CERN Bulletin

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PICKIN' UP GOOD VIBRATIONS

In preparation for the civil engineering work on the HL-LHC, vibration measurements were carried out at the LHC's Point 1 last month. These measurements will help evaluate how civil engineering work could impact the beam, and will provide crucial details about the site's geological make-up before construction begins.

A seismic truck at Point 1 generated wave-like vibrations measured by EN/MME.

From carrying out R&D to produce state-of-the-art magnets to developing innovative, robust material capable of withstanding beam impact, the HL-LHC is a multi-faceted project involving many groups and teams across CERN's departments. It was in this framework that the project management mandated CERN's Mechanical and Materials Engineering (EN/MME) group to measure the propagation of vibrations around Point 1. Their question: can civil engineering work for the HL-LHC – the bulk of which is scheduled for LS2 – begin while the LHC is running? Although the civil engineering work for the LHC was carried out during LEP operation, the LHC is much more sensitive to vibrations.

"While the main civil engineering work will, of course, take place during LS2, we would like to identify which parts of it could be carried out during LHC operation," says Paolo Fessia, who is in charge of the HL-LHC integration. It is a tricky endeavour. Imagine a massive digger pounding away just 40 metres from the beam. Meanwhile, the LHC beam stability would be needed in the micron level. Could this be feasible?

"Over this past year, we have performed a number of vibration studies," says Michael Guinchard, who is in charge of the mechanical measurement lab (EN/MME). "At SM18, we generated artificial vibrations on the floor and looked at their effect on the active part of an LHC quadrupole magnet. We also carried out similar measurements close to AWAKE, where we used their parallel tunnels to our advantage. We placed a shaker in one tunnel – creating known vibrations – and then we looked at the response in the other tunnel. This allowed us to examine the attenuation through the earth separating the two tunnels." With these measurements in hand, the team was well prepared to study vibration propagation at Point 1.

They began in the ATLAS UL16 tunnel, installing four geophone sensors to measure

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THANKS!

This is my last message to CERN personnel as Director-General, and the overriding sentiment I'd like to pass on is 'thank you': it has been a fantastic seven years. I've been privileged to be DG through amazing times, and thanks to the efforts of many we are at the threshold of a golden era for our field.

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NEWS

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A word from the DG

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THANKS!

Over seven years, the thank-yous add up, and I'd like to start by thanking the CERN Council for entrusting me with the best job in the world of particle physics and for providing constant support throughout my mandate. The Council and the Management do not always agree, and that is how it should be: each is subject to different boundary conditions, and priorities vary. Nevertheless, it has been a partnership in which discussions have been conducted constructively and differences resolved amicably. CERN is stronger because of it.

I'd like to thank the CERN staff, whose often-invisible efforts keep the wheels turning in all areas from the seamless delivery of beams to the administration of all the complex tasks that come with being a major intergovernmental organisation. While I'm speaking of staff, I'd also like to say how much I have appreciated the relationship between the Management and the Staff Association. Despite differing opinions, we have established and maintained a relationship characterised by mutual trust and respect.

Not all the essential functions of CERN are carried out by staff however, so I'd also like to thank the contractors, whose tasks range from site security to ensuring our offices and laboratories are clean, and our plates are full at lunchtime.

CERN's primary mission is, of course, research. As well as carrying out research ourselves, we are here for our users, who repay us royally in the form of reams of fantastic new physics. The Brout-Englert-Higgs mechanism is the cherry on the cake, and it has helped whet the world's appetite for physics. Over the last few years, Quark Gluon Plasma, pentaquarks, antimatter and baryon resonances have all made headlines. Long may this continue.

Nor should we forget our theorists. Although CERN is primarily an experimental physics centre, theory plays a vital part in the intellectual life of the Laboratory. Our theorists are indispensible to CERN and play a valuable role in training the future intellects that will drive our field forward in the years and decades to come.

Thanks are also due to the world's particle physics laboratories and institutions. Over the timespan of my mandate, the world of particle physics has got much closer. Today, it feels very much like a global collaboration.

I'd like to turn now to what you have achieved over the last seven years. Thanks to the bottom-up European Strategy process, Europe has a coherent, evolving and globally-integrated strategy that will steer us through the LHC era and set us up for what's to follow. This is fully consistent with the US and Japanese strategies, and is set to evolve at the next update around 2018. The CERN family has grown with new Member and Associate Member States, and that growth is set to continue.

Scientifically, of course, the highlight has been the spectacular performance of our flagship, the LHC, along with its detectors and computing infrastructure. Run 1 gave us the Brout-Englert-Higgs mechanism, leading to a Nobel Prize, and Run 2 is off to a brilliant start. Most of our facilities have seen upgrades, for example with the HIE-ISOLDE facility that recently came on-stream, ensuring that our veteran ion-beam facility remains competitive. We have also enlarged our scientific portfolio beyond the borders of Europe, and we've even extended the age range of our research community downwards by making a PS beam available to school groups who come to CERN for a couple of weeks a year. The first CERN Beamline for Schools competition winners are about to submit a paper to a peer-reviewed journal and I have high hopes for future cohorts.

CERN has always been a very open organisation, as our convention obliges us to be. But now we have gone further by pushing the frontiers of open-access publishing, making our datasets openly available and reaching out to new communities in the realms of the arts, philosophy and religion. The results, I believe, can only be good for science.

There's much more that I could say about your achievements, but time and space are limited and I would like to end with those words again: thank you. Your achievements make me proud to be part of this community, humbled and honoured to have had the privilege of leading this fantastic institution for the last seven years, and satisfied that I am leaving a laboratory that's in fine form, and for this I'd especially like to thank the outgoing Management team, and everyone among you.

Finally, I wish you and your families a wonderful end-of-year break and a fabulous 2016. And I'd like to thank the incoming Management team for all they've done to ensure a smooth transition. I wish Fabiola Gianotti, her team and all of you a successful future, crowned with wonderful new physics. I, for one, can't wait.

Rolf Heuer

PICKIN' UP GOOD VIBRATIONS

(Continued from page 1)

vibrations in the ground and convert the signal into an electronic signal. Further sensors were placed around the vibration sources at the surface, linked to the underground geophones using the LHC "White Rabbit" synchronisation network. This allowed the team to look at the effects of the vibrations at the same time.

"The first vibrations we studied were generated by a core-drilling machine, used to examine the site's geological make-up," says Paolo. "This information will be essential for designing and constructing the new underground caverns and technical galleries needed for the HL-LHC, as construction companies need to know exactly what they will find when they dig (hard rock, sand, water, etc.). While this is the main purpose of the drilling, it has also been used to study the effect of pulsed vibrations." The drilling activities are the responsibility of the GS-SE group, which will also be in charge of the follow-up of the execution of all the civil engineering work for the HL-LHC.

A few days later, the seismic truck rolled in. This unique, 24-tonne machine uses its entire weight to push down on the ground, generating wave-like vibrations from 4 up to 100 times per second. "We created waves with a wide range of frequencies and looked at their attenuation," says Michael. Working in collaboration with the BE-OP team, measurements with beam were also taken and will provide a valuable data set for more detailed analysis.

So, while the HL-LHC is still many years away from operation, its impact on the LHC can already be felt… in this case, quite literally!

Katarina Anthony

LHC REPORT: SERVING A HOT, DENSE SOUP FOR CHRISTMAS

With just a few days left until the end of the year, the LHC is finishing 2015 with yet another successful heavy-ion run. This has been possible thanks to a great deal of dedication and professionalism on the part of many people throughout the Organization.

As already reported in previous *Bulletin* articles, the last leg of the race started on 14 November with the 5.02 TeV intermediate energy proton run, the preparation for which was interleaved with the beginning of commissioning for the ion run. Early in the morning of 17 November, lead-lead collisions were produced for the first time at a new energy frontier: 5.02 TeV centre-of-mass energy per colliding nucleon pair (or 1.045 PeV total). With the proton-proton reference run safely out of the way, commissioning and validation with ions was then completed, opening the way for Stable Beams and the start of data-taking at ALICE, ATLAS, CMS and LHCb. The following days were eventful. Steady improvements were made in various accelerator chain systems to try to reach the longstanding goal of the design luminosity at ALICE of $1x10^{27}$ $cm^{-2}s^{-1}$.

