



FAX

FIRST/Planck Project

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copy

subject **Allocation of 100 / 60 kbps as Data Rate for FIRST/Planck Instruments - AI 5 of SCI/PT-MN-07691**

ref 1 Fax PT-06885, 25-06-1999
 ref 2 FIRST/Planck System Requirements Spec. PT-RS-05991, issue draft 1
 ref 3 FIRST/Planck IID Part A, issue 0-2

Dear colleagues,

The IID-A, Ref. 3, defines in para. 5.11.1, Telemetry:

“The indicated bit rates include science and instrument housekeeping data and formatting overhead for TM Packets.”

The FIRST/Planck SRD, Ref. 2 provides for the same definition in para. 5.4. Both definitions are based on fax Ref. 1, in which the Project Office confirmed to **increase the data rate allocations** and mass memory capacities by a factor of two to 100 / 60 kbps, in order to improve the scientific return.

For more clarity we would like to point out that the term “**science and housekeeping data**” used in Ref. 1 is considered to cover all **periodic and non-periodic data**, which are prepared by the instruments on-board for storage and downlinking. The Project Office does not intend to modify the specifications Ref. 1 and Ref. 2 in this respect.

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We would however like to point out, that for FIRST a small increase by less than 10% of the nominal average data rate during periods of active observation **should not result in data volumes larger than 100 kbps over 24 hrs.** This is because during certain slew movements during Raster Pointing, and other observation-, and non-observation-phases, no Science TM needs to be produced. Consequently, by adequate design of instrument TM data processing (no **Science TM-Packets during certain periods**), and later-on, by means of observation scheduling, the instrument teams can optimize their scientific return and stay within their allocated TM data volumes.

As instruments, which are not scheduled for an observation activity on FIRST/ Planck, are configured into an Idle/Standby Mode, they will still generate a certain amount of periodic (and possibly non-periodic) HK packets which constitutes a fraction of the overall budget of 100 / 60 kbps.

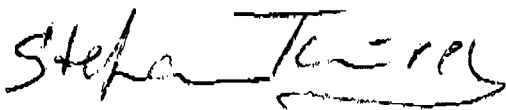
We would therefore recommend introducing to para. 5.11.1 of the IID-A:

“(FIRST) Instruments, which are not the prime instrument for a certain observation, shall not exceed a rate of 2 kbps each for housekeeping data. “

Additionally we would like to ask the PIs to provide inputs to their IID-Bs, which are in line with the requirements above, if it is not already the case. A table with allocations for their instrument science TM-packets, HK-, TC-Verification-, and other Event-packets for the (major) operational modes of each instrument would be suitable. Please provide inputs before 19-6-2000.

This closes AI 5 of our meeting of 20-4-2000 in ESOC.

Best regards,



S. Thürey