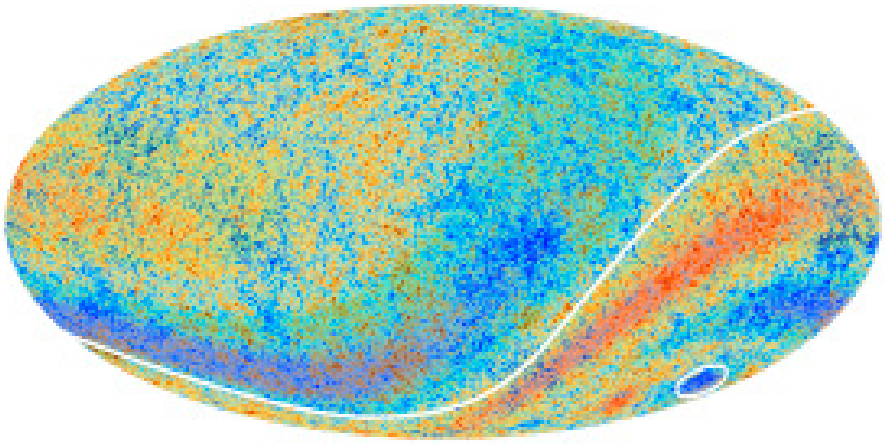
CERN Bulletin

Issue No. 27-28/2013 - Monday 1 July 2013
More articles available at: **http ://bulletin.cern.ch**

FATTER, OLDER AND SLOWER (AND WITH A TRIGGER)



Planck enhanced anomalies. Photo: ESA and the Planck collaboration.

The picture of the Universe has changed since the publication of the Planck results last March. One year earlier, the discovery of the Higgs boson had proved the existence of fundamental "scalar fields" – the most likely reason for why the Universe evolved from the Big Bang to what we observe today. At a workshop organized by the CERN Theory Unit, cosmologists and particle physicists discussed common issues and explored new avenues for better collaboration.

"Planck has not been kind to the Universe," says Daniela Paoletti, a member of the Planck collaboration and a researcher at the Italian National Institute for Astrophysics in Bologna. "We know now that it is fatter because it contains more dark matter than what we had previously calculated; it is also a few hundred thousand years older and is expanding at a slower pace."

What is the Universe really made of? Why are galaxies distributed the way they are? What did dark energy originate from? What is the role of the Higgs boson in the formation and evolution of the Universe? Will we be able to observe the primordial gravitational waves? These were some of the questions on the table for scientists participating in the "Cosmology and Fundamental Physics with Planck" workshop held at CERN from 17 to 28 June.

The venue might have seemed a bit unusual a few years ago when the two extremes – particle physics that studies the infinitely small using huge accelerators on Earth and cosmology that studies the infinitely large with satellites orbiting at a distance of over one million km from the Earth – were considered almost like different disciplines. "We observe Nature from two different angles and with different instruments but the recent results confirm that we are looking together in the same direction," says Julien Lesgourgues of CERN's Theory Unit who is a member of the Planck collaboration and was one of the workshop's organisers. "The main goal of this initiative is to stimulate interaction between participants. To this end, the programme of talks is light, and several rooms and office space are made available for discussions."

(Continued on page 2)

SAFETY, QUALITY, SCHEDULE: THE MOTTO OF LS1

The LHC's first long shutdown, LS1, is a marathon that began on 16 February and will take us through to the beginning of 2015. Just as Olympic marathon runners have a motto, Citius, Altius, Fortius, so the athletes of LS1 work to the mantra of Safety, Quality, Schedule. Four months into LS1, they have settled into their rhythm, and things are going to plan.

(Continued on page 2)

In this issue

Published by:
CERN-1211 Geneva 23, Switzerland
Tel. + 41 22 767 35 86 ***Printed by:*** *CERN Printshop*

ISSN: *Printed version: 2077-950X*
Electronic version: 2077-9518

A word from the DG

(Continued from page 1)

SAFETY, QUALITY, SCHEDULE: THE MOTTO OF LS1

The first task of LS1 was to bring the LHC up to room temperature - this was achieved in just 10 weeks. In parallel, preliminary tests for electrical quality assurance and leaks revealed essentially the level of wear and tear we'd expect after three years of running. One slightly anxious moment came when we looked at the RF fingers – the devices that ensure electrical contact in the beam pipes as they pass from one magnet to the next. Those of you with long memories will recall that before start-up, some of these got damaged at warm-up. The good news today is that with all eight sectors tested, only two RF finger devices have sustained damage.

Once each sector of the machine reached room temperature, the teams could start opening up the interconnections layer by layer to reach the splices of the superconducting cables where the bulk of the work is needed. The main job for LS1 is to repair any splices that have an electrical resistance that would prevent the LHC from reaching higher energies, and to add shunts and an improved insulation and restraint system at every single one of the 10,170 main splices around the ring.

That work is well under way. Thanks to collaborations with teams from Athens and Wroclaw, along with support from JINR Dubna, the outermost layers of interconnects equating to almost four sectors are open. This allows the next teams, from Pakistan and field support units, to cut the sleeves, giving access to the busbar lines themselves. This process is proceeding at the required rate of over 10 interconnections per day. A significant milestone was reached on 24 April when the first shunt was soldered into place. Today, some 10% of the shunt work is complete.

