CERN Bulletin

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ALPHA-2: the sequel

A Large Angle Veto detector in place in the NA62 decay volume.

While many experiments are methodically planning for intense works over the long shutdown, there is one experiment that is already working at full steam: ALPHA-2. Its final components arrived last month and will completely replace the previous ALPHA set-up. Unlike its predecessor, this next generation experiment has been specifically designed to measure the properties of antimatter.

The ALPHA collaboration is working at full speed to complete the ALPHA-2 set-up for mid-November – this will give them a few weeks of running before the AD shutdown on 17 December. "We really want to get some experience with this device this year so that, if we need to make any changes, we will have time during the long shutdown in which to make them," says Jeffrey Hangst, ALPHA spokesperson. "Rather than starting the 2014 run in the commissioning stage, we will be up and running from the get go."

The first piece to arrive was the ALPHA-2 cryostat from the TRIUMF laboratory in Canada. This cryostat will hold 16 LHC current leads to power the eight superconducting magnets in the new ALPHA-2 atom trap. The leads will allow the ALPHA-2 set-up to use less liquid helium. "These leads were provided by CERN, and use special technology developed specifically for the LHC," explains Jeffrey. "As a small collaboration, we could never have afforded this technology on our own."

Meanwhile, the final piece of the ALPHA-2 puzzle – the superconducting solenoid

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VISIT the CLIC Test Facility CTF3!

CERN Internal Communication is organising a visit to the CTF3 facility for CERN access-card holders. More details available on page 4.

To participate, send an email to **bulletin-editors@cern.ch.**

A word from the DG

Our top priority

After three years of LHC running, we are still at the beginning of a long research programme with our flagship facility, and hopefully 4 July 2012 will go down in history as the date of one of many landmark discoveries spanning several years. CERN's top priority for the next decade and more is the full exploitation of the LHC. With speculation about potential future facilities mounting in the light of the discovery of a new Higgs-like particle, it's important to state that most clearly. Of course, this will rely on continued global collaboration, and it's important that CERN engage constructively with other regions.

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Our top priority

It is important to plan ahead, particularly since the lead times for new projects in particle physics are long, and our field is increasingly global in nature. That's why the European particle physics community is currently engaged in updating its long-term strategy. Planning ahead allowed us to be ready technologically to build the LHC when the time was right to ask our Member States for funding in the mid-1990s. And planning ahead has brought linear collider technology to the point at which such a machine could be built today, if the political will were there to do so.

It is this kind of foresight that, coupled with the new impetus given by the discovery announced in July by ATLAS and CMS, that has allowed the Japanese physics community to state that they are ready to build a linear collider Higgs factory. Japan has recently developed its strategy for particle physics, and placed a linear collider as its top priority. Japanese physicists brought this news to the European particle physics strategy meeting in Krakow in September and, when I was in Japan recently, I heard it echoed in the highest scientific and political circles.

Japan's proposal is to host a linear collider to be built in two stages: the first as a Higgs factory, the second to go to higher energy. The majority of the funding would come from Japan with the rest being contributed by other regions. This would be a bold step for Japan. But even if construction were to begin tomorrow, it would be a decade before such a machine were operational: it would come on stream with the LHC about two thirds of the way through its operational lifetime.

I'm frequently asked about CERN's position towards the Japanese proposal, and my answer is that we have to wait for the European strategy process to run its course. Europe's engagement with other regions, both for the exploitation of the LHC and for Europe's participation in projects elsewhere, is one of the key points being addressed by the European Strategy Group. All of the options, from a lepton collider or electron-proton collider to a Super LHC and ambitious neutrino facilities have to be considered by the strategy group and distilled into a coherent proposal. This will be presented to the CERN Council in March for discussion and in May for approval. For its meeting in May, Council will go to Brussels so that the strategy can also be presented to European science ministers assembling for the European Competitiveness Council. In the meantime, global particle physics will continue to relish the performance of the LHC, its experiments and the computing that are producing such a rich stream of new results.

Rolf Heuer

Higgs: the beginning of the exploration

Even in the most specialized circles, the new particle discovered in July is not called the "Higgs boson" yet. Physicists still hesitate to give it this name because they want to be sure that its properties fit with those predicted by the Higgs theory. This week, at the HCP conference in Kyoto, CMS and ATLAS presented their latest results: a more refined data analysis has produced a more accurate value of the mass of the particle and has started to show decay channels never before observed.

Since July, both ATLAS and CMS have been working on extending the capabilities of their data analysis. The large teams of physicists have studied in even greater detail all the signals and the information that can be extracted from the data. Following this collective effort, both collaborations have recently presented an update on the mass of the new particle, together with several new measurements which are starting to unveil its properties.

