ATLAS

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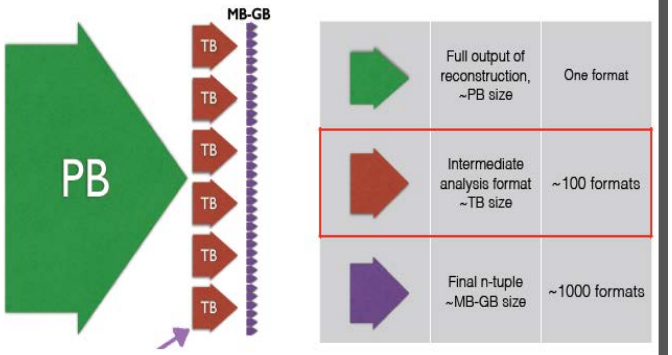
- Readiness for Run-2
- Prospects for Run-3

Readiness for Run-2 (1)

Done: Resource optimization & consolidation

- New framework
  - New data management system RUCIO
  - Same engine prod & analysis (integr'd w/ RUCIO)
- New analysis model
  - Train derivation / Centralized analysis
- New simulation model
  - ISF optimize fast vs full sim
- Flexibility
  - T1s can do primary processing, T2s reprocessing



Readiness for Run-2 (2)

- New Software
  - Multi-processing (80% resource in Mcore prod)
- Storage
  - More dynamic/Less planned/Less replication
  - More usage of tapes
  - Every dataset has a lifetime
- CPU
  - More usage of opportunistic resources
- Network improvement
  - Allows CPU/storage usage optimization via data remote access

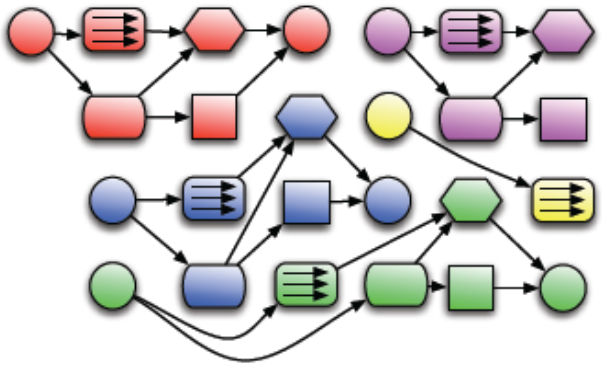
Prospects for Run-3 ~2021 (1)

Guideline: Resource optimization & Streamlining

- New Software to reduce memory footprint
  - Gap between CPU core & affordable memory is increasing
  - Multi-processing of Run-2 not enough

-> Multi-threading for memory savings

  - Multiple exectution threads all in the same memory space
  - Collaboration & share expertise w/ LHCb & CMS



Run3 multi-threaded reconstruction cartoon: Colours represent different events, shapes different algorithms; all one process running multiple threads

Prospects for Run-3 ~2021 (2)

- 'Smooth' evolution of the Computing Model
  - Gain in networking -> Dissolve Tiers hierarchy
  - T1 (~HTC)
    - Big data center with storage, throuput, less T1s (?)
    - Distributed storage à la Cloud
  - T2 (~HPC)
    - Less storage, use caching
    - 'Cloudification': eg jobs sent to FR cloud w/o explicit site requirements
    - Less T2s and bigger
- Hunt for opportunistic resources active
  - Cloud, HPC, HLT farm, ATLAS@home