There are many other tasks to be performed in LS1, including the installation of more pressure relief devices in the four sectors that were not done in 2009, the exchange of a number of magnets and consolidation of the feedboxes that take electricity into the LHC. There's also work on our electrical substations on the Meyrin and Prévessin sites, as well as the consolidation of the entire upstream injector chain. All of this work is on schedule. You can follow progress on weekly-updated dashboards at http://cern.ch/ls1dashboard, or by looking at the screens around the site where LHC page one is displayed when the machine is running. *Safety, Quality, Schedule*: with these three things always in mind, and with the Council's approval last week of the 2014 budget, we're on target to cross the LS1 finish line by the end of 2014, ready for a 2015 LHC re-start.

Rolf Heuer

FATTER, OLDER AND SLOWER (AND WITH A TRIGGER)

(Continued from page 1)

One of the main discussions concerned the role of the Higgs boson in the evolution of the Universe. The Planck results released last March confirmed that the most likely theory to describe the initial moments of the Universe is a model in which a scalar field – a field whose value is the same in whatever direction we measure it – triggers the very rapid and powerful expansion of the early Universe known as "inflation". The *Bulletin* has already discussed the possibility of the Higgs boson – the first fundamental scalar field discovered in Nature – being the *inflaton*, and a large community of scientists is not new to this question. "The current data doesn't allow us to figure out whether the Higgs boson and the inflaton are two distinct particles or the same one. But it is certainly compatible with the idea of Higgs inflation," says Julien Lesgourgues.

The best of Planck's results might still be to come in 2014 when, with the second data release, scientists will have also explored the polarisation properties of the Cosmic Microwave Background (CMB) radiation, the echo of the Big Bang. "The effects of the primordial gravitational waves, those that were generated during the first moments after the Big Bang, are imprinted in the radiation we observe today, and Planck could be able to detect them," says Martin Kunz, a cosmologist at the University of Geneva and one of the participants in the workshop.

This intense workshop was an excellent opportunity for scientists from both extremes of the research spectrum to exchange their views and to plan future collaboration. The common enthusiastic feeling they took home with them was nicely expressed by Benjamin D. Wandelt, a researcher at the *Institut d'Astrophysique* de Paris, who said: "The last twelve months have been very exciting for cosmologists and particle physicists. We are actually experiencing what we were dreaming of when we were at university."

Antonella Del Rosso

LS1 REPORT: ALL ACCORDING TO SCHEDULE

Last week, six magnets were replaced in LHC Sector 1-2. At Point 2, however, the maintenance work on the cooling towers combined with the very hot weather complicated the transport of the magnets as the increased humidity caused pools of water to form on the ground.

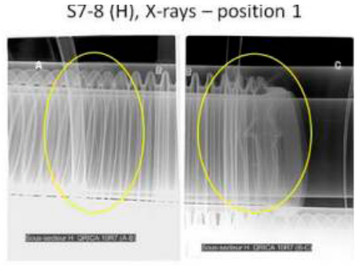
The interconnection train is advancing at an excellent pace. In Sector 5-6 the interconnection team has already begun re-soldering the sleeves of the M lines, but the team responsible for the consolidation of the electrical feedboxes (DFBAs) has had to overcome a problem associated with the tooling used to prepare the surfaces of the busbars in the DFBAs, which was not quite up to the job. The tools and procedures were modified and, happily, the problem was quickly resolved. The new tooling has just been validated, and the teams will be able to resume work on the DFBAs next week.

Two leaks had already been identified in the cryogenic distribution lines (QRL) of Sectors 4-5 and 7-8. Recent leak tests performed by the vacuum team have revealed a further five leaks in Sectors 3-4, 4-5, 6-7, 7-8 and 8-1. The X-rays (see picture 1) show that they all involve the same component, for which we have spares, and the faulty components are being analysed.

The R2E work is also progressing at a good pace. All the power converters at Point 1 have been removed, and installation of the new electrical equipment is about to get under way. At Point 5, drilling is in progress between two LHC structures to allow the passage of four 14-metre sleeves measuring 40 cm in diameter (see picture 2). Although the risk of encountering a pocket of water seems to be excluded, the limited space in which the work has to be performed makes this a technically difficult operation.

On the injector side, the ventilation teams have removed the last two ventilation units from the PS this week. At the SPS, 15 of the 16 magnets have already been replaced while, for radioprotection reasons, the final one will not be replaced until the end of October. The work to replace the 18 kV transformers has also begun. Their transport during the nights of 24, 26, 27 and 28 June required the overhead tram lines to be disconnected under the supervision of the TPG and the Geneva police.

The cabling campaign, involving a total of no fewer than 700 km of cables (!), is also progressing quite quickly, in spite of repeated cable thefts in recent weeks.



Picture 1: X-rays of the cryogenic distribution lines help identify the causes of leaks.

Picture 2: drilling operations underway at UJ56 of the LHC.

Anaïs Schaeffer

CHRONICLING A JOURNEY OF DISCOVERY

This year ALICE celebrates 20 years of exploration of the world of strong interactions and the Quark Gluon Plasma. To mark the anniversary, the collaboration has created a timeline that chronicles the experiment's history from 1993, when the original letter of intent was submitted, to 2013, when the first proton-lead run took place.

