A Large Ion Collider Experiment
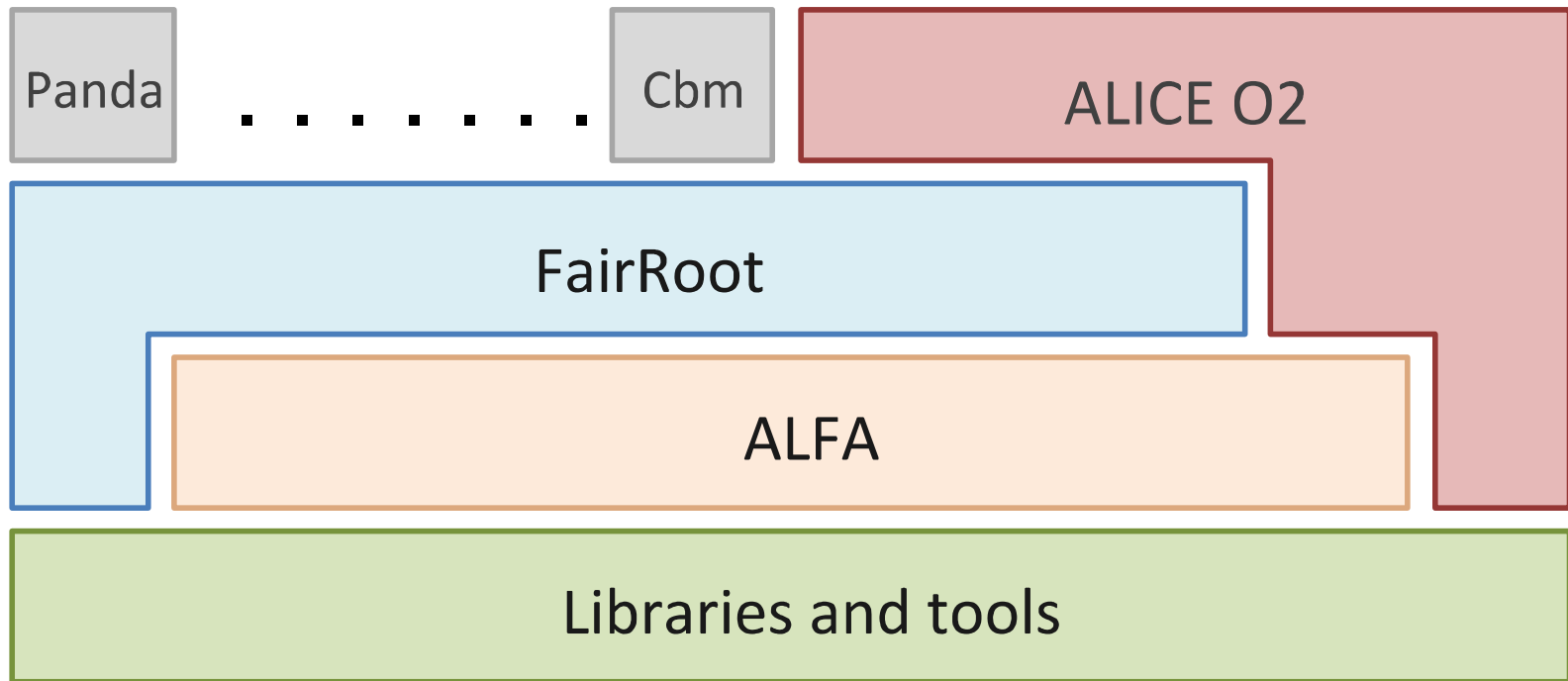
HSF Workshop – ALICE input

Predrag Buncic

ALICE & Common Software

- ALICE has been notably silent on HSF developments
  - This is not because we do not believe in a possibility to develop common software
  - On the contrary, we understand the needs for common software development and potential for rationalization
    - Shared development effort
    - Broader user base
    - Exposure to different use cases
    - Better testing
    - Long term support

- We are already engaged in software collaboration …

ALICE + FAIR = ALFA

| Panda | . . . . | Cbm | ALICE O2 |

FairRoot

ALFA

Libraries and tools

- ALFA is a common software layer initially extracted from FairRoot and amended with developments for ALICE Computing Upgrade (O2) project
  - Our approach to to concurrency problem in distributed multi-process environment

How it came about?

- First we identified a common problem
    - similar time scale
    - similar detector (continuous) readout
    - similar needs for simulation
    - similar data rates
- We agreed on a common approach
    - Multi-process, messaging framework, possibly distributed and running on heterogeneous platforms with parts optimized to use h/w accelerators (GPUs)

- We identified mutual interests
    - ALICE benefits from prior work done at FAIR/GSI and FAIR experiments benefit from the common developments and testing in real environment (Run 3) before their own data taking

- We agreed on a IP and software licenses
    - LGPL v3 for ALFA, LGPL v3 or GPL v3 for ALICE O2

- We put software on Github and started coding…

How could HSF help in this case?

- Ultimately, in order to form a collaboration, two or more parties have to identify a common interest
    - The rest comes naturally
- It would be really useful to have a common directory of projects that describe
    - individual project goals
    - license
    - dependencies to other projects, build instructions
    - names of developers
- It would be good to have a tool that could use this metadata to download and build given software with its dependencies and report build/test problems on various platforms
- If would be useful to make this information visible on a common portal along with details about project activity
- It would be excellent to impose approved Open Source license(s) on participating projects
- While I sympathize with idea of a common channel for distribution of pre-built software, I do not think that this is something that HSF should do
    - It will be difficult to define a common OS platform and applications that need to work together to satisfy possibly very different user communities