



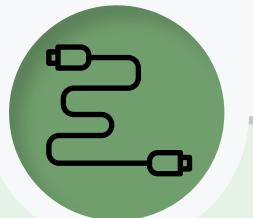
CREATE

Create system architecture



CAPTURE

Capture system architecture in model



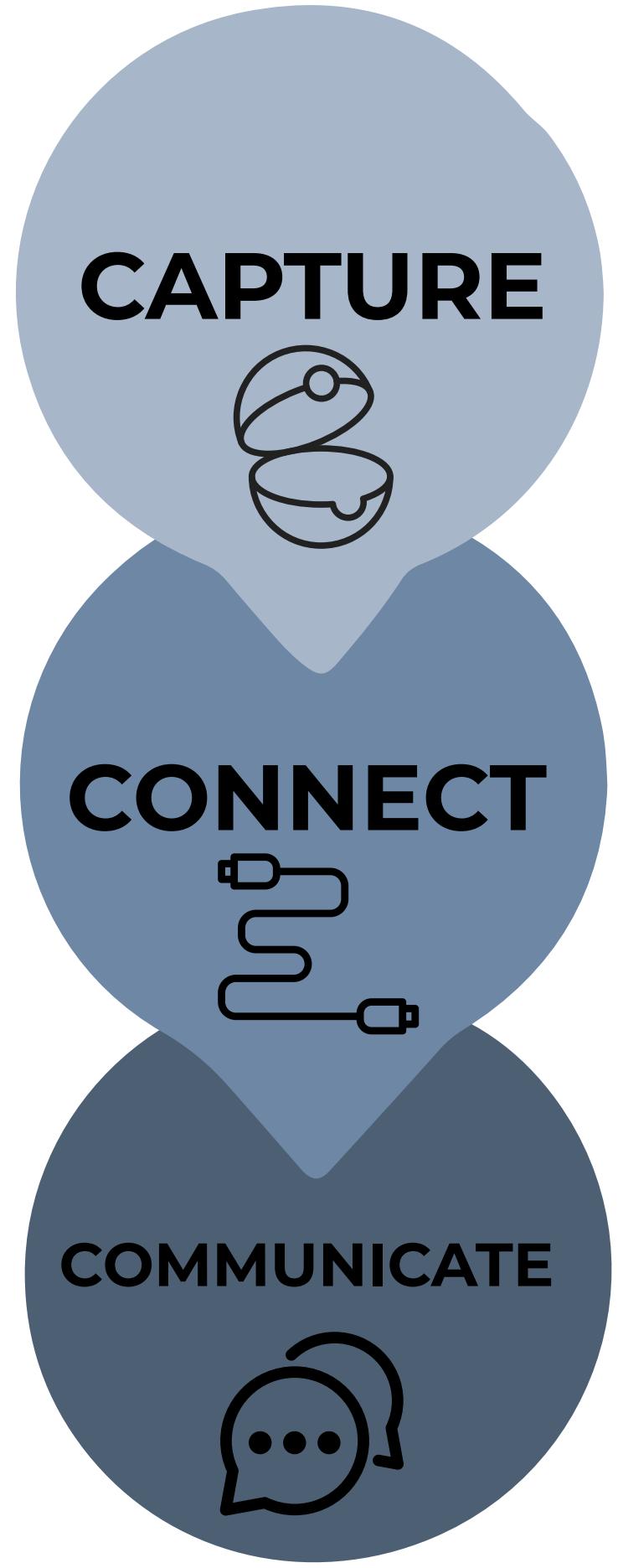
CONNECT

Connect structural and functional architectures



COMMUNICATE

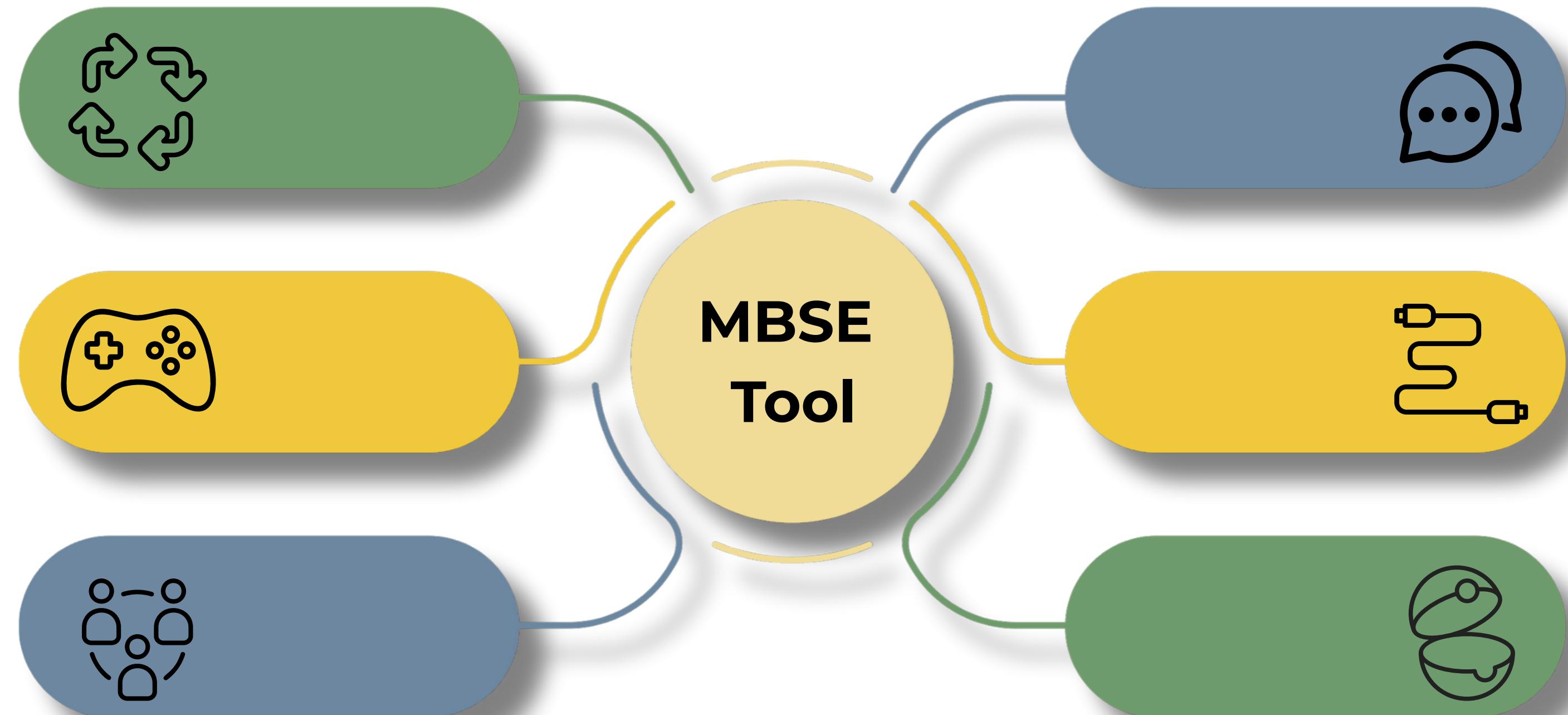
Communicate system architecture to stakeholders



