CERN Bulletin

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More articles at *http://home.cern/cern-people*

GBAR'S ANTIPROTON DECELERATOR INSTALLED

With the connection between ELENA and GBAR already in place, the commissioning of the decelerator with antiprotons is about to begin

Audric Husson working on GBAR's antiproton decelerator, which his team developed and installed and is now commissioning. (Image: Max Brice/CERN)

If matter falls down, does antimatter do the same? GBAR (Gravitational Behaviour of Antihydrogen at Rest), the experiment that will give us the answer, has just had a brand new part installed – an antiproton decelerator.

Located in the Antiproton Decelerator (AD) hall, GBAR will measure the freefall acceleration of antihydrogen atoms within Earth's gravitational field. To do that, something special has to be created first – antihydrogen ions, each consisting of one antiproton surrounded by two positrons. While these particles are very hard to produce, they are significantly easier to manipulate than antihydrogen atoms thanks to their positive charge.

The first ingredient of the antihydrogen ions – the antiprotons – will be supplied by the new ELENA (Extra Low Energy Antiproton) deceleration ring. The lower their energy, the bigger the probability that antihydrogen ions will form, so the beam coming from ELENA at 100 KeV will be further slowed down to just 1 KeV by the newly installed GBAR antiproton decelerator.

The second ingredient – the positrons – will be created with the help of the GBAR linear accelerator installed earlier in 2017.

A week after the first antiprotons circulated in ELENA, an antiproton extraction line was installed between that deceleration ring and the GBAR decelerator.

In the coming months, the first antiprotons will fly out of ELENA into GBAR, which will be the first of five experiments in the AD hall to receive a beam from ELENA.

(Continued on page 2)

A WORD FROM MARTIN STEINACHER

TAKING ACTION ON MOBILITY

With increasing numbers of people at CERN, challenging commuting conditions across the border, numerous daily inter-site trips and surging demand for parking, mobility is becoming a pressing concern. This is why the Director-General has tasked me with looking into the issue of mobility at CERN. As a consequence, the Head of the Site Management and Buildings Department has taken up the role of CERN mobility services manager and established a CERN mobility working group. This group is looking at all aspects of mobility including safety, parking, green mobility, public transport and site access.

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A WORD FROM MARTIN STEINACHER

TAKING ACTION ON MOBILITY

The working group's activity is aligned with the general objectives set out for mobility in CERN's 2030 Masterplan strategy, which can be summarised as follows: optimising the supply and management of CERN parking spaces; promoting alternative modes of transport; and optimising traffic safety and fluidity within and around the CERN sites.

The mobility working group is currently engaged in fact-finding with a view to presenting a mobility plan to the CERN Management. This will include an operational action list aimed at meeting these objectives by 2030. In the meantime, many actions have already been undertaken, such as the automation of CERN's entrances, the establishment of the CERN Mobility Centre, the construction of a cycle path between the Meyrin and Prévessin sites, road marking around the site, and safety improvements for cyclists and pedestrians at CERN's entrances. This, however, is just the beginning.

Several new ideas are already being studied, including measures to increase traffic flow at entrance E (west gate to French part of Meyrin site), the introduction of cycle paths and one-way streets on the CERN sites, the setting up of a CERN ride-sharing scheme and the installation of bicycle repair stations.

All CERN Departments, the Staff Association and ACCU are involved in this CERN-wide initiative with nominated representatives in the mobility working group. But maybe you also have good ideas to contribute to this mobility think tank? If so, now is the time to contact your representative to share ideas and discuss mobility issues. Let's work together to make mobility at CERN safer, greener and more enjoyable for all.