ATLAS has analysed a large sample of 13 fb^{-1} at 8 TeV energy. The large statistics will allow the collaboration to study physics processes – such as the decays of the new particle into two photons or into four leptons – which drive many of the property measurements. A preliminary observation of new decay channels - such as those of the new boson into two taus or into two b quarks - was reported for the first time in Kyoto. Globally, the results are compatible with the Standard Model Higgs expectations. The updated value of the mass is m_X = 126 GeV.

Very similar results were presented by CMS. The larger statistics are giving more precision to the July results. The mass of the new particle measured by CMS is:
m_X = 125.8 ± 0.4(stat) ± 0.4(syst) GeV. The signal now has a significance of 6.8 sigmas. The analysis is also showing that the new particle seems to be approaching the characteristics expected for the Higgs boson, and its decays into fermions (such as tau particles) are starting to gain significance. The couplings of the new boson are well within 2 standard deviations from the values predicted by the Standard Model.

The analysis will continue as the experiments move from discovery to a phase of measurements and in-depth studies. The collaborations plan to present updated results based on the larger data sample in the coming months.

Antonella Del Rosso

LHC Report: Level best

The LHCb experiment is special: there is a limit to the number of the events the detector can handle per bunch crossing. Consequently the maximum luminosity provided in 2012 has been around 4 x10^{32} cm^{-2}s^{-1} (compared to the maximum of 7.7 x10^{33} cm^{-2}s^{-1} seen by ATLAS and CMS). Nonetheless LHCb still wants to integrate as much luminosity as possible.

15-Nov-2012 10:31:27	Fill #: 3288	Energy: 4000 GeV	I(B1): 1.94e+14	I(B2): 1.94e+14
	ATLAS	ALICE	CMS	LHCb
Experiment Status	PHYSICS	PHYSICS	PHYSICS	2012: 2 / fb!
Instantaneous Lumi [(ub.s)^-1]	4427.0	2.925	4454.5	397.7
BRAN Luminosity [(ub.s)^-1]	4440.9	1.890	4478.6	212.4
Fill Luminosity (nb)^-1	67536.4	48.1	69245.1	4952.0
BKGD 1	0.616	0.589	2.528	0.920
BKGD 2	91.294	0.000	3.628	4.232
BKGD 3	1.615	8.334	16.074	1.293
LHCb VELO Position IN	Gap: -0.0 mm	STABLE BEAMS	TOTEM:	STANDBY

To meet LHCb's requirements a luminosity leveling technique is used. A machine setup is chosen that would give a peak luminosity well above the required maximum if the beams are collided head-on at LHCb's interaction point. This peak luminosity is then reduced to the required maximum by moving the two beams transversely apart at the interaction point. As the beam current goes down during a fill, the beams can be moved together in small increments to keep the collision rate constant throughout the fill.

In practice, when the LHC goes into collisions in LHCb, the initial luminosity is safely below LHCb's demanded level. There is then a semi-automatic system that allows LHCb to pass instructions to the LHC control system to nudge the beams towards each other. Any changes in the corrector settings used to move the beams have to be confirmed by the LHC operations team. To notify the team of a new LHC request, the LHC announcer gives an audible message and the phrase "Luminosity leveling requested by LHCb" is a now a familiar part of life in the control room.

The LHCb data taking in 2012 has been characterized by a stable trigger configuration and very stable data taking at the optimized instantaneous luminosity of 4 x10^{32} cm^{-2}s^{-1} and with an operational efficiency of 95%. 2 fb^{-1} has been delivered to them so far this year. (Elsewhere in the ring, ATLAS and CMS have now passed the 21 fb^{-1} mark.)

As of Friday 16 November, the rest of the 2012 runs foresees another 18 days of proton physics, 3 days of machine development and 8 days of 25 ns operation. The 25 ns slot will include a scrubbing run, machine development and, finally, a short 24 hours physics run with relatively low intensity 25 ns beam.

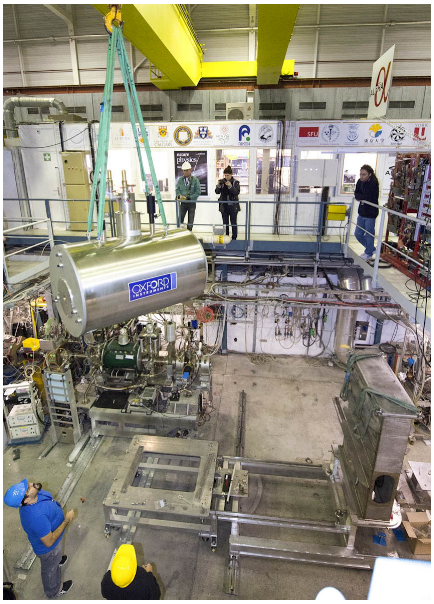
Mike Lamont for the LHC team

Did you know?

