CERN Bulletin

Issue No. 06-07/2015 - Monday 2 February 2015
More articles at: **http://bulletin.cern.ch**

EVERYTHING IS ILLUMINATED

On Monday, 26 January, CMS installed one of the final pieces in its complex puzzle: the new Pixel Luminosity Telescope. This latest addition will augment the experiment's luminosity measurements, recording the bunch-by-bunch luminosity at the CMS collision point and delivering high-precision measurements of the integrated luminosity.

Installing the PLT in the heart of the CMS experiment.

No matter the analysis, there's one factor that every experimentalist needs to know perfectly: the luminosity. Its error bars can make or break a result, so its high precision measurement is vital for success. With this in mind, the CMS collaboration tasked the BRIL (Beam Radiation Instrumentation and Luminosity) project with developing a new detector to record luminosity for Run 2. Working with experimentalists from across the CMS collaboration and CERN, BRIL designed, created and installed the small - but mighty - Pixel Luminosity Telescope (PLT).

"During Run 1, our primary online luminosity measurements came from the forward hadron calorimeter, which we compared to the offline luminosity measurement using the pixel detector," says Anne Dabrowski, BRIL deputy project leader and technical coordinator (CERN). "But as we move to higher and higher luminosities and pile-ups in Run 2, extracting the luminosity gets harder to do. "That's where the PLT comes in. Designed with the new LHC Run 2 in mind, the PLT uses radiation-hard CMS pixel sensors to provide near-instantaneous readings of the per-bunch luminosity - thus helping LHC operators provide the maximum useful luminosity to CMS. The PLT is unconnected to the CMS trigger and reads out at 40 MHz (every 25 ns) with no dead-time.

Research and development on the PLT began ten years ago, with diamonds first considered for the pixel telescope planes. A PLT prototype was even installed along the LHC beam line during Run 1. "Diamond sensors would have been an excellent choice, as they do not need

(Continued on page 2)

SCIENTIFIC REMEDIES: IT'S TIME TO UP THE DOSE

Last week, I spent some time attending the annual meeting of the World Economic Forum in Davos. As Director-General of CERN, I have a standing invitation and it's one that I have regularly taken up. I go there to promote the science agenda to leaders from all areas of society. Over the years, there's no doubt that science has moved up the agenda, but there's still a considerable way to go.

(Continued on page 2)

In this issue

NEWS

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)

IT'S TIME TO UP THE DOSE

The first time I went, I gave a presentation about physics and spent the rest of my time learning how Davos works. It did not take long to figure out that such presentations are essentially there to entertain the participants, and that the main purpose of Davos is meeting people and networking. It's an opportunity to take the world's pulse – and, if the pulse indicates that a remedy is required, to inject a little scientific medicine.

My message at Davos has evolved from sharing the excitement of the quest for knowledge to pointing out the necessity of basic science in the global economy, and, this year, the need for science, technology, engineering and mathematics (STEM) education if the next round of UN development goals are to stand any chance of being achieved. These are messages that are starting to gain traction, and of course I'm not the only one promoting them. Last week, for example, there was a very interesting discussion on the digital agenda that chimed perfectly with the messages that CERN wishes to spread.

The principal talking point, unsurprisingly, was the world economy, with the Swiss franc-euro exchange rate being much discussed. The economy is so interlinked that this has wide ramifications in both the public and private sectors, with consequences that are difficult to predict.

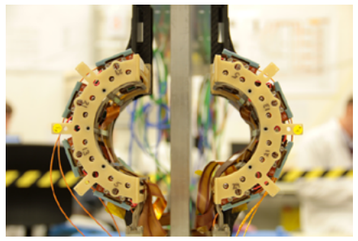
Clearly, a large drop in the value of the euro and other currencies relative to the Swiss Franc has a significant influence on CERN, with many of our Member States being in the Eurozone and our budget being measured in Swiss francs. As a consequence, the CERN Management has communicated immediately to the Member States that it will soon present a plan of action that will allow CERN to function as normal.

Returning to Davos, the medicine of science, unfortunately, has no quick fix to questions of economy. Our remedies are long term. They are based on the provision of basic science to drive innovation, and on the development of STEM education to provide both scientists and a scientifically literate society. Based on the pulse of Davos this year, we need to up the dose.

Rolf Heuer

EVERYTHING IS ILLUMINATED

(Continued from page 1)



The PLT is comprised of two arrays of eight small-angle telescopes situated on either side of the CMS interaction point. Each telescope hovers only 1 cm away from the CMS beam pipe, where it uses three planes of pixel sensors to take separate, unique measurements of luminosity. (Image: A. Rao)

The BRIL team includes collaborators from CERN, Germany, New Zealand, the USA, Italy and Russia.

to be run at low temperatures to have an acceptable radiation damage signal loss," says David Stickland, BRIL project leader (Princeton University). However - while the potential for a diamond PLT remains - the prototype results led the team to use a more tested and reliable material for Run 2: silicon.

