

The day the world came to CERN

Lucio Rossi, who led the task force charged with organizing the LHC 2008 open days, looks back on a memorable experience with the general public.

When I agreed to take on the challenge of organizing two open days just before the LHC tunnel was to close for the final stages of commissioning the machine, I was determined that they should provide an experience that people would never forget. Whether it was on 5 April for the families and friends of those who work at CERN, or on the following day for the general public, this would be the last chance to go underground, to see the immensity of the LHC and the four major experiments. The question was: would the people come?

The family and friends day had already proved a resounding success, with nearly double the expected number of visitors. Then I woke up to see what the public open day would bring. When I arrived at 7.30 a.m. people were already gathering in front of the Globe. At 7.45 a.m. the first phone rang in the Information and Coordination Centre (ICC) and from then on there was uninterrupted frantic activity, as ultimately some 53 000 people visited the 37 different points on show.

At 10.00 a.m. I began my first tour of the visit points, starting at the Meyrin site where I was delighted to see a large crowd in front of the central workshops and a long orderly queue of people waiting to visit the superconducting and cryogenic laboratories. In the LHC magnet workshops the crowds were smaller than at other locations, and the small groups of people were able to spend a long time with CERN personnel. They really seemed to appreciate being able to look at the magnet components and to almost touch them.

Out round the LHC ring I passed Point 4 when the “LH... C’est pas sorcier” dipole was there with Fred, the presenter of *C’est pas sorcier*, a popular science programme on French TV. A crowd of children and parents were watching his performance: a spectacle within the spectacle. Driving on to Point 5, I could see the long line of cars that reached back to the village of Cessy. The police had



The open day task force with an LHC dipole in front of the Globe of Science and Innovation.

already closed the road at 10.00 a.m. as there were many more people than the site could handle. I was comforted by the praise and thanks from the police for our organizational prowess, plus it was good to hear from them that everyone was well behaved and orderly. Thankfully, the huge crowds were not causing chaos: the decision we had made to move the public event from Saturday to Sunday was clearly a winner.

At midday, it was on to Point 6, the furthest from the main site, hidden in the woods between Versonnex and Bossy, with only the LHC machine and no experiment to see. I was amazed to find a 600 m line of cars parked on both sides of the road – it was then that I finally began to appreciate the magnitude of the day’s success. Here I watched children (of all ages) happily taking rides on the historical vehicles of CERN’s fire brigade.

By 12.30 p.m. I was back in front of the Globe for a live interview for TSR, the local Swiss TV station, against a background of long queues of patient people going to Point 1 and the ATLAS experiment. Then it was over to restaurant 2 on the main site for lunch with the two Nobel laureates, Georg Bednorz and Anthony Leggett, who had come to give talks about their work on superconductivity. They were really impressed that so many of the public had come to see the offspring of

their discoveries. As I left the restaurant I encountered people leaving the Computer Centre where they had found out about the wonders of the Grid; computer-fanatics had clearly found their paradise.

In the afternoon I set off on a second visit of the tour points, starting with Point 2 and the excellent exhibition on the ALICE experiment. Here I could appreciate the effort taken to care for the disappointed people, as the team explained the limited capacity of the visit, and even arranged for special visit days afterwards. At Point 4 I saw again the incredible success of the physics amusements, organized in collaboration with a team from ESRF–Grenoble. At Point 5 the flexibility of the volunteers at the CMS experiment had made it possible to successfully deal with 3500 underground visits, and at Point 6 people were still being encouraged to stay in the long queue – indeed, this one ended very late, with the last person taken by special bus at nearly 9.00 p.m. At Point 8 at about 6.00 p.m., the nearby supermarket car park was almost full of cars with people still trying to visit LHCb or the LHC tunnel. Back at Point 1 at 6.30 p.m. the queues were finally thinning out and I had to encourage and thank the first-aiders (volunteers from benevolent organizations from the Geneva area on the Sunday) who seemed almost frustrated by their non-activity; it’s difficult to do a job where success is measured in terms of having nothing to do.

On returning to the ICC after 7.00 p.m., I found that everyone was exhausted from answering telephone calls, but they were still explaining how to shut a visit point, or how to move the buses to rescue the remaining people. I was exhausted but satisfied, and could see that the others were also tired but happy. And that made it for me: that everywhere the volunteers from CERN were happy, having lived through a unique experience.

Lucio Rossi, CERN.

PHOTONIS Your partner for new detection solutions

CERN and PHOTONIS teamed up in the development of a unique HPD (Hybrid Photo Diode) for the LHCb experiment. The unique quality of this special HPD is its fast and high resolution single photon imaging capability. No other company in the world achieved this.

PHOTONIS. Photons matter.

