SCIAMACHY	Operation Change Request	OCR No:010 Issue: A

Title: Perform WLS over diffuser measurements (state 70, meas.cat. 19) in eclipse only

Description of Request:
WLS over diffuser measurements (state 70, meas.cat. 19) are normally performed on the dayside of the orbit (orbit phase ~ 0.87). These measurements are contaminated (up to 50 %) with spatial straylight and therefore cannot be used for monitoring. As example see the plot on the next page. It shows the ratio of a normal WLS over diffuser measurement with one performed in eclipse (orbit phase ~ 0.18) during delta SODAP in December 2002. Straylight can be clearly seen in channels 1 to 3 (the deviation in channel 6+ is possibly caused by temperature effects).
It is therefore requested to perform WLS over diffuser measurements in eclipse only. From a cautious estimate this should be in the orbit phase from 0.184 to 0.25.

Originator: Jochen Skupin	Date of Issue: 2003-05-8	Signature: e-mail 2003-05-09

Assessment of SSAG (necessary for requests by scientists):
The proposed change is recommended for implemented. The WLS/diffuser measurements on the dayside are currently useless.

SSAG: H. Bovensmann	Date: 9.5.2003	Signature: e-mail 9.5.2003

Classification of OCR: D

OCR Analysis (incl. Implementation Option):
The definition of timelines 60 and 62 (timeline set 25, monthly calibration) requires update. Timeline 60 (sub-solar window to eclipse start) will be cleared of the calibration lamps over diffuser measurements. Timeline 62 (eclipse start to end) will now also contain the calibration lamps over diffuser measurements (state ID 69 & 70). Timeline 62 also includes the NDFM monitoring states which operate the WLS as well. Therefore it is required to re-shuffle all states using the calibration lamps in order to take care of the time intervals without full performance measurements after a lamp state (SLS: 115 sec, WLS: 295 sec).
The resulting modified timelines 60 and 62 are attached. The WLS over diffuser measurement starts 759 sec after t/l start. Since the timeline start will be about 200 sec after ENVISAT enters eclipse and ENVISAT eclipse entry occurs about 475 sec after eclipse start on-ground, the WLS over diffuser measurement corresponds to an orbit phase (eclipse start on-ground = 0.0) of 0.23

Implementation can be ensured for the monthly calibration orbits in July.

Modification:
Since the orbital phase of the final lwnd measurement in the modified timeline 62 was considered not to be perfect, the implementation option is changed as follows:

a) also modify timeline 61: includes now in addition of the previous two lsc states also the WLS over diffuser state. The timeline ends with a block of dark current states and a few 'filler' dcc states (to adjust t/l duration). Lamp states are executed between orbital phase 0.15 - 0.27
b) t/l 62 executes the states lwnd01 & lwnd02 and the SLS over diffuser. This timeline also ends with blocks of dark current states, including filler dcc states. Lamp states are executed between orbital phase 0.15 - 0.28.

Both t/l 61 and t/l 62 are attached (together with the untouched t/l 60).

SOST: M. Gottwald, SOST-IMF (ESA, Industry if necessary)	Date: 12/05/2003 & 15/05/2003	Signature: via e-mail 12/05/2003 & 15/05/2003

Approval of Proposed Implementation:

Originator Approval: J. Skupin	Date: 20/05/2003	Signature: via telephone 20/05/2003
SSAG Approval: H. Bovensmann	Date: 16/05/2003	Signature: via e-mail 16/05/2003

Decision / Approval:
The OCR shall be implemented as described in the OCR Analysis.

DLR Approval: Ch. Chlebek	Date: 2003-05-20	Signature: e-mail 2003-05-20
Implementation by SOST : Timelines 60, 61 and 62 of set 25 have been modified as described in the attachment. The timelines have been transferred to ESOC 030521 and are included in the mission planning input for the time period June 17th - July 16th for upload (orbit 7151) and execution (orbit 7153/7154, July 13th).		
SOST: M. Gottwald, SOST-IMF	Date: 21/05/2003	Signature: via e-mail 21/05/2003