However, this practical decision would create new issues for the BRIL team to resolve: "Suddenly, heat was a real concern," explains Anne. "If we wanted to get a good signal out of silicon sensors, we had to bring the telescopes down in temperature." With only 18 months to go until installation, the BRIL team had to go back to the drawing board to try and fit a cooling structure into an already-constrained space.

"We were successful thanks to the ingenuity of the CMS engineering integration office and PH-DT engineers, in particular Robert Loos," says David. "Rob designed an extraordinary 3D-printed cooling structure using a titanium alloy, using the 'selective laser melting (SLM)' technique in order to 'grow' the cooling structure we needed." Despite the internal diameter of the cooling channels being less than 3 mm, the cooling structure can make right-angle turns at the drop of a dime and withstand pressure up to 15 bar. "It's tremendously strong, light and compact. I don't know how it could have been made without this technique," David adds.

This is only the first example of the innovative design used by the BRIL group. So while the telescope's installation may be complete, our coverage of their work is not yet over. Look out for an article in the next edition of the Bulletin to find out more...

Katarina Anthony

LHC REPORT: SUPERCONDUCTING CIRCUIT POWERING TESTS

After the long maintenance and consolidation campaign carried out during LS1, the machine is getting ready to start operation with beam at 6.5 TeV… the physics community can't wait! Prior to this, all hardware and software systems have to be tested to assess their correct and safe operation.

Most of the cold circuits (those with high current/stored energy) possess a sophisticated magnet protection system that is crucial to detect a transition of the coil from the superconducting to the normal state (a quench) and safely extract the energy stored in the circuits (about 1 GJ per dipole circuit at nominal current). LHC operation relies on 1232 superconducting dipoles with a field of up to 8.33 T operating in superfluid helium at 1.9 K, along with more than 500 superconducting quadrupoles operating at 4.2 or 1.9 K. Besides, many other superconducting and normal resistive magnets are used to guarantee the possibility of correcting all beam parameters, for a total of more than 10,000 magnets. About 1700 power converters are necessary to feed these superconducting circuits.

The commissioning of the superconducting circuits is a lengthy process. All interlock and protection systems have to be tested, before and while ramping up the current in steps. The typical time needed to commission a dipole circuit is in the order of 3 to 5 weeks. A total of more than 10,000 test steps have to be performed on the LHC's circuits and analysed by the protection experts.

An additional challenge for this year's commissioning of the superconducting circuits is the increase in energy (and therefore the current feeding each circuit) up to near the design values. In fact, when a superconducting magnet approaches its maximum performance, it experiences repetitive quenches (a phenomenon also known as training) before reaching the target magnetic field. The quenches are caused by the sudden release of the electromechanical stresses and the local increase in temperature above the transition level. The entire coil is then warmed up and needs to be cooled down again - for the LHC dipoles, this might take several hours. The LHC now has two sectors where the dipole magnets have been already trained. 20 and 7 quenches per sector respectively were necessary to reach the equivalent operational energy of 6.5 TeV, with a net time of 10 and 4 days spent in training the magnets.

As concerns the general preparation of the machine, the powering tests have now started in five of the eight LHC sectors: about 30% of the total number of test steps have been executed and the main dipoles and quadrupoles have been prepared for tests in half of the machine; all preparation activities should be completed in about three weeks' time and the commissioning of all circuits is expected to finish sometime in March.

Mirko Pojer, Matteo Solfaroli

THE ART OF SOURCING TALENT (NOT ONLY IN PHYSICS)

CERN is constantly seeking new talent, but this is not always an easy task, especially in some key areas. Although CERN is known worldwide for hiring physicists, they only account for a very small percentage of CERN's annual recruitment. The Organization offers a vast range of job opportunities in other domains, including, notably, for technicians and engineers in mechanics, electronics, cryogenics, etc. The new CERNbassador event and the EQIPIA tool will help the CERN Recruitment Unit find the talent of the future.

The CERN Recruitment Unit was created in 2010 and part of its mandate was to improve the so-called "sourcing" of candidates from all Member States. This was done by designing a new dedicated CERN website, posting the offers on several job portals across Europe, establishing direct contact with universities and technical schools, launching campaigns and using dedicated social media. "There is plenty of talent out there, but it's not always easy to reach, especially for certain professions - for example, technical engineers in radiofrequency, radioprotection, cryogenics – and in some Member States," explains Anna Cook, CERN Recruitment Unit Coordinator. "Our goal is to promote CERN as an 'employer of choice' for these categories too and we want to do that by using innovative solutions."

