

Objet: PS-ICD Service 6 - memory management**Date:** Wed, 14 Feb 2001 17:27:56 +0100 (MET)**De:** Anna Maria Di Giorgio <annadg@ifsi.rm.cnr.it>**A:** K.J.King@rl.ac.uk, L.Dubbeldam@sron.nl, ohb@mpe.mpg.de, fgb@mpe.mpg.de, beney@lal.in2p3.fr, fgr@ll.iac.es**Copies à:** orfei@eqs.ifsi.rm.cnr.it

Dear All,

IFSI has an open action within the Data Management Working Group for providing a proposal to modify the length of the address field in the memory management TCs.

The past week I had some discussions about this topic here at IFSI with Riccardo Cerulli and Renato Orfei (and with Carlo Gavazzi Space, which is involved in the topic because it is going to provide us with the PROM power-on procedure).

The first thing to note is that the data address generators in the ADSP21020 foresee a 24 bits address bus for the Program Memory and a 32 bits address bus for the Data Memory.

With 32 bits we can in principle address "absolutely" up to $\sim 2.15 \times 10^9$ memory locations. In our case we don't have such a big memory segment on board: our Program RAM is dimensioned to 512Kwords (3 MB with 48bits words), the Data RAM is 512Kwords (2MB, 32bits words) and the EEPROM is 256Kwords (1MB, 32bits words).

Therefore even a smaller Start Address Field in the memory management TCs can be used for an "absolute" addressing on board.

Our suggestion is to maintain the 32 bits totally allocated in the TCs for the memory addressing, but to ask ESA to divide the two fields into:

Memory ID field: 8bits
Start Address Field: 24bits.

The Memory ID field is intended to indicate the memory bank/block to which the start address is referred to. With 8 bits, up to 256 memory blocks can be assigned on board and even in the case of PACS, where more than one DSP is foreseen, these should be sufficient to identify all the different non-consecutive memory segments present in the instrument.

The Start Address Field length will allow to address the PM correctly, and to address up to a maximum of 8 Mw in the DM.

What do you think about this suggestion?

I've already had a positive feedback from Helmut and, before sending an "official" request to ESA for a modification of the PS-ICD, I would like to know if you all agree with this proposal.

Thank You in advance,

Best Regards,

Anna

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