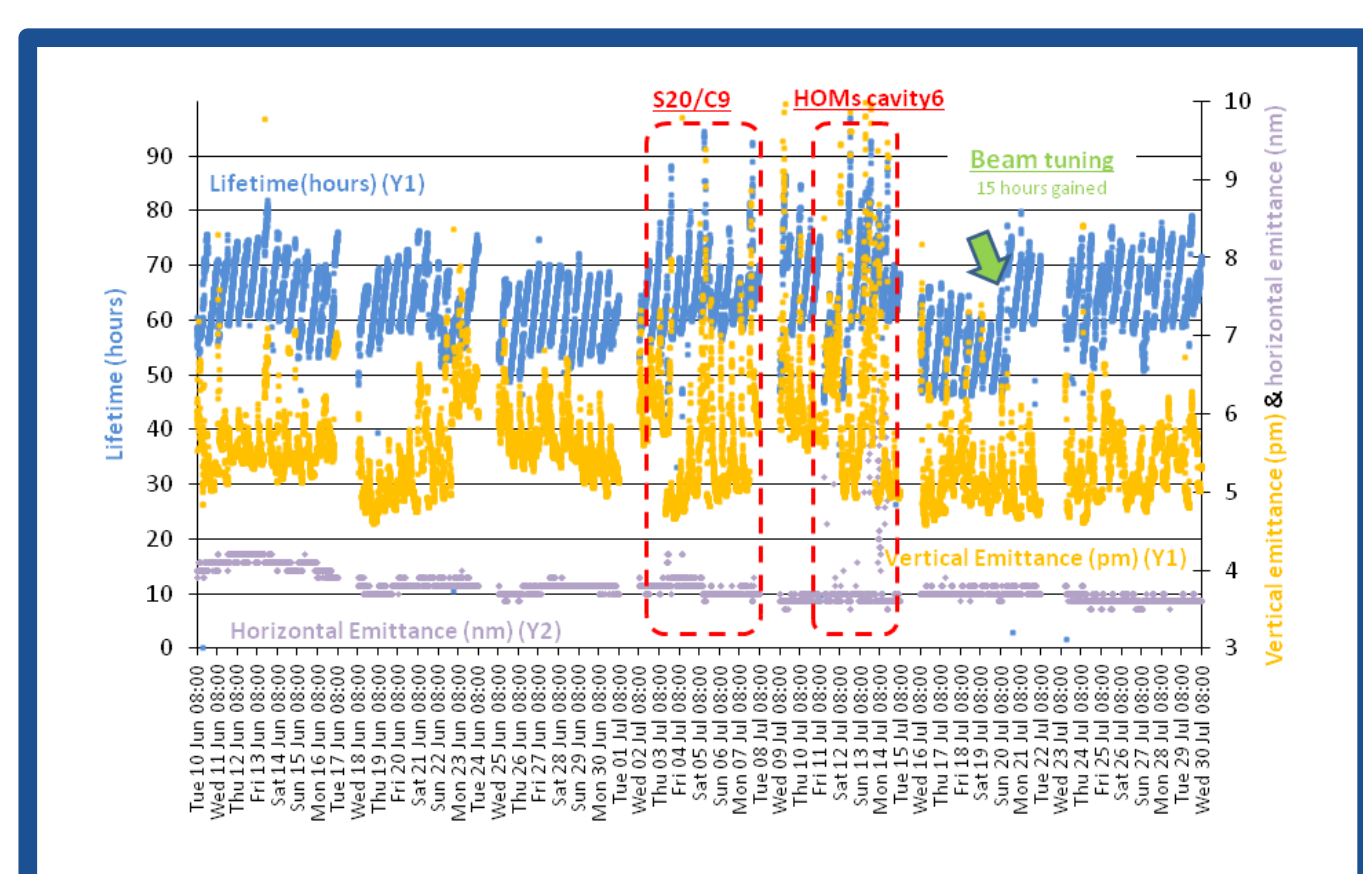




A pivotal role of the Operation Group is to communicate with the other groups within the Accelerator and Source Division, as well as the ESRF. It is the first port-of-call for ‘machine news’, disseminating information on scheduled interventions, machine parameters and reliability statistics, and week-by-week events. The Operation Group acts as a central unit, providing a global overview of the often very highly specialised activities of the other groups, to create a vision of the progress of the ASD as a whole and