



MESSAGE FROM THE PRESIDENT OF THE COUNCIL

CERN's accelerators and physics experiments saw record performances again in 2017. But it was not all plain sailing. A number of major technical challenges were overcome thanks to very flexible and highly skilled problem investigations and solving by teams from CERN working alongside many visiting scientists and engineers from universities and institutes from all over the world. The Council congratulates the CERN Management on the outstanding achievements of the Laboratory, which were delivered well within the designated budget.

2017 was the last year for which CERN's Annual Progress Report and Financial Statements were audited by NIK, the Supreme Audit Office of Poland. NIK exercised its duties as External Auditors of the Organization for the statutory maximum of three years plus two. On the Council's behalf, I wish to acknowledge and express appreciation for the thoroughness, clarity and assiduity with which NIK have audited the accounts of CERN and the Pension Fund over the past five years. The Council has appointed the National Audit Office of Finland as the next External Auditors from 1 January 2018.

The Council's subsidiary bodies are essential to its proper functioning. The Scientific Policy Committee and the Finance Committee are the best known, but others also play an indispensable role. These include the Tripartite Employment Conditions Forum, TREF, and the Audit Committee, established in 2017 by the Council to succeed the Standing Advisory Committee on Audits. The Audit Committee is a cornerstone of the Council's oversight of the Organization. In particular, the Council took note with satisfaction of the Audit Committee's opinion that the CERN Management had made major progress in charting the risks to the Organization and in elaborating mechanisms to mitigate those risks.

With many of the goals outlined in the 2013 European Strategy for Particle Physics, along with other projects around the world, well on the way to being achieved, the open questions of particle physics have become better defined and new ones are emerging. This, along with the information that will be gathered until the end of 2018, makes

the time right to launch the next update of the European Strategy in September 2018. To that end, 2017 saw major preparatory steps as the Council appointed Professor Halina Abramowicz as Strategy Secretary and established the Strategy Secretariat. Chaired by the Strategy Secretary, the Secretariat's members are the Chairs of the Scientific Policy Committee, the European Committee for Future Accelerators and the European Laboratory Directors Meeting. The Secretariat immediately set to work energetically and, in December, submitted a draft plan for the update process for the Council's feedback.

CERN remains attractive for countries wishing to join the front-line research of the Organization in the spirit of international collaboration. In 2017, the Republic of Slovenia became an Associate Member State in the pre-stage to Membership. The Republic of India became an Associate Member State and the Republic of Lithuania signed an agreement to be granted the same status. 2017 was also the year in which the Laboratory for Synchrotron-light for Experimental Science and Applications in the Middle East, SESAME, formally opened in Allan, Jordan. CERN extends its warm congratulations to SESAME, which presents another great opportunity for science for peace in the grand CERN tradition. The Council was delighted to hear that CERN's application to become an Observer was approved by the SESAME Council.

Last but by no means least, 2017 was the year in which Ms Brigitte Van der Stichelen, the Head of the Council Secretariat since 2001, took her well-earned retirement. The Council wishes her all the best in this new phase of her life and is pleased to see that all the tasks of the Secretariat have been smoothly transferred to an equally competent successor.

Sijbrand de Jong

A handwritten signature in black ink, consisting of a stylized 'S' followed by a long, sweeping horizontal line that tapers to the right.



MESSAGE FROM THE DIRECTOR-GENERAL

The year 2017 was a remarkable one for CERN, with great accomplishments across the full spectrum of the Laboratory's activities. The accelerator complex broke new records in terms of beam availability, and the LHC achieved a peak luminosity of $2 \times 10^{34} \text{ cm}^{-2}\text{s}^{-1}$, a factor of two higher than its design value. As a result, the LHC is on track to exceed the ambitious target of delivering a total of 150 fb^{-1} of data to ATLAS and CMS by the time Run 2 comes to a close at the end of 2018.

The wealth of high-quality data recorded by the experiments so far in Run 2 allowed detailed exploration of the several-TeV mass region and a large number of precise measurements. Higgs boson physics entered the precision era, and in 2017 the couplings of this very special particle to the heaviest fermions – the top quark, bottom quark and tau lepton – were established.

The upgrade projects for the injectors (LIU), the high-luminosity phase of the LHC (HL-LHC) and the experiments made substantial progress towards installation during the next two long shutdowns.

At the CERN Neutrino Platform, construction of liquid-argon detector prototypes for the DUNE long-baseline neutrino experiment in the US started in earnest. ISOLDE celebrated 50 years of physics with radioactive beams, and CERN's innovative medical isotope production facility, MEDICIS, produced its first isotopes. The ELENA ring, an upgrade to our unique Antiproton Decelerator facility, was installed and commissioned. Design studies for future colliders and projects, the Compact Linear Collider (CLIC) study, the Future Circular Collider (FCC) study and Physics Beyond Colliders (PBC), made good progress in preparing their input for the update of the European Strategy for Particle Physics.

In 2017, about 2000 young people, including fellows, doctoral students and summer students, were trained at CERN. An Alumni programme was launched, and a Data Privacy Protection Office was established to align CERN with regulations and best practices regarding the use of private data. The American Physical Society joined the Sponsoring Consortium for Open Access Publishing in Particle Physics

(SCOAP³), hosted by CERN, which now covers more than 90% of all publications in high-energy physics.

The CERN Environmental Protection Steering board (CEPS) released its first recommendations to minimise the impact of CERN on the environment, including measures to protect local watercourses and reduce greenhouse gas emissions.

In 2017, CERN attracted a record 136 000 visitors to its site, while some 400 000 people visited our travelling exhibitions.

These and the other great achievements covered in the pages of this report would not have been possible without the competence and dedication of CERN's employed and associated members of personnel and the very strong, continued support of the Council. My gratitude, and that of the entire Directorate, goes to them all.

Fabiola Gianotti