To turn the issue on its head, the CERN Recruitment Unit is introducing two different but complementary initiatives: the EQIPIA web platform and the first CERNbassador event. "This is a pilot event, scheduled for 20 March, which will host 40 to 50 teachers from technical schools. This first event will be dedicated to electronics, but other events dedicated to different fields could be envisaged," says Anna. Via their teachers, the event will target technical school students – the hardest to reach. "Our wish is to raise the teachers' awareness about CERN's mission, get them excited about it and become our ambassadors," continues Anna. At the event, CERN electronics experts will present their work and there will be stands where teachers will be able to ask questions and develop networks with representatives of the Beams, Physics and Technology Departments.

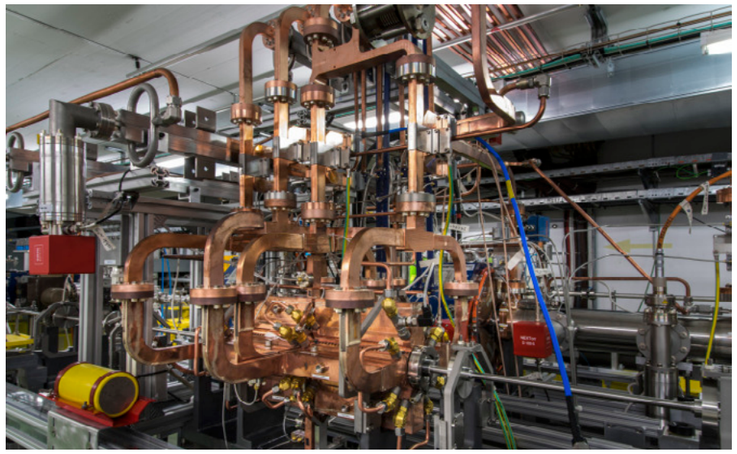
In the same vein, the Recruitment Unit is also working on enlarging its networking capabilities. "We have started to use EQIPIA, a web tool that synchronises LinkedIn connections in order to diffuse our job offers to all our contacts at CERN," explains Anna. "In this way, they will be able to easily share these offers within their own networks." EQIPIA is based on the concept of "referrals" - a recruitment method in which employees are encouraged to suggest potentially suitable recruits from their own networks. "The help of our CERN colleagues to spread the word about our opportunities would open up the doors to a whole new talent pool within their networks. We encourage them to accept our invitation," she concludes.

Rosaria Marraffino

For more information about the CERNBassador event or the EQIPIA referral system, contact **recruitment-unit@cern.ch**.

CLICING INTO ACTION

Putting its acronym into action, the Compact Linear Collider (CLIC) collaboration is testing its first compact accelerator module in the CTF3 test facility. Fed by high-power waveguides, cables and cooling tubes, the module has all the functions of future CLIC modules and allows the experts to test all the features, including frequency, losses, damping, acceleration and deceleration.



The new CLIC module in the CTF3 test facility.

CLIC is one of the potential follow-up projects to the LHC, alongside the International Linear Collider (ILC) and the Future Circular Collider (FCC) studies. Instead of smashing protons into protons, it is designed to collide electrons with positrons. Following the publication of its CDR in 2012, the CLIC collaboration entered the project preparation phase - testing its unique technology, making improvements and taking a closer look at the cost of the individual components.

This is where the new module comes in. While many of the techniques and technologies needed for and around CLIC's sophisticated drive-beam acceleration have already been tested individually, this module is the first opportunity to bring all the elements together. The module has been integrated into the test facility and has all the features of future CLIC modules: CLIC-type alignment systems, accelerating structures with higher-order mode damping and integrated diagnostics tools like wakefield monitors.

Now integrated, the CLIC researchers have begun to test it with beam. "It's a complex system, and our first results look promising," says Steffen Doebert, who is part of the team that developed the module. "We have to check all the connections and calibrate the module before installing a second super accelerating structure consisting of two accelerator units." With the help of the diagnostic tools integrated into the module, which can detect very small fields, the CLIC team knows where the beam is at any time within the structure. A very precise alignment system developed by CERN's metrology service and a silicon carbide support that can be adjusted in all directions allow the researchers to perform very accurate beam-based corrections. "After all we need to be precise down to ten microns," says Doebert.