CERN MOBILITY WORKING GROUP MEMBERS	
ACCU	Cristina Biino
Staff Association	Oliver Boettcher
BE	Jean-Jacques Gras
EN	Ingo Ruehl
EP	Martin Gastal
FHR Sector	Jerome Pierlot
HSE	Carine Pividori
IT	Wayne Salter
Soft Mobility	Jens Vigen
TE	Lisette Van Den Boogaard
TH	Michelangelo Mangano
SMB (Chairman and mobility coordinator)	Frédéric Magnin
SMB (Mobility services)	Reinoud Martens
SMB (Mobility services)	Gilles Bollinger
SMB (Technical secretary)	Ana Lacarcel Alberola

Martin Steinacher
Director for Finance and Human Resources

GBAR'S ANTIPROTON DECELERATOR INSTALLED

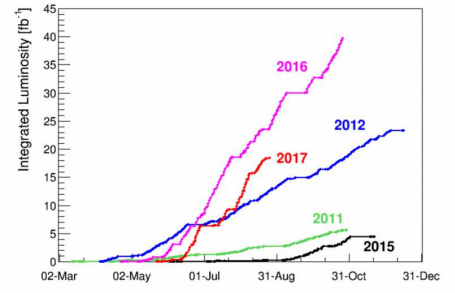
In the meantime, both the decelerator and the linac will be carefully prepared for the first phase of the experiment, which is dedicated to the creation of the first antihydrogen ions. “Beam path, energy and the efficiency of the system are the three things we will measure to make sure that the antiproton beam behaves the way we expect. We need to know the exact number of antiprotons in the bunch and how their energy diminishes while passing through the decelerator's chambers,” explains Audric Husson, a member of the team that developed and installed the new part, and currently in charge of its commissioning.

The rest of the equipment needed to measure the freefall of the antihydrogen atoms will be installed by the end of 2018. The first data might even be taken before Long Shutdown 2, due to start in January 2019, during which the accelerator complex will be closed for upgrades.

Iva Raynova

LHC REPORT: SOMETHING IN THE NOTHING

Recent CERN Control Centre (CCC) meetings have been dominated by “16L2”



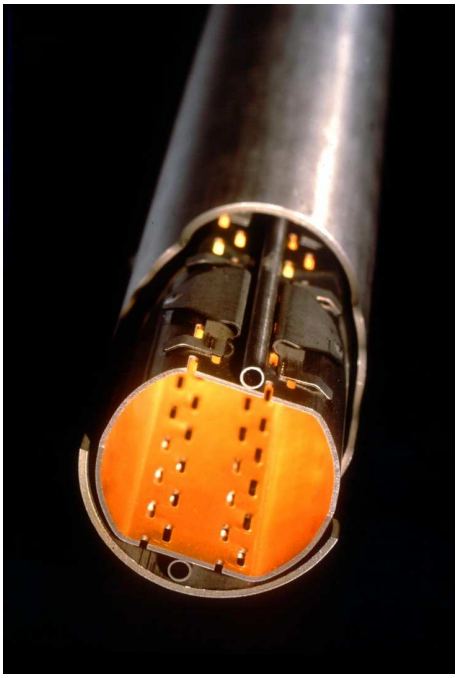
This graph shows the current integrated luminosity compared to previous years. Despite less LHC running time in 2017 due to EYETS, the target integrated luminosity for 2017 is 45 fb^-1.

Recent CERN Control Centre (CCC) meetings have been dominated by “16L2”. But why? The majority of recent beam dumps can be traced back to this cell and a likely hypothesis is the presence of gas in the vacuum pipes – there seems to be something in the nothing.

The name “16L2” refers to a group or “cell” of three dipoles, one quadrupole and some corrector magnets, sitting 16 cells to the left of point 2 of the LHC. Even during the LHC restart this spring there appeared to be issues in this part of the machine and, as the last LHC report explained, an applied magnetic field had been helping to mitigate cell losses so that the machine could run with 2556 bunches.

But despite this mitigation, physicists were keen to investigate. A likely hypothesis was that air had entered the cell's vacuum pipes during the Extended Year-End Technical Stop (EYETS) and had become trapped around the beam screen. If so, warming the beam screen from its usual 20 Kelvin to a temperature of 80 Kelvin should evaporate the gas from the beam screen and let it condensate on the surrounding 1.9 Kelvin vacuum chamber. On 10 August, this “flushing” of the beam screen was attempted. It didn't work as expected, nor as had been experienced previously elsewhere in the machine. What's more, the mitigating magnetic field no longer worked and 2556 proton bunches no longer circulated as before. Operators reduced the number of bunches down to 600 and then gradually stepped up to around 1700 bunches, producing physics at or around the design luminosity of $1x10^{34}cm^{-2}s^{-1}$. They varied the beam intensity but still encountered issues with 16L2. Despite these setbacks, machine availability has remained high and long fills have still allowed for increases in integrated luminosity.

