



CERN LIBRARIES, GENEVA



SC00000177

CERN/DRDC/91-4  
DRDC/P13 Add. 1  
24 January, 1991

CERN DRDC 91-4 Dear Dr. Turala,

Update to Proposal - DRDC/P-13 and Summary of Requests

- The collaboration has been extended by four physicists from Lancaster University and three from CNAF, Bologna, adding expertise in electronics and semiconductor physics.
- Investigations of the nature and density of traps in irradiated diodes are now under way at Lancaster and at the LENS Laboratory in Florence.
- Prototype microstrip detectors in GaAs have recently been manufactured in Glasgow and are now under test.
- We intend to place more emphasis on the development of front-end electronics in GaAs, specifically on the HBT pre-amplifier design study already begun by RAL, and we have defined a programme with the objective of producing a prototype for testing in early summer, 1992.
- Cost estimates have been received from NMRC, Cork and from MICRON Semiconductors, and are promised from Telettra, Milan. They are higher than originally suggested, typically around 100 ksw.fr. for the 54 detector elements which we proposed originally.
- We shall provide a data acquisition system for test - beam running, to enable us to carry out tests independently in low energy beams.

**Requests**

- Scientific approval of our programme of research into GaAs detectors and read-out electronics.
- Provision of two weeks of test beam time and facilities in high energy beams, and two weeks in a PS test beam to allow setting up and microstrip prototype evaluation, both during 1991.

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- Funding at a level which would encourage industrial involvement in device manufacture. To enable a proper study of edge effects and mechanical problems, an array of 2 x 2 detectors in three layers seems to us to represent a minimum realistic size. The quoted cost of 12-15 detector elements is in the range 30 - 45 ksw.fr. We wish to stress, however, that a "window of opportunity" to establish GaAs detectors as a viable option for LHC physics may be lost unless we succeed in constructing a complete demonstration detector module within the next two years or so.
- Mechanical and electronic engineering technical support, to promote coherence between the programme which we propose and that of the SITP collaboration, was originally requested at the level of one man-year in each case. Given the lack of enthusiasm shown by the CERN management for this request, and the addition of new collaboration members with appropriate skills in our home institutes, we wish to moderate this request to a total of three man-months for each. We continue to believe that support, even at this reduced level, would greatly enhance the prospects of a successful completion of our programme on time.

Yours sincerely,

Ken Smith, Carlo delPapa, Pier Giovanni Pelfer