



LS1: exciting times ahead



As the first and last proton-lead run of 2013 draws to a close, the extensive upgrade and maintenance programme of the LHC's first long shutdown (LS1) is about to get under way.

The LHC has provided physicists with a huge quantity of data to analyse since the first physics run in 2009. Now it's time for the machine, along with CERN's other accelerators, to get a facelift. LS1 will start on 13 February 2013, but this doesn't mean that life at the Laboratory will be any less rich and exciting. Although there will be no collisions for a period of almost two years, the whole CERN site will be a hive of activity, with large-scale work under way to modernise the infrastructure and prepare the LHC for operation at higher energy.

"A whole series of renovation work will be carried out around the LHC during LS1," explains Simon Baird, deputy head of the EN Department. "The key driver is of course the consolidation of the 10,170 **high-current splices** between the superconducting magnets. The teams will start by opening up the

1,695 interconnections between each of the cryostats of the main magnets. They will repair and consolidate around 500 interconnections simultaneously. The maintenance work will gradually cover the entire 27 km circumference of the LHC." The LHC will be upgraded as well as renovated during the period concerned. In the framework of the Radiation to Electronics project (R2E), sensitive electronic equipment protection will be optimised by relocating the equipment or by adding shielding.

The work will by no means be confined to the LHC. Major renovation work is scheduled, for example, for the Proton Synchrotron (PS) and the Super Proton Synchrotron (SPS). During LS1 the upgrade of the PS access control system, which includes the installation of 25 new biometrically controlled access points, will continue.

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Defining priorities

Last week the European Strategy Group met in Erice (Italy) to distil reams of input and months of discussion into a concise document outlining an updated Strategy for European Particle Physics. The result is a document that will be presented to the Council for feedback next month, before final approval by the Council at a special meeting in Brussels on 29 May. The Strategy process was important when it began in 2005, and is even more so today with important discoveries behind us and a changing global landscape for particle physics ahead.

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Defining priorities

The draft update, it's fair to say, contains few surprises, but there are nevertheless some weighty issues for the Council to deliberate. The top priority is, of course, the full exploitation of the LHC, but the Strategy goes further, stating unambiguously that Europe's top priority should be the high-luminosity upgrade of the machine. Other high-priority items are accelerator R&D to ensure the long-term global future of the field. On the subject of the much-publicised initiative for Japan to host an International Linear Collider, the Strategy Group has taken a pragmatic approach, looking forward to a proposal from Japan as to how other regions might take part. Other high priorities are for work to develop a substantial neutrino programme in Europe and for Europe to participate in major neutrino projects in the US and Japan.

Non-scientific issues in the Strategy are equally as important as the science. CERN's organisational model, for example, was hailed a good one for international science, and the draft Strategy's first recommendation is that it be retained. The strategy also unambiguously proposes CERN as Europe's vehicle for participation in global particle physics projects, wherever they may be. I am also pleased to see the Strategy Group has given engagement with society the importance I believe it deserves, highlighting the role of communication, education and technology transfer.

These extracts represent just my personal view of the draft, which contains recommendations on many other scientific and organisational issues. I'm aware that different aspects will carry more or less weight with each of us, but I think we can all agree that the Strategy Group has done a great job, providing much for Council delegates to discuss when they next meet at CERN in March.

Rolf Heuer

LHC Report: Ions cross protons

The LHC starts the New Year facing a new challenge: proton-lead collisions in the last month before the shutdown in mid-February.

The first stable beams were achieved on 20 January with 13 individual bunches per beam. In the next fill, the first bunch-trains were injected and stable beams were achieved with 96 proton on 120 ion bunches. This fill was very important because we were able to study the so-called moving long-range beam-beam encounters. Long-range encounters, which are also seen in proton-proton runs, occur when the bunches in the two beams "see" each other as they travel in the same vacuum chamber at either side of the experiments. The situation becomes more complicated with proton-lead ions because the two species have different revolution times (until the frequencies are locked at top energy- see "Cogging exercises") and thus these encounters move. We found that this effect does not cause significant beam losses or emittance blow-up. This clarification was long-awaited.

The full filling scheme with 338 on 338 bunches was injected and successfully ramped on 21 January. In addition, a record lead bunch intensity in the LHC was achieved. The performance of the injectors that provide the bunches of both particle species has been a great success and has been key to the excellent performance of the proton-ion run.

Since 24 January, we have been routinely achieving stable beams with the full filling scheme. Currently, protons are injected in ring 1 (clockwise) and lead ions in ring 2. But in a few days the beams will be swapped so

that ALICE, inherently an asymmetric detector, can take data in both directions.