The beam size at LHCb's interaction point is around 160 microns (4 Gaussian sigma) and the beam centres are separated by 100 microns at the start of a fill, and of the order of 40 microns towards the end of a long fill. The beams can also be collided head-on at the end of a very long fill, when there are less particles in the beam.

ALPHA-2: the sequel

(Continued from page 1)



magnet – was making its way from England. When it finally arrived on Wednesday 31 October, the ALPHA team had cleared the necessary space for it in the AD hall. This magnet, which was financed by a grant from the Carlsberg Foundation, provides a constant external field of about 1 Tesla for trapping the charged antiprotons and positrons that make up antihydrogen.

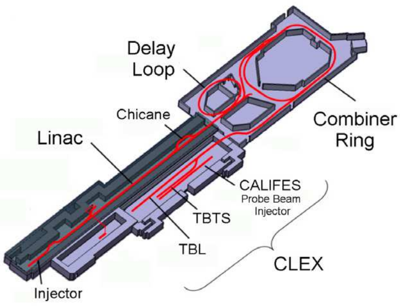
The new solenoid magnet will surround but one of two regions of the experiment that will hold anti-particles. The first, a "catching" trap installed in June, will capture and store antiprotons. These will then be guided into the solenoid magnet to be made into antihydrogen, and to undergo both microwave and laser spectroscopy. These two regions will be connected by intermediate solenoid magnet coils, which were constructed by CERN earlier this year.

Though ALPHA-2 has only just arrived, discussions have already begun on a possible new experiment for the collaboration: ALPHA-3, which would investigate the properties of gravity. In order to make space for this possible expansion, a new platform was created over the experimental area for the ALPHA-2 electronics. Mind your heads, as this collaboration grows ever upwards…

Katarina Anthony

First phase of CLIC R&D complete

Let's turn back the clocks to 2002: the LHC is still under construction, the wrap-up of the LEP physics programme is still in recent memory and the future of electron-positron accelerators at CERN is ambiguous. It was then that CLIC set out to prove the feasibility of their novel accelerator design in the CTF3 test facility. Though once a tall order for the collaboration, the recently released CLIC Conceptual Design Report has proven many of the major design elements… bringing to an end the first phase of CLIC R&D and pointing toward detailed performance optimisation studies in the next phase.



CTF3 layout.

Over a decade ago, the CTF3 team set up shop in the vacated LIL injector site, once home to the weathered machine that delivered electrons and positrons to LEP. Rebuilding and upgrading the machine piece by piece, the CTF3 team converted this mA linac into a high-current drive beam generator. Then, using recycled accelerators elements from across the world and a few pieces of new technology, they were able to add a delay loop, combination ring and two full test beam lines. "Our test facility is a complete hybrid," says Roberto Corsini, CLIC Collaboration spokesperson. "But it has given us the ability to carry out far more than a single experiment. We've surpassed our original R&D goals, proving CLIC concepts once considered out of reach."

At the heart of these new concepts is the generation of the drive beam; this beam would operate alongside the main CLIC accelerator, providing it with RF power without adding any extra length. But to make it, the CTF3 team had to create a high-current beam in a fraction of the required length. They set out using a delay loop to take beams slightly out of phase with each other, then overlapping them in a combiner ring. Today, CTF3 routinely converts 3.5 A beams into 30 A beams using this technique – establishing the combination principle required for CLIC.

Their disparate lines of research have also allowed the CTF3 team to prove many other key concepts of the CLIC design, including the critical drive beam deceleration for RF power extraction. "In some respects, this proved to be more difficult for CTF3's set-up than it will be for CLIC's," explains Roberto. "Our incoming drive beam energy is lower than the lowest CLIC drive beam energy. Of course, as energy decreases, the size of the beam grows – making the beam increasingly difficult to extract power from. We knew that accomplishing extraction in CTF3 meant guaranteed success with CLIC." So far, CTF3 has succeeded in decelerating their beam to 30% in just 20 metres; they hope to push this by an additional 10% this year. CTF3 have also studied the transfer of drive beam energy to a second accelerating structure – a key ingredient of the CLIC acceleration scheme. This has been demonstrated in their two-beam test station, where accelerating gradients of 145 MV/m are regularly achieved. Note that CLIC will require 100 MV/m – a challenging requirement, but one CTF3 has surpassed.

