UNECOSOC Innovation Fair

CERN : Fundamental research on particle physics

CERN, the European Organization for Nuclear Research, operates the world's leading laboratory for particle physics. Its business is fundamental physics, finding out what the Universe is made of and how it works. Founded in 1954, CERN has become a prime example of international collaboration, with currently 20 Member States. Additional nations from around the globe also contribute to the research programmes. In total, more than 11,000 scientists from over 100 nations collaborate in the physics research at CERN.

The CERN Laboratory sits astride the Franco-Swiss border near Geneva. Its flagship research facility, the Large Hadron Collider, is housed in a 27-kilometer tunnel under then plain between Lake Geneva and the Jura mountains.

Four huge detectors (ALICE, ATLAS, CMS, LHCb) measure and identify particles produced in the collision of protons or lead ions, up to 600 million per second. In 2012, the excellent performance of the LHC and the experiments led to the discovery of a new particle that features many of the expected properties of the Higgs boson.

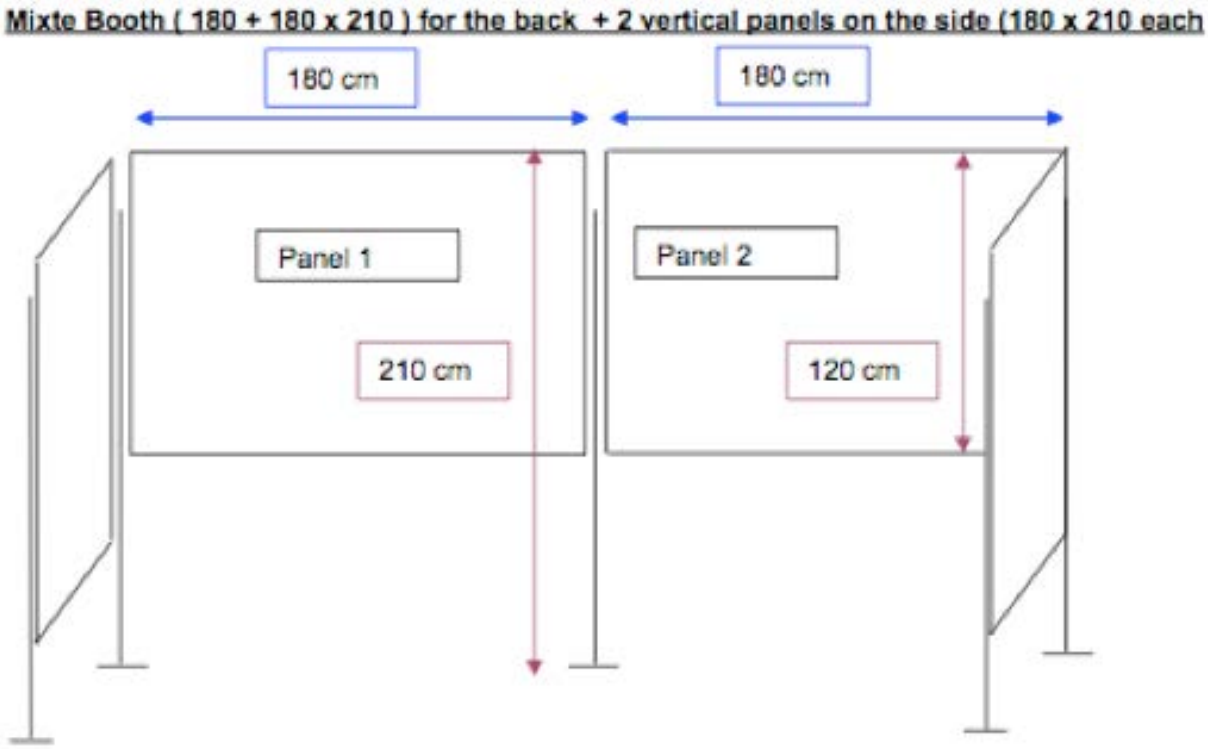
The LHC data are analyzed using the LHC computing GRID, a world-wide infrastructure consisting of more than 300,000 CPUs.

Sharing its knowledge with society is an important part of CERN's mission. By driving innovation, developing forefront technologies, stimulating international collaboration and training a new generation of scientists, CERN shares the benefits of its work with other fields in research, industry and education.

To motivate school students to become interested in modern physics, CERN offers special 1-week programmes for more than 1000 school teachers per year, coming from more than 30 countries.

CERN exhibition at the ECOSOC Innovation Fair 2013

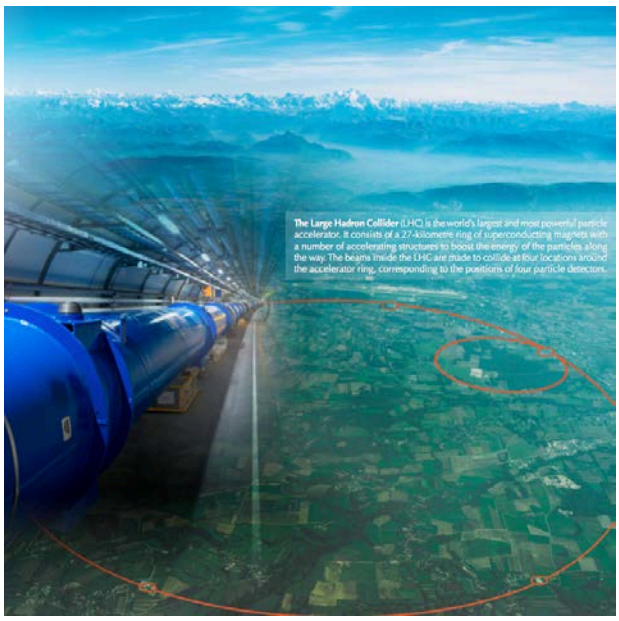
The stand will illustrate the above messages with the corresponding visual material. The stand will be a ‘mixed booth’, with two side panels of dimension 180x210 cm^2 and two back panels of dimension 180x120 cm^2 (see sketch below):

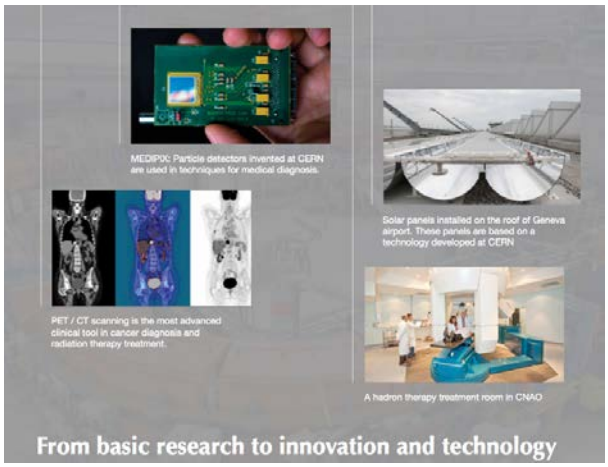


In front of the stand, there will be a table and two chairs. On the table, we will put a small detector (called “MediPix”), together with a computer (below the table) and a computer screen showing the readout of the detector. This unit will illustrate an important application of modern detector technology used in the LHC experiments (called “pixel detectors”) for medical applications.

Towards the left side of the stand, we will have a 55” screen playing a 1 minute video loop about CERN, the LHC, the experiments, and the discovery of the Higgs boson.

The images below show the preliminary design of the posters for the 4 panels.





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