But with pressure to deliver luminosity for the experiments, on 16 August, the LHC machine committee established a task force, led by José Miguel Jiménez, to investigate the 16L2 issues and propose a solution. On the basis of current statistics, there appears to be no direct correlation between the number of bunches and the number of beam dumps, so the task force is now planning tests with beams of up to 2200 bunches (last year's maximum) to evaluate the situation. The task force are now moving forward with their tests, mindful of this year's target for integrated luminosity, set at an ambitious 45 fb^{-1}, an increase from 40 fb^{-1} in 2016.



This cross-section of a prototype LHC beam pipe shows the beam screens housed within. Slits in the screens allow residual gas molecules to be pumped out and be frozen to the walls of the 1.9 Kelvin beam pipe (Image: Patrice Loïez, Peter Rakosy, Laurent Guiraud/CERN)

Kate Kahle and Rende Steerenberg

HL-LHC SHORT-MODEL MAGNETS TESTS ARE GOING FULL SPEED AHEAD

During the summer, the third of a series of short, 1.5-metre-long magnet models for the HL-LHC project was successfully tested

A short magnet models for the High-Luminosity LHC project was tested in the newly-commissioned vertical test station in hall SM18. (Image: Noemi Caraban Gonzalez/CERN)

There is no break for the team developing the magnets for the High-Luminosity LHC (HL-LHC) project. During the summer, the third in a series of short, 1.5-metre-long magnet models was successfully tested. This model is made up entirely of coils constructed at CERN and contain-

ing an Nb_3Sn conductor, which is manufactured using a technology called Powder In Tube (PIT). The PIT process was developed in Europe with strong support from CERN. These magnets are test models for the main quadrupole magnets that will sit in the insertion regions on either side of the ATLAS and CMS detectors to squeeze the beams before collisions.

The short model was tested in the newly-commissioned vertical test station in hall SM18. The magnet rapidly reached its nominal gradient, corresponding to a magnetic field intensity of 11.4 Tesla. It then smoothly went up to the ultimate performance, corresponding to a proton energy in the LHC of 7.5 TeV, and to a magnetic field intensity in the coil of 12.3 Tesla. The short model was then heated up and cooled down again in order to test its "memory" – it demonstrated its ability to pick up from the exact level of magnetic field that it had reached in the last quench of training before the thermal cycle. "This is very important," says Paolo Ferracin, the engineer in charge of this magnet development and production. "A good memory is an essential feature for magnet operation in the accelerator!"

The next step in the development programme for the main magnets of the HL-LHC project is the testing of the first four-metre-long quadrupole magnet in the US. This will be the first full-length Nb_3Sn magnet. "CERN and the LHC-AUP (LHC Accelerator Upgrade Project) consortium in the US proceed hand in hand in the challenging task of building accelerator magnets operating in the range of 12-Tesla peak fields," says Ezio Todesco, who is in charge of the insertion region magnets for HL-LHC. "The magnet has reached a field value that is 50% higher than that reached with the current LHC magnets, and it is an essential step in paving the way for the future of CERN."

Stefania Pandolfi

DIVERSIFYING THE CONVERSATION

Learn more, think more and talk more about gender diversity in tech at our upcoming film screening and light lunch

Many believe that the 21st century will be the century of women; that we will see unprecedented progress in gender equality and female participation at all levels in our societies. Initiatives are multiplying all around the world to promote equality and propel women to be leaders in their fields. CERN's Women in Technology (WIT) community was born in early 2016 in the same spirit and now invites you all to a film screening of *CODE - Debugging the Gender Gap* in September.

The idea for a CERN WIT group began when several new members of the IT department realised that the Women in Technology networks from which they had benefited at university and in industry did not exist at CERN, or even in the Geneva area. After speaking with like-minded colleagues, they decided to found a group at CERN where colleagues could exchange ideas on common topics and share career advice and experiences. In February 2017, WIT established its Steering Committee, which organises events such as "WIT Talks" (see below), lectures and collaborations with external groups.

An increasing amount of research is being done on the importance of diversity and the positive impact it has on productivity and culture, and conversely on the damage that a lack of diversity and inclusion can cause. WIT provides an environment in which women are not in the minority when interacting with technology, allows them to build a network and enables male allies to support the cause.

