**FEC Upgrade Status**

(EMEC) for | Provide finer granularity to L1 trigger (up to 10x improvement) | Resolution of jet and Baseplane | ≤ 2.5 of the New LSBs

**Phase-I Upgrade**

- Level-1 trigger readout system is being upgraded to replace old trigger towers with supercells (with finer granularity) in order to improve object discrimination capability at trigger level.
- This allows to keep the trigger p_{T} thresholds at the same level, even with future increases in luminosity.

**New Baseplanes**

- allocates new slots for LTDBs
- routes supercell signals
- routes signal sums such that legacy trigger path is kept operational

**Legacy Trigger Readout:**

- digitize analog signals and send to back-end digital processors
- form layer sums similar to those in Run 2 and send to legacy readout, leaving this readout system unaffected

**Installation and Commissioning Status**

- The production of LSBs, baseplanes and boards for LDPS is complete. For LDPS the production is on hold due to lab closures.
- Baseplane replacement and refurbishment of FEBs with new LSBs were progressing well before CERN closure. These tasks have resumed recently.
- 33 LDPSs are received and installed.
- 4 LDPS units have been installed.

Commissioning of newly refurbished crates:

- **Main Readout:** Readout boards refurbished with new LSBs are tested through measurement of calibration parameters and coherent noise values.
- **Legacy Trigger Readout:** This is tested to ensure it maintains its functionality since it will be kept operational until at least 2022. These tests are done by taking Level-1 Calo gain and timing scans of trigger towers.
- **New Trigger Readout:** The digital sums produced by new front-end and back-end boards are read and processed to calculate the energy and timing of calibration pulses.
- ★ There are significant ongoing efforts towards testing and validating the readout paths of newly refurbished crates.
- ★ Despite the pause in installation due to COVID-19 lockdown, the opportunity was used for improving online tools and remote testing of the system.