H:\scia\timing\timeline_set_25\tl_25_60_03.xls		sub_beg_ecl_beg_cal_monthly_spec_orb3		Table start ID =	3777	Event_type =	s_07
DURATION <s>=	1902,46093750	DTX0 <s>=	18,25000000	DTX1 <s>=	11,00000000	DTX2 <s>=	12,73000000
SCHED_TYPE =	SF_FI	GEO_TYPE =	azimuth	GEO_NUM <deg>=	270,22	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	63	sscp02	709	2,77	2,77	28,46	31,23
2	8	dec05	7286	28,46	31,23	43,56	74,79
3	26	dec04	11151	43,56	74,79	33,56	108,35
4	46	dec01	8591	33,56	108,35	13,56	121,91
5	63	dec02	3471	13,56	121,91	33,56	155,46
6	67	dec03	8591	33,56	155,46	83,56	239,02
7	8	dec05	21391	83,56	239,02	43,56	282,58
8	26	dec04	11151	43,56	282,58	33,56	316,14
9	46	dec01	8591	33,56	316,14	13,56	329,70
10	63	dec02	3471	13,56	329,70	33,56	363,26
11	67	dec03	8591	33,56	363,26	83,56	446,82
12	8	dec05	21391	83,56	446,82	43,56	490,38
13	26	dec04	11151	43,56	490,38	33,56	523,93
14	46	dec01	8591	33,56	523,93	13,56	537,49
15	63	dec02	3471	13,56	537,49	33,56	571,05
16	67	dec03	8591	33,56	571,05	83,56	654,61
17	8	dec05	21391	83,56	654,61	43,56	698,17
18	26	dec04	11151	43,56	698,17	33,56	731,73
19	46	dec01	8591	33,56	731,73	13,56	745,29
20	63	dec02	3471	13,56	745,29	33,56	778,84
21	67	dec03	8591	33,56	778,84	83,56	862,40
22	8	dec05	21391	83,56	862,40	43,56	905,96
23	26	dec04	11151	43,56	905,96	33,56	939,52
24	46	dec01	8591	33,56	939,52	13,56	953,08
25	63	dec02	3471	13,56	953,08	33,56	986,64
26	67	dec03	8591	33,56	986,64	83,56	1070,20
27	8	dec05	21391	83,56	1070,20	43,56	1113,75
28	26	dec04	11151	43,56	1113,75	33,56	1147,31
29	46	dec01	8591	33,56	1147,31	13,56	1160,87
30	63	dec02	3471	13,56	1160,87	33,56	1194,43
31	67	dec03	8591	33,56	1194,43	83,56	1277,99
32	8	dec05	21391	83,56	1277,99	43,56	1321,55
33	26	dec04	11151	43,56	1321,55	33,56	1355,11
34	46	dec01	8591	33,56	1355,11	13,56	1368,66
35	63	dec02	3471	13,56	1368,66	33,56	1402,22
36	67	dec03	8591	33,56	1402,22	83,56	1485,78
37	8	dec05	21391	83,56	1485,78	43,56	1529,34
38	26	dec04	11151	43,56	1529,34	33,56	1562,90
39	46	dec01	8591	33,56	1562,90	13,56	1576,46
40	63	dec02	3471	13,56	1576,46	33,56	1610,02
41	67	dec03	8591	33,56	1610,02	83,56	1693,57
42	8	dec05	21391	83,56	1693,57	43,56	1737,13
43	26	dec04	11151	43,56	1737,13	33,56	1770,69
44	46	dec01	8591	33,56	1770,69	13,56	1784,25
45	63	dec02	3471	13,56	1784,25	33,56	1817,81
46	67	dec03	8591	33,56	1817,81	83,56	1901,37
47	End of Timeline	End of Timeline	21391	83,56			
48	End of Timeline	End of Timeline	0				
49	End of Timeline	End of Timeline	0				
50	End of Timeline	End of Timeline	0				
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59	End of Timeline	End of Timeline	0				
60	End of Timeline	End of Timeline	0				
61	End of Timeline	End of Timeline	0				
62	End of Timeline	End of Timeline	0				
63	End of Timeline	End of Timeline	0				
64	End of Timeline	End of Timeline	0				
		T/L Cleanup	486750		1901,37	0,09	1901,46

Timeline 60

H:\scia\timing\timeline_set_25\tl_25_G1_03.xls		ecl_beg_ecl_end_cal_monthly_spec_orb2		Table start ID =	3841	Event_type =	n/a
DURATION <s>=	1300.53125000	DTX0 <s>=	n/a	DTX1 <s>=	n/a	DTX2 <s>=	n/a
SCHED_TYPE =	NF_FB	GEO_TYPE =	n/a	GEO_NUM <>=	n/a	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, cl)	State TT (relative, sec)	Start Time (absolute, sec) T1 +	State Duration (sec)	End Time (absolute, sec) T1 +
		T/L setup			0	2,77	
1	8	dec05	709	2,77	2,77	43,56	46,33
2	26	dec04	11151	43,56	46,33	33,56	79,89
3	46	dec01	6591	33,56	79,89	13,56	93,45
4	63	dec02	3471	13,56	93,45	33,56	127,00
5	67	dec03	6591	33,56	127,00	83,56	210,56
6	59	lec01	21391	83,56	210,56	21,57	232,14
7	8	dec05	5523	21,57	232,14	43,56	275,70
8	26	dec04	11151	43,56	275,70	33,56	309,25
9	46	dec01	6591	33,56	309,25	13,56	322,81
10	63	dec02	3471	13,56	322,81	33,56	356,37
11	67	dec03	6591	33,56	356,37	83,56	439,93
12	70	lwd01	21391	83,56	439,93	90,32	530,25
13	8	dec05	23122	90,32	530,25	43,56	573,81
14	26	dec04	11151	43,56	573,81	33,56	607,37
15	46	dec01	6591	33,56	607,37	13,56	620,93
16	63	dec02	3471	13,56	620,93	33,56	654,48
17	67	dec03	6591	33,56	654,48	83,56	738,04
18	8	dec05	21391	83,56	738,04	43,56	781,60
19	26	dec04	11151	43,56	781,60	33,56	815,16
20	46	dec01	6591	33,56	815,16	13,56	828,72
21	63	dec02	3471	13,56	828,72	33,56	862,28
22	67	dec03	6591	33,56	862,28	83,56	945,84
23	59	lec01	21391	83,56	945,84	21,57	967,41
24	8	dec05	5523	21,57	967,41	43,56	1010,97
25	26	dec04	11151	43,56	1010,97	33,56	1044,53
26	46	dec01	6591	33,56	1044,53	13,56	1058,09
27	63	dec02	3471	13,56	1058,09	33,56	1091,64
28	67	dec03	6591	33,56	1091,64	83,56	1175,20
29	8	dec05	21391	83,56	1175,20	43,56	1218,76
30	26	dec04	11151	43,56	1218,76	33,56	1252,32
31	46	dec01	6591	33,56	1252,32	13,56	1265,88
32	63	dec02	3471	13,56	1265,88	33,56	1299,44
33	End of Timeline	End of Timeline	6591	33,56			
34	End of Timeline	End of Timeline	0				
35	End of Timeline	End of Timeline	0				
36	End of Timeline	End of Timeline	0				
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62	End of Timeline	End of Timeline	0				
63	End of Timeline	End of Timeline	0				
64	End of Timeline	End of Timeline	0				
		T/L Cleanup	332656		1299,44	0,09	1299,53

