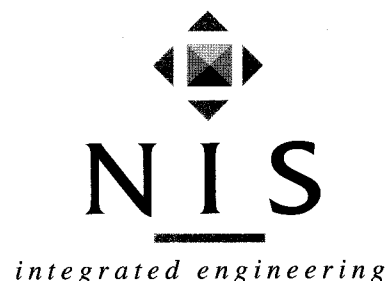


DAB/JH

24th August 2009

Science and Technology Facilities Council
Rutherford Appleton Laboratory
Harwell Science and Innovation Campus
Didcot
OX11 0QX



FAO: Mr John Hill - Project Engineer
NIS Ref: E00727/ES001242
Subject: Maintenance equipment CMS project

Dear John

Thank you for your time taken to explain the requirements for a handling system to conduct maintenance activities on end caps of the CMS (Compact Muon Solenoid) used in the ECAL (Electromagnetic Calorimeter) experiment at CERN.

NIS is pleased to confirm its interest in this project. A novel approach may be required, but we feel that our experience in both nuclear handling and industrial automation means that we are well qualified to provide the required solution.

Our initial thoughts are that the project should be approached in a phased format, commencing with a Feasibility Study. NIS would be pleased to offer a Phase 1 Feasibility Study which would include the following activities;

- Site visits to Harwell and CERN (if required) to gain a complete understand of the requirements, and to assimilate all the relevant documentation (e.g. component drawings, manuals, procedures).
- Initial Design review meetings at NIS, involving engineers from all relevant disciplines, to generate a broad overview of the alternative solutions available. e.g:
 - Assessment of a fully automated solution using either:
 - Staubli 6 axis robot
 - Proprietary cartesian system (eg. Gudel based)
 - Dedicated geometry servo driven system, closely matching the geometry of the "slice", with a radial arm configuration.
 - Assessment of a remote handling, non automatic system using either:
 - Staubli 6 axis robot in conjunction with joystick type manual over-ride controls.
 - Proprietary cartesian system (eg. Gudel based) in conjunction with joystick type manual over-ride controls
 - Dedicated geometry servo driven system, closely matching the geometry of the "slice" with a radial arm configuration, in conjunction with joystick type manual over-ride controls.
 - Standard nuclear industry type Master Slave Manipulator (MSM)

Registration number 3345114

- Review of proprietary equipment available in line with the above options.
- Investigation of end effector requirements for all options.
- Generation of optional design schemes selected from the above options, including end effectors, for discussion with Rutherford Appleton.
- Preparation of a quotation for Phase 2, the scope of which will be to convert the preferred conceptual option agreed above into a detailed scheme and preparation of the URS.

The subsequent Project Phases would then be as follows;

2. (As quoted at completion of Phase1) Preparation of Design Scheme based on agreed outcome of Phase 1, together with a User Requirement Specification (URS) for the equipment.
3. Detail design of equipment, based on agreed Design Scheme and URS.
4. Manufacture of development system, including mock up end cap assembly.
5. Development trials at NIS, Chorley, and/or other preferred site.
6. Additional design, manufacture and procurement as a result of development findings.
7. Final acceptance trials of equipment at NIS, Chorley, and/or other preferred site.
8. Installation of equipment in the ground level maintenance area at CERN.
9. "Dry Run" acceptance and training at CERN.
10. Support during live operation of the equipment, as required

We will be pleased to offer the Phase 1 Feasibility Study outlined above at a Fixed Price, if the proposed content meets with your approval. Obviously this is open to discussion. We would recommend a visit to our premises at Chorley in the near future, both to view our facilities and provide the opportunity to discuss the above proposals in more detail.

We hope the above is of interest, and look forward to your response.

Yours sincerely
For NIS Limited



David Beard
Industrial Proposals Manager