EGSE WG Meeting #12

12/13 June 2001, RAL, SPIRE-PACS-MOM-000811

Participants: Otto Bauer (MPE), Luc Dubbledam (SRON), Frederick Wechsler (ESTEC), Ken King (RAL), Andy Matheson (RAL), Dave Parker (RAL), Jeff Payne (RAL), Panchita Gomez (IAC), Tatiana Filipova (IAC), Jose Miguel Herreros (IAC), Sergio Molinari (IFSI), Bryan Melton (ESTEC), Stephane Veillat (ESTEC), David Verrier (ESOC), Erich Wiezorrek (MPE)

Chairman for this meeting was Otto Bauer. The minutes were taken by Erich Wiezorrek.

Although this was not an "official" CDMS meeting a lot of CDMS items were discussed hence the participation of the people assigned to PLANCK mission.

Bad news at the beginning

Problems with the delivery of the PACS DPU. There will be no delivery before mid of November. A three month testing period at IFSI must be added. This delays the testing at MPE at least for three months.

Stefan Thürey is not here. There will be no update for the PS-ICD. But we still want to collect critical RIDs which must be answered before the next official release of the PS-ICD.

Minutes of last meeting

There were no comments on the minutes of the EGSE WG meeting #11.

Review of Action Items

AI-ID:	Status	Due date	Actionee	Description	Notes
EGSE#9-06	Open	July 29	Otto	CDMS sim SOW	
EGSE#9-07	Open	July 29	Otto	Letter of understanding of EGSE WG	
EGSE#9-09	Open	July 29	Erich	First draft SOW OBSM	
EGSE#9-10	Open	July 20	Riccardo	First draft SOW OBS maintenance facility	
EGSE#10-2	Closed		All	Make proposal for naming conventions	Closed during this meeting
EGSE#10-4	Closed		Luc	Add warm restart capability to Router ICD	New ICD will be issued -> AI EGSE#12-03; warm restart capability is the

					responsibility of the clients
EGSE#10-6	Closed	April 27	Erich	Describe Test-control collect input organize user-meeting	Bryan will issue a new SCOS EGSE user manual (-> AI EGSE#11-12), Erich will provide the requirements matrix (June 19), the user meeting will be replaced by the acceptance test after EGSE integration
EGSE#10-9	Open	June 29	Ken	Acceptance test plan for CDMSsim	
EGSE#10-10	Closed		Otto	Ask IFSI to write acceptance test plan for ICU/DPU IF that specifies clearly the Electrical Interface tests that need to be carried out and shall be carried out before the ICU/DPU is ready for the next-level integration, i.e. integration with the EGSE.	A new one will be opened EGSE#12-09
EGSE#11-1	Obsolete		Erich	organize a telecon end May on naming conventions. Participants: - Chris Butler - Bruno Mansoux - Ken - Luc.	
EGSE#11-2	Closed		Luc	assemble a list of documents	
EGSE#11-3	Closed		Erich	get a directory on Life-Link. Distribute instructions to the group. Arrange Read and Write Access.	
EGSE#11-4	Closed		Luc	distribute Fredericks memo and Luc's initial response	
EGSE#11-5	Closed		Luc Frederick	reach agreement on the open items in CDMS IF test doc	
EGSE#11-6	Open	June 29	Dave	send his comment on test-requirements doc to Luc	
EGSE#11-7	Open	July 20	Luc	update the test requirements document	
EGSE#11-8	Closed		Luc	discuss client-test with Albrecht.	Closed by agenda item
EGSE#11-9	Open	June 22	Luc	issue third draft EGSE integration plan	
EGSE#11-10	Closed		Erich	discuss TEI/labview/C issue with the test-engineers and will respond by email within two weeks	
EGSE#11-11	Closed	May 15	Ken	send the Router Bug reports. + copy to Luc	
EGSE#11-12	Open	June 14	Bryan	send a version of TTA manual to Erich with all Siemenses removed	
EGSE#11-13	Closed		Otto	clarify the IFSI schedule	

Progress Reports

TEI

No further progress, delivery end of July

Router

Still no version 1.0, current version seems to be 0.92
Router still has to be fetched from Albrecht's web page.

