PARTICLE PHYSICS PROJECTS RISK PROFORMA

Ref	Risk Description	Potential impact on project	Inherent Risk Score			Existing Controls	Mitigating factors	Residual risk score			Comment	Proposed Action
			L	I	L×I			L	I	L×I		
WP1.1	Failure of ECAL wafer fabrication	Loss of some ECAL layers leading to less useful data	2	2	4	Non-UK: Sourcing wafers from four manufacturers	All layers populated but only 2/3 complete transverse.	2	1	2		
WP1.2a	Failure of AHCAL system	Loss of data for simulation comparisions	2	2	4	Non-UK: Technical Board reviews every six months	System already running and test beam data taken	1	2	2		
WP1.2b	Failure of DHCAL systems	Loss of data for simulation comparisions	3	1	3	Non-UK: Technical Board reviews every six months		3	1	3		
WP1.3	Extended beam test period required due to problems with calorimeters, beams or DAQ	Higher travel costs	2	1	2	Thorough testing of equipment before shipping. Visit beam areas and understand environment before beam test	We have budgetted for around £1k/week for the beam test	2	1	2		
WP2.1	Failure of VFE ASIC production so no chips available for PCB test	Non-verification of ASIC by time of TDR	1	2	2	Non-UK: Review ASIC design before each fabrication round		1	2	2		
WP2.2	Not able to find manufacturer for 1.5m PCBs	Study not completed in time for TDR	2	2	4	Investigate several PCB manufacturers	Rely on smaller PCB stitching techniques, which may become the baseline in any case	2	2	4		
WP2.3	Delays in sourcing off-detector receiver components	Delays in tests	1	2	2	Consider alternative components and/or suppliers	Continue work with partially completed engineering version of boards	1	2	2		
WP3.1	Failure of sensor fabrication round	Three to four month delay in schedule and extra cost to remake	2	2	4	Regular design reviews according to ISO9000 specifications	Prepare tests before fabrication complete so major errors can be identified immediately	2	2	4		
WP4.1	Failure to develop suitable techniques for large-scale assembly	UK does not construct detector	1	5	5		Feed back to electronics/ mechanical designers to modify slab design to simplify assembly	1	5	5	Added Nov 2006	
WP4.2	Long term failure of glue		2	5	10			2	5	10	Added Jan 2006	
WP5.1	No significant use of UK algorithms outside UK	Loss of influence/leadership in medium term	2	2	4	Ensure algorithms widely used by UK groups, increases exposure	UK groups work well together and collaborate with groups around world	2	2	4		
WP5.2	UK studies make no significant impact on overall detector design	Loss of influence/leadership in medium term	2	2	4	Ensure studies performed are written up and included in detector concept reports	Process already started, e.g. for LDC	2	2	4		
All.1	Delays/problems with RA appointments	Less impact on projects	2	1	2	Schedule recruitment period well in advance	All new project RAs are now in post	2	1	2	Retired Jan 2007	
All.2	Loss of staff with required skills	Loss of expertise mid-way, causing delays	3	2	6	Ensure personnel work closely with other UK colleagues so no one individual alone has critical knowledge	People in post can step in	3	1	3		
All.3	Illness of staff in critical positions	Reallocation of effort causing delays	2	2	4	As above		2	1	2		

L = Likelihood on scale of 1, 2 ,3 4 where 1 is low.

I = Impact on scale of 1, 2, 3, 5 where 1 is low.

High risk is a score greater than 8

11 January 2007