AIDA2020 WP3
LAL Contribution Status

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AIDA2020 Monthly Meeting, September 2017

Conditions (framework extension)

Gaudi Conditions

- Was still hoping for "reentrant data handles"... but integration by ATLAS staff seems dropped, because of too much differences between the standard Gaudi event store and the ATLAS one (StoreGate).

- GAUDI workshop, this week, will be an opportunity to arbitrate between three options
    1. Remove incompatiblities between stores, so that the handles cans be integrated unmodified.
    2. Simplify the handles interface so to make them compatible with both stores.
    3. Make a different version of the handles for the standard GAUDI event store.

- LHCb strongly supports Hadrien implementation of conditions to be integrated fast.

DDCond

- under study. When better globally understood, Hadrien will contact Markus and discuss how to remove the differences about time representation, intervals of validity, etc.

Tracking & ACTS

- Multi-threaded reproductibility tests are integrated in the ACTS continuous integration machinery. **Multi-threading is now switched on by default in ACTS**, except for MacOS/Xcode users (Apple has explicitly switched off OpenMP support).

- End of Nicolas Loiseau internship, about ACTS eigen-based implementation of track propagation.
    - It was running 2.5 slower than original ATLAS code...
    - It has now similar performance, with improved documentation, tests and benchmarks.
    - Under way : reintegration of this improved implementation in ACTS.

- End of Lucas Serrano internship, about vectorizing track fitting step of Kalhman Filtering
    - First prototype delivered with improved performance for 5x5 matrix operations, based on boost.simd for generic vectorization.
    - To be done : investigate what can be feeded back to ACTS.
    - BUT : failure to finalize the PHD funding of Lucas... which means delay before going on.

- Plan to prototype an ACTS implementation of BELLE II tracking.