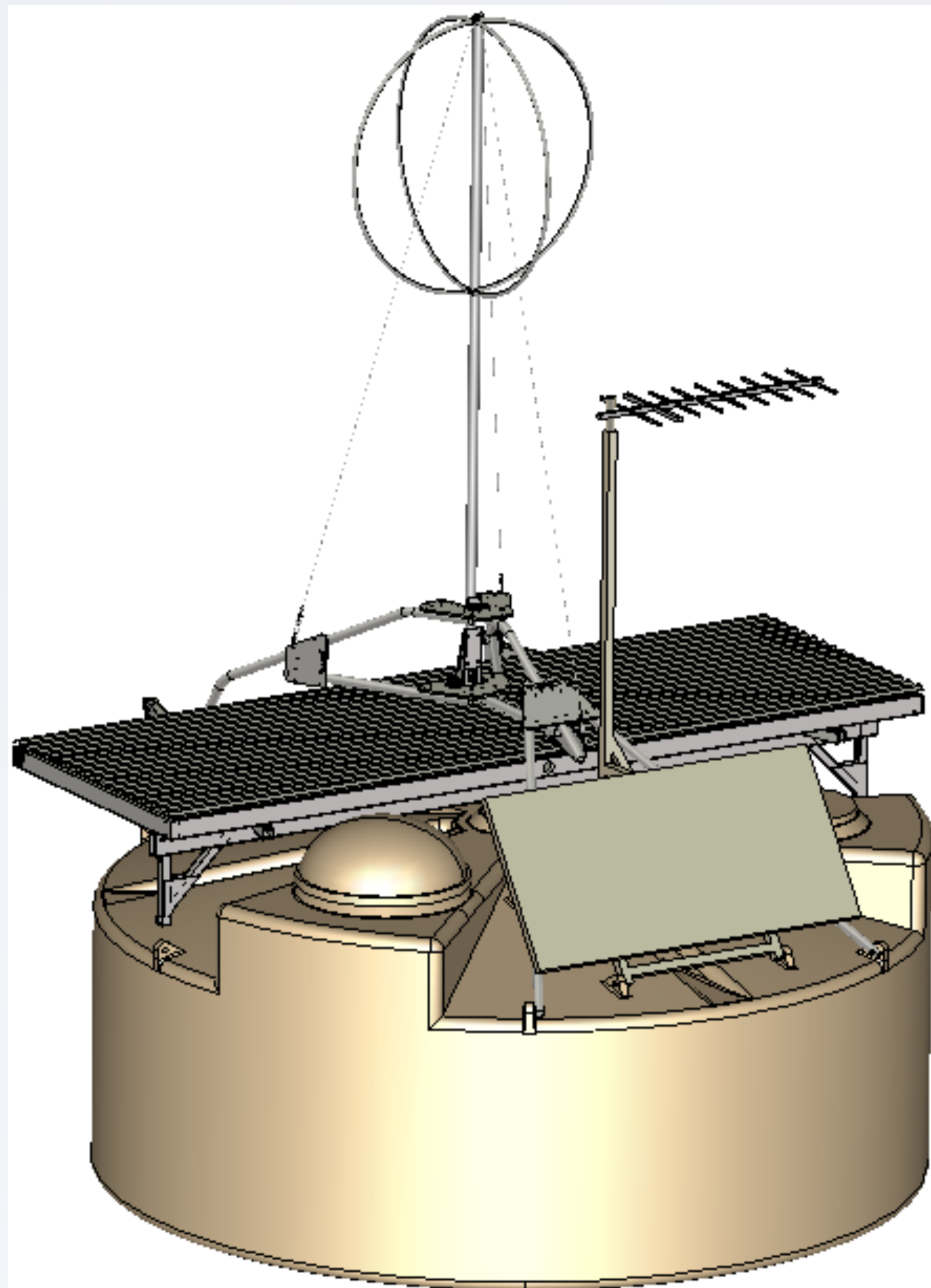


Update of the Offline Framework for AugerPrime

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1. Upgraded surface detector station