The ALICE timeline examines various key aspects of the experiment's history, including the connection between ALICE and other heavy ion experiments. Over the years, the experiment has adapted along with developments on heavy ion physics. ALICE has added several new components to the detector following new experimental findings. The timeline also links the experiment's history with the theoretical advancements in the field of QCD and the growing understanding of strong interactions.

But let's not forget the human element of the experiment's history. It has taken a lot of hard work to build the detectors, to develop software for collecting and analysing the data, and to ensure the smooth running of the machine. The timeline brings the physicists and engineers who have made ALICE possible into the spotlight.

Visit **www.cern.ch/alice20** for an exciting journey of discovery!

Panos Charitos

27 SEPTEMBER 2013: FAST FORWARD AND REWIND TO OUR *ORIGINS*

Origins is the EU co-funded project that will celebrate the 2013 Researchers Night on 27 September. For the first time, a webcast produced at CERN, UNESCO in Paris and the National Institute for Astrophysics (INAF) in Bologna, Italy will bring cosmologists and particle physicists to the stage. They will take us on a journey both back to the origins of our Universe and forward to the future scientific achievements that we expect to unveil its mysteries.

"The two infinities have never been so close" reads the motto of *Origins*, the international project led by the CERN Communication Group and selected by the European Union to receive funds under the seventh Framework Programme. "With the discovery of the Higgs boson at CERN in 2012 and the results on the Cosmic Microwave Background radiation recently published by the Planck collaboration, researchers have made progress towards solving some of the most profound mysteries of the Universe we live in. With *Origins* we want to celebrate the thousands of scientists who are finally harvesting the fruit of their research with such amazing achievements," says the *Origins* project leader Paola Catapano, a member of the CERN Communication Group.

The project will feature "speed-dating" meetings between scientists and the public, and a show broadcast live on the web in English from Geneva, in French from Paris and in Italian from Bologna. "The three locations will be virtually connected throughout the show but each venue will have different guests and will organise satellite events for the local public," says Paola.

The *Origins* show will see the participation of Nobel laureates as well as young researchers involved in projects carried out at CERN, ESA and ESO and at national institutes such as INAF, which is co-ordinating the events in Italy. "*Origins* will be the main event organised for the Researchers Night in Bologna," explains Luca Valenziano, a cosmologist at INAF and the 2013 event coordinator for Italy. "We will welcome renowned scientists from different fields to the stage to talk about their present and future research projects. Several artistic interludes, including a performance by a youth orchestra from Leipzig, will make the webcast even more enjoyable. The public will be involved throughout the programme and will take part in discussions with a scientific panel in person and also through the social media that we have set up for the event."

The Paris event promises to be no less exciting, with the whole show to be held at UNESCO's headquarters. "We will involve our permanent delegations as well as scientists and artists to make a great event, which will feature international scientific cooperation amongst researchers and the importance of science education and its cultural and emotional dimensions," says Sonia Bahri, Chief of Science Policy and Reform Section, Natural Sciences Sector at UNESCO.

Antonella Del Rosso

FROM EUCARD TO EUCARD-2

The one word that best describes the spirit of the EuCARD '13 event that took place from 10 to 14 June at CERN is "collaboration". The event brought together more than 180 accelerator specialists from all over the world to celebrate the conclusion of the EuCARD project and to kick off its successor, EuCARD-2.

EuCARD-2 brings a global view to particle accelerator research in order to address challenges for future generations of accelerators. The project officially began on 1 May 2013 and will run for four years. With a total budget of €23.4 million, including an €8 million EU contribution, it will build upon the success of EuCARD and push it into an even more innovative regime. EuCARD-2 aims to significantly enhance multidisciplinary R&D for European accelerators and will actively contribute to the development of a European Research Area in accelerator science. This will be accomplished by promoting complementary expertise, cross-disciplinary fertilisation and a wider sharing of knowledge and technologies throughout academia and with industry.

It is worth noting that the objectives of EuCARD-2 differ somewhat from those of EuCARD. First of all, EuCARD-2 focuses more on network activities and will have four additional work packages dedicated to them*. Secondly, the European Commission has drawn attention to the importance of close collaboration with industry. The aim is to open up new opportunities for applications in the fields of medicine, industry, security and energy that could benefit society as a whole. EuCARD-2 introduces two application-oriented networks – "Innovation" and "Accelerator Applications" - in order to support this knowledge transfer.

Last but not least, EuCARD-2 further extends the scope of the EuCARD consortium. The consortium has attracted a large variety of partners, conscious of the beneficial contributions made by small labs and universities to EuCARD. Among the 40 participants representing 14 countries, the largest number are universities, followed by accelerator laboratories, scientific research institutes and industry. While the initial involvement of industry remains small (only one partner), project coordinator Maurizio Vretenar has already voiced his intention to attract more industrial partners via events such as "Academia meets Industry".

Regarding transnational access, EuCARD-2 includes two activities aimed at opening three advanced accelerator test facilities to new European partners: the Ionisation Cooling Test Facility at STFC, HiRadMat at the SPS at CERN, and the Magnet Test Facility at CERN. Four further hardware-oriented Joint Research Activities (JRA) complete the EuCARD-2 project. At this crucial time for particle accelerators, the activities will address the technological limits of current machines with regard to magnetic fields, RF gradient and technologies, and collimator materials. One JRA will focus on plasma-wakefield acceleration as an alternative to the present approaches.