thus fostering team spirit within the Division. The poster below is one example of such communication, summarising the main events of a run. Posters such as these are displayed prominently near the Control Room and in the Division corridors to showcase the good quality work done by members of the ASD.



LIFETIME AND EMITTANCE

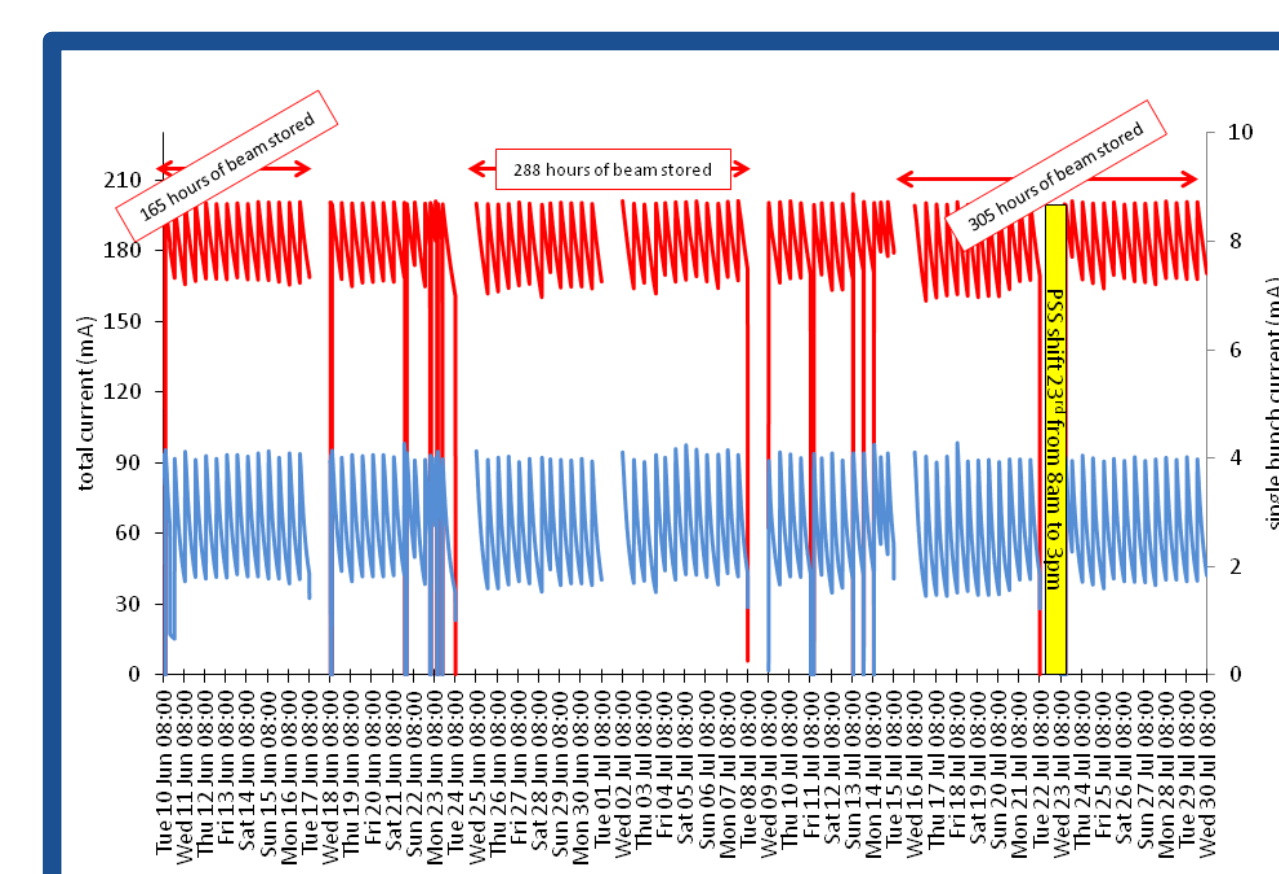
- Noisy readings on the S20–C9 corrector affected the lifetime in mid-July, as did HOMs from RF Cavity 6.
- Several beam tunings were carried out to recover the lifetime and decrease emittance.