SCOS 2000

SCOS 2.1e (LINUX) will not include EGSE extension (available June). The modifications for the EGSE version will be done till September. SCOS 2.2e will include the EGSE extensions (available end of October)

Test Control

No progress in the test procedure area (waiting for further requests after the reading the requirements matrix and/or after the acceptance test). Progress was done in the ICDs for the HCSS.

MIB/Editor

There is a problem with the MIB editor running on Windows 2000 and MS Access 2000.
Milena will distribute the IFSI version of the MIB to the CSDT.

CDMS simulator

The basic CDMS Sim software is complete for Normal mode (BC + Monitor).
That is Stand-Alone operation, TC packet and TM packet protocol.
The Router interface has been written but not yet fully tested.
Items to be completed in future work:

- RT 'instrument simulator' for DDC card,
- Simulator error handling,
- Synchronous buslist change,
- TM Playback mode,
- Remote control of Simulator.

A predelivery of the CMDS simulator (including an simple instrument simulator) should made available end July. For PACS this includes also the hardware.
The next CMDS simulator SW release will be end September.

OBSM

Erich still needs to dive into the SCOS 2000 documentation of the OBSM before he is able to write the SoW.

CDMS I/F Test Requirements

Luc will include Frederick's comments in a new version (1.0) of the CMDS I/F test requirements document (AI EGSE#12-08).
This will trigger test plans for the CMDS interface both from RAL and IFSI.
(AI EGSE#10-09, AI EGSE#12-08).
The test plans shall include the test setup like bus couplers, length of cables.

Acceptance Test Plans

CDMS simulator

ICU/DPU to CDMS interface

The test plans shall have a reference to every item in the CDS IF test matrix. They can refer to external documents if tests were done by other parties.

IFSI

Frederick mentions that the current version of the PS-ICD is the baseline not any discussion on any meetings. Otto emphasis again the importance of the critical problem reports on this document which must be updated soon.

I/F handler

See Sergio's presentation in appendix 2
Once a preliminary version of the CDMS simulator is available a more realistic test/simulation will be possible.

DPU tests at IFSI

Sergio got no inputs from Renato to be presented.

Naming convention

The group accepted David's suggestion more or less, minor disagreements were resolved. David will distribute a new version for the naming convention end of June via email.

Update of PS-ICD

See AI EGSE#12-13. As this is an AI which was closed immediately here is the response to this AI:

> July 4/5 July there will be a CCB, the outcome will be draft version of the PS-ICD which will be circulated for three weeks before it will be frozen as the next version. CRRs which need a quicker response shall be reported to Stefan.

CDMS tests

Dave gave a demo of a running CDMS Simulator Control Panel with simulated data.

EGSE Integration Plan

Router: available mid June
CMDS simulator: predelivery end July, a further delivery will be end September

September 26/27: Acceptance of the CDMS simulator at RAL
October 15: Acceptance testing of router and test control at MPE
October 16/17: EGSE integration at MPE

Start of next day

Presentation of the CDMS simulator

Because not all people have already seen them Dave showed some viewgraphs which were already showed at the last EGSE meeting. The viewgraphs were taken from the CDMS simulator SSD which can be extracted from following LiveLink directory:
7Herschel/Commonality/CDSM_Sim/CDMS Simulator SSD

With the current CDMS (double subframe buffer) simulator and the current implemented bus protocol there is a limit of 20 TM packets per second for a single RT.

The general impression was very positive about it. We saw a running demo version of the CDMS simulator but still a lot of features still have to implemented.

IAC is using a different timer board so they are worried if the software accepts this board as well.

The CDMS simulator has to synchronize the instrument time with its internal time using the PUS service 9. This will be triggered by a special CMDS simulator command. A further command will be used to tell the CMDS simulator the ground time used by all the test equipment.

After checking the next version of the PS-ICD (July) a special CDMS meeting should be seriously considered.

IAC wants to have the possibility to issue more than a single command from a file.

Hardware for ILT

PACS proposal presented by Otto see appendix 3.

Not all instruments will use the same version of SCOS 2000.

HCSS shall work on a standalone system.