Proving these technologies is just the beginning for CTF3. With their first R&D phase winding up this year, they've started transitioning into a second, even more intense phase of research. For more about what's in store for the facility, check out next week's Bulletin.

Katarina Anthony

Visit CTF3!

CERN Internal Communication is organising a visit to the CLIC Test Facility CTF3 – an opportunity for you to explore the R&D facility.

If you wish to participate, you can sign up for a visit by sending us an e-mail at **bulletin-editors@cern.ch**. The visit will take place between 7 and 18 January 2013 (final date and time to be decided once visitor numbers are established). Note that visits are only open to CERN access-card holders.

The visit will last approximately 45 minutes and will include:
- an introduction to CLIC and the facility by experts,
- a tour of the CLEX (CLIC Experimental area) of CTF3 and the CLIC showroom,
- a few minutes for questions.

Did you know?

- Visiting CTF3 is not only an exceptional experience for R&D fanatics; it's also rather like celebrity-spotting, accelerator style. You can catch a glimpse of accelerator pieces from LEP's accelerator chain, CERN's ISR, Super-ACO from France, and the CELSIUS storage ring from Sweden.

- CTF3 was the first facility to create isochronous beams – that is, beams orbiting with the same period independent of their energy in a circular accelerator.

- The CTF3 team have designed and tested novel Power Extraction & Transfer Structures (PETS) to provide energy to the main beam line. They operate with an on/off principle, allowing individual PETS to be turned off whenever there is an electrical breakdown.

- In its final stage at maximum energy, the CLIC facility will need a power of more than 500 MW. For this reason, the efficiency of RF to beam power transfers is especially important. CTF3 have already succeeded in providing 95.3% efficiency in drive beam acceleration, though they continue to push other systems towards similar values as a part of studies to optimize power and energy consumption of the machine.

Modelling the models

By analysing the production of mesons in the forward region of LHC proton-proton collisions, the LHCf collaboration has provided key information needed to calibrate extremely high-energy cosmic ray models.

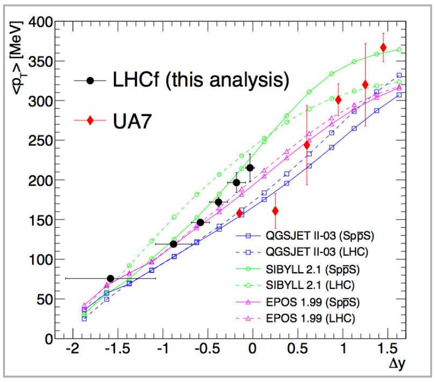
LHCf is dedicated to the measurement of neutral particles emitted at extremely small angles in the very forward region of LHC collisions. Two imaging calorimeters – Arm1 and Arm2 – take data 140 m either side of the ATLAS interaction point. “The physics goal of this type of analysis is to provide data for calibrating the hadron interaction models – the well-known ‘Monte Carlo codes’ – that are used in the study of extremely high-energy cosmic rays,” explains Lorenzo Bonechi, an INFN researcher based in Florence and a member of the LHCf collaboration.

Around the world, several experiments are dedicated to these kinds of measurements, but none of them can reach the precision of LHCf. At the current LHC energy, the LHCf detectors can measure forward high-energy inclusive-particle-production cross-sections of photons, neutrons, and other neutral mesons and baryons with an unprecedented accuracy.

Among the many neutral particles that LHCf can detect, the π^0 mesons are the most sensitive to nuances in proton-proton interactions. Thus, high priority has been given to analysing forward π^0 production data in order to provide key information for hadron interaction models at the TeV energy scale.

So, based on experimental data obtained on 15 and 16 May 2010 during proton-proton collisions at 7 TeV, the LHCf collaboration analysed the production of these rich-in-information mesons. They identified them by their decay into two photons: the opening angle between the photons from π^0 decay is detected by the LHCf detectors, constrained by an angle of ≤ 0.4 mrad for Arm1 and ≤ 0.6 mrad for Arm2. They then compared their data to different hadronic interaction models in order to improve them: “We don’t know which model is the best one for high-energy cosmic rays,” explains Hiroaki Menjo, LHCf collaboration member from the Kobayashi-Maskawa Institute (Nagoya University). “LHCf is a vital tool for theoretical physicists, as it provides the only real data that can be used to calibrate their models for these high-energy phenomena.”

“At the beginning of next year, we will operate with lead-proton collisions,” adds Lorenzo Bonechi. “At the moment, we are already updating our detectors for the even more distant future: operation with proton-proton collisions at 14 TeV in 2015.” The goal: to provide even more invaluable input for the Monte Carlo codes used for modeling cosmic ray interactions in the Earth’s atmosphere.



