Observation Coordination Framework
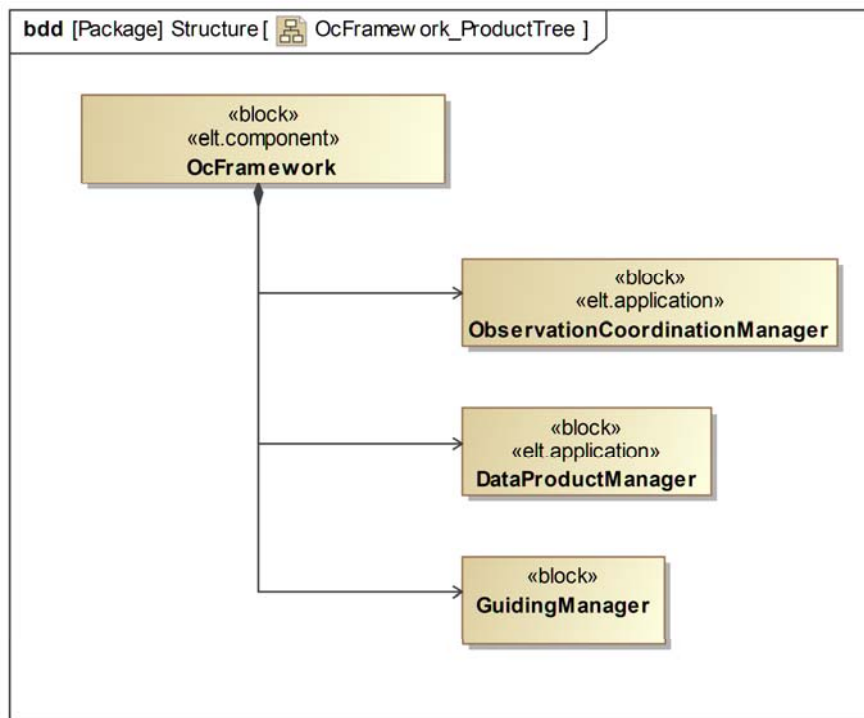
Calle Rosenquist

```
                        ICS Framework (511)

   HL FW (511-01)        LL FW (511-02)        Control Model (511-03)

   Application Framework    Cryogenic and Vacuum    Communication Infrastructure
   (511-01-01)              (511-02-01)             (511-03-01)

   Function Control Framework   Interlock and Safety    General Facilities
   (511-01-02)                  (511-02-02)             (511-03-02)

   Widget Library           Cabinet Management Unit    Local Control Units
   (511-01-03)              (511-02-03)               (511-03-03)

                           Technical CCDs           Simulations
                           (511-02-04)              (511-03-04)

                                                    Test Instrument
                                                    (511-03-05)

   Observation Coordination Framework (511-01-04)

   Technical Detector Control Software (511-01-05)

   Data Display (511-01-06)

   Data Interface Tools (511-01-07)

   Sequencer (511-01-08)

   Template Library (511-01-09)
```

- **Current Baseline**
- **Preliminary Design**
- **Control & Data Flow**

Observation Coordination Framework
Introduction

bdd [Package] Structure [OcFramework_ProductTree]

«block»
«elt.component»
OcFramework

«block»
«elt.application»
ObservationCoordinationManager

«block»
«elt.application»
DataProductManager

«block»
GuidingManager
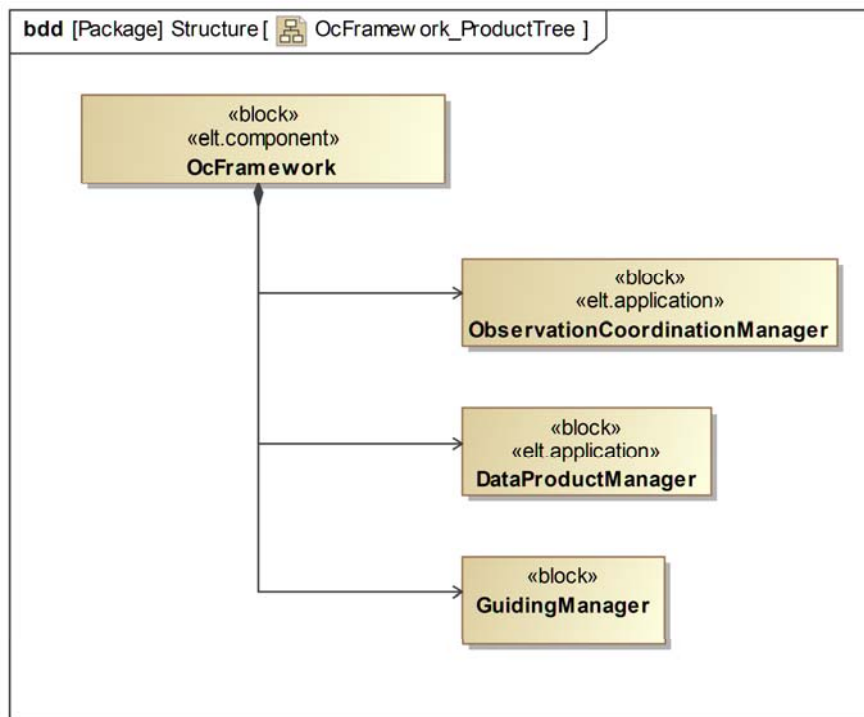
- **OCM**
  - ➤ Coordinates data acquisition
- **DPM**
  - ➤ Creates FITS files
- **GM**
  - ➤ Slow guiding facilities
  - ➤ Custom

