

MANOEUVRES HISTORY IN PHASE E2

Swarm-A			
Date	Start Time, UTC	Activity	Comment
06/05/2014	13:50	~4s single thruster firing	Failed ACC scale factor calibration test; EFI off
13/05 - 14/05/2014	Start: 00:49 End: 05:32	4 x 90° yaw slew manoeuvres	For VFM-ASM Residual investigation

Swarm-B			
Date	Start Time, UTC	Activity	Comment
08/05 – 09/05/2014	Start 05:50 End: 07:35	4 x 90° yaw slew manoeuvres	For VFM-ASM Residual investigation; EFI off

Swarm-C			
Date	Start Time, UTC	Activity	Comment
08/04 – 09/04/2014	Start: 20:00 End: 23:48	Orbit Manoeuver Batch-3a	
11/04/2014	02:23 until 12:06	Orbit Manoeuver Batch-3b	
15/04/2014	performed between 03:42 and 05:06	Drift Stop manoeuvres 1	2 manoeuvres (each 10minutes)
17/04/2014	performed between 04:20 and 05:37	Drift Stop manoeuvres 2	2 manoeuvres (each 10minutes)
13/05 – 14/05/2014	Start: 05:38 End: 10:16	4 x 90° yaw slew manoeuvres	For VFM-ASM Residual investigation



MANOEUVRES HISTORY IN PHASE E1

Swarm-A			
Activity	Date	Start Time, UTC	Comment
Torquer correction MTQ-1	17/12/2013	16:16	EFI in LP TSM.
Torquer correction MTQ-2	17/12/2013	21:15	EFI in LP TSM.
Torquer correction MTQ-3	17/12/2013	08:39	EFI in LP TSM.
Precise datation	18/12/2013	17:19	
Yaw slew	19/12/2013	Start: 14:00 End: 02:00 (next morning)	
Fall-back to CPM	04/01/2014	10:49	Caused by STR's anomaly
Yaw slew	09/01/2014	16:29	For EFI TII gain calibration, but improper TII commanding
Pitch slew	09/01/2014	18:14	For EFI TII gain calibration, but improper TII commanding
Pitch slew	10/01/2014	16:07	For EFI TII gain calibration
Yaw slew	10/01/2014	17:51	For EFI TII gain calibration
Orbital manoeuvre test	15/01/2014	11:51	Actuation of the orbit control thrusters (OCT) for 60 seconds. Satellite in nominal attitude.
Torquer correction MTQ-1	16/01/2014	15:02	EFI in LP TSM. Torquer actuations every 2s for 8mn
Torquer correction MTQ-2	16/01/2014	18:25	EFI in LP TSM. Torquer actuations every 2s for 8mn
Torquer correction MTQ-3	16/01/2014	05:48	EFI in LP TSM. Torquer actuations every 2s for 8mn
EFI TII datation verification	21/01/2014	14:55	Specific MTQ pattern (MTQ-3 ok?)



Orbit Manoeuvre Test batches	22/01/2014	12:02 until ~15:00	OCT actuations for ca. 20 mn at ascending and descending node for two consecutive orbits. For these manoeuvres the attitude was slewed with certain yaw offset angles
Precise datation	23/01/2014	13:55	Repeat of 18-Dec manoeuvre after STR SW patch
-180° yaw bias for 12h	23/01/2014	17:55	For ACC offset calibration
Orbit Manoeuvre Batch-1	28/01 – 29/01/2014	28/01/2014 @ 04:43 until 29/01/2014 @ 17:54	Yaw angle at ascending node: -62° Yaw angle at descending node: -33° At 17:54 the satellite stayed at -33° yaw (not planned). Manoeuvre batch aborted at 22:35.
Orbit Manoeuvre Batch-2	04/02 – 06/02/2014	04/02/2014 @ 08:34 until 06/02/2014 @ 01:08	Yaw angle at ascending node: -62° Yaw angle at descending node: +58° NOTE: following the abort during the first batch, the approach has been changed by using only the A1 and A2 OCTs. This required the yaw angle at the descending node to be significantly changed
Orbit Manoeuvre Batch-3	18/02 – 19/02/2014	18/02/2014 @ 03:34 until 19/02/2014 @ 04:10	Yaw angle at ascending node: -80° Yaw angle at descending node: -12°

Swarm-B			
Activity	Date	Time, UTC	Comment
Safe mode (fall-back to CPM)	26/11/2013	15:24	Caused by MTL anomaly
Transition to CPM (to load new STR SW on one unit)	05/12/2013	09:05	25° pitch threshold exceeded
Yaw Manoeuvre (-62°)	16/12/2013	Start: 14:00 End: 02:00 (next morning)	STR COI Phase Delay was not updated before this manoeuver. STR not synchronised to PPS.



