

# **ECAL Upgrade II Workshop (in hybrid mode)**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

## Roadmap towards the LHCb Upgrade II

*Monday 12 December 2022 09:35 (20 minutes)*

**Presenter:** PALUTAN, Matteo (INFN e Laboratori Nazionali di Frascati (IT))

**Session Classification:** Introduction

Contribution ID: 2

Type: **not specified**

## **Lessons learned from LS2 upgrade and commissioning**

*Monday 12 December 2022 09:55 (20 minutes)*

**Presenter:** MACHEFERT, Frederic (Université Paris-Saclay (FR))

**Session Classification:** Introduction

Contribution ID: 3

Type: **not specified**

## **ECAL consolidation and upgrade plans (incl. requirements)**

*Monday 12 December 2022 10:15 (20 minutes)*

**Presenter:** SCHOPPER, Andreas (CERN)

**Session Classification:** Introduction

Contribution ID: 4

Type: **not specified**

## **Status of baseline ECAL module design and additional options**

*Monday 12 December 2022 10:35 (20 minutes)*

**Presenter:** ROLOFF, Philipp (CERN)

**Session Classification:** Introduction

Contribution ID: 5

Type: **not specified**

## Discussion

*Monday 12 December 2022 10:55 (10 minutes)*

**Session Classification:** Introduction

Contribution ID: 6

Type: **not specified**

## Plans of the simulation project

*Tuesday 13 December 2022 10:50 (15 minutes)*

**Presenter:** Dr WHITEHEAD, Mark Peter (University of Glasgow (GB))

**Session Classification:** Physics benchmarking of the baseline

Contribution ID: 7

Type: **not specified**

## Hybrid Monte Carlo framework, single-module optimisation and DD4hep integration

*Monday 12 December 2022 11:45 (25 minutes)*

**Presenter:** PIZZICHEMI, Marco (Universita Milano-Bicocca (IT) and CERN)

**Session Classification:** Simulation and reconstruction



Contribution ID: 8

Type: **not specified**

## **ECAL reconstruction and performance in Run 3**

*Monday 12 December 2022 12:10 (15 minutes)*

**Presenter:** MARIN BENITO, Carla (University of Barcelona (ES))

**Session Classification:** Simulation and reconstruction

Contribution ID: 9

Type: **not specified**

## **Evolution of reconstruction for Upgrade II (long. segmentation and timing)**

*Monday 12 December 2022 12:25 (15 minutes)*

**Presenter:** BOLDYREV, Alexey (NRU Higher School of Economics (Moscow, Russia))

**Session Classification:** Simulation and reconstruction

Contribution ID: **10**

Type: **not specified**

## Discussion

*Monday 12 December 2022 12:40 (20 minutes)*

**Session Classification:** Simulation and reconstruction

Contribution ID: 11

Type: **not specified**

## **Sashlik performance**

*Monday 12 December 2022 14:15 (15 minutes)*

**Presenter:** GUZ, Iouri (Peking University (CN))

**Session Classification:** Detector performance from test beams

Contribution ID: 12

Type: **not specified**

## **GAGG SPACAL-W performance**

*Monday 12 December 2022 14:30 (15 minutes)*

**Presenter:** MARTINAZZOLI, Loris (Universita & INFN, Milano-Bicocca (IT))

**Session Classification:** Detector performance from test beams

Contribution ID: 13

Type: **not specified**

## **Poly SPACAL-W performance**

*Monday 12 December 2022 14:45 (15 minutes)*

**Presenter:** SALOMONI, Matteo (CERN)

**Session Classification:** Detector performance from test beams

Contribution ID: 14

Type: **not specified**

## **Poly SPACAL-Pb performance**

*Monday 12 December 2022 15:00 (15 minutes)*

**Presenter:** KHOLODENKO, Sergey (Institute for High Energy Physics of NRC Kurchatov Institute (RU))

**Session Classification:** Detector performance from test beams

Contribution ID: 15