On a good day, there are two physics fills with a peak luminosity at the beginning of the collisions of around $10^{29} \text{ s}^{-1} \text{ cm}^{-2}$ in ALICE, ATLAS and CMS. The LHC is producing an integrated luminosity well above expectations: around 2 inverse nanobarns per experiment per day. The LHC efficiency over the past week has also been remarkably good: 45% of the time the machine has been in stable beams.

Reyes Alemany Fernandez for the LHC team

Did you know?

Currently, the proton and ion bunches have an average intensity of 1.5×10^{10} charges at the start of a fill. However the ion bunch current (expressed in proton charges) decreases faster than it does for protons: each time an inelastic collision takes place, one proton is lost in the proton beam, but one ion representing 82 charges (protons) is lost from the lead ion beam (the lead ion is fully stripped of electrons and it has a nucleus with 82 protons). This is the expected luminosity burn-off. The lead bunches also suffer from increased transverse blow-up due to intra-beam scattering.

Cogging exercises

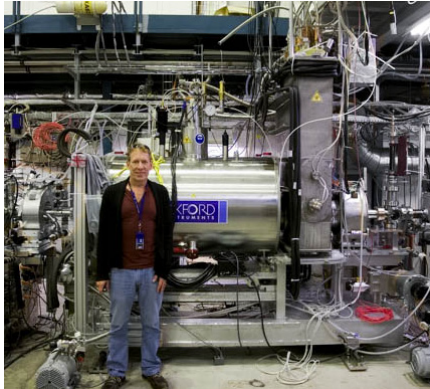
When two different types of particles are circulating in the LHC, the locking of the two radio frequency (RF) systems (known as "cogging") can be a challenge. Along with **other activities**, cogging was one of the many delicate tasks addressed during the proton-lead beam-commissioning phase.

During the first cogging exercises the beam dump was triggered due to high beam-losses. This was later found to

be caused by an improper synchronization of the two RF frequencies. The de-synchronization provoked an overshoot of frequency during adjustment and thus an overshoot of the position of beam 2 in the horizontal plane. As a consequence, the beam 2 was scraped and some ions lost at the collimators at point 7. Careful fine-tuning was needed for the cogging process to overcome the problem.

ERC supports antihydrogen research

As part of a Europe-wide effort to promote high-level research, the European Research Council (ERC) has awarded a €2.14 million grant to ALPHA spokesperson Jeffrey Hangst, which will further the collaboration's study of the antihydrogen spectrum. The grant will be used to purchase laser spectroscopy equipment for the new ALPHA-2 set-up.



ALPHA Spokesperson, Jeffrey Hangst, in front of the new ALPHA-2 set-up.

The **incorporation of lasers** into ALPHA-2 will allow the team to take precise measurements of trapped antihydrogen. Among the new

equipment financed by the grant will be a high-precision laser and stabilisation system to study the transition from the ground state to the first excited state in antihydrogen. As this spectral line is very well known in hydrogen, its study in antihydrogen will provide essential data for matter/antimatter symmetry investigations.

"The grant has come at a perfect time for us," says Jeffrey Hangst. "We will be procuring most of the equipment in 2013 and getting it ready to be used when the beam comes back after the shutdown. All of the collaboration members who have laser experience will be involved in the laser project, including two new postdocs and a PhD student who will be hired with grant financing. We hope to be ready to go in 2014."

LS1: exciting times ahead

(Continued from page 1)

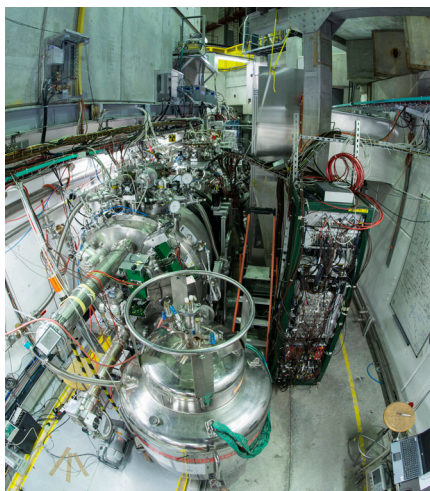
The whole tunnel ventilation system will also be dismantled and replaced, with 25 air handling units representing a cumulated flow rate of 576,000 m³/hour to be installed around the accelerator's 628 m circumference. Meanwhile, at the SPS, about one hundred kilometres of radiation-damaged cables used in the instrumentation and control systems will be removed or replaced. The Bulletin will cover the long list of work taking place on the CERN site as it progresses.

CERN will take advantage of LS1 to improve the installations connected with the experiments, the accelerators, the electronics, etc., with a view to a spectacular resumption of its main activities after the shutdown. While the shutdown work is in progress, life at the Laboratory will be anything but boring. You can count on the Internal Communications service to keep you abreast of all the developments.

