



SpaceSystems
Finland

Catalogue of System and Software Properties

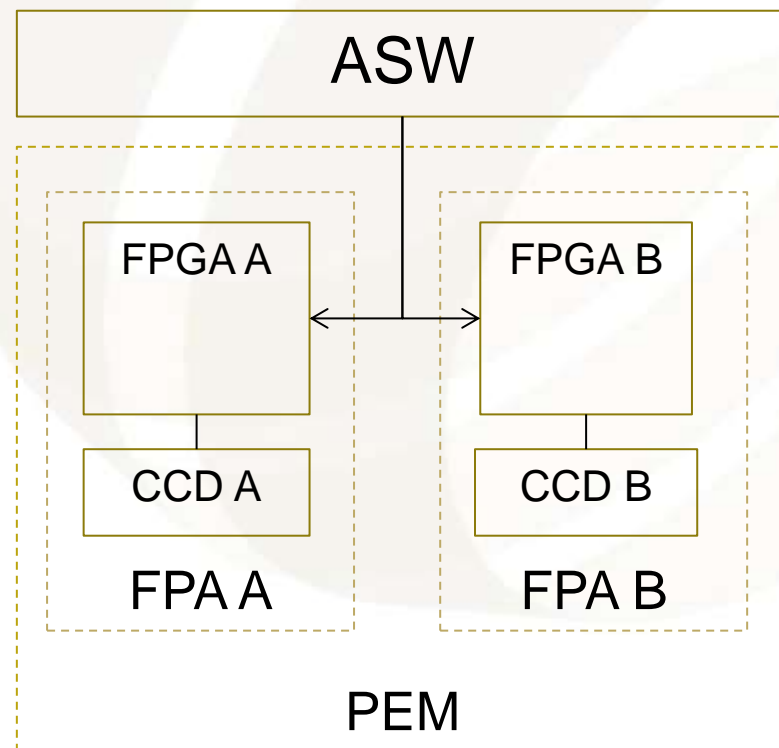
A European Space Agency project with SSF, FBK and RWTH

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*On the Grounds
of Quality*

Example: Star Tracker

- Proximity Electronic Unit (PEM)
 - FPA A
 - FPGA
 - CCD
 - FPA B
 - FPGA
 - CCD
- Application software (ASW)



STR ASW

Modes

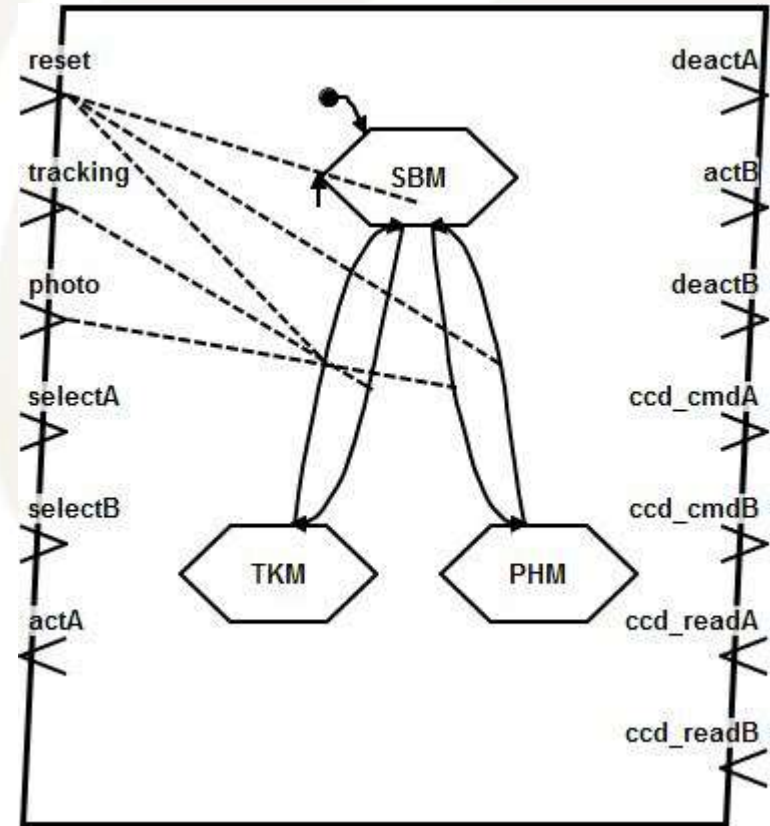
1. SBM: standby mode
2. TKM: tracking mode
3. PHM: photo mode

