

# Task 12.2 - Turnkey Software

AIDAInnova hackathon

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# Plans and goals

## Intersection with other tasks of WP12

- **Profit from having “all the experts in the room”**
  - Hope for a lot of fruitful discussion
  - Probably some action items for after the hackathon
  - Maybe even get some lines of code in
- Planned dedicated sessions for each of the tasks
  - FastSim / Simulation: following this
  - Particle Flow: tomorrow 10:30 “Particle Flow hack-a-chat”
  - Tracking / ACTS: Today
- Dedicated “internal” Key4hep discussion sessions
  - Tuesday, Wednesday afternoon + Thursday at IdeaSquare
- In general not too many dedicated plans, rather try to have a prioritised list of work topics

# Main topics for FastSim / simulation session

- Consolidation of simulation approaches in Key4hep
  - DDG4 / ddsim, k4SimGeant4, Gaussino
  - Profit today from the presence of Gaussino experts / developers
- Discuss what is missing from Key4hep stack for FastSim
  - Which parts of the necessary software is possible / necessary / desirable?

# Main topics for Particle Flow session

- Integration into the Key4hep stack
- Integration of new algorithms into Pandora / particle flow framework
  - E.g. CLUE for clustering
- Status of k4Pandora

# Main topics for Tracking session

- Discuss DD4hep integration technicalities
  - Missing ingredients for geometry / tracking surfaces
- Handoff between EDM4hep and ACTS
  - Track parametrization
  - Data transfer
  - ...

# Possible topics for Key4hep stack

- Schema evolution
- Key4hep and Gaudi Functional / Gaudi Hive
  - Define guidelines?
  - Locate documentation and make it more easily accessible
- podio::Frame integration into k4FWCore
  - Define user (non?)-interaction with Frame
- Analysis facilities and data tier in Key4hep (a la xAOD / nanoAOD / miniDST + tools)
  - Requirements, current possibilities
- General podio / EDM4hep topics
  - “Interface types” / concepts
  - Datamodel extension (technicalities)
  - Relations between arbitrary types...