MOM EGSE commonality meeting #2

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1 pages

Minutes of meeting

Subject:	MOM EGSE commonality meeting #2
By:	Peter Roelfsema
Date:	11 February 2000
Location:	SRON/Utrecht
Participants:	Rik Huygen, Ken King, Otto Bauer, Helmut Feuchtgruber, Willem Luinge, Albrecht de Jonge (part time), Luc Dubbeldam, Albert Naber, Peter Roelfsema

1 ILT setup

First a discussion is started to get a final version of the ILT-setup diagram. It is clear that elaboration of the various functions and data flows is needed. Probably we will have to come up with both a functional diagram and a data flow diagram.

A discussion follows on what are the ‘commands’ or ‘command sequences’ coming out of CUS. One conclusion appears to be that most commands in a CUS timeline are more or less directly corresponding to individual TC packets.

A question is raised whether output of OBS management goes directly to test control or goes through the CUS.

A number of functions were detailed further (Test control, RTA ..)

PRR and KK will update figures and text for use in the common EGSE note (and the scenario document).

Next we need to further elaborate on the different boxes and data flows, derive user requirements and see which way those requirements could be fulfilled (e.g. which parts can be provided by existing/expected SCOS 2000 functions).

A proper breakdown can then also be used for costing.

1.1 DPU/ICU testing

The possibility is raised to use the TM/TC interface-Uplink/Downlink-Test Control-RTA in an early incarnation could be used for testing the DPU/ICU in

Italy. Here is clearly a possibility for cooperation between the three instrument groups.

2 Timescales for testing

To define who does what when we need to get some idea of timescale. This is driven by the time when instrument groups start tests on 'an integrated instrument' –albeit possibly only a partially completed instrument (e.g. only a few wavelength bands available in HIFI at the start of ILT).

The groups start testing at:

- HIFI starts ILT in May/June 2001 (current schedule)
- PACS starts ILT mid September 2001
- SPIRE starts ILT in December 2001

3 Embedded computers for EGSE equipment (AdJ)

Albrecht describes his proposal for possible test equipment interfaces (TEI in the diagram). It appears that is possible to make a system that will accommodate both one and multiple TEI's. A TEI essentially translates TC packets it gets into commands that the particular test equipment understands (possibly through e.g. a standard IEEE bus). The data returned from the test equipment is packaged into a TM wrapper and sent on through to the TM/TC interface.

APIDs can be used for addressing different (parts of) test equipment units. Likely a large number (1000 or more) of different APIDs can be used (if desired).

Each group will have to further investigate how many TEIs they think they need and what their detailed capabilities need to be. On the basis of this a more detailed TEI design can be made.

Albrechts' note containing requirements on the TEI is attached as appendix A

4 SCOS 2000,.. yes or no

The note sent around by Estaria re COTS products needed and cost of SCOS 2000 looks promising, but is not fully understood. SPIRE has already sent in a number of questions about the details of the cost, PACS and HIFI will definitely also send in their questions. Likely these will be discussed at the next Commonality Steering Committee meeting (1 March).

It is clear that each group would likely need 2, 3 or even more incarnations of SCOS 2000 at various times during development... Also the italians need something at various times, how does that figure in.

The last question is whether SCOS 2000 does cover all Test Control and uplink related functions. This will be analysed by Helmut (WP2)

4.1 The other option; NOT use SCOS 2000

Following the answers from project and the availability of the URDs for the parts of the EGSE that we expect SCOS 2000 to handle we can begin to assess whether NOT using SCOS 2000 might be more efficient. This clearly puts some stress on the various action items. This would probably be the main subject of a next meeting.

5 Who does what?

From the functional description two initial work packages can be identified which need to be worked on the short term.

- WP1: analyse TM/TC interface, OBDH interface, TEI and uplink/downlink systems, write requirements document...
- WP2: analyse the Test-Control/RTA environment, write the TestControl requirements

Somewhat longer term:

- OBS maintenance – should be covered by IFSI; they should set up the requirements and design of the OBS maintenance system. This should be tackled at the next OBS meeting (29 Februari).
- URD for FINDAS ILT (includes e.g. requirements related to wanting to access FINDAS from RTA) - FGSSE does this
- IA/QLA interface requirements – SPIRE looks into this
- CUS URD/design – PACS looks into this