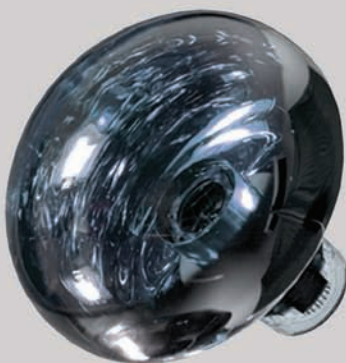
Picture Courtesy of CERN

Advanced Light Sensors



Hybrid Photo Diodes (HPD), PLANACON, Image Intensifier Tubes, MCP/PMT

Photo Multiplier Tubes



XP 2020, large area PMT's, Ultra-Fast Timing PMT's, High Quantum PMT's

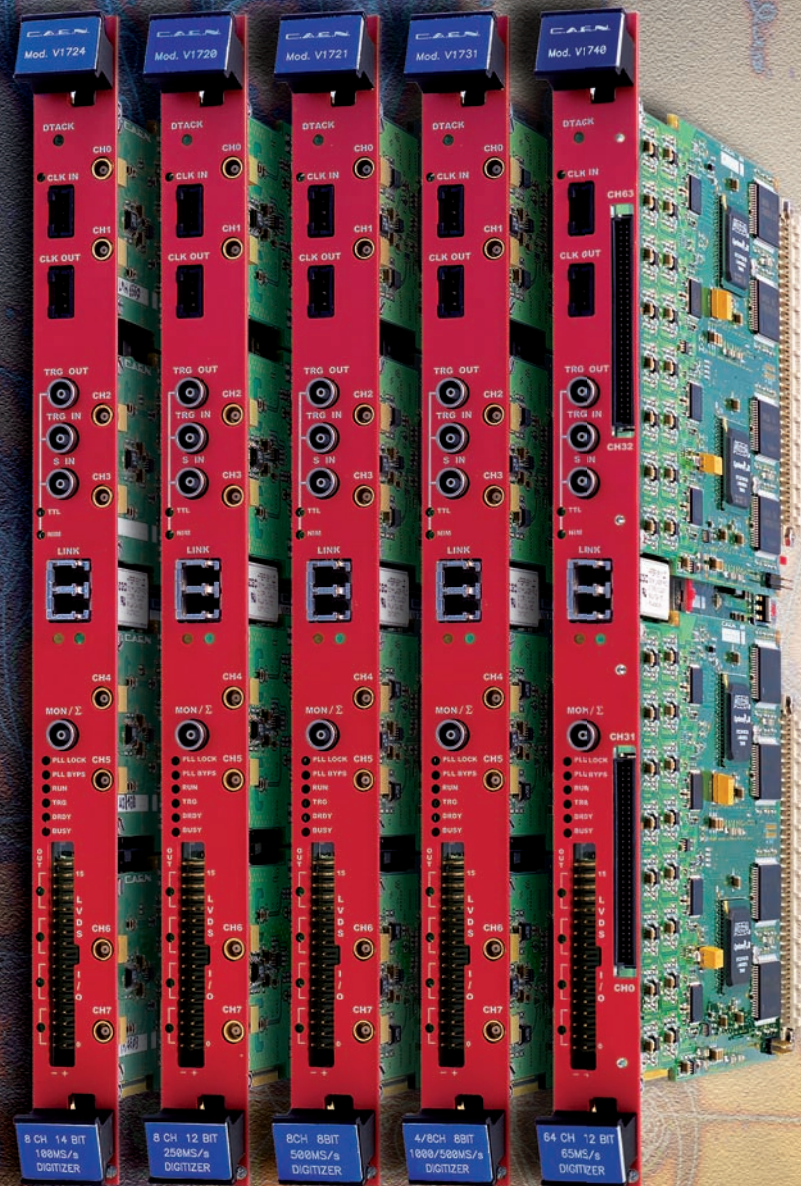
Extreme Detectors



High Neutron & Gamma Flux, Ultra-Fast Streak Tubes, Microchannel Plates for Extreme UV and X-ray optics, UV-detection and Imaging in Space.

Digitizer Family

- 8/12/14 bit digitizers
- 4/8/64 channels
- Up to 1 GS/s
- External/internal Trigger
- Multi-Board synchronisation
- Zero Suppression and Data Reduction algorithms
- Memory buffer: up to 10 MSample/ch, up to 1024 events
- Optical Link interface
- VME64X compliant
- Firmware upgradeable via VME/Optical Link
- Direct PC control of up to 8 digitizers using A2818 PCI/Optical link card
- Libraries, Demos (C and LabView) and Software tools for Windows and Linux



Small details  *Great differences*

Model	#ch	Res (bit)	Dynamic Range (Vpp)	Sample Rate (MS/s)	Bandwidth (MHz)	Memory (Sample/ch)	Max Recorded time (ms)
V1724	8	14	2.25 - 10	100	DC to 40	512K / 4M	~5 / 42
NEW V1740	64	12	2-10	65	DC to 30	192K / 1.5M	~3 / 21
V1720	8	12	2	250	DC to 125	1.25M / 10M	~5 / 42
V1721	8	8	1	500	DC to 250	2M	~4
V1731	8 - 4	8	1	500 - 1000	DC to 250 - 500	2M - 4M	~4