Terminology

➢ **Data Acquisition**

The process of acquiring data captured by science detectors or other systems

➢ **Primary Data**

Typically science detector data

➢ **Meta Data**

Any supporting data, e.g. device manager status information

➢ **Data Product**

FITS file

Goals

- **Focused Responsibility**

- **Standardise Interfaces**

- **Avoid SW Customization***

  Instead:
  - Configuration
  - Interface

- **OCM**
  - Data Acquisition
  - Coordination
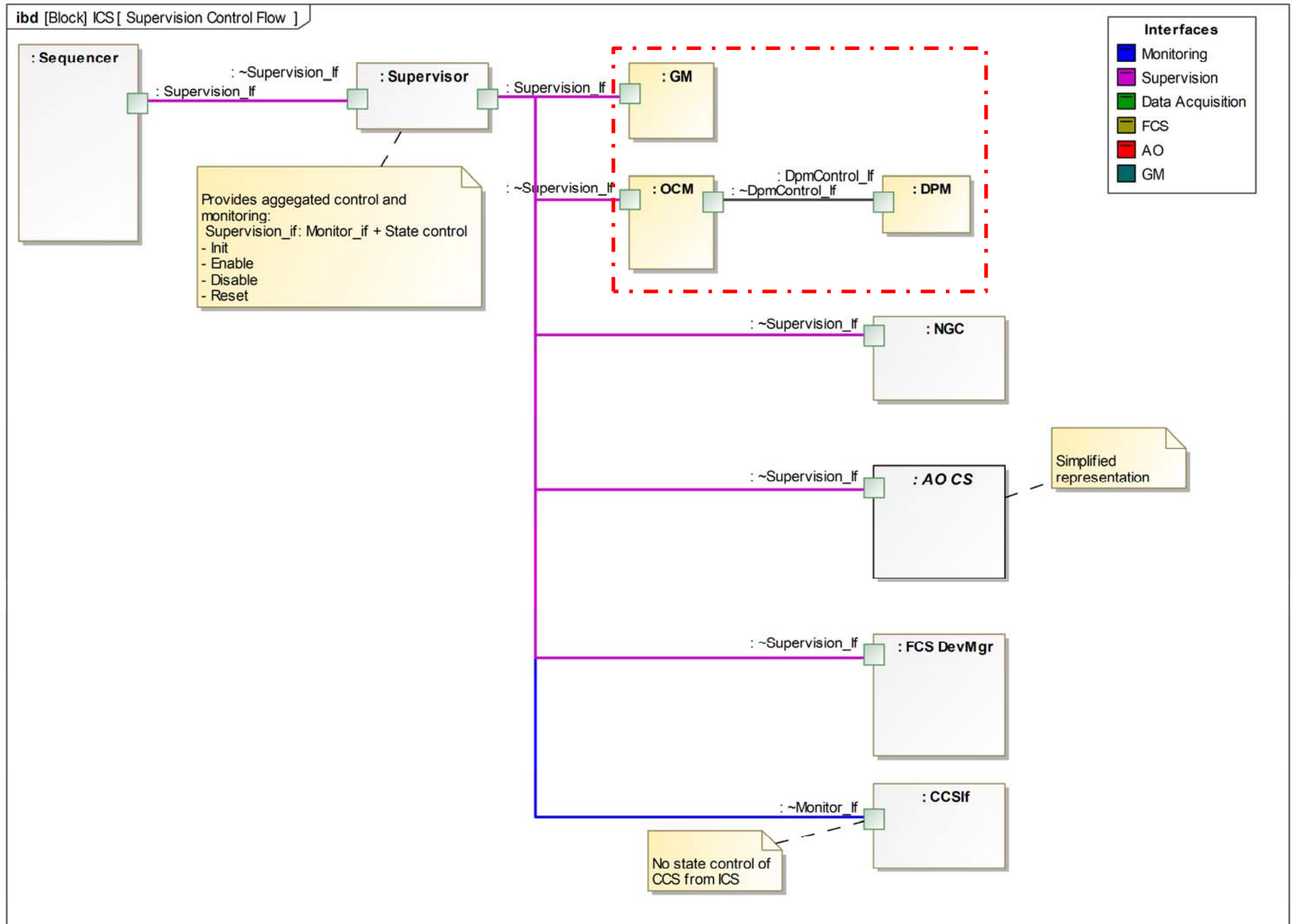 - Interfaces with data providers