However, there are a few challenges ahead. Although the number of work packages has increased, the budget has followed the opposite trend. Moreover, in a context of economic gloom, accelerator R&D tends to be a second priority for large laboratories. Collaboration has therefore been defined as a key element for the success of EuCARD-2. It will be promoted between different work packages in order to create synergies, and also between scientists and industry, universities and non-EU partners.

"And now it's time to set sail for a new adventure!" said Maurizio Vretenar, concluding the EuCARD '13 annual meeting and wishing all the participants success in their research.

** Six EuCARD-2 work packages will focus on network activities: Innovation, Energy efficiency, Accelerator applications, Extreme beams, Low-emittance rings, Novel accelerators.*

Mathilde Chaudron, CERN, on behalf of the EuCARD-2 consortium

INTERVIEW WITH PETER JENNI

Peter Jenni, former spokesperson of the ATLAS Collaboration, discusses the challenges and satisfactions from his long-standing career in high-energy physics in this month's PH Newsletter.

Following a long career at CERN that dates back to 1970 (ranging from Summer Student to Fellow and to Staff), Peter Jenni recently retired after about 40 years marked by exciting discoveries (from the first two-photon production of eta-prime at SPEAR to the Higgs boson at the LHC). Peter was involved in the LHC from its very beginnings and was spokesperson of the ATLAS Collaboration until February 2009.

Peter Jenni will continue working with ATLAS as a guest scientist with the Albert-Ludwigs-University Freiburg, and when he's not travelling he still spends most of his time in his office in Building 40, where he met with interviewer Panos Charitos.

Panos Charitos: When did you first arrive to CERN?

Peter Jenni: I first came to CERN as a Summer Student in the very early 70s, following a period during which I was working as a member of the University of Bern Group for my diploma thesis on an experiment at the SC. It was an experiment that produced muonium atoms in a magnetic bottle. Later, I returned as a Fellow in the group of Massimiliano Ferro-Luzzi working on my PhD thesis, which I finally defended at ETH Zurich in 1976.

My thesis focused on very small angle elastic scattering in the Coulomb-nuclear interference region. We were looking at the scattering amplitude and its real part and applied the results in dispersion relations, predicting the cross sections at very high energies. At this point, I started getting interested in high energy physics.

I was motivated to come as a Fellow by Charles Peyrou, the division leader of the TC department and a guest professor at the University of Bern. I was often the only student in the lectures that he used to deliver on Saturday morning at the University of Bern.

After finishing my PhD I joined the ETH Zurich group working in the ISR (R702) experiment. The spokesperson was Pierre Darriulat and there I also met Burton Richter who at that time was on a sabbatical from SLAC. He was interested in studying electron-muon coincidences as a first signature of open charm production. Therefore the Zurich group built a small muon spectrometer with the help of CERN to complement the electron arms of R702. At that time, the J/ψ was known but an open-charm quark had not been observed yet. Hence, the idea was to look for open-charm since, when a charm quark pair is produced, an electron -muon pair can appears sometimes in the decay chain giving a unique signature.

To continue reading the PH Newletter's interview with Peter Jenni, go to **http://ph-news.web.cern.ch/content/interview-peter-jenni-4**

PH Newsletter

HIGH-TECH SOLUTIONS FOR THE ENVIRONMENT

Four solar-powered compactor dustbins have recently been installed at various locations around the Meyrin site. These compact systems fitted with photovoltaic panels compress waste; their increased capacity compared to a standard dustbin reduces the number of collections and the associated CO_2 emissions.

Four strange "machines" have recently appeared on the CERN site. Made by the company Big Belly, these intelligent solar-powered mini-compactors fitted with the latest energy-saving technology are perfectly aligned with the Laboratory's policy of minimising the impact of its activities on the environment.

With their ability to hold up to four times more waste than the average bin, they need to be emptied less frequently, significantly reducing the CO_2 emissions associated with collection and transport. What's more, the integrated software monitors the fill level of each bin in real time and sends an e-mail or text when it needs emptying, thus optimising collections and saving costs.

The bins, "decorated" by CERN's Graphic Design service, have been installed at the Globe, on the terrace of Restaurant No. 1 and in the pedestrian area in front of Buildings 40 and 42. Three are for ordinary household rubbish, while the fourth is for PET (bottles made of recyclable plastic).

"These first four bins will serve as a pilot. Based on the results, we'll decide whether it makes sense to install further bins," explains Martine Auerbach of the GS Department. The solar-powered bins are part of the an approach by the Organization that uses innovation to preserve the environment. So, now all we need to do is sort our waste and let the compactors do their job.

Gabrielle Thomas

NEW ARRIVALS

On Tuesday 25 June 2013, recently recruited staff members and fellows were welcomed in the framework of the second part of the Induction Programme.

HR Department

SCIENTIFICALLY ARTISTIC- ARTISTICALLY SCIENTIFIC

From 5 to 7 June, two Austrian high-school classes met in Graz (Austria) for the *Art&Science@School* project. Launched by Michael Hoch from the CMS collaboration, the programme aims to show them another face of science through art.

Michael Hoch (centre) and the students from the BORG and GIBS schools (Austria) at the Joanneums Viertel Museum in Graz.

On the first day, 62 teenagers from the BORG and GIBS schools attended a masterclass, where scientists from the CMS institute HEPHY (Vienna) provided information on colliders and detectors at CERN and explained the principles of high-energy physics. The students even had the chance to analyse real CERN data sets to "find" new particles. They also discovered the close link between science and art over the centuries and how contemporary artists visualise modern science and technology today.