WIT Talks are interviews with women in leading roles at CERN, in industry or in academia about their careers and backgrounds, giving them the chance to inspire fellow women and share their views on how to improve the gender balance with the whole CERN community. These talks prompt positive discussion among both women and men at CERN interested in equal opportunities. We have had the chance to listen to many interesting and inspiring women including Maite Barroso (IT Deputy Department Head), Charlotte Warakaulle (Director for International Relations) and Sudeshna Datta Cockerill (Ombud), to mention only a few. More talks are scheduled to take place in the next few months! Also keep an eye out for our planned series of interviews with male colleagues around why gender diversity is important to them, starting with physicist John Ellis.

To broaden our network beyond CERN, WIT is also in touch with similar groups at other organisations, like Google and HP. Thanks to these relationships, we visited Google in Zurich in March and have visited HP's local offices several times. WIT has also collaborated with other initiatives at CERN including the Cine Club, the Running Club and Arts at CERN.

WIT is open to all CERN colleagues. People interested in learning more about WIT can visit the webpage cern.ch/wit and join the e-group wit-matters, through which upcoming events are advertised and interesting reading material is shared.

On Monday, 11 September at 12 noon, in collaboration with the CERN diversity office and the IT department, WIT will be hosting a screening in the Council Chamber of the award-winning documentary *CODE - Debugging the Gender Gap*. The screening will be followed by open discussions, during which finger foods will be provided. We look forward to seeing you there!

The WIT Steering Committee

COMPUTER SECURITY: HARDBALL FOR ATTACKERS

Successful cyberattacks always start with the compromise of a PC

Successful cyberattacks always start with the compromise of a PC. Once the attacker “owns” that PC, he or she can install additional software to spy on the user, extract data and passwords, enable the microphone and webcam, and manipulate any software, application or transaction by the user. Hence it is reasonable to try to prevent this initial compromise as thoroughly as possible. And while Windows PCs remain the most susceptible, here is what CERN is doing to “harden” the Windows PCs and laptops managed by CERN's IT department.

Of course, not only Windows PCs are under attack. Linux, MacBook, Android and iOS devices are also vulnerable. But Windows still has a big market share and many attack vectors are aimed at it. In addition, Windows is used widely in CERN's administrative sector, which manages lots of sensitive data. And, finally, a large fraction of Windows systems are still centrally managed by CERN's IT department. They can easily help to protect end users from cyber threats but, due to CERN's academic environment, for most other platforms the paradigm is “bring your own device” (BYOD) – and with your freedom to do so, you also inherit the responsibility to deploy adequate protection measures. At CERN, in the first instance you are responsible for the security of your own devices. . .

But if you run a centrally managed Windows PC or laptop, the IT department is ready to help you with that responsibility – in particular if you are working in an environment dealing with lots of sensitive data or are often required to access “random” webpages or open unsolicited e-mails and attachments (like our colleagues in the administrative sector, in procurement, in senior management, or in the secretariats). Our “hardened Windows PC” configuration provides you with a more secure and protected Windows PC.

The first rule for a hardened PC is the use of Windows 10 instead of Windows 7. Windows 10 comes with enhanced and state-of-the-art security (and, admittedly, a few privacy concerns still to be resolved), as well as additional protective measures. Full hard disk encryption is enabled by default (but don't worry, at no performance cost!). Dedicated anti-exploit tools protect against malicious links and the (hidden) download of malware from infected websites. The local firewall is configured so that some malicious payloads using Windows Powershell are inhibited, and we have enabled additional logging and traceability options just in case an attacker makes it through.

Furthermore, we are locking down program execution rights to prevent the execution of malicious macros so that, for example, malicious Word or Excel files cannot create havoc. Using an alternative PDF reader and limiting (or even disabling!) Adobe Flash will remove two often used attack vectors, as vulnerabilities in Adobe Reader and Adobe Flash are often used by adversaries to gain unauthorised access to Windows systems (as well as to MacOS devices). We are even considering introducing some “fake” processes to make malware think the PC is a security researcher's “honeypot”: a lot of malware avoids such honeypots in order not to reveal their internal workings...

