## Cooperation with the European Organisation for Nuclear Research (CERN) on upgrading detectors of the Large Hadron Collider (LHC)

The Ministry of Education and Science has been instructed to draft supplements to the memorandums of understanding on upgrading four detectors of the Large Hadron Collider (LHC) and to make a one-time payment of 2.8983 million Swiss francs to the European Organisation for Nuclear Research (CERN) in 2017. The federal budget for 2017 provides for these allocations. The Russian Government will also earmark 330 million roubles from its reserve fund under the state programme Developing Science and Technology 2013-2020 to Russian organisations for the production, supply and assembly of equipment as Russia's in-kind contribution to the LHC's modernisation. Russian scientists will continue taking part in CERN's international research.

## Reference

Submitted by the Ministry of Education and Science.

The upgrading of the detectors of the Large Hadron Collider (LHC) by CERN is envisaged by the protocol on participation in implementing the programme of experiments at the LHC. The protocol is part of the agreement between the Russian Government and CERN on further developing scientific and technical cooperation in high energy physics of 19 December 2003.

In April 2013, the LHC Resources Review Board — the highest body overseeing LHC experiments — made a decision to upgrade four detectors in 2013-2022.

Considering that Russia is a stakeholder in the operation of the detectors, the Resources Review Board prepared for signing supplements on LHC detectors, in which Russia's total contribution to their modernisation was estimated at 6.9593 million Swiss francs.

In accordance with the terms of modernisation work, Russia will pay CERN 2.8983 million Swiss francs. Russian organisations will contribute the rest as in-kind contributions.

The Ministry of Education and Science has been instructed to sign supplements to the memorandums of understanding on cooperation on four LHC detectors (LHCb, CMS, ALICE and ATLAS) and to make a one-time payment of 2.8983 million Swiss francs to CERN in 2017. The relevant allocations are envisaged in the 2017 federal budget.

The Russian Government will also earmark 330 million roubles from its reserve fund: 263 million roubles will be paid to the Kurchatrov Institute National Research Centre and 67 million roubles to the RAS Nuclear Research Institute.

The Russian organisations will spend these sums on the production, supply and assembly of equipment and spare parts for the LHC experimental complex as Russia's in-kind contribution to the modernisation of the detectors. These sums have been provided under the state programme Developing Science and Technology 2013-2020.

Russian scientists will continue taking part in international research at the LHC under CERN.

The documents were reviewed and approved by the Government of the Russian Federation at its meeting on 19 October 2017.