

# Introduction to FIT projects

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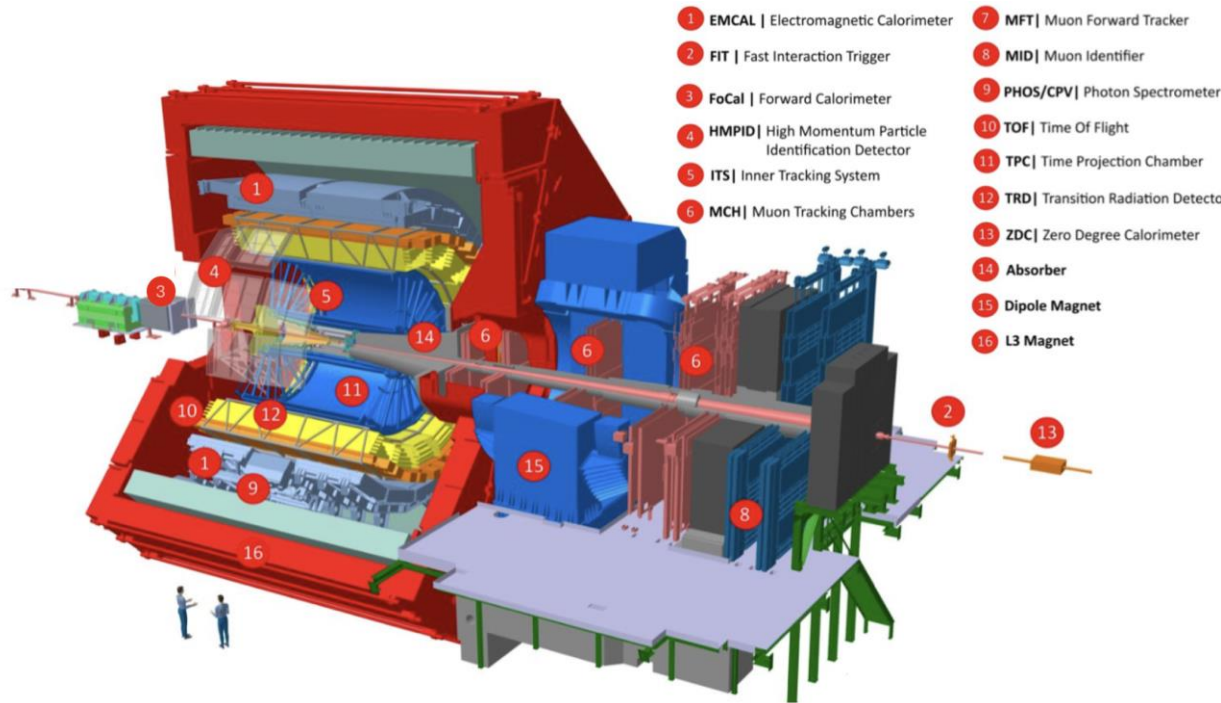


Fig. 1: ALICE detector

## Delivered Functionality

- Fast min. bias collision trigger with latency < 425 ns;
- Time resolution: 5 ps in Pb-Pb and 18 ps in pp collisions;
- Luminosity and background monitor;
- Centrality measurement;
- Event plane determination;

