

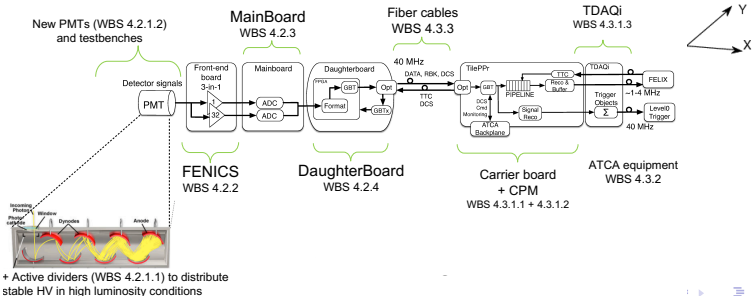
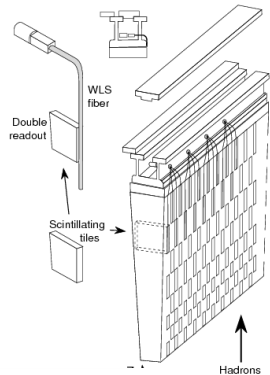
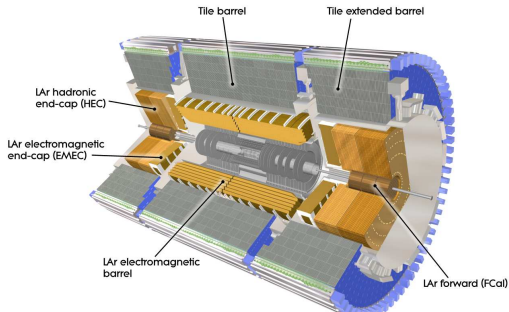
TileCal Phase-II Upgrade Project Needs and Requirements

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Tile Calorimeter



Review status

- 4.1 Drawer Mechanics **production complete**
 - ▶ 4.1.1 MD mechanics
 - ▶ 4.1.2 MD services
 - ▶ 4.1.3 Handling tools
- 4.2 On-detector electronics
 - ▶ 4.2.1.1 new PMT **production**
 - ▶ 4.2.1.2 HV Active Dividers **production**
 - ▶ 4.2.2 FENICS **production**
 - ▶ 4.2.3 MainBoard **production**
 - ▶ 4.2.4 DaughterBoards **PDR follow-up**
- 4.3 Off-detector electronics (**FDR Q1/2-2023**)
 - ▶ 4.3.1.1 Carrier Board
 - ▶ 4.3.1.2 CPM
 - ▶ 4.3.1.3 TDAQi
- 4.4 Calibration systems
 - ▶ 4.4.1 Laser system (**FDR+PRR July-2023**)
 - ▶ 4.4.2 Cesium system (**FDR May-2023**)
- 4.5 Low-voltage system
 - ▶ 4.5.1 LVPS bricks **FDR follow-up**
 - ▶ 4.5.2 LVPS DCS **production**
 - ▶ 4.5.4 LVPS mechanics **FDR follow-up**
 - ▶ 4.5.5 LVPS services **FDR Q4-2022**
- 4.6 High voltage system **FDR Dec-2022**
 - ▶ 4.6.1 HV Bus Board
 - ▶ 4.6.2 HV Regulation Board
 - ▶ 4.6.3 HV Bulk Supplies
 - ▶ 4.6.4 HV Cables
- 4.7 & 4.8 Drawer Assembly, Installation, Commissioning
 - ▶ 4.7.1 Database for QA **development**
 - ▶ 4.7.2 QA test-benches **PDR Dec-2022**
 - ▶ 4.7.3 Assembly tools **production complete**
 - ▶ 4.8.2 Installation tools **production complete**

Requirements and Needs

- TileCal Visualisation: geometry doesn't change from Phase-1 to Phase-2 (mostly)
- TileCal groups perform thorough tests of the produced boards and detector components. The results are stored locally. Would be good to have an interface to the TileCal assembly database.
- Visualisation and/or automation of the QA process
- On-detector electronics radiation tolerance : monitoring and visualisation of the irradiation levels