Average transverse momentum (p_T) as a function of rapidity loss Δy. Black dots represent LHCf data and the red diamonds represent SPS experiment UA7 results. The predictions of hadronic interaction models are shown by open boxes (sibyll 2.1), open circles (qgsjet II-03) and open triangles (epos 1.99). Among these models, epos 1.99 shows the best overall agreement with the LHCf data.

Anaïs Schaeffer

The Metamorphosis by K. (12)

In the last issue of the Bulletin we reported on the first run of the new NA62 experiment. In this issue, we go behind the scenes to take a look at the production of the experiment’s new kaon beam.

10^{-2}, 10^{-3}, 10^{-4}, 10^{-5}, 10^{-6} mbar… send in the protons! Since Thursday 1 November, the P42 beam line of the SPS has once again been sending protons to the beryllium target to produce the K12 kaon beam line eagerly awaited by the NA62 collaboration. This was no trivial matter!

The first step was to clear the decks by dismantling the entire H10 beam line and NA60 experiment, as well as most of the NA48 experiment - representing some 1000 tonnes of equipment in total! Next came the complete renovation of the infrastructure, which dated back to 1979. The operation called on the expertise of virtually all branches of the EN and GS departments, as well as the Radiation Protection group: from those responsible for the electrical system to those in charge of the overhead travelling cranes, the cooling water distribution system, the ventilation, the control systems, the safety systems and the radiation control system. Civil engineers also had to be called in to remove some 75,000 tonnes of earth to make room for the construction of a new beam dump.

Once the preparatory work was complete, the new K12 beam line with its magnets, collimators, diagnostics system* and a crucial vacuum line could start to be installed. As Lau Gatignon, project leader for the K12 beam, explains: “The study of the decay of kaons produced by the K12 beam requires a very high-grade vacuum (10^{-6} mbar) over an exceptionally large volume (500 m^3). This meant the need for recourse to large cryogenic pumps.”

On the surface, the old control room was also completely transformed: “We moved the walls and changed the electrical distribution system and the air conditioning,” adds François Butin, project engineer for the NA62 experimental area (ECN3). “After a final new lick of paint, we’re now all set for the exciting years of research ahead!”

Thanks to meticulous planning and flawless alignment, the new K12 beam line was commissioned very quickly. On Thursday 1 November, protons were focussed on the 2 mm diameter beryllium target after only a few hours, and by the following day all the NA62 detectors were receiving a high-quality beam, ready for the experiment to start to be calibrated.

François and Lau conclude with the following words of thanks: “We would like to extend our warmest appreciation to all the technical teams from the BE, EN, GS and TE departments, who did a remarkable job, as well as to the groups from the PH department with whom we collaborated very closely.”

CERN Bulletin

** The diagnostics system consists of stations for monitoring and evaluating all the beam parameters.*

Vidyo – a collaborative tool for Planet CERN

CERN's videoconferencing service has a new look. The user-friendly, easy-to-access Vidyo system is replacing EVO and, by the end of 2012, will become CERN's only official videoconferencing platform.

CERN's videoconferencing service has a new look. The user-friendly, easy-to-access Vidyo system is replacing EVO and, by the end of 2012, will become CERN's only official videoconferencing platform.

Since November 2011, the IT Department has been offering Vidyo to its users of videoconferencing services. After a year of living alongside EVO, which pioneered the technology since the 90s, Vidyo is now poised to take over. In January 2013, the technical support services provided by the IT Department will be devoted entirely to assisting organisers and participants in videoconferences using the Vidyo platform. But you don't have to wait until 2013 as you can join the growing community of Vidyo users straight away!

Vidyo is fully integrated with Indico, so organising or taking part in a videoconference from your office or meeting room is simplicity itself! "We wanted this new videoconferencing system to be extremely easy to use," says Thomas Baron, Head of CERN's Audiovisual and Collaborative services. "From now on, as soon as a meeting is created in Indico, the user can book a virtual Vidyo meeting room in parallel. All the information needed to connect to the videoconference is then supplied on the Indico page for the meeting."

In addition, Vidyo allows users to connect to videoconferences not only from any of CERN's 70 meeting rooms, on conventional telephones, Macintosh computers or PCs running Windows or Linux, but even on tablets or smartphones operating iOS or Android. "It's a multi-platform service," adds Thomas Baron. "It works whatever the connection medium!"

Vidyo is open to any CERN account-holder but unregistered participants can also be invited to take part. "Once a virtual meeting has been created," Thomas Baron explains, "the user is provided with a URL which can be simply sent to the other participants, who can connect and take part in the meeting without needing to log on."