The lead ion source was refilled on 1 December and is currently reaching 90% of the expected performance with around 22 µA now being delivered by Linac3. A charge stripper in Linac3 was replaced, giving excellent transmission to the Low Energy Ion Ring (LEIR). The SPS team has worked hard ro reduce the beam losses during the energy ramp with excellent results. All these improvements translate into average ion bunch intensities close to $2x10^{10}$ equivalent proton charges at injection into the LHC, almost three times the design intensity.

The ion beams are injected into the LHC as trains of up to 24 bunches. Up to 22 SPS to LHC injections per beam are needed to fill the machine for physics, with around 400 to 500 bunches per beam. Each train is made of 12 pairs of bunches, known as batches. The two bunches are separated by 100 ns, which is the minimum spacing achievable by the PS batch compression RF gymnastics systems. Each batch was separated by 225 ns from the following batch to match the rise time of the SPS injection kicker. The bunch and batch spacing limits the total number of bunches that can be injected into the LHC.

On 4 December, an SPS injection kicker switch was replaced, allowing a faster rise time with less jitter and, as a consequence, a batch spacing of 175 ns was achieved instead of the original 225 ns. This is an unexpected bonus not originally envisaged as being possible until after LS2. This modification allowed 474 bunches per beam to be injected (up from 426). Keen to fully exploit the possibilities, the Accelerator Beam Transfer (ABT) group pursued further improvements and managed to reduce the rise time further, to 150 ns. On 9 December, they reached their target and, for the first time, 518 bunches per beam were injected into the LHC and allowed physics to begin, increasing once again the peak and integrated luminosity. The SPS and LHC transverse dampers have been closely following all these modifications to fully guarantee the required bunch stability.

ALICE's luminosity levelled at the design luminosity of $1x10^{27}$ $cm^{-2}s^{-1}$ for between 3 and 4 hours of a typical 5-hour fill. ATLAS and CMS enjoyed peaks of over $3x10^{27}$ $cm^{-2}s^{-1}$. For the first time in an ion-ion run, LHCb also took data, following its participation in the proton-lead run.

Besides physics production we also managed to squeeze in other activities, such as the necessary luminosity calibration runs and the ALICE spectrometer polarity reversal. ALICE collected more than 300 μb^{-1}, CMS more than 500 μb^{-1} and ATLAS over 700 μb^{-1}, putting them fully on track for the integrated Pb-Pb luminosity goal of 2015.

And last but not least, machine development activities are also a fundamental part of the run. Crystals have once more channelled high-energy beams, this time with lead ions. The test complements the initial experiment performed with proton beams in November and together they address the feasibility of bent crystals as collimators in view of the High-Luminosity LHC project.

On 8 December, the first luminosity-driven quench took place in the LHC under controlled conditions, resolving a long-standing uncertainty on quench and luminosity limits. This result finally clarifies the case for the installation of dispersion suppression collimators in the LHC, an issue that had been under discussion since 2003.

At the time of publication, the LHC has just finished brewing the hottest and densest soup ever prepared for Christmas.

Reyes Alemany for the LHC team

HOW CERN PROMOTES INNOVATION AND ENTREPRENEURSHIP

The promotion of innovation and entrepreneurship is a crucial factor in CERN's overall mission of maximising technological and knowledge returns to society. CERN's Knowledge Transfer (KT) group assiduously works to this aim, through a variety of activities.

"Entrepreneurship and knowledge transfer cannot be done in isolation," says Vetle Nilsen, fellow in charge of the entrepreneurial related activities in the KT group. "Exposing CERN basic research to a wider audience and bringing together people from different fields is a key way to create new entrepreneurial opportunities for CERN-related science."

To this end, the KT group showcased CERN at the Geneva Global Entrepreneurship Week (GEW) event from 16 to 20 November, now in its fifth year. The GEW is an international event occurring simultaneously in over 160 different countries. It shares KT's aim of inspiring people to explore their innovative and entrepreneurial ideas, through boot-camp activities, networking and meetings with experts.

The KT group, participating in the GEW in Geneva for the second year running, was involved in the organisation of two sessions.

The Entrepreneurship Meet-Up organised by the KT group for the Geneva GEW.

During the first one, held at the University of Geneva, Vetle Nilsen gave a talk on the overall mission and the activities of the KT group, showcasing some examples of successful CERN-related start-ups, such as Terabee and TIND.

The second session organised by the KT group consisted of an Entrepreneurship Meet-Up held at CERN's IdeaSquare. This meet-up was open to people inside and outside CERN, and featured a panel discussion on the creation of interdisciplinary start-ups. This meeting was a special version of the regular entrepreneurship meet-ups organised by the KT group, held twice a month since March 2015. These bi-monthly encounters are informal meetings with an overarching topic, where CERN people interested in entrepreneurship can meet and discuss their innovative ideas. Often, there are also external speakers invited to talk about various aspects of entrepreneurship.

Again in this perspective of facilitating the development of innovative business ideas, a first-of-its-kind, one-day event on innovation and entrepreneurship was held at CERN on 26 November. It was organised by CERN openlab, together with the KT group and IdeaSquare, in the framework of their collaboration with Intel in The Innovation and Entrepreneurship (I&E) project. It saw the participation of about 80 CERN people and external experts, invited to talk about a broad variety of topics related to the commercialisation of basic-research technological solutions.

About 20 participants also had the chance to present their business ideas and discuss them with the experts on a one-to-one basis. One of the innovative ideas exploiting CERN technology was presented by Juan Mario Michan, a postdoctoral fellow from the ALPHA collaboration. He developed a technology that could reduce air pollutants from the exhaust of large combustion engines or power stations, using nano-structured surfaces that initiate the chemical reactions reducing the pollutants. Its commercialisation, however, has been impeded by the lack of a dependable and scalable manufacturing process for this nano-technology. Fortunately, one of CERN's technologies provided a viable solution: the titanium polishing technology developed at CERN and used to polish the accelerator cavities to a nanometer level of smoothness can be employed to develop a suitable nano-manufacturing technology. Indeed, a titanium substrate polished at the sub-nanometer roughness could be used to grow the required nano-structured surfaces.

A very good example of how innovative ideas can be boosted by CERN technology to become entrepreneurial realities!

For more information and to take part in the KT Entrepreneurship Meet-ups, go to: ***http://cern.ch/go/xh8w***.

Stefania Pandolfi

EVALUATING AND MEASURING IMPACT: WHERE AND HOW?

On 12 and 13 November, a workshop on "Evaluation in international organisations" took place at CERN. Fourteen internal auditors and planning and policy analysts, from six different international organisations, discussed whether and how to evaluate the impact of their organisations' programmes on the target beneficiaries.

Participants of the "Evaluation in international organisations" workshop at CERN.

"Evaluation", a relatively recent but fast growing discipline, deals with the systematic and objective assessment of the impact of policies and programmes on the target beneficiaries – often society at large. In the past few years, other international organisations have created an evaluation function within their internal structure, whose role is to measure the impact of their public policies. "In the first instance we wanted to understand what the difference between evaluation and internal audit is and whether CERN could benefit from building evaluation competencies," explains Laure Esteveny, Head of Internal Audit at CERN, who proposed this initiative. "It is actually part of the internal audit's role to keep a watch on best practices and trends and to make proposals where appropriate. In the wake of the joint training initiatives that we regularly set up with peer organisations in the Geneva area, I decided to organise a workshop on this topic."

Organised in collaboration with CERN's Learning and Development Group, the workshop was a great learning opportunity for the participants. "The programme combined theoretical lectures and practical activities," explains Erwin Mosselmans, Technical Management Training coordinator. "With the agreement of the IdeaSquare project leader Markus Nordberg, who kindly accepted our invitation to introduce the subject, participants were invited to reflect on how the impact of the IdeaSquare programme on its targeted population could best be evaluated."