Transition triggers

1. Reset
2. Tracking
3. Photo

Outputs from ASW:

1. Activate (A/B)
2. Deactivate (A/B)
3. Command CCD (A/B)



- ASW shall ensure that FPA A and FPA B are never active at the same time.
- In TKM mode, ASW shall send an FPA command every second
- The jitter of the command shall be less than 1ms

FPA

Modes

1. standby mode
2. active mode

Transition triggers

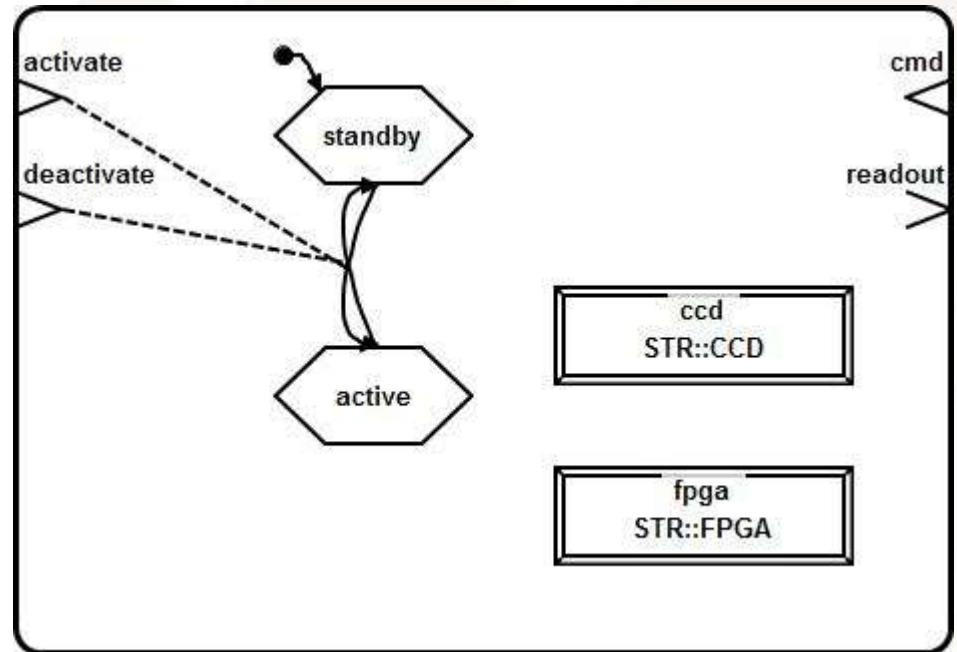
1. activate
2. Deactivate

Inputs

1. Cmd

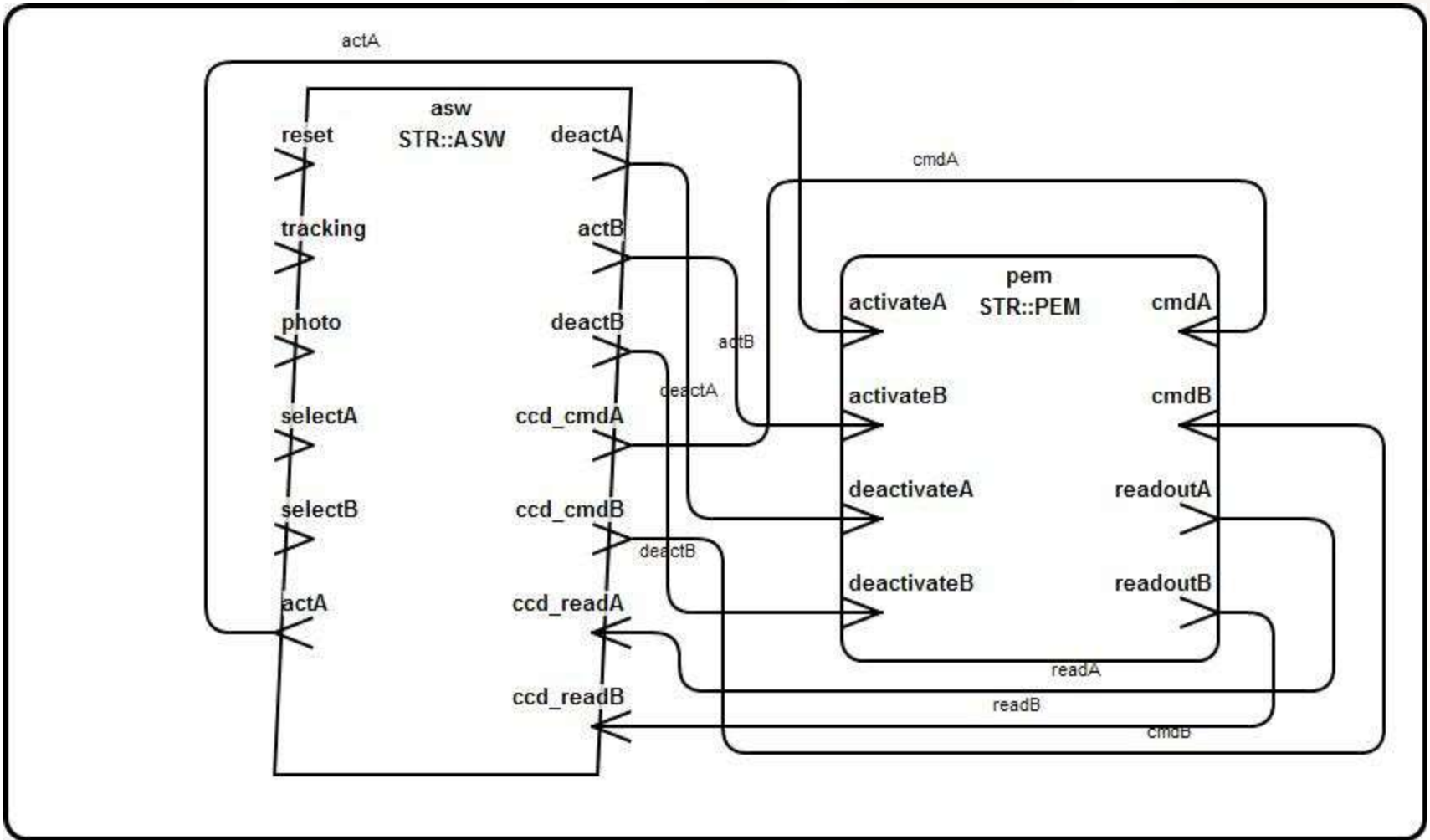
Outputs

1. readout



- In standby mode, no cmd is accepted and no readout is generated

Star tracker (top-level component)



Example properties

-- FPA

CSSP::ModelInhibited => (reference(cmd),reference(readout))
applies to standby;

-- ASW

CSSP::PeriodInterval => 1 sec applies to ccd_cmdA;
CSSP::PeriodJitter => 1 ms applies to ccd_cmdA;
CSSP::PeriodEnabled => (reference(TKM_activeA))
applies to ccd_cmdA;

CSSP::PeriodInterval => 1 sec applies to ccd_cmdB;
CSSP::PeriodJitter => 1 ms applies to ccd_cmdB;
CSSP::PeriodEnabled => (reference(TKM_activeB))
applies to ccd_cmdB;