**Justification for the use of Cavitech (Boudry.ch) for the production of the CMS RE4 upscope signal cables.**

The 864 signal cables for the RE4 RPC must transmit signals with 1ns time difference (Skew). The lengths therefore are cut to better than a few cm accuracy to ensure the same arrival time for the batches of 6 cables from each chamber.

The Cavitech Company have shown great willingness and capacity to achieve a fine quality (tolerance1cm) in the above area as they produced the 2600 cables for the RPC stations already installed in CMS. It is necessary to achieve the same level of quality as produced before with zero failures at the level of the skew test, that they agree to do, in addition to the standard continuity tests.

The designation of each cable, by label, is also done in the company

The test apparatus will be supplied by CERN and must be readily maintained at short notice, the proximity of the company is necessary.

In addition to the 864 cables for the RE4 up-scope we will are requiring spares and diagnostics cables, both of which must be compatible with the present RE1, 2 & 3 already installed. The installation will start in March and with a declared 2 month lead time, that does not include the skew test time we are rather late. This company is the only company that can meet the current schedule.

An excellent cooperation with this company has been noted with an R&D project on the alternative cable link between Chamber pick-up strip and FEB (Front End Board).

Ian Crotty

11 Dec 2012