"As CERN's mission includes serving society by promoting scientific collaboration and providing unique training opportunities for the next generation, evaluation is really something to consider and is now a new competency within the internal audit service," concludes Laure Esteveny.

For more information about "Evaluation", please visit: ***http://www.europeanevaluation.org/***.

Antonella Del Rosso

CBI STUDENTS: TARGET HIT!

The students on the third Challenge Based Innovation (CBI) @CERN course have been working on their society-oriented projects since September. Last Thursday, 10 December, they finally presented all their proofs-of-concept and prototypes to a packed audience at IdeaSquare.

CBI students presenting their projects at IdeaSquare (Image: Carlos Yarza/IED Barcelona).

Twenty-seven students from four universities and over ten countries have been working on the CERN CBI course since last September. Labour mobility, food safety, literacy and water safety are the four projects that the students have been working on.

Thanks to help and inspiration from a wide range of people working at CERN, especially in the Knowledge Transfer group, the students have redefined and focused their original challenges and have developed four concepts to solve societal challenges:

*Team Bohr developed a concept for encouraging labour mobility and talent exchange in Europe, combining data analysis and existing online platforms.

*Team Kelvin was looking into improving food safety and developed new tools for the home delivery of food.

* Team Penrose was engaging communities for co-created learning experiences and solving community issues.

* Team Planck improved access to potable drinking water by improving access to existing solutions.

The students' final presentations and prototype expo filled IdeaSquare last Thursday; the recorded presentations and more info about the project results will be soon updated on the course website (**http://www.cbi-course.com/**).

The next Challenge Based Innovation course will start in February and will be organised in collaboration with schools from Turin. You can find information about other upcoming projects and events at IdeaSquare at **http://cern.ch/ideasquare**. The IdeaSquare and CBI organisers are also always looking for advisors and mentors for the project teams. Do you want to share your knowledge? Please contact **tuuli.utriainen@cern.ch** or **joona.kurikka@cern.ch**.

CERN Bulletin

CERN ENCOURAGES GIRLS TO "EXPAND THEIR HORIZONS"

On 14 November, CERN took part for the fourth time in *"Élargis tes horizons"*, a conference organised every two years at Geneva University for girls from the local region aged 11 to 14 aiming to encourage them to take up studies and careers in the scientific and technical domains.

Claude Sanz (left), a fellow in the EN Department, explaining to three girls how to build a particle accelerator in a salad bowl.

This year, young physicists and engineers from ATLAS and CMS ran three workshops: "Seeing the invisible using a cloud chamber", "Great cold fun and treats with liquid nitrogen" and "Build your own accelerator in a salad bowl!" CERN was also represented at the *Forum de Découverte*, represented by the Diversity Office and the Medialab team, presenting the "Higgnite" interactive experiment, which illustrates the principle of the Higgs field.

More than 400 girls attended this year's "*Élargis tes horizons*" and 120 of them took part in the CERN workshops. CMS physicist Rebeca Gonzalez Suarez, who ran the workshops, said: "The girls were all really eager and interested and we had a great time showing them how to build a particle accelerator in a salad bowl! Perhaps some of them will end up at CERN one day."

François Briard

TRAINING COURSE FOR EIGHTEEN TEACHERS AT CERN

From 8 to 10 December, 18 teachers from all over France attended a three-day training course on matter, organised by the LAMAP Foundation (*Fondation La main à la pâte*) and hosted by CERN and S'Cool Lab. The LAMAP Foundation, set up by Georges Charpak in 1995, aims to help primary school teachers use the investigative process to instil the scientific spirit in their pupils.

Fired by curiosity and eager to learn, the teachers were introduced to the many and varied activities on offer at CERN, including the cloud chamber experiment, the Masterclass programme and the "Be a physicist" learning scheme. They particularly enjoyed their tours of Microcosm, the Synchrocyclotron and the ATLAS visitor centre, which stimulated many questions. They are eagerly looking forward to passing on their newly found knowledge to their pupils and perhaps even inspiring some to take up a career in physics!

Last but not least, they were treated to a projection of the documentary film *Particle Fever*, which they all enjoyed immensely!

This was the second course organised in partnership with the LAMAP Foundation. CERN and LAMAP are planning to set up a cross-border pilot centre for teachers in the local region.

Laurianne Noemie Trimoulla

STAFF MEMBERS WITH 25 YEARS' SERVICE AT CERN IN 2015

The 30 staff members who have spent 25 years within CERN in 2015 were invited by the Director-General to a reception in their honour on 10 December.

Renaud	Barillere	EN	Simone	Giani	PH	Luigi	Rolandi	PH
Edgar	Birker	DG	Jean-Pierre	Granchelli	EN	James	Rouet	PH
Sergio	Calatroni	TE	Juan	Guijarro	IT	Nilo	Segura Chinchilla	IT
Paola	Catapano	DG	Helene	Haller	PH	Fabio	Trevisani	IT
Christophe	Delamare	GS	John	Harvey	PH	Andromachi	Tsirou	PH
Philippe	Farthouat	PH	Vincenzo	Innocente	PH	Brigitte	Van Der Stichelen	DG
Roger	Forty	PH	Gilles	Maire	PH	Rob	Van Weelderen	TE
Yves	Gaillard	TE	Malika	Meddahi	TE	Philippa	Wells	PH
Clara	Gaspar	PH	Christophe	Mugnier	TE			
Jean-Christophe	Gayde	EN	Louis	Pereira	BE			
Hubert	Gerwig	PH	James	Purvis	HR			

HR Department

TEDGLOBAL>GENEVA

On Tuesday 8 December, a TEDGlobal Conference took place at the *Bâtiment des Forces Motrices* (BFM) in downtown Geneva.

Charlotte Lindberg Warakaulle, Director for International Relations at CERN, speaking at the workshop for TEDx organisers held at CERN.

Curated by Bruno Giussani, the TED European Director, it was the first official TED event to take place in Switzerland. Under the theme "Critical Junctures" the program, which was unknown to the audience beforehand, featured two sessions and more than a dozen speakers. Among them were voices from local residents whose work has worldwide impact, such as the UN High Commissioner for Refugees, Antonio Guterres; Swiss neurosurgeon Jocelyne Bloch; Head of the Biorobotics Laboratory at EPFL, Auke Ijspeert; Founder of Apelab, Emilie Joly; and National Geographic explorer, Sarah Marquis. CERN was represented by a particle physicist from the LHCb collaboration, Harry Cliff, who is based in the UK and a fellow at the Science Museum in London.

In addition to the Swiss speakers, figures of worldwide note, such as former Greek Finance Minister Yanis Varoufakis and former tech executive Wael Ghonim, who anonymously used social media to help spark the Egyptian revolution in early 2011, took the stage. One of the standing ovations was for Caleb Harper, director of the Open Agriculture Initiative at MIT, who is studying what it means to apply digital and sensing technology to agriculture.

A total of 900 guests were invited to attend TEDGlobal>Geneva, half of which were TEDx organisers from all over the world. In fact, for the TEDx organisers, the event started two days earlier with a full day of workshops at CERN on Sunday and cultural tours and visits across Western Switzerland (plus a special session at the Graduate Institute) on Monday. In total almost 500 TEDx organisers took part in the 3-days event in Geneva, with the goal to provide them opportunities for learning and knowledge sharing. Attending this event qualifies TEDx organisers to hold an event with an audience bigger than 100 people, which is the traditional license given by TED.

"The whole three days at CERN, around Geneva and at the BFM weaved together beautifully, there was a lot of positive energy and a lot of love in this community, a striving to create and imagine the future, insights and inspiration, and certainly people have left with a good understanding of what this small city has to offer to the world, from the scientists in Meyrin to the diplomats around the *Place des Nations* to the startuppers down near Plainpalais and Acacias," said Bruno Giussani, TED European Director.

Only in the last year, there were almost 3000 TEDx events organised around the world. Together they created 18K talks with 450 million views; a number that is only about to grow.