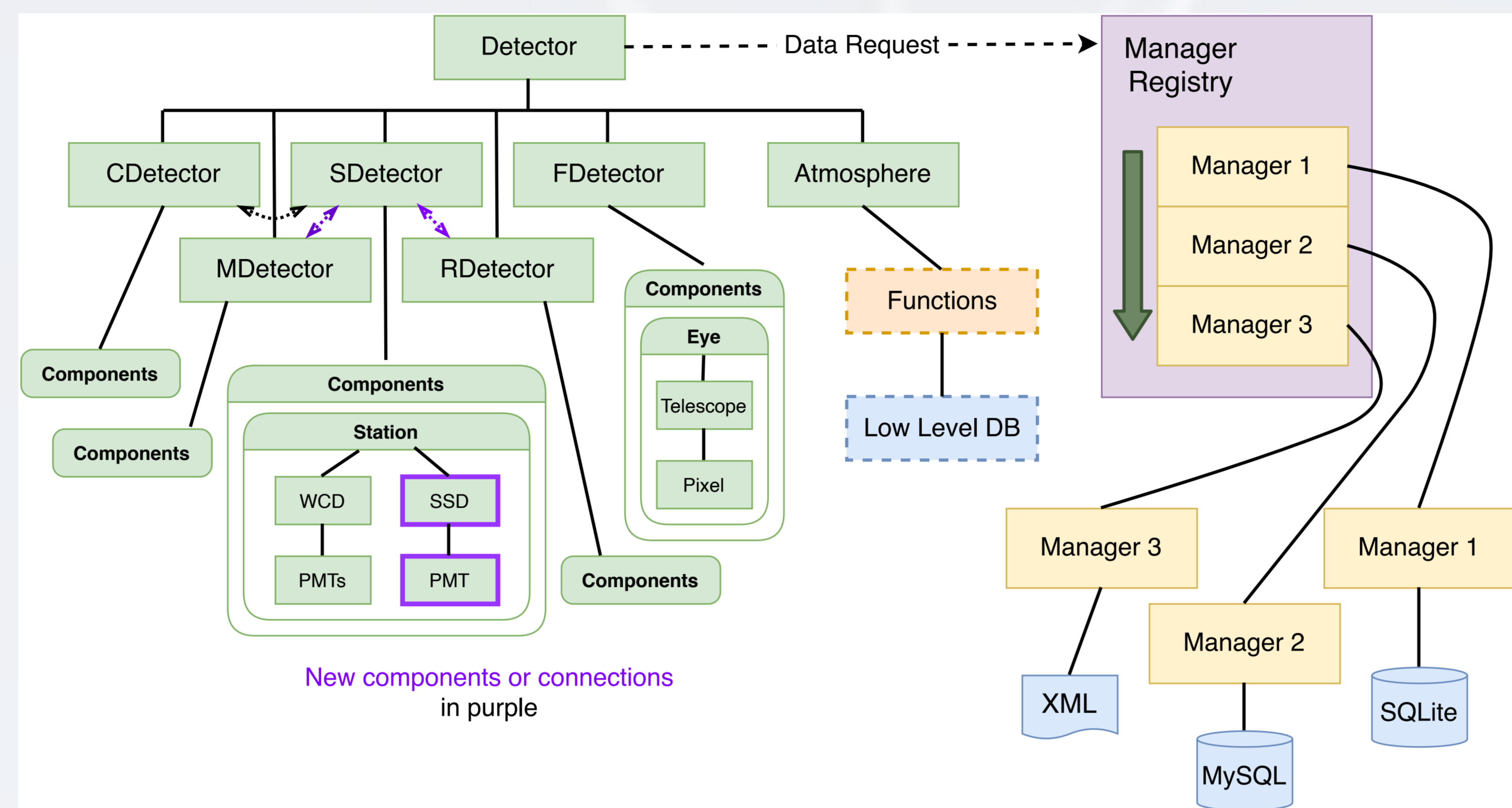


The visible, new elements are the **Salla Antennas** for Radio Detection and horizontal enclosure of the **scintillator detector (SSD)**. The *small PMT* for extending the dynamic range is inside the detector enclosure and therefore not visible. One can also identify the **dome for the station electronics**, the **solar panel** and the **communications antenna**.