Yaw slew	19/12/2013	08:10	For EFI TII gain calibration
Pitch slew	19/12/2013	12:56	For EFI TII gain calibration
Fall-back to CPM	01/01/2014	09:17	Caused by STR anomaly
Fall-back to CPM	05/01/2014	19:40	Caused by STR anomaly
Torquer correction MTQ-1 (15s interval)	09/01/2014	14:22	EFI in LP TSM.
Torquer correction MTQ-2 (15s interval)	09/01/2014	19:19	EFI in LP TSM.
Torquer correction MTQ-3 (15s interval)	10/01/2014	06:21	EFI in LP TSM.
Orbital manoeuvre test	14/01/2014	13:48	Actuation of the orbit control thrusters (OCT) for 60 seconds. Satellite in nominal attitude.
Precise datation	15/01/2014	13:43	
Torquer correction MTQ-2	15/01/2014	18:36	EFI in LP TSM. Torquer actuations every 2 s for 8mn
Torquer correction MTQ-1	16/01/2014	15:00	EFI in LP TSM. Torquer actuations every 2s for 8mn
Torquer correction MTQ-3	17/01/2014	05:25	EFI in LP TSM. Torquer actuations every 2s for 8mn
EFI TII datation verification	21/01/2014	11:25	Specific MTQ pattern (MTQ-3 ok?)
-180° yaw bias for 12h	22/01/2014	Start: 14:20 End: 02:20 (next day)	For ACC offset calibration
Orbit Manoeuver Batch-1	25/02 – 27/02/2014	25/02/2014 @ 06:02 until 27/02/2014 @ 15:59	
Orbit Manoeuver Batch-2	11/03 - 13/03/2014	11/03/2014 @ 09:39 until 13/03/2014 @ 09:55	



Swarm-C			
Activity	Date	Time, UTC	Comment
Yaw slew	19/12/2013	16:01	For EFI TII gain calibration ASM in Scalar w/o Motor mode
Pitch slew	19/12/2013	19:14	For EFI TII gain calibration
Yaw slew (-62°)	09/01/2014	Start: 11:58 End: 23:58	For VFM calibration
Torquer correction MTQ-1	13/01/2014	13:00	EFI in LP TSM. 15s between change of actuation sign
Torquer correction MTQ-2	13/01/2014	17:57	EFI in LP TSM. 15s between change of actuation sign
Torquer correction MTQ-3	14/01/2014	06:34	EFI in LP TSM. 15s between change of actuation sign
Precise datation	15/01/2014	15:15	
Orbital manoeuvre test	16/01/2014	14:46	Actuation of the orbit control thrusters (OCT) for 60 seconds. Satellite in nominal attitude.
-180° yaw bias for 12h	21/01/2014	Start: 06:00 End: 18:00	For ACC offset calibration
Torquer correction MTQ-3	22/01/2014	05:17	EFI in LP TSM. Torquer actuations every 2s for 8mn
Torquer correction MTQ-1	22/01/2014	12:56	EFI in LP TSM. Torquer actuations every 2s for 8mn
Torquer correction MTQ-2	22/01/2014	17:53	EFI in LP TSM. Torquer actuations every 2s for 8mn
Orbit Manoeuver Test batches	23/01/2014	13:19 until ~15:11	OCT actuations for ca. 20mn at ascending and descending node for two consecutive orbits. For these manoeuvres the attitude was slewed with certain yaw offset angles
EFI TII datation verification	29/01/2014	18:20	



CESS calibration (6 hours forward + 6 hours backward flying)	27/02 - 28/02/2014	Start: 18:00	
Fall-back to CPM	28/02/2014	06:52	Upon slewing back to forward flying at end of CESS calibration
Orbit Manoeuver Batch-1	04/03 - 05/03/2014	04/03/2014 @ 05:06 until 05/03/2014 @ 16:51	
Orbit Manoeuver Batch-2	25/03 - 26/03/2014	25/03/2014 @ 03:53 until 26/03/2014 @ 14:20	

- end of document -