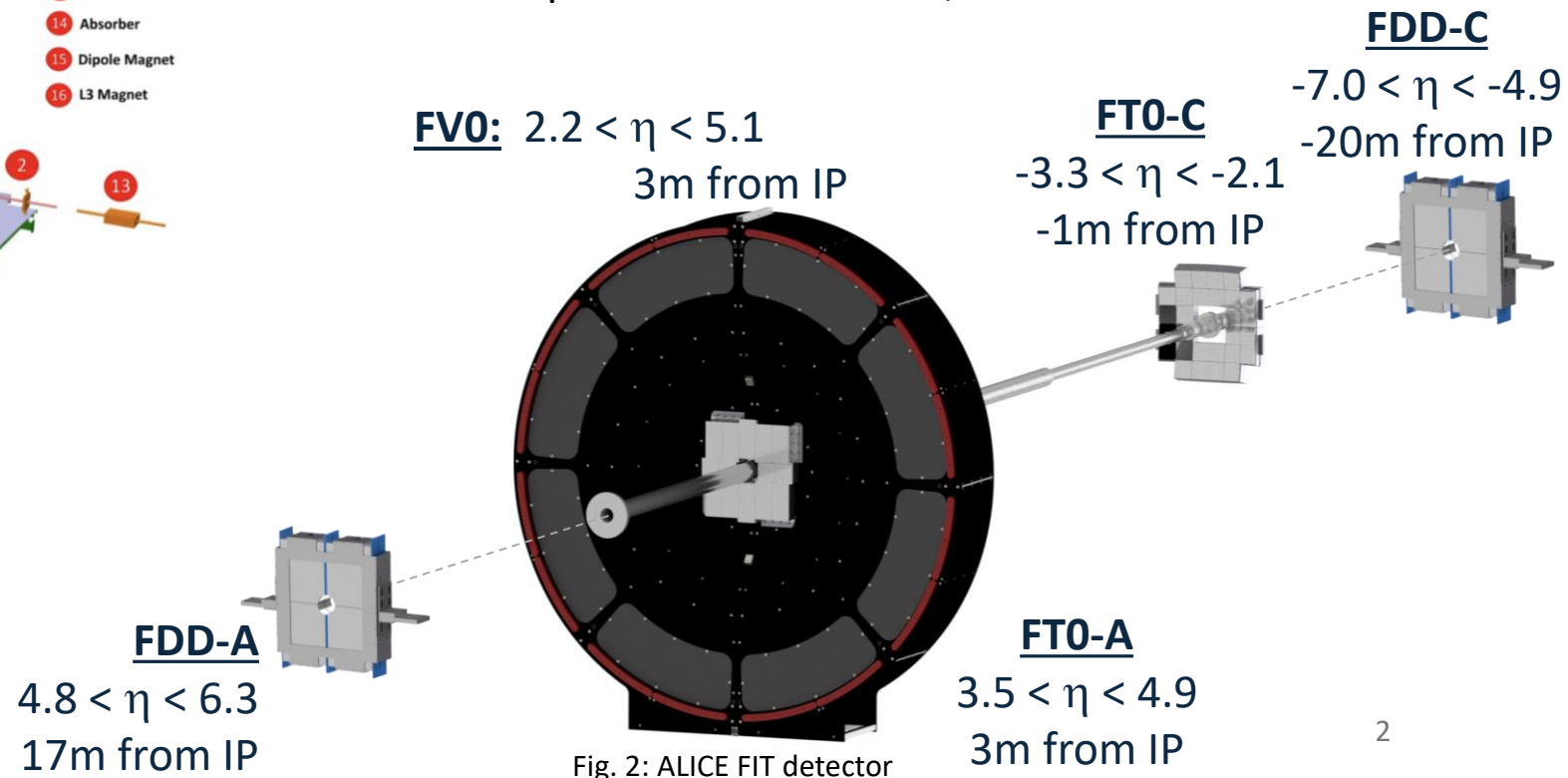


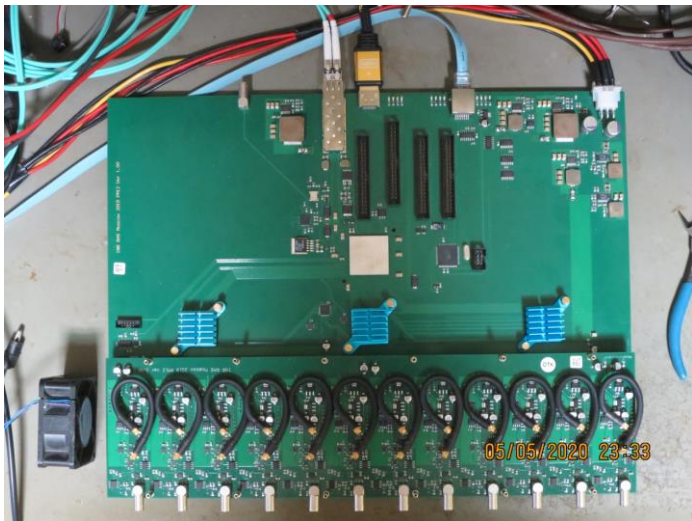
Fig. 2: ALICE FIT detector



ALICE

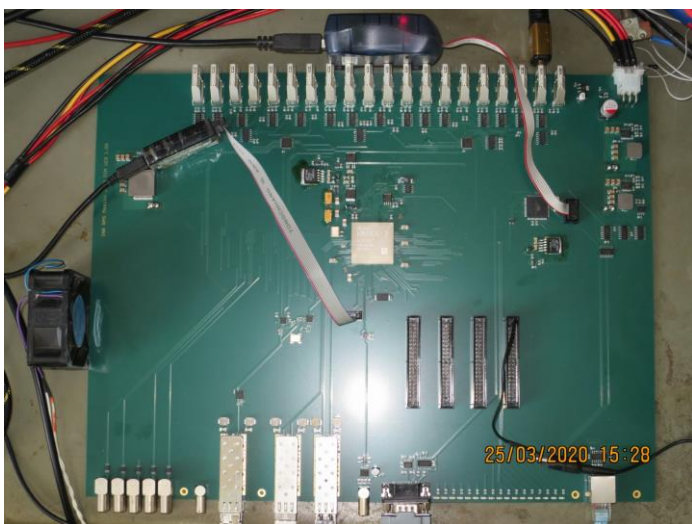
# ALICE FIT detector setup

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FIT PM (Processing Module):

