizza Customers is about “Time to deliver”.
  - Qualify capabilities (Measure Dimensions)
    - Ability to deliver pizza => “Time to deliver”.
  - Qualify capability exhibitions and objectives in Enterprise Phases (Measures)
    - Ability to deliver pizza => “Time to deliver” = 20 minutes in 2020.
  - Qualify architecture models (Measures and Measure Dimensions)
    - Process A is about “Time to deliver”.
    - Business Function A + Process A shall ensure that “Time to deliver” = 15min

Measure Criterion as Categor

- Measure Criterion are a dedicated implementation of the category Meta-Model pattern.
- They can themselves be organized in categories.
  - For instance “Business Criticality”, “Safety Criticality” and “Security Criticality” can be grouped under a “Criticality” category.
- Other categories of Measure Criterion are:
  - Physical categories: length KPIS, weight KPIS, ..
  - Financial categories: revenue, cost, …
  - Marketing categories: customer KPIS, Web KPIs, …

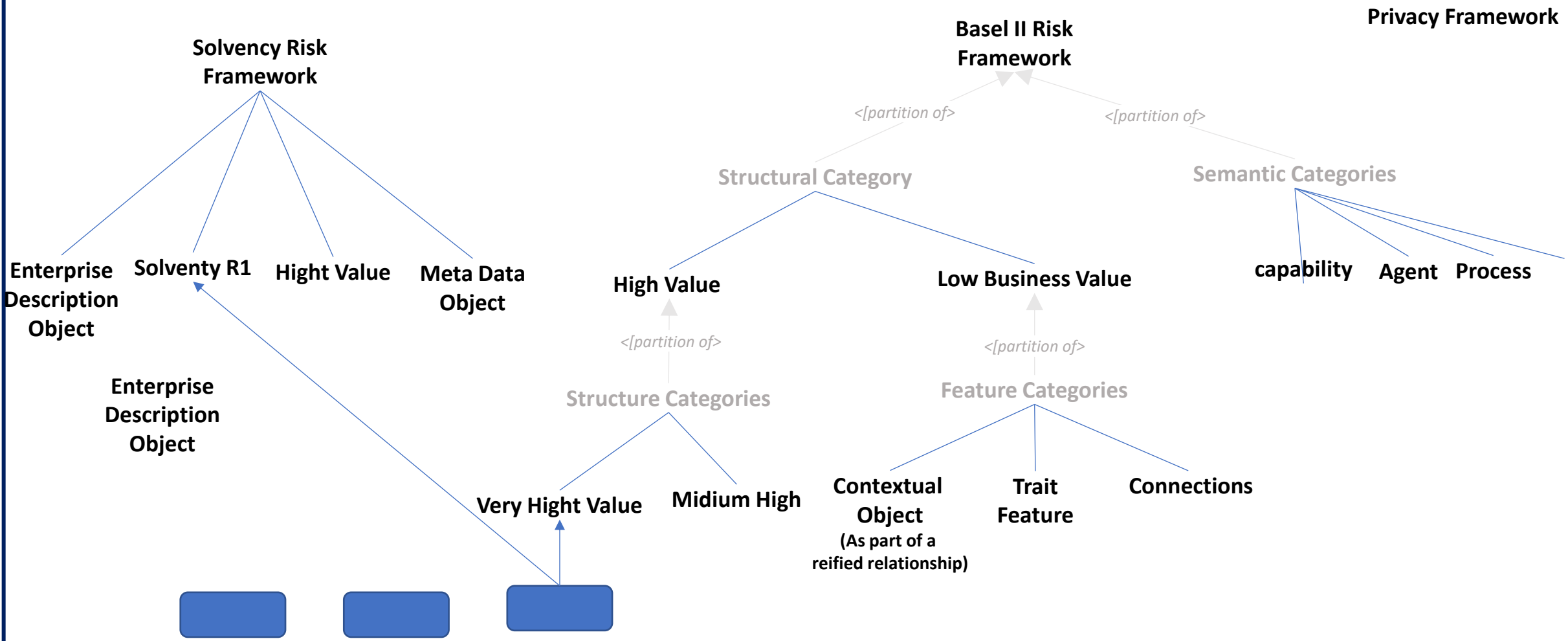


Examples of Measures

- Recovery Point Objective (RPO)
- Recovery Time Objective (RTO)
- Work Recovery Time (WRT)
- Maximum Tolerable Downtime (MTD)
- SLA Level
- Recovery Point Objective (RPO)
- Recovery Time Objective (RTO)
- Work Recovery Time (WRT)
- Maximum Tolerable Downtime (MTD)
- SLA Level

Query Requirement

Principle: partitioning



Business Processes - Process Families