Caroline Duc

AEGLS installation completed

Gravity. Despite first being described over three centuries ago, it remains one of the least understood of the fundamental forces explored by physicists. At CERN's recently completed AEGLS experiment, a team has set out to examine the effect of gravity on an as-yet-uncharted realm: antimatter.



The complete AEGLS set-up.

Located in the AD hall, the **AEGLS** experiment plans to make the first direct measurement of Earth's gravitation effect on antimatter. By sending a beam of antihydrogen atoms through very thin gratings, the experiment will be able to measure how far the antihydrogen atoms fall and in how much time – giving the AEGLS team a measurement of the gravitational coupling.

"By the end of 2012, we had finished by putting all the elements of the experiment together," explains Michael Doser, AEGLS Spokesperson. "Now we have to show that they can all work together and, unfortunately, we will have no antiproton beams for a long period due to the machines' shutdown."

But instead of waiting for two years for beams to return to the AD hall, the AEGLS team has come up with an alternative. If they can't work with antihydrogen, why not try out their experiment with hydrogen? By replacing antiprotons with their own proton source, the AEGLS team will be able to manufacture their own hydrogen beam that they can use to commission and test their set-up. "We want to make sure we understand how to make antihydrogen and our diagnostic will be the formation of hydrogen," says Doser. "If we succeed in making hydrogen this year, that will be a huge step forward; and if we can make hydrogen beams next year, then we'll really be in business." Surprisingly, carrying out the experiment with hydrogen will technically be more difficult than it would have

been with antihydrogen. The AEGLS team is pushing the technology hard to develop a suitable detector.

One main challenge will be in the production of positronium* used to create hydrogen. The AEGLS team will be faced with a Goldilocks-style problem: making sure it is not too fast, and not too slow. "The positronium needs to be fast enough to ensure it doesn't quickly decay before it meets the protons/antiprotons," explains Doser. "But it can't be so fast as to pass the protons/antiprotons altogether. Tuning this will take quite some time and will be one of the first things the team works on."

"The AEGLS team will be carrying out this commissioning during the coming months, opening up their set-up next month to make any necessary adjustments and to install a hydrogen detector and proton source."

Katarina Anthony

* Positronium: an electron and a positron in a bound state.

CERN's new seat at the United Nations

At the end of December, the General Assembly of the United Nations in New York granted CERN Observer status. As the only science organisation to acquire this prestigious status in the Assembly, CERN hopes to be able to raise awareness about the importance of fundamental science for society more effectively.

"Both CERN and the United Nations are committed to promoting science as a driving element for society. Both organisations promote dialogue between different cultures and can propose concrete models for peaceful cooperation towards objectives that benefit society as a whole," says Maurizio Bona, CERN's officer in charge of relations with international organisations. Although the basic motivations are clear, obtaining the prestigious status from the UN was a long process that required negotiations and diplomatic work. Following some preliminary contacts with Switzerland starting in spring 2012, the resolution to grant observer status to CERN was jointly submitted in mid-August 2012 by the Organization's two Host States, Switzerland and France and then co-sponsored by CERN's eighteen other Member States as well as by several non-Member States. It is worth noting that requests to grant Observer status to intergovernmental organisations cannot be put forward by the organisations concerned, but only by Member States of the United Nations.

CERN already engages in a several relations with the United Nations and several of its agencies. The presence of CERN, an inter-governmental organisation, as a permanent Observer at the UN General Assembly is a natural step forward. "Our presence at the Assembly was felt to be so natural by everybody that the Organization's sign and seat were prepared before the formal adoption by the General Assembly and were made available as soon as the positive vote actually took place," says Maurizio Bona, who attended the General Assembly session on 14 December. "The meeting with UN Secretary General, Ban Ki-moon, and our Director-General on Monday 17 December was extremely friendly and lasted longer than officially planned. Mr Ban Ki-moon encouraged CERN to actively cooperate with the United Nations, in particular on his initiative on science for sustainable development, and expressed a wish to visit CERN soon."

To fulfill its mission, the UN and its agencies are involved, in different ways, in many fields of science, technology and innovation, as well as in education. With the recently updated and more effective institutional relationships, CERN hopes to strengthen and broaden its contribution to various ongoing UN initiatives. As an example, in the coming



months CERN is planning to contribute to the implementation of **ECOSOC's** 2013 theme, "science, technology and innovation, and the potential of culture, for promoting sustainable development and achieving the Millennium development goals".