On the second day, under the supervision of art teachers, the students created an artwork from idea and concept to realisation and presentation. "I was completely amazed by the standard of the four artworks and by their diversity," says Michael Hoch. "I really didn't expect such original and high-quality productions. The students really put their hearts into producing these pieces." The artwork was created and presented at the Joanneums Viertel Museum in Graz, which later hosted a successful private viewing of the work. After the exhibition, the artworks were put on display in the schools.

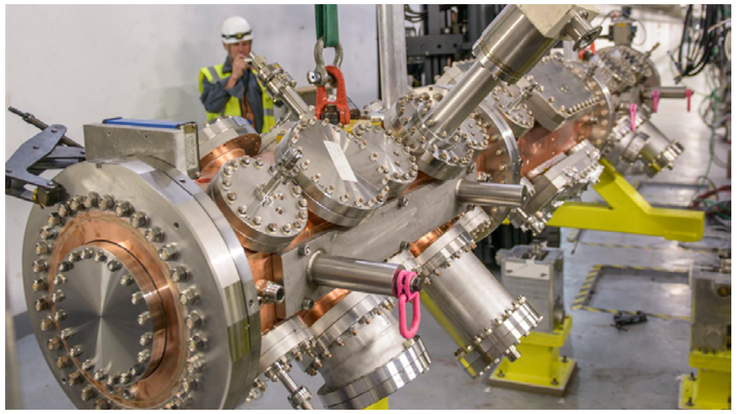
Anaïs Schaeffer

LINAC4: THE FINAL ASSEMBLY STAGE IS UNDER WAY

The Linac4 radiofrequency quadrupole (RFQ) module was installed at the accelerator test-stand in Building 152 last August. After an assembly phase and tests that concluded last March with the acceleration of a hydrogen beam to 3 MeV, the module has just been permanently installed in the new Linac4 tunnel (Building 400). The installation of the MEBT (Medium Energy Beam Transport) will begin shortly, followed by the start of the first Linac4 commissioning phase.

To find out more about the Linac4 RFQ module, read the previous Bulletin *articles published in Nos. 21-22/2010 and 35-36/2012.*

CERN Bulletin



Computer Security

WHY CAN'T I SUE MY SOFTWARE PROVIDER?

Imagine buying a new car, fixing its number plates on and driving it off to the autobahn in order to test whether the 250km/h top speed on the speed meter is genuine. However, there's too much traffic,and you have to slow down. You hit the brakes but they don't respond. You break through the crash barrier, enter a field and manage to stop the car. You are not hurt, but the car is a write-off…

Fortunately, you will not lose out. A car's safety is the responsibility of the manufacturer and you can sue them for compensation. Even worse for them, if it turns out to be a design flaw they will need to recall and fix all the cars of that model – at their expense. Thus, legal requirements and pressure from clients and automobile clubs ensure that cars are reliable and safe.

Now, imagine you've just downloaded a new web browser. You install it on your laptop and connect to the Internet. But your new browser is flawed, and malicious attackers quickly exploit its vulnerability. They manage to hack your Amazon, e-bay and Paypal accounts and go off shopping with your money. You might not be the only one concerned: hundreds of thousands of other people may be affected, and millions of dollars of losses may be incurred. But when you notify the corresponding software provider, you get nothing but silence. Only after a few months, after security companies and the media have repeatedly reported the security risks associated with the browser, does the provider issue a short statement and acknowledge the facts.

As I expect my car to be safe, I also expect the software I use to be secure. Unfortunately, the latter seems not to be the case. So who has to do the due diligence when using/providing software applications? Why is it that security is not handled like safety? Why can I sue my car manufacturer but not my software provider?

I believe the roots of this mismatch lie in the fact that many software packages are flawed from design, that many technologies have valid use cases but can at the same time be misused and that many companies just don't care. Money and legislation are the best incentives for making reasonably secure software. But there is no regulation (yet) requiring Adobe, Apple, Microsoft or Siemens to make security a priority.

Microsoft has learned its lesson, having been clobbered in the past due to its insecure pre-Windows XP SP2 operating system, and is actively pushing for a secure software development life cycle. Money was the driving force. Apple seems to do well in providing secure software but its communication when dealing with new vulnerabilities leaves much to be desired. Siemens learned its lesson after the Stuxnet attacks against its PLCs and is now reviewing how to thoroughly deploy security as another development criteria.

So, we are still left with the consequences. We are the ones who bear the costs of their vulnerabilities. We are obliged to take protective and detective measures. We have to carry the costs of patching and anti-virus software. We have to do due diligence… Image if you had to do the same for your car! So, do we need regulations and laws to force software vendors to provide better, inherently secure code and protected devices? We are eager to hear your opinions. Write to us at **Computer.Security@cern.ch**.