TED is a nonprofit devoted to spreading ideas, usually in the form of short, powerful talks (18 minutes or less). TEDx programme supports independent organisers who want to create a TED-like event in their own community. CERN has organised 3 TEDxCERN events, the latest on 9 October 2015.

Claudia Marcelloni

A PLEA TO SANTA CLAUS

Running pirated software or illegal licences, using cracking tools to bypass software activation measures, sharing music and films – these are problems that academic environments unfortunately have to deal with. All violate the copyright of the software/music/film owners, and copyright owners are not Santa Claus...

CERN, like other research organisations and universities, regularly receives allegations from external companies complaining about laptops or PCs running illegal software or sharing their films, videos or music with peers – and thus violating copyright.

Usually, we then contact the owners of the corresponding devices in order to understand whether these allegations are true. Very often such allegations boil down to a laptop whose owner replies "I confirm that a torrent client was left up and running on my device by mistake" or "This is a file that is stored on my personal hard disk." As if those allegations were "peccadillos" (see our earlier *Bulletin* article "Downloading films is no peccadillo") and have no consequences.

So why is it that some of us think we have the right to bend CERN's rules? Violating copyright, using pirated licences ("Do you have 30 kCHF pocket money?"), outsourcing IT technologies when CERN provides similar technologies ("IT or not IT, that is the question"), speeding on the CERN site, parking where it is not permitted… Aren't we supposed to apply due diligence and avoid such things in order to protect the reputation of the Organization? Aren't we all professionals bound by the Organization's Code of Conduct and its rules?

Of course, we could say 'no more warnings' and go straight to the more severe consequences and sanctions, involving hierarchy and supervisors, etc. However, since this is the end of the year, let's make a wish that we will all act in a more responsible and ethical way in 2016!

We are also keen to get your opinion concerning suitable strategies to apply to this issue. Just send us an e-mail at **Computer.Security@cern.ch**.

For further information, questions or help, check: ***https://security.web.cern.ch*** *or contact us at* ***Computer.Security@cern.ch****.*

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

Stefan Lueders, Computer Security Team

DAVID ASBURY (1950-2015)

It was with great sadness that we learned that David Asbury passed away in his sleep last week.

David joined CERN in 1984 after having worked for some years at RAL in the UK. He was a skilled programmer and systems engineer, and much appreciated by both users and colleagues at CERN. His contributions to IT services include the IBM mainframe workhorse CERN VM, the backup tape service and in recent years the version control services, until his well-deserved retirement at the end of March this year.

We will all remember David for his friendly and helpful manners, and as a warm person who was always caring for others, particularly newcomers. David was also a passionate musician and active tennis player. He will be greatly missed by his colleagues.

A memorial service took place at 11 a.m. on Monday, 14 December 2015 at the Auditoire Calvin next to the Cathedral in Geneva.

His colleagues and friends

NEW CERN HEALTH INSURANCE SCHEME (CHIS) FORMS

New versions of the following forms for claims and requests to the CERN Health Insurance Scheme (CHIS) have been released:

- form for claiming reimbursement of medical expenses,
- form for requesting advance reimbursement, and
- dental estimate form (for treatments foreseen to exceed 800 CHF).

The new forms are available in French and English. They can either be completed electronically before being printed and signed, or completed in paper form. New detailed instructions can be found at the back of the claim form; CHIS members are invited to read them carefully.

The electronic versions (PDF) of all the forms are available on the CHIS website (**http://cern.ch/go/Q6Pr**) and on the UNIQA Member Portal (**http://cern.ch/go/GSX6**).

CHIS Members are requested to use these new forms forthwith and to discard any previous version.

Questions regarding the above should be addressed directly to UNIQA (72730 or 022.718 63 00 or **uniqa.assurances@cern.ch**).

HR Department

OPERATIONAL CIRCULAR NO. 2 (REV. 3) - CONDITIONS OF ACCESS TO THE FENCED PARTS OF THE CERN SITE

Operational Circular No. 2 (Rev. 3) entitled "Conditions of access to the fenced parts of the CERN site", approved by the Director-General following discussion in the Standing Concertation Committee meeting on 24 September 2015, is now available on: http://cern.ch/go/qB8K.

This revised circular cancels and replaces Operational Circular No. 2 (Rev. 2) also entitled "Conditions of access to the fenced parts of the CERN site", of September 2014.

The circular was revised predominantly in order to specify that access to the CERN site is granted to CERN Pension Fund beneficiaries only provided that they are actually in receipt of payments from the Fund; and to allow the Director-General to permit special types of vehicles on site, such as trailers. It also includes a certain number of text improvements and an updated version of the implementation measures, in particular with regard to vehicle identification, road traffic and parking.

HR Department

SERVICE AVAILABILITY DURING CERN ANNUAL CLOSURE 2015/2016

Please note that the Service Desk will be closed, however in case of urgent requests, you can call/contact (+41 22 76) 77777. Calls will be redirected to the relevant support groups.

General Services
As always, like the security service, the emergency and fire service remain operational 24/7 and reachable via 74444.

However, the services provided by the GS department requiring human presence (such as CERN hotel, the car sharing service, the shuttle service, etc.) will not be operational during the annual closure.

Services that do not depend on a continuous human presence will remain available offering a reduced level of support during this period. In general, the response time to normal problems will be a half day (no guarantee), but in case of serious failure, the reaction time will depend on the arrangements that have been made with the supported services.

Any incidents will be documented on the CERN Service Status Board (**http://cern.ch/go/6WVP**).

For more information, please consult the CERN Services Portal (**http://cern.ch/go/9ThH**).

Please also note that the heating of the Meyrin and Prévessin sites will be switched into a low mode. This reduced level will lead to a slight drop in temperature, in order to gain energy savings during this period of low occupancy.

Computing Services
Most of the services provided by the IT department - including WLCG production services - will remain available during the CERN annual closure. No interruptions are scheduled but in case of failure, the restoration of services cannot be guaranteed.

Problems will be dealt with on a best effort basis only. However, please note:

- Experts should be reachable to start investigations on the following services within about half a day except around Christmas Eve and Christmas Day (24 and 25 December) and New Year's Eve and New Year's Day (31 December and 1 January) – Databases*, Linux, lxplus, lxbatch, Mail, Printing, Network & Telecoms, Vidyo, Windows & Windows Terminal Services, Web Services, Oracle web hosting (Apex), Java web hosting, Cloud Infrastructure, activation of accounts, resetting passwords, EOS, AFS, CDS, CERNBox, Castor, Indico, Inspire, TWiki, SVN, GIT, issue tracking, Configuration Management Service, JIRA, CVMFS, Dashboard Monitoring Service, CERN Grid Services and the room booking system.
- Incidents will be listed on the CERN Service Status Board for Computing.
- All network and telecom services will run as usual, the first-line support will operate normally, but other changes requiring human intervention will not be possible.
- The backup service will remain operational, but backups cannot be guaranteed and file restores may not be possible.
- For the Castor service, damaged tapes will not be processed.

**Availability, backup and restore limited by the availability of other services.*

Please note that the operator service will be available and can be reached at 75011 or by email to **computer.operations@cern.ch**, where urgent problems may be reported. Potential computer security incidents must be reported to **Computer.Security@cern.ch** or 70500 as usual.

Please remember to shutdown and power off any equipment in your office that is not required during the annual closure.

CERN HEALTH INSURANCE SCHEME (CHIS): MONTHLY CONTRIBUTIONS FOR 2016

For 2016, the contribution rate for active and retired CHIS members will be 4.86%. The amounts of the fixed contributions for voluntarily insured members (e.g. users and other associates), as well as the supplementary contributions for spouses with income from a professional activity or with a retirement pension (including a CERN pension), are thus as follows:

1. Voluntary contributions
The full contribution based on Reference Salary II is 1218 CHF per month. This fixed contribution is applied to voluntarily affiliated users and other associates with normal coverage. Half of this amount, 609 CHF, is applied to voluntarily affiliated users and other associates with reduced coverage.