"Several of the United Nations' initiatives are happening in areas where CERN has no Member States," says Maurizio Bona. He concludes: "The seat at the UN Assembly is not a static throne but a privileged position that will open new doors for us to reach a wider audience and raise awareness about the scientific world and its positive influence on society in a more global community."

Antonella Del Rosso



United Nations Secretary-General Ban Ki-moon (left) and CERN Director-General Rolf Heuer (Image: Evan Schneider/UN).

CERNland: addicted to edu-gaming

CERNland, the CERN site designed for kids, has launched a new game environment dedicated to the Universe. If you are between 7 and 99 and like challenges, embark on a journey through the history of the Universe and become addicted to (healthy) gaming!



Welcome on board the CERNland spaceship! Visit cernland.net

Fifteen games, a newsroom and a brand-new game environment on the evolution of the Universe: since its official launch in 2009 to mark the 20-year anniversary of the invention of the Web, CERNland hasn't stopped growing.

In CERNland, games can be accessed by clicking on points corresponding to the experiment locations or on specific buildings on the CERN site. Everything in CERNland is animated and interactive, even the educational ("learn") parts where the player can

find more in-depth explanations. A zoom-in animated sequence brings you to the CERN site, while a zoom-out on board a spaceship takes you to the frontiers of the Universe.

Each single character in CERNland is specially designed and drawn for the site, and the programming behind the animations accurately reproduces the specific physics processes that the game is about. But don't think about all this. CERNland must be enjoyed without too much physics thinking. Allow yourself to feel like a young child

again and start playing. A cute spaceship is now there to welcome you on board. Don't forget to check the journey logbook from time to time and try to get to the Big Bang faster than the others!

Antonella Del Rosso

CERNland kudos

Available in six languages, CERNland receives a few hundred visitors every day, of whom more than 80% on average percentage are new visitors. In 2010 the site was awarded the physics.org web prize. Over the years and with the regular addition of new games, it keeps collecting fans from all over the world. Browsing the net for spontaneous comments, you can find the following quotes: "Cute and cuddly. Not how you'd normally describe the biggest of big physics projects. But I've just spent a happy hour exploring and playing in CERNland, and I'm as smitten as a kitten. I've often cringed at some of the well-meaning, yet misguided attempts to teach kids about particle physics. But CERNland has got it spot on." And tweets like: <http://www.cernland.net/> #CernLand by @CERN fantastic! #physics. And blogposts: "I swear I am 24 years old. GO HERE TO VISIT CERNLAND! #this is Super Mario meets the LHC #CERN #i swear i am 24 years old #LHC #Large Hadron Collider"

CERN Courier goes digital

The January/February 2013 issue of CERN Courier offers a new way to access the content – the first digital edition of this magazine.



CERN Courier dates back to August 1959, when the first issue appeared, consisting of 8 black-and-white pages. Since then it has seen many changes in design and layout, leading to the current full-colour editions of more than 50 pages on average.

It went on the web for the first time in October 1998, when IOP Publishing took over the production work. Now, we have taken another step forward with a digital edition

that provides yet another means to access the content beyond the web and print editions, which continue as before. To sign up to the new issue alert, please visit:

<http://cerncourier.com/cws/sign-up>.

Christine Sutton, CERN Courier editor



Hacking control systems, switching lights off!

Have you ever heard about “Stuxnet”? “Stuxnet” was a very sophisticated cyber-attack against the Iranian nuclear programme. Like in a spy movie, the attackers infiltrated the uranium enrichment plant at Natanz, arranged for infected USB sticks to be inserted into local PCs, and then the USB viruses did the rest.

Not only did the virus employ four distinct - so far unknown - weaknesses in the Windows operating system, but each weakness could have been sold on the underground market for up to \$250,000 each.

The virus was targeted to disrupt Iran's uranium production. At first, it scanned the infected PCs for dedicated SCADA (Supervisory Control and Data Acquisition) software from Siemens. Once the virus hit upon that software, it tried to identify any control system components, i.e. so-called PLCs (programmable logic controllers), attached to that PC. If the PLC matched a certain brand (Siemens S7) and configuration, the virus downloaded additional code sequences into that PLC. Those sequences were lethal: clandestinely and over months, they varied the rotational speed of the uranium enrichment centrifuges. Non-constant rotation deteriorated the uranium enrichment and subsequent wear-out rendered the centrifuges useless. So the attackers achieved their goal...