With these good results in their hands, the members of CLIC met at CERN from 26 to 30 January for their annual collaboration meeting. You can find additional information about the meeting here: **https://indico.cern.ch/event/336335**

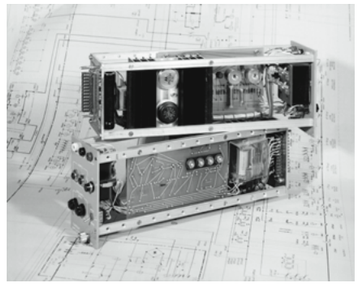
Barbara Warmbein

PRESERVING CERN'S LEGACY

At CERN, scientists from all over the world design and build innovative instruments to be implemented in the cutting-edge machines used in high-energy physics. Those instruments go on to become part of the world's most powerful accelerators, Nobel-prize-winning detectors, unique antimatter machines, the first web servers… These are historical pieces and belong to our common heritage. But, what happens to them once they are no longer in use?

New endeavours consistently require new technical developments, and the list of "old" objects belonging to a laboratory like CERN increases over time. As innovative as they might have been when they were created, they are often bulky, sometimes very delicate, and do not always look like everyday tools when they are dismantled. How best to deal with them? "A database of objects suitable for scientific exhibitions has been available on CDS for many years," says Gigi Rolandi, Chair of CERN's Scientific Information Policy Board (SIPB), the body in charge of the object preservation policy. "It includes over 180 different pieces that museums can borrow from CERN for a period that is negotiated on a case by case basis."

While the historical bubble chambers are among the most photographed objects of the Microcosm exhibition, part of the ALEPH Time Projection Chamber is on display at the International Museum of Horology at La Chaux-de-Fonds (Switzerland) and the original web server is a very popular object that tours exhibitions across the world, other objects



simply disappeared after being dismantled. "A policy of object preservation has been in place since 2007 when the SIPB proposed to take a systematic approach to preserving, cataloguing, and exploiting scientific objects and images, both still and moving," says Jens Vigen, head of the CERN Scientific Information Service, which is also in charge of managing the Organization's archives. "The first step is to correctly document all the objects and share the information for later use."

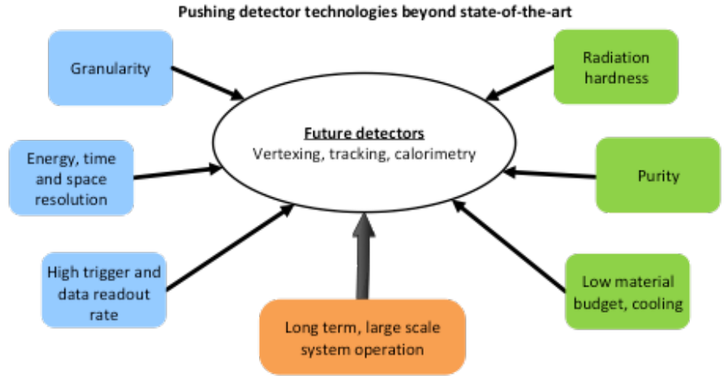
The existing database needs more information and more accurate descriptions of the various entries. "The contribution of CERN people who actually worked on the instruments is of vital importance," confirms James Gillies, head of CERN's Communication Group and a member of the CERN Stakeholder Relations Office, which formally owns and manages the historical objects. "They have already helped the Library by recognising places and faces during the Mystery Photos campaign. We now need an honorary member of the personnel, or a group of people, to help us implement the policy."

Preserving objects that bear witness to the ingenuity of the minds that created them and remind us of the hard work needed to keep cutting-edge research moving at a fast pace is the duty of everyone. If you are aware of or sit just next to a historical piece related to CERN's history, or if you wish to volunteer to help CERN implement its object preservation policy, do not hesitate to contact the SIPB: **jens.vigen@cern.ch**

Antonella Del Rosso

A FLYING START FOR CERN IN H2020

Following successful participation in a string of some 90 projects within FP7, CERN is also actively involved in Horizon 2020. In 2014, nearly 60 proposals involving CERN's participation were submitted to various H2020 sub-programmes and the hope is that many more will follow in 2015.



Technological challenges for future detectors, to be addressed by the AIDA-2020 project.

Key elements of the Conceptual Design Report and coverage of the EuroCirCol project.

The projects coordinated by CERN that have been selected for funding in 2014 span many different fields and activities: science outreach (PopScience), a study of isotopes for medical applications (MEDICIS-PROMED), the development of innovative fibre technologies (INTELUM), international collaboration on accelerator science and technology (E-JADE), novel NMR techniques (BetaDropNMR), new mathematical structures (MathAm) and the procurement of cloud services in Europe (PICSE).

After a very encouraging 2014, 2015 started well too: AIDA-2020 and EuroCirCol have recently been selected for funding under the H2020 Research Infrastructure programme. Both projects are fully in line with the priorities of the European Strategy for Particle Physics and have strategic importance for CERN (as the coordinating institute) and the HEP community.