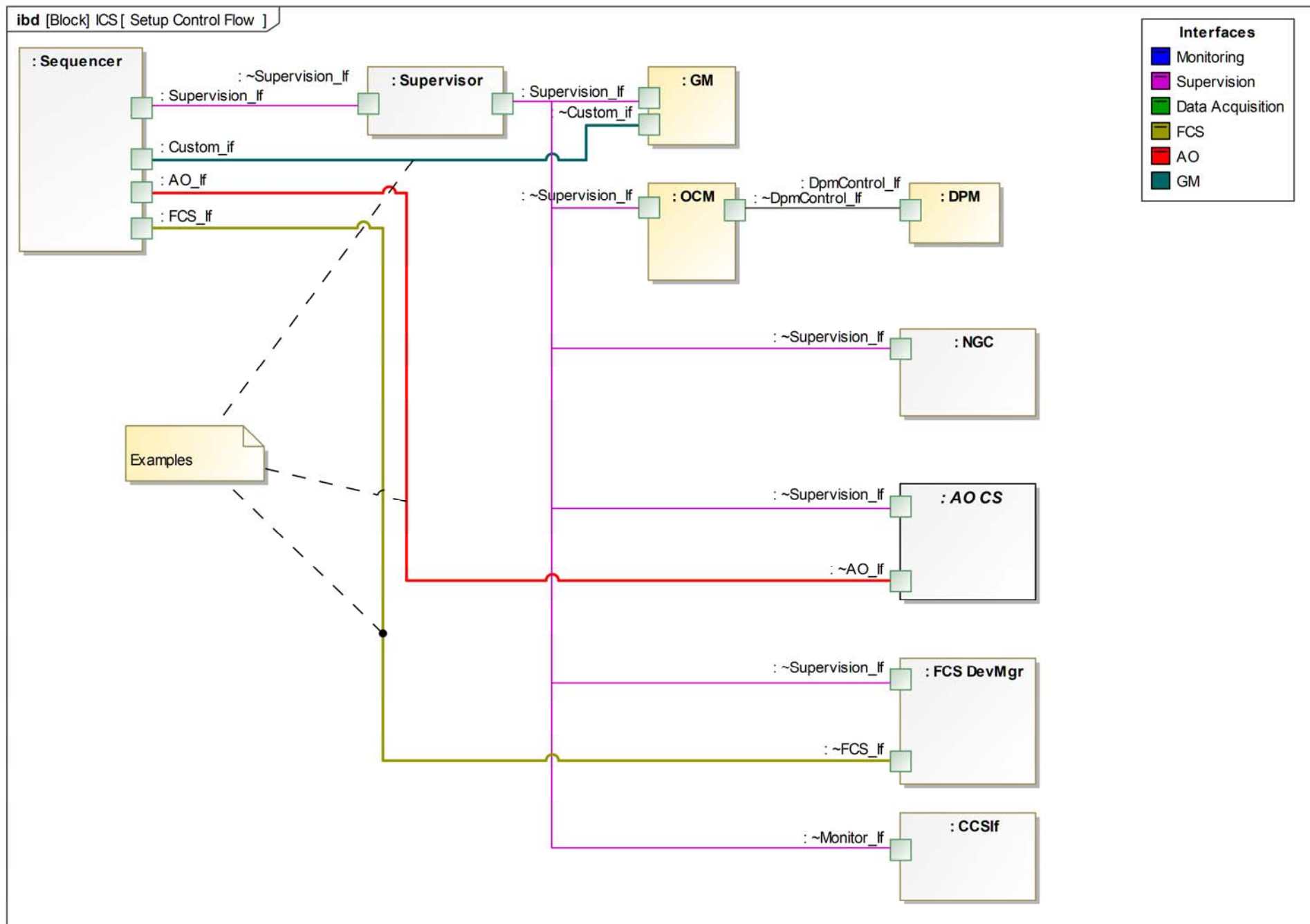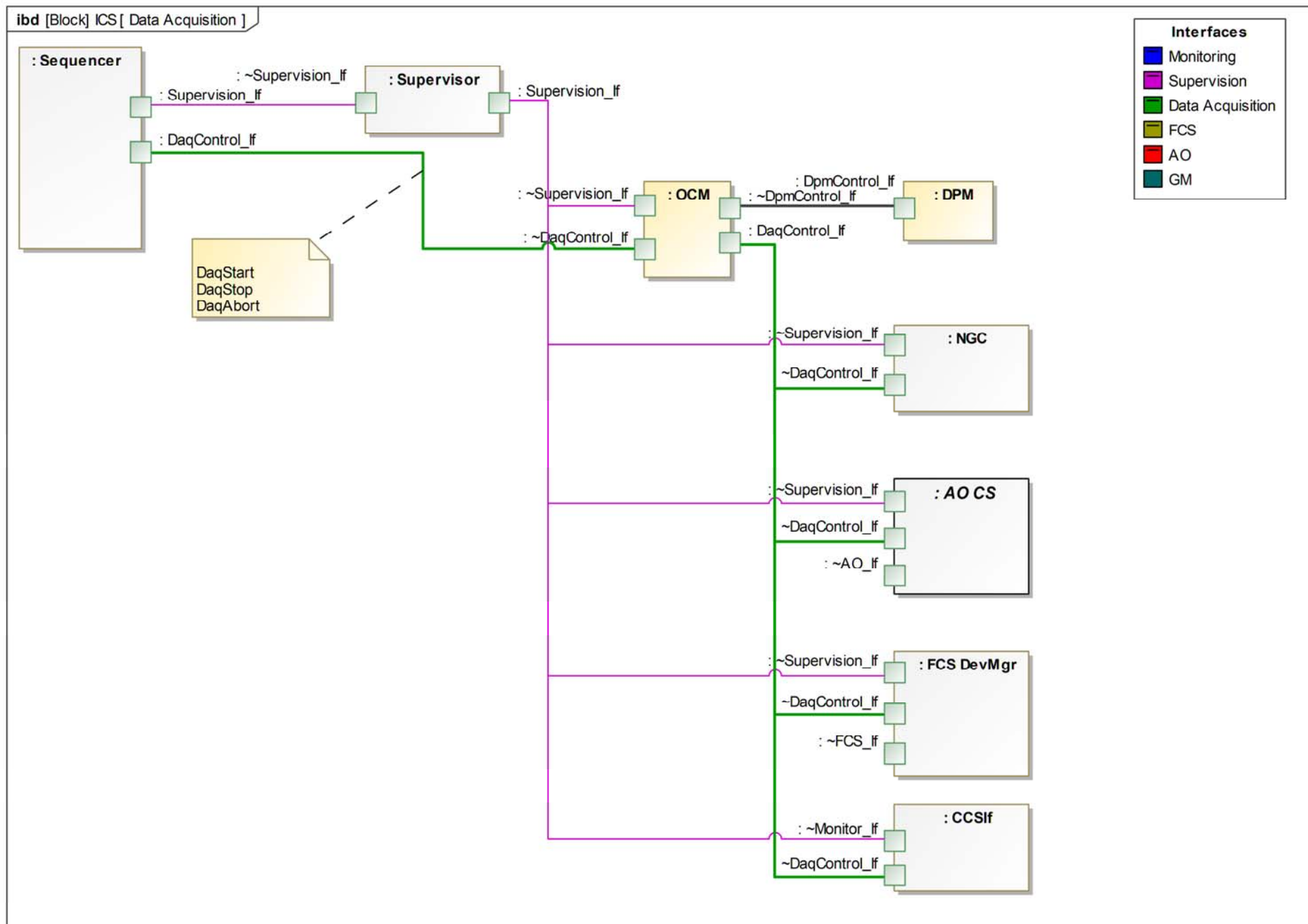- **DPM**