While this seems to be a far-fetched and unique example, reality is much worse. Standard control systems deployed in power distribution networks and energy generation or employed in almost all pro-

duction lines worldwide (cars, oil, chemicals, etc.) are completely unprotected. While they use similar techniques as standard PCs - like the Windows operating system, e-mails and www, and connect to similar networks - “security” was never part of their design. Thus, breaking into PLCs is easy and straightforward. Switching off the lights in [put your favorite country here] has never been so easy. Not without reason, Richard A. Clarke, advisor to the U.S. President, stated in 2011 that while the U.S. might be able to blow up a nuclear plant somewhere, a number of countries could strike back with a cyber-attack and “the entire U.S. economic system could be crashed in retaliation... and we can't defend it today”. Replace “U.S.” with “worldwide” and you get the real picture.

What about CERN? Accelerators, experiments and their technical infrastructure are all based on the same control system technologies with the same drawbacks, vulnerabilities and security risks. Interestingly, colleagues in the former IT/CO group (now EN/ICE) had already created a much less sophisticated variant of “Stuxnet” in 2004. Dedicated tests from 2005 to 2007 showed that one third of the tested control systems could be crashed via a cyber-attack within seconds. Consequently, a strategic working

group, the Computing and Networking Infrastructure for Controls (CNIC) group, was mandated to improve the cyber-security of CERN's control system in 2004. This group brought together representatives from all the LHC experiments, the technical and accelerator sectors, as well as the IT department and the Computer Security Team. The result was a clear control system security policy and actions, e.g. separation of office network (GPN) and control network (TN) and prohibition of USB sticks on the TN. Today, CERN is in direct contact with several vendors and governmental bodies, and collaborates with them to better secure control systems...

So if you are running control systems, check: Is your configuration safe? Do you have proper access control? Do you patch on time? Do you know “security”? If you do not know or have doubts, join the [CNIC Users Exchange](#) or contact us at Computer.Security@cern.ch.

Computer Security Team



Springer e-books in Engineering and Mathematics - now at your desktop!

News from the Library

Users obviously expect library collections to be shaped to meet their information needs. Today, online systems have replaced the good old “Book Suggestion Register” to help readers provide libraries with input.

Moreover, e-books lend themselves by their nature to a trial period, whereby the needs and the potential usage of collections can be effectively measured.

In this sense, the trial of Springer e-books on engineering done in October-November last year was extremely fruitful because it showed the interest of the community and provided us with essential feedback.

Following that trial, the Library now provides access to a collection of Springer e-books **on Engineering** published in 2012 and 2013 and also **on Mathematics** (2010-2013). These collections complement the Springer Physics and Astronomy and “Lecture Notes in Physics” e-books series.

CERN Library

Work at home

Just the word “telecommuter” is enough to make many managers start to sweat. When faced with the prospect of managing an employee they cannot even see, basic managerial knowledge often becomes hazy, resulting in a confusing arrangement for both manager and employee. As more and more of our world revolves around technology and an increasing number of jobs can be executed from an office at home, managers must learn how to adapt their leadership style to cater to both remote employees, and those working in the office.⁽¹⁾

As the policy concerning working from home is described in the Operational Circular No 7⁽²⁾, I will not describe it in detail but rather focus on the pros and cons of such a work arrangement, and most importantly on the discussion following a request and on the necessary mutual confidence between the manager and the employee. Of course, working from home is appropriate for some professions, but may not be possible for all of them.

Some 500 studies⁽³⁾ about telecommuting have provided evidence that most people are eager to find a work-life balance and that 36% would prefer working at home to a pay raise. Professionals are often happier and a lot more productive when they work removed from the stresses and the interruptions of the workplace, working independently in their own environment at their own pace. Working from home results in fewer unscheduled absences, reduced stress, sickness levels and burnouts. Avoiding commuting and the improved attractiveness of the institution are also good arguments, among many others⁽³⁾, in favour of working at home. Taking all considerations into account, the improved efficiency can be as high as 13-15%.

The main obstacles are management mistrust, career fears, co-worker jealousy and collaboration concerns. Telecommuting demands self-discipline to stay focused on the job, a good home-based organization and an aptitude for self-motivation, and so it is not suited to everyone.

Work at home calls for an improved communication between managers and employees. Their mutual expectations should be more precise, the arrangement should be finely tuned to avoid any conflict developing due to a lack of mutual trust. When working at home, employees should feel trusted and motivated by their managers and will therefore work harder to honour that trust. Unfortunately some managers still feel that the work at home cannot be put on the same footing as work in the office, just because they do not see their staff and consequently do not feel confident of their productivity. Sometimes managers may even impose checks on their employees which go much beyond what would be applied while working on CERN premises.

Work at home has been officially accepted at CERN, under certain conditions of course, and the managers should adapt their management style to those who submit a valid request to work partly at home. Thus, they should not a priori be suspicious nor should they introduce unjustified mechanisms for checking the amount of time spent people actually spend on their work at home. Definitive and conclusive organisational discussions should take place between the manager and the employee in order to avoid any misunderstanding on the work to be done and the objectives. This is the way of ensuring mutual respect, mutual trust, transparency and the best possible efficiency for CERN.