Type: **not specified**

## **LAPPD performance**

*Monday 12 December 2022 15:15 (15 minutes)*

**Presenter:** PERAZZINI, Stefano (Universita e INFN, Bologna (IT))

**Session Classification:** Detector performance from test beams



Contribution ID: **16**

Type: **not specified**

## Discussion

*Monday 12 December 2022 15:30 (15 minutes)*

**Session Classification:** Detector performance from test beams

Contribution ID: 17

Type: **not specified**

## **ECAL engineering design and support infrastructure**

*Monday 12 December 2022 16:15 (15 minutes)*

**Presenter:** LINDNER, Rolf (CERN)

**Session Classification:** Detector R&D

Contribution ID: **18**

Type: **not specified**

## **Absorber R&D**

*Monday 12 December 2022 16:30 (15 minutes)*

**Presenter:** GERWIG, Hubert (CERN)

**Session Classification:** Detector R&D

Contribution ID: **19**

Type: **not specified**

## **Crystal fibres R&D**

*Monday 12 December 2022 16:45 (15 minutes)*

**Presenter:** AUFRAY HILLEMANN, Etienne (CERN)

**Session Classification:** Detector R&D

Contribution ID: 20

Type: **not specified**

## Photon detectors R&D

**Session Classification:** Detector R&D

Contribution ID: 21

Type: **not specified**

## Calibration system

*Monday 12 December 2022 17:00 (15 minutes)*

**Presenter:** MARCHAND, Jean-Francois (LAPP - Centre National de la Recherche Scientifique (FR))

**Session Classification:** Detector R&D

Contribution ID: 22

Type: **not specified**

## Discussion

*Monday 12 December 2022 17:15 (30 minutes)*

**Session Classification:** Detector R&D

Contribution ID: 23

Type: **not specified**

## **Introduction: benchmarking and global optimisation**

*Tuesday 13 December 2022 09:00 (20 minutes)*

**Presenter:** ROLOFF, Philipp (CERN)

**Session Classification:** Physics benchmarking of the baseline



Contribution ID: 24

Type: **not specified**

## Analysis report: $K^*$ gamma

*Tuesday 13 December 2022 09:20 (15 minutes)*

**Presenter:** AN, Liupan (CERN)

**Session Classification:** Physics benchmarking of the baseline

Contribution ID: 25

Type: **not specified**

## **Analysis report: electron-positron final states ( $B \rightarrow K e e$ and $Z \rightarrow e e$ )**

*Tuesday 13 December 2022 09:35 (15 minutes)*

**Presenter:** BETTI, Federico (CERN)

**Session Classification:** Physics benchmarking of the baseline

Contribution ID: 26

Type: **not specified**

## **Analysis report: neutral pions in D-meson decays**

*Tuesday 13 December 2022 09:50 (15 minutes)*

**Presenter:** STAHL, Sascha (CERN)

**Session Classification:** Physics benchmarking of the baseline

Contribution ID: 27

Type: **not specified**

## **Analysis report: B->J/psi pi0**

*Tuesday 13 December 2022 10:05 (15 minutes)*

**Presenter:** BOLDYREV, Alexey (NRU Higher School of Economics (Moscow, Russia))

**Session Classification:** Physics benchmarking of the baseline

Contribution ID: 28

Type: **not specified**

## Physics impact of VELO timing

*Tuesday 13 December 2022 10:35 (15 minutes)*

**Presenter:** DUFOUR, Laurent (CERN)

**Session Classification:** Physics benchmarking of the baseline

Contribution ID: 29

Type: **not specified**

## **Available test beam facilities and specific infrastructure**

*Tuesday 13 December 2022 11:40 (20 minutes)*

**Presenter:** GUITTIERE, Manuel (Université Paris-Saclay (FR))

**Session Classification:** Test beams

Contribution ID: **30**

Type: **not specified**

## **DAQ system and online analysis**

*Tuesday 13 December 2022 12:20 (20 minutes)*

