

The EGSE/HCSS to CCS "uplink" interface.

Reference document:

R-1: "Role of Instrument EGSE at system level", Bryan Melton,
TOS-EMG/2002.1061/bm, 3-7-2002

Reference e-mails:

E-1: Action EGSE-23-09, Jon Brumfitt, Thu, 17 Oct 2002
E-2: Re: Action EGSE-23-09, Erich Wiezorrek, Thu, 17 Oct 2002
E-3: Re: Action EGSE-23-09, Albrecht de Jonge, Thu, 17 Oct 2002
E-4: Re: Action EGSE-23-09, Bryan Melton, Fri, 18 Oct 2002
E-5: EGSE-WG: Minutes of Teleconference, Kevin Galloway, Wed, 20 Nov 2002
E-6: Some questions to impl. details, Erich Wiezzorek, Thu, 21 Nov 2002
E-7: Additional info concerning MoT, Kevin Galloway, Thu, 21 Nov 2002
E-8: Re: Some questions to impl. details, Brian Melton, Thu, 21 Nov 2002

The starting point should be a stand-alone observation (test step) after which the operator has to wait for a GO to continue. Logic should not be included within single test steps.

The starting point is that TestControl sends a request for a certain observation (ObsMode, parameters) to CUS (HCSS) and CUS generates a TC sequence with relative timing. It also calculates the whole duration of this observation. CUS also adds the TCId.

The output could be:(TCId= n):

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!ObsMode (parameters)!
TC-1, n1, ObsId-x
TC-2, n2, BbId-y
wait t1
TC-3, n3, p1
wait t2
TC-4, n4, p2, p3, p4
wait p5
TC-5, n5, p6
TC-5, n6, p7
wait t3
TC-6, n7
wait t4
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The corresponding parameter set is: (n1, ObsId-x, n2, n3, p1, n2, p2, p3, p4, p5, n5, p6, n6, p7, n7)

- n1, ..., n6 are TCId's (normally $n2=n1+1$...).

- ObsID-x will change in case of repetition.
- p1,..., p7 would be variables which could change of repetition.
- t1,..., t4 are fixed waiting times. The total duration would be $T = t1+t2+ p5 +t3+t4$, e.g. T depends on p5 and this depends on either p2, p3 or p4. •
- It also can be that we have the same TC with different parameters (TC-5 with param. p6 and p7) or commands without parameters (TC-6).
- During ILT CUS would delivery back to TestControl the instantiated TC sequence including duration T and TestControl would send it via TOPE to SCOS for execution.
- Such an instantiated TC sequence could be given to CCS for execution during short functional tests without instrument participation. In case of repetition of such a sequence ObsID-x could be increment by 1 in a predefined range. Also n1,..., n6 have to be incremented.
- For the IST, and this could be implemented and tested during ILT, CUS has to be modified in such a way that it generates three outputs:
 - The instantiated TC sequence.
 - The parameterized TC sequence as shown above.
 - The corresponding parameter set (n1, ObsID-x, n2, n3, p1, n2, p2, p3, p4, p5, n5, p6, n6, p7, n7).
- The parameterized TC sequence could be given to CCS and stored in SCOS.
- At the time of execution CCS/SCOS sends a request: ObsMode(parameters) to IEGSE TestControl which starts CUS.
- TestControl will then send the complete parameter set to CSS/SCOS.
- CCS/SCOS parses the parameters and sends the TC sequence to the instrument.

It has to be investigated if Bryan´s scenario concerning the use of SCOS functionality feasible:

- (a) The necessary information could be communicated between the CCS and EGSE/ HCSS using SCOS packets (tm/ tc).
- (b) The capabilities of the MIB/ spacecraft database could be utilized to define variable parameters and the source from which the values could be obtained.
- (c) SCOS can perform the parameter value substitution.