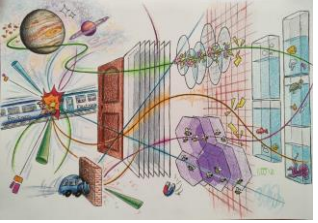


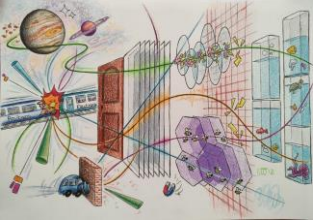


# WG 5 - R&D on new techniques, common infrastructures, and characterization facilities

**Proposal for workplan**

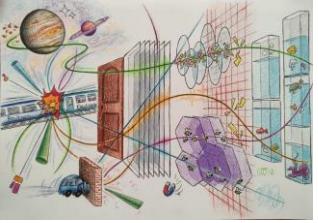
M. Fernández García (IFCA/CERN), M. Jaksic D.(RBI)

D. Dannheim(CERN), I. Vila Álvarez (IFCA)



# Outline

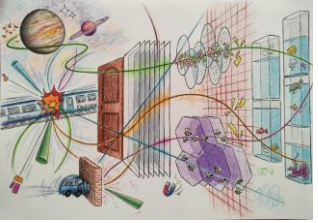
- Implementation guidelines
- Summary of the community Survey.
- Implementation: tasks.
- Today’s agenda.



# Captatio Benevolentiae

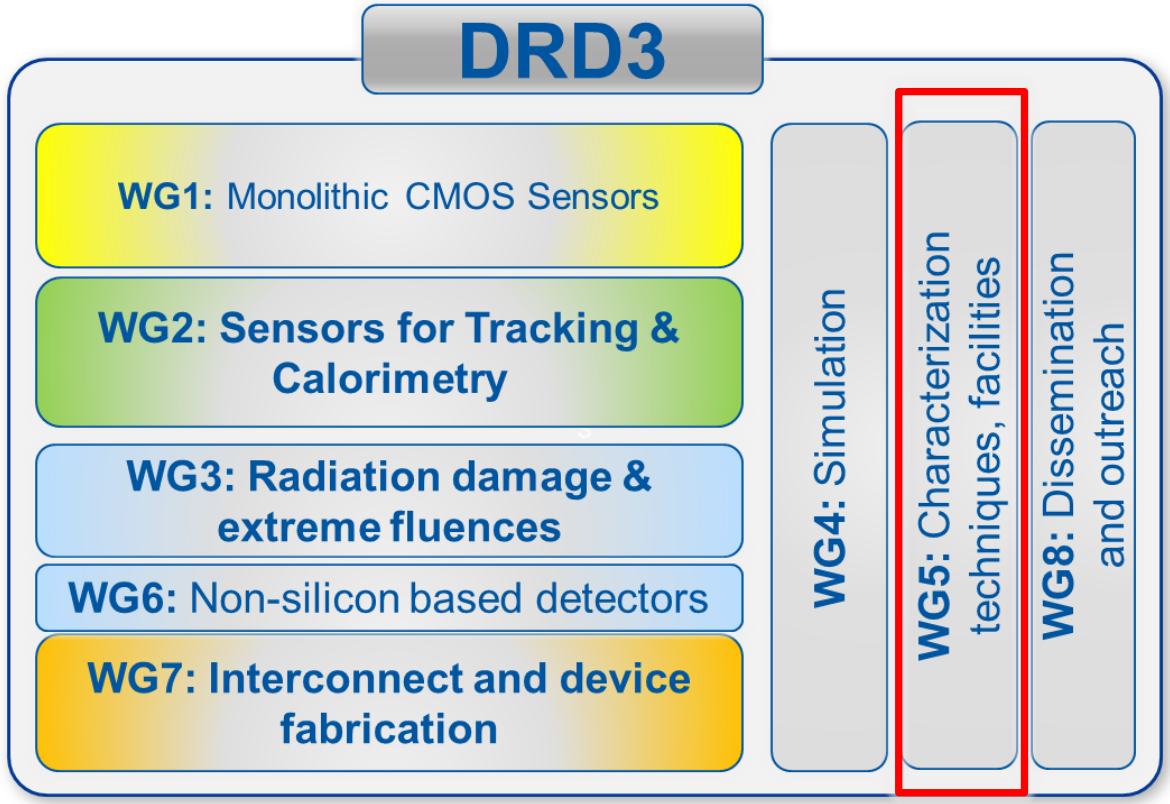
DRD3

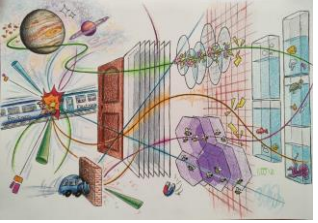
- These slides represent the **preliminary** findings of the community survey, and are **still only a partial review** of the interests expressed.
- **We welcome any additional proposals to the discussion.**
- Please don't hesitate to speak up during the meeting, or alternatively, send us your feedback after.