2. Changes to the detector station

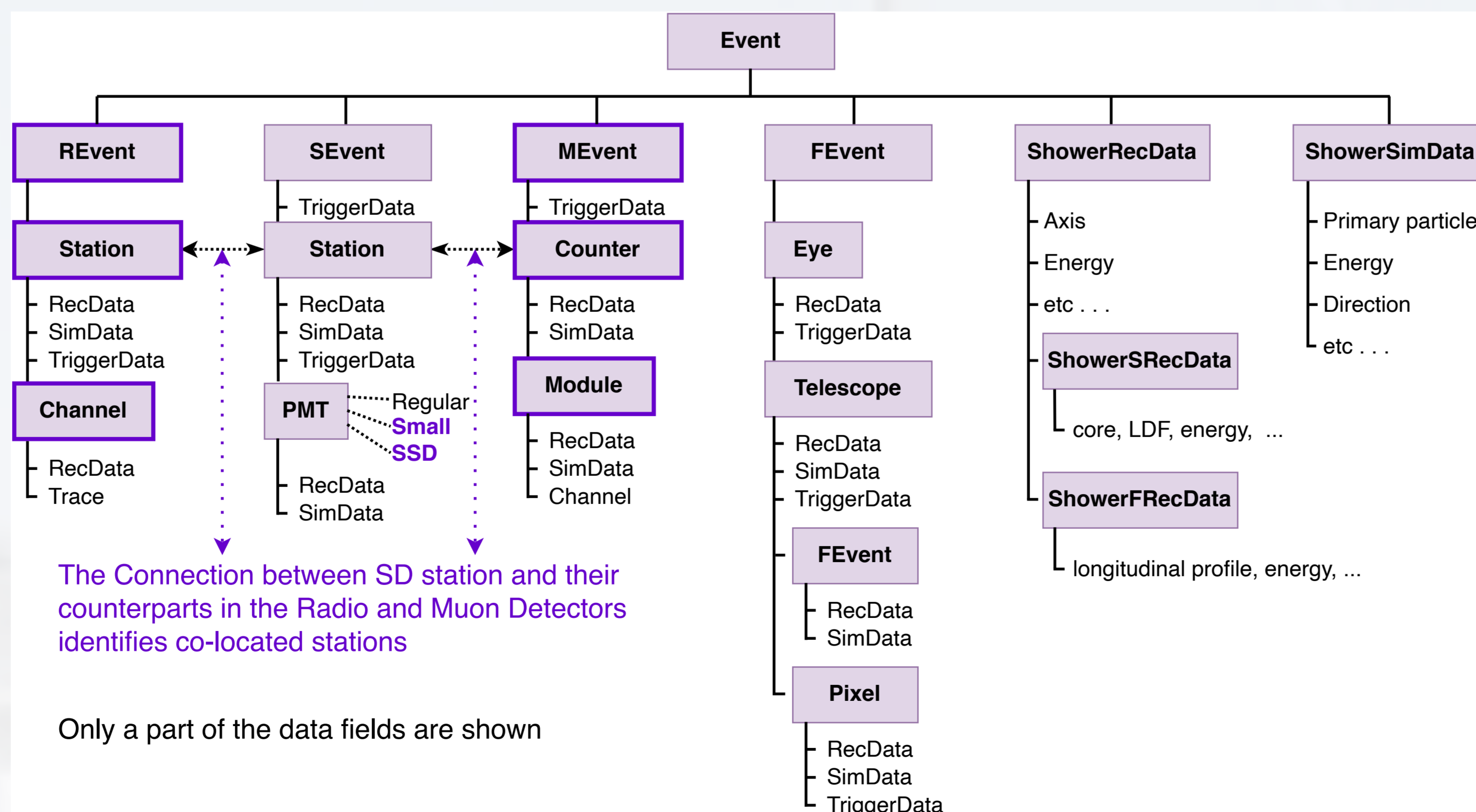
- ➔ Additional **small PMT**
- ➔ Digitizer speed from 40MHz to 120MHz
- ➔ Additional **channels**
- ➔ **Scintillator detector** on top of WCD
- ➔ **Radio detector** (Salla antenna)

3a. Detector structure



- ➔ The **Detector tree** follows the **hardware hierarchy** of the Observatory and its components.
- ➔ Information from **atmospheric monitoring** is available through the detector
- ➔ **Managers control the low-level data sources and their priority**