**Presenter:** SALOMONI, Matteo (CERN)

**Session Classification:** Test beams

Contribution ID: **31**

Type: **not specified**

## **Progress on the new hodoscope**

*Tuesday 13 December 2022 12:00 (20 minutes)*

**Presenter:** ZAFFARONI, Ettore (EPFL - Ecole Polytechnique Federale Lausanne (CH))

**Session Classification:** Test beams



Contribution ID: 32

Type: **not specified**

## Discussion

*Tuesday 13 December 2022 12:40 (15 minutes)*

**Session Classification:** Test beams

Contribution ID: 33

Type: **not specified**

## Requirements for a precise time measurement

*Tuesday 13 December 2022 15:05 (10 minutes)*

**Presenter:** BRETON, Dominique Robert (Université Paris-Saclay (FR))

**Session Classification:** Electronics I

Contribution ID: 34

Type: **not specified**

## **Signal treatment: simulation studies and ideas for improvement**

*Tuesday 13 December 2022 15:15 (15 minutes)*

**Presenter:** PERAZZINI, Stefano (Universita e INFN, Bologna (IT))

**Session Classification:** Electronics I

Contribution ID: 35

Type: **not specified**

## **ASIC development for time measurement**

*Tuesday 13 December 2022 14:50 (15 minutes)*

**Presenter:** VALLERAND, Philippe

**Session Classification:** Electronics I

Contribution ID: **36**

Type: **not specified**

## **FE-Electronics**

*Tuesday 13 December 2022 14:20 (15 minutes)*

**Presenter:** BEIGBEDER-BEAU, Christophe (Université Paris-Saclay (FR))

**Session Classification:** Electronics I

Contribution ID: 37

Type: **not specified**

## Discussion

*Tuesday 13 December 2022 15:30 (20 minutes)*

**Session Classification:** Electronics I

Contribution ID: **38**

Type: **not specified**

## **Photon detectors and cables**

*Tuesday 13 December 2022 16:05 (15 minutes)*

**Presenter:** PICATOSTE OLLOQUI, Eduardo (University of Barcelona (ES))

**Session Classification:** Electronics II

Contribution ID: 39

Type: **not specified**

## **FPGA Co-processing**

*Tuesday 13 December 2022 16:35 (15 minutes)*

**Presenter:** HENDERSON, Riley (Monash University (AU))

**Session Classification:** Electronics II



Contribution ID: 40

Type: **not specified**

## **HV system**

*Tuesday 13 December 2022 16:20 (15 minutes)*

**Presenter:** PERRET, Pascal (Université Clermont Auvergne (FR))

**Session Classification:** Electronics II

Contribution ID: 41

Type: **not specified**

## Discussion

*Tuesday 13 December 2022 17:05 (10 minutes)*

**Session Classification:** Electronics II

Contribution ID: 42

Type: **not specified**

## Introduction

*Tuesday 13 December 2022 17:15 (5 minutes)*

**Session Classification:** Discussion: next steps towards LS3 consolidation review and TDR

Contribution ID: 43

Type: **not specified**

## Discussion

*Tuesday 13 December 2022 17:20 (25 minutes)*

**Session Classification:** Discussion: next steps towards LS3 consolidation review and TDR

Contribution ID: 44

Type: **not specified**

# Physics motivation and requirements for a timing layer

*Wednesday 14 December 2022 09:00 (20 minutes)*

**Presenter:** YANG, Zhenwei (Peking University (CN))

**Session Classification:** Potential benefit of a timing layer

Contribution ID: 45

Type: **not specified**

## **Proposed technologies that could meet the requirements**

*Wednesday 14 December 2022 09:20 (20 minutes)*

**Presenter:** VAGNONI, Vincenzo (INFN Bologna (IT))

**Session Classification:** Potential benefit of a timing layer

Contribution ID: 46

Type: **not specified**

## Implications on integration, electronics and DAQ

*Wednesday 14 December 2022 09:40 (20 minutes)*