AIDA-2020 brings together 38 partners from 19 countries. The project aims to advance detector technologies beyond current limits (upper image) for the benefit of thousands of researchers participating in the LHC High-Luminosity Upgrade, linear collider efforts and future neutrino projects, and to enhance the coordination within the European detector community, leveraging EU and national resources. AIDA-2020 will also exploit the innovation potential of detector R&D by engaging with European industry for large-scale production of detector systems and by developing applications outside of particle physics, e.g. for medical imaging.

EuroCirCol is a conceptual design study in preparation for a post-LHC accelerator in Europe, i.e. the FCC (Future Circular Collider). The project will study different scenarios and assess the feasibility of key technologies needed for a new 100 TeV energy-frontier circular collider (lower image) through a collaboration of institutes and universities worldwide. The main outcome of EuroCirCol will be laying the foundation of an ambitious post-LHC machine that will strengthen Europe's position as a focal point of global research cooperation and a leader in frontier knowledge and technologies over the next decades.

So far, 18 new EU projects involving CERN have been accepted for funding, and 9 of those are coordinated by CERN teams. Considering that the average success rate in H2020 is expected to be below 20%, CERN's record so far is very encouraging for the 15 proposals that are still under evaluation.

EU Projects Office

EU COMMISSIONER FOR RESEARCH, SCIENCE AND INNOVATION VISITS CERN

The EU Commissioner for Research, Science and Innovation, Carlos Moedas, visited CERN on 30 January 2015. He was invited by the Director-General to obtain a first-hand impression of some of the world's largest and most complex scientific instruments, just before the eagerly awaited restart of the LHC at record energies.

EU Commissioner Carlos Moedas (first row, fourth from right), accompanied by members of CERN management and researchers involved in the CESSAMag project.

One of the magnets being tested at CERN, in the framework of the CESSAMag project.

The Commissioner was informed about the missions and various activities of CERN, including knowledge transfer and technologies for medical applications. He visited CMS, some of the magnets developed by CERN for SESAME in the framework of the EU co-funded CESSAMag project, and the IT Computing Centre.

The Commissioner encouraged CERN to engage in a European Science Cloud Pilot that could be built on top of existing and highly successful distributed computing initiatives, in some of which CERN played a fundamental role.

CERN and the EC have had a long-standing collaboration for many years. As one of the major stakeholders of the European Research Area, CERN contributes actively to its further development, notably in areas such as research and e-infrastructures, international cooperation, open access, training, mobility and careers of researchers, knowledge transfer and innovation.

Svetlomir Stavrev

ANOTHER AWARD-WINNING YEAR FOR CERN'S APPRENTICESHIP TRAINING PROGRAMME

CERN has a long tradition of training apprentices. The Organization's apprenticeship programme, which is based on the Swiss apprenticeship system, dates back to 1965. Since then, over 200 apprentices have been trained at CERN. Each year, seven or eight apprentice electricians, library assistants and physics laboratory technicians qualify after three or four years of training, depending on the job.

UIG prize ceremony 2014: Angelina Bakker (third from right), apprentice physics laboratory technician at CERN, receives her "Certificat fédéral de capacité".

On Tuesday, 25 November 2014, CERN was presented with a prize for being the best apprenticeship training scheme provider in 2014. This prize is awarded each year to eight apprenticeship providers active in the different "vocational categories" in the canton of Geneva.

The prizes are awarded by the Geneva Department of Public Education, Culture and Sport (DIP), the *Cité des métiers* association and the *Communauté genevoise d'action syndicale (Community of Union Action of Geneva)*.

CERN received the prize for large providers, which is awarded to a provider that trains a large number of apprentices in several different vocational categories.

In addition, on 9 December 2014, during a special cerewmony for apprentices, the *Union industrielle genevoise* awarded a prize to Angelina Bakker, an apprentice physics laboratory assistant at CERN, for her excellent results in the *Certificat fédéral de capacité*.

Anne Gentil-Beccot

TWO PIONEERING ARTISTS VISIT CERN

On Monday, 19 January, CERN physicists welcomed musician Tim Blake - progressive rock keyboard and theremin player - and architectural lighting designer Patrice Warrener - inventor of the Chromolithe Polychromatic Illumination system, used in Lyon's "Fête des Lumières". Together, they make up the musical duo "Crystal Machine".

The artists visit the Antiproton Decelerator. (Image: Django Manglunki.)

Their visit began with an introduction to CERN by their friend Django Manglunki, project leader for the ion injector chain, and an improvised discussion on the LHC extraction system with Roger Barlow, kicker magnet controls expert and progressive rock fan. This was followed by a quick trip to the CCC, the server room and the SPS RF amplifiers in BA3.

