	Operation Change Request	OCR No: 009
S C I A M A C H Y		Issue: A_5

Title: Repetition of Memory Effect measurements from SODAP

Description of Request:
It is proposed to repeat the measurements for the verification of the in-flight memory effect. The measurements during SODAP were not sufficient to fulfill the objective, since they were erraneously done in the sunlit part of the orbit. A further investigation leads to the conclusion that the original states WLS_Fast_Out_3, WLS_Fast_Out_4 and WLS_Fast_Out_5 have to be changed. The changes concern PETs and scanner phase duration. A detailed description of the required changes can be found in the attached file 'memeffectmsm.pdf'.

Originator: G. Lichtenberg (SRON)	Date of Issue: 7.05.03	Signature: email 7.05.03

Assessment of SSAG (necessary for requests by scientists):
As the memory effect already changed on ground by 20 – 40% (TN-SCIA-1000FO/200) and an imperfect knowledge will introducing differential structures of some 10^{-3}, it is recommended to perform the proposed measurements asap. Interferences with validation campaigns should be avoided.

SSAG: H. Bovensmann	Date: 9.5.03	Signature: e-mail 9.5.03

Classification of OCR: D

OCR Analysis (incl. Implementation Option):
This OCR requires the definition of 3 specific states (WLS_Fast_Out_3/4/5). They are defined similary as the corresponding SODAP states but with the modifications specified in the document *memeffectmsm.pdf*. During the WLS_Fast_out measurements no other measurements (except t/l 63) will be performed.

The 3 WLS_Fast_Out states will be planned in two consecutive timelines of set 09. The first executes the sequence WLS_Fast_Out_3/WLS_Fast_Out_4/WLS_Fast_Out_5, the other the reversed sequence WLS_Fast_Out_5/WLS_Fast_Out_4/WLS_Fast_Out_3.
The draft timeline definitions are attached. Each timeline will start 750 sec after ENVISAT enters eclipse. This corresponds to an orbital phase of about 0.2 (eclipse start on-ground = 0.0).

Given the importance of these measurements, we will schedule the two consecutive measurements twice. WLS usage amounts to 448 sec each, i.e. the LLI budget will increase by 1792 sec (total WLS budget is 25 hrs burning time). Please confirm the number of orbits when approving the OCR. If 4 orbits are considered too risky from a LLI point of view, they will be reduced to 2.

Implementation can be ensured for mid July (end of the planning cycle which is presently in preparation). Note that we try to execute these measurements even earlier in the end-of-June timeframe, but calibration and data processing shall currently use the mid July milestone.

SOST: M. Gottwald, SOST-IMF	Date: 12/05/2003	Signature: via e-mail 12/05/2003

Approval of Proposed Implementation:

Originator Approval: G. Lichtenberg	Date: 2003-05-13	Signature: e-mail 2003-05-13
SSAG Approval: H. Bovensmann	Date: 2003-05-13	Signature: e-mail 2003-05-13

Decision / Approval:
The measurements shall be performed only once to avoid the extra burning time of the WLS.
The measurements shall be performed during "Kiruna visible orbits" to enable data delivery by DDS.

DLR Approval: Ch. Chlebek	Date: 2003-05-13 & 2003-06-23/24 (modification)	Signature: e-mail 2003-05-13 & telecons 2003-06-23/24 (modification)

Implementation by SOST :
States: State 42,43 & 44 has been defined according to the specification. Setup and cleanup times are identical to the settings of the associated states in SODAP (config. 6).

CTI-files are generated and transferred to FOCC with validity for orbits 6778 and 6779.
The restoration of the final-flight config has been also generated and transferred to FOCC with validity from orbit 6780 onwards.
Timelines: Two timelines have been defined in set 09 (t/l 39 & 40) as specified above. CTI-generation and transfer are done.

The planning input for the time period June 17th - July 16th includes the execution of these timelines in orbits 6778 and 6779 (June 17th). These orbits are Kiruna coverage orbits without a SAA passage.

Addendum (modification):
Due to occurrence of failure entries during execution of state 42,43 & 44 related to exceeding the data rate limit, the implementation of these states for a repetition will be altered as compared to document memeffectmsm.pdf by G.Lichtenberg 07/05/2003 such that:
a.   Channels 6,7 & 8 will now be integrated with coadding 16 in all 3 states
b.   Channels 6,7 & 8 will now be integrate with shorter PET of 0.03125sec in state 44 to avoid saturation

The planning input for the time period July 16th – August 16th includes the execution of these measurements in timelines 39 and 49 in orbits 7193 and 7194 (July 16th). These orbits are Kiruna coverage orbits. The CTI-files required will be produced and transferred week 27.

| SOST: M. Gottwald, SOST-IMF E. Krieg, SOST-IMF | Date: 25/06/2003 | Signature: via e-mail 26/06/2003 |

H:\scia\timing\timeline_set_09\tl_09_3 9_01.xls	ecl_beg_ecl_end_mem_elf_wls		Table start ID =	2433	Event_type =	s_08
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SCHED_TYPE =	SF_FI	GEO_TYPE =	elevation_backward	GEO_NUM <deg> =	28,50	FOV_CHECK =	NO
RATE_TYPE =	LOW	DTX3 <s>=	n/a	DTX4 <s>=	n/a	TL_PAD <s>=	1,00000000

State Running Index	State ID	State Description	State TT (relative, ct)	State TT (relative, sec)	Start Time (absolute, sec) T1 +	State Duration (sec)	End Time (absolute, sec) T1 +
		T/L setup			0	2.77	
1	42	WLS Fast Out 3	709	2.77	2.77	361.35	364.12
2	43	WLS Fast Out 4	92506	361.35	364.12	81.35	445.47
3	44	WLS Fast Out 5	20825	81.35	445.47	39.35	484.82
4	End of Timeline	End of Timeline	10073	39.35			
5	End of Timeline	End of Timeline	0				
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		T/L Cleanup	124113		484.82	0.09	484.91

Timeline 39

H:\scia\timing\timeline_set_09\tl_09_4 0_01.xls	ecl_beg_ecl_end_mem_eff_wls		Table start ID =	2497	Event_type =	s_0B
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SCHED_TYPE =	SF_FI	GEO_TYPE =	elevation_backward	GEO_NUM <deg> =	28,50	FOV_CHECK =	NO
RATE_TYPE =	LOW	DTX3 <s> =	n/a	DTX4 <s> =	n/a	TL_PAD <s> =	1,00000000

State Running Index	State ID	State Description	State TT (relative, ct)	State TT (relative, sec)	Start Time (absolute, sec) T1 +	State Duration (sec)	End Time (absolute, sec) T1 +
		T/L setup			0	2.77	
1	44	WLS_Fast_Out_5	709	2.77	2.77	39.35	42.12
2	43	WLS_Fast_Out_4	10073	39.35	42.12	81.35	123.46
3	42	WLS_Fast_Out_3	20825	81.35	123.46	361.35	484.82
4	End of Timeline	End of Timeline	92505	361.35			
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		T/L Cleanup	124113		484.82	0.09	484.91

Timeline 40