  - Collect Data
  - Create Data Products
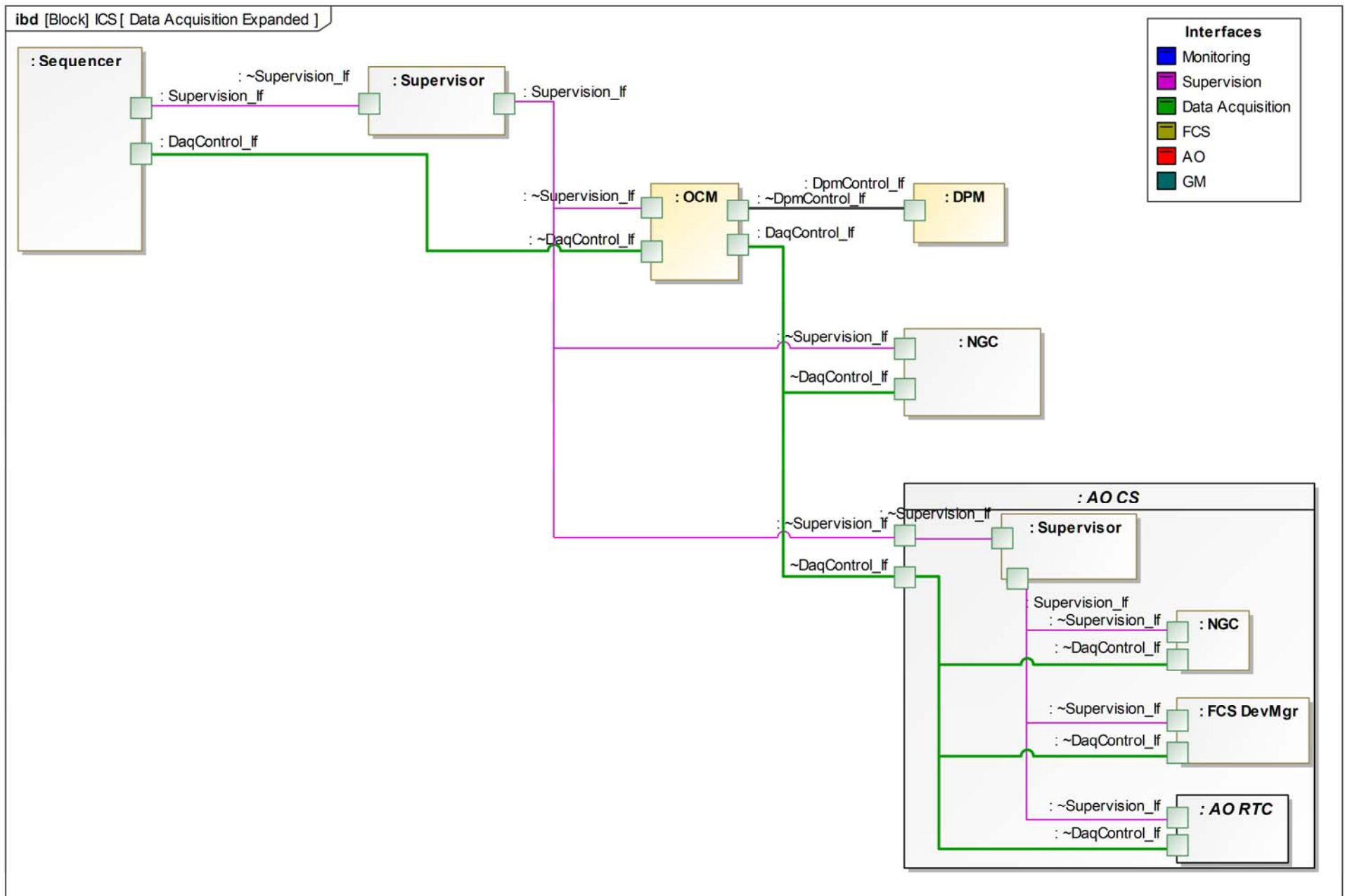