Conclusion:

Work at home – along with its associated conditions – is part of official CERN policy. As much as possible, managers should consider adapting to it and employees should respect the agreed objectives. It is part of our strategy for a respectful workplace environment and in many cases promotes an improved work-life balance, which is conducive to enhanced overall effectiveness.

Vincent Vuillemin

⁽¹⁾ **“Working from Home: Benefits for the employer”**, Amelia Forczak, Marketing Manager, HR solutions Inc. eNews, March 2011, Chicago, USA.

⁽²⁾ Operational Circular No 7, Human Resources Department, May 2004.

⁽³⁾ For example: **“Costs and Benefits, Advantages of Telecommuting For Companies”**, from Global Workplace Analytics - **“Benefits for Organization”** - **“The advantages and Disadvantages of Working from Home”**.



Operational circular n°10 – Principles and procedures governing investigation of fraud

Operational Circular No. 10 entitled "Principles and procedures governing investigation of Fraud", approved by the Director-General following discussion at the Standing Concertation Committee meeting of 4 December 2012 and entering into force on 1 January 2013, is available on the intranet site of the Human Resources Department:

This circular is applicable to any person working at or on behalf of CERN.

The purpose of this new operational circular is to state the definition of fraud and to set the Organization's fraud investigation process pursuant to the **CERN Anti-fraud Policy** and in accordance with the principles of due process.

Department Head Office
HR Department

CERN anti-fraud policy

In 2011, a working group on improved fraud prevention and management was established. The group was composed of the Director of Administration and General Infrastructure, the Head of the Human Resources Department, the Head of the Legal Service and Internal Audit. It recommended the adoption of a global fraud prevention and management policy.

The global fraud prevention and management policy was implemented through the **CERN Anti-Fraud Policy**, which was endorsed by the Enlarged Directorate in May 2012 and approved by the Director-General for entry into force on 1 January 2013.

The CERN Anti-Fraud Policy defines the Organization's policy in matters of fraud. CERN has a zero tolerance approach towards fraud, as it would compromise the accomplishment of its objectives and undermine its functioning, credibility and reputation. The policy also states CERN's commitment to the prevention, identification and investigation of fraud.

All CERN contributors have a key role to play in the prevention and detection of fraud and the responsibility to report suspicions of fraud.

Department Head Office
HR Department

Procedure for obtaining visas for Switzerland and France - Signature rights

In accordance with the Status Agreements with CERN, Switzerland and France facilitate the entry of members of the Organization's personnel on to their territories. Where relevant, detailed procedures for obtaining visas apply.

Within the framework of those procedures, only the following individuals are authorised to initiate the note verbale procedure as well as to sign the Official Invitation Letters and the Conventions d'accueil.

- Kirsti ASPOLA (PH – CMO)
- Oliver BRÜNING (BE – ABP)
- Michelle CONNOR (PH – AGS)
- Patrick FASSNACHT (PH-ADO)
- David FOSTER (IT – DI)
- Nathalie GRÜB (PH – AGS)
- Tadeusz KURTYKA (DG – PRJ)
- Markus NORDBERG (PH – ADO)
- Cécile NOELS (DG – PRJ)
- Maria QUINTAS (HR – SPS)
- Kate RICHARDSON (PH-AGS)
- Jeanne ROSTANT (PH – AGS)
- José SALICIO-DIEZ (PH – AGS)
- Ulla TIHINEN (PH – AGS)
- Emmanuel TSESMELIS (DG)
- Rüdiger VOSS (PH – ADE)

The French and Swiss Authorities will reject any request signed by a person who is not on this list.

We would like to remind you that in accordance with the memorandum of 7 December 2000 issued by the Director of the Administration, (ref. DG/DA/00-119), "the Organization shall not request any legitimisation document (or residence permit) or visa from the Host States for persons registered as EXTERNAL" (people who do not hold a contract of employment, association or apprenticeship with CERN).

We would also like to remind you that those coming to CERN should find out in good time about the conditions of entry to Switzerland and France applying to them and ensure that they obtain the requisite visas, where applicable, in the country in which they are habitually resident.

Useful information can be obtained from the Swiss and French diplomatic representations abroad, as well as from the following Web pages:

- **Swiss Federal Office for Immigration;**
- **French Ministry of Foreign and European Affairs.**

The Authorities of the Host States have informed the Organization on a number of occasions that they insist upon scrupulous compliance with visa legislation.

