ECALp @ DRD6
aka. HighCompactCalo

Adrián Irles,

***AITANA group at IFIC – CSIC/UV**

AGENCIA ESTATAL DE INVESTIGACIÓN
GOBIERNO DE ESPAÑA MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES
Financiado por la Unión Europea NextGenerationEU
Plan de Recuperación, Transformación y Resiliencia
GENERALITAT VALENCIANA
GVANEXT Fondos Next Generation en la Comunitat Valenciana
Gen—T
AITANA

HighCompact Calo

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- LIST OF PARTICIPATING INSTITUTES/LABS WITH SHORT DESCRIPTION
  - INSTITUTE 1: Tel Aviv University, Israel
  - INSTITUTE 2: AGH University of Science and Technology, Cracow, Poland
  - INSTITUTE 3: University of Warsaw, Poland
  - INSTITUTE 4: Instituto de Física Corpuscular - IFIC (joint center CSIC-University of Valencia) Spain
  - INSTITUTE 5: Institute of Space Science (ISS), Romania

Prototype of a highly compact electromagnetic calorimeter

March 23st 2023

DESCRIPTION OF THE PROJECT AND POSITIONING W.R.T. THE ROADMAP

DRD6 collaboration meeting

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- Nice representation!
  - Veta and me in person
  - 4 HighCompactCalo related talks
- WP4 – electronics
  - AGH report (FLAXE & more) – Marek Idzik Talk
- WP1 – sandwich calorimeters
  - Report on the project (AI) Talk
- Plenary - TestBeam and tools
  - TB2022 – Michal Elad Talk
- Plenary – Software and Analysis
  - Detector Optimization - A.F. Zarnecki Talk

- **Synergies**
  - High Compact Calo & SiWECAL projects synergies on gluing and sensor characterization
  - HighCompactCalo & WP4
- WP1 very focused on HiggsFactories

WP1

- Every institute contact person should be responsible of adding the team members to the CERN e-group drdcalo-wp1 via https://e-groups.cern.ch or add your full institute e-group
  - Please do it if not done
- Lucia proposes to have a list of contact persons per project
  - “steering” board of WP1
- We are also looking for a candidate to act as WP1 representative in the SpeakersBureau
  - Volunteers?
- Default proposal does not contemplates having and institute board for each WP (besides the global DRD6 CB)

- More Meetings?
  - It has been stated that more meetings are not a liked-option but we may consider having satellite WP1 meetings just before/after the collaboration meetings.
  - It is proposed to have dedicated meetings for specific topics :

    Example: cooling solutions for sandwich calorimeters.

    Example: test beam readiness. We had this in CALICE and I found it very useful.11

WP1 - testbeams

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- We are requested to inform the DRD6 of testbeam request (CERN or DESY)
  - When requested / obtained, we should send a mail to Gabriella Gaudio gabriella.gaudio@pv.infn.it (and Lucia Masetti and myself as WP1 coordinators)
  - For DESY it is simply a formality (or a courtesy…)
  - For CERN, the testbeam coordinators will always use DRD6 to coordinate the calorimetry requests.

Other issues

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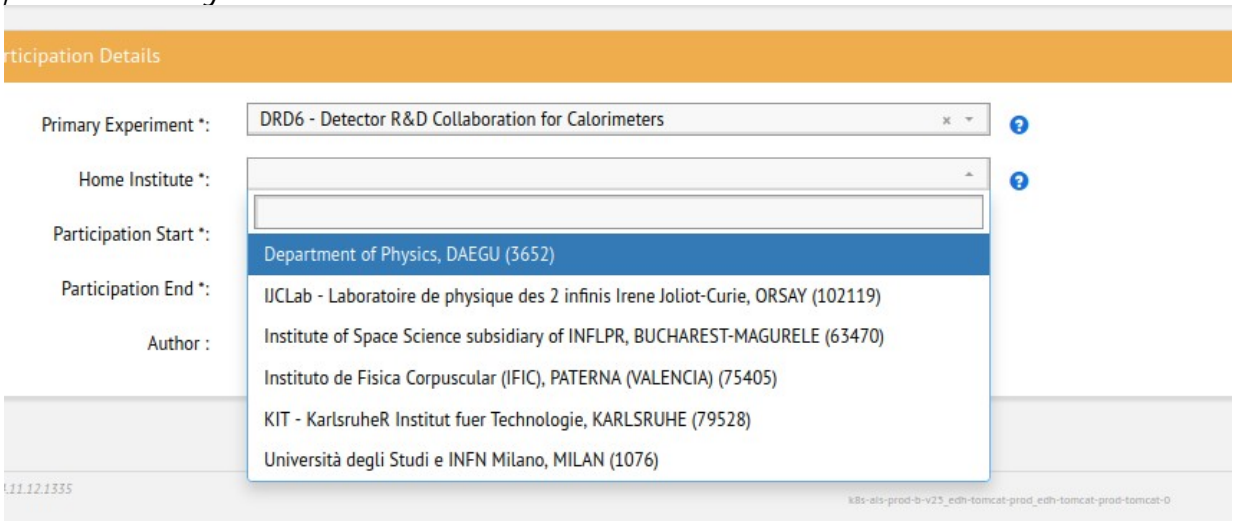
- DRD-calo is already a CERN recognised collaboration at least at the adminsitrative level
  - We can use it to access CERN resources (accounts, services, etc… create new users)
  - IFIC, ISS already in the list