Timing

Stephane presented the CSDT decisions considering the time stamps to be used within the HCSS. Please see the minutes of the CSDT#5 (LiveLink).

OBSID/BBID

Stephane wrote an update of his technical note about OBSID/BBID and suggests a new appendix for the PS-ICD. A CRR will be raised by Stephane to supply this appendix as input to Project.

HCSS Integration and Acceptance Plan

The EGSE group will write a first draft of the integration plan, the HCSS group will draft the Acceptance plan. EGSE (OHB) and HCSS (SV) will organize the first issue of both plans. The drafts shall be available in September.

Terms of Reference for the EGSE Working Group

Some minor comments of draft 4. Otto will produce version 1.0 till June 26.

Action items

AI-ID:	Actor	Due date	Description
EGSE#9-06	Otto	July 29	CDMS sim SOW
EGSE#9-07	Otto	July 29	Letter of understanding of EGSE WG
EGSE#9-09	Erich	July 29	First draft SOW OBSM
EGSE#9-10	Riccardo	July 20	First draft SOW OBS maintenance facility
EGSE#10-9	Ken	June 29	Acceptance test plan for CDMSsim
EGSE#11-6	Dave	June 29	send his comment on test-requirements doc to Luc
EGSE#11-7	Luc	July 20	update the test requirements document
EGSE#11-9	Luc	June 22	issue third draft EGSE integration plan
EGSE#11-12	Bryan	June 14	send a version of TTA manual to Erich with all Siemenses removed

AI-ID:	Actor	Due date	Description
EGSE#12-01	All authors	July 29, 01	Put all documents appearing on Luc's document list on the LiveLink EGSE directory.
EGSE#12-02	Andy	June 22, 01	send SPIRE LabView/TEI interface to Luc and Erich
EGSE#12-03	Luc	June 22, 01	update the router ICD concerning the bug report from Ken (see AI: 11-11) and also concerning warm start capabilities (see AI: 10-4)
EGSE#12-04	Luc (Albrecht)	June 18, 01	Issue version 1.0 of the router

EGSE#12-05	Bryan	June 22, 01	Send hardware specification for the LINUX SCOS 2000 version to all of us.
EGSE#12-06	Luc (Albrecht)	July 27, 01	Send MIB editor bug reports (Windows 2000/ MS Access 2000) to ESOC
EGSE#12-07	Rik	June 18, 01	Include Sergio and Tatiana in the EGSE distribution list
EGSE#12-08	Luc	June 22, 01	Issue version 1.0 of the CDMS I/F test requirements
EGSE#12-09	Sergio	July 27, 01	Issue a test plan for the instrument IF.
EGSE#12-10	Ken, Otto, Luc	July 27, 01	Confirm (or otherwise) that asynchronous event slots are used in the CMDS IF
EGSE#12-11	Renato	July 27, 01	Detailed DPU test plan (for the DPU test at IFSI)
EGSE#12-12	David	June 22, 01	New issue for the naming convention
EGSE#12-13	Frederick	June 14, 01	Clarify with Stefan the procedure for updating the PS-ICD and whether a formal answer for CRRs is possible before end of June
EGSE#12-14	Luc	June 29, 01	Acceptance test plan and test report for the router
EGSE#12-15	Erich	August 17, 01	Acceptance test plan for the Test Control
EGSE#12-16	Ken, Luc	June 26, 01	Come up with a proposal for the hardware and operating system setup for ILT
EGSE#12-17	Otto	June 18, 01	Send Stephane a PS-ICD CRR template
EGSE#12-18	Otto	June 26, 01	Issue version 1.0 of terms of reference

Next meetings

EGSE #13 meeting, August 2, 01, at ESTEC
EGSE #14 meeting, September 26/27, 01, at RAL
Acceptance of the CDMS simulator, September 26/27, 01, at RAL
EGSE #15 meeting, October 15, 01, at MPE
Acceptance meeting, October 15, 01, at MPE
Integration meeting, October 16/17, 01, at MPE

Attachment 1: Agenda

EGSE WG #12/CDMS #9
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Location : RAL, Building R25, Room 1.13
Date : 12/13-June-2001
Start : 12-June, 9:00 LT
End : 13-June, 16:00 LT

