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Betreff: Group Delays at New Norcia
Datum: Fri, 6 Dec 2002 20:37:08 +0100
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Dear All,

there was still an open action from our first meeting. I hope, the values below give us a first impression of what can be expected, and thus allow us to close this action.

Best Regards, Juergen

... "the following applies to the group delay stability specifications and measurements, (I start from b, i.e. the specifications):

It doesn't exist an overall station level specification, but subsystem level figures which I collected and provided in the hand-over document (pag. 188)

Group Delay Stability - Requirement from [RD 3], [RD 13], [RD 18]

Subsystem	Subsystem requirement	Req. over 10 hours
IFMS Downlink	0.5 nesc over 12 hours +/- 6 C	0.42 nsec
IFMS Uplink	2.0 nsec over 12 hours +/- 6 C	1.67 nsec
S-Band Downlink (until output of S-Band D/C)	5 nsec/100 hours	0.5 nsec
X-Band Downlink (until output of S-Band D/C)	1 nsec/24 hours	0.42 nsec
S-Band Uplink	5 nsec/100 hours	0.5 nsec
X-Band Uplink	5 nsec/100hours	0.5 nsec
L-Band Down Converter	1nsec/12 hours +/- 6 C	0.84 nsec

Total S-Band Downlink - S-Band Uplink	3.93 nsec
Total X-Band Downlink - S-Band Uplink	3.85 nsec
Total X-Band Downlink - X-Band Uplink	3.85 nsec

Group delay stability - the applicable requirement will be to verify that, in ranging calibration configuration, and for a measurement of 10 hours, the group delay will be stable within 4 nsec.

In respect to this specification, I have so far performed two measurements, in the configuration S-Band uplink to S-Band Downlink and X-Band Uplink to X-Band Downlink.

Attached are the measurement data.

In summary, I get:
S-Band Uplink to S-Band Downlink: variations peak to peak in 5 hours: 0.9 nsec, StDev 0.1 nsec
X-Band Uplink to X-Band Downlink: variations peak to peak in 5 hours: 1.9 nsec, StDev 0.2 nsec

>From similar tests Boris had already achieved, during the combined SED-ND-Satcom tests, the following:
S-Band Uplink to S-Band Downlink: variations peak to peak in 10 hours: 0.25 nsec, StDev 0.04 nsec (but data were averaged over 5 minutes).

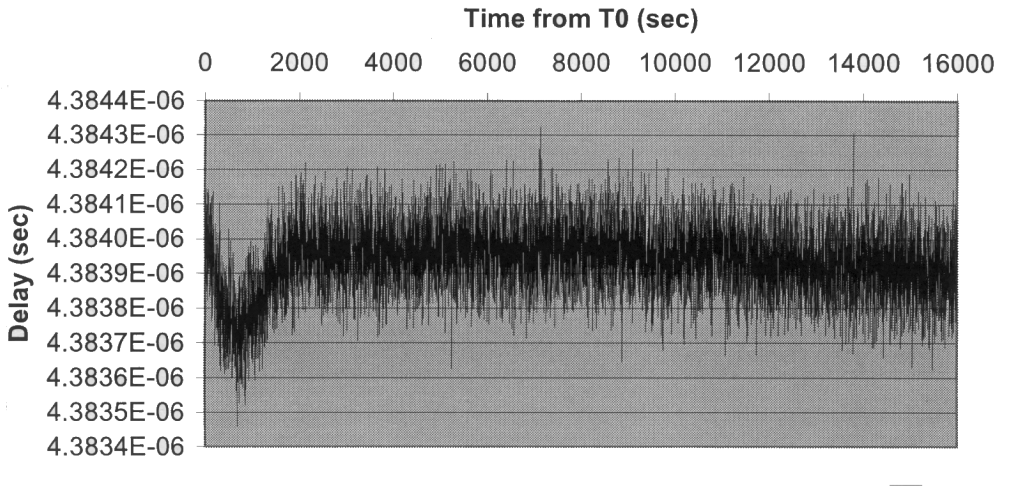
I hope this information is enough for closing the action.

Regards

Marco

NNO Group Delay Measurements.pdf	**Name:** NNO Group Delay Measurements.pdf **Type:** Acrobat (application/pdf) **Encoding:** base64 **Description:** Adobe Portable Document

Delay
IFMS2 ULM - SUC2 - SLPA - SLNA2 - SDC2 - LDC2 - IFMS2 RGD



Delay
IFMS1 ULM - XUC1 - XHPA - XLNA2 - XDC2 - LDC1 - IFMS1 RGD