Project Management Plan

Project Name: Tera-Pixel APS for CALICE

Scope: ASIC Design

Version: 1.0

APPROVAL

	Name	Signature	Date
Project Manager	Jamie Crooks		
Group Leader	Renato Turchetta		

DISTRIBUTION FOR ALL UPDATES:

Project Manager: Jamie Crooks
Group Leader responsible for the project: Renato Turchetta
Division Head responsible for the project: Marcus French
Project Managers of related projects:
Programme Manager:
Quality Manager: Steve Quinton

MANAGEMENT ASPECTS

This document details the management of the ASIC design work parts of the project. The associated Project Specification document covers the wider "Workpackage 3" but clearly indicates the responsibilities of RAL Technology, to which this document relates only.

1 RELATED PROJECTS

MI3 OPIC (On-Pixel Intelligent CMOS), test structure implementing in-pixel comparator & DRAMs. Testing of this device is in progress as the CALICE project begins and will conclude during the design phase. Testing results may impact the CALICE design if significant problems are found in relevant circuits that have been reused.

2 STAKEHOLDER PLAN

See separate document

3 RISK MANAGEMENT PLAN

See separate document

4 PROJECT STAFF AND ORGANISATION

Project manager:	Jamie Crooks	RAL Technology
Project team:	Jamie Crooks	RAL Technology
	Renato Turchetta	RAL Technology
Other collaborators:	Giulio Villani	RAL PPD
	Mike Tyndel	RAL PPD
	Nigel Watson	University of Birmingham
	Yoshi Mikami	University of Birmingham
	Paul Dauncey	Imperial College London
	Anne-Marie Magnan	Imperial College London
Customer:	Paul Dauncey	Imperial College London

5 TRAINING

None anticipated.

6 PROJECT PLAN

See separate Gantt chart (Microsoft project file)

7 COSTS AND FINANCE

The budget for the workpackage is administered centrally and is not assigned directly to RAL Technology. The sensor fabrication budget is £76k in FY07/08 for the first fabrication round and a further £76k in FY08/09 for the second round. There is also £96k total for all other equipment and consumables associated with the workpackage, which runs until the end of FY08/09. All figures are in FY05/06 £.

The budget for total RAL Technology effort over this period is 4SM for Renato Turchetta and 36SM for Jamie Crooks.

Costs of the foundries are held on record at RAL: these are omitted from this public documentation to respect confidentiality (NDA) rights.

8 PROJECT REVIEWS AND DOCUMENTATION

	Event	Documentation
ASIC 1	Preliminary Design Review	Technical Specification Project Specification Project Management Plan Risk Register Stakeholder Plan
	Interim Design Review (1)	Design schematics Supporting simulations
	Interim Design Review (2) (pre-submission)	Design schematics (changes from last reviewed) Supporting simulations (for changes since last review) Pixel layouts in detail Full chip design Layout Pre-submission checklist
	Testing/release	User Manual & Test documentation.
ASIC 2	Interim Design Review (3)	As PDR for ASIC1
	Interim Design Review (4)	As IDR1 for ASIC1
	Final Design review (pre-submission)	As IDR2 for ASIC1
	Testing/release	User Manual & Test documentation.

9 PROJECT MONITORING AND CONTROL

The RAL Technology responsibilities of this project will be managed using the online PMFS system, by J. Crooks.

10 PROCUREMENT PLAN

Multi-project wafer processing (if used) will be procured direct to foundry.

Full / Stitched wafer processing will be procured direct to foundry and will require a single tender case.

A small PCB will be required for testing and interfacing with FPGA/PC. This is not the responsibility of RAL Technology. (This work is low value and will not be subject to tendering procedures.)

No items will be exported.

11 SOFTWARE AND EQUIPMENT

- Cadence design & simulation tools
- Design extraction and checking tools (eg Assura, Calibre)

12 QUALITY PLAN

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

13 SAFETY

The scope of this project excludes testing/operation with charged particles, and should include only light imaging/characterisation by the RAL team members identified.

14 ENVIRONMENTAL IMPACT

Low. The scope of this project concerns only small volumes of test devices for concluding beam tests in 2008/9.

TECHNICAL ASPECTS

1 REQUIREMENTS

- To produce active-pixel sensors that provide in-pixel functionality to record timestamps of above-threshold signals caused by incident charged particles in the International Linear Collider project (/CALICE)
- For full details of requirements see Technical Specification document.

2 SPECIFICATION OF DELIVERABLES

- ASIC1 (defined in ASIC1 Technical Specification)
- ASIC2 (defined in ASIC2 Technical Specification)

3 MANUFACTURING

- Foundry to be selected

4 TESTING AND PRODUCT CONTROL

- Basic/initial functionality testing of ASIC1
- Basic/initial functionality testing of ASIC2
- Full details of testing & responsibilities are detailed in Testing Specification document

5 SHIPPING AND INSTALLATION

- Full details of testing & responsibilities are detailed in Testing Specification document
- Some off-site support is anticipated during handover of test system to customer locations for detailed tests.

6 MAINTENANCE AND FURTHER ORDERS

- This is a prototype test structure, no expected further-orders (without another design cycle) or need for support beyond the lifetime of the project.