

# Entry Stage for the CBM First-level Event Selector

*Monday 9 July 2018 15:15 (15 minutes)*

The First-level Event Selector (FLES) is the main event selection system of the upcoming CBM experiment at the future FAIR facility in Germany. As the central element, a high-performance compute cluster analyses free-streaming, time-stamped data delivered from the detector systems at rates exceeding 1 TByte/s and selects data for permanent storage.

While the detector systems are located in a dedicated CBM building, the FLES compute resources will be hosted in the central Green IT Cube data center approx. 700 meters away from the experiment. This demands single-mode optics and protocols not susceptible to delay. Previous concepts therefore included an FPGA-based concentrator stage and custom optical links to the FLES cluster.

Exploiting newest network technologies allows for a more flexible, yet cost effective design using COTS equipment for the long-haul link. A FLES entry cluster, placed near the detector, will terminate detector links in custom PCIe cards. It aggregates processing components and delivers them via a specially configured InfiniBand network to the main compute cluster. The network design facilitates flexible staging and local processing for testing and detector commissioning purposes.

An overview of the FLES entry cluster and network architecture as well as newest performance measurements will be presented.

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