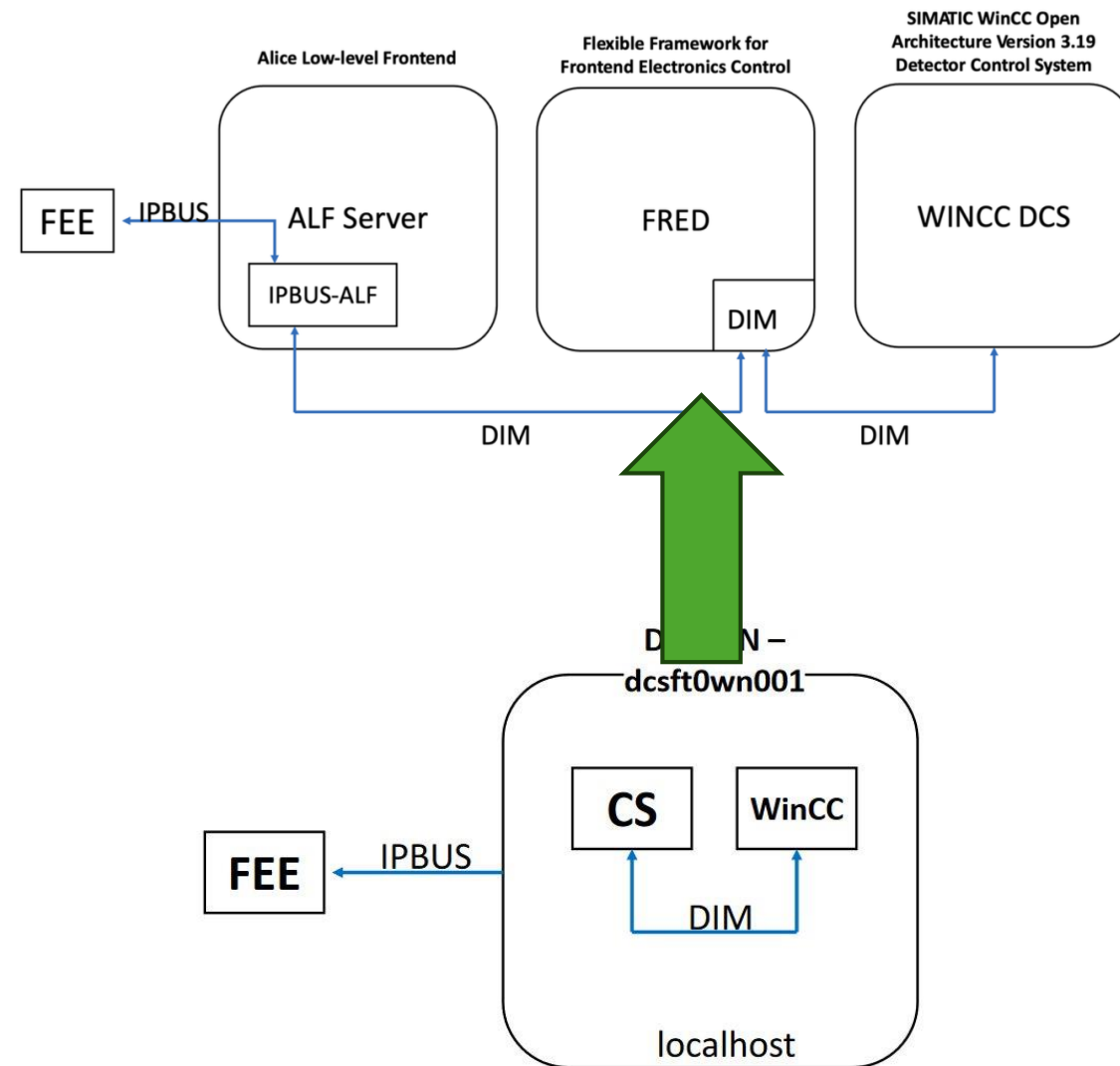
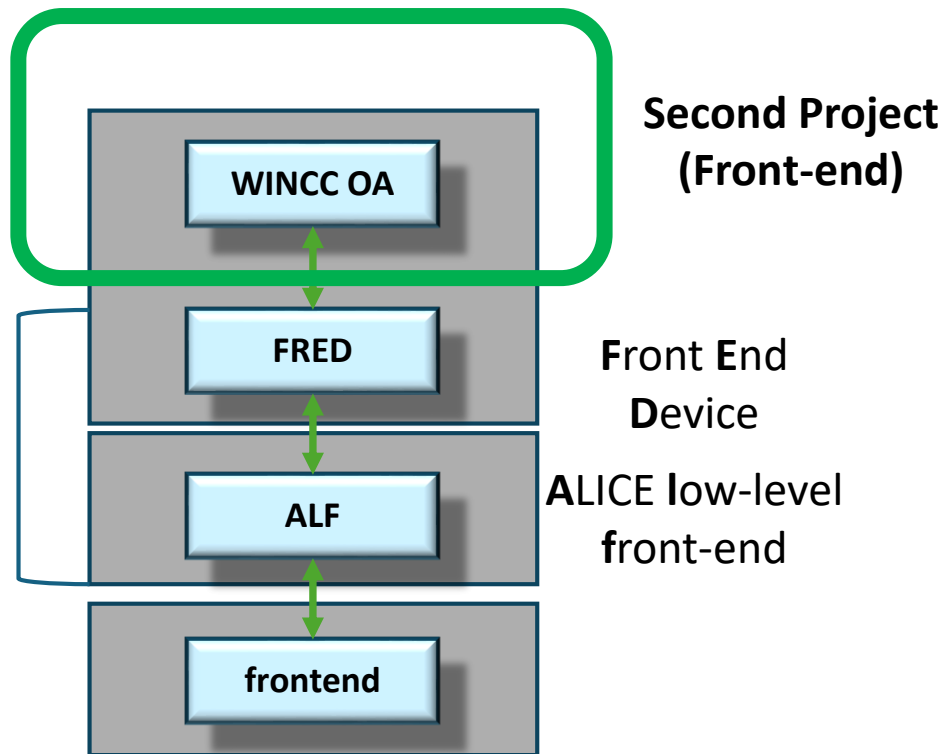
- 12 independent inputs;
- Very similar for all FIT detectors;