On the user side, administrator rights for regular users will be removed and execution of software from the user profile will be restricted (no software usually needs to run from this location and it is often abused by malware). For browsing the Internet, reading unsolicited e-mails and opening unknown attachments, it is also possible to use a hardened PC configuration in an additional – virtual – environment so that neither browsing nor opening e-mails can be a vector for infecting the primary PC.

Of course, we are trying to make these PCs as convenient and transparent for you and your everyday work. The more “standard” your usage is, the easier it will be for you to have a “hardened PC”. Some of these measures will certainly also make it into the configuration of normal Windows PC managed by the IT department. Some other measures might also be deployed, to our Mac community for example. So, please stay tuned. If you want to participate in our pilot programme, please 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. For further information, questions or help, visit our website or contact us at Computer.Security@cern.ch.

The Computer Security Team

LHCB GETS READY FOR A SCIFI UPGRADE

The first 20 modules of a new scintillating fibre tracker have been delivered as early elements of the LHCb detector upgrade

Each of the four boxes houses five detector modules. 128 modules will make up the new scintillating fibre (SciFi) tracker, part of the major upgrade of the LHCb detector (Image: Christian Joram/ CERN)

The very first detector elements of the LHCb upgrade, early pieces of the scintillating fibre (SciFi) tracker, have arrived at CERN. Four boxes housing the first 20 of 128 modules were unloaded from trucks after an international tour: the scintillating fibres from Japan had been verified at CERN months ago before travelling to either Aachen, Dortmund, Lausanne or Moscow and then being assembled into modules in Heidelberg, Germany. Today

they arrived at their final destination, CERN LHC Point 8.

In the coming weeks, the modules will be checked and reworked ahead of installation next spring. The 128 modules – containing 11 000 km of scintillating fibres – will make up the new SciFi tracker, which will replace the outer and inner trackers of the LHCb detector as part of the experiment's major upgrade during Long Shutdown 2 (LS2).

Read more about the SciFi tracker here.

Kate Kahle

Official communications

19.10.2017: ANNUAL INFORMATION MEETING OF THE PENSION FUND

All members and beneficiaries of the Pension Fund are invited to attend the

Annual Information Meeting to be held in the Council Room (503-1-001), on Thursday 19 October 2017, from 10:30 a.m. to 12:30 a.m.

Following a presentation by the Chief Executive Officer of the Fund there will be a Questions and Answers session. Members and Beneficiaries are welcome to send questions **in advance of the meeting** by post to:

Mr Matthew Eyton-Jones
"Annual Information Meeting"
CEO CERN Pension Fund
Office 5-5-012, Postbox C23800
CH- 1211 Geneva 23 – Switzerland

or via email to: pension-fund@cern.ch.

Copies of the 2016 Pension Fund Annual Report & Financial Statements are already available in accessible PDF on the Pension Fund website, and will also be distributed at the annual meeting.

Coffee and croissants will be served prior to the meeting as of 10:00 a.m.

OFFICIAL NEWS REGARDING THE CERN SAFETY RULES

The CERN Safety Rule listed below has been published on the CERN website dedicated to the Safety Rules:

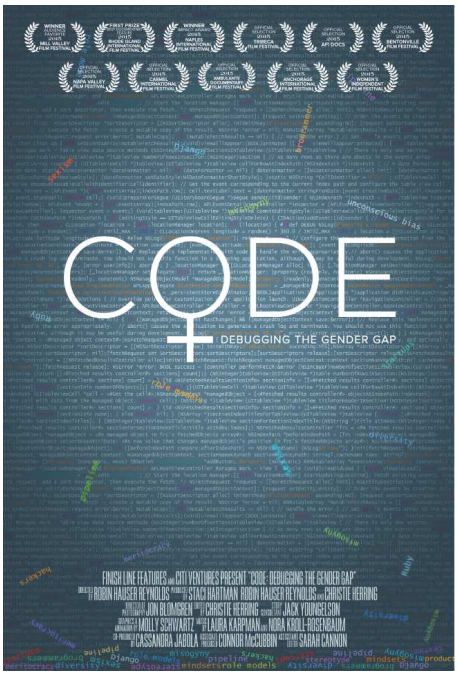
General Safety Instruction GSI-SH-1 "Visits on the CERN site" (https://cern.ch/safety-rules/GSI-SH-1.htm).