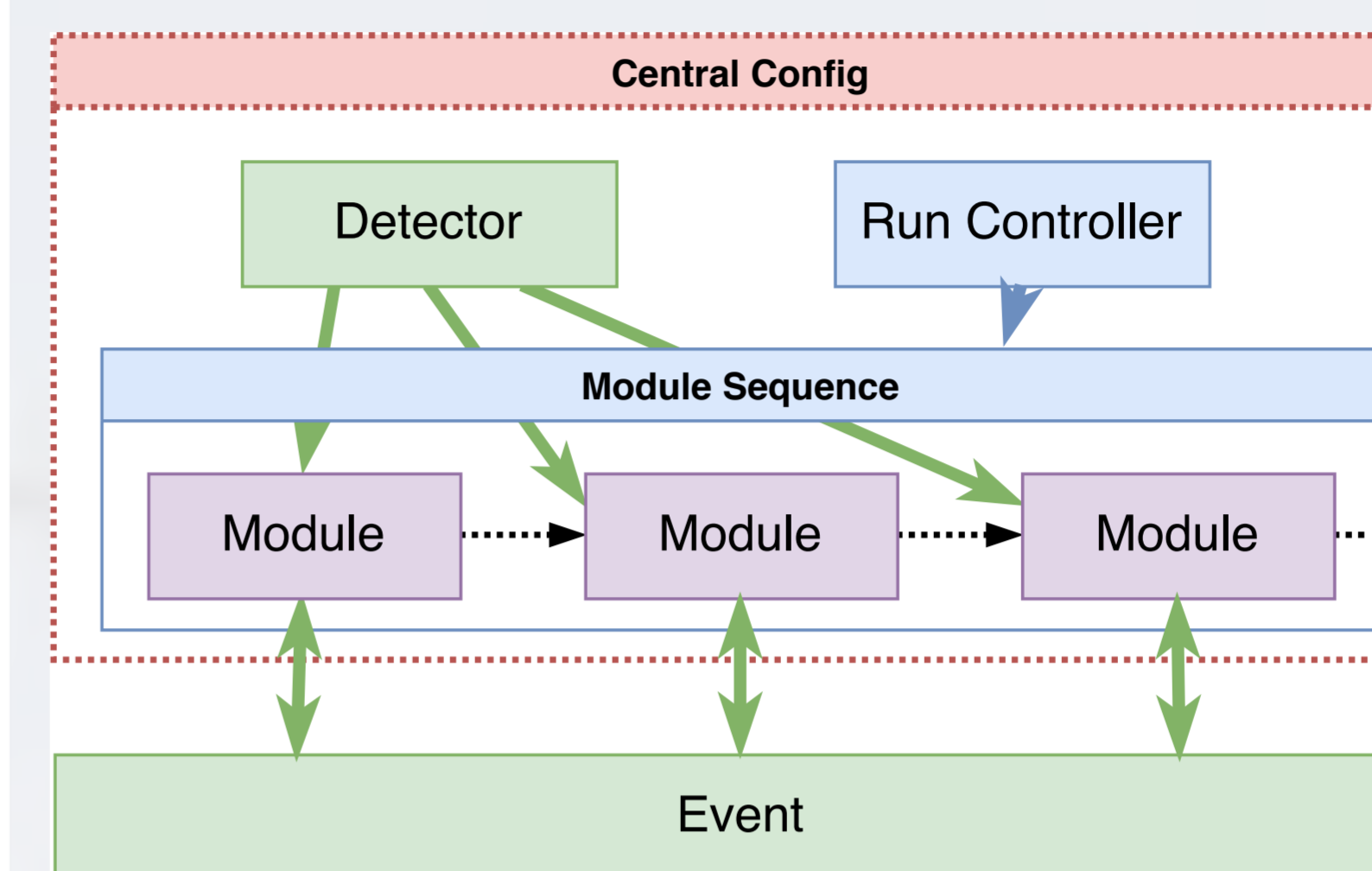
3b. Event structure



The Connection between SD station and their counterparts in the Radio and Muon Detectors identifies co-located stations

Note: The **CEvent** structure is not shown here, since it is not part of the AugerPrime upgrade. For the rest, the major components mirror their counterparts in the **Detector** hierarchy.

4. Control flow



- ➔ An application is broken down into **individual steps**, implemented as **modules**
- ➔ The **Run Controller** configures the module sequence and schedules the execution of individual modules
- ➔ **Central Config** configures the Detector, the Run Controller, and modules
- ➔ The **detector** provides **read-only information** to modules
- ➔ The **event** is used to **transfer results** from one module to the next

5. Lessons Learned



- ➔ **Clean design** and investment in testing infrastructure pay off
- ➔ From the beginning consider the need of the **end-user**
- ➔ Choose **data formats** carefully: event data, detector/slow control, and configuration