By the way, what is a good incentive for you to provide secure code? Remember our *Bulletin* article on "A Short Tale of the Black Sheep of –ITY" and that security has to form an integral part of the overall picture in the same way as availability, functionality, maintainability and usability. More secure code means fewer interventions to fix and patch problems, thus increasing availability and improving maintainability. More secure code means better control of user interfaces and user inputs, thus enhancing usability and functionality. If you would like to learn how to do better, contact us at **Computer.Security@cern.ch** for consultancy or a dedicated full-scale security audit, or check out our dedicated training sessions on secure coding scheduled for September 2013:

- *Secure coding in C/C++ (1 day)*
- *Secure coding in Perl (1 day)*
- *Secure coding in Python (1 day)*
- *Securing Java Applications (1 day)*
- *Securing Java and Web Applications (1 day)*
- *Securing PHP Web Applications (1 day)*
- *Developing secure software (4 hours)*

For further information, please contact the Computer Security Team or check out our website: **security.web.cern.ch**

Computer Security Team

Ombuds' Corner

LET'S NOT CONFUSE STUDENTS AND FELLOWS WITH MISSING STAFF

One of the main missions of CERN is education. Several programmes are dedicated to training students. Others, like the Fellowship programme, offer graduates to start a career and become professionals in their fields. All these young and fresh people provide very valuable contributions to our Organization.

At the same time, it is important to remember that they (especially the students) are here to learn from our professional staff for their future career. This is the correct exchange: they bring their dedicated work to our projects and they gain experience by working with our staff. There's no better way to learn than on-the-job.

However they should not be considered as missing staff, with the exact same requirements expected from the CERN staff. Potential missing staff in some areas is a separate issue, and educational programmes are not designed to make up for it. On-the-job learning and training are not separated but dynamically linked together, benefiting to both parties.

In my three years of operation, I have unfortunately witnessed cases where CERN duties and educational training became contradictory and even conflicting. This has particularly been the case when the requirements of the CERN supervisor conflict with the expected time dedicated to a doctoral student's thesis. Some students would become hostages, torn between their CERN supervisor and their thesis advisor, usually located in his/her remote Institute. This is a very uncomfortable situation for students, which can even endanger his/her thesis. The message would then be given to both sides: the CERN supervisors should not consider students or fellows to be their missing staff, and Institutes are required to keep a close contact with their own students and exercise continued supervision of their work. In my mind, the success of the CERN educational programme requires both sides.

Conclusion: The realization of projects and education, for everyone's benefit, go together. Hand in hand, future scientists, engineers, technicians and administrative members collaborate for the best research.

As a reminder, all previous Ombuds corners can be accessed in the Ombuds blog:
ombuds.web.cern.ch

Vincent Vuillemin

Library

FACILITATING ACCESS TO A PROGRAM FOR RADIATION SHIELDING - THE LIBRARY CAN HELP

MicroShield® is a comprehensive photon/gamma ray shielding and dose assessment programme. It is widely used for designing shields, estimating source strength from radiation measurements, minimising exposure to people, and teaching shielding principles.

Integrated tools allow the graphing of results, material and source file creation, source inference with decay (dose-to-Bq calculations accounting for decay and daughter buildup), the projection of exposure rate versus time as a result of decay, access to material and nuclide data, and decay heat calculations.

The latest version is able to export results using Microsoft Office (formatted and colour-coded for readability). Sixteen geometries accommodate offset dose points and as many as ten standard shields plus source self-shielding and cylinder cladding are available.

The library data (radionuclides, attenuation, build-up and dose conversion) reflect standard data from ICRP 38 and 107* as well as ANSI/ANS standards and RSICC publications. Custom materials are based on ANSI/ANS-6.4.2-2006. Exposure dose and fluence rates and the ICRP 51 and ICRP 74 results can be customized on the dose-equivalent report.

The CERN Radiation Protection Group is intending to buy the software. In order to facilitate this operation, the Library wishes to gather expressions of interest in this product. Please contact us at **library-serials@cern.ch**.

**ICRP Publication 107 (Nuclear Decay Data for Dosimetric Calculations, Annals of ICRP Volume 38, No. 3, 2008) provides an updated nuclear library containing 1252 radionuclides of 97 elements. ICRP Publication 107 supersedes ICRP Publication 38 (1983) and both libraries along with the original Grove Library are provided with the software.*

CERN Library

Take note

GROUP LIFE INSURANCE

The CERN Administration wishes to inform staff members and fellows having taken out optional life insurance under the group contract signed by CERN that the following changes to the rules and regulations entered into force on 1 January 2013:

- The maximum age for an active member has been extended from 65 to 67 years.
- The beneficiary clause now allows insured persons to designate one or more persons of their choice to be their beneficiary(-ies), either at the time of taking out the insurance or at a later date, in which case the membership/modification form must be updated accordingly. Beneficiaries must be clearly identified (name, first name, date of birth, address).

The membership/modification form is available on the FP website: **http://fp.web.cern.ch/helvetia-life-insurance**

For further information, please contact:

Valentina Clavel (Tel : 73904)
Peggy Pithioud (Tel : 72736)

2013 BIKE SAFETY CAMPAIGN: OUTCOME AND FEEDBACK

From 3 to 17 June, the HSE Unit, in collaboration with the Reception and Access Control Service, led a campaign targeting CERN cyclists.

In exchange for vouchers distributed by the security guards, 195 persons received a helmet and a reflective vest as well as documents on safety issues (ex: how to adjust one's safety helmet properly; how to avoid blind spots; what is the required equipment for bikes and bike users, etc.).

These persons also took part in a survey that contained questions on their cycling habits and level of knowledge on bike safety issues. It appeared that, for instance, 43% of the participants were aware that wearing a reflective vest is mandatory whenever visibility is poor (in France). 95% gave particular attention to the need to protect their heads (by assuming that wearing a helmet is either "mandatory" or "highly recommended"). The HSE Unit provided the participants with further information when distributing the equipment.

