Long, JA (Judy)

To: Long, JA (Judy)
Subject: FW: CWG #1 and #2 agenda.

Our ref: PT-06427

Dear All,

Please find below the agenda for the CWG 1-2 meeting to be held at ESTEC on 3 March 1999, starting 09.00 hrs. room Ea112.

1. Introduction.
2. Identification of S/C interfaces to be dealt with within CWG:
   a) OBDH. General, data rate/structure, modes, interface type, timing, datation.
   b) Power. General, voltage level, current rating.
   c) AOCS. Instrument requirements, LOS (FIRST)
   d) Other S/C interfaces. Temperature sensors.
   e) Objectives are: Pre-definition/recommendation of power and OBDH.
   Completion of requirements on AOCS.
3. Microprocessor specifics.
4. Parts Procurement.
5. Plan of activities of CWG.
6. Date and place of next meeting.
7. AOB:
   a) S/C simulator.

Instrument presentations on requirements are expected for items 2a, 2c, 3, 7a.

To 3. I have attached the response to an AI on microprocessor selection received from G. Pilbratt. The issue was to get some information from Sweden re. how the choice of microP was made for e.g. Odin.

Please check the list of addressees/participants for completeness and let me know who will be attending the meeting.

Regards

Harm Schaap

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Attachment on AI response:

The Swedish Odin satellite will use the (SAAB) Thor processor. The plan for SMART-1 is to use the (Dassault) Flame processor. The Flame is "another" Sparc processor, cf. the (Temics) ERC32 which in its 3-chip version will be used on the space station and which will come in a one-chip version this year. Apparently the Flame is available as of summer 1998, however, the documention was mentioned to be "hard to get" making life difficult for people wanting to evaluate/using it.

The Thor processor is optimised for Ada; it is good hardware but it lacks in compilers and development software environment.

For the Sparc processors you can develop code on normal Sun workstations; this is definitely true for the ERC32 microP, but also (?) for the Flame one.

The conclusion was if you choose today for something like FIRST you might

want to go for the one-chip ERC32. The Flame was chosen for SMART-1 because it was available (and needed much) earlier.

The DSP processor (TSC210020) was never considered for e.g. Odin or SMART-1 because it is "generally known" that a DSP is not a good choice for real-time applications. Apparently it lacks general registers, interrupts, etc. in the hardware, and no general real-time operating system (such as e.g. VxWorks, VertX, ENEA) has been ported to this microP. This does not mean it cannot be used; it is just not the obvious choice.

Where the DSP excels is in (some types of) signal processing (which presumably is why it is considered/chosen) for the FIRST instruments). It would be possible to use the DSP as co-processor to exploit this and still use a "more appropriate" choice for real-time use; but then you are indeed dealing with two different microPs. It seems it is personal taste whether this is a disadvantage or not.

Additional info: Pathfinder used a PowerPC processor.
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