6 Next meeting

14 March at Garching.

7 Action items

Nr	On	What	Due
EGSE-25/1/00-#1	PRR	to update ILT and IST figures to line it up with the discussion.	29/1/2000
EGSE-25/1/00-#2	PRR	Make figure similar to the ILT/IST setup for operations	4/2/2000
EGSE-25/1/00-#3	KK	to update common EGSE note	18/2/2000
EGSE-25/1/00-#4	AdJ	Further develop requirements on TEIs	next meeting
EGSE-25/1/00-#5	OHB	Have Erich Wiezorrek make the SCOS2000 documentation and source code accessible for the instrument groups.	
EGSE-25/1/00-#6	PACS/HF	WP2 - test control: draft URD	18/2/2000
EGSE-25/1/00-#7	HIFI/LD	WP1 – interface unit and uplink/downlink: draft URD	18/2/2000
EGSE-25/1/00-#8	HIFI PACS	Send questions on SCOS 2000 deployment to project	4/2/2000
EGSE-25/1/00-#9	all	Ask IFSI to specify requirements and design of the OBS maintenance facility (at next BS meeting)	29/2/2000
EGSE-25/1/00-#10	OHB, KK	Further investigate how many TEIs they think they need and what capabilities are required	next meeting
EGSE-25/1/00-#11	SPIRE	IA/QLA interface requirements	next meeting
EGSE-25/1/00-#12	PACS	CUS URD/design	next meeting

A Embedded computers for EGSE equipment

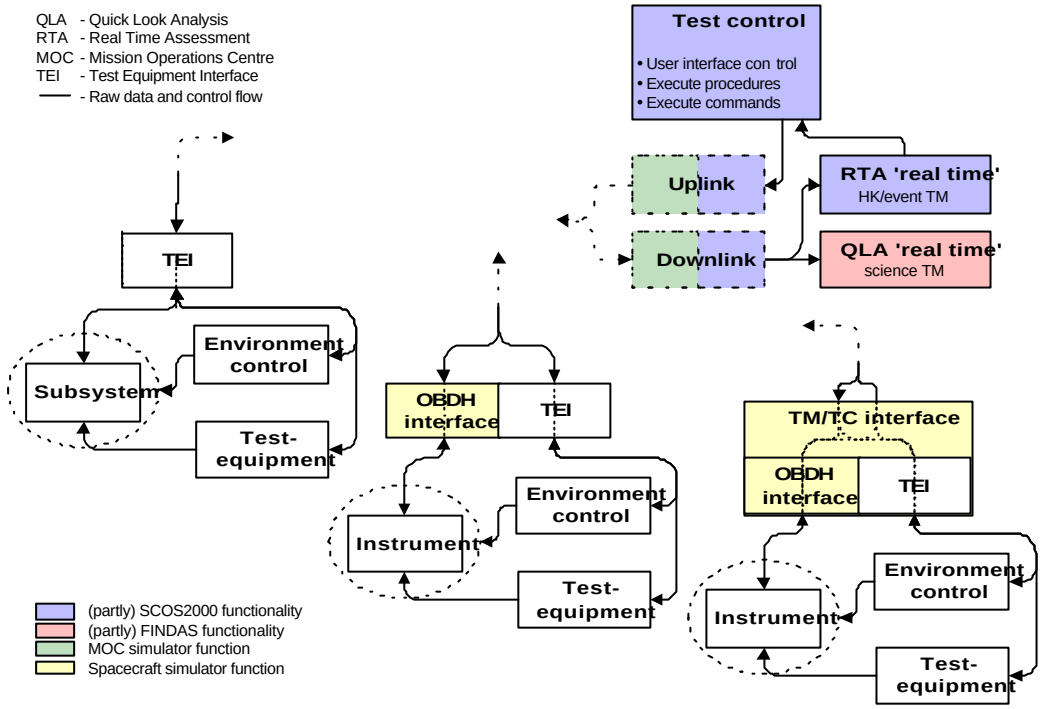
A.1 Requirements

1. Read out sensors
   1.1. Intelligent equipment via RS232, IEEE, RS485, etc
   1.2. Basic equipment using analog signals, probably using conditioning equipment
   1.3. Status indicators/switches as digital signals
2. Control actuators
   2.1. Intelligent equipment via RS232, IEEE, RS485, etc
   2.2. Basic equipment using analog signals, probably using conditioning equipment or power amplifiers
   2.3. Digital equipment/relays/switches via digital outputs
3. Close servo loops
4. Display readings/settings locally
   4.1. The display may be shared between connected systems
5. Accept local user commands
   5.1. The command facility may be shared between connected systems
   5.2. Command handling must have a facility to manage commanding rights for the possible sources
6. Log data
7. Make logs available
8. Generate telemetry(-compatible) packets from sensor data and internal settings
9. Receive telecommand(-compatible) packets and use them as commands
10. Be small and cheap
    10.1. Price and size shall not exceed 25 % of the electronics box in which it is embedded, with a minimum of 25% of a 3U 19” box.
    10.2. Software development shall be based on operating systems and language which are standard (within SRON)
11. Interconnect with similar systems for the purpose of 4.1, 5.1, 8 and 9 using a simple OTS network cabling system.