(1) Minutes and Action Items of last meeting

(2) EGSE WG : ToR

(3) Progress reports including schedule
- TEI
- Router
- SCOS 2000
- Test Control
- MIB/Editor
- CDMS simulator

(4) CDMS I/F Test Requirements

(5) Acceptance Test Plans
- CDMU simulator
- ICU/DPU to CDMS interface

(6) EGSE Integration Plan

(6) IFSI
- I/F handler
- DPU tests at IFSI

(7) Update of PS-ICD : Review of
Change Request Records and answers
from Project

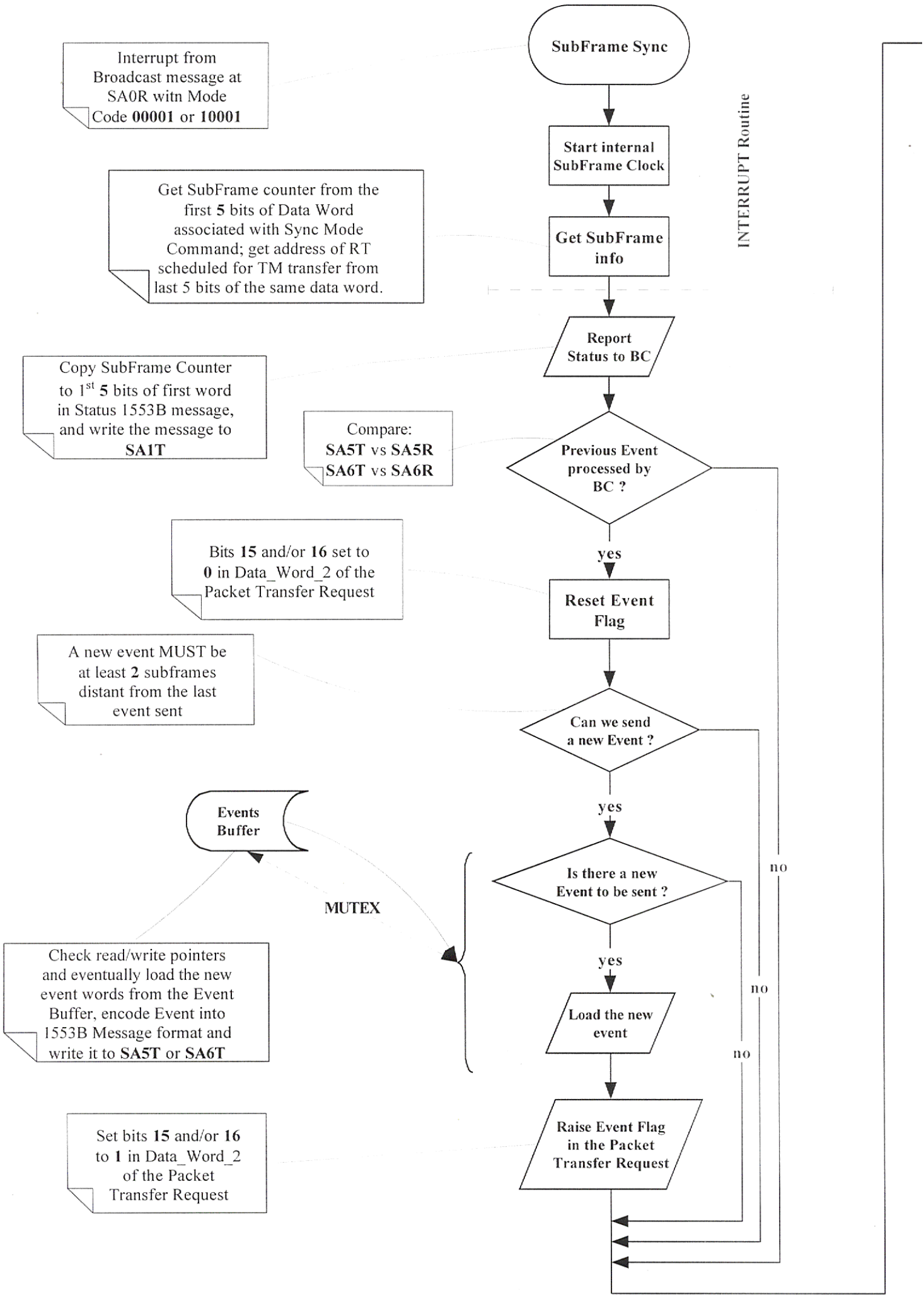
(8) CDMS tests

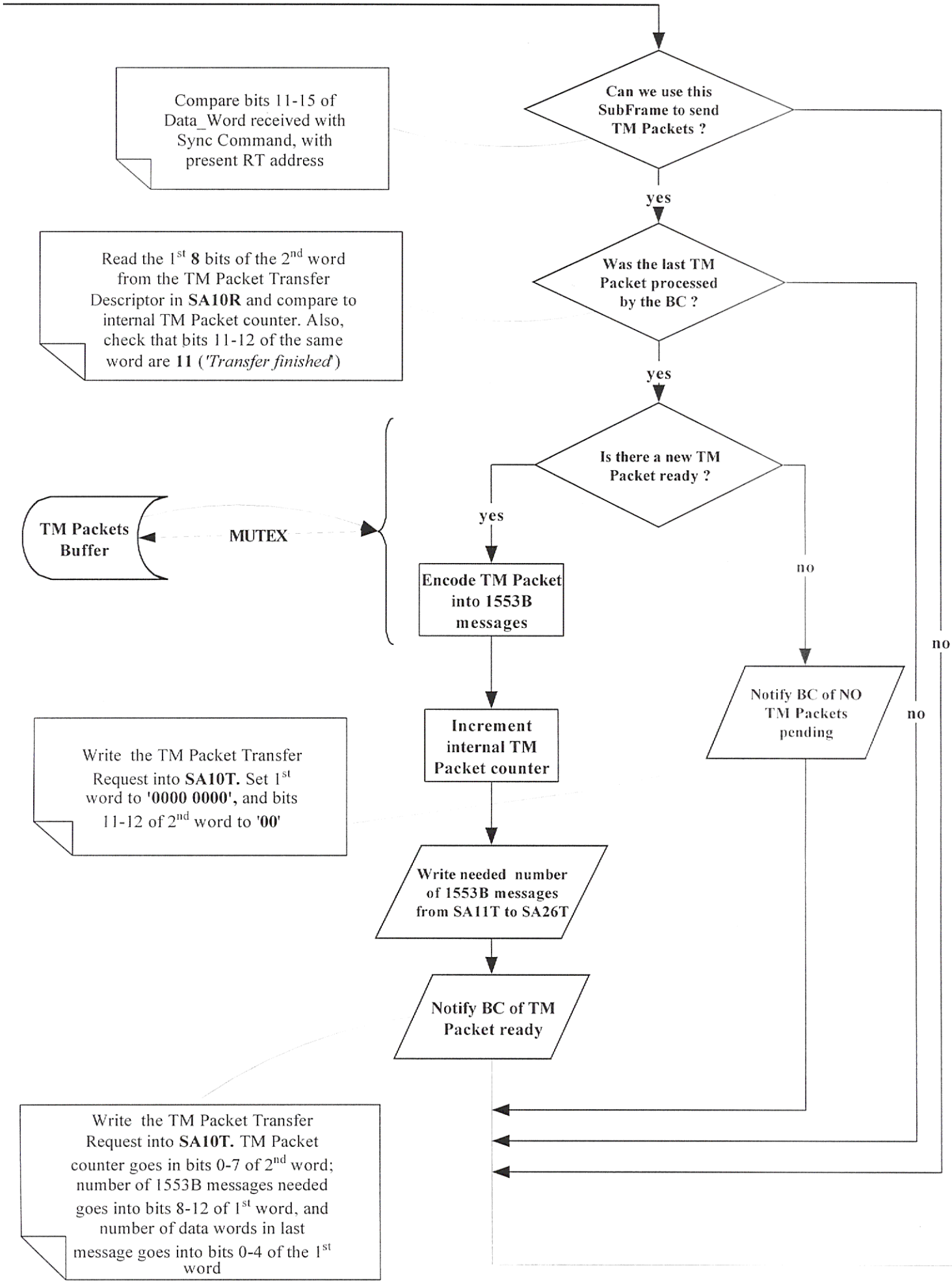
(9) Test summary

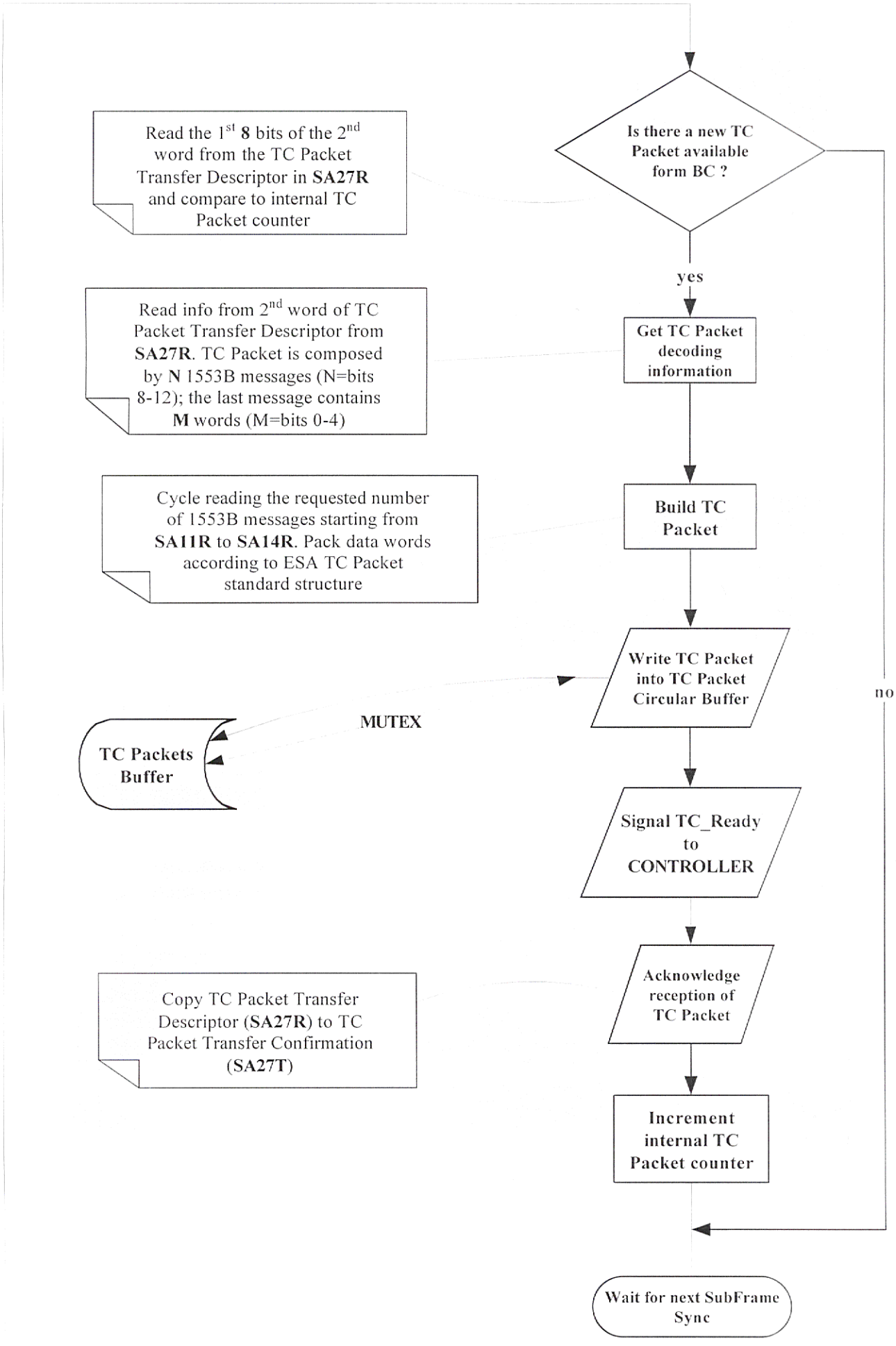
(10) Summary of AIs and schedule

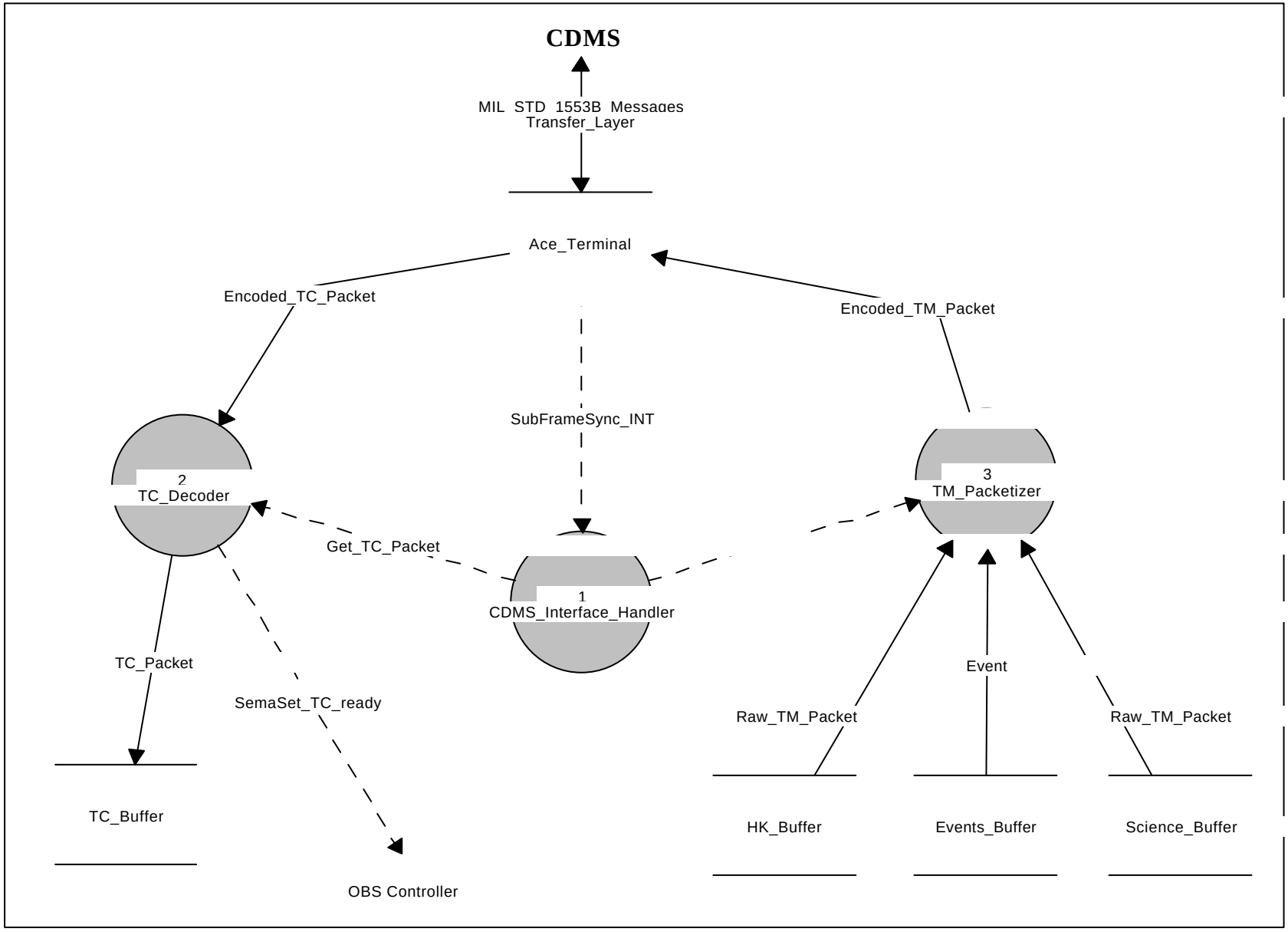
(11) Next meetings

(12) AOB


Interrupt from Broadcast message at SA0R witn Mode Code 00001 or 10001
SubFrame Sync
Start internal SubFrame Clock