Finally, an amount of 487 CHF is applied to children maintaining their insurance cover on a voluntary and temporary basis.

2. Supplementary contributions
The supplementary contribution for the spouse or registered partner of a staff member, fellow or pensioner is now as follows, according to the spouse's monthly income:

- up to and including 2500 CHF: none
- more than 2 500 CHF and up to 4 250 CHF: 162 CHF
- more than 4 250 CHF and up to 7 500 CHF: 283 CHF
- more than 7 500 CHF and up to 10 000 CHF: 446 CHF
- more than 10 000 CHF: 609 *CHF*

HR Department
Tel.: 74719

PENSION PAYMENT DATES IN 2016

The pension payment dates for next year are also available on the Pension Fund website (go to: http://cern.ch/go/Ndq7).

- Thursday 7 January
- Monday 8 February
- Monday 7 March
- Thursday 7 April
- Friday 6 May
- Tuesday 7 June
- Thursday 7 July
- Monday 8 August
- Wednesday 7 September
- Friday 7 October
- Monday 7 November
- Wednesday 7 December

Learning

PLACES AVAILABLE - TECHNICAL MANAGEMENT COURSES (UP TO THE END OF JUNE 2016)

Please find below the courses in the field of technical management scheduled up to the end of June 2016 and which have places available.

For more details about a course and to register, please go to the Training Catalogue.

If you need a course that is not in the catalogue, please contact your supervisor, your Departmental Training Officer or the HR-LD group at **Communication.Training@cern.ch**.

Upcoming Technical Management courses (in chronological order)

	Language	Next Session	Duration	Available places
Procurement of supplies at CERN up to 200 000 CHF – e-learning	English	n/a	1 hour	n/a
Achats de fournitures au CERN jusqu'à 200 000 CHF – e-learning	français	n/a	1 hour	n/a
Selecting the right person for CERN	English	5 February	1 day	13
Quality assurance	English	8-9 February	2 days	6
Selecting the right person for CERN	English	22 March	1 day	14
Dealing with Media questions	English	29 March	1 day	9
Managing by project	English	28-29 April	2 days	11
PMI Project management	English	12-13 May 16-17 June	4 days	9
Risk management	English	17-18 May	2 days	8
Procurement and Contract Management of Supplies	English	27 May	1 day	13
Project Engineering	English	20-21 June	2 days	4

Take note

CERN BULLETIN PUBLICATION SCHEDULE FOR 2016

The table lists the 2016 publication dates for the *CERN Bulletin* and the correspondingdeadlines for the submission of announcements. Please note that all announcements must be submitted by 12 noon on Tuesdays at the latest.

If you wish to publish a news article or an item in the Announcements, Events or Official News sections, please contact: **Bulletin-Editors@cern.ch**.

If you wish to publish an announcement in the Staff Association section, please contact: **Staff.Bulletin@cern.ch**.

The distribution of the printed version depends upon external services. To ensure you remain up-to-date with current events, subscribe to the Bulletin e-newsletter on: **http://cern.ch/go/WrD6**.

Bulletin No. (corresponding to the week number)	Submission deadline for announcements (before 12 noon)	Publication of Bulletin (web version)
3-4	Tuesday 12 January	Friday 15 January
5-6	Tuesday 26 January	Friday 29 January
7-8	Tuesday 9 February	Friday 12 February
9-10	Tuesday 23 February	Friday 26 February
11-12	Tuesday 8 March	Friday 11 March
13-14	MONDAY 21 March	THURSDAY 24 March
15-16	Tuesday 5 April	Friday 8 April
17-18-19	Tuesday 19 April	Friday 22 April
20-21	Tuesday 10 May	Friday 13 May
22-23	Tuesday 24 May	Friday 27 May
24-25	Tuesday 7 June	Friday 10 June
26-27	Tuesday 21 June	Friday 24 June
28-29	Tuesday 5 July	Friday 8 July
30-31-32	Tuesday 19 July	Friday 22 July
33-34-35	Tuesday 9 August	Friday 12 August
36-37	Tuesday 30 August	Friday 2 September
38-39	Tuesday 13 September	Friday 16 September
40-41	Tuesday 27 September	Friday 30 September
42-43	Tuesday 11 October	Friday 14 October
44-45	Tuesday 25 October	Friday 28 October
46-47	Tuesday 8 November	Friday 11 November
48-49	Tuesday 22 November	Friday 25 November
50-51-52	Tuesday 6 December	Friday 9 December

FIND OUT MORE ABOUT CERN'S 5-YEARLY REVIEW

Everything you have ever wanted to know about the Organization's five-yearly review and how it impacts each and every one of us.

For the past two years, the mammoth task of the Organization's five-yearly review has been under way, developing clear measures and proposals aimed at creating a positive and socially progressive work environment for all CERN contributors.

At the end of November, the proposed measures received strong support from all delegates at the Tripartite Employment Conditions Forum (TREF) and they will be tabled for recommendation and approval at the Finance Committee and Council on 16 and 17 December.

Preparation for the implementation of these measures is in full swing and detailed information will be made available in the admin e-guide and on the HR website as soon as all details are finalised.

How does this affect each and every one of us at CERN? What are the implications? To answer your questions, the annual HR public meeting, to be held on 11 February 2016, will include a dedicated component on this important milestone to present how we all stand to benefit from the proposed new measures, which in their variety will enhance CERN's attractiveness as an employer.

Don't miss this chance to find out more!

HR Department

END OF INCOMING ICMP ("PINGS")

In order to further reduce the exposure of the CERN networks and their devices to the Internet, the Computer Security Team has decided to block ICMP ("ping") requests from the Internet towards devices connected to the CERN office network (GPN) and the CERN wireless network.

This should counter the threat of external parties mapping any device connected to these CERN networks. "Pings" to servers in the CERN computer centre will remain possible for the moment, although restrictions are likely in the future. Outgoing "pings" towards the Internet and within CERN will continue to work.

The CERN networking team will implement this policy progressively during the first half of 2016. ICMP requests directed towards devices connected to the CERN wireless network will be blocked on 12 January 2016. ICMP requests towards devices connected to the CERN office network (GPN) will be blocked as of late March or early April.

Computer Security Team

WANTED: MODERATORS FOR INTERNATIONAL MASTERCLASSES IN PARTICLE PHYSICS

The International Masterclasses in Particle Physics give high school students from around the world the opportunity to become particle physicists for a day. CERN physicists are invited to participate in next year's Masterclass programme, to be held from 11 February to 23 March 2016.

During a Masterclass, high-school students work with recent data from the LHC experiments under the supervision of physicists. For example, students can rediscover the Z boson or the structure of the proton, reconstruct strange particles or measure the lifetime of the D^0 particle. "Students get a taste of how modern physics research works by working directly with particle physicists and using real LHC data," says Uta Bilow from TU Dresden, coordinator of the International Masterclasses programme.

To simulate a real scientific working environment, each Masterclass ends with a video conference, where student groups from different countries connect with two moderators at CERN to combine and discuss their results. They can also pick their moderators' brains in a Q&A section. The video conference ends with a multiple choice quiz on particle physics.

In 2015, 47 CERN physicists volunteered to moderate the video conferences. Paul Laycock, a former moderator, especially enjoyed the Q&A part: "The best part is answering their questions and seeing how happy and excited they are to be talking to physicists at CERN!"

*If you are interested in joining the Masterclass moderator team in 2016, please contact Uta Bilow (**uta.bilow@cern.ch**).*

Supplemental

NEWS

FROM THE CERN WEB: GRID COMPUTING, NIGHT SHIFT, RIDGE EFFECT AND MORE

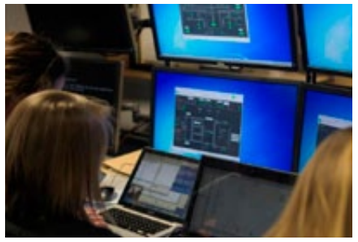
This section highlights articles, blog posts and press releases published in the CERN web environment over the past weeks. This way, you won't miss a thing...