The simple-to-use system also offers high video and audio quality, and this performance is maintained whatever the number of users. "CERN and its collaborators need a system capable of bringing together a large number of participants in each videoconference," adds Thomas Baron. "Vidyo fulfilled all the requirements imposed by the collaborative nature of the work done here." Up to 1,600 simultaneous connections are possible, with high-definition videos and good adaptability to network conditions.

Vidyo is also set to evolve in the future. In 2013, it will be equipped with a bridge to Skype, new telephone access points and the possibility of recording or broadcasting videoconferences on the Internet. Why don't you have a look at its many functions yourselves? Whether it's for a technical meeting with a supplier in Japan, a project review with the United States and Italy, or a virtual tour of your facilities, Vidyo will bring you closer to your partners!

Caroline Duc

A CERN fireman becomes a world boxing champion

From 19 to 28 October, Sydney (Australia) welcomed thousands of firemen and women from all over the world for the 12th World Firefighters Games. Launched in 1990 in Auckland (New Zealand), this biennial celebration is – according to its organizers – "intended to be an inclusive event that celebrates the camaraderie, heroism, health, fitness and spirit of the women and men who work in one of the world's most respected professions".

This year, Craig Stevenson, who is member of the CERN Fire Brigade, took part in the competition. He went as far as winning the gold medal in the boxing championship, in the "under 75 kg" category. "This is my last year at CERN, and I wanted to do something special," Craig explains. "I work with a lot of inspirational people, who have really made me want to achieve more."

In order to compete in the "under 75 kg" category, Craig first had to lose around 6 kg… "I kick-started the process with the GR5 tour of Mt Blanc: 105 miles in four nights and five days," adds Craig. "I was then training two or three hours a day, with the occasional day off to recuperate! I initially thought it would be like one of those 20-minute training montages from 'Rocky', but soon discovered it was going to be a long, gruelling journey..."

But it wasn't until the day of the competition that Craig realised what he had signed up for: "When I saw all the other competitors wearing their boxing attire, I had a major attack of doubt... But then, three 2-minute rounds later (of exhausting hell!), I was given the gold medal!"

Anaïs Schaeffer

Ombuds' Corner
Le coin de l'Ombuds

The third party, the institution

"The Ombuds shall provide confidential assistance for the informal resolution of interpersonal issues, in the interests of the good functioning of CERN."*

In any institution, conflicts are inevitable. They can, however, offer an opportunity for a positive resolution. Relationships in a workplace are generally better and stronger between people who have been able to reach a positive resolution of their disagreement, than they are between people who get along moderately well. However, in disputes involving two antagonistic parties, people often forget that there is actually a third party behind the scenes: the institution. It is sometimes surprising to see that even people holding management responsibilities or hierarchical positions in projects fight each other, and completely forget that they are accountable for the good functioning of CERN. Commitment and professionalism are part of the five priority values of CERN, as expressed in its Code of Conduct: "Promote the CERN mission and act in accordance with CERN values. Maintain a professional environment characterized by good working relations and an atmosphere of tolerance and mutual respect."**

The respect of CERN values and the overall efficiency of work in our institution are directly linked. This point should be kept in mind: disputes – although inevitable – will always mean a loss of efficiency in our various missions, as well as disastrous human costs. Obviously, we should not commit ourselves to any loss of efficiency.

Conclusion:
Everyone is accountable to our institution. Of course, conflicts will always be with us and will have to be attended to at the earliest possible moment. However, the interest of CERN itself, accountable to its Member States and to the overall physics community, should never be forgotten in such cases. This is yet another good reason to confer with the Ombuds, if appropriate, before any dispute reaches the level where a loss of work efficiency becomes detrimental to our missions and, even more harmful, where the human costs may be with us for a long time.

Vincent Vuillemin

** Mandate of the CERN Ombuds*
*** CERN Code of Conduct*

Computer Security
Sécurité informatique

Let's play hide and seek!

This week, we would like you to play a small online game called "Virtual Hide & Seek". The rules are simple: some of our colleagues have published some sensitive or confidential documents on CERN's central services like Indico, CDS, EDMS or TWiki, as well as on our many websites. Your mission, should you choose to accept it: find them!

If you provide us with documents marked "confidential", "classified", "sensitive", or containing plain text operational passwords, you can win a book on computer security. There are only few conditions: these documents must be visible from outside CERN, must not require a CERN account in order to access them, and must not belong to you or have a direct link with your work. Have fun!

