



ISIEC – INITIAL SAFETY INFORMATION ON EXPERIMENTS AT CERN

PURPOSE OF THIS TEMPLATE

This document shall be completed by the GLIMOS of an experimental collaboration, whenever it intends to bring new experimental apparatus, new test beams or make major modifications to experimental apparatus already operating at CERN.

The purpose of this document is to provide a summary description of the equipment that is to be brought to CERN and the activities that are to be carried out. This document will then allow the PH Safety Office (PH-SO) to perform an initial safety assessment; i.e. identification of the applicable safety requirements, control measures, etc.

This ISIEC document will serve as a basis for the safety information on an experiment. Further documentation may be requested to improve the understanding of safety hazards.

For each experimental apparatus, the following procedure applies:

- 1- The GLIMOS shall fill in chapters 1 to 4.
- 2- The GLIMOS shall submit this document (ISIEC form) to the PH Unit sps.coordinator@cern.ch and dso-ph@cern.ch
- 3- Recommendations and procedures will follow after the provision of this document. Note that if the experiment is considered to have major safety implications then the CERN HSE unit will become involved and their safety procedures will then be followed.
- 4- A Launch Safety Discussion may be called for by the PH-SO. This will take place on site with representatives of the experiment, PH-SO, the HSE Unit and other CERN Departments.
- 5- A formal 'Safety Clearance' of the experiment must be given prior to the experiment being allowed to start operating (for example to receive beam).

Please note that this form must be completed and sent to CERN prior to the arrival of the planned experiment. Work will not be allowed to start until this form, and any requested complementary information on safety hazards, has been completed and handed over as explained above.

Please complete the following:

NAME OF THE EXPERIMENT: CMS RPC GIF++ Ageing

Filled out by: Ian Crotty 164414

Date: 20 March 2015

1 INTRODUCTION

The purpose of this document is to provide a description of the experimental program/test beam to be carried out at CERN; i.e.:

- to identify the equipment brought to CERN;
- to identify activities to be carried out at CERN;
- to identify hazards associated to the equipment and activities and the measures to be implemented in order to eliminate, control or mitigate them.

Please enter the information in the empty cells of the tables below:

1.1 Organization of the Collaboration

Role	Name	Phone/e-mail
Spokesperson	Tiziano.Camporesi@cern.ch	160404
Technical coordinator	Austin Ball	160408
GLIMOS	Niels du Pont	165186
SPS Coordinator	Henric Wilkens	16-3845 spsco@cern.ch
DSO-PH	Mark Hatch	dso-ph@cern.ch
Liaison Physicist	Gabriela Pugliese	164880
TSO	Michael Jeckel	164710

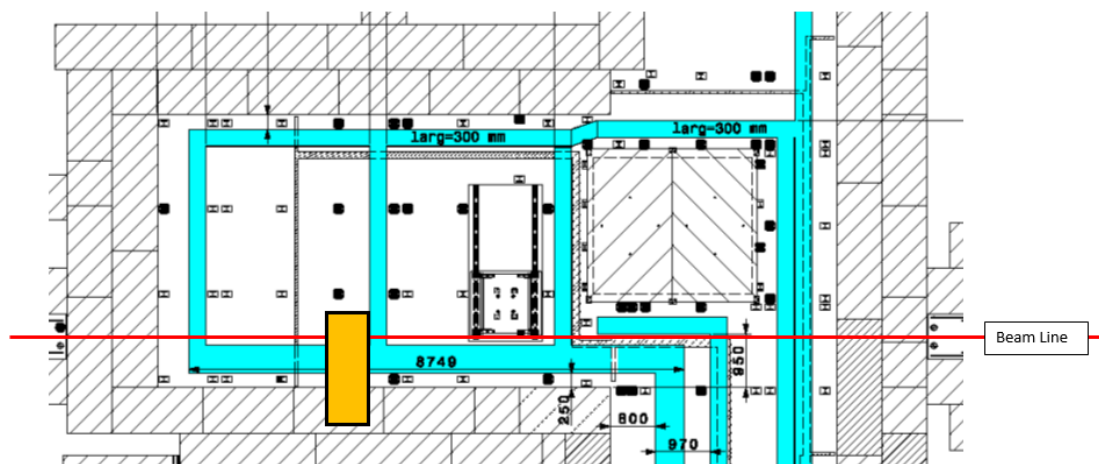
1.2 Schedule and location of the experimental apparatus or test beam

Start date:	21 March 2015
Completion date:	October 2015
Building/experimental area	887 GIF++
Beam line/PPE door	H4 PPE 154
Lab/Counting room/Phone	HNA 487 phone 78905

2 DESCRIPTION OF THE EXPERIMENTAL APPARATUS/TEST BEAM

2.1 General description of the experimental apparatus/test beam

Initial Test Trolley with one RPC shown in yellow. 1.6m x 0.8m x 2.20m in beam line up stream of the source.



2.2 Description of the installation

Complete the cells below and double click on the boxes and check as appropriate.