FIT TCM (Trigger and Clock Module):

- One TCM;
- May connect 20 PMs via an HDMI cable;
- Connected to the FIT DCS via IPbus;

# Implementation of ALFRED





ALICE

# WinCC O.A SCADA system

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ControlServer v1.1: FDD settings

File Control Network

Board selection: TCM A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 C0 C1 C2 C3 C4 C5 C6 C7 C8 C9

System: is restarting, restarted, Errors present

Board status (TCM): Board temp.: 20.2°C, FPGA temp.: 31.1°C, 1V power: 0.988 V, 1.8V power: 1.769 V

TCM A-side: Links OK and ready, PLL locked, Readiness changed, Average time, ns: 0.000, Phase, ns: -4.800

TCM C-side: Links OK and ready, PLL locked, Readiness changed, Average time, ns: 0.000, Phase, ns: 0.000

Triggers: 1: Central, 2: Semi chrg Central, 3: Vertex, 4: OrC, 5: OrA

Background counters: NoiseA, True OrA, Beam-gas A, NoiseC, True OrC, Beam-gas C, Total noise, True Interaction, True Vertex

Laser system: Laser enabled, On Cal trigger (OrA4), Suppressing triggers for: 1, BCs in: 38, BCs at frequency: 9999.726 Hz

Statistics: FIFO max, Drop count, BC indicators, Converter, Selector, Count, Rate, Hz, Events

Phase, ns: -6.969

10.160.39.138: online



6:16:45 PM 8/19/2024

Board selection: TCM A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 C0 C1 C2 C3 C4 C5 C6 C7 C8 C9

System: is restarting, restarted, Errors presented

Board status (TCM): Board temp.: 24.20°C, FPGA temp.: 40.02°C, 1V power: 0.982V, 1.8V power: 1.763V

TCM A-side: Links OK and ready, PLL locked, Readiness changed, Average time, ns: 0, Phase, ns: 10.522

TCM C-side: Links OK and ready, PLL locked, Readiness changed, Average time, ns: 0, Phase, ns: 0.000

Triggers: 1: Central, 2: Semi chrg central, 3: Vertex, 4: OrC, 5: OrA

Background counters: NoiseA, True OrA, Beam-gas A, NoiseC, True OrC, Beam-gas C, Total noise, True Interaction, True Vertex

Laser system: Laser enabled, On Cal trigger (OrA4), Suppressing triggers for: 1, BCs in: 38, BCs at frequency: 9999.726 Hz

Statistics: FIFO max, Drop count, BC indicators, Converter, Selector, Count, Rate, Hz, Events

Phase, ns: 00000000

# FIT videos viewed

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- YouTube:
  - English;  
<https://youtu.be/PjsBIbKsuO0>
  - Spanish;  
<https://youtu.be/qR IG7K3pfs>
  - Polish;  
<https://youtu.be/31s8jix2omo>
  - Russian;  
<https://youtu.be/phN0AohEDKI>

