

GRAIN status

A summary after the first two wg meetings

Lea Di Noto (GE) & Alessandro Montanari (BO)

SAND technical meeting

April, 12th 2022



First meeting

General	61 events	→
Physics/Software	34 events	→
Review for inner tracker	7 events	→
Technical	10 events	→
STT Working Group	1 event	→
GRAIN Working Group	2 events	→
ECAL Working Group	1 event	→

- **Meeting organization:**

- Indico page: <https://indico.fnal.gov/category/1051/>

- Mail list: DUNE-ND-SAND-GRAIN@fnal.gov

- minutes + recording

- **bi-weekly meeting:** on Thursday at 11.00 CET

- + **technical meeting on GRAIN simu/reco:** bi-weekly on Thursday at 14.30 CET

- **Scope of the WG**

- **First attempt to define a set of deliverables**

- **WG chairs:** Lea Di Noto (GE) & Alessandro Montanari (BO)

Scope of the GRAIN WG

The WG is going to work on:

- **Cryostat**
 - Mechanics
 - Cryogenics
 - Monitoring system
- **Detector (lens/hadamard)**
 - Design
 - Electronics
 - Prototyping
 - Simulation/reconstruction tool development

update → main meeting on Thursday at 14.30
- **Physics requirements and achievements**
 - update → main meeting in SAND Physics

Status & deliverables

- **DETECTORS (lens/hadamard)**
 - **Design:** many simulations already available both with lenses of coded masks,
 - define a **first configuration** with lens and coded masks in GRAIN
by the end of the year
 - **Electronics:**
 - First estimate of electronics requirements for matrix readout based on 1kW of maximum power dissipation
by the end of September
 - toward an ASIC development
 - **Prototyping:**
 - define a plan for prototyping and tests with lenses and coded masks
by the end of May

Status & deliverables

- **CRYOSTAT**

- **Mechanics:** a first design is already available

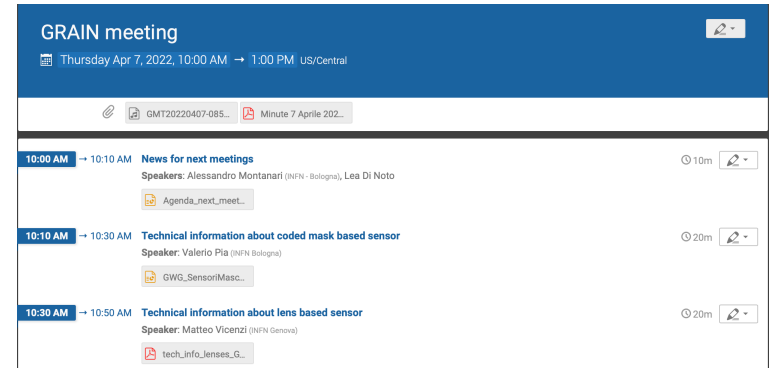
- Finalization of the cryostat dimensions after input from optical detectors and from STT **by the end of the year**

- **Cryogenics:** general scheme is already available
with a **baseline option** of 1kW maximum dissipation power

improved and finalized by October

Agenda of the next meetings

- OPTICAL SENSORS: 7th April 2022



- PROTOTYPING: design, goal, timeline **21th April**
 - Lens prototype: design & goals
 - Matrix prototype: design & goals
- CRYOSTAT DESIGN: current project & constraints **5th May 2022**
- CRYOGENIC: current project & constraints **19th May 2022**