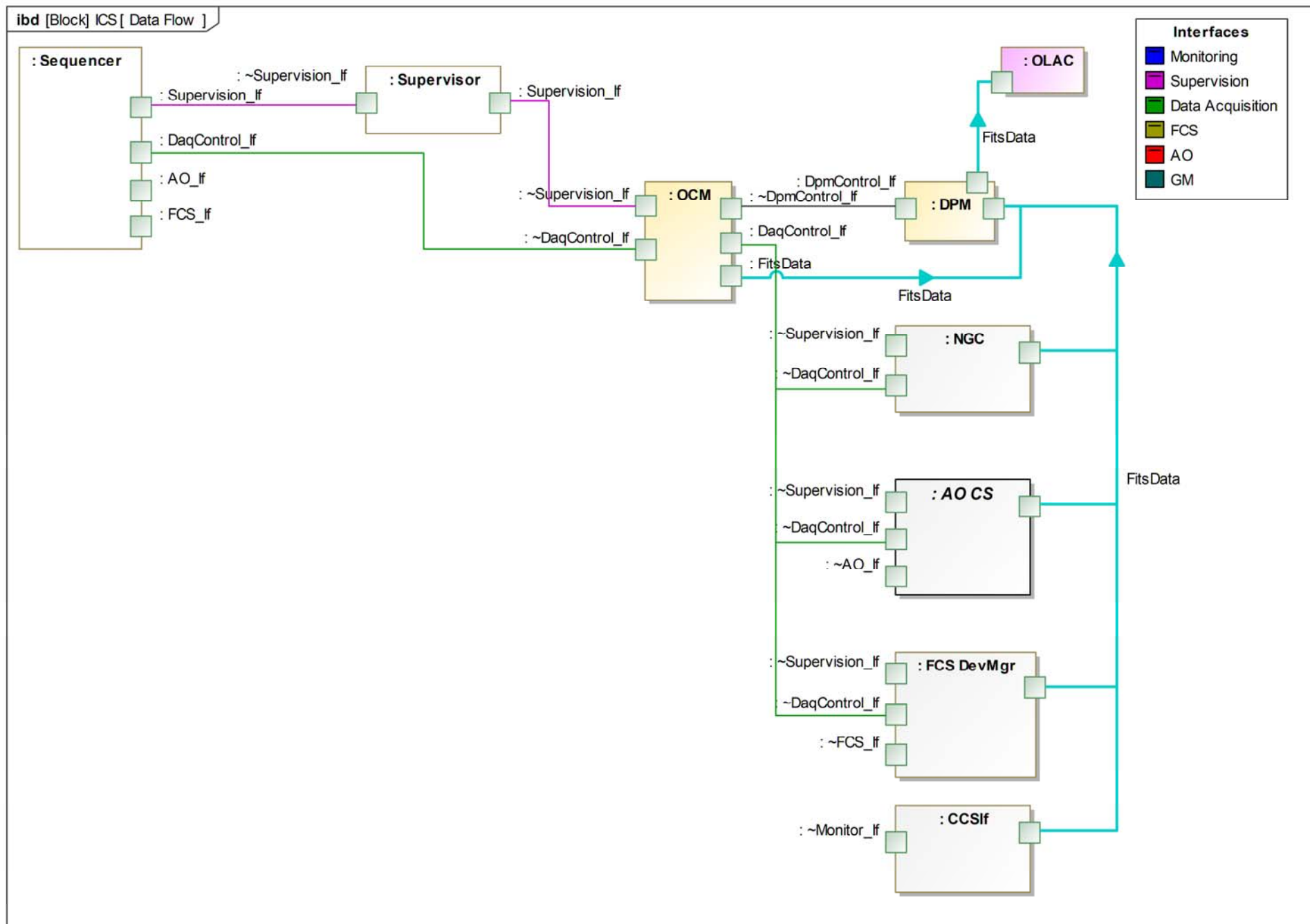 - Interfaces with On-Line