Relations with the Host States Service
relations.secretariat@cern.ch
Tél. 72848

Administrative circular No.14 (Rev. 3) – Protection of members of the personnel against the financial consequences of illness, accident and incapacity for work

Administrative Circular No. 14 (Rev. 3) entitled "Protection of members the personnel against the financial consequences of illness, accident and incapacity for work", approved by the Director-General following discussion at the Standing Concertation Committee meeting of 19 April 2012 and entering into force on 1 January 2013, is available on the intranet site of the Human Resources Department.

This circular is applicable to all members of the personnel.

It cancels and replaces Administrative Circular No. 14 (Rev. 2) entitled "Protection of members of the personnel against the financial consequences of illness, accident and disability" from July 2006.

The circular was revised in order to improve the procedure before the Joint Advisory Rehabilitation and Disability Board (JARDB) and the management of long-term sick leave through a multidisciplinary approach launched upstream. The aim of this approach is to allow staff/fellows concerned to return to work as soon as possible and in the best possible conditions.

Department Head Office
HR Department

Administrative circular n°23 (Rev. 3) – Special working hours

Administrative Circular No. 23 (Rev. 3) entitled “Special working hours”, approved by the Director-General following discussion at the Standing Concertation Committee meeting of 11 October 2012 and entering into force on 1 January 2013, is available on the intranet site of the Human Resources Department.

This circular is applicable to staff members and fellows.

It cancels and replaces Administrative Circular No. 23 (Rev. 2) entitled “Special working hours” of December 2008.

Paragraph 6 a) of Annex II of this circular was revised following the modification of Article III 1.04 of the Staff Regulations approved by Council on 14 December 2012. The modification serves to adapt the minimum rest time to the fact that, in case of rapidly alternating shifts, a maximum of seven consecutive shifts may be performed.

Department Head Office
HR Department



Language training

English courses

Oral Expression

The next sessions will take place from 4 March to 21 June 2013. This course is intended for people with a good knowledge of English who want to enhance their speaking skills.

There will be on average of 8 participants in a class. Speaking activities will include discussions, meeting simulations, role-plays etc. depending on the needs of the students.

Writing Professional Documents in English - Administrative Writing Professional Documents in English - Technical

The next sessions will take place from 4 March to 21 June 2013. These courses are designed for people with a good level of spoken English who wish to improve their writing skills. There will be an average of 8 participants in a class.

For registration and further information on these courses, please consult [our Web pages](#) or contact Kerstin Fuhrmeister: **Tel. 70896**.



Take note

2013 European School of High-Energy Physics

The School will be held in Hungary from 5 to 18 June 2013.

PLEASE NOTE THAT THE DEADLINE FOR APPLICATIONS IS **15 FEBRUARY 2013**

The lectures will cover a broad range of HEP topics at a level suitable for students working for a PhD in experimental particle physics.

Note that, as indicated on [the web pages](#), one or two students from developing countries could be considered for financial support.

Nick Ellis

(On behalf of the Organising Committee)



Seminars

THURSDAY 7 FEBRUARY

COLLIDER CROSS TALK

11:00 First evidence for Bs->mumu: theoretical overview and experi- mental result

GINO ISIDORI (INFN FRASCATI), XABIER CID VIDAL (UNIVERSIDADE DE SANTIAGO DE COMPOSTELA (ES))

CERN (4-2-011 - TH COMMON ROOM)

A&T SEMINAR

14:15 The Maintenance Management Project (MMP)

INGO RUEHL (CERN), GORAN PERINIC (CERN), MEMBERS OF THE MMP TEAM

CERN (30-7-018 - KJELL JOHNSEN AUDITORIUM)

ISOLDE SEMINAR

14:30 PROTON/ANTI-PROTON MAGNETIC MOMENTS AND THE HYPERFINE STRUCTURE OF ANTIHYDROGEN

STEFAN ULMER

CERN (26-1-022)

FRIDAY 8 FEBRUARY

DETECTOR SEMINAR

09:00 Overview of the LHCb calorim- eter detectors

PASCAL PERRET (UNIV. BLAISE PASCAL CLERMONT-FE. II (FR))

CERN (40 S2-A01 SALLE ANDERSSON)

PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 TBA

RIKKERT FREDERIX (CERN)

CERN (4-3-006 - TH CONFERENCE ROOM)

TUESDAY 12 FEBRUARY

COMPUTING SEMINAR

10:30 PostgreSQL in the database landscape

HARALD ARMIN MASSA & SIMON RIGGS (2NDQUADRANT)

CERN (6-2-024 - BE AUDITORIUM MEYRIN)

TH STRING THEORY SEMINAR

14:00 TBA

RICCARDO RATTAZZI (UPFL)