Next on the itinerary was a tour of the AD and anti-hydrogen experiments led by Michael Doser, AEgIS Spokesperson. A leisurely lunch followed, in the company of Roberto Saban, Head of the Engineering Department, Michael Doser and Michael Hoch, research physicist and founder of the art@CMS project. The daylong visit concluded with trips to the Computer Centre, SM18 and a tour of the CMS experiment.

Tim and Patrice were impressed by the passion, enthusiasm, and quality of explanations with which their guides communicated their topics of research. They were especially thankful for the welcome they received, with Tim saying he will never forget their experience: "Wow, what a day! – Quarks, Strangeness and Charm indeed!"

CERN Bulletin

WELL FOUGHT, FP!

We are used to spam and phishing emails. But at the end of last year, a very special email struck one of our colleagues in the FP Department.

An accountant was gently asked in an email from "Rolf.Heuer@cern.ch" to prepare a financial transaction - in the strictest confidence. A phone call from the beneficiary to the accountant was made in an attempt to support this request. Despite being instructed not to talk to anyone, the e-mail, the phone conversation and the circumstances were all so suspicious that our colleague consulted his hierarchy, the internal audit service and us. Well done, FP Department! This is a rare case of an attempt at "social engineering", i.e. luring someone into doing something detrimental to the Organization.

The e-mail was fake. While it appeared to come from "Rolf.Heuer@cern.ch", it actually came from an alleged fraudster outside CERN. The e-mail and the phone call showed that he was well prepared and directly focused on this particular accountant. Besides the technical details for the transaction, this scam e-mail also contained every element needed to succeed: complimenting and trust-building ("*Nous effectuons en ce moment une opération financière importante sur laquelle je travaille depuis quelques mois. Je vous ai choisi pour votre discrétion et travail irréprochable au sein de notre société car je ne veux aucunes fuites.*") and the requirement for strict confidentiality ("*Cette OPA (offre public d'achat) doit rester strictement confidentielle, personne d'autre ne doit être informé pour le moment, y compris vos collègues.*", "*Merci de ne faire aucune allusion en interne ou externe sur ce dossier, ni même par téléphone. Je suis en séance toute la journée, je vous le répète veuillez communiquer uniquement par courriel avec [FRAUDSTER] selon la procédure imposée par l'AMF (autorité des marchés financiers).*") But our colleague did not succumb!

So remember, the e-mail protocol does not provide any protections against fake sender addresses. Unless your sender digitally signs his or her emails, you can only tell from the overall package (sender, subject, message, circumstances) whether it is a legitimate e-mail or a scam. Note that you are the first line of defence in those respects. If you have any doubts, consult a colleague, your supervisor or **Computer.Security@cern.ch**. This particular case is a prime example of how professional vigilance works!

Check out our website **https://security.web.cern.ch** for further information, answers to your questions and help, or e-mail: **Computer.Security@cern.ch**

If you want to learn more about computer security incidents and issues at CERN, just follow our Monthly Report: **https://cern.ch/security/reports/fr/monthly-reports.shtml**

Stefan Lueders, Computer Security Team

ABOUT LETTING GO…

New year, old problems? The best way to start 2015 is by not carrying over any frustration from 2014. Instead, let it go and move forward.

As I blew out the candle to celebrate my first anniversary of my position as the CERN Ombud, I found myself reflecting back over the past year, wondering what I could share with you, and the following recurring situation came to mind…

Often, people come to the Ombud's office either because they feel mistreated or because they consider themselves to be facing an unfair situation. When this happens, we work through the problems together and identify different options by which to tackle the situation. Sometimes they ask to be coached through the way in which to go back and deal with the issues themselves; at other times they prefer to address the issue with the other person, in the presence of the Ombud, and request mediation. In both cases, the objective is the same: to ensure that both points of view are understood and to agree on an outcome that improves their working relationship and allows the situation to move forward in a way that is mutually acceptable to both the parties concerned.

However, the agreement that is reached is almost never quite what one or the other wanted at the outset. Understandably, this leads to a certain amount of frustration as both parties feel that they have had to give up a part or all of what they had originally wanted, albeit in favour of an outcome that is an improvement on the situation that had initially led them to seek a solution.

In some of these cases, people come back to the Ombud complaining that, although the solution is indeed working well, they still believe that 'justice was not done', they feel hurt and continue to believe that the legitimacy of their own position was not fully acknowledged. For example:

John is a senior technician who has built up a reputation for being 'the man for the job' in a certain area of expertise. Eric is his supervisor.

John visits the Ombud's office because he is unhappy about a decision that Eric took to assign an important and prestigious task to another colleague. John considers this colleague to have less experience than him, and feels that his competence is being questioned.

