

CERN-RRB-2010-048

23 MARCH 2010

# PRINCIPAL LHCC DELIBERATIONS

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6<sup>TH</sup> MEETING OF THE TOTEM RESOURCES REVIEW BOARD

20 APRIL 2010

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SCIENTIFIC SECRETARY, LHCC

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**GENERAL**

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This document summarises the principal LHCC deliberations concerning TOTEM at the Committee's session in February 2010.

**Good progress was reported on the completion of the TOTEM experiment. The LHCC congratulates the TOTEM Collaboration for promptly identifying the nature of the hardware problems that appeared before the LHC run in 2009, and for correcting them completely during the Christmas technical stop.**

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**CONCERNS FROM THE PREVIOUS TOTEM RESOURCES REVIEW BOARD**

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SUB-SYSTEM	CONCERN	STATUS
T1 Telescope	Completion of the construction of the T1 Telescope.	Progress has been made in the production of the T1 Telescope. The first arm is complete and tested in beam while the construction of the second arm should be complete by the end of April 2010.
Software	Completion of the online and offline software.	Progress was reported on the development of the software.

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**STATUS OF THE EXPERIMENT**

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The LHCC took note of the last-minute problems with the T2 Telescope and the Roman Pot (RP) detectors, which occurred before the November-December 2009 LHC runs, and which partly disturbed the TOTEM commissioning plans. One end of the T2 detector was unavailable and the high voltage of some RP detectors could not be operated due to insufficient clearance to the RP window. Nevertheless, the overall performance of the functional components and of the trigger, DAQ and control systems was consistent with expectations. In particular, the operation of the RPs and their influence on the beam showed no reason for concern.

Progress is still being made on the software, both for the online and offline. The emphasis is now on developing more user-friendly interfaces, which will allow the non-experts to take shift responsibilities.

The TOTEM Collaboration presented the first results of the analysis of test beam data for the first completed arm of the T1 Telescope. A few issues with noisy channels may need to be cleaned up, but there do not seem to be major concerns for the detector performance. The construction of the second arm should be completed by the end of April 2010. The LHCC encourages the Collaboration to take full advantage of the extended test beam periods that will be available in 2010 in order to carry-out complete system tests of the detector, and to review internally the readiness of the full

system for installation. A complete plan of the resources, infrastructure, services and time required for the installation and the commissioning of the T1 Telescope should be carried out as input to the final installation review to be carried out with CMS. The goal should be to guarantee the installation and commissioning by the next winter technical stop, should there be an opportunity.

Once the physics commissioning of the integrated T2 Telescope and RP system (alignment, trigger, backgrounds) is completed with the forthcoming data, the TOTEM Collaboration should prepare a realistic physics plan for the 2010 run to be discussed at the next LHCC.