Schoolboy uses grid computing to analyse satellite data
9 December - by David Lugmayer

At just 16, Cal Hewitt, a student at Simon Langton Grammar School for Boys in the United Kingdom became the youngest person to receive grid certification – giving him access to huge grid-computing resources. Hewitt uses these resources to help analyse data from the LUCID satellite detector, which a team of students from the school launched into space last year.

Continue to read on:
http://cern.ch/go/BD77

On Seagull Soup and Coffee Deficiency: Night Shift at CMS
8 December – CMS Collaboration



Night shift in the CMS Control Room (Photo: Andrés Delannoy).

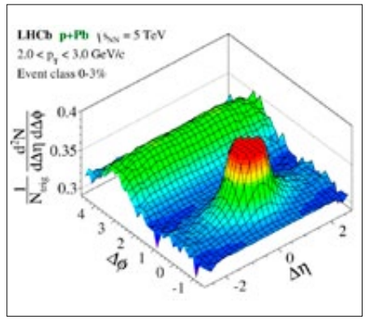
More than half a year, a school trip to CERN, and a round of 13 TeV collisions later, the week-long internship we completed at CMS over Easter is still the most awe-inspiring experience of our lives so far. After almost a year of email exchanges with Dave Barney, then project manager for ECAL at CMS, the initial excitement of our placement seemed to become buried further and further under piles of administration. The idea that we were ever actually going to get there still felt like a dream (we're lying, neither of us could sleep for about a week before).

Continue to read on:
http://cern.ch/go/6VkL

A mysterious ridge effect
2 December – LHCb Collaboration

The LHCb collaboration has submitted a paper reporting the study of correlations in particle production in proton-lead ion collisions at the LHC. The plots showing the angular distribution of these correlations (see on the right) exhibit features similar to a "ridge" in a mountain landscape. Therefore physicists name this kind of analysis a study of a "ridge effect".

Continue to read on:
http://cern.ch/go/zpV8



Breaking the rules: TEDxCERN 2015 videos now live
1 December – by Abha Eli Phoboo

Videos of talks presented at TEDxCERN 2015 are now online. The event, held on 9 October in the CMS Assembly Hall at CERN's Large Hadron Collider, was attended by around 600 people. Around 4000 followed the live webcast with 22 institutes around the world hosting their own TEDxCERN viewing parties.

Continue to read on:
http://cern.ch/go/ZSV8

Test racetrack dipole magnet produces record 16 Tesla field
27 November – by Harriet Jarlett

A new world record has been broken by the CERN magnet group when their racetrack test magnet produced a 16.2 tesla (16.2T) peak field – nearly twice that produced by the current LHC dipoles and the highest ever for a dipole magnet of this configuration. The Racetrack Model Coil (RMC) is one of several demonstration test magnets being built by the group to understand and develop new technologies, which are vital for future accelerators.

Continue to read on:
http://cern.ch/go/6MrS

The Racetrack Model Coil test magnet.

OFFICIAL NEWS

END-OF-YEAR CLOSURE 2015/2016

As announced in *CERN Bulletin No. 51-02/2015*, the Laboratory will be closed from Saturday, 19 December 2015 to Sunday, 3 January 2016 inclusive.

This period consists of:

- 4 days official holiday, i.e. 24, 25 and 31 December 2015, and 1 January 2016;
- 6 days special paid leave in accordance with Article R II 4.38 of the Staff Regulations, i.e. 21, 22, 23, 28, 29 and 30 December 2015;
- 3 Saturdays, i.e. 19 and 26 December 2015 and 2 January 2016 and 3 Sundays, i.e. 20 and 27 December 2015 and 3 January 2016.

The first working day in the New Year will be Monday, 4 January 2016.

Further information is available from Department secretariats, specifically concerning the conditions applicable to members of the personnel who are required to work during this period.

Human Resources Department
Tel.: 73903/79257

OFFICIAL HOLIDAYS IN 2016 AND END-OF-YEAR CLOSURE 2016/2017

Application of Articles R II 4.38 and R II 4.39 of the Staff Regulations.

Official holidays in 2016 (in addition to the special leave during the annual closure):

- Friday, 1 January: (New Year)
- Friday, 25 March: (Good Friday)
- Monday, 28 March: (Easter Monday)
- Thursday, 5 May: (Ascension Day)
- Friday, 6 May: (compensation granted for 1 May)
- Monday, 16 May: (Whit Monday)
- Thursday, 8 September: (*"Jeûne genevois"*)
- Thursday, 22 December: (compensation for 24 December, Christmas Eve)
- Friday, 23 December: (compensation for 25 December, Christmas)
- Thursday, 29 December: (compensation for 31 December, New Year's Eve)
- Friday, 30 December: (compensation for 1 January 2017, New Year)

Annual closure of the site of the Organization during the Christmas holidays and days of special leave granted by the Director-General:

- The Laboratory will be closed from Thursday, 22 December 2016 to Wednesday, 4 January 2017 inclusive (without deduction of annual leave). The first working day in the New Year will be Thursday, 5 January 2017.

Human Resources Department
Tel.: 73903/79257

EXTENSION OF THE PRE-RETIREMENT PROGRAMMES

Following a recommendation by the Standing Concertation Commitee at its meeting on 9 November 2015 and approval by the Director-General, please note that:

- the Progressive Retirement Programme has been extended by one year, from 1 April 2016 until 31 March 2017;
- the Scheme of Part-Time Work as a Pre-retirement Measure has also been extended by one year, from 1 January 2016 until 31 December 2016.

Further information is available from the following sites:

- **http://cern.ch/go/Fd6m**
- **http://cern.ch/go/Q7ZS**

Human Resources Department
Tel.: 79257 / 73903

OFFICIAL NEWS RELATING TO CERN SAFETY RULES

The CERN Safety Rules listed below have been published on the official CERN Safety Rules website.

Safety Regulation SR-WS Works and services: this SR-WS (version 1) will cancel and replace the corresponding provisions of Safety Instruction IS50 "Safety Coordination on CERN Worksites".

- General Safety Instruction GSI-WS-1 Safety coordination for works and services: this GSI-WS-1 (version 1) will cancel and replace the corresponding provisions of Safety Instruction IS39 "Notice of Start of Works (AOC)" and of Safety Instruction IS50 "Safety Coordination on CERN Worksites"
  - Specific Safety Instruction SSI-WS-1-1 Safety coordinator for category 1 operations: this SSI-WS-1-4 (version 1) will cancel and replace the corresponding provisions of Safety Instruction IS50 "Safety Coordination on CERN Worksites".

In order to limit the impact on the end-of-year technical stop, the Works and Services (WS) Safety Rules listed above shall enter into force as of 1 June 2016. Until this date IS39 and IS50 remain applicable.

- General Safety Instruction GSI-SH-1 v2 Visits on the CERN site: this GSI-SH-1 (version 2) cancels et replaces GSI-OHS1 (version 1).
- General Safety Instruction GSI-SH-2 Lone working: this GSI-SH-2 (version 1) cancels and replaces the corresponding provisions of Safety Code A6 "The two-person rule of working" and Safety Note NS8 "Two-person rule of working".
- General Safety Instruction GSI-WO-12 Workshop supervisor.

The three General Safety Instructions listed above enter into force as of their publication on the official CERN Safety Rules website, i.e. on 27 November 2015.

These CERN Safety Rules apply to all persons under the Director-General's authority.

HSE Unit

TAKE NOTE

JOINT UNIVERSITIES ACCELERATOR SCHOOL (JUAS)- PLACES AVAILABLE

If you are a PhD student, fellow or staff member and are interested in following one or more specific modules à la carte at JUAS a limited number of places are still available on the Technologies & Applications course.

The coursewill be held at the European Scientific Institute in Archamps, France (Haute-Savoie) in February and March 2016.

EUROPEAN SCHOOL OF INSTRUMENTATION FOR PARTICLE AND ASTROPARTICLE PHYSICS (ESIPAP) - PLACES AVAILABLE

If you are a PhD student, fellow or staff member and are interested in following one or more specific modules à la carte at ESIPAP, a limited number of places are still available on the Technologies & Applications course.