Get SubFrame counter from the first 5 bits of Data Word associated with Sync Mode Command; get address of RT scheduled for TM transfer from last 5 bits of the same data word.
Get SubFrame info
INTERRUPT Routine
Report Status to BC
Copy SubFrame Counter to 1st 5 bits of first word in Status 1553B message, and write the message to SA1T
Compare: SA5T vs SA5R SA6T vs SA6R
Previous Event processed by BC ?
yes
Bits 15 and/or 16 set to 0 in Data_Word_2 of the Packet Transfer Request
Reset Event Flag
A new event MUST be at least 2 subframes distant from the last event sent
Can we send a new Event ?
yes
Events Buffer
Is there a new Event to be sent ?
no
MUTEX
yes
Check read/write pointers and eventually load the new event words from the Event Buffer, encode Event into 1553B Message format and write it to SA5T or SA6T
Load the new event
no
no
Raise Event Flag in the Packet Transfer Request
Set bits 15 and/or 16 to 1 in Data_Word_2 of the Packet Transfer Request


Compare bits 11-15 of Data_Word received with Sync Command, with present RT address
Can we use this SubFrame to send TM Packets ?
yes
Read the 1st 8 bits of the 2nd word from the TM Packet Transfer Descriptor in SA10R and compare to internal TM Packet counter. Also, check that bits 11-12 of the same word are 11 ('Transfer finished')
Was the last TM Packet processed by the BC ?
yes
Is there a new TM Packet ready ?
yes
no
TM Packets Buffer
MUTEX
Encode TM Packet into 1553B messages
Notify BC of NO TM Packets pending
no
no
Increment internal TM Packet counter
Write the TM Packet Transfer Request into SA10T. Set 1st word to '0000 0000', and bits 11-12 of 2nd word to '00'
Write needed number of 1553B messages from SA11T to SA26T
Notify BC of TM Packet ready