- MoU …. (next page)

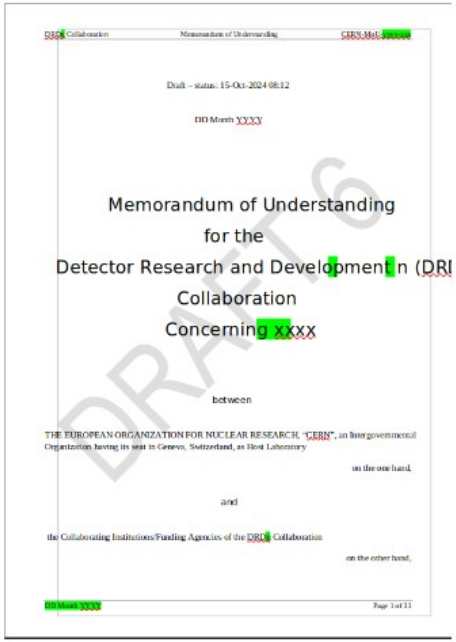
governance rules

- Governance rules endorsed by the CB
- Resource Board Body is mandatory.. still very unclear of its role if there is no Common Fund.
  - However, all major changes (open/close WPs, WGs, ...) need RB approval (!)
-

WP Coordinators:

- Election: WP responsibility (followed by CB endorsement)
- Terms of office:
  - Defined in Annex 4 (i.e. Governance Rules), as for other management positions
    → our choice
  - Proposed to set to 2 or 3 years (3 y suggested in CERN “templates”)
  - Renewal with 2/3 majority ?
  - Anyway, handled in WP domain ...

MoU – link to Roman's talk



DRDn Collaboration Memorandum of Understanding CERN-MoU-xxxx

Draft – status: 15-Oct-2024 08:12

DD Month YYYY

Memorandum of Understanding
for the
Detector Research and Development n (DRI
Collaboration
Concerning xxxx

between

THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH, "CERN", an Intergovernmental Organization having its seat in Geneva, Switzerland, as Host Laboratory