This rule cancels and replaces the previous version of the same document. The new version allows for VIP visits to be qualified as professional visits under certain conditions.

The CERN Safety Rules apply to all persons under the Director General's authority. They are available under the following link: http://www.cern.ch/safety-rules.

Announcements

SCREENING OF “CODE - DEBUGGING THE GENDER GAP” | 11.09.2017



You are warmly welcome to attend the screening of “CODE - Debugging the Gender Gap”, the award winning documentary exposing the dearth of American female and minority software engineers and exploring the reasons for this gender gap. CODE raises the question: what would society gain from having more women and minorities code? The screening, in English with French subtitles, will be followed by a light lunch in the pas perdus to foster further discussions. The event is organised by the WIT Community and sponsored by the IT Department and the Diversity Office. Thanks for registering and joining us!

What? Film Screening: CODE - Debugging the Gender Gap
Where? Council Chamber
When? Monday, 11 September 2017, 12:00
Register: https://indico.cern.ch/event/645249/

PDF SOFTWARE CHANGE

As previously announced (see article from June), Mac and PC users will soon be prompted to remove Adobe Reader and Adobe Acrobat. For security reasons, please uninstall these versions of Adobe as soon as possible (for PC CMF users, removal will be forced in October).

Please install these recommended PDF Editor tools instead:

- Mac: **PDF Expert** available via Mac Self-Service
- PC: **PDF-XChange** (now installed by default on all centrally-managed PCs via CMF)

Should you still require Adobe Acrobat, please purchase the new full Adobe **Acrobat DC** license using this request form.

Please note that Adobe **Reader DC** will be made available as a CMF package for special cases (e.g. reading 3D PDFs). However, other PDF software should be installed as the default to help strengthen security.

EXTENSION OF GATE E EVENING OPENING HOURS UNTIL 8.00 P.M.

From Friday, 1 September, in order to ease traffic congestion during the work on the *Esplanade des Particules*, the evening opening times of Gate E will be extended by one hour **for those leaving the site.** The new times will be 4.30 p.m. to 8.00 p.m. (instead of 4.30 p.m. to 7.00 p.m. at present), Mondays to Fridays, except official CERN holidays.

SMB Department

FUN SCIENCE WITH "SHOW DEVANT! LA CONFÉRENCE ÉLECTRIQUE"

On Tuesday 12 September and as part of the EUCAS 2017 conference will be held at the Globe of Science and Innovation a rather unusual mainstream conference: levitating scooter, liquid nitrogen and a nod to Star Wars – discover science as you've never seen it before!

Everything you always wanted to know about superconductivity and electricity will finally have answers in just about 2 hours of show, during which interactive demonstrations will succeed, much to the amazement of the initiated and novice audience alike.

Indeed, there is no limit to science curiosity!

20:30-22:30
As from 10 years old
Hosted in French by Olivier Gaumer, UNIGE's Physiscope
No translation into English
Free entry but booking is mandatory: www.cern.ch/go/show-devant
More information on EUCAS 2017: www.eucas2017.org

SAFETY BULLETIN 2017-4

What happened: In May, a gas leak was reported in a CERN installation. Just over one tonne of gas was released, with potentially harmful consequences for people (danger of suffocation and circulatory problems in particular) and for the environment.

Causes:

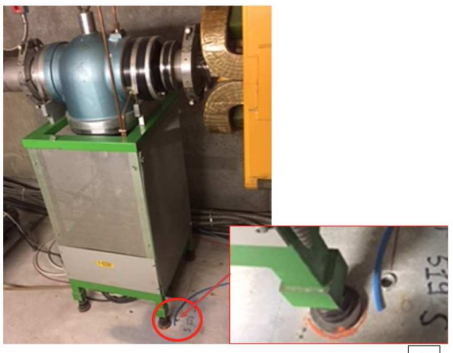
The following have been identified as causes of the accident:

- no double ferrule in the compression fitting (1)
- no sign that crimping has taken place
- no tube insert
- no compression nut (2)
- tube poorly connected (3)

What you must do:

- Ensure that gas installations are assembled in compliance with CERN's regulations, in particular General Safety Instruction GSIM2, "Standard Pressure Equipment", and ensure that similar installations contain all the necessary components assembled in the correct order.
- Select the equipment (pressure regulators, hoses, etc.) most appropriate for the intended use.
- Remember that each connector has a specific assembly, so beware of the potential for incompatibility between the gas and the material. Refer to the catalogues of manufacturers of industrial gas equipment if you have any doubts.

