# Model checker for SysML

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Model-checker for SysML

- No model-checker dedicated for SysML
- Some works translate UML/SysML to formal languages in order to use model-checkers:
  - HugoRT: state chart → Promela
  - IFx-OMEGA: SysML → IF
- UML/SysML charts to be translated must respect some syntax of annotations
→ a subset of UML/SysML being translated

Verification SysML with IF toolset

- **IFx-OMEGA:** a translator SysML diagrams to IF description

- **IF:** a model-checker

- **Observer:** a IF description representing safety property to be verified
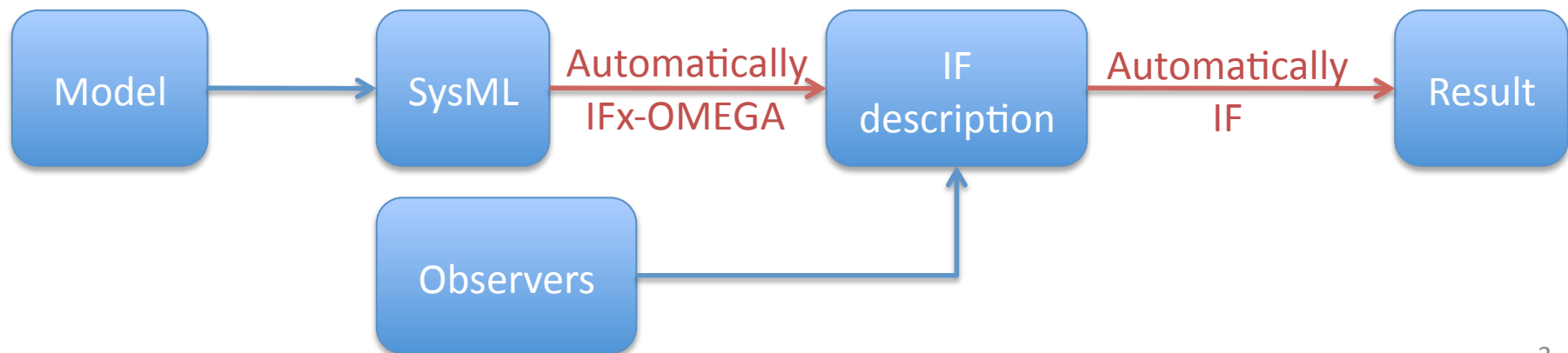
A model of ETCS

- Two main components: OBU & RBC
- Environment ENV representing other actors interacting with OBU & RBC, *e.g.*, driver, control center, ...
- OBU functions on 3 modes:
    - Moving: $(d-p) \geq 4*SD$
    - Negotiation: $4*SD > (d-p) \geq 2*SD$
    - Stop: $(d-p) < 2*SD$