The coursewill be held at the European Scientific Institute in Archamps, France (Haute-Savoie) in February and March 2016.

ANNUAL CLOSURE OF THE CERN RESTAURANTS

- Restaurant No. 1 will close at 4 p.m. on Friday, 18 December 2015. The newspaper kiosk will close at 2.30 p.m. The 'Grab & Go' stand will not open at all that day.
- Restaurant No. 2 and the snack-bars in Buildings 6, 13, 30 and 40 will close at 3 p.m. on Friday, 18 December 2015. The snack-bar in Building 54 will close at 10.30 a.m.
- Restaurant No. 3 will close at 4 p.m. on Friday, 18 December 2015. The coffee bar in Building 864 will close at 10.30 a.m. and the one in Building 865 at 10.45 a.m.

All outlets will open again at the usual times on Monday, 4 January 2015.

CERN'S 2016 BEAMLINE FOR SCHOOLS COMPETITION STARTS ON 17 NOVEMBER

Spread the word: CERN is offering high-school students from around the world the chance to create and perform a scientific experiment on a CERN accelerator beamline. What better way to learn about physics?

Now in its third year, the Beamline for Schools competition is open to teams of at least five students aged 16 and with at least one adult supervisor or "coach".

Students can find out about the beamline and facilities via **http://cern.ch/bl4s**, then think of a simple, creative experiment. They can register their team from 17 November to start receiving e-mail updates. They then submit a written proposal and a short video by 31 March 2016. The winners will be announced in June and will come to CERN, preferably in September 2016. Previous winners have tested webcams and classroom-grown crystals at the beamline, others have studied how particles decay and investigated high-energy gamma rays.

All participants will receive a certificate. Shortlisted teams will win a BL4S t-shirt for each team member and a cosmic-ray detector for the school, and some will be offered the chance to visit a physics laboratory near them. For the winning team(s), between five and nine members and up to two adult coaches per team will be invited to CERN, all expenses paid, for 10 days to carry out their experiments at the beamline.

Registration opens 17 November: http://cern.ch/bl4s.

The project is funded in part by the Alcoa Foundation; additional contributions are received from National Instruments.

PLEASE EXERCISE EXTREME CAUTION AT THE SAINT-GENIS ROUNDABOUT

In the interests of enhanced safety, a new pathway for pedestrians and cyclists has been constructed around the outside of the Saint-Genis roundabout. However, the markings of the previous cycle path, which is now closed to traffic, are still visible and can cause confusion. We therefore call on everyone to exercise extreme caution and to use the new pathway.

New two-way markings have been laid out, inviting pedestrians and cyclists coming from the direction of Saint-Genis-Pouilly to go towards the Swiss border or CERN Entrance E using the left-hand side of the roundabout (i.e. the Prévessin side). So, from now on, cyclists must no longer go around the roundabout on the right-hand side and pedestrians will no longer have to cross the D884 dual carriageway.

Similarly, people staying at the Saint-Genis hostel are invited to follow these new markings to get to CERN or to return to the hostel, which means they will avoid having to cross the D35 highway at a spot where traffic is generally very fast.

EXTREME CAUTION must be exercised and the still-visible old road markings must not be followed.

ACADEMIC TRAINING LECTURES | STUXNET AND CYBER-WARFARE | 13-14 JANUARY 2016

Please note that the next series of Academic Training Lectures will take place on 13 and 14 January 2016. The lectures will be given by Gian Piero Siroli (Università e INFN, Bologna (IT))

Stuxnet and Cyber-Warfare (1/2)
on Wednesday, 13 January
from 11 a.m. to 12 p.m.
http://indico.cern.ch/event/438525/

Stuxnet and Cyber-Warfare (2/2)
on Thursday, 14 January
from 11 a.m. to 12 p.m.
http://indico.cern.ch/event/438526/

at CERN, Council Chamber (503-1-001)

Description: The first part of the lecture is devoted to the description of the Stuxnet worm, the first cyber-weapon whose existence has been made public, discovered in 2010 and targeting a specific industrial control system; the worm is responsible for the damaging of many centrifuges at an uranium enrichment facility, with the goal of sabotaging Iran's nuclear program. In the second part, the main features of cyber-warfare in conflict and pre-conflict activities will be discussed and compared to the conventional warfare domains, with also a general view at the international political debate on this topic.

CERN LIBRARY | BOOK PRESENTATION: «60 YEARS OF CERN EXPERIMENTS AND DISCOVERIES» | 15 DECEMBER

«60 years of CERN experiments and discoveries», edited by Herwig Schopper and Luigi Di Lella.

Tuesday 15 December at 16:00
Room C (Building 61)
The presentation will be followed by refreshments

The book contains a description of the most important experimental results achieved at CERN during the past 60 years, from the

mid-1950s to the latest discovery of the Higgs particle. It covers the results from early accelerators at CERN to the most recent results at the LHC and thus provides an excellent review of the achievements of this outstanding laboratory. It reflects not only the impressive scientific progress achieved during the past six decades but demonstrates also the special way of successful international collaboration developed at CERN.

The e-book is available in Open Access here thanks to an agreement between CERN and the publisher.

«60 years of CERN experiments and discoveries», ed. by Herwig Schopper and Luigi Di Lella, World Scientific, 2015, ISBN 9789814663182.

LEARNING

PLACES AVAILABLE - TECHNICAL MANAGEMENT COURSES (UP TO THE END OF 2015)

Please find here the courses in the field of technical management scheduled up to the end of 2015 and which have places available.

For more details about a course and to register, please go to the Training Catalogue.

If you need a course that is not in the catalogue, please contact your supervisor, your Departmental Training Officer or the HR-LD group at **Communication.Training@cern.ch.**

PLACES AVAILABLE - LEADERSHIP PROGRAMME (UP TO THE END OF 2015)

Please find here the courses in the field of leadership scheduled up to the end of 2015 and which still have places available.

For more details about a course and to register, please go to the Training Catalogue.

If you need a course that is not in the catalogue, please contact your supervisor, your Departmental Training Officer or the HR-LD group at **Communication.Training@cern.ch.**

PLACES AVAILABLE - PERSONAL DEVELOPMENT AND COMMUNICATION COURSES (UP TO THE END OF 2015)

Please find here the courses in the field of personal development and communication scheduled up to end of 2015 and which still have places available.

For more details about a course and to register, please go to the Training Catalogue.

If you need a course that is not in the catalogue, please contact your supervisor, your Departmental Training Officer or the HR-LD group at **Communication.Training@cern.ch**.

Upcoming Technical Management courses (in chronological order)

		Language	Next Session	Duration	Available places
	Procurement of supplies at CERN up to 200 000 CHF – e-learning	English	n/a	1 hour	n/a
	Achats de fournitures au CERN jusqu'à 200 000 CHF – e-learning	français	n/a	1 hour	n/a
	Project Scheduling and Costing	English	13/14 October	2 days	3
	Managing by Project GDPM	English	21/22 October	2 days	2
	Selecting the right person for CERN	English	19 November	1 day	6
Extra Session	Procurement and Contract Management of Supplies	English	24 November	1 day	3
	Project Engineering	English	10/11 December	2 days	8
New	Innovation Management in Horizon 2020	English	11 December	5 hours	17
New	Gestion de la maintenance	French	14/16 December	2.5 days	6

	Language	Next Session	Duration	Available places
Eléments essentiels de la gestion du personnel pour les superviseurs (adapté de « CDP pour superviseurs »)	French	Module 1 - 2, 3 November Module 2 - 11 December Module 3 - 21, 22 January	5 days	8 places
Comment, en tant que superviseur, tirer le meilleur parti de l'entretien annuel	French	20 November	1 day	8 places
How to get, as a supervisor, the most out of the annual interview	English	30 November	1 day	10 places

Newly launched communication course

Communiquer avec impact	French	12, 13 November	2 days	5 places

	Language	Next Session	Duration	Available places
Voice and Nonverbal Behaviour in Speech Communication	English	19-20 November	2 days	4 places
Communicating to Convince	English	23-24 November	2 days	4 places
Négociation efficace	French	3-4 November	2 days	9 places
Les enjeux de la voix et du comportement non verbal dans la communication orale	French	5-6 November	1.5 days	6 places
Handling Difficult conversations	English	20 November 27 November 5 February 2016	3 days	3 places
Animer ou participer à une réunion de travail	French	30 November 1, 2 December	3 days	5 places
Communiquer pour convaincre	French	25-26 November	2 days	7 places

The following places are available on the newly launched Communication workshops:

	Language	Next Session	Duration	Available places
Communication: Science or Art? (Workshop 1)	English	19 November	1 day	7
Communication : Science ou Art ? (Atelier 1)	French	27 November	1 day	8
Communiquer avec succès en milieu interculturel (Atelier 2)	French	4 December	1 day	5
Effective Cross Culture Communication (Workshop 2)	English	20 November	1 day	7

SAFETY TRAINING: PLACES AVAILABLE IN NOVEMBER AND DECEMBER 2015

There are places available in the forthcoming Safety courses. For updates and registrations, please refer to the Safety Training Catalogue on: http://cern.ch/go/8tpW.

