Physicist Interface

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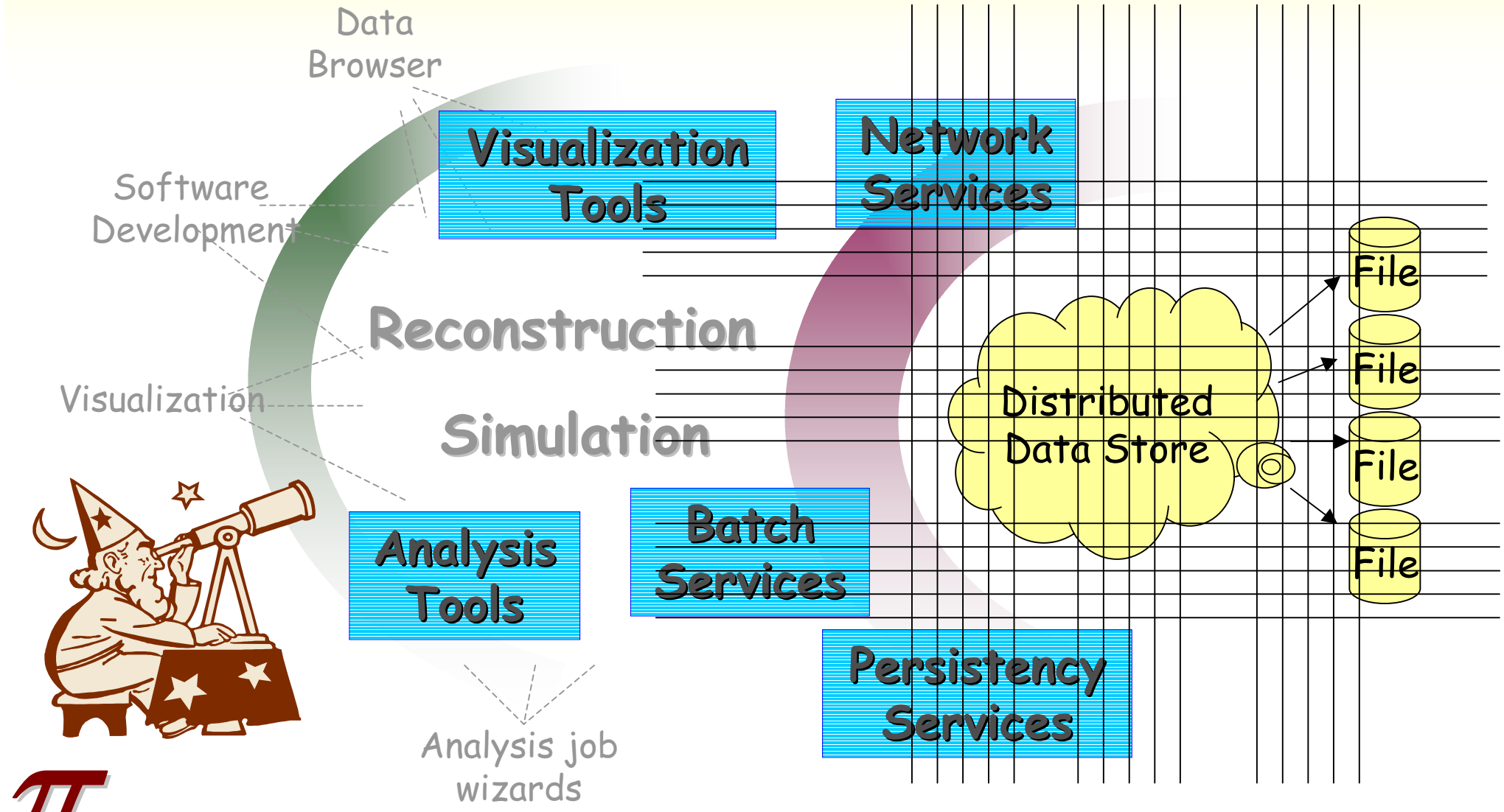
Coherent Analysis Environment
(chep01)



“Blueprint” PI-Breakdown

- **Interactivity**
  - Physicist’s desktop
- **Analysis Tools**
  - Binned and unbinned statistical analysis
    - Data manipulation and transformation
    - Analysis (fitting) engine
    - Inspection of results
- **Visualization**
  - Data and results of statistical analysis
  - Event simulation, reconstruction
- **Distributed analysis**
  - Transparent access to “grid” resources
    - “bsub” on the wan…
    - “root” on the wan…
  - Tools to implement experiment’s analysis model
- **Grid Portals**
  - Transparent access to “grid” resources
  - Custom solution tailored to LHC experiment needs
    - Event collection handing
    - Metadata browsing
    - VDP definition
    - …

Architecture

Blueprint component architecture

Technologies

- **Python**
  - Generation of Python bindings:
    - Boost, Swig, Sip, Cable
  - “Develop” python tools for an interactive environment
- **Qt**
  - “Develop” a common set of Qt services for HEP specific GUI
  - “Develop” GUIs for Event Display, Statistical analysis, …
  - KDE?
- **OpenInventor**
  - “Develop” a common set of high-level OI primitives
  - “Develop” a OI Event Display framework

Technologies

- **AIDA**
  - Review AIDA in the context of LHC experiment's analysis environment
  - Review AIDA in the context of the Blueprint architecture
  - Review current AIDA compliant libraries
- **Root**
  - Develop an AIDA binding to ROOT
    - *Access Root objects though an AIDA interface*
  - Develop Root-plugins for AIDA compliant libraries
    - *Use AIDA objects from inside Root*
  - Plug Root on the physicist's desktop
    - Open communication channels between Root and the other π applications

Technologies

- **GRID**
  - Interface to LCG middleware
  - Opportunistic computing vs deamon/client-server
    - Condor vs Proof
  - Web-services
  - Distributed MetaData and catalogs
    - Distributed RDBMS
    - Grid Replication services
  - End-user software “distribution”
  - End-user data management

First Steps

- **Tour Experiments to identify**
  - Requirements
  - Priorities
  - Constrains
  - Possible contributions
- **Meet with "Providers"**
  - Root team
  - IT/API
  - Grid (LCG, EU, US projects)
  - LCG-AA developers
  - …
- **Establish**
  - an initial team
  - a short term working plan