STRANGE LOOPS: A THEORY OF MODEL RELATIONSHIPS AND TRANSFORMS

← Subsets :types: Supersets →

Supersets :objects: Subsets

$\{M_{\text{System Standard}}\}$ $\subseteq$ $\{M_{\text{Reliability Standard}}\}$

$\{M_{\text{System Agent}}\}$ $\subseteq$ $\{M_{\text{Reliability Agent}}\}$

$\{M_{\text{Build Definition}}\}$ $\subseteq$ $\{M_{\text{Verification Definition}}\}$

$\{M_{\text{Build Agent}}\}$ $\subseteq$ $\{M_{\text{Verification Agent}}\}$

$\{M_{\text{Build}}\}$ $\subseteq$ $\{M_{\text{Verification}}\}$

$\{M_{\text{Operation Agent}}\}$

$\{M_{\text{Operation}}\}$

M_{World}
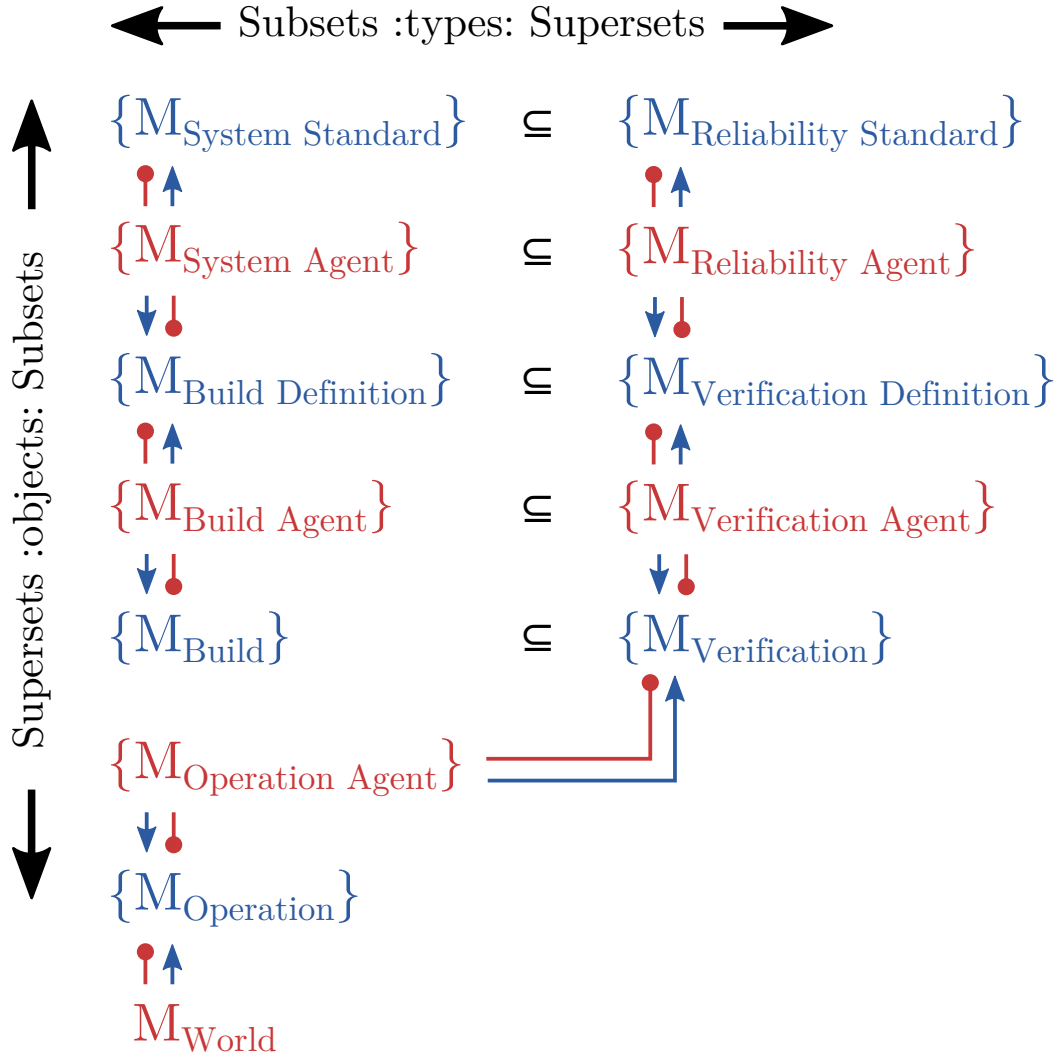
M: A model object: models are structured information and include model functions.

S: Current functional state of a model, serves as a go/nogo gate for downstream functions depending on the model.

M: A source model object: sources are releasable. A release is a static configuration of the object.

M: An autonomous agent: capable of interpreting and creating other model objects.

$M_a \bullet\!\!-\!\! M_b \rightarrow (S_b, M_b)'$

An agent review function: The agent M_b reviews the contents of source M_a, internalizing its contents, thereby updating the agent mode. The state of the review process is given by S_b'

$\{M_a\} \rightarrow M_b \rightarrow \{(S_a, M_a)\}'$

An agent execution function: The agent M_b uses its internal state to update the sets of models M_a. The state of each update is given by each S_a'

$M_{\text{Definition}} \leftarrow M_{\text{Agent}} \rightarrow M_{\text{Build}} \leftarrow M_{\text{World}}$

A strange loop: An agent uses a definition model to produce a build, the build is executed, which updates the build model and produces a build state. The agent uses the build state and updated model to reassess and update the definition model. The process may repeat an arbitrary number of iterations.