**Presenter:** ARTUSO, Marina (Syracuse University (US))

**Session Classification:** Potential benefit of a timing layer

Contribution ID: 47

Type: **not specified**

## Discussion

*Wednesday 14 December 2022 10:00 (30 minutes)*

**Session Classification:** Potential benefit of a timing layer



Contribution ID: 48

Type: **not specified**

## **Role of HCAL in current PID and impact of its removal**

*Wednesday 14 December 2022 11:05 (15 minutes)*

**Presenter:** VAN VEGHEL, Maarten (Nikhef National institute for subatomic physics (NL))

**Session Classification:** Impact of HCAL removal

Contribution ID: 49

Type: **not specified**

## **Impact of HCAL removal on physics measurements**

*Wednesday 14 December 2022 11:20 (15 minutes)*

**Presenter:** ZULIANI, Davide (Universita e INFN, Padova (IT))

**Session Classification:** Impact of HCAL removal

Contribution ID: 50

Type: **not specified**

## **Ideas on instrumenting the iron with a scintillating layer**

*Wednesday 14 December 2022 11:35 (15 minutes)*

**Presenter:** GULIAEVA, Vasilisa (M.V. Lomonosov Moscow State University (RU))

**Session Classification:** Impact of HCAL removal

Contribution ID: 51

Type: **not specified**

## Discussion

*Wednesday 14 December 2022 11:50 (30 minutes)*

**Session Classification:** Impact of HCAL removal

Contribution ID: 52

Type: **not specified**

## Introduction

*Wednesday 14 December 2022 12:20 (5 minutes)*

**Session Classification:** Conclusions of the workshop

Contribution ID: 53

Type: **not specified**

## Discussion

*Wednesday 14 December 2022 12:25 (35 minutes)*

**Session Classification:** Conclusions of the workshop

Contribution ID: 54

Type: **not specified**

## Discussion

*Tuesday 13 December 2022 11:05 (15 minutes)*

**Session Classification:** Physics benchmarking of the baseline

Contribution ID: 55

Type: **not specified**

## Welcome address

*Monday 12 December 2022 09:30 (5 minutes)*

**Presenter:** Prof. STOCCHI, achille (IJCLab , UNiversite Paris-Saclay, CNRS)

**Session Classification:** Introduction



Contribution ID: 56

Type: **not specified**

## **ASIC development for energy measurement**

*Tuesday 13 December 2022 14:35 (15 minutes)*

**Presenter:** MAZORRA DE COS, Jose (Univ. of Valencia and CSIC (ES))

**Session Classification:** Electronics I

Contribution ID: 57

Type: **not specified**

## **PCle400**

*Tuesday 13 December 2022 16:50 (15 minutes)*

**Presenter:** LANGOUET, Julien (CNRS)

**Session Classification:** Electronics II

Contribution ID: 58

Type: **not specified**

## Expected radiation environment and activation

*Monday 12 December 2022 11:30 (15 minutes)*

**Presenter:** KARACSON, Matthias (CERN)

**Session Classification:** Simulation and reconstruction

Contribution ID: 59

Type: **not specified**

## Introduction to electron-hadron separation

*Wednesday 14 December 2022 10:50 (15 minutes)*

**Presenter:** GOLUTVIN, Andrei (Imperial College London)

**Session Classification:** Impact of HCAL removal

Contribution ID: **60**

Type: **not specified**

## **Analysis report: B->pi+ pi- pi0**

*Tuesday 13 December 2022 10:20 (15 minutes)*

**Presenter:** MANUZZI, Daniele (Universita e INFN, Bologna (IT))

**Session Classification:** Physics benchmarking of the baseline

Contribution ID: **61**

Type: **not specified**

## **Introduction to the workshop**

*Monday 12 December 2022 09:20 (10 minutes)*

**Presenter:** ROBBE, Patrick (Université Paris-Saclay (FR))

**Session Classification:** Introduction