Capture
architectures
in system model

Connect
architecture
relationships

Communicate
architectures to
stakeholders





Simple

Flexible

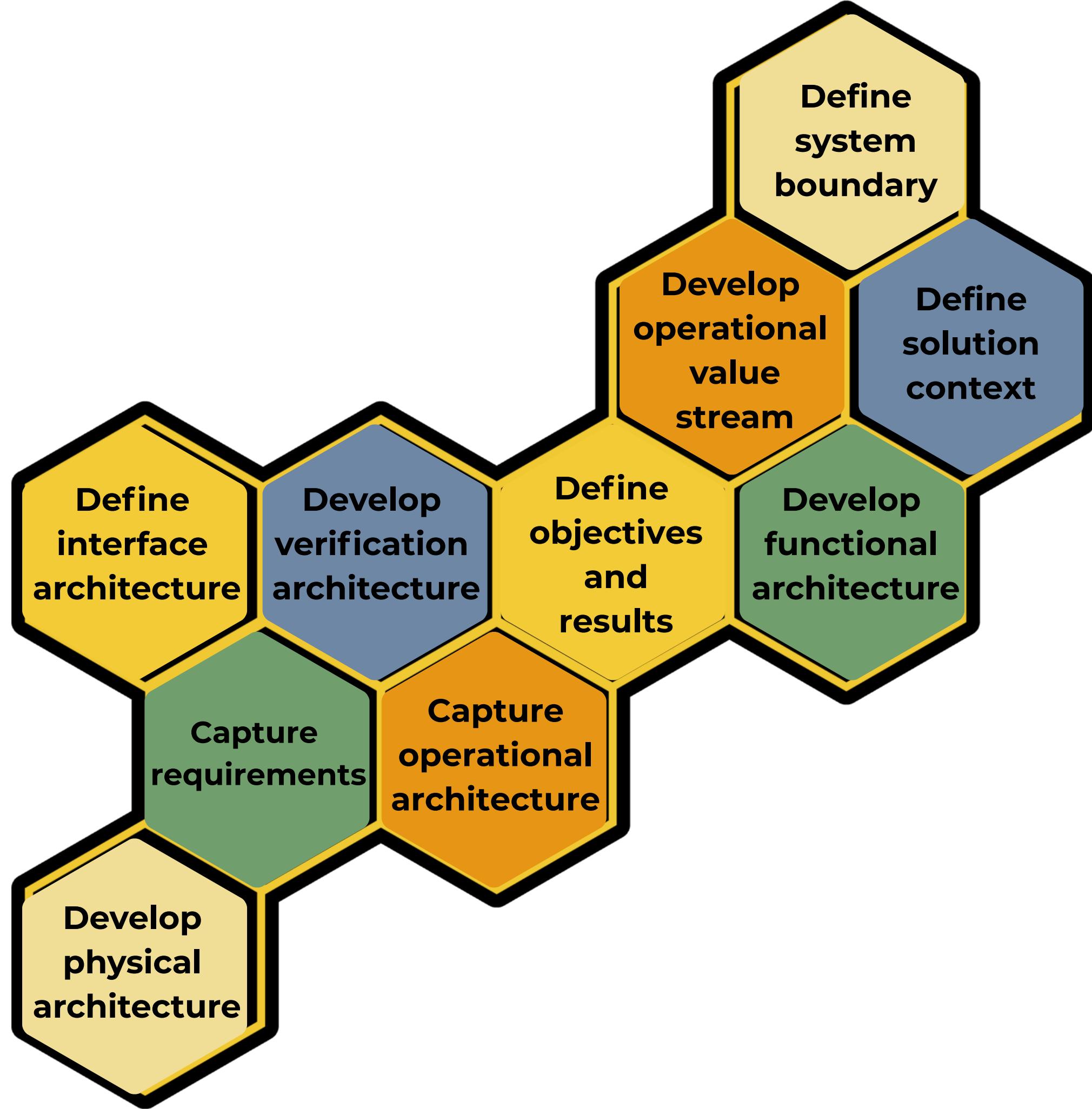
Compatible

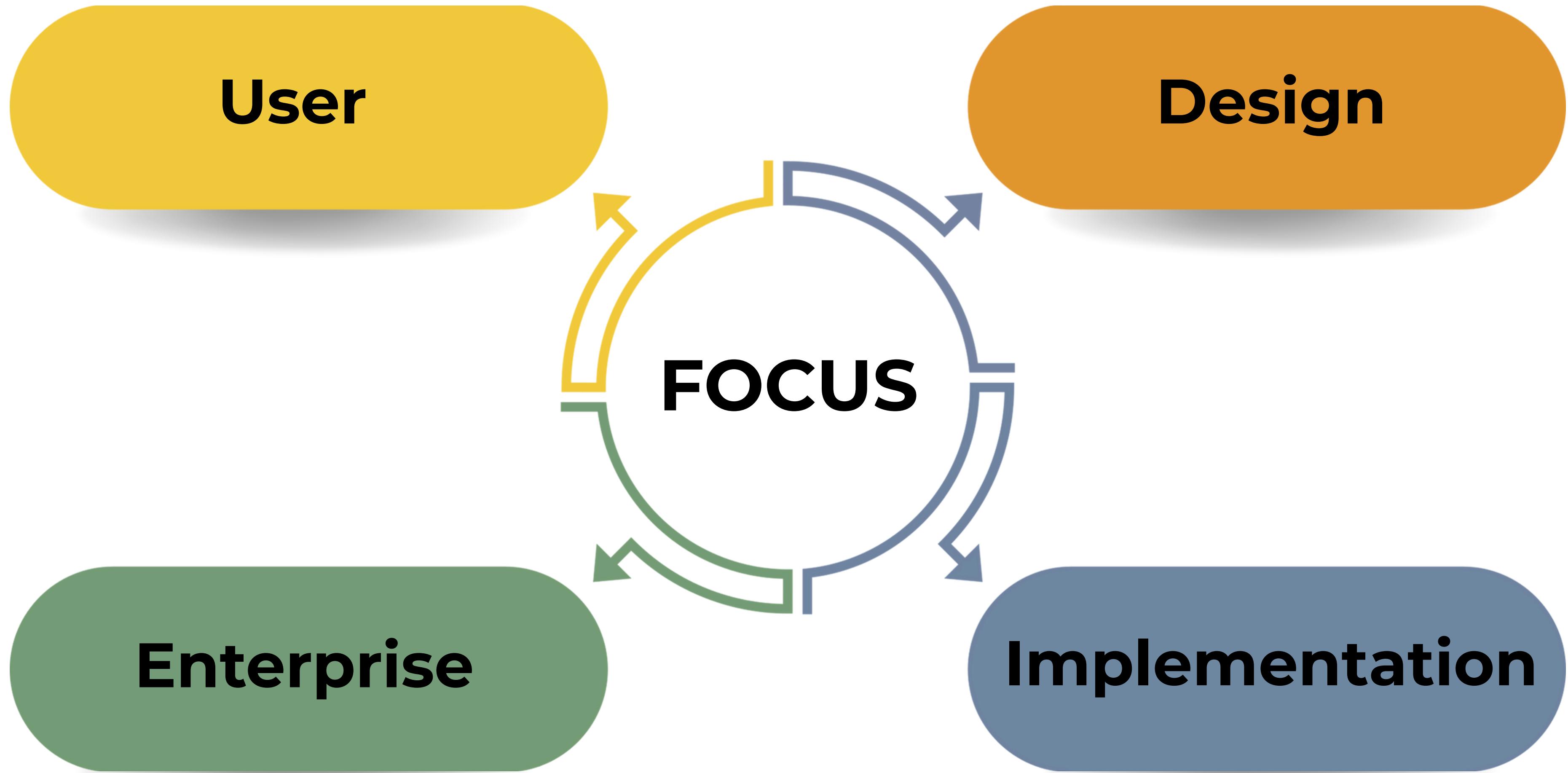
Comprehensible

Measurable

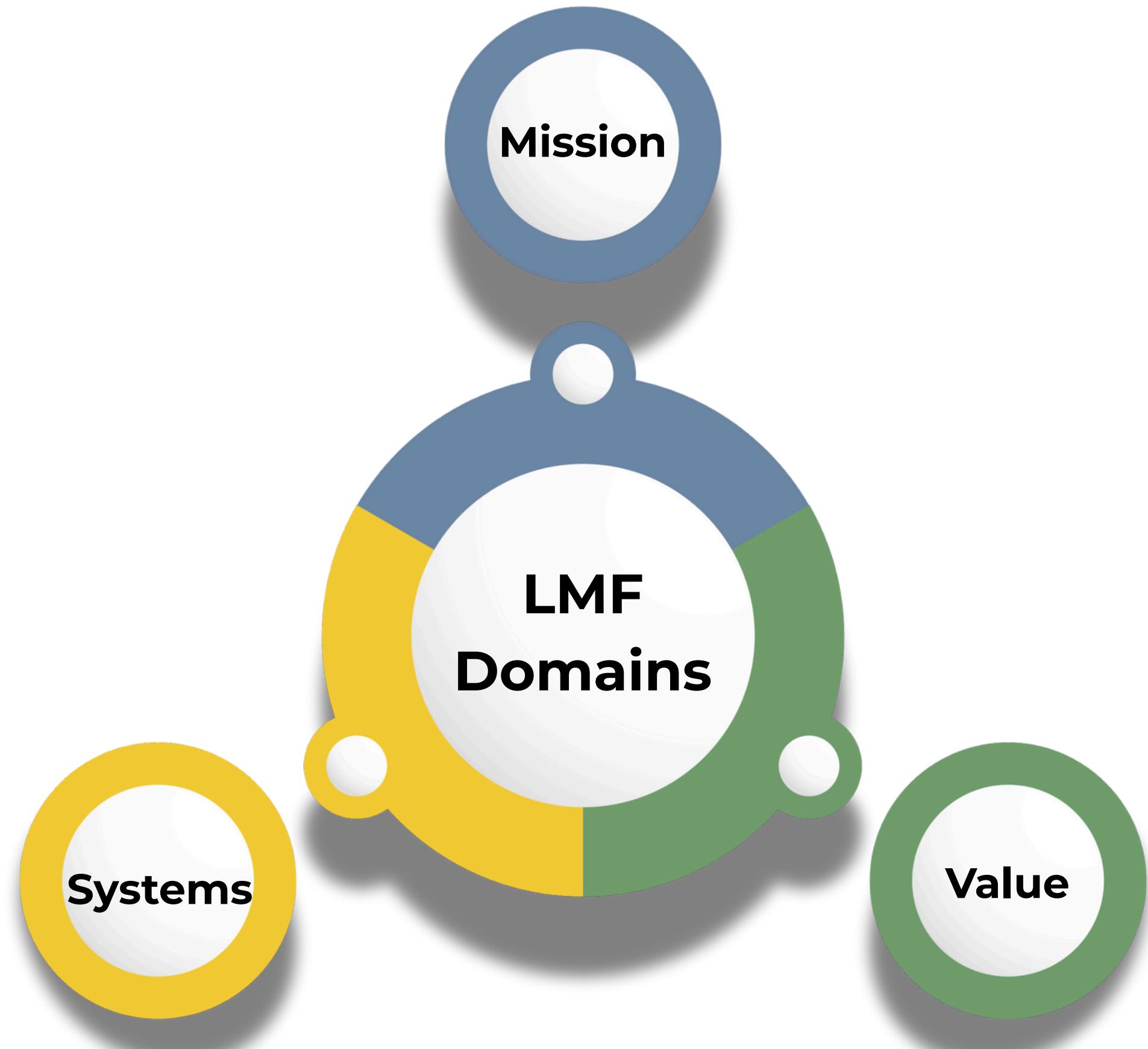
Inclusive

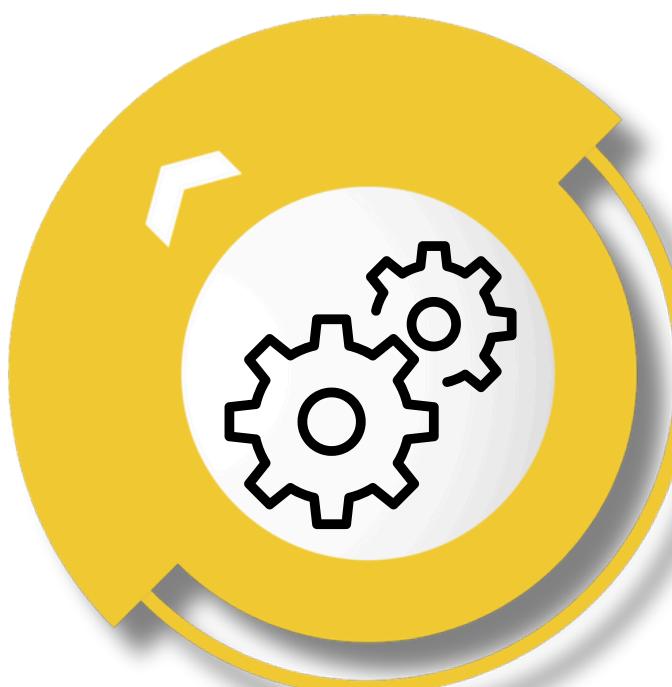
Agile



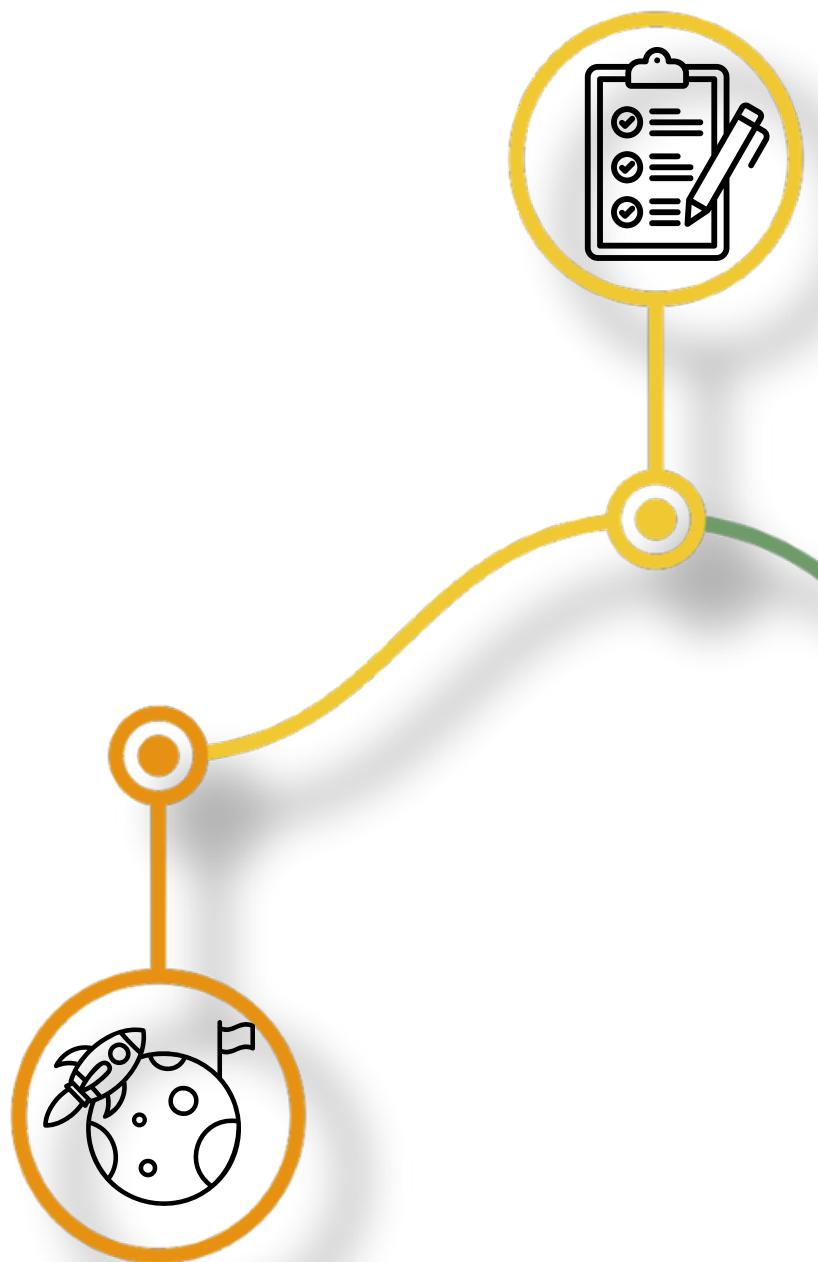








Requirements



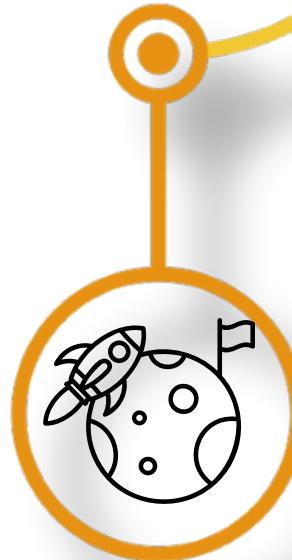
Design-to



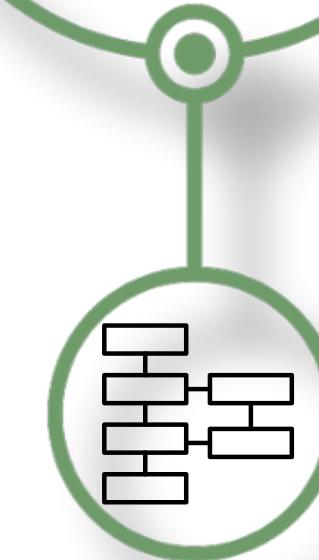
As-built



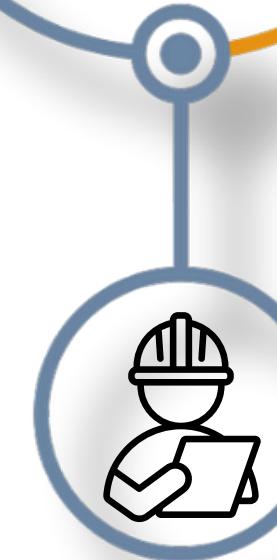
Mission



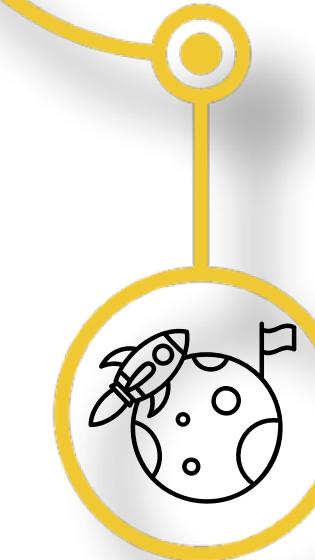
Functional

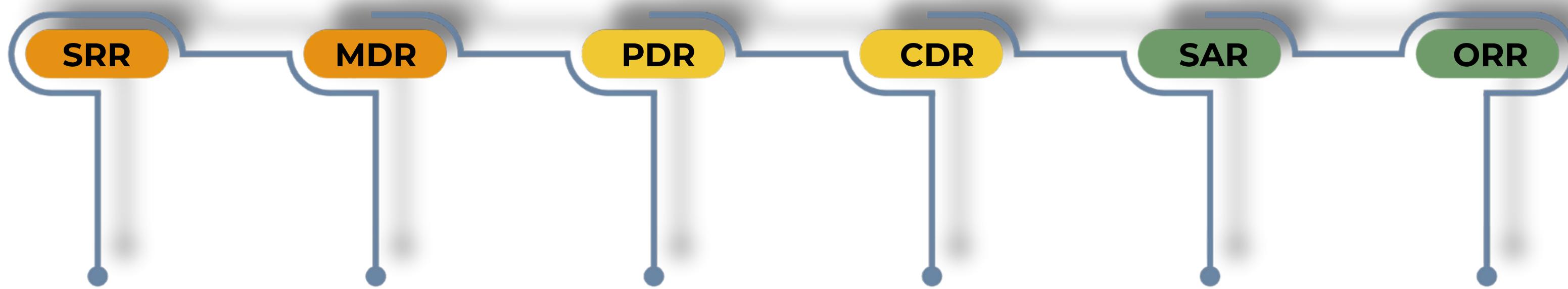


Build-to

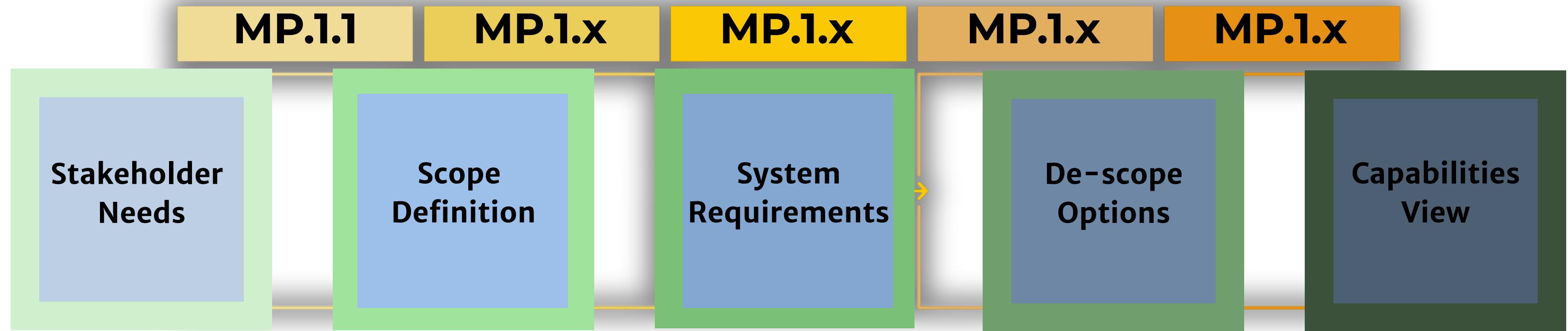


As-deployed

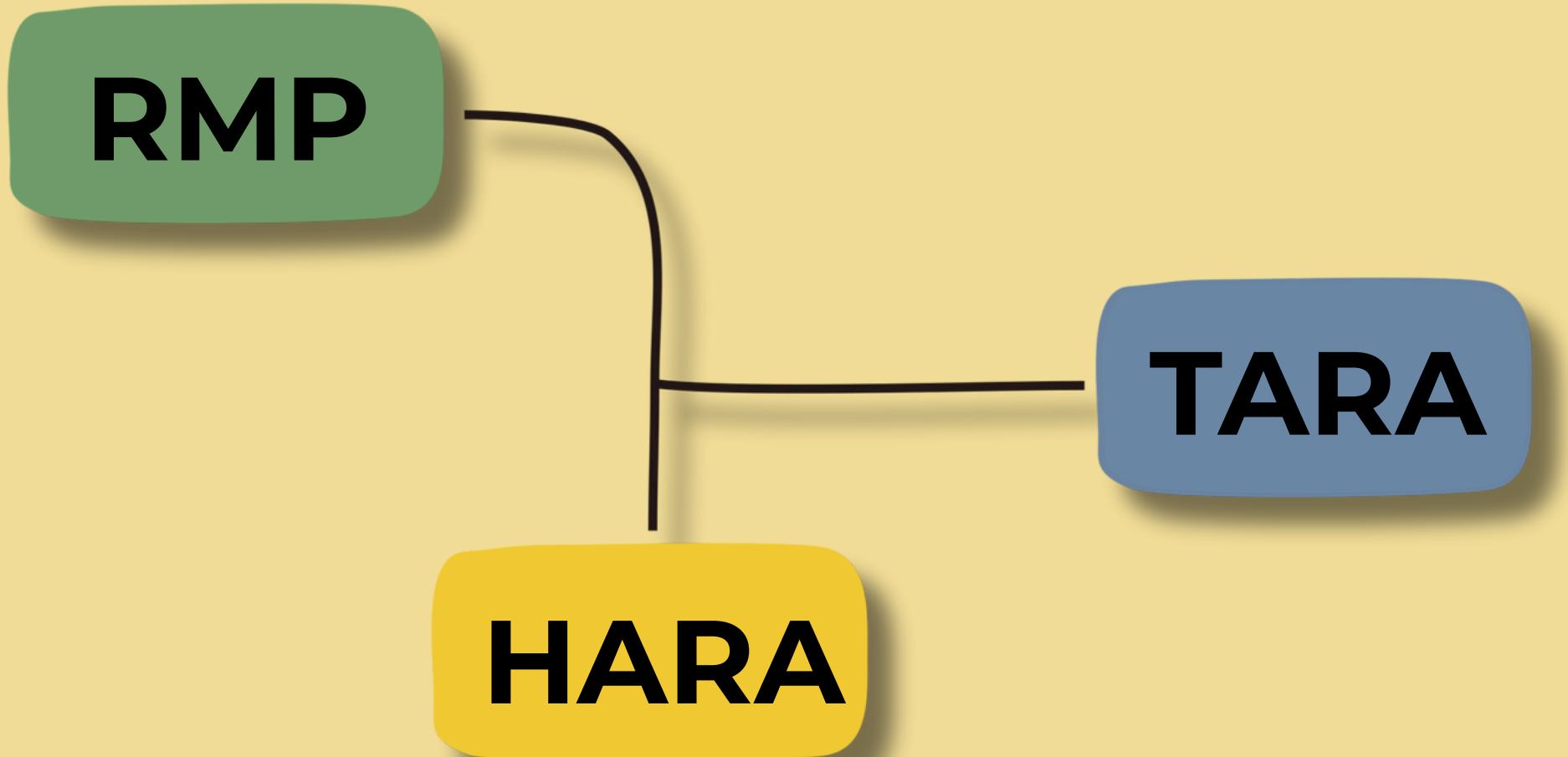


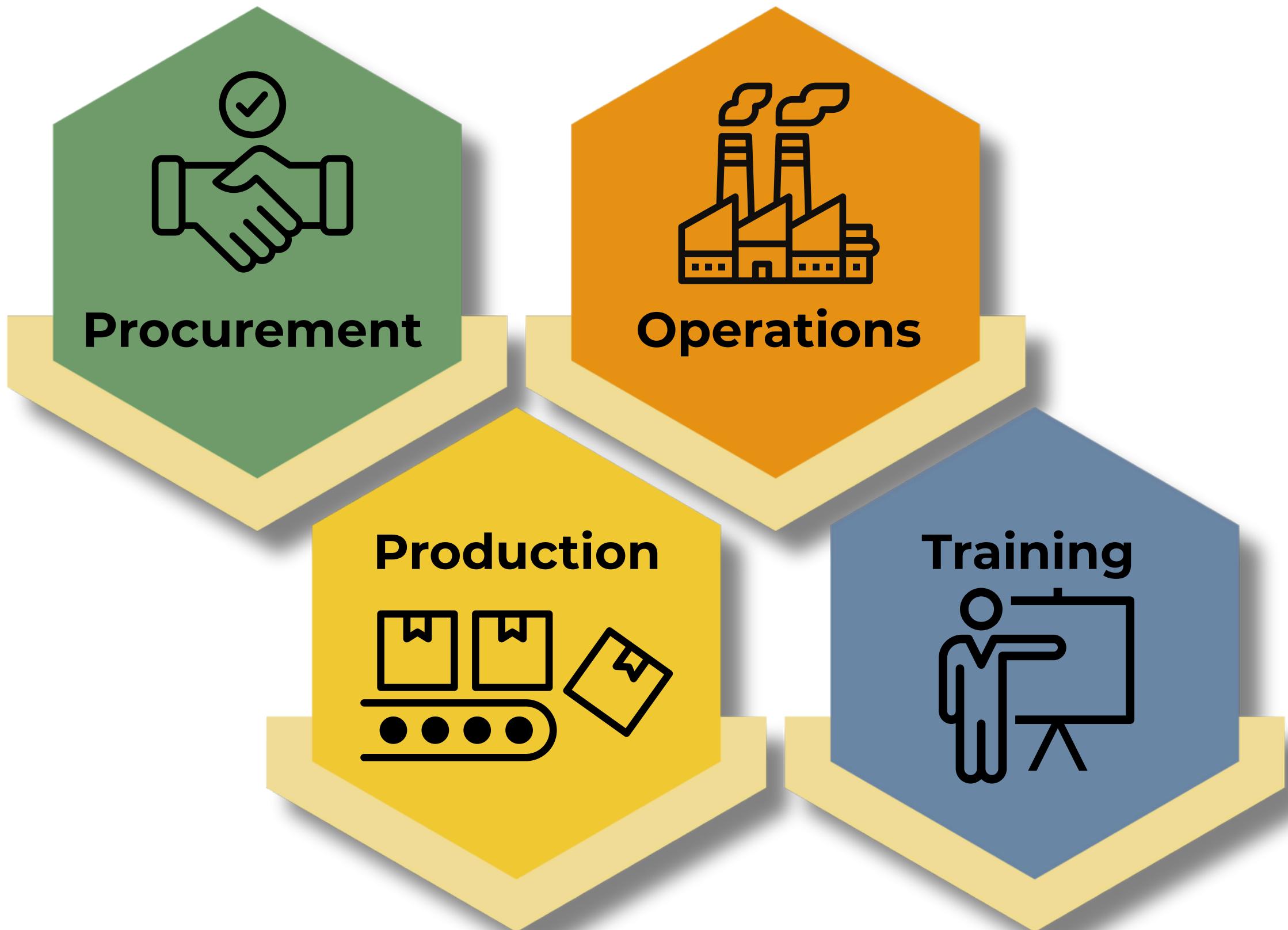


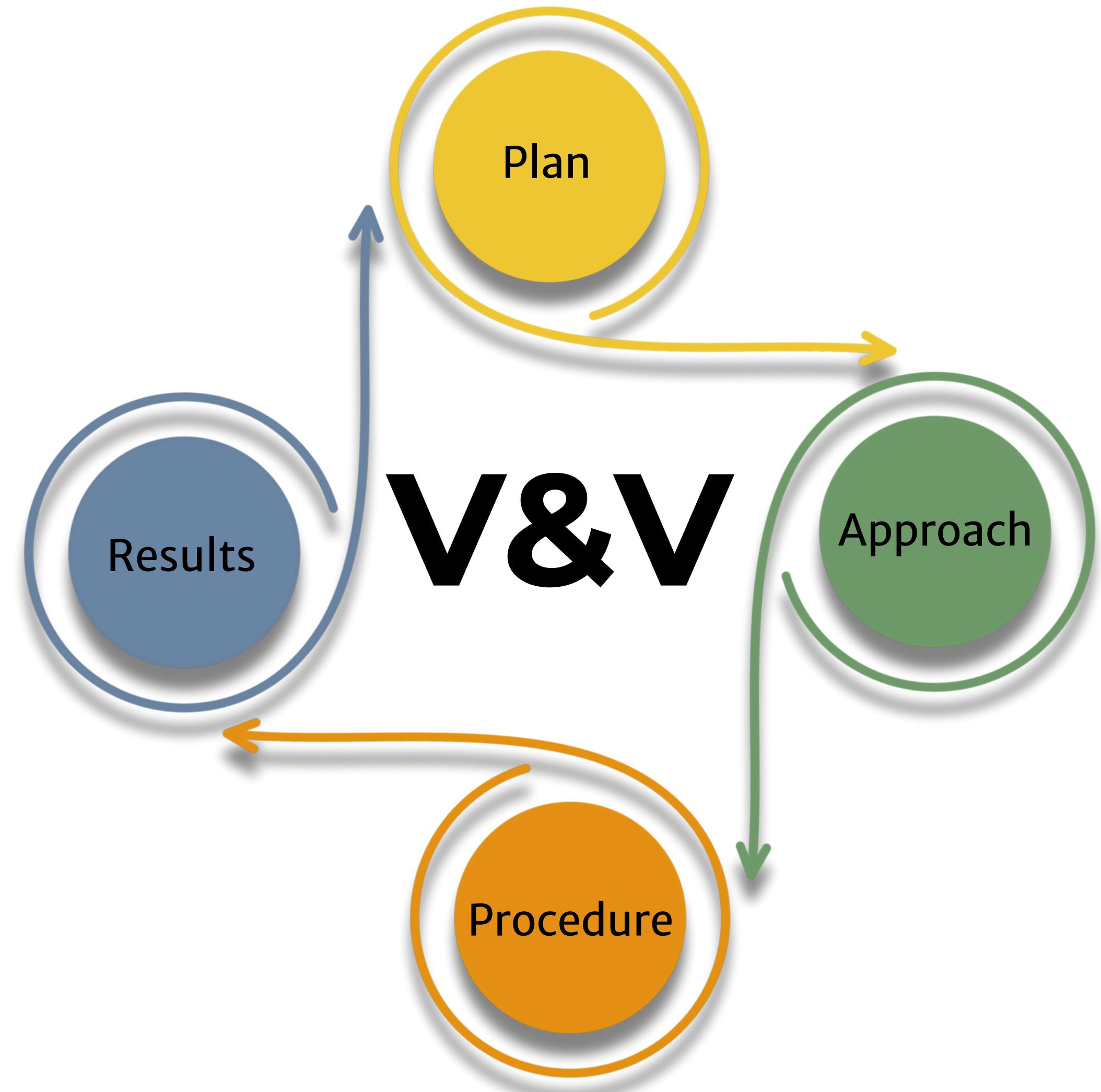




Risk Assessment and Mitigation