RUN 3 AT A GLANCE...

Week number	24	25	26	27	28	29	30	TOTAL
Beam Availability	99.2%	95.2%	99.4%	99.5%	96.0%	99.4%	99.4%	98.33%
Machine availability	99.7%	95.5%	100.0%	100.0%	96.5%	100.0%	100.0%	98.86%
Number of trips with beam interruption	1	5	0	0	4	0	0	10
Mean Time between Failures	168.0	28.8	n/a	n/a	36.0	n/a	n/a	104.9
Number of trips attributed to phase I	0	3	0	0	4	0	0	7 = 70%

STATISTICS

- Over the run, the machine availability was over 98%, with three weeks with no failures. There was a total of 10 beam trips, of which seven could be attributed to Phase I equipment. The Mean Time Between Failures was 88.8 hours.



BEAM AND CURRENT PROFILES

- There were three long periods of stable stored beam over the run, one lasting 165 hours, the longest lasting 288 hours (due to two consecutive weeks of no failures) and the shortest lasting 144 hours.

WEEK 1

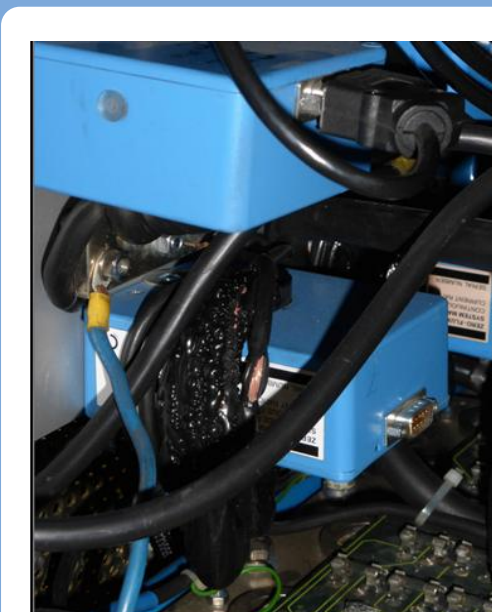
- The Rotabloc 6A was found to be damaged and removed, causing HQPS to be unavailable on 7th and 8th July.
- The SYRF wave form was improved to remove saturation.



Rotabloc 6A

WEEK 3

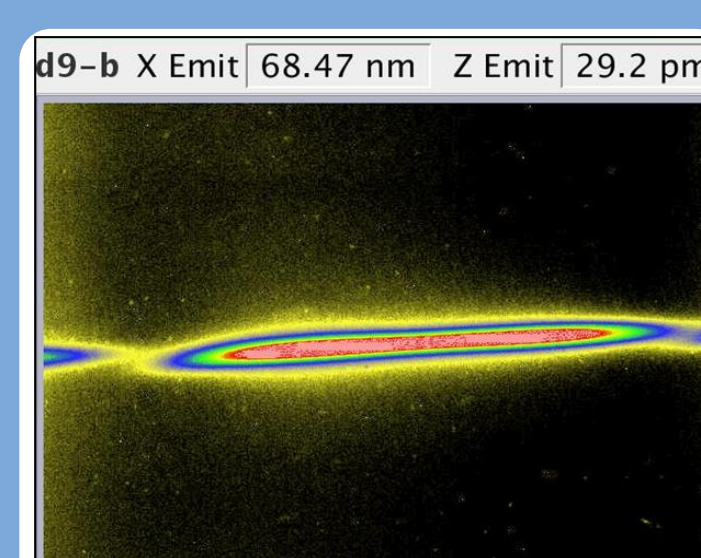
- No beam interruptions: 144 hours without failure!
- Magnet power supply failure on TL2 due to a burnt fuse in the auxiliary DCCT power supply. Replacement DCCTs were ordered.