Title of the course EN	Title of the course FR	Date	Hours	Language
Installation Specific Safety				
ALICE - Confined Space	ALICE - Espace confiné	05-Nov-15 to 09-Nov-15	14.00 - 16.00 and 9.00 - 10.00	English
ALICE - Underground - Guide	ALICE - Souterrain - Guide	10-Dec-15 to 14-Dec-15	14.00 - 16.00 and 9.00 - 10.00	English
CMS - Shift Leader in Matters of Safety (SLiMoS)	CMS - Chefs d'équipe en matière de sécurité (SLiMoS)	13-Nov-15	13.00 - 17.00	English
		27-Nov-15	13.00 - 17.00	English
		11-Dec-15	13.00 - 17.00	English
CMS - Underground - Guide	CMS - Souterrain - Guide	02-Nov-15	14.00 - 17.00	English
ISOLDE - Experimental Hall - Electrical Safety - Handling	ISOLDE - Hall d'expérience - Sécurité électrique - Manipulation	03-Nov-15	13.00 - 14.30	English
		17-Nov-15	13.00 - 14.30	English
		23-Nov-15	13.00 - 14.30	English
ISOLDE - Experimental Hall - Radiation Protection - Handling	ISOLDE - Hall d'expérience - Radioprotection - Manipulation	03-Nov-15	14.30 - 17.00	English
		17-Nov-15	14.30 - 17.00	English
		23-Nov-15	14.30 - 17.00	English
Electrical Safety (EL)				
Habilitation électrique - Electrician Low Voltage - Initial	Habilitation électrique - Électricien basse tension - Initial	09-Dec-15 to 11-Dec-15	9.00 - 17.30	English
Habilitation électrique - Electrician Low and High Voltage - Initial	Habilitation électrique - Électricien basse et haute tensions - Initial	17-Nov-15 to 20-Nov-15	9.00 - 17.30	English
Habilitation électrique - Electrician Low and High Voltage - Refresher	Habilitation électrique - Électricien basse et haute tensions - Recyclage	23-Nov-15 to 24-Nov-15	9.00 - 17.30	French
		07-Dec-15 to 08-Dec-15	9.00 - 17.30	English
Habilitation électrique - Non-Electrician - Initial	Habilitation électrique - Non-électricien - Initial	16-Nov-15	9.00 - 17.30	English
		01-Dec-15	9.00 - 17.30	English
Habilitation électrique - Non-Electrician - Refresher	Habilitation Electrique - Non-Electricien - Recyclage	30-Nov-15	9.00 - 17.30	English
Habilitation électrique - Person making tests in labs or on test-stands - Initial	Habilitation électrique - Personnel réalisant des essais en laboratoire ou en plate-forme d'essai - Initial	23-Nov-15 to 25-Nov-15	9.00 - 17.30	English
Habilitation électrique - Electrician Low Voltage - Working with power on	Habilitation électrique - Électricien basse tension - Travaux sous tension	19-Nov-15 to 20-Nov-15	9.00 - 17.30	French
		23-Nov-15 to 24-Nov-15	9.00 - 17.30	French

		07-Dec-15 to 08-Dec-15	9.00 - 17.30	French
Fire (FS)				
Fire Extinguisher	Extincteur d'incendie	05-Nov-15	10.30 - 12.00	French
		05-Nov-15	14.00 - 15.30	French
		12-Nov-15	14.00 - 15.30	English
		13-Nov-15	10.00 - 11.30	French
		16-Nov-15	10.30 - 12.00	English
		16-Nov-15	14.00 - 15.30	English
		20-Nov-15	10.30 - 12.00	English
		20-Nov-15	14.00 - 15.30	English
		24-Nov-15	10.30 - 12.00	French
		24-Nov-15	14.00 - 15.30	French
Mechanical Safety (M)				
Cryogenic Safety - Fundamentals	Sécurité Cryogénie - Fondamentaux	11-Nov-15	14.00 - 16.00	French
Cryogenic Safety - Helium Transfer	Sécurité Cryogénie - Transfert d'hélium	19-Nov-15	9.30 - 12.00	English
Electrical Palett Truck - Driving	Transpalette électrique - Conduite	16-Nov-15	8.30 - 12.30	French
Overhead Crane - Operator and Slinger - Initial	Pontier-élingueur - Initial	10-Dec-15 to 11-Dec-15	8.30 - 17.30	French
Overhead Crane - Operator and Slinger - Refresher	Pontier-élingueur - Recyclage	09-Dec-15	8.30 - 17.30	French
Non-Ionizing Radiation (NIR)				
Laser - Expert	Laser - Expert	09-Nov-15 to 10-Nov-15	9.00 - 17.30	English
Laser - User	Laser - Utilisateur	19-Nov-15	9.00 - 12.30	English
Radiation Protection (RP)				
Radiation Protection - Controlled Area - CERN Employees and Associates	Radioprotection - Zone contrôlée - Employés et associés CERN	02-Nov-15	9.00 - 17.00	English
		16-Nov-15	9.00 - 17.00	English
		25-Nov-15	9.00 - 17.00	English
		26-Nov-15	9.00 - 17.00	French
		02-Dec-15	9.00 - 17.00	English
Safety Organisation (SO)				
Safety in Projects	Sécurité dans les projets	18-Nov-15	14.00 - 17.00	English
Territorial Safety Officer (TSO) - Initial	Délégué à la sécurité territoriale (TSO) - Initial	01-Dec-15 to 03-Dec-15	8.45 - 17.30	French
		09-Nov-15	14.00 - 16.00	English
		16-Nov-15	10.00 - 12.00	English
		23-Nov-15	14.00 - 16.00	English
		07-Dec-15	10.00 - 12.00	French
		07-Dec-15	14.00 - 16.00	English
Self-Rescue Mask - Refresher	Masque auto-sauveteur - Recyclage	03-Nov-15	10.00 - 12.00	French
		05-Nov-15	10.00 - 12.00	English
		12-Nov-15	10.00 - 12.00	English
		17-Nov-15	10.00 - 12.00	French
		18-Nov-15	10.00 - 12.00	English
		19-Nov-15	10.00 - 12.00	French
		24-Nov-15	10.00 - 12.00	French
		26-Nov-15	10.00 - 12.00	English
		01-Dec-15	10.00 - 12.00	French
		03-Dec-15	10.00 - 12.00	French
		08-Dec-15	10.00 - 12.00	French
		10-Dec-15	10.00 - 12.00	English
Worksite (WS)				
Confined space	Espace confiné	17-Nov-15	9.00 - 17.30	French
Scaffolding - Accepting	Échafaudage - Réception	23-Nov-15 to 24-Nov-15	9.00 - 17.30	French
Working at Heights - Using a harness	Travail en hauteur - Utilisation du harnais	04-Nov-15	9.00 - 17.30	English
		07-Dec-15	9.00 - 17.30	French