on the one hand,

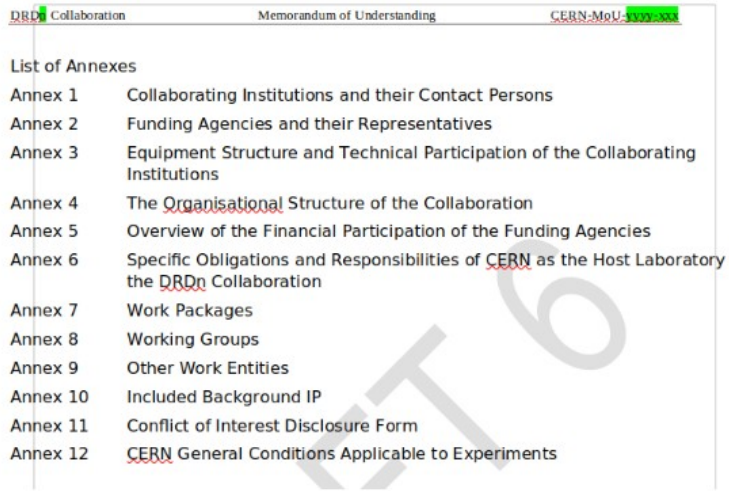
and

the Collaborating Institutions/Funding Agencies of the DRDn Collaboration

on the other hand,

DD Month YYYY Page 1 of 31

DRAFT 6



DRDn Collaboration Memorandum of Understanding CERN-MoU-YYYY-XXX

List of Annexes

Annex 1	Collaborating Institutions and their Contact Persons
Annex 2	Funding Agencies and their Representatives
Annex 3	Equipment Structure and Technical Participation of the Collaborating Institutions
Annex 4	The Organisational Structure of the Collaboration
Annex 5	Overview of the Financial Participation of the Funding Agencies
Annex 6	Specific Obligations and Responsibilities of CERN as the Host Laboratory of the DRDn Collaboration
Annex 7	Work Packages
Annex 8	Working Groups
Annex 9	Other Work Entities
Annex 10	Included Background IP
Annex 11	Conflict of Interest Disclosure Form
Annex 12	CERN General Conditions Applicable to Experiments

- The collaboration has to be formalised by signing an MOU
- MOU contains essentually two parts
  - A general part that hopefully will never (or rarely) be changed
  - Annexes that basically contains the "dynamic" part of the collaboration
- Drafts of MOUs circulated to ECFADetector Roadmap Contacts
  - ... which are supposed to inform the Funding Agencies
  - Circulation "outside" Europe?

MoU – key points

- DRDs are CERN collaborations..
  - Treated as a small experiment at CERN
- Annex 2: Funding Agencies and their representatives
  - Firstly it was said that institutes / laboratories could sign as funding agencies.
  - This statement seems in strong contradiction with the following point
- Annex Work Packages
  - It comes with a list of deliverables and milestones.. that are resource loaded… (eventhough the M/D are global to the projects, not split by Institutes/universities)
  - Tables with list of M/D and their resources must be signed by funding agencies.

- The deadline for providing these tables (and material for the annexes) was 8th November.
  - Roman et al saw this deadline too tight but still we were told that the WP would be contacted right after the collaboration meeting to start collecting information
  - but we haven't…
  - (continues)

HighCompactCalo – deliverables and milestones

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- Lets ignore the politics for the moment…
- In the proposal of DRD6, a educated guess of Milestones and Deliverables for the HighCompactCalo was made
  - Proposal Document https://drive.google.com/drive/u/0/folders/1c5SzFb6k4b6B4828jV2kXY_xxAJa7Nq-
- "Old ones"
  - D.1.3 Updated set of compact detection layers – 2024
  - M.1.2 Prototype for GaAs with strip readout – 2026
  - D.1.4 Set of validated GaAs sensors > 2026
- New proposal should be prepared soon. (next page)
  - Let's assume that funding agencies will sign them (before funding us!)

HighCompactCalo – deliverables and milestones

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- First very preliminary draft discussed via mail:
- TO BE ITERATED
  - M.1.XX First fully functioning set of sensor planes, embedded in compact mechanical frame with precision tungsten plates Q2-2025
  - D.1.XX Partially instrumented HighCompactCalo tested in beam Q3-2025
  - *M.1.XX First front-end board with FLAXE readout ASICs Q1-2026 (WP4?)*
  - M.1.XX Prototype of Si or GaAs sensor with traces for readout - Q3-2026
  - D.1.XX Full HighCompactCalo instrumented and tested in beam (>15X_0) 2027

- Note: the numbering is global for the full WP1

back-up

DRD6 Calo

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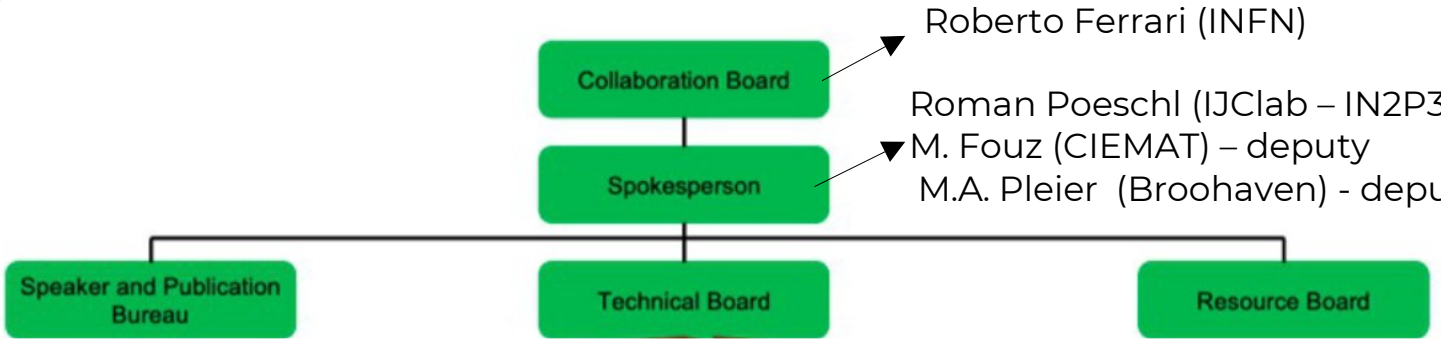