TL2 magnet PS

WEEK 5

- The tuning angles of RF cavities 3 and 4 were found to be wrongly set, leading to Higher Order Modes and causing a beam trip.



Wrong tuning angle

WEEK BY WEEK...

Jun 2014	Jul 2014
1	1 MDT
2	2
3	3
4	4 7/8 + 1
5	5
6 Start-up	6
7 MDT	7
8 MDT	8 MDT
9 MDT	9
10	10
11 7/8 + 1	11 7/8 + 1
12	12
13	13
14 7/8 + 1	14
15	15 MDT
16	16
17 MDT	17
18	18 7/8 + 1
19	19
20 7/8 + 1	20
21	21
22	22 MDT
23	23 PSS
24 MDT	24
25	25
26	26 7/8 + 1
27 7/8 + 1	27
28	28
29	29
30	30
	31

WEEK 2

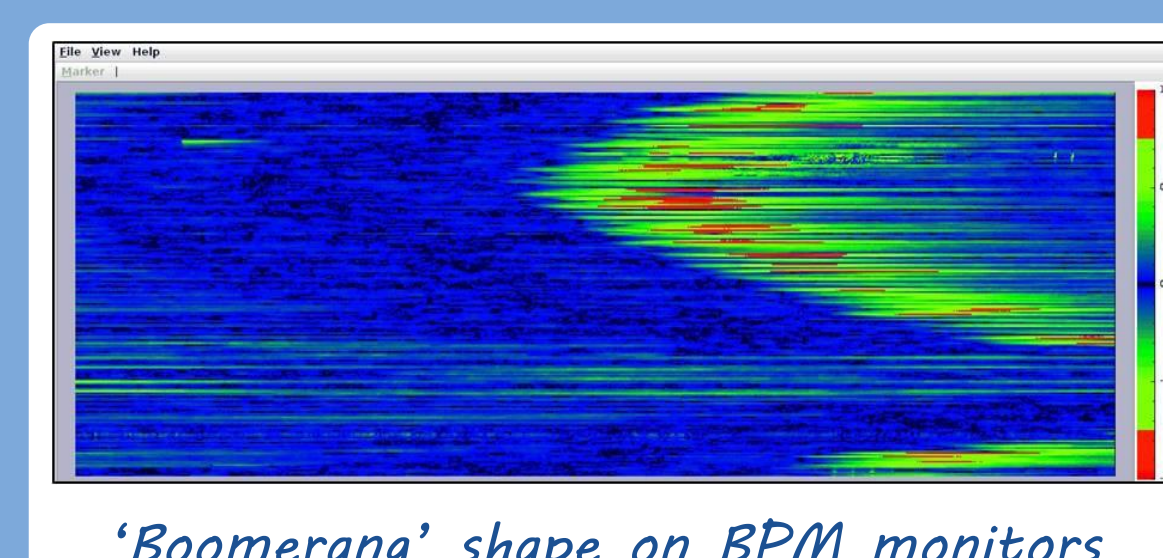
- A Mirage army plane hit two 225kV cables over Lake Monteynard, triggering the HQPS blackout protection. This disturbed a SRE pump, which triggered a cooling interlock.



Mirage army plane

WEEK 4

- No beam interruptions: 144 hours without failure for the second week running!