CERN (4-3-006 - TH CONFERENCE ROOM)

WEDNESDAY 13 FEBRUARY

TH THEORETICAL SEMINAR

14:00 TBA

ELIEZER RABINOVICI (THE HEBREW UNIVERSITY OF JERUSALEM (IL))

CERN (4-3-006 - TH CONFERENCE ROOM)



Safety Training Course

Safety Training - places available in February 2013

Noise - Understanding the risks

01-FEB-13, 10.00 – 12.30, in French

Magnetic Fields

08-FEB-13, 9.00 – 11.30, in French

Conduite de plates-formes élévatrices mobiles de personnel (PEMP) – Cherry-picker driving

18-FEB-13 to 19-FEB-13, 8.30 – 17.30, in French

Self-Rescue Mask Training

05-FEB-13, 8.30 – 10.00, in French

05-FEB-13, 10.30 – 12.00, in French

12-FEB-13, 8.30 – 10.00, in French

12-FEB-13, 10.30 – 12.00, in French

14-FEB-13, 8.30 – 10.00, en anglais

14-FEB-13, 10.30 – 12.00, en anglais

19-FEB-13, 8.30 – 10.00, in French

19-FEB-13, 10.30 – 12.00, in French

21-FEB-13, 8.30 – 10.00, en anglais

21-FEB-13, 10.30 – 12.00, en anglais

26-FEB-13, 8.30 – 10.00, in French

26-FEB-13, 10.30 – 12.00, in French

28-FEB-13, 8.30 – 10.00, en anglais

28-FEB-13, 10.30 – 12.00, en anglais

Habilitation électrique personnel électricien basse tension (habilitation électrique for electricians in low voltage)

04-FEB-13 to 06-FEB-13, 9.00 – 17.30,

in English

06-FEB-13 to 08-FEB-13, 9.00 – 17.30,

in French

Habilitation électrique personnel non électricien tension (habilitation électrique for non electricians)

07-FEB-13, 9h00 – 17.30, in English

(exceptionally 8 hours instead of 12)

Use of fire extinguisher – live exercises

06-FEB-13, 8.30 – 10.30, in French

06-FEB-13, 10.30 – 12.30, in French

08-FEB-13, 8.30 – 10.30, in French

08-FEB-13, 10.30 – 12.30, in French

13-FEB-13, 8.30 – 10.30, in French

13-FEB-13, 10.30 – 12.30, in French

15-FEB-13, 8.30 – 10.30, in French

15-FEB-13, 10.30 – 12.30, in French

20-FEB-13, 8.30 – 10.30, in English

20-FEB-13, 10.30 – 12.30, in English

22-FEB-13, 8.30 – 10.30, in French

22-FEB-13, 10.30 – 12.30, in French

27-FEB-13, 8.30 – 10.30, in French

27-FEB-13, 10.30 – 12.30, in French

Pontier-élingueur (Crane driving)

25-FEB-13 to 26-FEB-13, 8.30 – 17.30,

in French

Recyclage – Conduite de plates-formes élévatrices mobiles de personnel (PEMP

- refresher course for cherry-picker driving)

27-FEB-13, 8.30 – 17.30, in French

Refresher course Self-Rescue Mask Training

04-FEB-13, 8.30 – 10.00, in French

04-FEB-13, 10.30 – 12.00, in English

11-FEB-13, 8.30 – 10.00, in French

11-FEB-13, 10.30 – 12.00, in French

18-FEB-13, 8.30 – 10.00, in French

18-FEB-13, 10.30 – 12.00, in English

25-FEB-13, 8.30 – 10.00, in French

25-FEB-13, 10.30 – 12.00, in English

Recyclage – Habilitation électrique personnel non électricien (refresher course for non electricians)

08-FEB-13, 9.00 – 17.30, in English

Recyclage – Habilitation électrique personnel électricien basse et haute tensions (refresher course for electricians in low and high voltage)

25-FEB-13 to 26-FEB-13, 9.00 – 17.30, in French

Recyclage – Pontier-élingueur (refresher course for crane driving)

28-FEB-13, 8.30 – 17.30, in French

Risks associated with operations in confined spaces

13-FEB-13, 9.00 – 17.30, in French

First-Aiders – Basic Course

07-FEB-13, 8.15 – 17.30, in French

First-Aiders – Refresher Course

14-FEB-13, 8.15 – 12.30, in French

14-FEB-13, 13.30 – 17.30, in French

14-FEB-13, 8.15 – 12.30, in French

14-FEB-13, 13.30 – 17.30, in French

Working at heights – Using a harness to prevent falling from a height

15-FEB-13, 9.00 – 17.30, in English