



System definition and safety assessment consistency

Systems engineering and safety models synchronization

1. Need elicitation with MBSE
2. System and safety consistency
3. System Architecture to Co-Simulation
4. Digital continuity for MBSE

MOISE
Models and Information Sharing in Extended Enterprise

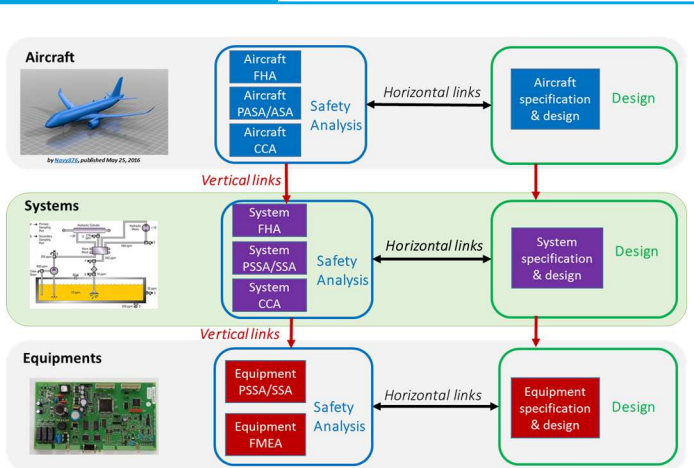
Value Proposition

Provide a proven synchronization process ensuring the consistency of MBSE and MBSA models and associated analyses, in compliance with ARP4754A and ARP4761, allowing efficient iterations for system co-design.

Motivations

- Reduce the cost of iterations between system design definition and safety assessment
- Improve safety analysis confidence for certification

Scope of activities

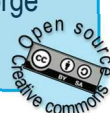


Exchanges between design and safety activities (ARP4754A) exist at aircraft, system and equipment level. Current activities are focused on System level, and preliminary development phase.

AIDA Study CASE

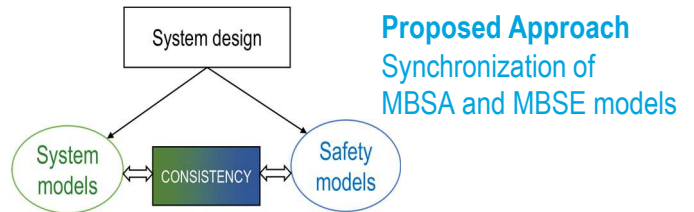
AIDA Drone for A/C preflight inspection, for a representative co-design process.

Access AIDA on the IRT Saint Exupéry forge
<https://sahara.pf.irt-saintexupery.com>



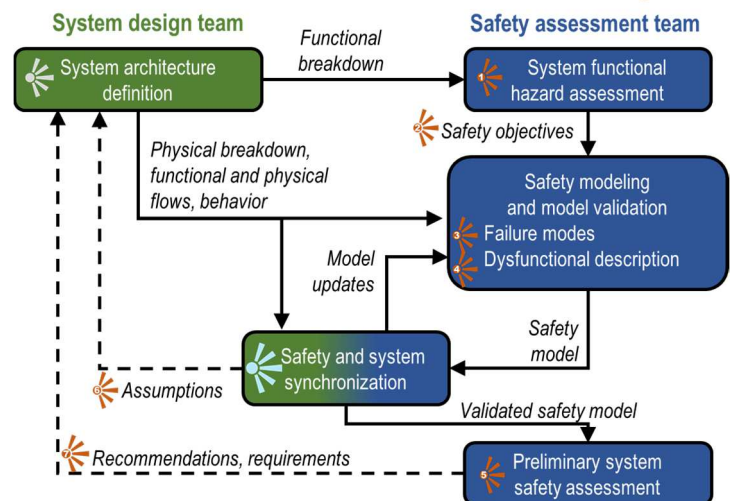
Tools & Technologies

CAPELLA (PolarSys, Eclipse), Cecilia-OCAS (Dassault Aviation), SCADE ARCHITECT (ANSYS), MEDINI (ANSYS)

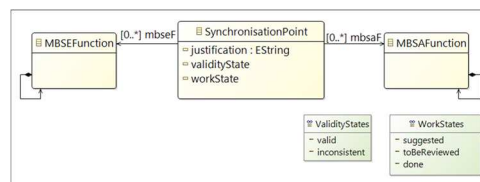


MBSE/MBSA synchronization

Definition of a synchronization process, supported by system, safety and consistency viewpoints:



Formalization of data exchanged and specification of associated MBSE/MBSA synchronizations.



Meta models definition

Synchronization viewpoint illustration

| System | Safety |
|--------------------------------------|-------------------------------|
| 4 Control drone navigation | 4 ControlDroneNavigation |
| 4.1 Acquire and store flight plan | 4.1 AcquireAndStoreFlightPlan |
| 4.2 Run flight plan | 4.2 RunFlightPlan |
| 4.3 Select control mode | 4.3 SelectControlMode |
| 4.3.1 Select drone control mode | |
| 4.3.2 Passive engagement oscillation | |
| 5 Record video | 5 RecordVideo |
| 5.1 Select camera control | 5.1 SelectCameraControl |
| 5.2 Control camera orientation | |

has no safety impact



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