WCD Computing Update

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Water Cherenkov Detector II, 2010/01/30

Outline

Overview

Online Report

Offline Report

Infrastructure Report

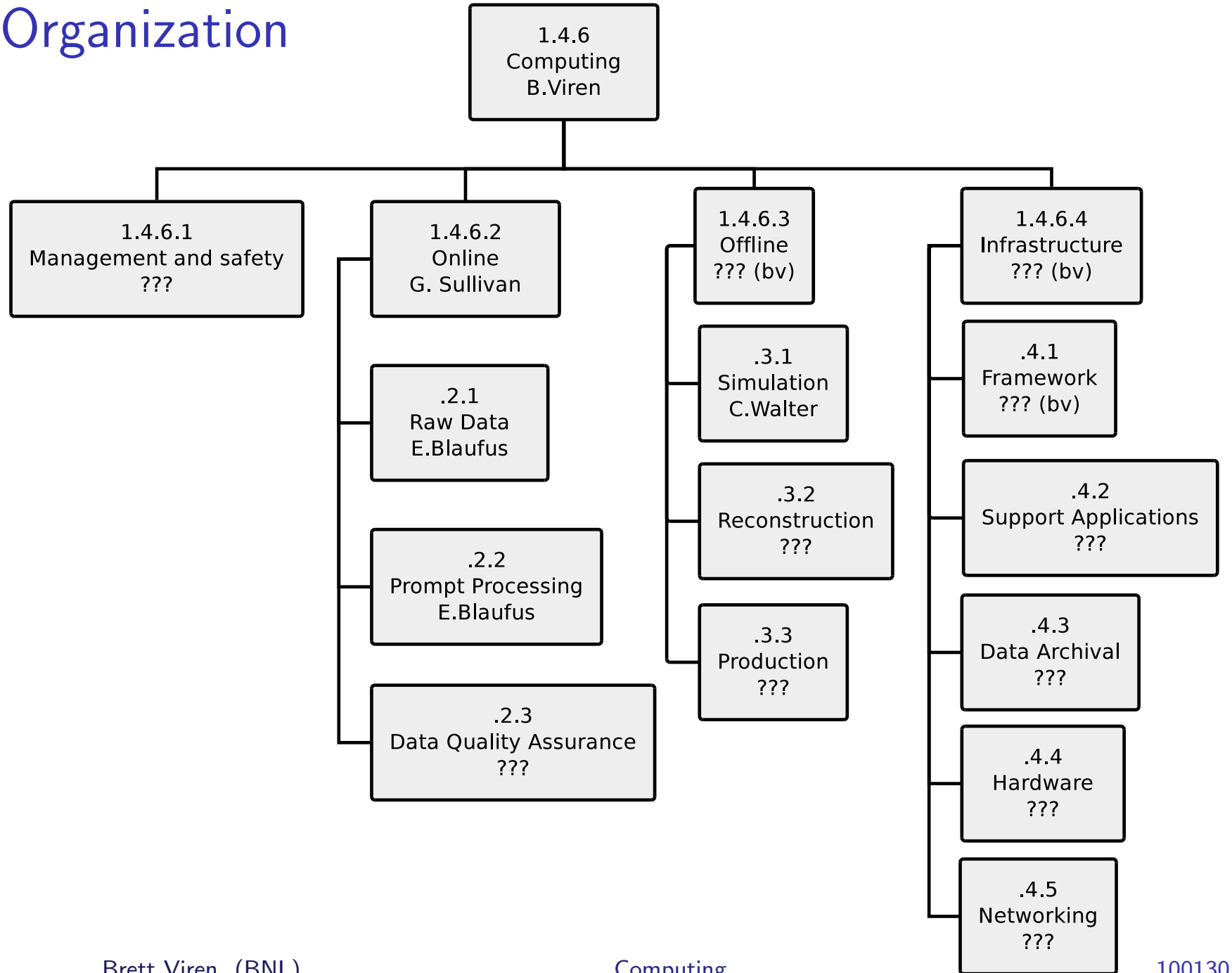
Milestones

WBS Dictionary	done
Preliminary requirements, initial draft	done
Preliminary requirements, due	2/15
Draft Conceptual Design	4/15
Baseline Conceptual Design	5/15
Assessment of design alternatives	5/15
Cost Estimate for CD-1	6/1
Contingency analysis for CD-1	8/1

Internal Review

- Latter part of February
- 3-4 hours, connect via EVO
- Chair: Jon Urheim
- Doesn't include simulation (reviewed separately Jan 14)

Organization



Online Report

$\longrightarrow$ Greg

Offline Status

Simulation:

- Just heard from Simulation group
- Manual install of WCSim + GENIE on RACF (B. Bhuyan).
- Automated installer developed (see below)

Existing Computation Resources

BNL RHIC/ATLAS Computing Facility (RACF)

- Scientific Linux 5.3, 64bits
- 10 nodes $\times$ (16 cores, 5.5 TB storage, 24 GB RAM) / node
- Parasitic running on $\sim$2000 similar nodes.
- Work in progress: Xrootd to access storage on all RACF nodes

FNAL:

- ...

Software Framework Status

- Gaudi selected as default, IceTray retained as alternative
- Gaudi And Related Projects Installer (GARPI) (bv)
  - CMT-based installation automation for non-CERN experiments
  - Developed and in testing.
- GARPI based WCSim+Geant4+ROOT installer working
- Software for Long-baseline and Under Ground (SLUG) (bv)
  - In early development
  - To become basis for our eventual software stack.
  - Gaudi/GiGa/DetDesc based project.
  - Initial geometry system in testing. Python driven and flexible.
  - Implementation of SK geometry in development.
  - Also, has GARPI based installation.

Hardware and Networking Status

Computing Hardware:

- Initial CPU and storage requirements estimated (DocDB #506 and requirements doc in prep)
  - $635 + 94 \times N_{year}$ CPU-year needed for year N_{year} of running.
  - $60 + 90 \times N_{year}$ TB archived and live storage
  - Currently LBNE has 160 CPUs and 55 TB disk in RACF, will double this in a year or so.

Networking:

- In talks with BNL's network guru John Bigrow
  - Has determined ESNET is already at Homestake.
  - Will try to set up ongoing connectivity monitoring to test reliability

DOEGrids Virtual Organization Discussion

- Want to exploit Grid resources and/or ATLAS PANDA batch system.
- Job submission requires a grid certificate that is a member of a Virtual Organization (VO).
- We should register an LBNE VO
  - Requires management and VOMS server
  - BNL can handle this, but does FNAL want to do it?
- Certs useful for other things: web authentication, email signing/encrypting.