Remember: Gas installations must be assembled by skilled personnel. If you have any doubts about the assembly of pressure equipment, please contact the HSE-SEE group.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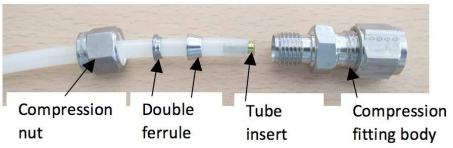

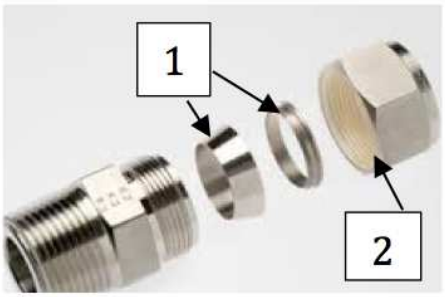

HSE Unit

WANT TO BE AN EARLY ADOPTER? GADGETS PROVIDED!

IT regularly introduces major upgrades of the services it provides. Usually those upgrades introduce new features and sometimes completely new tools are offered.

If you would like to be informed about new or upgraded tools and services provided by IT and have a chance to test them even before they are publicly released, then we will be happy to welcome you on board.

We currently offer the possibility to test phone calls and collaboration features of Skype for Business (*). We will give a “Logitech H570e” headset to the first 30 people that agree to switch their office phone (Alcatel) to Skype for Business in the coming few weeks.

Skype for Business is an application that provides:

- Phone calls
- Chat
- Remote desktop sharing
- Point-to-point video calls

It is especially convenient for people moving around (meetings, business trips, working from home, working from outside the office). But it's useful also for people working in an office for:

- Initiating phone calls from a PC, for example from a browser (phonebook.cern.ch), from Outlook etc.
- Being hands-free during a call
- Easy way to configure forwarding of calls (also while being out of the office)
- Getting your own phone number including notifications for missed calls and voice messages (useful for people sharing a phone number)

Interested?

Join the “Early Adopters” community, state your interest and claim your prize on the channel! Anyone with a CERN account can join the community. Simply join the “Early adopters” channel on the Mattermost portal by following those steps:

1. Join the “IT-dep” team on Mattermost (you don't have to work for IT department to join!)
2. Join the “Early Adopters” channel

(*) Skype for Business lets you activate a CERN fixed phone number on your CERN account. It can be installed on Windows, Mac, mobiles/tablets (Android, iPhone, Windows phone) and the Pidgin application for Linux can also connect to the service. Skype for Business is CERN regular telephony system. All new phone numbers are activated on Skype for Business.

IT Department

CERN ACCELERATOR SCHOOL - SPECIALISED COURSE

Registration is now open for the CERN Accelerator School's specialised course on Beam Dynamics and Technologies for Future Colliders, to be held in Zurich, Switzerland from 21 February to 6 March, 2018.

The course will be of interest to staff and students from laboratories and universities who wish to learn about the various options being considered for future colliders for high-energy physics. The material presented will be at an accessible level and cover circular hadron and lepton colliders. The programme will cover the beam dynamics of the colliders presently under consideration and the associated technologies that will be needed to build them. Beam generation and machine protection issues will also be addressed. Students will have the opportunity to work on realistic case studies throughout the school.

Further information can be found at:
https://indico.cern.ch/event/643268/
http://cas.web.cern.ch/schools/zurich-2018

Obituaries

BJØRN JACOBSEN (1961-2017)

Bjørn Jacobsen, Norwegian delegate to the CERN Council and previous Chair of the CERN Finance Committee, passed away on 13 June after a few months of illness.

