Project Management Plan

Project Name: CMS-FED

Version: 2.0

Approval:

	name	signature	date
Project Manager	**J. Coughlan**		**26.04.2004**
Customer/Sponsor	**G. Hall**		

Distribution for all updates:

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Doc # CMS-FED-002

Management Aspects

1. Related Projects

CMS FED-PMC : Project manager J. Coughlan ESDG/ID/RAL.

CMS APV25 : Project manager M. French MESG/ID/RAL.

CALICE : Project manager R. Halsall ESDG/ID/RAL.

Associated CMS CERN projects:

CMS Tracker Optical Links : http://cms-tk-opto.web.cern.ch/cms-tk-opto/

CMS TRIDAS : http://cmsdoc.cern.ch/cms/TRIDAS/html/tridas.html

2. Stakeholder Plan

Refer to document CMS-FED-007.

3. Risk Management Plan

Refer to document CMS-FED-008.

4. Project Staff and Organisation

Project Manager	John Coughlan (J.Coughlan@rl.ac.uk)
Design Engineer	Saeed Taghavi (S.Taghavi@rl.ac.uk)
PCB Designer	Chris Day (C.Day@rl.ac.uk)
Test engineer	Ivan Church (I.Church@rl.ac.uk)
Customer	Geoff Hall (G.Hall@ic.ac.uk)

5. Training

Training in the use of the proposed analogue simulation tools for Analogue design engineer.

Training in Laser safety and opto-device handling for all team members involved in testing of cards.

6. Project Plan

The major production phases identified so far:

Prototype FEDs (FEDV1) {10 off} in 2003 for verification of design at RAL and IC.

Pre-production FEDs (FEDV2) {20 off} in 2004/5 to verify final production design.

Main production (FEDV3) {500 off} in 2005/6 for installation at CMS.

Details of production schedule beyond FEDV1 will be determined by overall CMS project schedule.

The current FED project schedule is detailed in CMS-FED-005.

7. Costs and Finance

Project budget and resource allocations are as specified by CMS UK Management Committee.

The CMS-FED is a non-commercial project.

Staff effort usage and projections are detailed in CMS-FED-004.

Target cost of 96 channel FED (excluding OptoRx) = 10,000 CHF (to be confirmed with customer.)

FED cost estimates for prototypes and production cards are detailed in CMS-FED-003

VAT is reclaimable on all purchases on approved CMS project codes.

The customer has requested that no explicit FED contingency reserve should be specified.

NB All expenditure is to be made on the approved CMS project code FK50800 to enable VAT to be recovered.

8. Project Reviews and Documentation

Formal Internal INS design reviews.

FED-UK reviews with customer.

There are also formal meetings held at CERN where the FED project is reviewed by the CMS community.

9. Project Monitoring and Control

Project Monitor Forms shall be produced at least monthly.

The progress of the FED project is also presented at customer meetings held at RAL every 2 to 3 weeks.

10. Procurement Plan

Procurement Plan to be determined as part of EU Tender (CMS-FED-010).

11. Software and Equipment

Software packages:

Task	Tool	Company	License
PCB Design		CADENCE	Europractice.
Analogue Simulation	Analogue Work Bench	CADENCE	Europractice.
FPGA Design	FPGA Advantage	Mentor Graphics	Europractice
FPGA Tests	IMPACT	XILINX	Europractice
Readout tests	Linux	CERN	None

Test Equipment: Refer to Test Plan (CMS-FED-006).

12. Quality Plan

All project work is undertaken using the processes and forms defined by Instrumentation Department's Quality System.

13. Safety

Lasers: All team members involved in working with FED modules must attend approved safety training course in the handling of laser sources.

Radiation: The FEDs are installed in the underground counting room at the CMS site. This is not a restricted access area. All team members involved in beam tests or CMS operation must follow procedures to obtain a radiation film badge at CERN.

Underground: The FEDs are installed in the underground counting room at the CMS site. All team members working at the CMS site must attend the required CMS safety training courses.

14. Environmental Impact

If required any obsolete equipment will be taken back and disposed of.

Technical Aspects

1. Requirements

The customer requirements on the FED are as described in latest User Requirements Document v0.54 .

2. Specification of Deliverables

Refer to Specifications document (CMS-FED-001).

3. Manufacturing

To be arranged with PCB and Assembly companies in conjunction with Instrumentation Dept Design and Procurement offices.

4. Testing and Product Control

Refer to Test Plan CMS-FED-006.

Follow QA procedure 5520.

5. Shipping and Installation

Follow QA procedure 5530.

6. Maintenance and further orders

Refer to CMS-FED-010.