But seriously, are you sure that your documents are really properly protected? We regularly find confidential documents stored on one of the CERN central services and which have accidentally been made public. Only our oath of discretion forbids us from giving details. However, you may remember the article on "CERN est une véritable passoire" from the "Le Matin" of November 2009, which will give you an idea about the negative consequences leaking documents can have.

CERN central services like CDS, INDICO, EDMS or TWIKI, as well as the web service, provide means to classify your documents and protect access to them accordingly. While these services are inherently secure, it is up to you to check that you are using their protection correctly! Thus, if you own or manage confidential documents, are these properly classified and have access protections been properly applied (e.g. using e-groups)? Can only the people who need them access them? Have you tried to find them with Google searching for "[YOUR SENSITIVE DOCUMENT TITLE HERE] site:cern.ch"? Should you find out that one of your documents ended up publicly available by accident, do not hesitate to contact the corresponding support team directly, as they can give you help and advice.

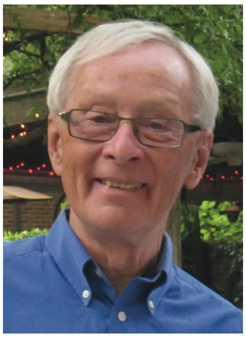
Still, our challenge remains. Maybe someone else will find your confidential documents publicly available on a CERN site. Whoever sends link(s)/URL(s) for confidential document(s) to **Computer.Security@cern.ch** by 14 December 2012 can win one of three books on computer security.*

Computer Security Team

**In the event of more than three credible, correct replies, we will draw from the pool of replies.*

William J. Willis (1932-2012)

It is with great sadness that we learned of the passing of our colleague of many years, Bill Willis, who died on 1 November after a short illness.



Active in physics until his very last days, Bill's career spanned more than 50 years at the forefront of particle physics.

After his early career in weak interaction studies using bubble chambers in the USA, he was persuaded to join CERN in 1973, where he was introduced by Jack Steinberger as "the cleverest physicist I've ever met".

He was attracted by the physics potential of the CERN ISR to which he brought a vision of a new detector concept – a 4π facility with charged and neutral particle detection capability, which he called the "Impactometer". Its possibility of measuring "missing energy" and the importance of direct lepton detection were prescient concepts of immense discovery potential. The first incarnation of the "Impactometer" was the "Axial Field Spectrometer" at the ISR, which detected high-pt jets in hadronic collisions at the same time as UA1 and UA2. This approach, considered adventurous at hadron colliders at the time, is now the standard detector concept. Subsequently he turned his interest to nuclear matter under extreme conditions of temperature and density: he convinced the CERN management to adapt the SPS to the acceleration of heavy ions, including lead ions, thus opening a new field, which flourished at RHIC and now also at the LHC.

He returned to the United States in 1990, taking up a professorship at Columbia University. In 1993 Bill was part of the first US delegation to visit CERN to explore the US joining the LHC experiments. Some of the ideas from earlier concepts were promoted by Bill and found their way into ATLAS. Bill served as the US ATLAS construction Project Manager until 2005 and was a member of the ATLAS Executive Board for four years.

Most recently he was involved in the MicroBooNE experiment, in which he combined his talent for developing ingenious approaches and his interest in novel detectors to the field of neutrino physics.

Bill was truly a "Renaissance physicist" with remarkably wide-ranging research interests. He was familiar with advanced accelerator physics, having developed a novel plasma-type accelerator scheme in the early 70s. He is of course well known for the introduction of several novel detector concepts – including Liquid Argon Calorimetry and Transition Radiation Detectors, which would be adopted by many experiments, including ATLAS. In recognition of his many contributions he was awarded the 2003 Panofsky Prize of the APS.

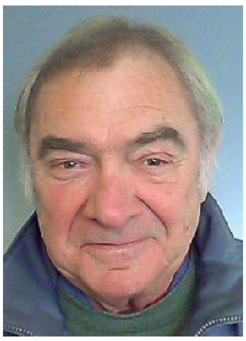
Bill worked with great distinction both here at CERN and in the USA and forged fruitful links with several Russian physicists who became collaborators and friends. He grasped, earlier than many of us, the importance of the international dimension to our field, and showed how we could be both competitive, in a friendly way, and collaborative.

He carried his deep knowledge and experience with the grace of the true scholar: he was hugely respected and admired, and he will be very much missed.

His friends and colleagues at CERN

Paul Beynel (1944-2012)

Paul joined the Radiation Group at CERN's Laboratory II in March 1972. He carried out tests on materials and components that were used in the construction of the SPS.