PROJECT MILESTONES

**Systems Requirements
Review**

add definition



**Preliminary Design
Review**

add definition

**Critical Design
Review**

add definition



**Final Design
Review**

add definition

**System Acceptance
Review**

add definition



**Operational
Readiness Review**

add definition



Project
Artifacts

ICD

SEMP

SRD

CAD

ConOps

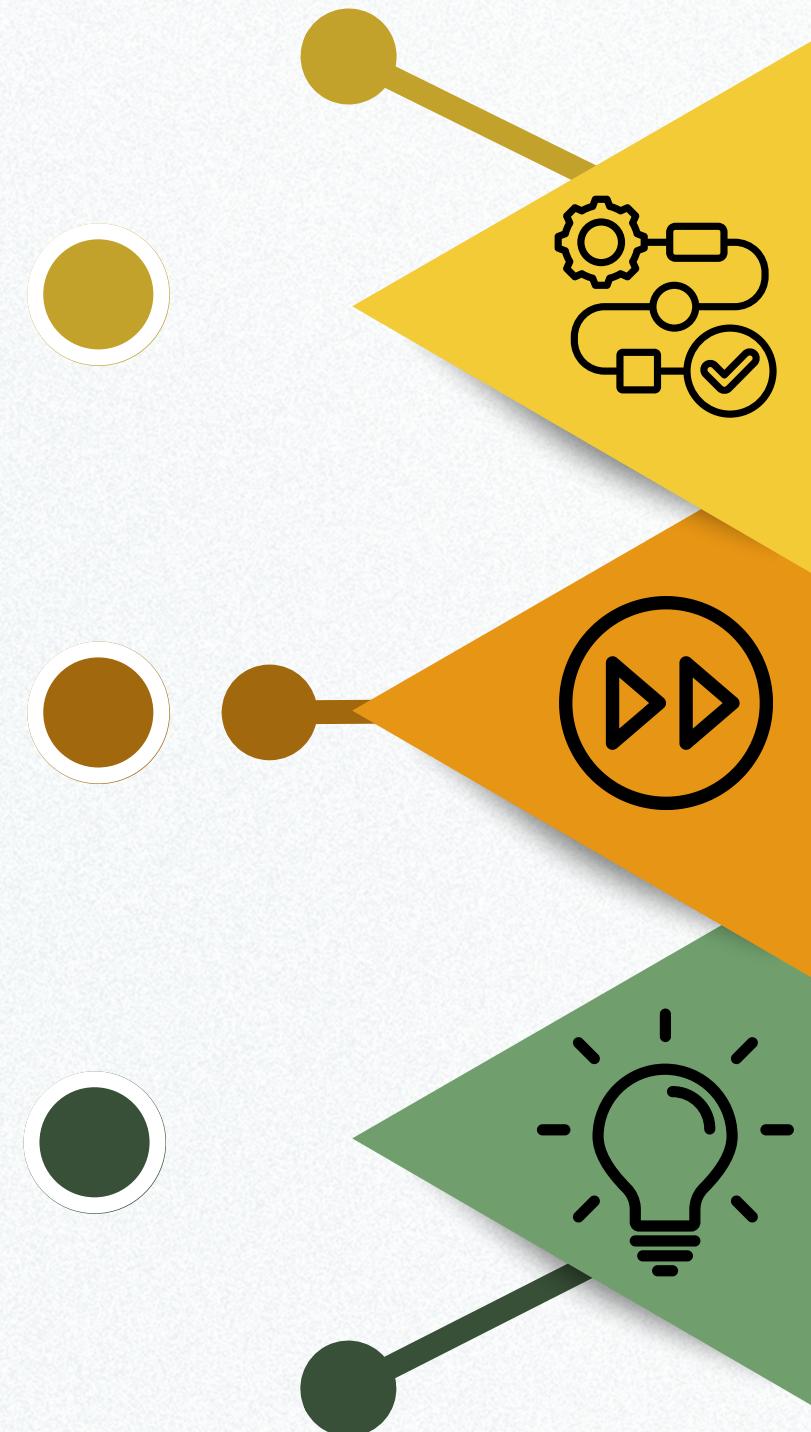
RVM



LMF MODELING APPROACH

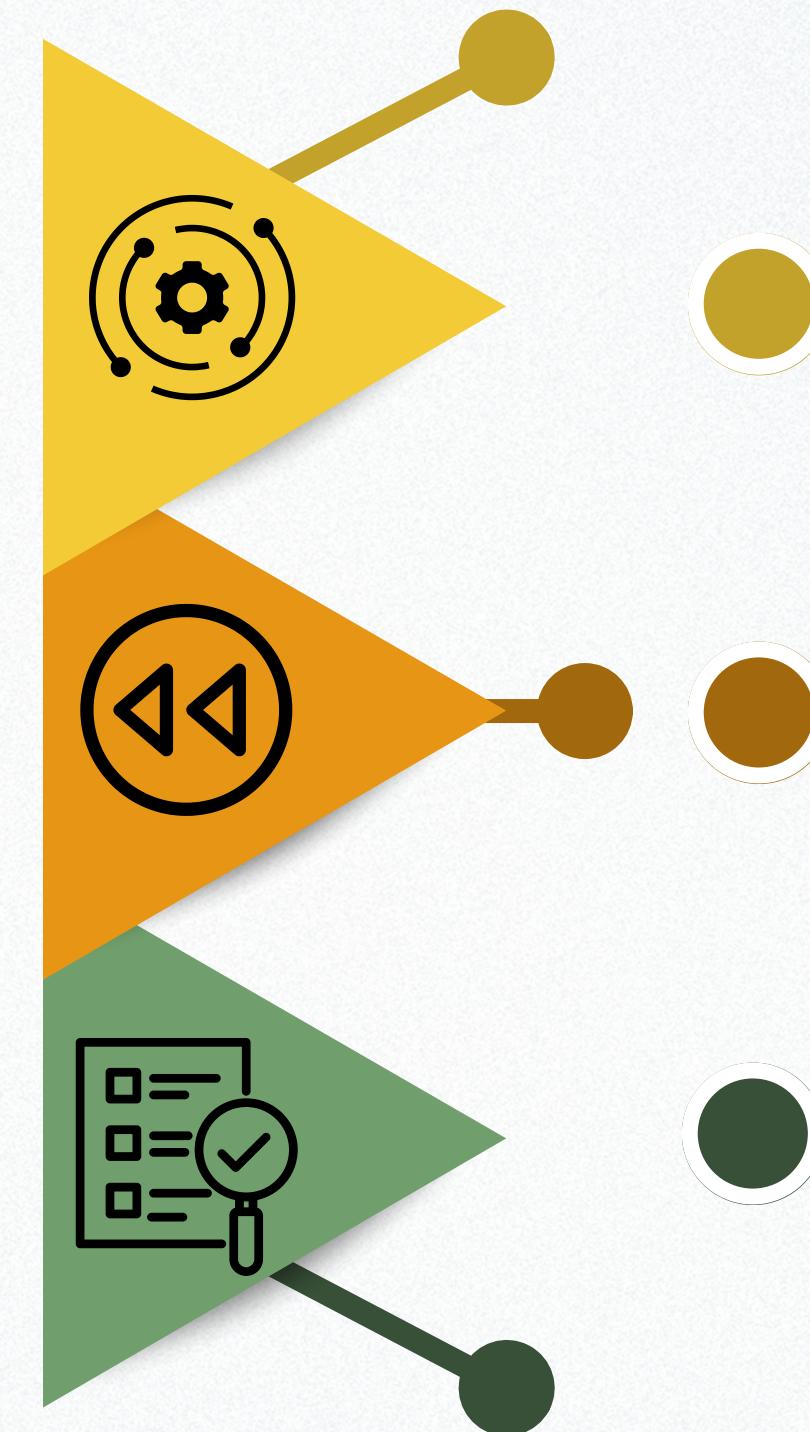
Mission Stream Model

Defines the sequence of capabilities necessary to deliver value to the customer for a specification mission area



Forward Modeling

Uses MBSE to guide SE and PM for each technical baseline throughout the entire lifecycle



Mission Systems Model

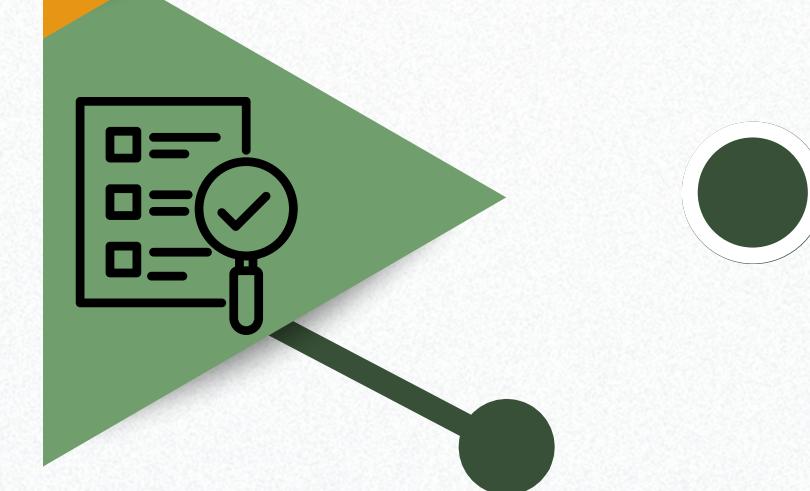
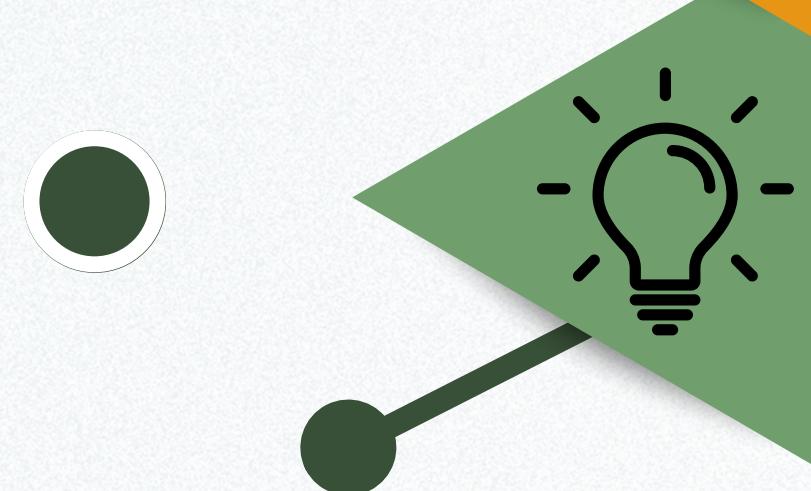
Highlights the top-down approach to system design and bottom-up approach to implementation