The campaign was a response to a request by the CERN Directorate, which set bike safety as one its 2013 priorities. The HSE Unit is grateful to all the participants who came with such warm smiles, constructive input and a strong commitment to pay even greater attention to road safety.

HSE Unit

SUMMER SEASON | CAFETERIA CLOSURES

Please note the following cafeteria closures over the summer season:

Bldg. 54 closed from
29/07/2013 to 06/09/2013.
Bldg. 13: closed from
13/07/2013 to 06/09/2013.
Restaurant No. 2, table service
(brasserie and restaurant): closed from
01/08/2013 to 06/09/2013.
Bldg. 864: closed from
29/07/2013 to 06/09/2013.
Bldg. 865: closed from
29/07/2013 to 06/09/2013.

COLLIDE@CERN: ON 4 JULY, DON'T MISS THE PUBLIC LECTURE BY BILL FONTANA, CERN'S NEW ARTIST IN RESIDENCE

Collide@CERN presents "The Universe of Sound"

Sound sculptor, Bill Fontana, the second winner of the Prix Ars Electronica Collide@CERN residency award, and his science inspiration partner, CERN cosmologist Subodh Patil, present their work in art and science at the CERN Globe of Science and Innovation on **4 July 2013 at 7 p.m.**

More information on **bulletin.cern.ch**

Training & Development

"USE OF FIRE EXTINGUISHERS" COURSE: A HOT TIP FOR YOUR SAFETY!

The "Use of fire extinguishers – live exercises" course was introduced in conjunction with the Fire and Rescue Service and the HSE Unit at the start of 2012. Since then, more than 800 people have been trained in the use of fire extinguishers.

This course is aimed at all members of the CERN personnel. It takes place at the Prévessin training centre, lasts an hour and a half and consists of a theoretical part and a practical part with a role-play exercise in the simulator. The course can be taken in French or English.

Photo : Vanessa Bandier.

Here are some examples of comments received from people who have taken the course:

"Excellent training session, very useful, especially the practical part. I'm no longer afraid to use a fire extinguisher."

"I was impressed with the quality of the installations used for the training. I didn't expect every participant to be able to practise dealing with an emergency situation. I'm afraid of fire, but this training session helped me to fight my fear."

You can now enrol for the next sessions planned for July:

- Wednesday, 10 July at 10.30 a.m. (English)
- Friday, 12 July at 10.30 a.m. (French)
- Wednesday, 24 July at 10.30 a.m. (English)
- Friday, 26 July at 10.30 a.m. (French)
- Wednesday, 31 July at 10.30 a.m. (English)

For more information, contact the Safety Training team (HSE Unit) directly by sending an e-mail to **safety.training@cern.ch**.

The Safety Training Team

SAFETY TRAINING: PLACES AVAILABLE IN JULY - AUGUST 2013

There are places available in the forthcoming Safety courses. For updates and registrations, please refer to the Safety Training Catalogue.

July - August 2013 (alphabetical order)

Conduite de plates-formes élévatrices mobiles de personnel (PEMP) (Cherry-picker training)
01-JUL-13 to 02-JUL-13, 8.30 – 17.30, in French

First-Aiders – Basic Course
31-JUL-13, 8.15 – 17.30, in English

Habilitation électrique personnel électricien basse tension (electrical habilitation for low voltage)
01-JUL-13 to 03-JUL-13, 9.00 – 17.30, in French (with handouts in English)

Pontier-élingueur (Crane training)
03-JUL-13 to 04-JUL-13, 8.30 – 17.30, in French (with handouts in English)

Radiological Protection - Controlled Radiation Area - Course A for CERN employees and CERN associates
11-JUL-13, 8.30 – 17.00, in English
11-JUL-13, 8.30 – 17.00, in French
12-JUL-13, 8.30 – 17.00, in English
23-JUL-13, 8.30 – 17.00, in English
24-JUL-13, 8.30 – 17.00, in English
06-AUG-13, 8.30 – 17.00, in English
07-AUG-13, 8.30 – 17.00, in English
19-AUG-13, 8.30 – 17.00, in French
20-AUG-13, 8.30 – 17.00, in English
21-AUG-13, 8.30 – 17.00, in English

Refresher course Self-Rescue Mask Training
01-JUL-13, 10.30 – 12.00, in English
08-JUL-13, 8.30 – 10.00, in French
08-JUL-13, 10.30 – 12.00, in English
15-JUL-13, 8.30 – 10.00, in French
15-JUL-13, 10.30 – 12.00, in English
22-JUL-13, 8.30 – 10.00, in French
22-JUL-13, 10.30 – 12.00, in English
29-JUL-13, 8.30 – 10.00, in French
29-JUL-13, 10.30 – 12.00, in English
05-AUG-13, 8.30 – 10.00, in French
05-AUG-13, 10.30 – 12.00, in English
12-AUG-13, 8.30 – 10.00, in French
12-AUG-13, 10.30 – 12.00, in English
19-AUG-13, 8.30 – 10.00, in French
19-AUG-13, 10.30 – 12.00, in English
26-AUG-13, 8.30 – 10.00, in French
26-AUG-13, 10.30 – 12.00, in English