Archive System (OLAS)
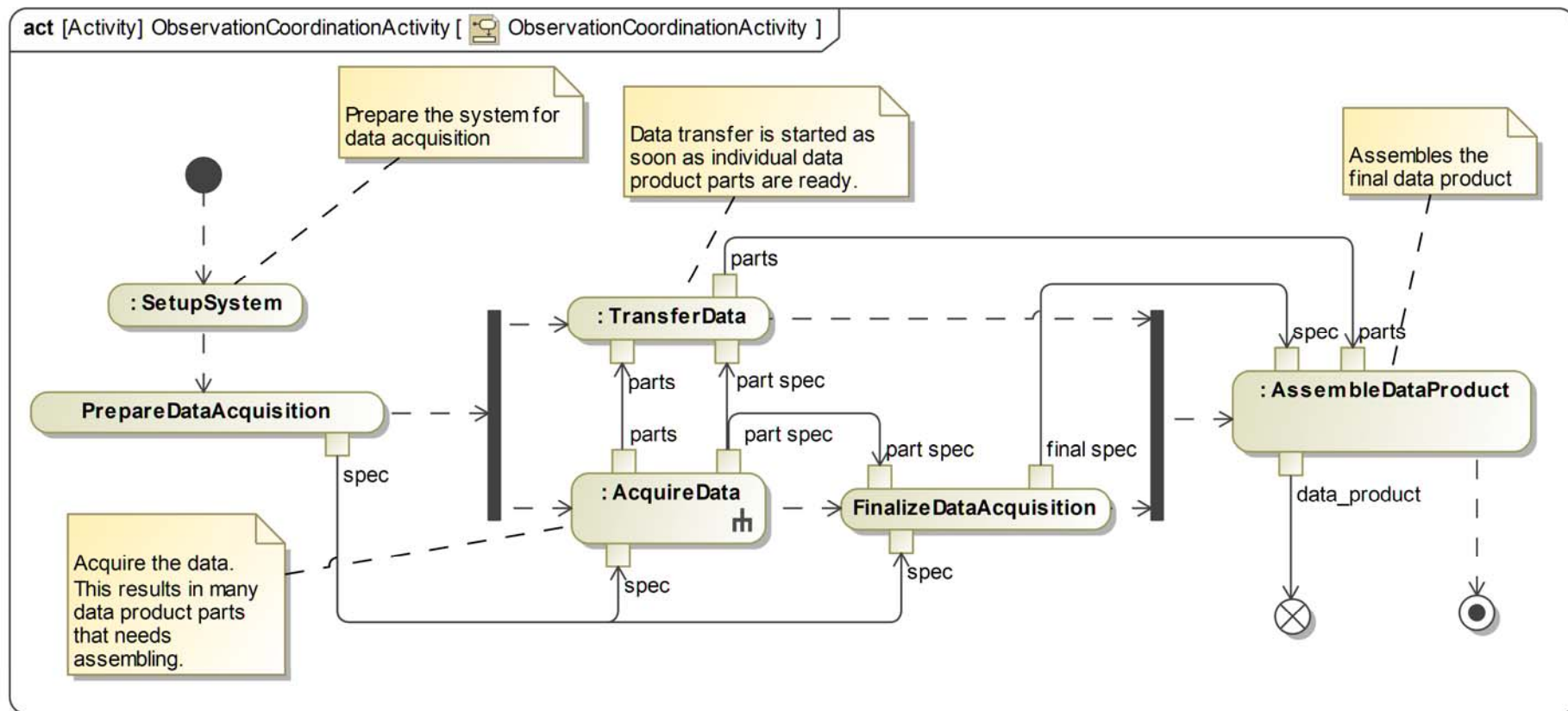
Previous Baseline