Reverse Modeling

Uses MBSE as a thinking tool to analyze and model an existing product

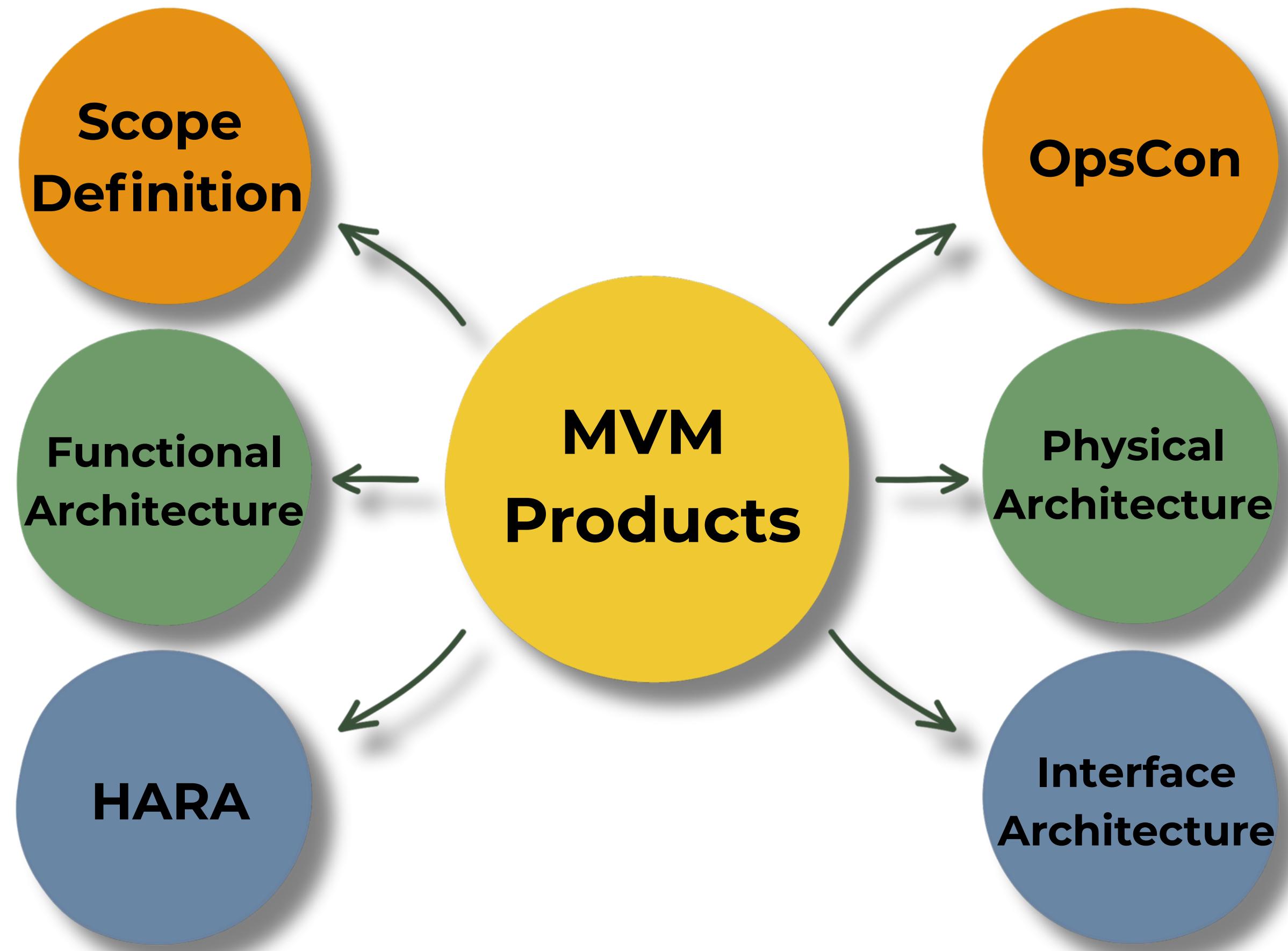
Assessment Viewpoint

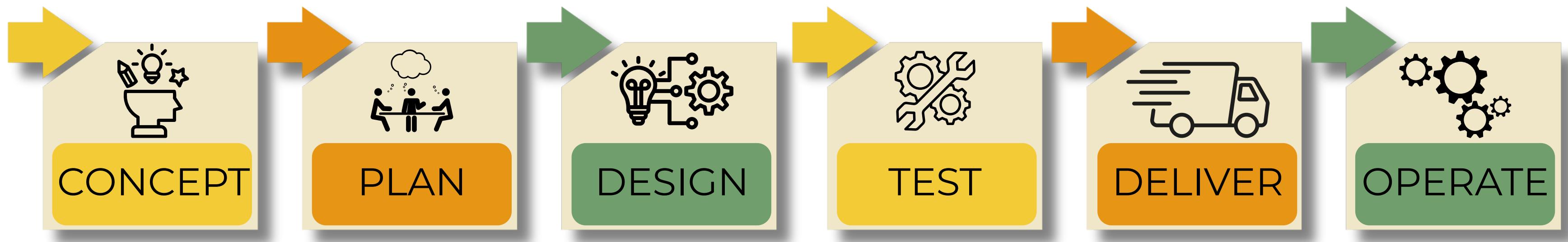
Establishes criteria to ensure mission and system domains are accomplished



Model Assessment

Evaluates model against assessment viewpoint criteria





INITIATIVES



Capability to
take
action

OBJECTIVES



Goals that
determine project
direction

KEY RESULTS



Measures progress
towards
objectives

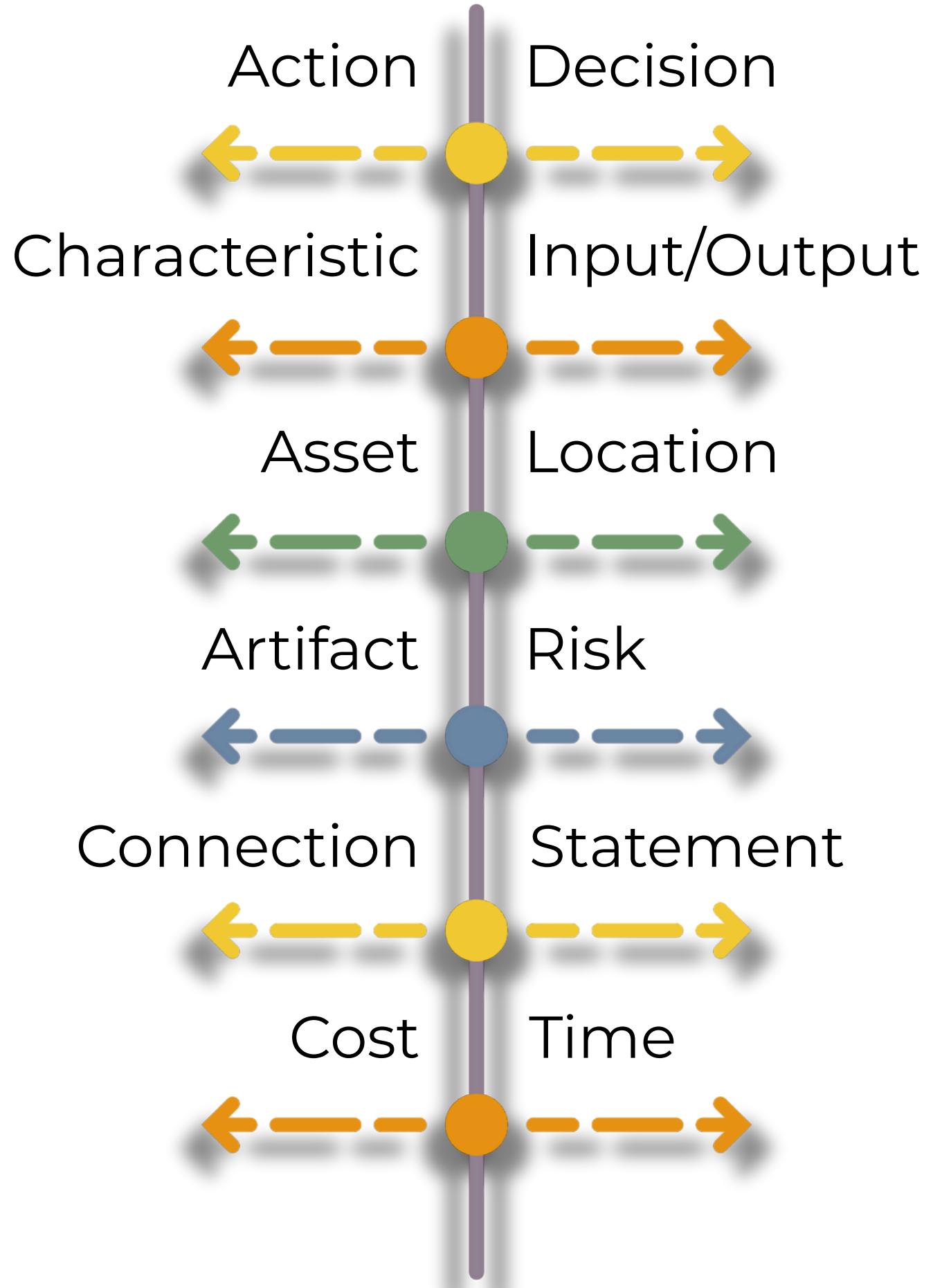
-
- 1 Observe basic principles
- 2 Form technology concept
- 3 Proof of concept
- 4 Lab validation
- 5 Environment validation
- 6 Space validation
- 7 Demonstration
- 8 System validated
- 9 Mission successful

MP.3.x Technical
Plan

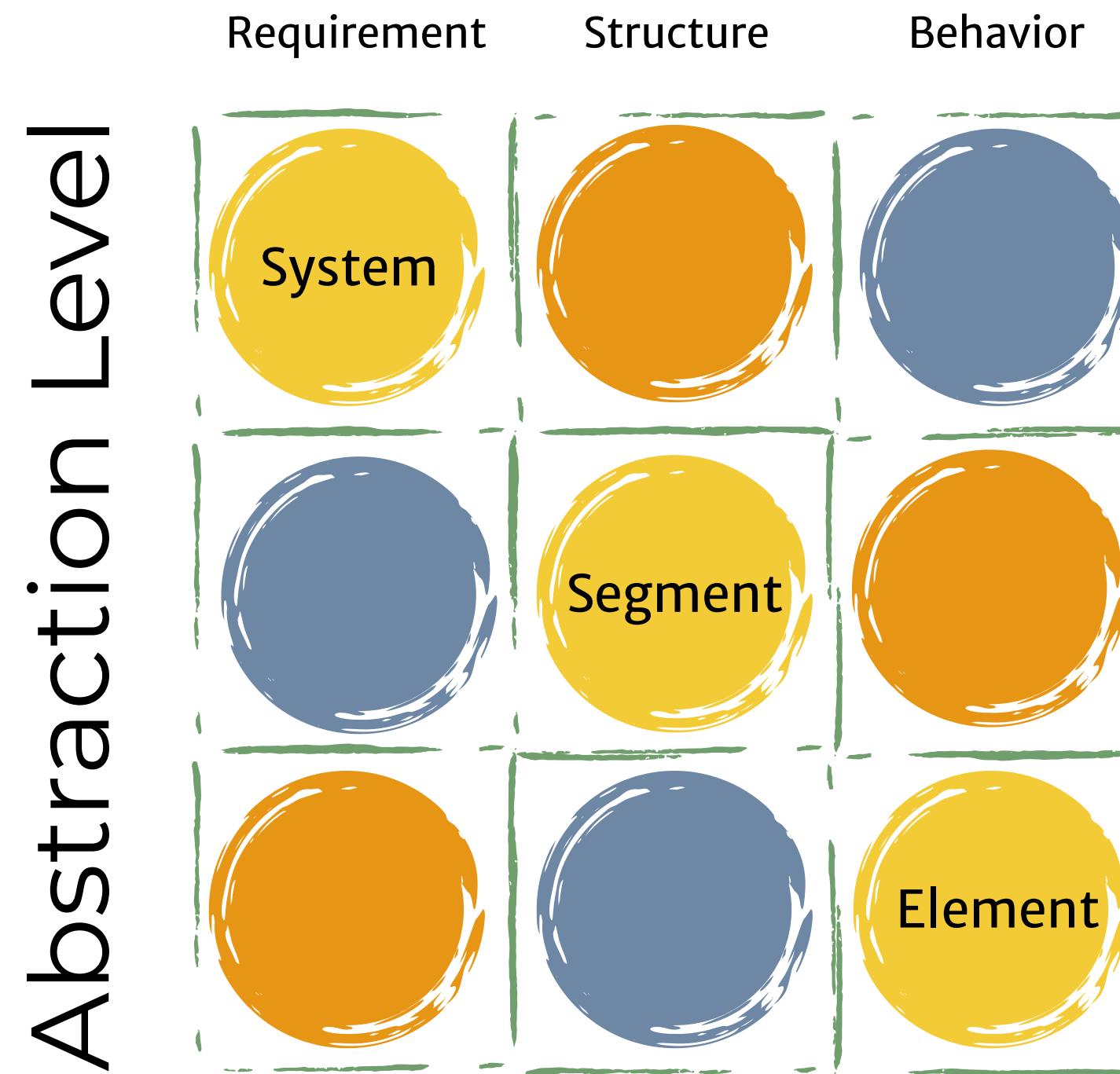
MP.3.x Roadmap

MP.3.x IMS

MP.3.x WBS



Architecture



Why?

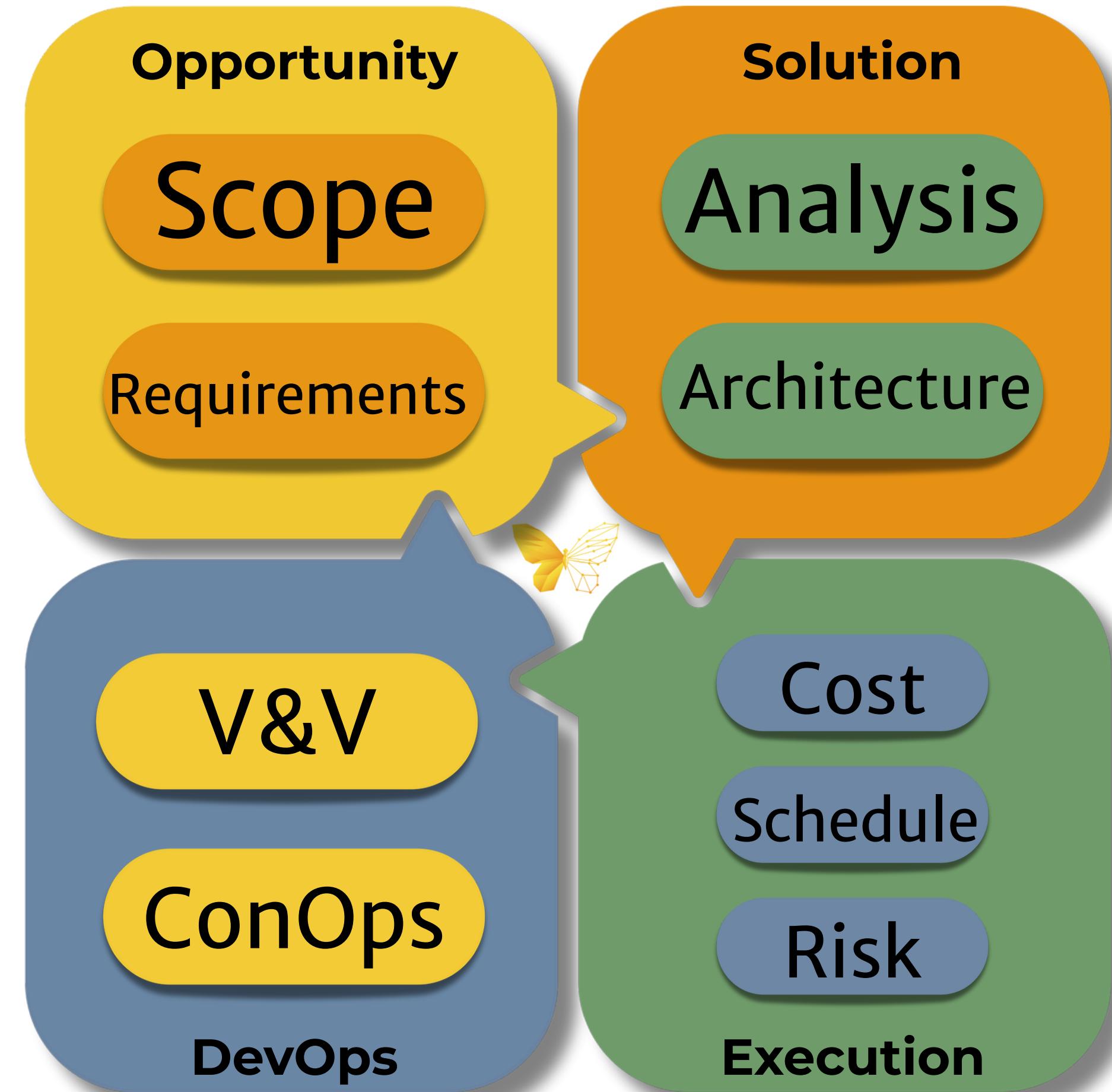
How?

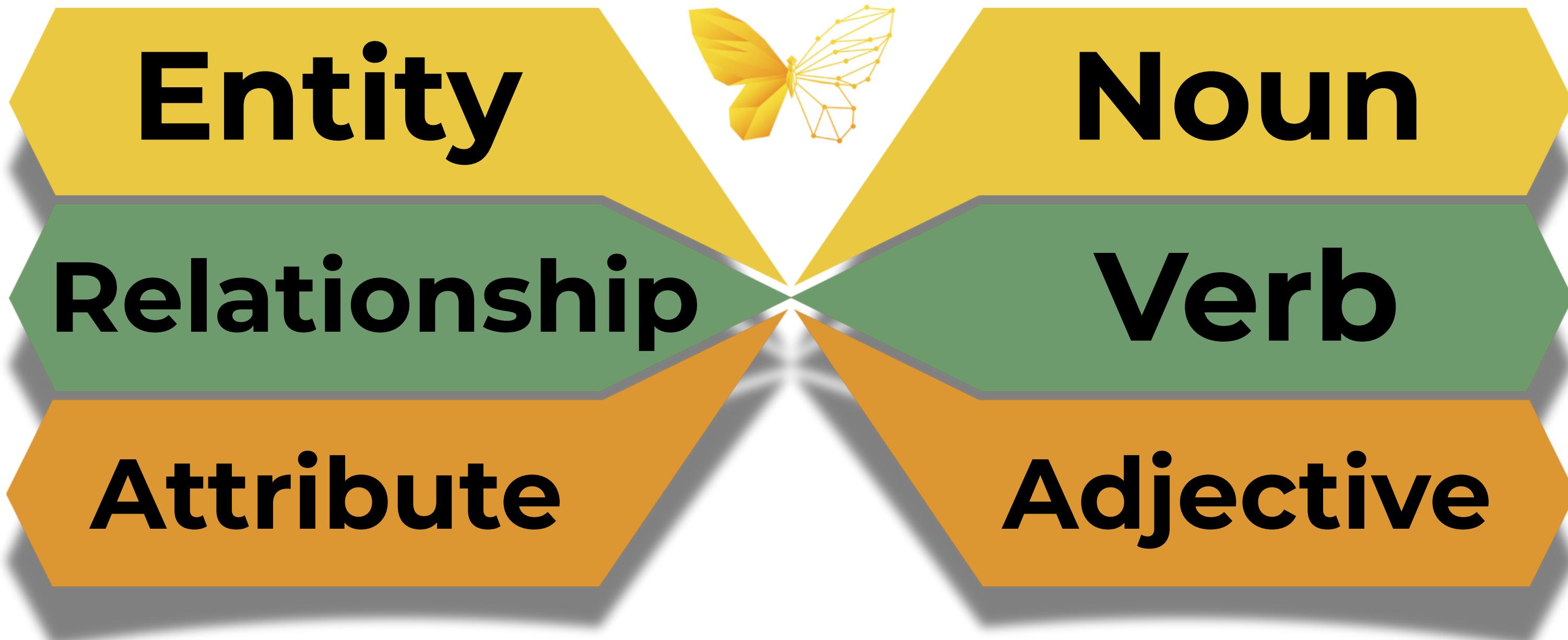
What?