Recyclage - Habilitation électrique personnel électricien basse et haute tensions (Refresher course for electrical habilitation in low and high voltage)
11-JUL-13 to 13-JUL-13, 9.00 – 17.30, in French

Recyclage – Habilitation électrique personnel électricien basse tension (Refresher course for electrical habilitation in low voltage)
04-JUL-13 to 05-JUL-13, 9.00 – 17.30, in French

Self-Rescue Mask Training
02-JUL-13, 10.30 – 12.00, in French
09-JUL-13, 10.30 – 12.00, in French
11-JUL-13, 10.30 – 12.00, in English
16-JUL-13, 10.30 – 12.00, in English
16-JUL-13, 10.30 – 12.00, in English
23-JUL-13, 10.30 – 12.00, in French
23-JUL-13, 10.30 – 12.00, in English
30-JUL-13, 10.30 – 12.00, in French
01-AUG-13, 10.30 – 12.00, in English
06-AUG-13, 10.30 – 12.00, in French
08-AUG-13, 10.30 – 12.00, in English
13-AUG-13, 10.30 – 12.00, in French
15-AUG-13, 10.30 – 12.00, in English
20-AUG-13, 10.30 – 12.00, in French
22-AUG-13, 10.30 – 12.00, in English
27-AUG-13, 10.30 – 12.00, in French
29-AUG-13, 10.30 – 12.00, in English

Use of fire extinguisher – live exercises
10-JUL-13, 10.30 – 12.30, in English
12-JUL-13, 10.30 – 12.30, in French
24-JUL-13, 10.30 – 12.30, in English
26-JUL-13, 10.30 – 12.30, in French
31-JUL-13, 10.30 – 12.30, in English
02-AUG-13, 10.30 – 12.30, in French
07-AUG-13, 10.30 – 12.30, in English
09-AUG-13, 10.30 – 12.30, in French
14-AUG-13, 10.30 – 12.30, in English
16-AUG-13, 10.30 – 12.30, in French
21-AUG-13, 10.30 – 12.30, in English
23-AUG-13, 10.30 – 12.30, in French
28-AUG-13, 10.30 – 12.30, in English
30-AUG-13, 10.30 – 12.30, in French

Working at heights - Using a harness to prevent falling from a height
02-AUG-13, 9.00 – 17.30, in French
29-AUG-13, 9.00 – 17.30, in English

Isabelle CUSATO, HSE Unit

Seminars

THURSDAY JULY 04, 2013

- **09:15** Summer Student Lecture Programme Course **Standard Model (1/5)** Main Auditorium
- **10:15** Summer Student Lecture Programme Course **Statistics (1/4)** Main Auditorium
- **11:15** Summer Student Lecture Programme Course **Statistics (2/4)** Main Auditorium
- **12:00** Summer Student Lecture Programme General **Discussion Session** Main Auditorium

FRIDAY JULY 05, 2013

- **09:15** Summer Student Lecture Programme Course **Standard Model (2/5)** Main Auditorium
- **10:15** Summer Student Lecture Programme **Course Accelerators (1/5)** Main Auditorium
- **11:15** Summer Student Lecture Programme Course **Statistics (3/4)** Main Auditorium
- **12:00** Summer Student Lecture Programme General **Discussion Session** Main Auditorium
- **15:00** Summer Student Lecture Programme **Introduction Welcome Presentation from Director General** Main Auditorium

SUNDAY JULY 07, 2013

- **08:00** HASCO Summer School **HASCO Summer School 2013 HS 5**

MONDAY JULY 08, 2013

- **09:15** Summer Student Lecture Programme Course **Standard Model (3/5)** Main Auditorium
- **10:15** Summer Student Lecture Programme Course **Accelerators (2/5)** Main Auditorium
- **11:15** Summer Student Lecture Programme Course **Statistics (4/4)** Main Auditorium
- **12:00** Summer Student Lecture Programme General **Discussion Session** Main Auditorium
- **17:30** SLAC Summer Institute **41st SLAC Summer Institute** Kavli Auditorium

TUESDAY JULY 09, 2013

- **09:15** Summer Student Lecture Programme Course **Standard Model (4/5)** Main Auditorium
- **10:15** Summer Student Lecture Programme Course **Accelerators (3/5)** Main Auditorium
- **11:15** Summer Student Lecture Programme Course **Accelerators (4/5)** Main Auditorium
- **12:00** Summer Student Lecture Programme General **Discussion Session** Main Auditorium
- **14:00** Summer Student Lecture Programme General **ROOT Tutorial** Room Georges Charpak (Room F)
- **20:00** HUPP Group - Turkish students meetings **Next Hupp Meeting**

WEDNESDAY JULY 10, 2013

- **09:00** INFIERI **Oxford Summer School "Intelligent Front-End Signal Processing for Frontier Exploitation in Research and Industry"**
- **09:15** Summer Student Lecture Programme Course **Standard Model (5/5)** Main Auditorium
- **10:15** Summer Student Lecture Programme Course **Accelerators (5/5)** Main Auditorium
- **11:15** Summer Student Lecture Programme Course **Detectors (1/5)** Main Auditorium
- **12:00** Summer Student Lecture Programme General **Discussion Session** Main Auditorium
- **14:00** Summer Student Lecture Programme General **ROOT Tutorial** Room Georges Charpak (Room F)
- **14:00** TH Theoretical Seminar **TBA** TH Conference Room