With the help of the Ombud, the reasons behind this decision are clarified: Eric explains that he has taken John off that particular project because he wishes to develop the competencies of a junior colleague in that field and needs John's expertise in another area.

John is assigned a new task, equally prestigious and challenging.

Even though John finds the new task interesting, he still feels frustrated at having been taken off the previous task, and his pride is hurt at not having at least been consulted by Eric before the decision was taken.

These feelings may be undeniable but they are certainly not very helpful to John as they keep him in a negative frame of mind and prevent him from being able to make a clean break away from a stalemate situation and move forward.

All conflicts have two sides to them, and when coming to a resolution, whether individually or with the help of mediation, it is very rare to find a solution that corresponds exactly to what one expects or desires. On the contrary, seeking resolution involves stepping out of one's own position and trying to find the best solution that is in the mutual interest of both the parties concerned. It involves finding a new path, agreeing on a new way out and ahead. To achieve this, it is best to let go of the old feelings that keep one from fully committing to the new situation and move on to embrace the future.

So, if you have been through such a conflict situation and agreed on a course of action… then why not just focus on that? Make it your 'new-year resolution' to let go of the past and engage fully in making a success of the days ahead!

Sudeshna Datta-Cockerill

Take note

"MANAGING ITALIAN RESEARCH STATIONS AT THE POLES" BY ROBERTO SPARAPANI | 19 FEBRUARY

Polar areas are an ideal place to study climate change and other research fields. However, living and working at the Poles is a challenge for all the researchers involved. This presentation by Roberto Sparapani, who led the Italian research station *Dirigibile Italia* at Ny-Ålesund from 1997 to 2014, will take a short trip through the research and history of polar science - with a focus on the human factor, which makes a difference in a natural environment that leaves no room for improvisation.

The seminar will be held on **19 February at 4.30 p.m. in the Main Auditorium**. It will be followed by a screening of Paola Catapano's documentary for RAIWORLD "A Nord di Capo nord" (North of Cape North), in Italian with English subtitles. The documentary was given the "Artistic Direction Special Award" at the Rome Scientific Documentary Festival in December 2014.

Ny-Ålesund is a small international research village located in the northwest coast of the Svalbard archipelago (79° N). Similar to a small "CERN", Ny-Ålesund is a community of 11 research stations and more than 20 countries working in the sunlight for 6 months in a row, and the reflections of the aurora for the rest of the year.

Roberto Sparapani worked for CNR (the Italian Research Council) since 1983, initially with the Institute of Atmospheric Pollution Research as a laboratory technician. He soon started taking part in research expeditions to extreme areas as a logistics manager: on oceanographic ships from 1987 to 1990, in Nepal in 1991, the Spitzbergen in 1992, Antarctica in 1994, Greenland in 1999 and the Canadian Arctic (Alert) in 2000. He was base leader of the Antarctic Zucchelli station from 2004 to 2009 and of the Arctic research station "Dirigibile Italia" at Ny-Ålesund since its opening in 1997 until 2014.

WHERE STUDENTS TURN INTO TEACHERS: THE EIGHTH INVERTED CERN SCHOOL OF COMPUTING

For the eighth time since 2005, the CERN School of Computing (CSC) has organised its inverted school, which will take place at CERN on 23 and 24 February 2015, in the IT Auditorium (Room 31/3-004).

The idea for inverted CSCs stemmed from the observation that at regular CSCs it is common to find students in the room who know more on a particular (advanced) topic than the lecturer. So why not try and exploit this and turn the students into teachers?

CSC2014 students made proposals via an electronic discussion forum, from which a programme was designed. This year's programme focuses on challenging and innovative topics, including: the evolution of processor architectures, the growing complexity of CPUs and its impact on the software landscape, exploring clustering and data processing, the importance of message passing in high-performance computing, the development of applications across heterogeneous systems. There will be also lectures on applied computing used in the simulation of longitudinal beam dynamics problems typical of the accelerator sector.

Attendance is free and open to everyone. Though most of the lectures are part of a series, the programme is designed so that lectures can be followed independently. Registration is not mandatory, but will allow you to obtain a copy of the full printed booklet (first registered, first served). You can register here: **http://cern.ch/go/PW6p**

The inverted schools are one key step in a process that's been in place for several years to identify and train young new lecturers for the main School. This year's main school will take place in September in Kavala, Greece and the thematic school in Split, Croatia, next May.

For further information on the CERN School of Computing, see **http://cern.ch/csc** or **contact computing.school@cern.ch**.