Equipment	Availability	Design and manufacturing
RPC RE2/2 from CMS	<input checked="" type="checkbox"/> Existing	<input checked="" type="checkbox"/> To be used without any modification <input type="checkbox"/> To be modified
	<input type="checkbox"/> New	<input type="checkbox"/> Standard equipment supplied by a manufacturer <input checked="" type="checkbox"/> CERN/collaboration responsible for the design and/or manufacturing
CAEN main Frame SY1527 LV Module A1513A HV module A1526N	<input checked="" type="checkbox"/> Existing	<input checked="" type="checkbox"/> To be used without any modification <input type="checkbox"/> To be modified
	<input type="checkbox"/> New	<input checked="" type="checkbox"/> Standard equipment supplied by a manufacturer <input type="checkbox"/> CERN/collaboration responsible for the design and/or manufacturing
Cabling	<input checked="" type="checkbox"/> Existing	<input checked="" type="checkbox"/> To be used without any modification <input type="checkbox"/> To be modified
	<input type="checkbox"/> New	<input type="checkbox"/> Standard equipment supplied by a manufacturer <input checked="" type="checkbox"/> CERN/collaboration responsible for the design and/or manufacturing

2.3 Hazards generated by the experimental apparatus/test beam

Identify the hazards associated to each part of the experiment and the associated equipment that is to be integrated in the experimental apparatus/test beam. Double click on the boxes and check as appropriate. Provide comments or values under the description.

Domain	Hazards/Hazardous Activities		Description
Mechanical Safety	Pressure	<input checked="" type="checkbox"/>	1-2[mbar]; 6[l]
	Vacuum	<input type="checkbox"/>	NA
	Lifting equipment	<input type="checkbox"/>	NA
	Machinery / Machine Tools	<input type="checkbox"/>	NA
	Mechanical energy (moving parts)	<input type="checkbox"/>	NA
	Mechanical properties (sharp, rough, slippery)	<input type="checkbox"/>	Antico frame on Wheels
	Industrial Vehicles	<input type="checkbox"/>	NA
	Hot Work (e.g. welding, grinding)	<input type="checkbox"/>	NA
	Hot/cold surfaces	<input type="checkbox"/>	NA
	Vibration	<input type="checkbox"/>	NA
Cryogenic Safety	Cryogenic fluid	<input type="checkbox"/>	NA
Structural	Shielding Walls	<input type="checkbox"/>	NA

Safety	Specific actions/conditions	<input type="checkbox"/>	
Electrical and Electro-magnetic Safety	Electrical equipment and installations	<input checked="" type="checkbox"/>	7[V], 1.5[A]
	High Voltage Equipment	<input checked="" type="checkbox"/>	10 [kV]
	Magnetic field	<input type="checkbox"/>	[T]
	Equipment in potentially explosive atmospheres	<input type="checkbox"/>	
Chemical Safety	Hazardous chemical agent (HCA)	<input type="checkbox"/>	
	CMR (carcinogens, mutagens and substances toxic to reproduction)	<input type="checkbox"/>	
	Toxic/Harmful	<input type="checkbox"/>	[fluid], [quantity]
	Corrosive	<input type="checkbox"/>	[fluid], [quantity]
	Oxidizing	<input type="checkbox"/>	[fluid], [quantity]
	Flammable	<input type="checkbox"/>	[fluid], [quantity]
	Potentially explosive atmospheres	<input type="checkbox"/>	[fluid], [quantity]
	Irritant	<input type="checkbox"/>	[fluid], [quantity]
	Asphyxiant	<input type="checkbox"/>	[fluid], [quantity]
	Nanomaterial's	<input type="checkbox"/>	
	Dangerous for the Environment	<input type="checkbox"/>	
	Asbestos	<input type="checkbox"/>	
	Biological Safety	Legionella	<input type="checkbox"/>
Biological Agents		<input type="checkbox"/>	
Non-ionizing radiation Safety	Laser, class	<input type="checkbox"/>	
	Radiofrequency	<input type="checkbox"/>	
	Microwaves	<input type="checkbox"/>	
	UV light	<input type="checkbox"/>	
	Electromagnetic (Frequency & Field strength)	<input type="checkbox"/>	Hz, Vm ⁻¹
Workplace	Excessive Noise	<input type="checkbox"/>	
	Temperature constraints (non-comfortable)	<input type="checkbox"/>	
	Insufficient Lighting	<input type="checkbox"/>	
	Indoor Air quality (e.g. clean rooms)	<input type="checkbox"/>	
	Confined space	<input type="checkbox"/>	
	Work at height	<input type="checkbox"/>	
	Obstructions in passageways	<input type="checkbox"/>	
	Lone working	<input type="checkbox"/>	
	Falling objects	<input type="checkbox"/>	

