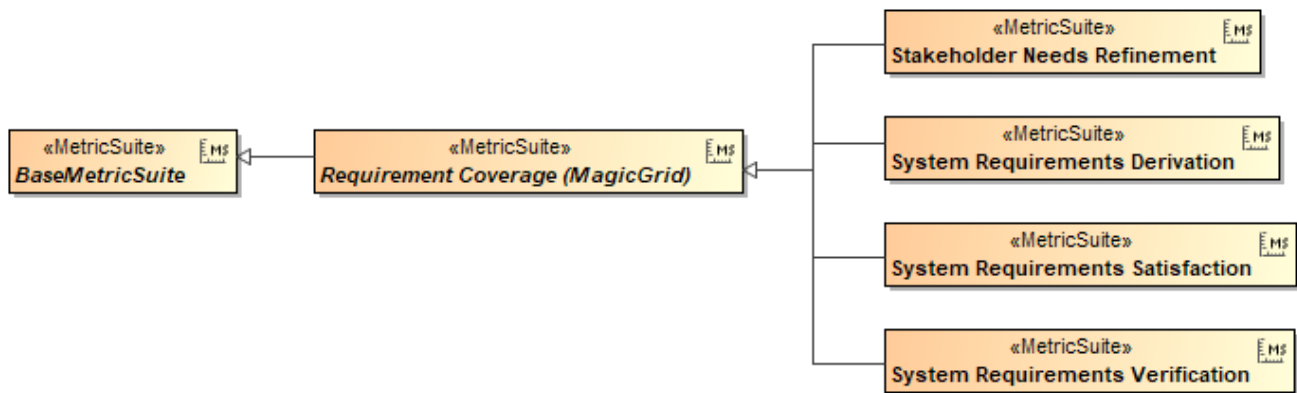# Requirement coverage

A Metric suite is a collection of parameters and metric definitions used to calculate metrics that evaluate specific aspects of your model. For your convenience, there are four predefined Metric Suites for MagicGrid that calculate Requirement coverage. The following figure shows these Metric Suites and their purposes.

> ⚠️ **Important**
>
> You must create a MagicGrid project or use the MagicGrid Profile in your model in order to user predefined Metric Suites for MagicGrid.

Predefined Requirement coverage Metric Suites for MagicGrid.

Stakeholder Needs Refinement

This Metric Suite checks incoming Refine relationships and tracks whether or not stakeholder needs are refined. Only atomic Requirements (without sub-requirements) are tracked. Stakeholder needs can only be refined by one of the following elements:

- Action
- State
- Part Property
- Reference Property
- Flow Property
- Full Port
- Proxy Port
- Value Property
- Constraint Property

System Requirements Derivation

This Metric Suite checks outgoing Derive relationships and tracks whether or not system Requirements are derived. Only atomic Requirements (without sub-requirements) are tracked. A Requirement is treated as derived when it or its grouping Requirement has an outgoing Derive relationship to the Requirement with no sub-requirements.

System Requirements Verification

This Metric Suite checks incoming Verify relationships and tracks whether or not system Requirements are verified by a Test Case element. Only atomic Requirements (without sub-requirements) are tracked.

System Requirements Satisfaction
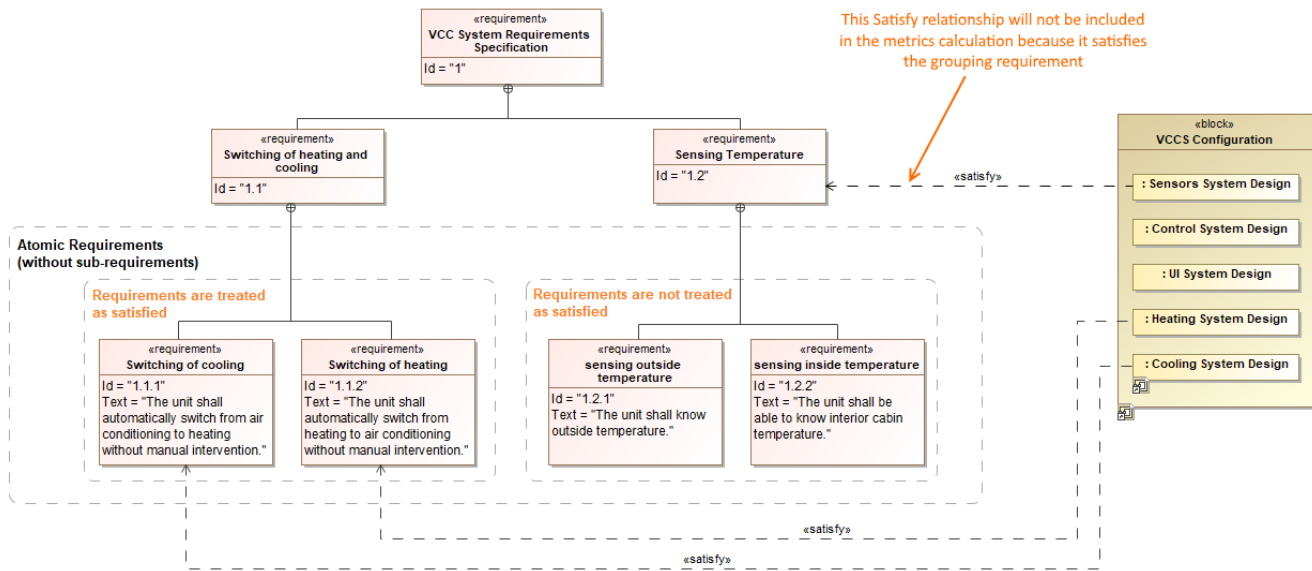
This Metric Suite checks incoming Satisfy relationships and tracks whether or not system Requirements are satisfied. Only atomic Requirements (without sub-requirements) are tracked. System Requirements can only be satisfied by one of the following elements:

- Action
- State
- Part Property
- Reference Property
- Flow Property
- Full Port
- Proxy Port
- Value Property

○ Constraint Property

«requirement»
VCC System Requirements Specification
Id = "1"

This Satisfy relationship will not be included in the metrics calculation because it satisfies the grouping requirement

«block»
VCCS Configuration

«requirement»
Switching of heating and cooling
Id = "1.1"

«requirement»
Sensing Temperature
Id = "1.2"

«satisfy»

: Sensors System Design

: Control System Design

: UI System Design

: Heating System Design

: Cooling System Design

Atomic Requirements (without sub-requirements)

Requirements are treated as satisfied

Requirements are not treated as satisfied

«requirement»
Switching of cooling
Id = "1.1.1"
Text = "The unit shall automatically switch from air conditioning to heating without manual intervention."

«requirement»
Switching of heating
Id = "1.1.2"
Text = "The unit shall automatically switch from heating to air conditioning without manual intervention."

«requirement»
sensing outside temperature
Id = "1.2.1"
Text = "The unit shall know outside temperature."

«requirement»
sensing inside temperature
Id = "1.2.2"
Text = "The unit shall be able to know interior cabin temperature."

«satisfy»

«satisfy»

This diagram illustrates which system Requirements are satisfied when using the **System Requirements Satisfaction** Metric Suite.