

M E M O R A N D U M

Copy to/Copie à:

To/A : Members of the SPS Committee
From/De : UA2 Collaboration
Subject/: Upgrade programme for 1987 onwards
Objet

In May 1984 we presented a proposal to improve the performance of the UA2 detector (CERN/SPSC 84-30) in which a number of options were considered for the central vertex detector. The design studies and prototype tests which we have performed in the mean time have now converged to a final design, a detailed description of which will be submitted to the SPS Committee before Christmas 1984, in time for discussion at the January 1985 session. The present memorandum provides early information on the general outline of the proposed upgrade design.

Moving outwards from the interaction region, the upgraded vertex detector contains the following components:

- a small diameter beryllium vacuum chamber to be installed in 1985,
- a drift chamber system providing an accurate measurement of the longitudinal and transverse positions of the event vertex,
- a matrix of silicon counters with the double purpose of measuring ionisation and helping in pattern recognition,
- a pair of transition radiation detectors providing an additional rejection factor of at least an order of magnitude against fake electrons,
- a multilayer scintillating fiber detector for tracking and for measuring early electromagnetic showers developing after a 1.5 radiation length thick converter.

The sharing of responsibilities among the institutes involved in the UA2 upgrade programme is:

- Bern and Pavia: forward preshower detectors,
- CERN and Milano: calorimeter end caps,
- Cambridge, CERN and Saclay: scintillating fiber detector,
- Orsay: transition radiation detector,
- Pisa: central drift chambers,
- Bern and CERN: silicon hodoscope.

filename:

CM-P00045026