Approved by CERN DRC

- First Collaboration Meeting 9th - 11th April

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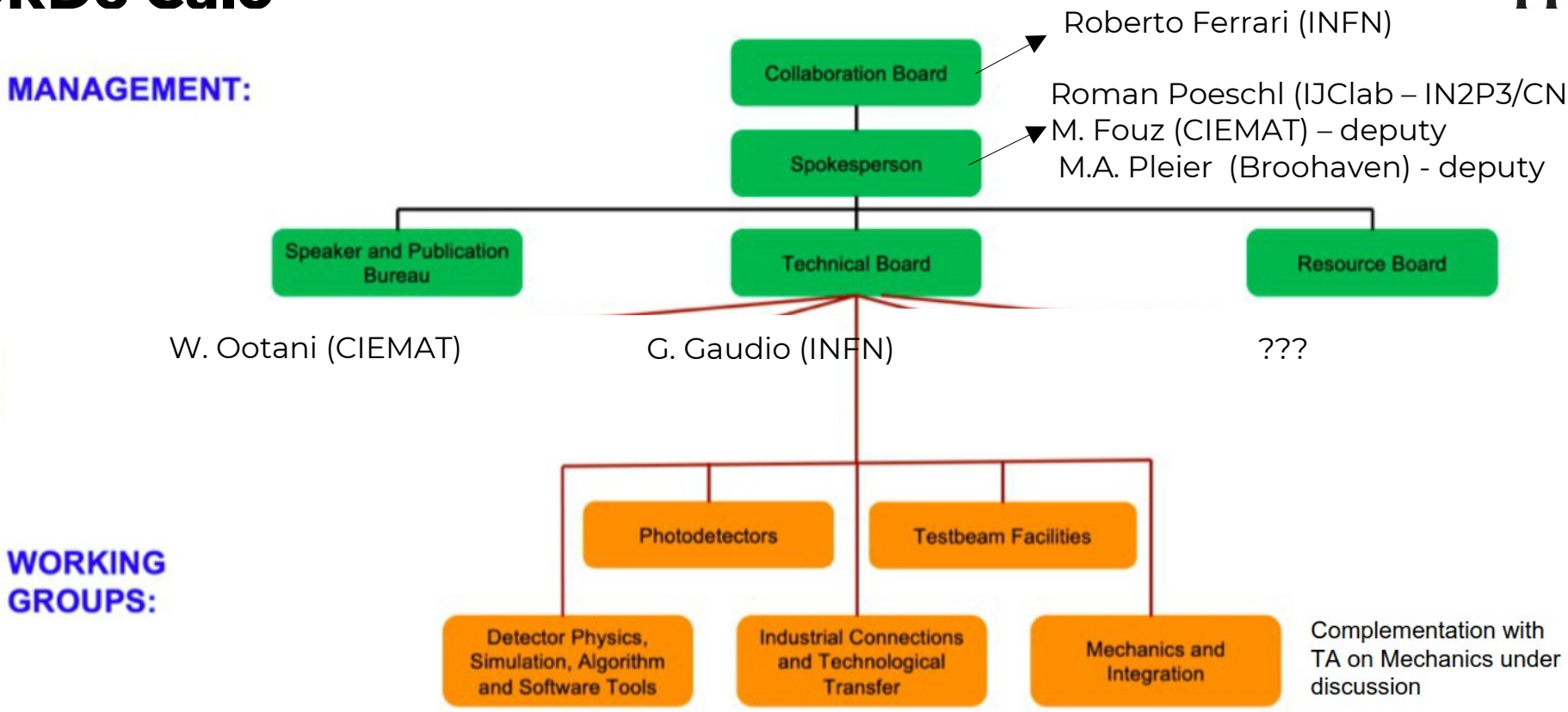