ibd [Block] ICS [Supervision Control Flow]

: Sequencer

: ~Supervision_If
: Supervision_If

: Supervisor

: Supervision_If

: GM

Provides aggegated control and monitoring:
 Supervision_if: Monitor_if + State control
- Init
- Enable
- Disable
- Reset

: ~Supervision_If

: OCM

: DpmControl_If
: ~DpmControl_If

: DPM

Interfaces

Monitoring
Supervision
Data Acquisition
FCS
AO
GM

: ~Supervision_If

: NGC

: ~Supervision_If

: AO CS

Simplified representation

: ~Supervision_If

: FCS DevMgr

: ~Monitor_If

: CCSIf

No state control of CCS from ICS

ibd [Block] ICS [Data Acquisition]

: **Sequencer**

: ~Supervision_If
: Supervision_If

: **Supervisor**

: Supervision_If

: DaqControl_If

DaqStart
DaqStop
DaqAbort

: ~Supervision_If

: **OCM**

: DpmControl_If
~DpmControl_If

: **DPM**

: ~DaqControl_If

: DaqControl_If

:~Supervision_If

: **NGC**

~DaqControl_If

~Supervision_If

: **AO CS**

~DaqControl_If

: ~AO_If

~Supervision_If

: **FCS DevMgr**

~DaqControl_If

: ~FCS_If

: ~Monitor_If

: **CCSIf**

~DaqControl_If

Interfaces
- ■ Monitoring
- ■ Supervision
- ■ Data Acquisition
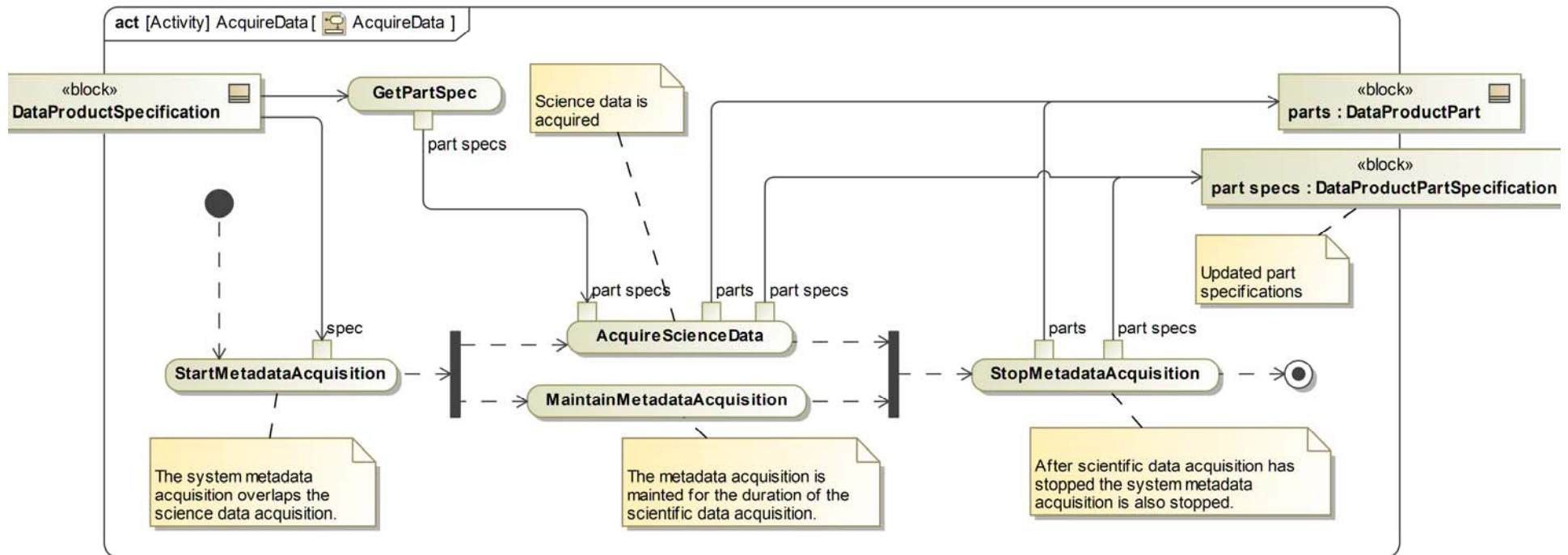- ■ FCS
- ■ AO
- ■ GM

