

CMS, ST & EST

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Summary

The assembly of CMS is a demanding task because of the very large size and mass of the various elements. This assembly cannot be done directly in the underground area (UXC5), which has been designed to the minimum size to minimise cost. Thus CMS requires, during the assembly period, a large assembly hall on the surface (SX5). This hall cannot be positioned directly over the main shaft because this area has to be left free for the civil engineering to complete USC5 and UXC5 after the stop of LEP, and then to allow UXC5 to be equipped.

After the surface test of the magnet, the assembly building will be connected to the part of the SX5 building covering the main shaft, which will have been completed in the mean time, allowing for the transfer of the heavy pieces to the underground area.

After the transfer of the CMS magnet to the underground area has been completed, the surface building SX5 will be reduced in height to 16 m, and in length to 100 m, a size sufficient for the normal running of CMS and which also satisfies environmental requirements.

The heat dissipated in the underground area from both the front end electronics and the rack system is approximately 3 MW. In fact the sub-detectors must be designed around an active cooling system to make sure the heat is removed where it is created, and thus minimise the excess heat dissipated in the air.

Air conditioning systems are essential to provide the clean, dry and heated air that will be needed for both the personnel and the detectors. Two separate ventilation systems will be used, one for the air in USC5 and one for the air in UXC5.

As these projects are in the hands of ST, I suggest to create a ST coordination group for Point 5. This group will interact positively both with CMS in one hand and with the project teams inside ST in the other hand, but also with services in other divisions like SL and EST.