# Implementation guidelines

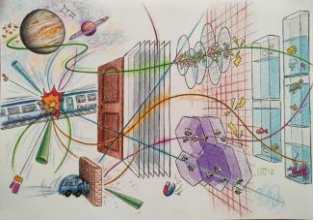
- Community-driven working group:
  - Development/improvement/diffusion of **methods and techniques for characterizing sensors.**
  - Joint research activities for the **delivery of common infrastructures for sensor testing**
  - Promoting the **use of singular characterization facilities.**
- Transversal WG across the different Detector R&D Themes (DRDT). Aligned with the General Strategic Recommendations of ECFA Roadmap.
- The implementation of WG5 does not strictly adhere to the logic of DRDT activities with medium and long-term milestones.





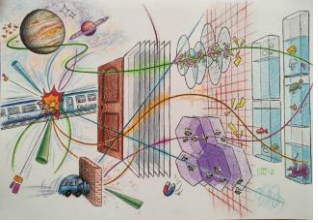
# Community Survey

- Around 20% of questionnaires  interested in WG5 related activities.



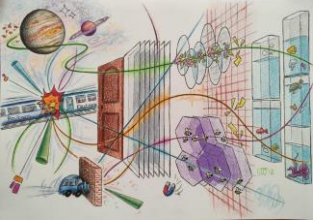
# Characterization Techniques

- Aim: Development/improvement/diffusion of methods and techniques for characterizing sensors.
- Interest from the community survey:
  - Development/Improvement of existing laser-based characterization methods (TPA-TCT, UV-TCT).
  - Development/Improvement of methods for defect spectroscopy.
  - Development/Improvement of X-ray based methods.
- In RD50, intramural project supported by common fund.
- Other related activities:
  - Training on the characterization techniques (WG8)



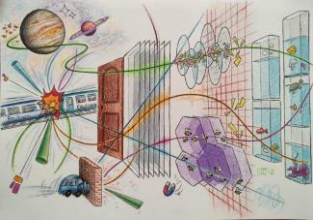
# Common Infrastructures

- AIM: Joint research activities for the **delivery of common infrastructures for sensor testing.**
- **Interest from the community survey:**
  - Telescope for test beam areas, many flavors: high position resolution, high precision time stamping, DMAPS, hybrid, diamond…
  - High-precision time stamping systems for equipping test beams.
  - Common Data Acquisition systems.
- **The infrastructure delivered by this joint activities are of interest to more than one DRDT: supported by common fund.**



# Singular characterization facilities.

- The sensor's R&D community and singular characterizations facilities:
  - High energy particle beams (MIP like)
  - Ion Beams for IBIC and TRIBIC.
  - EMC characterization facility
  - Light sources (Synchrotron) and femtosecond laser facilities
- DRD3 could **complement** the Transnational Access (TA) schemes provided by several EU projects:
  - Supporting users **access to infrastructures non-included in TA schemes**.
  - Supporting users **access from non-EU members.**
  - Promoting **training access of users** on the characterization methods used at these facilities.
- **Supporting experts** on testing infrastructures (e.g., telescope operation & DAQ).
- **Common projects** on improving the testing infrastructure at the facilities.
- **Centralized request** to test beam and irradiation facilities.



# Today's agenda

- Example of three types of actions inside WG5:
  - R&D on techniques: Two-Photon-Absortion Transient Current Technique
  - Common projects: CARIBOU
  - Singular testing facilities: IBIC and gamma irradiation at RBI

| | | |
|---|---|---|
| 09:00 | **WG5: Introduction**<br>*222/R-001, CERN* | *Dr Ivan Vila Alvarez*<br>09:00 - 09:10 |
| | **WG5: Task1 Example - TPA-TCT**<br>*222/R-001, CERN* | *Marcos Fernandez Garcia*<br>09:10 - 09:20 |
| | **WG5: Task 2 Examples - CARIBOU DAQ System**<br>*222/R-001, CERN* | *Dominik Dannheim*<br>09:20 - 09:30 |
| | **WG5: Task 3 - Example - Ion Beam testing and irradiations at RBI**<br>*222/R-001, CERN* | *Milko Jaksic et al.*<br>09:30 - 09:40 |
| | **Discussion**<br>*222/R-001, CERN* | 09:40 - 10:00 |