- Defines scope
- Defines system architectures
- Defines interfaces

- Mission Systems Model
- Mission Value Stream Model
- Construct iterative models

- Operations Concept
- Risk analysis
- Hazard controls
- Integrate all system and mission architectures





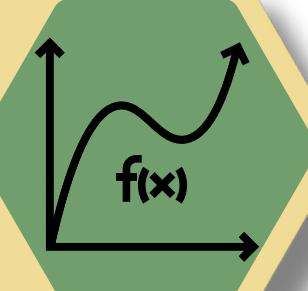
Form



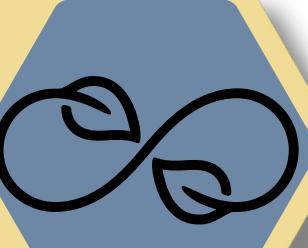
Fit



Function



Features



Risk

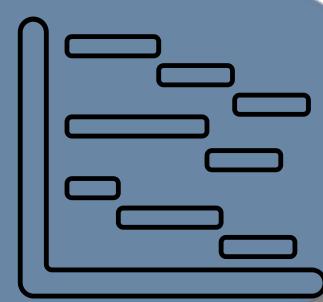
Cost



Technical



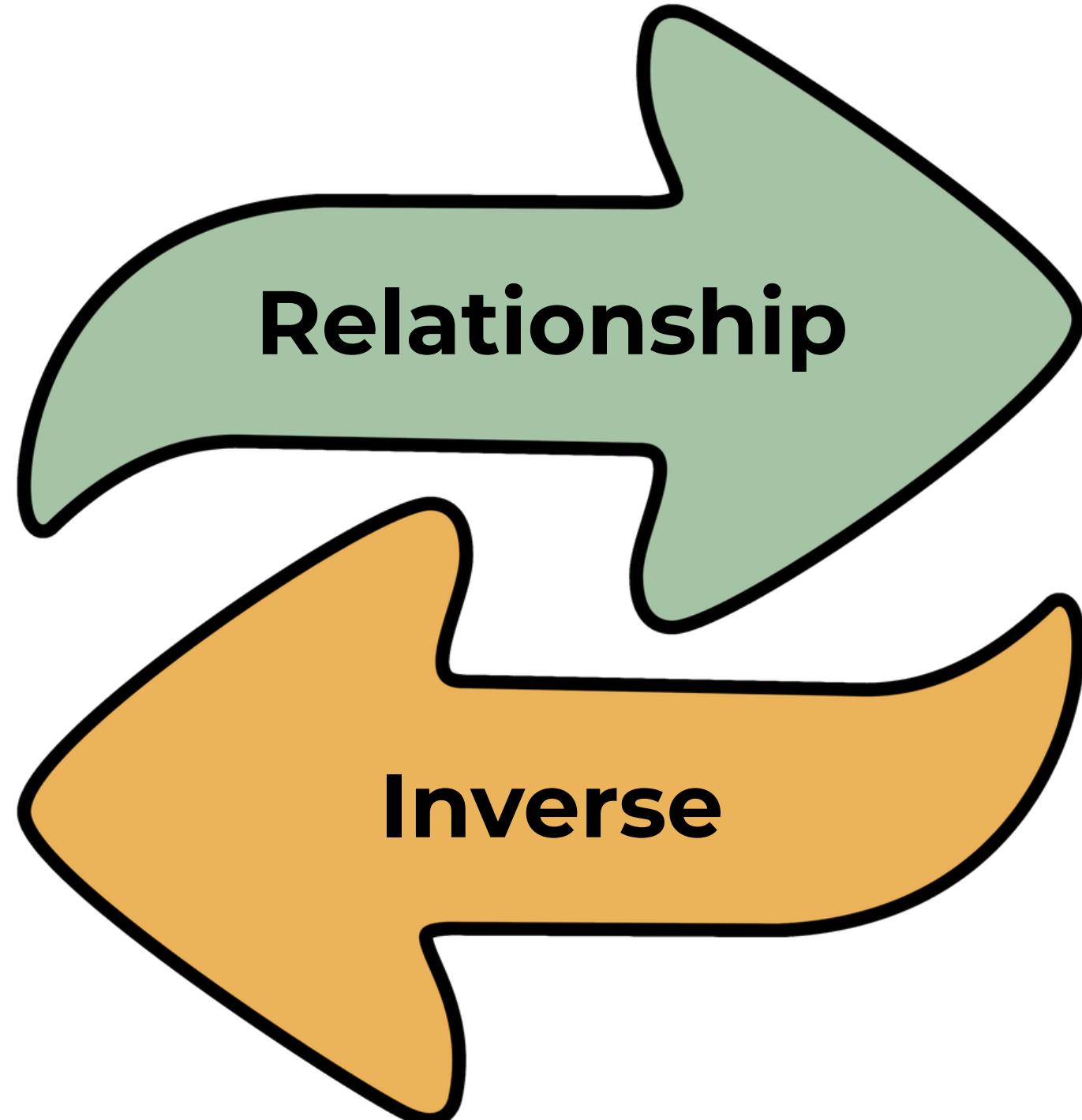
Schedule



Orbital

Physical

Virtual



Relationship

Inverse



KPI/KPP



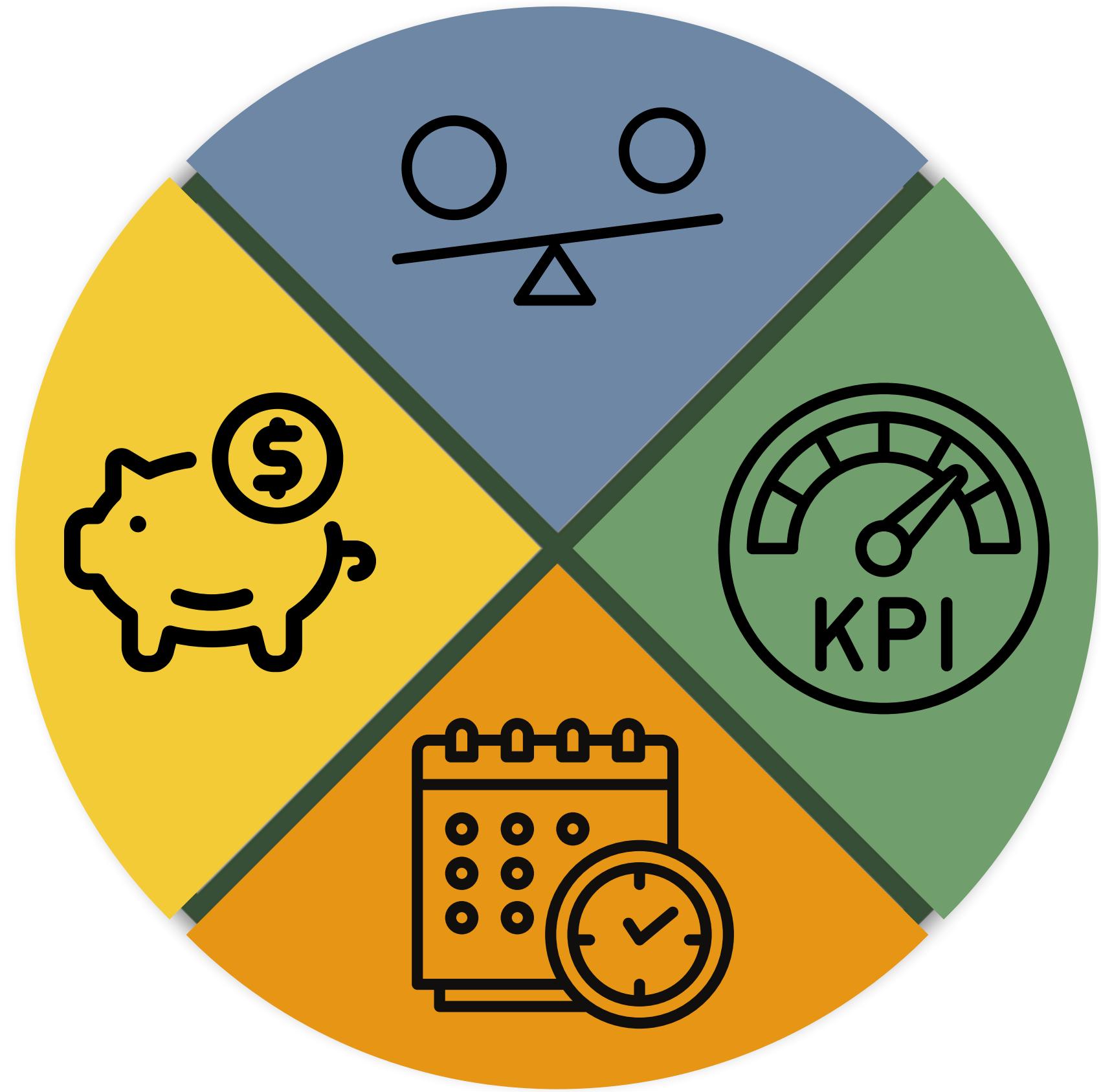
Features



User Stories



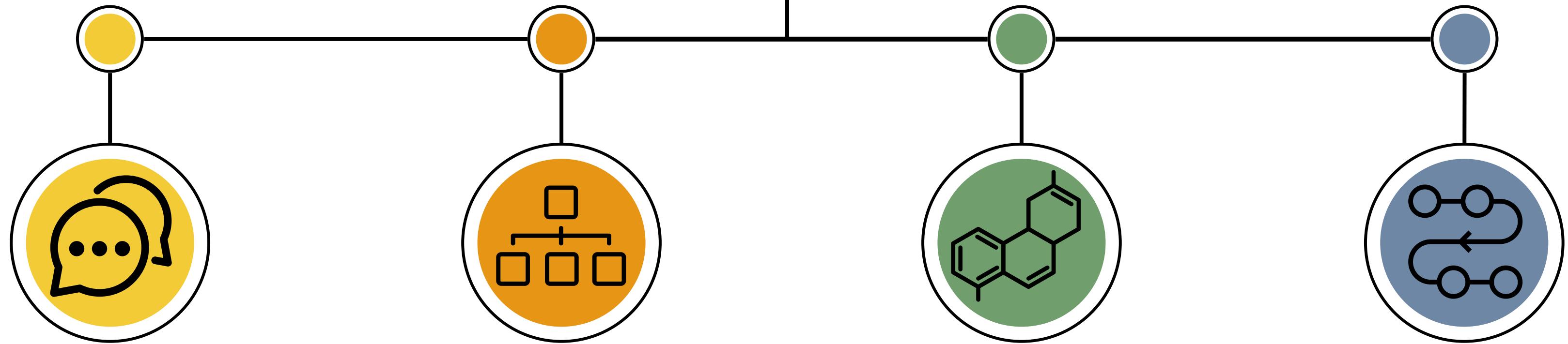
Verification



WHAT IS A MODEL



EFFECTIVE MBSE



Language

Enables development of system models

