Common Tools developments

- Need to develop/test/validate common tools for analysis
  - ★ Athena tools (ARA dual-tools ?)
  - ★ Common tools independent from every analysis framework (EWPA, EV, ...)
  - ★ Maintained across physics and performance groups
  - ★ Validated in the release cycle
  - ★ Usable in every analysis schema
  - ★ **Common tools are highly encouraged by the collaboration**

- TagAndProbe tool for in-situ performance measurements
  - ★ Many of us are interested in this analysis
  - ★ "Different" analysis have been performed and compared recently using independent code
  - ★ Data is approaching and an unification of these efforts is expected
  - ★ A common tool will allow us to take advantage from everyone experience and to test it in independent ways

Common Tools developments

- **Inserter tools** (present in EWPA):
  - to read and select particles from AOD, DnPD: MuonInserter, ElectronInserter, TruthInserter, TriggerInserter, ...
  - allow to establish common "definitions" of what is a muon, an electron, ...
  - you don't have to worry about StoreGate calls
  - maintained by physics-performance groups in PAT
  - initial proposal from EV people in cvs: to be extended
- **Associator tools** (present in EWPA)
  - to match two particles/tracks
  - using configurable metrics: ΔR, track parameters, χ^2, ...
  - general enough to be used with different particles: most of them inherits from IN4M
  - something in cvs ...
  - maintained by physics groups inside PAT
- **Overlap-removal tools** (present in EWPA, to be tested)
  - to remove overlap between different identifications/reconstruction algorithms
    - an electron is always reconstructed also as a jet, muon reconstructed by multiple algorithms (different containers, ...)
  - using configurable metrics: ΔR, track parameters, χ^2, ...
  - general enough to be used with different particles: most of them inherits from IN4M
  - first developed in EV, i don't know of a common tool in cvs, anyway foreseen by PAT

Common Tools developments

- TagAndProbe tool for in-situ performance measurements
  - ★ An advanced structure is already in place in PhyscisAnalysis/AnalysisCommon/InsituPerformance (M. Schott)
    - InsituDatabaseTools/ (tools to write information to DB)
    - InsituEvent/
    - InsituExamples/
    - InsituRepresentation/ (tools to write information to matrix representation)
    - InsituRepresentationPool/
    - InsituTools/ (tools for proble selection and collection in StoreGate)
- MuonTriggerProbeCollectorTool
  - ★ to collect probe collection in StoreGate (different types of probe defined: ID, MS, ... with different tag definitions: online triggered track, offline combined track)
  - ★ probe selection is done inside the tool: need to collect also detailed information for debugging
  - ★ use of the probe collection is decouple from its selection
- MuonTriggerAssociatorTool
  - ★ test trigger associations by trigger element using TrigDecisionTool