Write the TM Packet Transfer Request into SA10T. TM Packet counter goes in bits 0-7 of 2nd word; number of 1553B messages needed goes into bits 8-12 of 1st word, and number of data words in last message goes into bits 0-4 of the 1st word


Is there a new TC Packet available form BC ?
yes
no
Read the 1st 8 bits of the 2nd word from the TC Packet Transfer Descriptor in SA27R and compare to internal TC Packet counter
Get TC Packet decoding information
Read info from 2nd word of TC Packet Transfer Descriptor from SA27R. TC Packet is composed by N 1553B messages (N=bits 8-12); the last message contains M words (M=bits 0-4)
Build TC Packet
Cycle reading the requested number of 1553B messages starting from SA11R to SA14R. Pack data words according to ESA TC Packet standard structure
Write TC Packet into TC Packet Circular Buffer
MUTEX
TC Packets Buffer
Signal TC_Ready to CONTROLLER
Acknowledge reception of TC Packet
Copy TC Packet Transfer Descriptor (SA27R) to TC Packet Transfer Confirmation (SA27T)
Increment internal TC Packet counter
Wait for next SubFrame Sync


CDMS
MIL STD 1553B Messages
Transfer_Layer
Ace_Terminal
Encoded_TC_Packet
Encoded_TM_Packet
SubFrameSync_INT
2
TC_Decoder
3
TM_Packetizer
Get_TC_Packet
1
CDMS_Interface_Handler
TC_Packet
SemaSet_TC_ready
Event
Raw_TM_Packet
Raw_TM_Packet
TC_Buffer
HK_Buffer
Events_Buffer
Science_Buffer
OBS Controller

Application	Operating System	Hardware	Comments
TEI	very likely Windows 2000, but may be Linux as well	PC	
CDMS simulator	Windows NT	PC	
Router	(Java)	SUN	Same H/W as SCOS 2000
SCOS 2000	Solaris	SUN	
TOPE	Solaris	SUN	Same H/W as SCOS 2000
HCSS	Linux/Solaris	X	X := proper Linux Server
QLA	Linux/Solaris (Java)	SUN, X, Laptop	
IA	Linux/Solaris	X, Laptop	