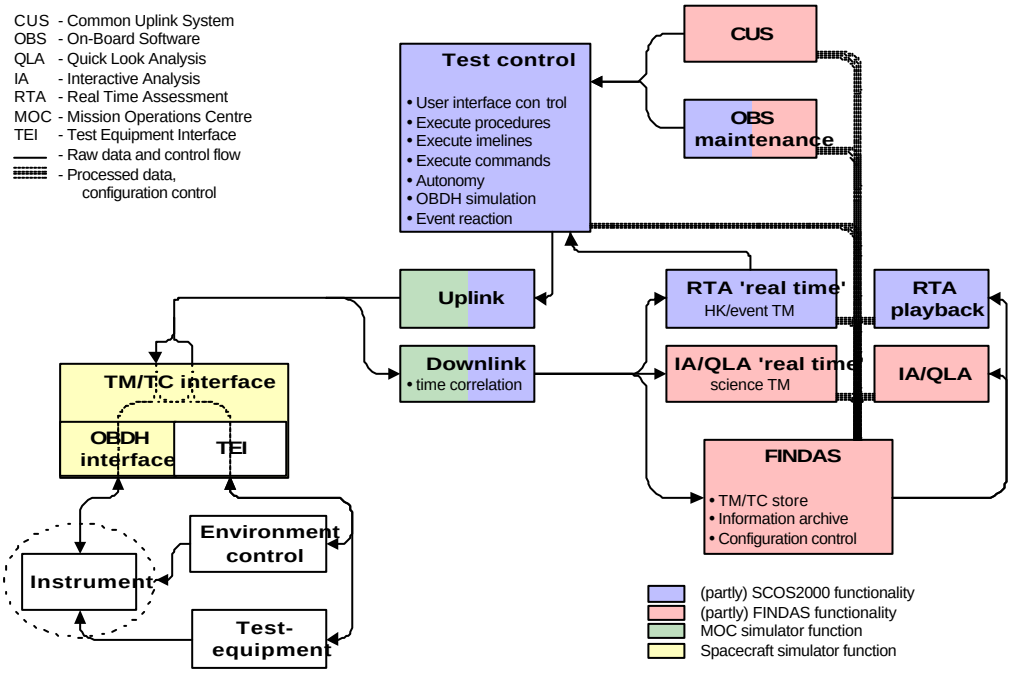
A.2 Architecture

TBS

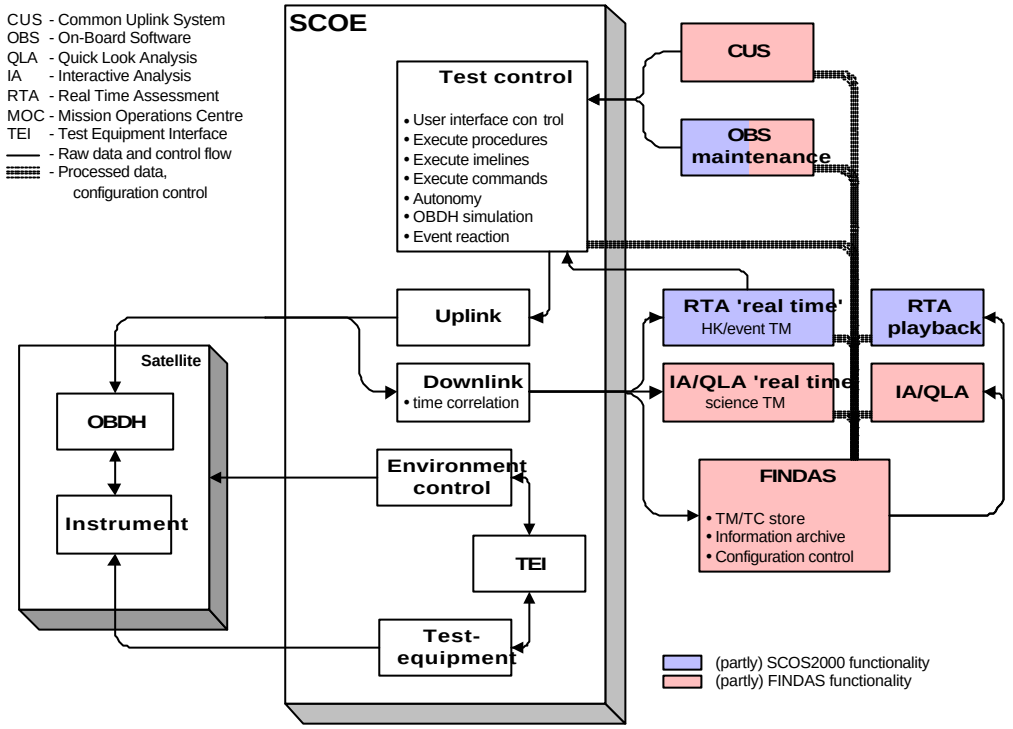
B Subsystem tests



C ILT



D IST



E Operations