

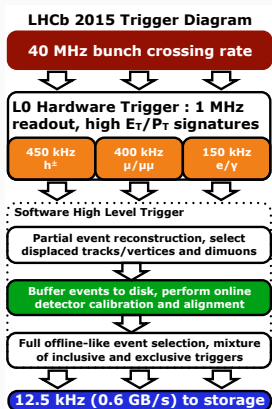
Alignment Tools

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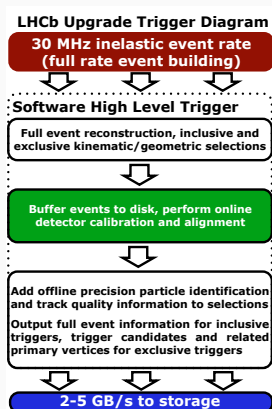
AIDA-2020 WP3 Meeting
25 January 2018



- During LS2 (2018-2021) LHCb will undergo it's first upgrade
- Hardware trigger will be removed entirely
 - All events reconstructed using software
- Lots of improvements are needed to facilitate this

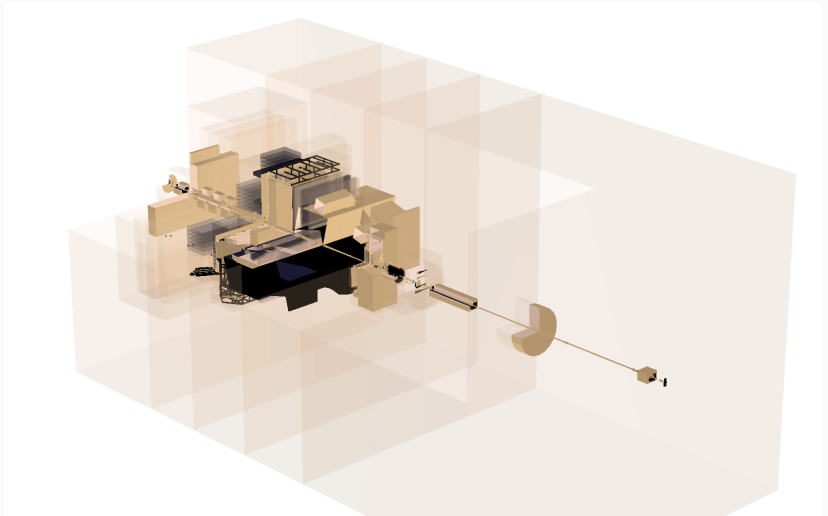


Run 2 (current)



Run 3

- A LHCb specific detector description is currently used
 - Unmaintained and hasn't kept up with software advances
 - DD4hep is most promising alternative
- LHCb geometry had already been converted by Markus
- LHCb has ~ 5 upgrade software hackathons per year
 - Participated in December with Lucia Grillo and Ben Couturier
 - Ported the Alignment software to the new functional framework
 - Debugged various errors/inconsistencies in the DD4hep geometry
 - Started figuring out how to replace the LHCb Geometry



- In summary:
 - Alignment has been ported to the upgrade stack
 - Fixed the LHCb geometry to be consistent in DD4hep
 - Started integrating DD4hep with the LHCb alignment software
 - Also helped with testbeam alignment needs
- Outlook:
 - Continue integrating DD4hep in to the LHCb upgrade stack
 - Validate that the new XML is correct and DD4hep is “bug free”
 - And continue supporting test beam activities