Jacobsen studied physics at the University of Oslo, where he obtained his PhD in space physics in 1991. He spent the next 12 years in research in Norway and abroad, in particular two years at the European Space Research and Technology Centre (ESTEC) at Noordwijk in the Netherlands. In 2003, he joined the Research Council of Norway (RCN) where he worked until his death. On joining RCN, he immediately became involved with CERN, first as an advisor to the Norwegian delegation and a member of the Finance Committee, and then, in 2008, he became a Council delegate. He was Chair of the Finance Committee from 2011 to 2013, having served as the Committee's Vice-Chair from 2009 to 2010. In his capacity as Chair of the Finance Committee, he also served as Chair of CERN's Standing Advisory Committee on Audits (SACA). More recently, he was a member of the External Review Committee set up in April 2016 to optimise CERN's use of financial and human resources.

Bjørn led the Finance Committee with calmness and wisdom. He managed to balance firmness and flexibility, and was met with general acclaim and respect. Always attentive and consensus-oriented, he smoothly steered this Committee through waters that could sometimes get rough. His interventions in the various fora were thoughtful and balanced. He was a modest and conscientious person who met everybody with respect and friendliness.

Bjørn played an important role as a source of contact and inspiration for the small Norwegian community at CERN and the high-energy physics community at large in Norway. He was also instrumental in the successful campaign to recruit Norwegian technical students to CERN.

His assistance to the Norwegian research community was not limited to high-energy physics. Bjørn coordinated support for all the RCN's physics programmes. More recently, he served as Special Advisor for the Norwegian contribution to large international infrastructure programs such as ESS (European Spallation Source), EISCAT (European Incoherent Scatter Scientific Association) and NOT (Nordic Optical Telescope).

Bjørn Jacobsen was the type of colleague, scientific policy advisor and friend whom we could not afford to lose. We will miss him dearly, and his memory will stay with us.

Colleagues and friends

This obit will appear also in the October issue of the CERN Courier.

Ombud's corner

IT'S ALL ABOUT RESPECT...

Conflicts in the workplace are inevitable, but are conflicts at CERN any different to those in other organisations? Interpersonal issues arise when people clash over different goals, perceptions or values, but does the fact that we work in a primarily technical environment mean that we handle these issues differently?

Whilst there is no clear "cause and effect" answer to this question, it can be said that there are certain patterns to the problems that arise that may be deeply rooted in some aspects of our organisational culture.

"People here are very bright – everyone has an opinion on how things should be done and nobody is prepared to let go..."

"We have no right to error – and as a result we can never acknowledge that we may have got it wrong ... nor can we ask for help!"

The picture that emerges from these examples cited in the Ombud Office is one of a highly competitive environment where people stick to their positions and any kind of compromise is viewed as a sign of weakness or failure. Sometimes, however, even a scientific or technically viable solution may have to be abandoned in favour of a slightly lesser solution that takes into account additional factors such as time and budget. At other times, it may be necessary to cut our losses by reviewing a technical choice that is not producing expected

results and accept the need to look for another strategy. Camping on one's positions and refusing to envisage other approaches causes difficulties that become deeply entrenched over time, leading to divided loyalties, inefficiency and ultimately a sense of frustration and demotivation for all concerned. This rapidly declines into a situation where it is no longer only the technical issue that is at stake, but also an emotional one, and as such, needs to be addressed differently.

Rising to technical challenges is our bread and butter at CERN – we are used to simply focusing on the problem itself and, using either tried and tested means or new skills acquired on the way, we do whatever it takes to solve it.

When it comes to people problems, however, it is not only resolving the issue that counts; we need to take into account the wider context and emotions involved.

"It is not just what is said but how it is said that counts. . . "

Indeed, dealing with people issues is an adaptive process where we need to be able to listen to other perspectives and be flexible enough to adjust our own goals accordingly. It is all about understanding people's positions and how they got there, being sensitive to their needs and aware of the impact that our own behaviour may have on them. Most of all, it is about acknowledging the legitimacy of others' perspectives or experience, even when they differ from our own, and being able to respect them for it. In some cases, this also implies taking responsibility for our own errors, so that even if it is too difficult to apologise, we can at least express regret for the negative consequences entailed.

In the final analysis, it is through the respect that we show for others that we build the rapport that is necessary to all healthy work environments. Where there is respect, we may address issues whilst safeguarding relationships, thus enabling technical goals to be met with pride and a shared sense of achievement.

Sudeshna Datta Cockerill