	Internal Traffic (e.g workshops, experiments)	<input type="checkbox"/>	
	Slippery/unstable ground	<input type="checkbox"/>	
	Working outside normal working hours	<input checked="" type="checkbox"/>	
<i>Environment</i>	Usage/storage of potentially polluting substances (gases, liquids, solids)	<input checked="" type="checkbox"/>	R134a & SF6
	Emissions of substances into the atmosphere	<input checked="" type="checkbox"/>	R134a & SF6
	Discharge of effluents to the site drainage (i.e. infiltration water, rain water, cooling water...)	<input type="checkbox"/>	
	Discharge of effluents to sewage (i.e. sanitary water...)	<input type="checkbox"/>	
	Activated or radioactive soil	<input type="checkbox"/>	
	Polluted or contaminated soil	<input type="checkbox"/>	
	Emission of noise harmful for the environment	<input type="checkbox"/>	
	Vibrations harmful for the environment	<input type="checkbox"/>	
	Odours	<input type="checkbox"/>	
	Waste generation	<input type="checkbox"/>	
	Significant consumption of resources (e.g. water, electricity gas, fuels, ...)	<input type="checkbox"/>	
<i>Worksite</i>	Construction & dismantling activities	<input checked="" type="checkbox"/>	All work done outside bunker
	Co-activity	<input checked="" type="checkbox"/>	With other experiments
<i>Fire Safety</i>	Hot works	<input type="checkbox"/>	
	Combustible Materials	<input type="checkbox"/>	
	Ignition sources	<input type="checkbox"/>	
<i>Ionizing Radiation</i>	Target material	<input type="checkbox"/>	
	Beam particle type	<input checked="" type="checkbox"/>	Muons
	Beam intensity	<input checked="" type="checkbox"/>	10 ⁴ /spill
	Beam energy	<input checked="" type="checkbox"/>	<100GeV
	Source	x	Cs 137

Table 1 - Hazard identification

Include below a table of any other hazards that may be present – if applicable.

3 DESCRIPTION OF THE ACTIVITIES CARRIED OUT AT CERN

3.1 Description of installation activities

Roll the trolley into position from the preparation zone and cable/pipe

3.2 Description of the operation

Carry out HV scans and establish efficiency plots, log currents as a function of source intensity. All operations are controlled from the control room HNA 487

3.3 Description of the maintenance

There should be no maintenance except for gas leak checks

4 SAFETY ASSESSMENT

For the key identified hazards of an experimental apparatus and activity, measures shall be taken in order to eliminate, control or mitigate them. The table below shall contain the list of the key hazards and the measures that are to be implemented.

Key hazards identified	Location	Measures to be implemented
HV	On Trolley	Ground of chamber and trolley PS limit is 1mA, set well below.
ODH on gas return	Gas Racks	Measure gas return flow rate

5 ROLES AND RESPONSABILITIES

5.1 GLIMOS

According to the § 5.4 of the Safety Policy at CERN (SAPOCO): *“For Safety matters, an experiment or test is represented by a Group Leader in Matters of Safety (GLIMOS), who is responsible for Safety, with the necessary authority, from the design stage and subsequently throughout the development, construction, and operational stages of the equipment until it is finally dismantled and correctly disposed of”*.

In the absence of an appointed GLIMOS, all his duties and responsibilities fall automatically on the Technical Coordinator or, if one does not exist, to the Spokesperson.

5.2 HSE Unit

According to the § IV of the Mandate of the Occupational Health & Safety and Environmental Protection Unit (HSE):

*“The HSE Unit provides Safety clearance for activities, special equipment, installations, experiments and projects with **major Safety implications** prior to design, operation or dismantling activities”*.

For experiments less than 3 weeks duration, and if there are no major safety implications, then the PH-SO procedure will be followed (the ISIEC form and formal safety clearance by PH-SO).

5.3 TSO

According to the Safety Guide for experiments at CERN the task of Territorial Safety Officers is to watch over the safety of and in the region or building(s) under their responsibility, thereby ensuring that no part of the CERN site(s) escapes safety surveillance. However, the character of the various regions differs considerably, and consequently also the roles of the TSOs. We shall in this guide limit the considerations to those TSOs that are responsible for either experiment areas or buildings housing experiment support labs/workshops.

6 SAFETY CLEARANCE

The procedure for the safety clearance will depend on the type and duration of the experiment and whether or not there are major safety implications. In all cases a formal safety clearance is a requirement before an experiment can start operating

7 PS/SPS PHYSICS COORDINATOR

The PS/SPS physics coordinator establishes the AD/PS/SPS user schedules, represents the users at the different scientific and technical committees, being the contact person for both the accelerator groups and the experimental users. He also reports to the CERN management.

*** **

ANNEX

Terms and abbreviations in English

CSHS	Special Health and Safety Committee
CSO	Cryogenic Safety Officer
CSOC	Cryogenic Safety Officers' Committee
DSO	Departmental Safety Officer
DSOC	Departmental Safety Officers' Committee
FGSO	Flammable Gas Safety Officer
FGSOC	Flammable Gas Safety Officers' Committee
GLIMOS	Group Leader In Matters Of Safety
HSE	Occupational Health & Safety and Environmental Protection Unit
PH-SO	Physics Department Safety Office
RSO	Radiation Safety Officer
SAPOCO	SAfety POlicy COmmittee
SLIMOS	Shift Leader In Matters Of Safety
TSO	Territorial Safety Officer