Following the commissioning of the SPS in 1975 and when the two laboratories were merged into one, Paul became a member of the Radiation Protection group. There, he had two roles: the first as a radiation protection officer in the underground areas, where access and personnel protection issues were of crucial importance; and the second testing the radioresistance of many different types of materials. Thanks to his detailed analyses and shrewd interpretation of the results, he became a recognised expert in the field - a recognition that extended far beyond the boundaries of CERN. He wrote many reports and co-authored several volumes of the CERN "yellow reports" issued as a catalogue on the radioresistance of materials and which continue to serve as reference works today.

In July 1988 Paul had a career change and joined the General and Electrical Safety group as a general safety inspector. Once again, he became an expert in two fields: those of safety inspection and applied ergonomics. He developed the latter field in collaboration with the Medical Service as ergonomics and the problems of working on VDUs increasingly became a focus of public attention. In addition, once the highly complex assemblies needed for the LEP had been received and commissioned, the issue of noise in the workplace and the environment needed to be addressed. Paul's work in this field made a decisive contribution to reducing noise pollution. Paul retired in December 2004. After fewer than 8 years of retirement, he has left us much too early. We will remember him as a vivacious and dynamic colleague who worked quickly, independently and efficiently. We, his former colleagues, are deeply saddened by his untimely death and would like to convey our deepest sympathy to his family and close friends.

His friends and colleagues at CERN

Official news

REMINDER : Changes in family situation are to be declared promptly

All changes in the family situation of members of the personnel (employed or associated) have to be declared without delay and in writing to the Organization.

Among the changes that shall be notified within 30 calendar days of their occurrence, the most frequent ones are:

• marriage; divorce; entering into a partnership officially registered in a Member State; dissolution of such a partnership; death of the spouse or partner; and birth or death of a child.

For more information, in particular on how to declare any of the above changes, please see the CERN Admin e-guide.

In addition, any change to the health insurance situation, the income or retirement pension of the spouse or partner of any staff member or fellow also has to be declared to the Organization in writing within 30 calendar days of its occurrence. Such changes shall be declared using the EDH "CHIS Declaration of health insurance situation spouse/partner".

HR Department

Take note

SM18 Visits and Access

VISITS

The rules and conditions to be followed for visits in the SM18 Hall are laid out in the EDMS 1205328 document. No visit is allowed without prior reservation.

ACCESS

Special access right is needed ONLY from 7 p.m. to 7 a.m. and during week-ends. From 1 December, the current SM18 access database will be closed and a new one "SM18-OWH outside normal hours" started from scratch. Requests, via EDH SM18-OWH, will have to be duly justified.

"Le million" tickets!

Le Million tickets are on sale at the Swiss post office, Building 63 - R0012 (Main Building).

- A great Christmas gift -

26 cars and 14 million Euros to win this December. New prizes every day.
Come and try your luck!

Seminars

THURSDAY 22 NOVEMBER

TH COSMO COFFEE

11:00 Special Discussion Session University of Geneva (Grand Auditoire de l'Ecole de Physique)

QUAI ERNEST-ANSERMET 24 1205 GENEVA

CERN COLLOQUIUM

16:30 Future possibilities for precise studies of the X(125) Higgs candidate

ALAIN BLONDEL (UNIVERSITE DE GENEVE (CH)), DR. FRANK ZIMMERMANN (CERN)
CERN (MAIN AUDITORIUM)

FRIDAY 23 NOVEMBER

PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 TBA

GILBERTO COLANGELO (UNIVERSITY OF BERN)
CERN (4-3-006 - TH CONFERENCE ROOM)

TUESDAY 27 NOVEMBER

TECHNICAL SEMINAR

09:00 13eme Forum Utilisateurs CATIA au CERN

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

TH STRING THEORY SEMINAR

14:00 TBA TH Conference Room

VERCNOCKE BERT (CEA, SACLAY)
CERN (4-3-006 - TH CONFERENCE ROOM)

TH THEORETICAL SEMINAR

14:00 Recent progress on Quantum Black Holes

ATISH DABHOLKAR (CNRS)
CERN (4-3-006 - TH CONFERENCE ROOM)

ISOLDE SEMINAR

14:30 Super-heavy isotopes research at GSI

CHRISTOPH DÜLLMANN
CERN (26-1-022)

WEDNESDAY 28 NOVEMBER

TH COSMO COFFEE

11:30 Cosmological perturbations from the Standard Model Higgs

ANDREA DE SIMONE (CERN)
CERN (4-2-011 - TH COMMON ROOM)

MONDAY 3 DECEMBER

JOHN ADAMS LECTURE

14:30 The Role of Superconducting Magnets for High Energy Physics

DR. LUCIO ROSSI, CERN
COUNCIL CHAMBER, CERN