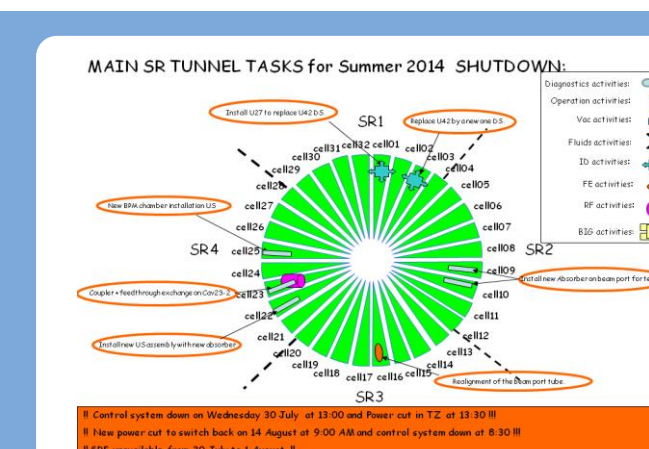


'Boomerang' shape on BPM monitors

- A 'boomerang-shaped' form observed on the BPM monitors during USM was linked to fluctuations in temperature of the SRE cooling system with the Fast Orbit Feedback on.

WEEK 6

- No beam interruptions: 144 hours without failure!
- Preparations were made for the summer shutdown.



Summer shutdown 2014

RUN NUMBER	WEEK NUMBER	TYPE OF FAILURE	DURATION		NUMBER	
			DURATION	PHASE I	TOTAL	PHASE I
RUN2014-03	WEEK1	TRA2: Human mistake	28	0	1	0
		Bm32: PSS 24 volts PS of PSS optical hutch failure (29mn)	99	0	1	0
		TRA1: pressure burst in the tube (24mn) in between 46mn				
	WEEK2	C23-cavity2: transistors failures SSA	129	129	1	1
		C23-cavity2: PLC interlock active (24mn)	77	77	1	1
		C23-cavity2: PLC interlock active (20mn) in between 33mn				
		Drop on mains due to HV cables cut by a plane	51	0	1	0
		C23-cavity2: Pressure burst	29	29	1	1
	WEEK3					
	WEEK4	USM postponed by 17mn due to PLL of FOFB	17	17	0	0
		SRE water leak in RF test stand. Electrical power cut in TZ56	220	220	1	1
	WEEK5	Cavity6 pressure peak due to HOM	24	24	1	1
		RF tuning @ refill	29	29	1	1
		longitudinal feedback tuning @ refill	23	23	1	1
	WEEK6					
	WEEK7					
		RUN2014-03	726	548	10	7

TYPES OF FAILURES

- A total of 12 failures occurred in three out of the seven weeks of the run. A quarter of were due to problems on C23 Cavity 2.

	17/06/2014	24/06/2014	01/07/2014	08/07/2014	15/07/2014	22/07/2014
07:00:00						
08:00:00	Interventions & restart	Interventions & restart	Interventions & restart	Interventions & restart	BEAM DYNAMICS	Interventions & restart
09:00:00					BRM/MLT measurements	
10:00:00						
11:00:00						
12:00:00	OPERATION Top-up tuning	RF Inspection of TRAI dumpers	DIAG Boomerang effect cause to SRE temperature variations	Misc + ACU Exchange of FOFB cable		RP ID17 ramping in current
13:00:00		Validation of operation	Electrical C23SSA system on conductance	RF lock on C23SSA	Interventions & restart	
14:00:00						
15:00:00						
16:00:00						
17:00:00						
18:00:00						
19:00:00						
20:00:00						
21:00:00						
22:00:00						
23:00:00						
	7/8 + 1	7/8 + 1	7/8 + 1	7/8 + 1	7/8 + 1	7/8 + 1
						PSS 23/07 am

MDT PROGRAMME

- Tests to improve injection efficiency in 16-bunch top-up mode were carried out during this run.