Timeline 61

H:\scia\timing\timeline_set_25\tl_25_62_03.xls		ecl_beg_ecl_end_cal_monthly_spec_orb3		Table start ID =	3905	Event_type =	n/a
DURATION <s>=	1297.70312500	DTX0 <s>=	n/a	DTX1 <s>=	n/a	DTX2 <s>=	n/a
SCHED_TYPE =	NF_FB	GEO_TYPE =	n/a	GEO_NUM <>=	n/a	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	8	dec05	709	2,77	2,77	43,56	46,33
2	26	dec04	11151	43,56	46,33	33,56	79,89
3	46	dec01	8591	33,56	79,89	13,56	93,45
4	63	dec02	3471	13,56	93,45	33,56	127,00
5	67	dec03	8591	33,56	127,00	83,56	210,56
6	69	lad01	21391	83,56	210,56	89,58	300,14
7	8	dec05	22932	89,58	300,14	43,56	343,70
8	26	dec04	11151	43,56	343,70	33,56	377,26
9	46	dec01	8591	33,56	377,26	13,56	390,82
10	63	dec02	3471	13,56	390,82	33,56	424,38
11	67	dec03	8591	33,56	424,38	83,56	507,93
12	29	dcchm	21391	83,56	507,93	21,26	529,19
13	16	lvnd02	5442	21,26	529,19	22,32	551,51
14	8	dec05	5713	22,32	551,51	43,56	595,07
15	26	dec04	11151	43,56	595,07	33,56	628,63
16	46	dec01	8591	33,56	628,63	13,56	642,18
17	63	dec02	3471	13,56	642,18	33,56	675,74
18	67	dec03	8591	33,56	675,74	83,56	759,30
19	8	dec05	21391	83,56	759,30	43,56	802,86
20	26	dec04	11151	43,56	802,86	33,56	836,42
21	46	dec01	8591	33,56	836,42	13,56	849,98
22	63	dec02	3471	13,56	849,98	33,56	883,54
23	67	dec03	8591	33,56	883,54	83,56	967,09
24	39	dcchm	21391	83,56	967,09	21,26	988,35
25	48	lvnd01	5442	21,26	988,35	23,35	1011,70
26	8	dec05	5977	23,35	1011,70	43,56	1055,26
27	26	dec04	11151	43,56	1055,26	33,56	1088,82
28	46	dec01	8591	33,56	1088,82	13,56	1102,38
29	63	dec02	3471	13,56	1102,38	33,56	1135,93
30	67	dec03	8591	33,56	1135,93	83,56	1219,49
31	8	dec05	21391	83,56	1219,49	43,56	1263,05
32	26	dec04	11151	43,56	1263,05	33,56	1296,61
33	End of Timeline	End of Timeline	8591	33,56			
34	End of Timeline	End of Timeline	0				
35	End of Timeline	End of Timeline	0				
36	End of Timeline	End of Timeline	0				
37	End of Timeline	End of Timeline	0				
38	End of Timeline	End of Timeline	0				
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62	End of Timeline	End of Timeline	0				
63	End of Timeline	End of Timeline	0				
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		T/L Cleanup	331932		1296,61	0,09	1296,70

Timeline 62

Ratio of WLS over diffuser measurements on dayside (orbit phase ≈0.87) and in eclipse (orbit phase ≈0.18), channel 2 ordered by wavelength