Lecturers

- Vincent CROFT National Institute for Subatomic Physics (NIKHEF), RU-Nijmegen, Netherland
- Helvi HARTMANN Frankfurt Institute for Advanced Studies, Germany
- André PEREIRA LIP-Minho, Braga, Portugal
- Pawel SZOSTEK CERN, Geneva, Switzerland
- Helga TIMKO CERN, Geneva, Switzerland

Programme overview

Monday 23 February 2015

09:00-09:15	Welcome
09:15-09:30	Introduction to the inverted CSC
09:30-10:30	Basic concepts in computer architectures - Pawel Szostek
11:00-12:00	Numerical Methods of Longitudinal Beam Dynamics - Helga Timko
13:30-14:30	Exploring EDA - Vincent Alexander Croft
14:30-15:30	Multi-core processors and multithreading - Pawel Szostek
16:00-17:00	Numerical Challenges & Limitations of Longitudinal Beam Dynamics - Helga Timko

Tuesday 24 February 2015

10:00-11:00	Taking Raw Data Towards Analysis - Vincent Alexander Croft
11:00-12:00	Challenges of Modern High Performance Computing Helvi Hartmann
13:30-14:30	Scalable Parallel Computing - Andre Pereira
14:30-15:30	Message Passing - Helvi Hartmann
16:00-17:00	Frameworks to Aid Code Development and Performance Portability - Andre Pereira

Alberto Pace, Director,
CERN School of Computing

Training

SAFETY TRAINING: PLACES AVAILABLE IN JANUARY AND FEBRUARY 2015

Places are available in the forthcoming Safety courses. For updates and registrations, please refer to the Safety Training Catalogue: cta.cern.ch.

Safety Training, HSE Unit
safety-training@cern.ch

"ERGONOMICS" TRAINING COURSE: LIVING IN HARMONY WITH YOUR SCREEN!

More and more of us are spending time in front of a computer screen. For some people, the average is one or two hours a day, but for others it's practically the whole day. Not to mention what happens when we get home…

Sitting correctly at your screen-based workstation is not just a question of comfort.

Back or neck pain, sore wrists, eye strain, stress... these are just some of the problems that can arise over the short to medium term.

The likelihood of such problems can be reduced by adjusting your workstation, its position or the organisation of your workload, which can be defined as part of a detailed evaluation of your personal situation.

However, there are a few simple actions we can take ourselves.

With this in mind, the HSE Unit invites you to attend the "Ergonomics" training course, which is aimed at everyone who works in front of a screen.

Combining theory and practical exercises over the course of half a day, this training session covers essential topics such as:

- The risks associated with working in front of a screen (anatomy and problems);
- Preventive measures (ergonomic organisation of the workstation, positioning, equipment);
- Strengthening and relaxation exercises.

The course description and registration form can be found in the training catalogue on the Safety Training Service's website or can be consulted directly here: **http://cern.ch/go/c9qP**.

Sign up now! You won't see working in front of a screen in the same light again!

More information about screen-based workstations here: **http://cern.ch/go/Xfgs**.

Don't hesitate to contact us if you have any questions concerning:

- Safety training: **safety-training@cern.ch**
- Safety and working conditions: **hse.secretariat@cern.ch**
- Medical aspects and occupational health: **medical.service@cern.ch**

Safety Training, HSE Unit

Seminars

THURSDAY FEBRUARY 05, 2015

15:00 **ROOT Class ROOT** Lecture 304-1-001

MONDAY FEBRUARY 09, 2015

11:00 **EP Seminar** Storage ring proton EDM experiment

TUESDAY FEBRUARY 10, 2015

11:00 **LHC Seminar Seminar on LHCb results** Main Auditorium
14:00 **Computing Seminar Large Data Visualization with Open-Source Tools** IT Amphitheatre
14:00 **TH String Theory Seminar TBA** TH Conference Room

WEDNESDAY FEBRUARY 11, 2015

15:00 **ROOT Class ROOT** Lecture Room C

THURSDAY FEBRUARY 12, 2015

15:00 **ROOT Class ROOT** Lecture 304-1-001

FRIDAY FEBRUARY 13, 2015

14:00 **Particle and Astro-Particle Physics Seminars TBA** TH Conference Room
16:00 **TH String Theory Seminar TBA** TH Conference Room

MONDAY FEBRUARY 16, 2015

08:30 **Special Event Schools**@CMS 2015
14:00 **TH Journal Club on String Theory** TBA

TUESDAY FEBRUARY 17, 2015

11:00 **LHC Seminar Seminar on ALICE results** Main Auditorium
14:00 **TH String Theory Seminar TBA** TH Conference Room


RETOUR À LA RÉALITÉ
C'est pour CHARLIE HEBDO?
non c'est pour changer des francs suisses !