Framework

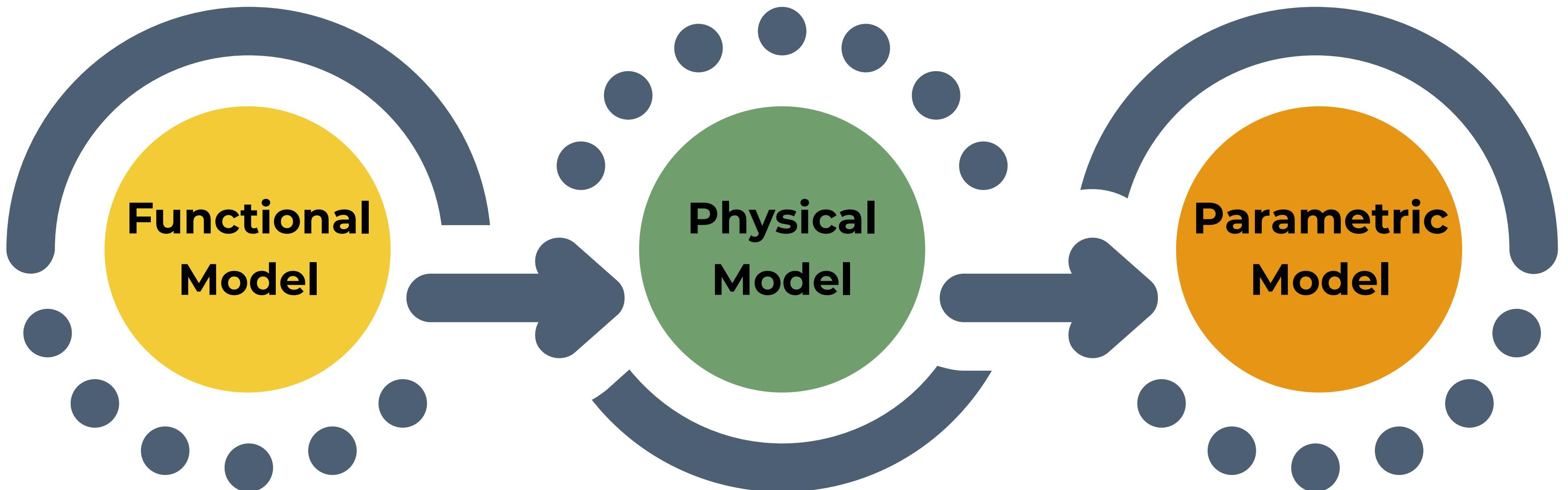
Establishes recommended visualizations

Structure

Standardizes the modeling language

Processes

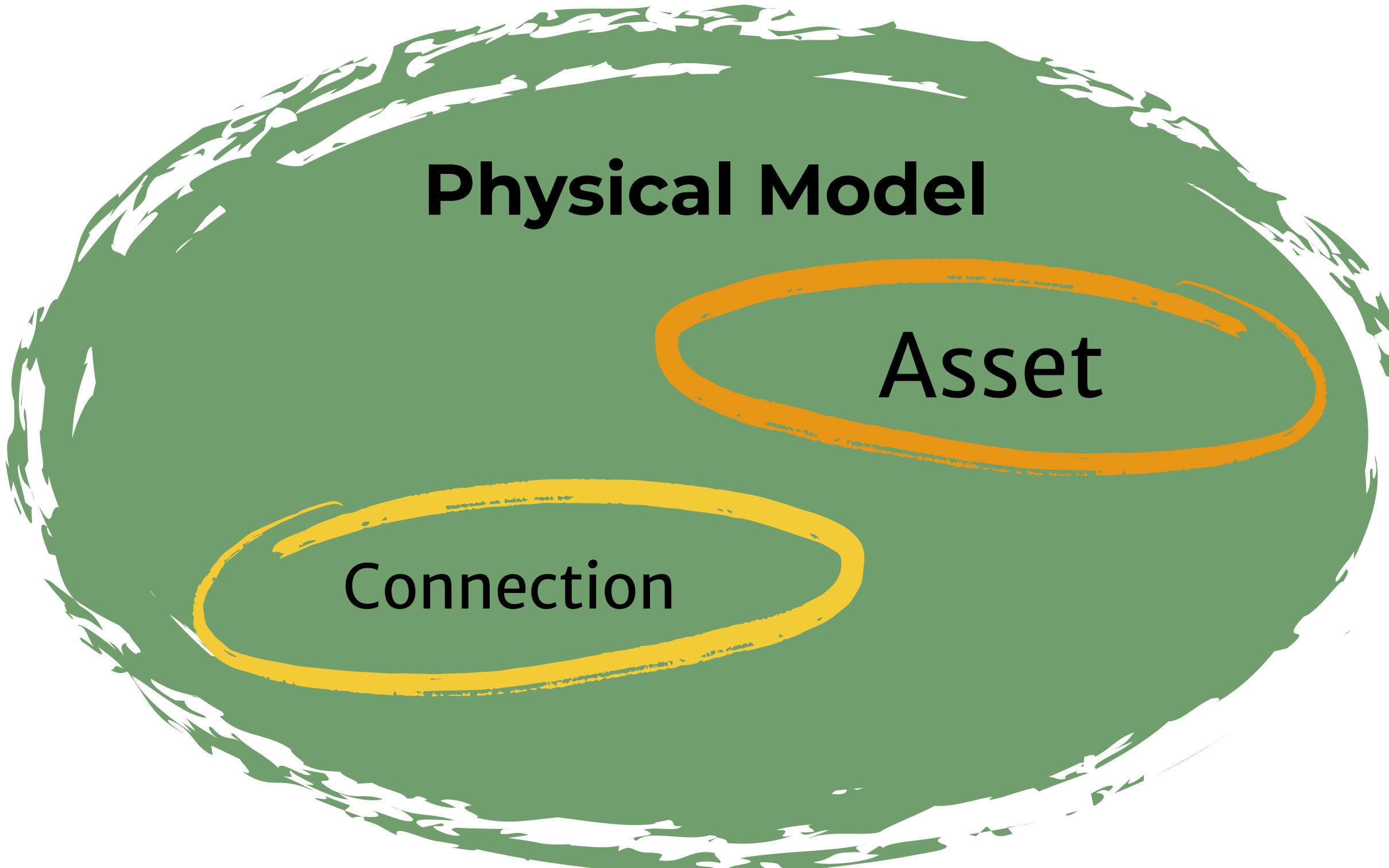
Enables model analysis



Functional Model

Action

Input/Output



Physical Model

Asset

Connection

Parametric Model

Characteristic

Time

Cost

Program Entities

Location

Risk

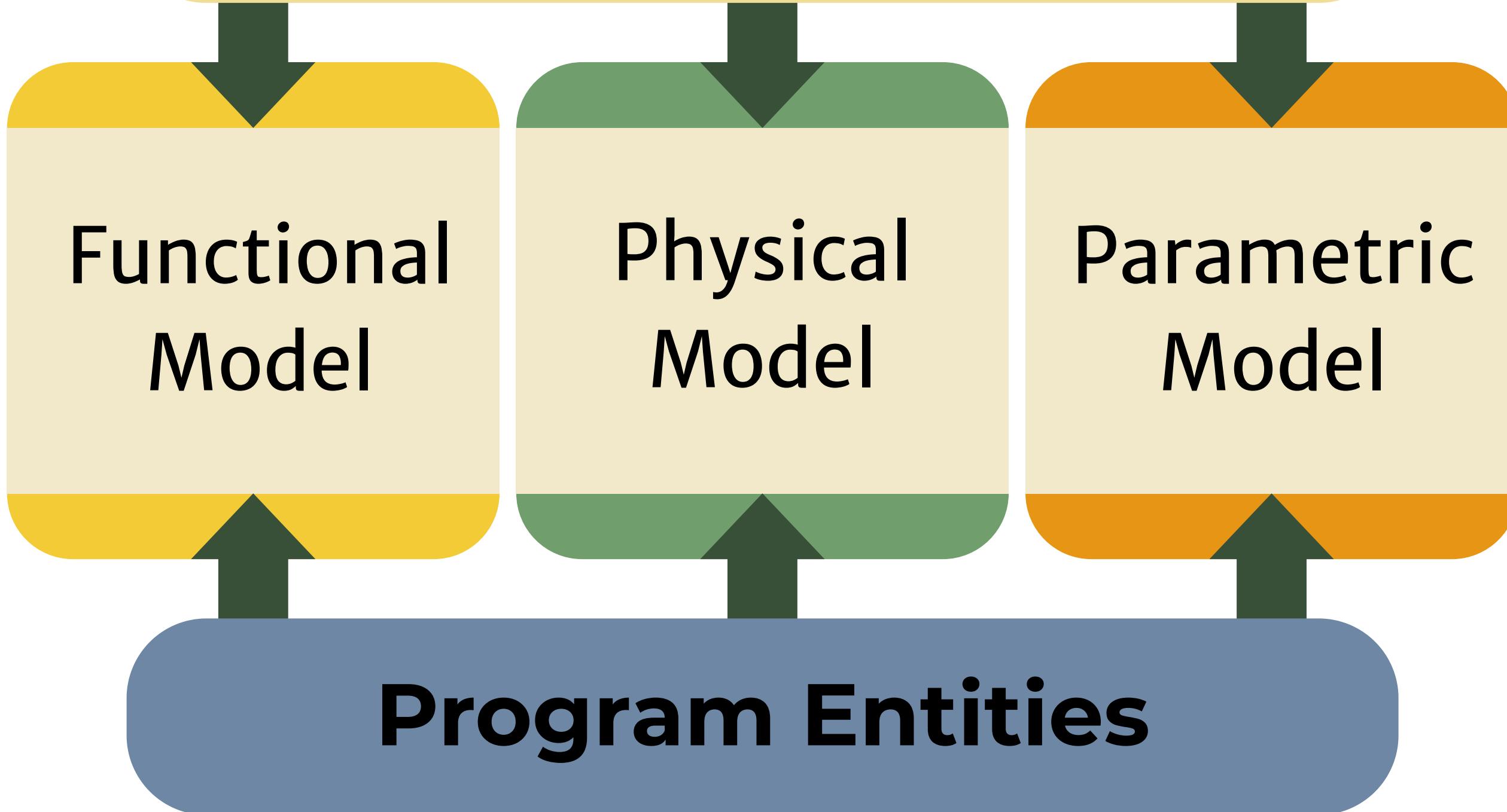
Decision

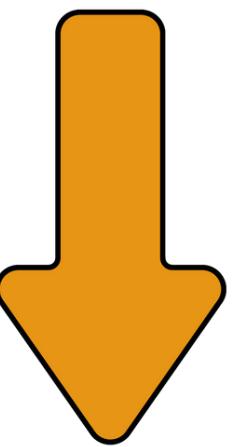
Document Entities

Artifact

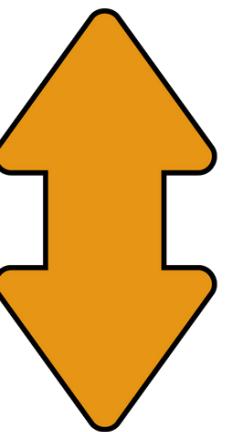
Statement

Document Entities

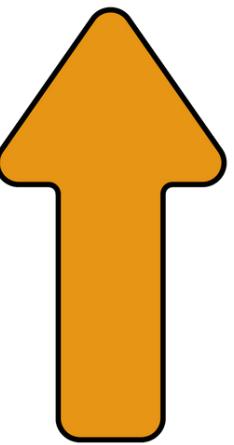




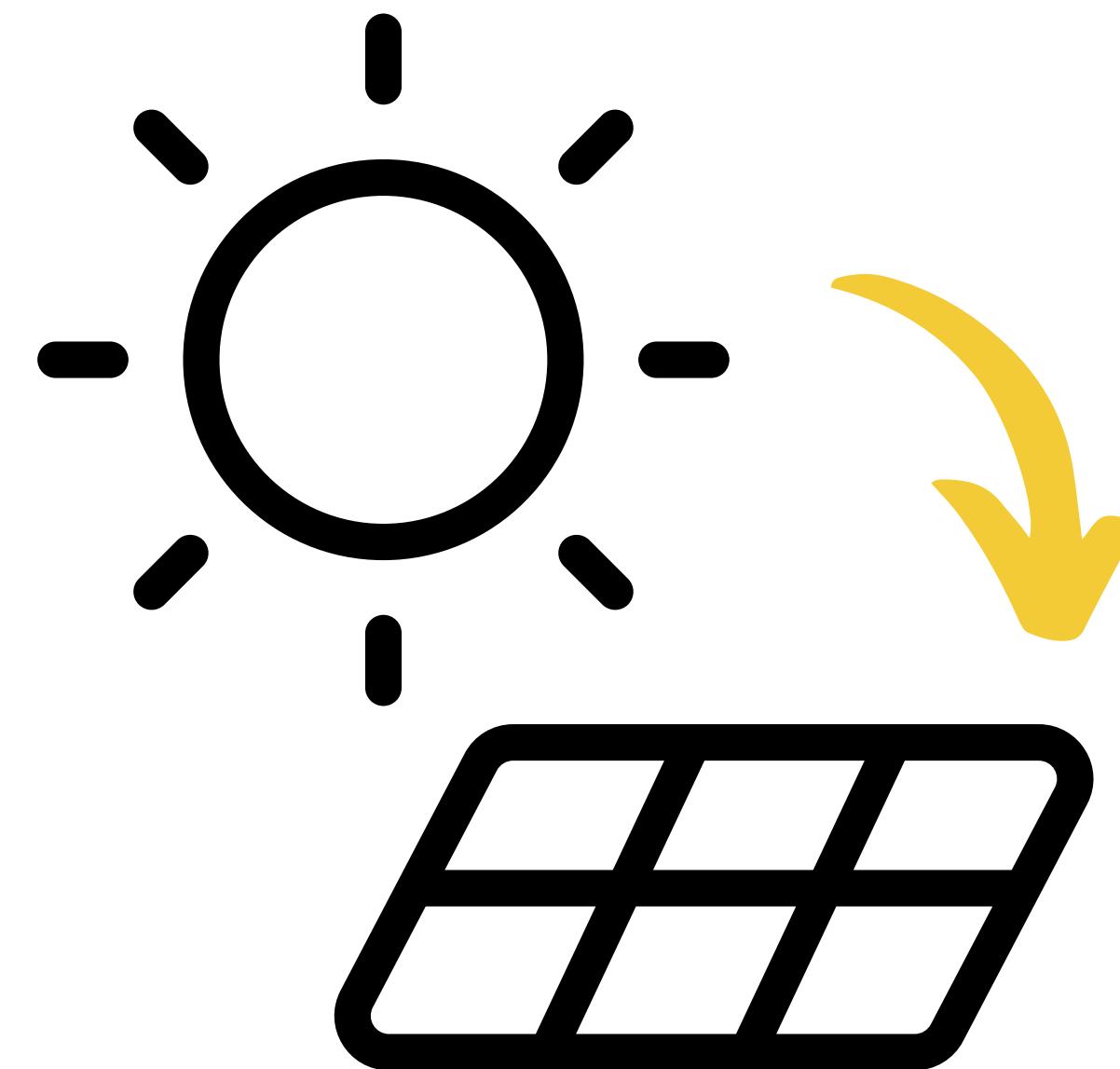
**Requirement
Analysis**



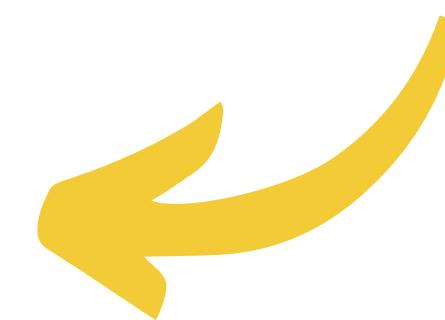
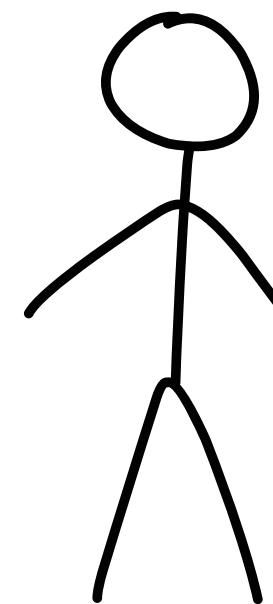
**Functional
Analysis**