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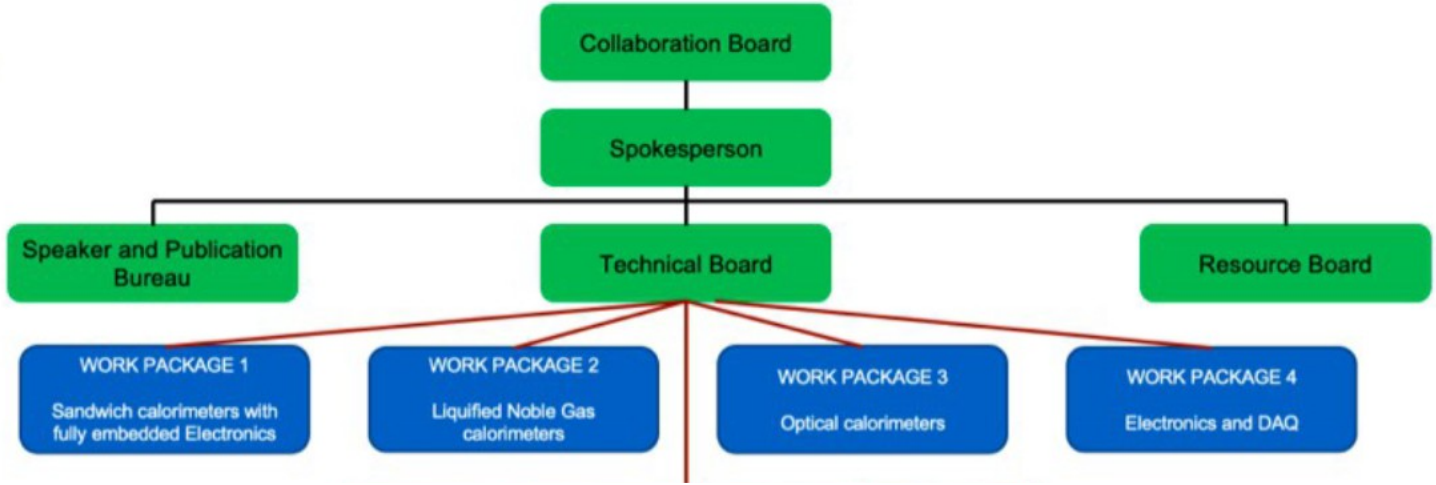

WORK PACKAGES:

Lucia Masseti (Mainz)
A. Irles (IFIC) - deputy

N. Morange (IJCLab)

M. Mlynáriková (CERN)

???

Approved by CERN DRC

- First Collaboration Meeting 9th - 11th April

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- Rest of the structure is still in progress → handled by the **Proposal team acting as interim management (together with the CB)**

Proposal Team

Coordinators: Roberto Ferrari, Gabriella Gaudio (INFN-Pavia), R.P. (IJCLab)

Representative from ECFA Detector R&D Roadmap Coordination Team: Felix Sefkow (DESY)

WP 1: Sandwich calorimeters with fully embedded Electronics – Main and forward calorimeters
Conveners: Adrian Irles (IFIC, adrian.irles@ific.uv.es), Frank Simon (KIT, frank.simon@kit.edu), Jim Brau (University of Oregon, jimbrau@uoregon.edu), Wataru Ootani (University of Tokyo, wataru@icepp.s.u-tokyo.ac.jp), Imad Laktineh (I2PI, imad.laktineh@in2p3.fr), Lucia Masetti (masetti@physik.uni-mainz.de)

WP 2: Liquified Noble Gas Calorimeters
Conveners: Martin Aleksa (CERN, martin.aleksa@cern.ch), Nicolas Morange (IJCLab, nicolas.morange@ijclab.in2p3.fr), Marc-Andre Pleier (mpleier@bnl.gov)

WP 3: Optical calorimeters: Scintillating based sampling and homogenous calorimeters
Conveners: Etiennette Auffray (CERN, etiennette.auffray@cern.ch), Macro Lucchini (University and INFN Milano-Bicocca, marco.toliman.lucchini@cern.ch), Philipp Roloff (CERN, philipp.roloff@cern.ch), Sarah Eno (University of Maryland, eno@umd.edu), Hwidong Yoo (Yonsei University, hdyoo@cern.ch)

WP 4: Electronics and DAQ
Christophe de la Taille (OMEGA, taille@in2p3.fr)

Transversal Activitiies
Photodetectors: Alberto Gola (FBK, gola@fbk.eu)