

Physicist Interface

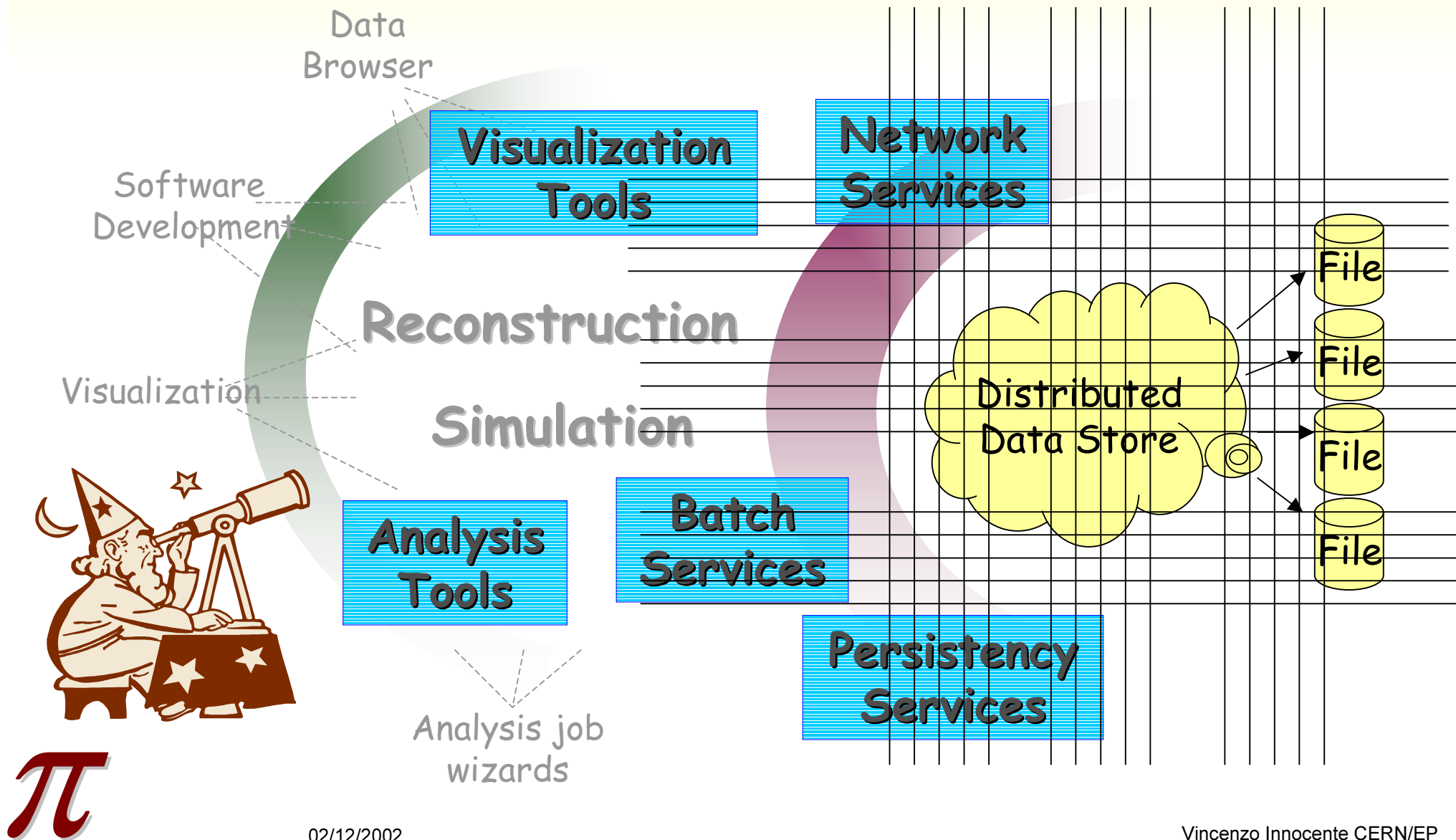
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Coherent Analysis Environment (chep01)



“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 through 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 daemon/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