**Design
Synthesis**

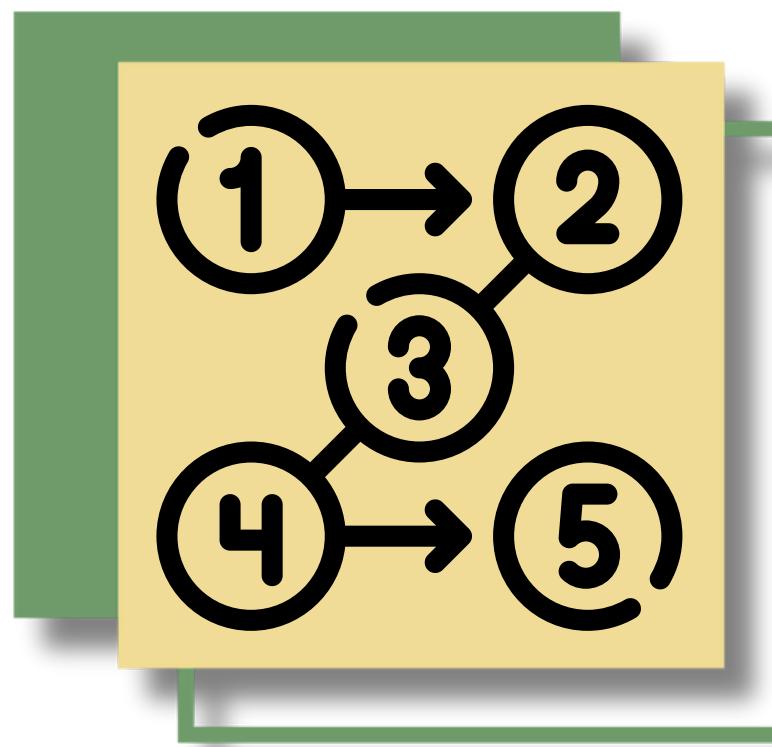


Sunlight

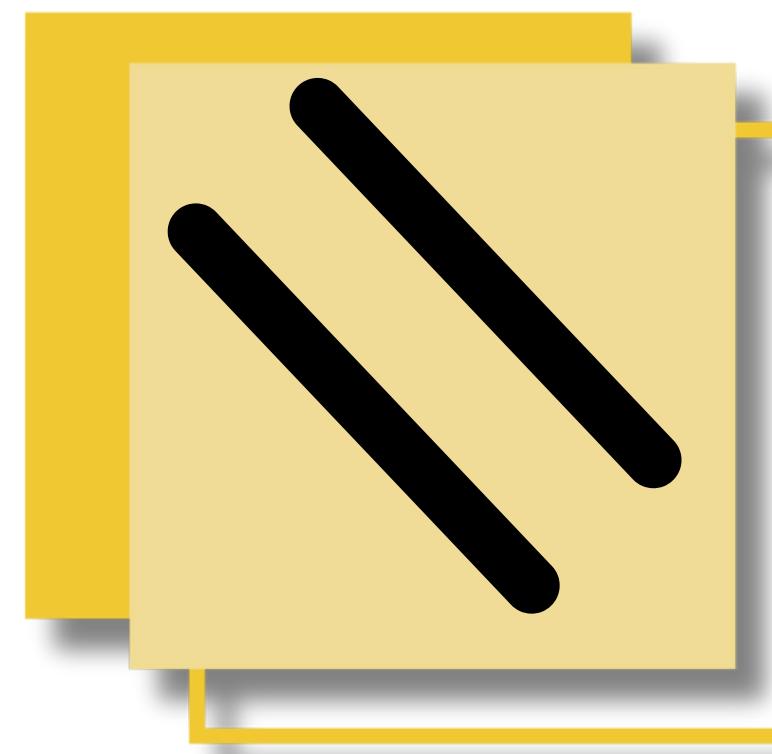


Electricity

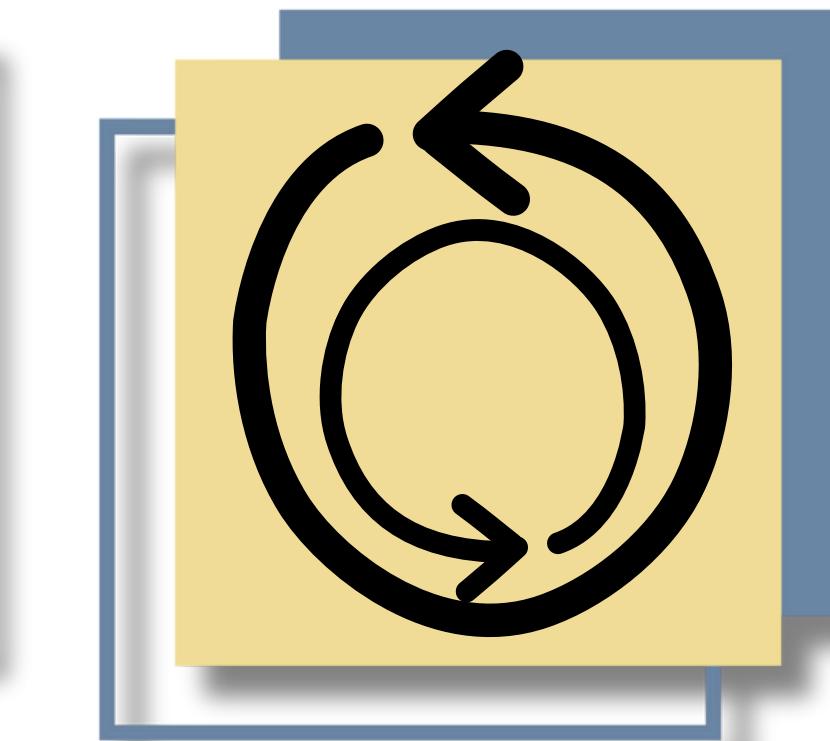
Sequential



Selection

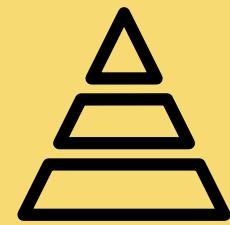


Parallel



Loop

Hierarchical



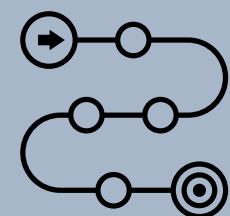
Relational



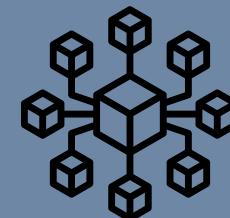
Operational

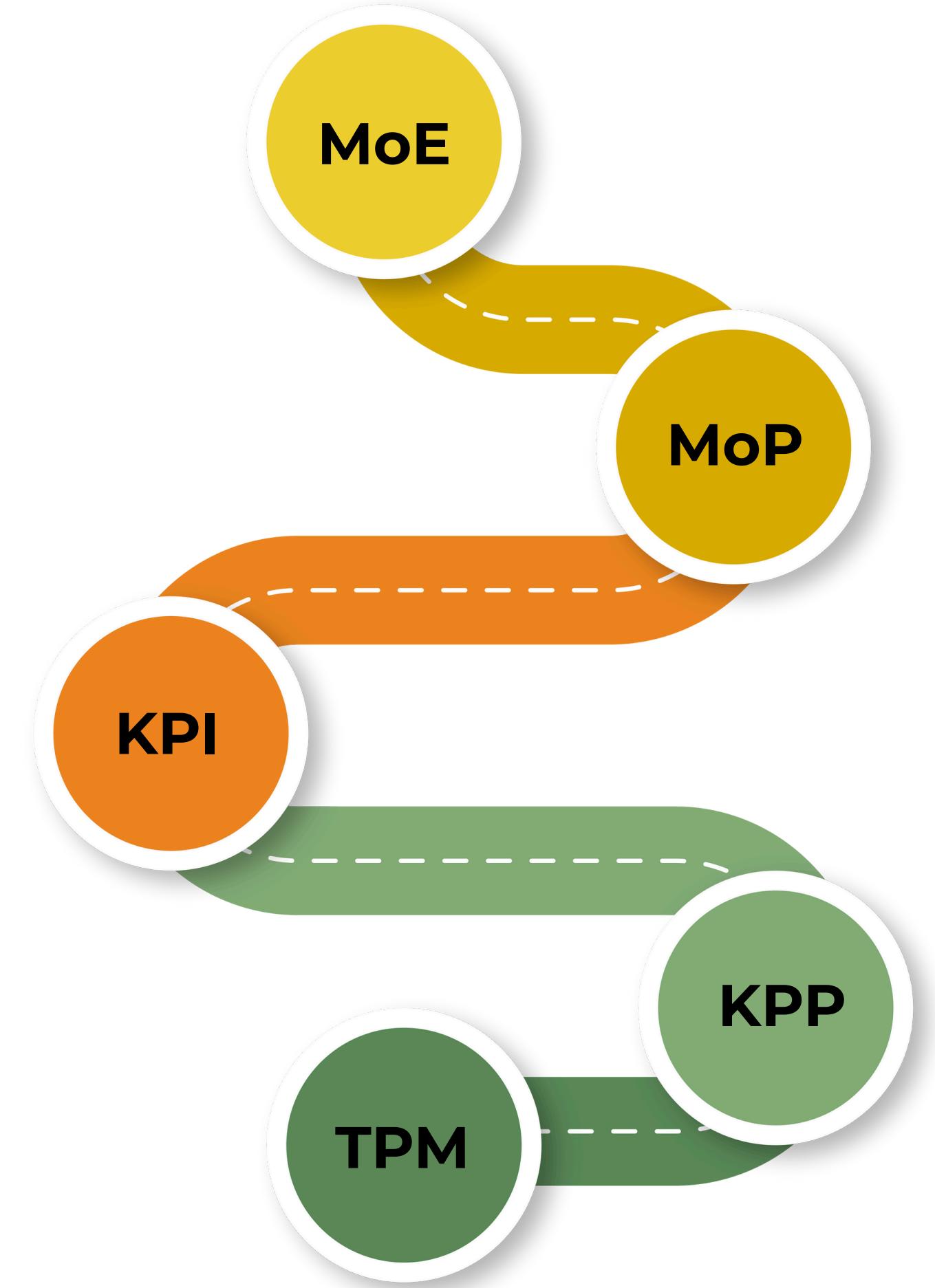


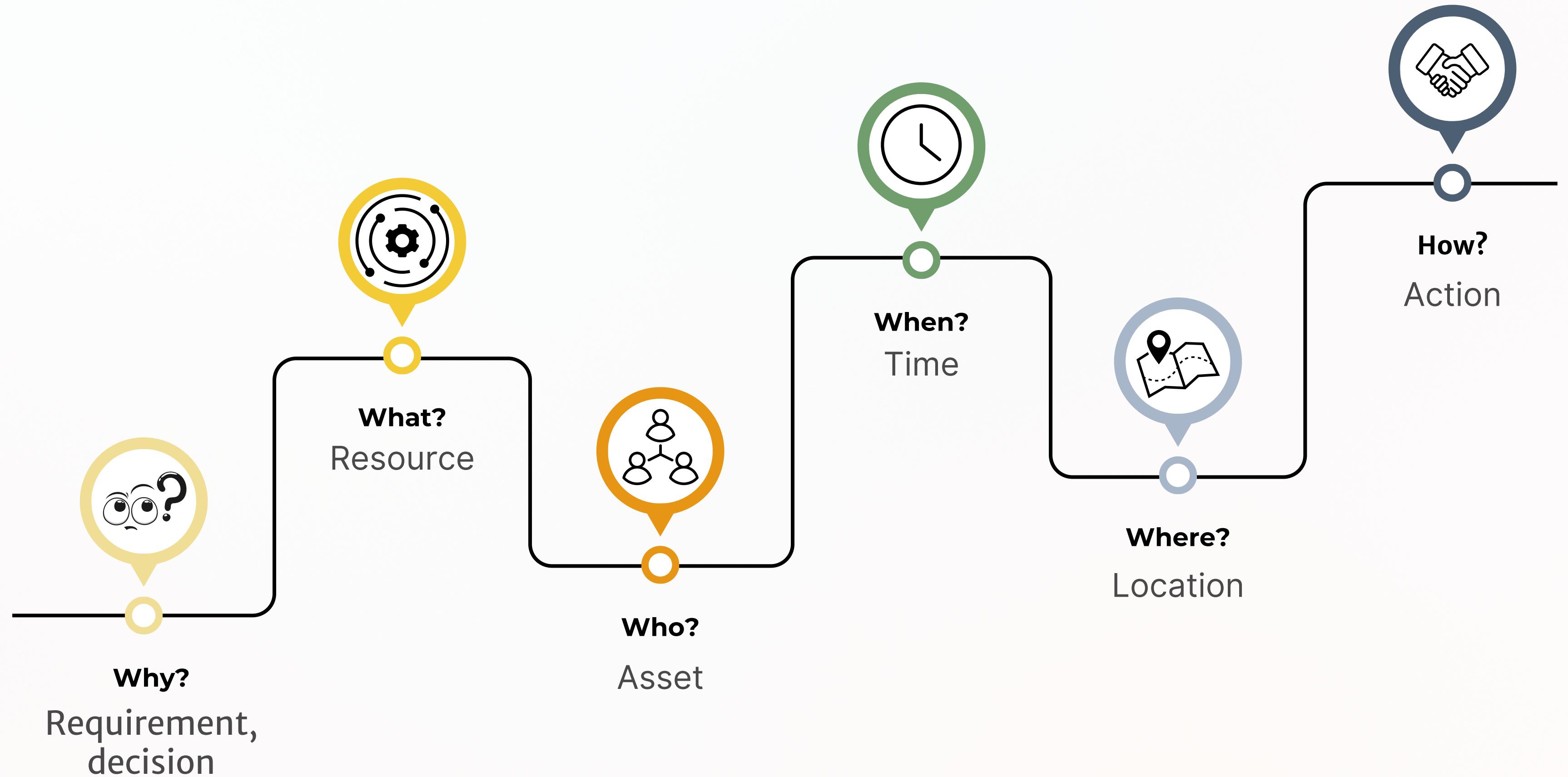
Logical

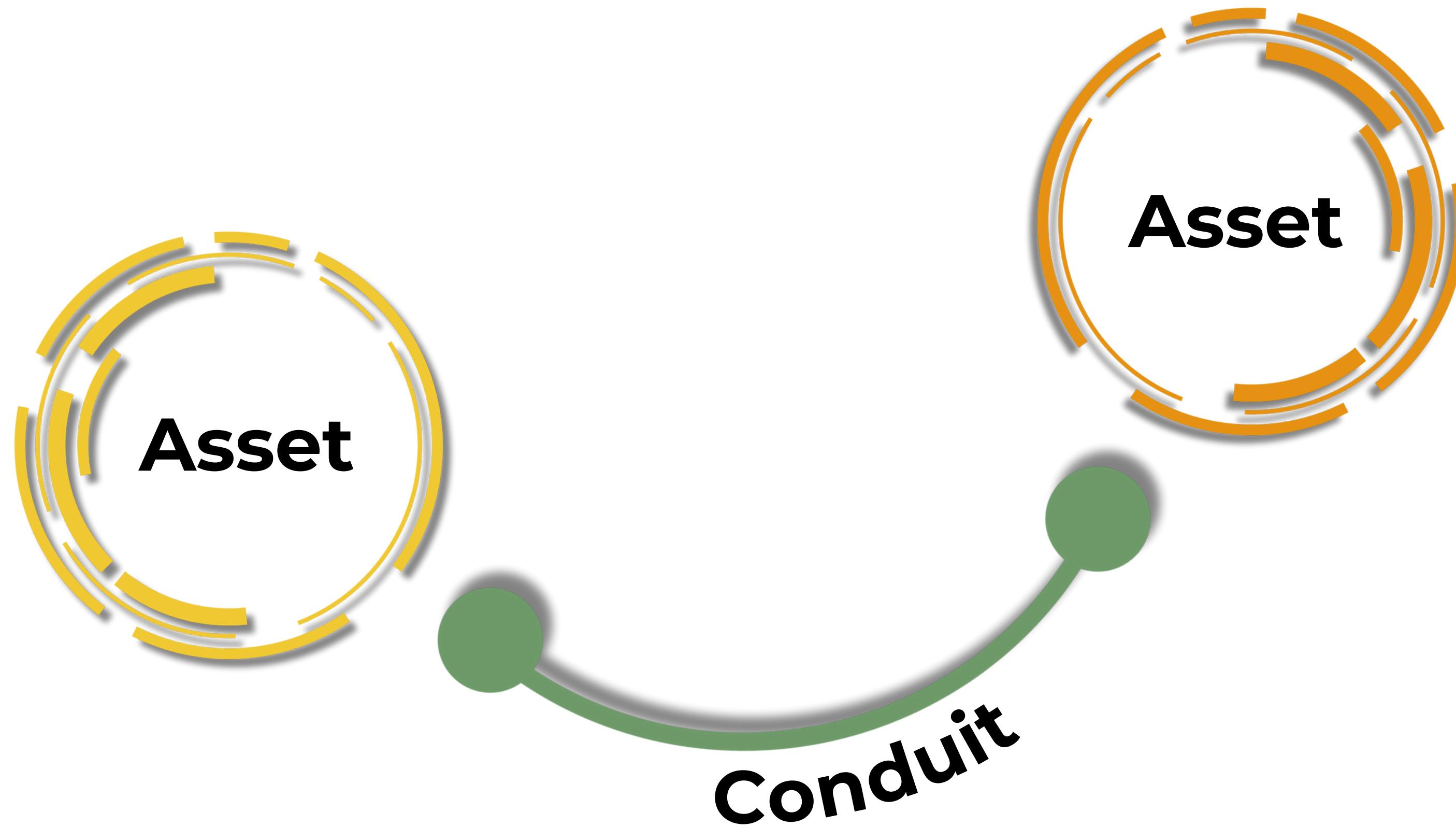


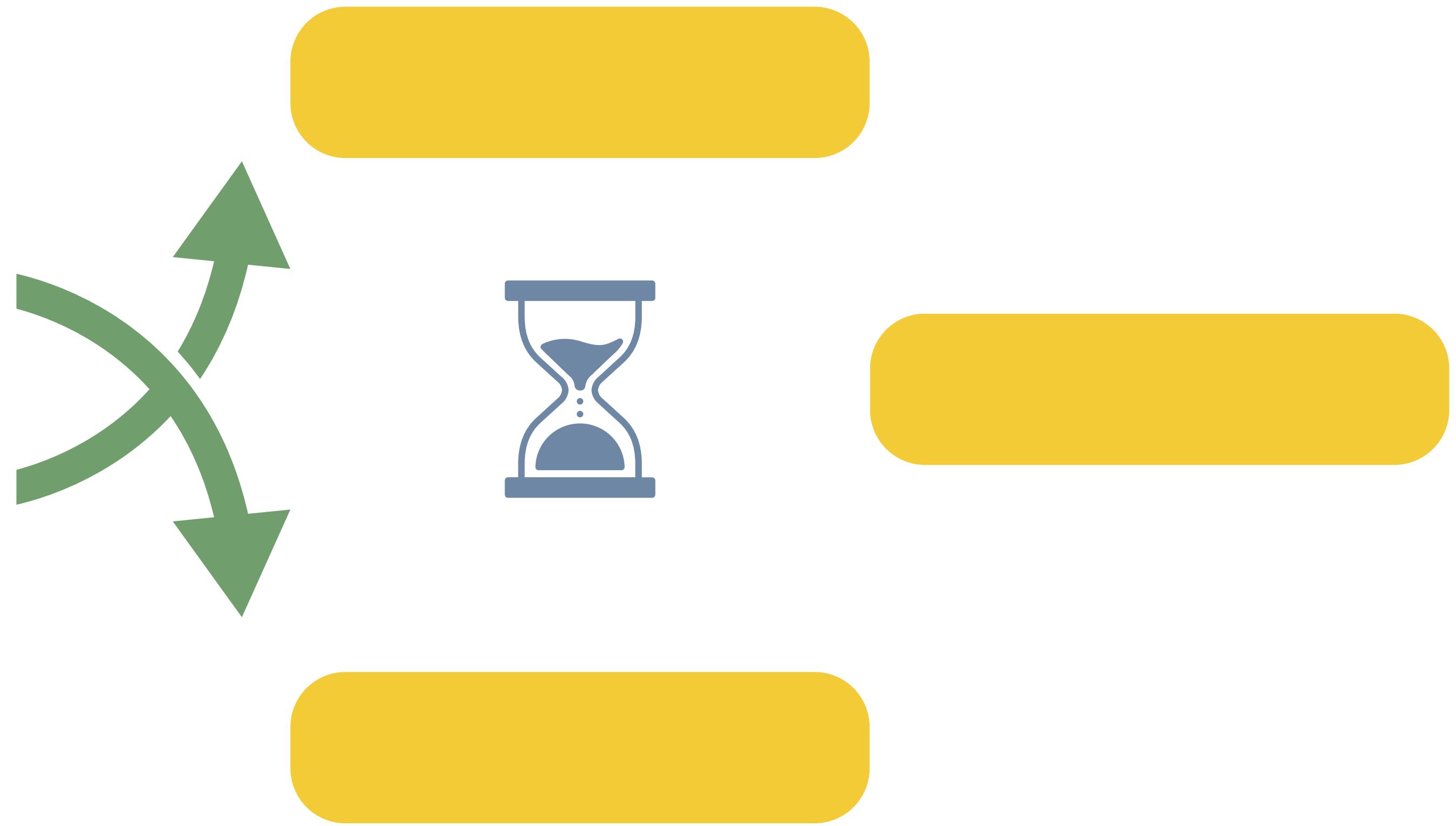
Interfacing

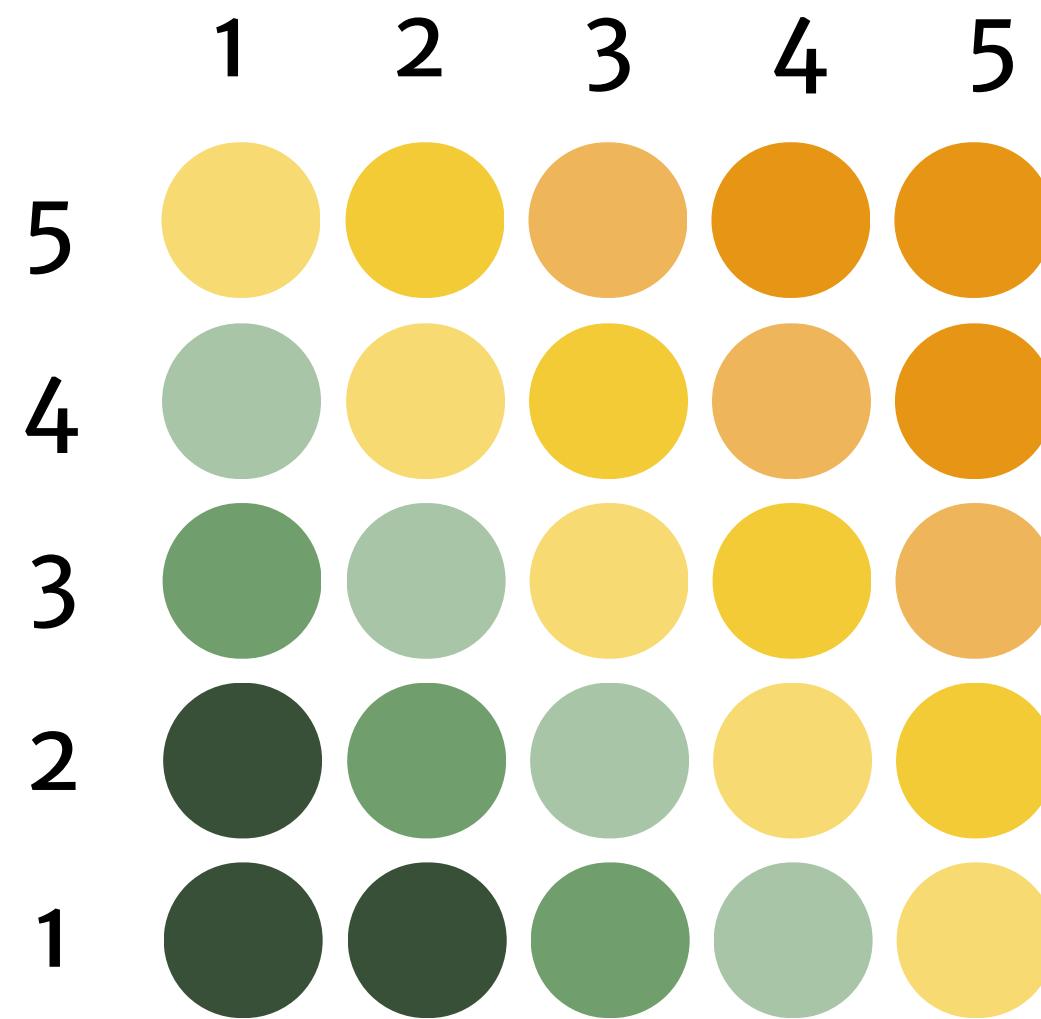
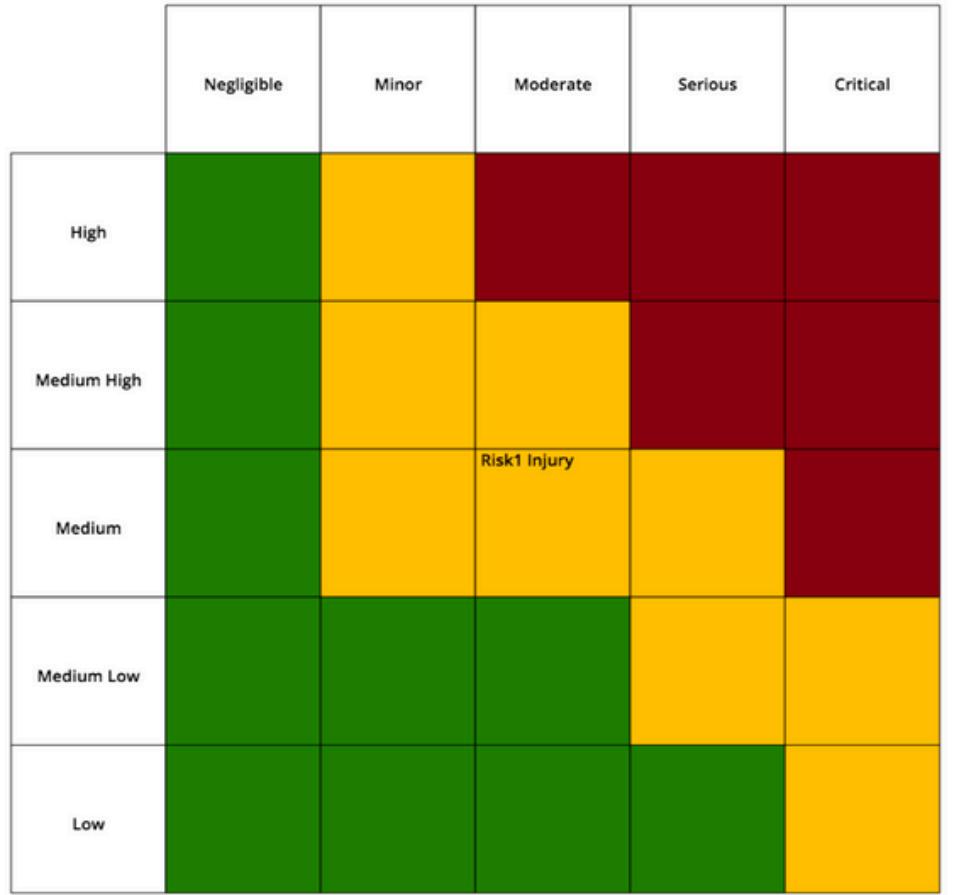












WEEK 1



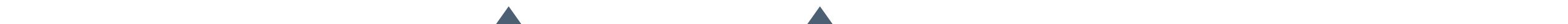
WEEK 2

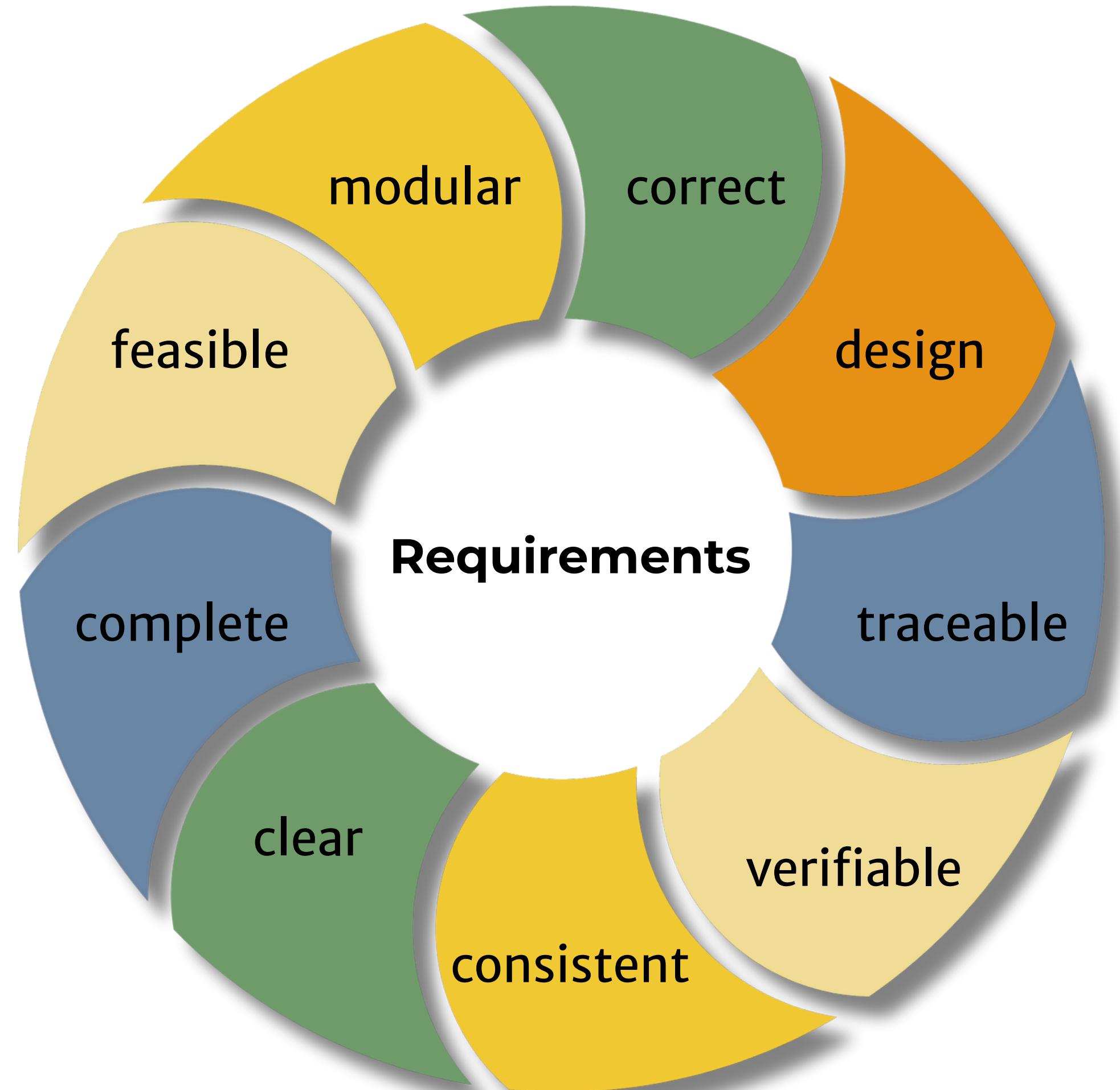


WEEK 3



WEEK 4

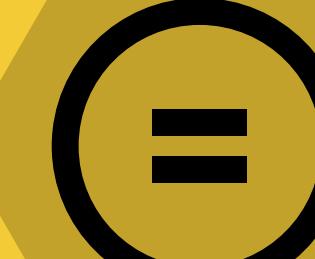




LML Entity

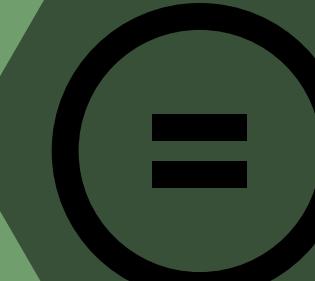
Element Type

Asset



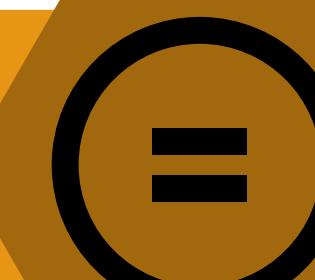
Object

Characteristic



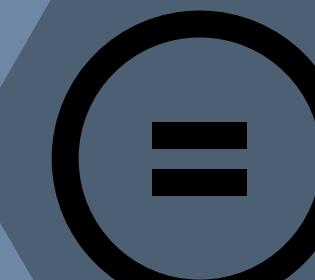
Attribute

Action

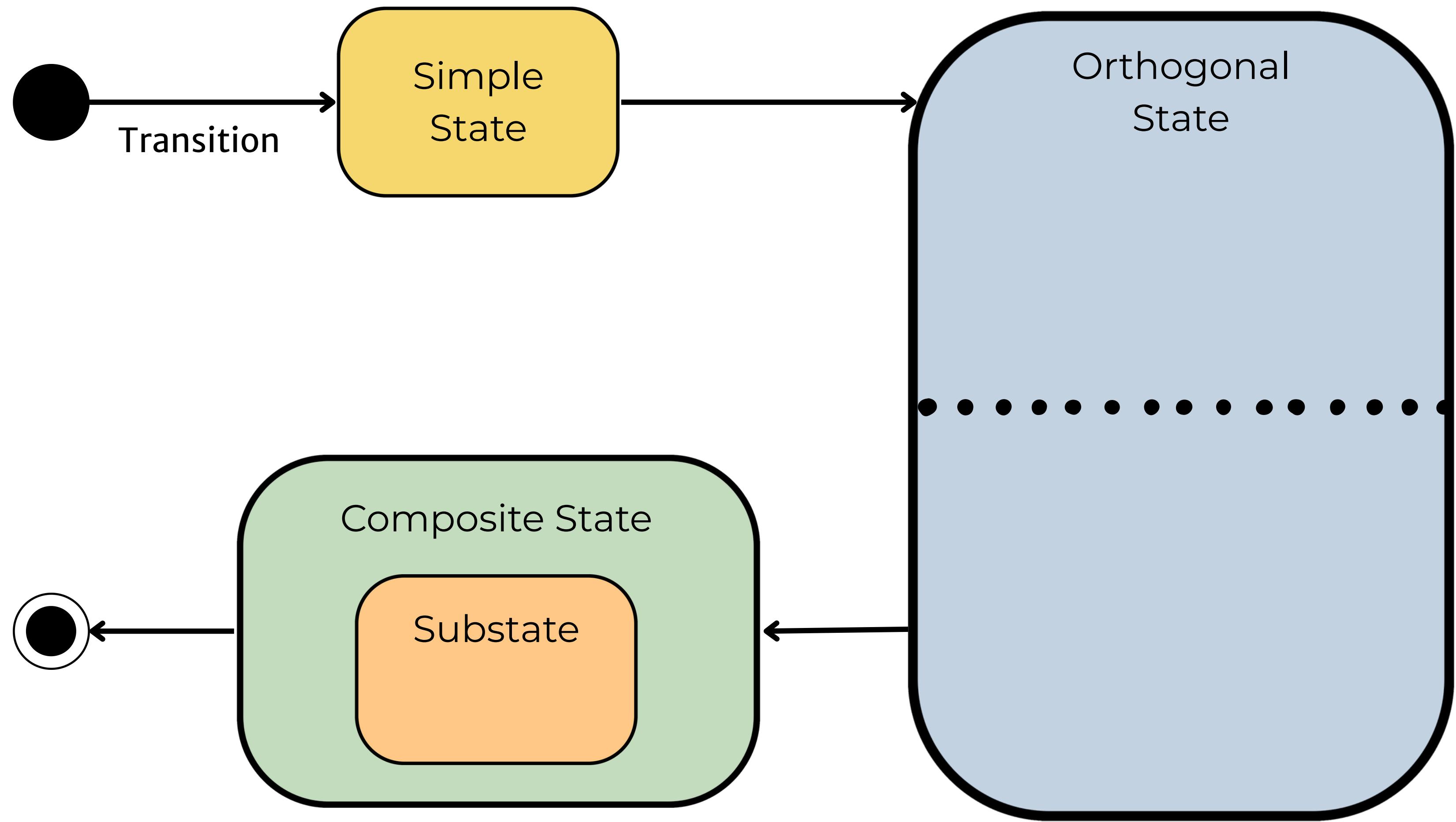


Method

Logical



Relationship

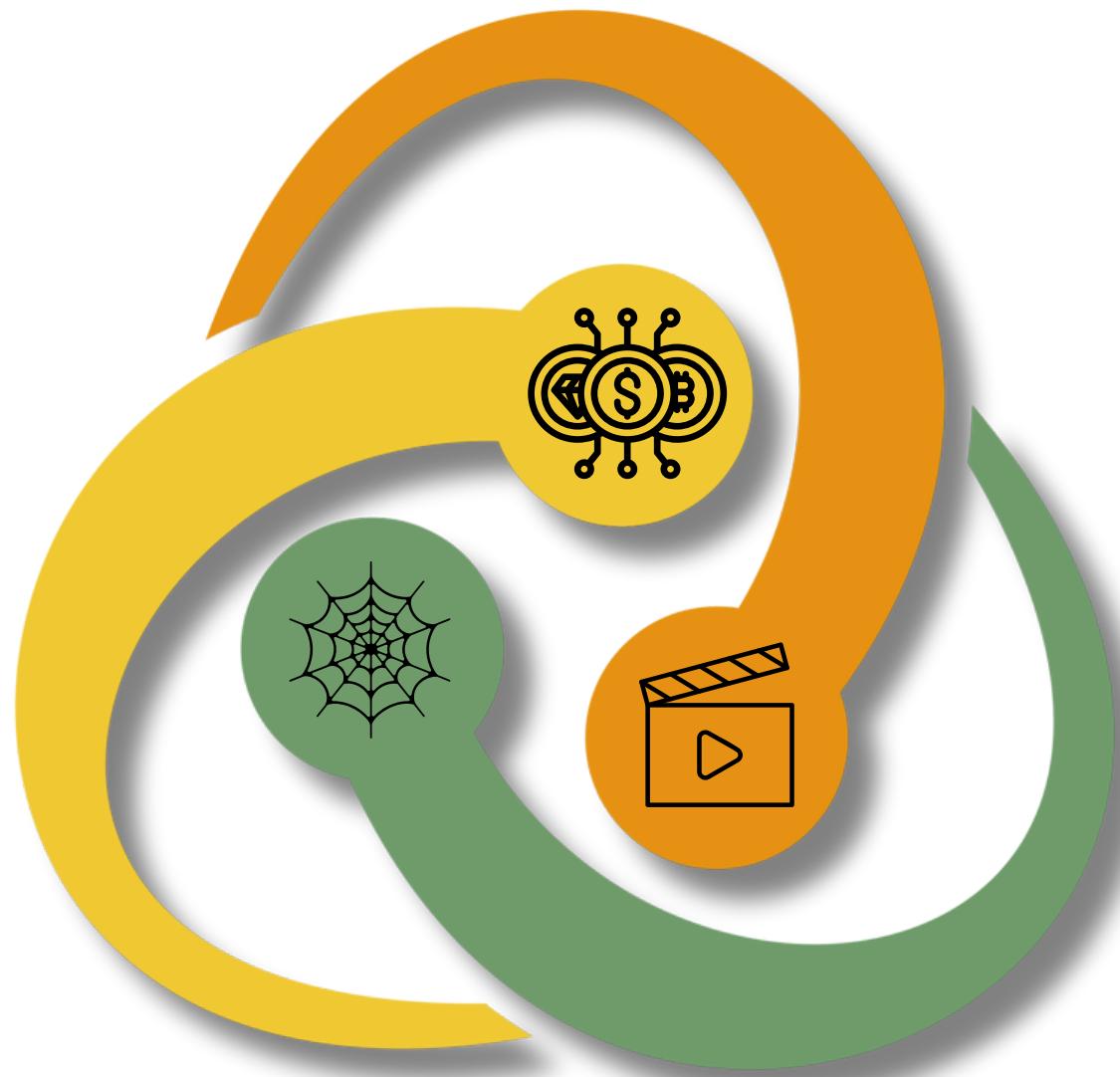


Action
Diagram

Asset
Diagram

Spider
Diagram

Interface
Diagram



Data Type	Description
Big_Text	A string of Rich Text characters up to 65,536 characters in length
Boolean	Data that can have one of two values, including "true" and "false"
Computable	Data representing a mathematical formula that can be used to visualize the equation and calculate values.
DateTime	Data representing a date and time value
Duration	Data that is a special case of Number where the value will be assigned units of "seconds", "minutes", "hours", "days", "months" or "years"
Enumeration	Data representing a choice from set of defined options, where the selection of only one option is permitted
Equation	Data representing a mathematical formula that can be used to visualize the equation in normal mathematical form.
File	Data representing an uploaded file that contains information in other formats
GeoPoint	Data representing a longitude and latitude pair on the surface of a body
HTML	A string of ASCII characters where the value may contain HTML tags
Multiplicity	Data representing the potential range of the number of items that can be associated with a specific entity
Multiselect	Data representing choices made from set of defined options, where the selection of one or more options is permitted.
Number	Data representing any real number. This number can be represented by a distribution as well.
Percent	Data that is a special case of Number where the value is restricted to values between zero and one hundred.
Quality	Data representing the quality (the goodness) of an entity
Text	A string of ASCII characters, such as a single character, a word, or multiple words up to 256 characters in length
URI	A special case of Text where the value must be a Uniform Resource Identifier
User_Team	Data representing the names (or usernames) of individuals assigned to a project