OCM/DPM

Features

➢ Concurrent Data Acquisitions

➢ Multiple Detector per Data Product

➢ Offline or deferred "merging"

➢ Multiple Data Products per Data Acquisition*
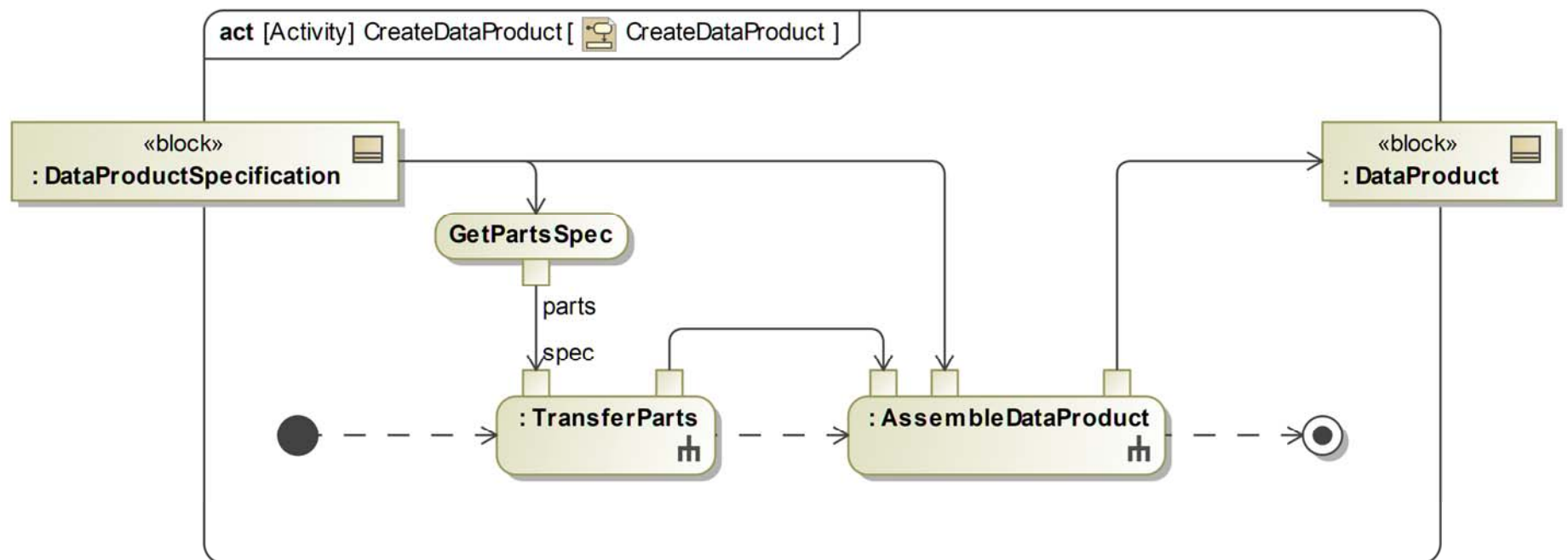
    ➢ Science + e.g. auxiliary AO data

OCM

Provided Interface

➢ Controlling DAQ

  ➢ Start/Stop/Abort

➢ Control Data Product Creation*

➢ Synchronize to different points

Data Acquisition

OCM

DPM

Questions?