
ILCSoft Tools

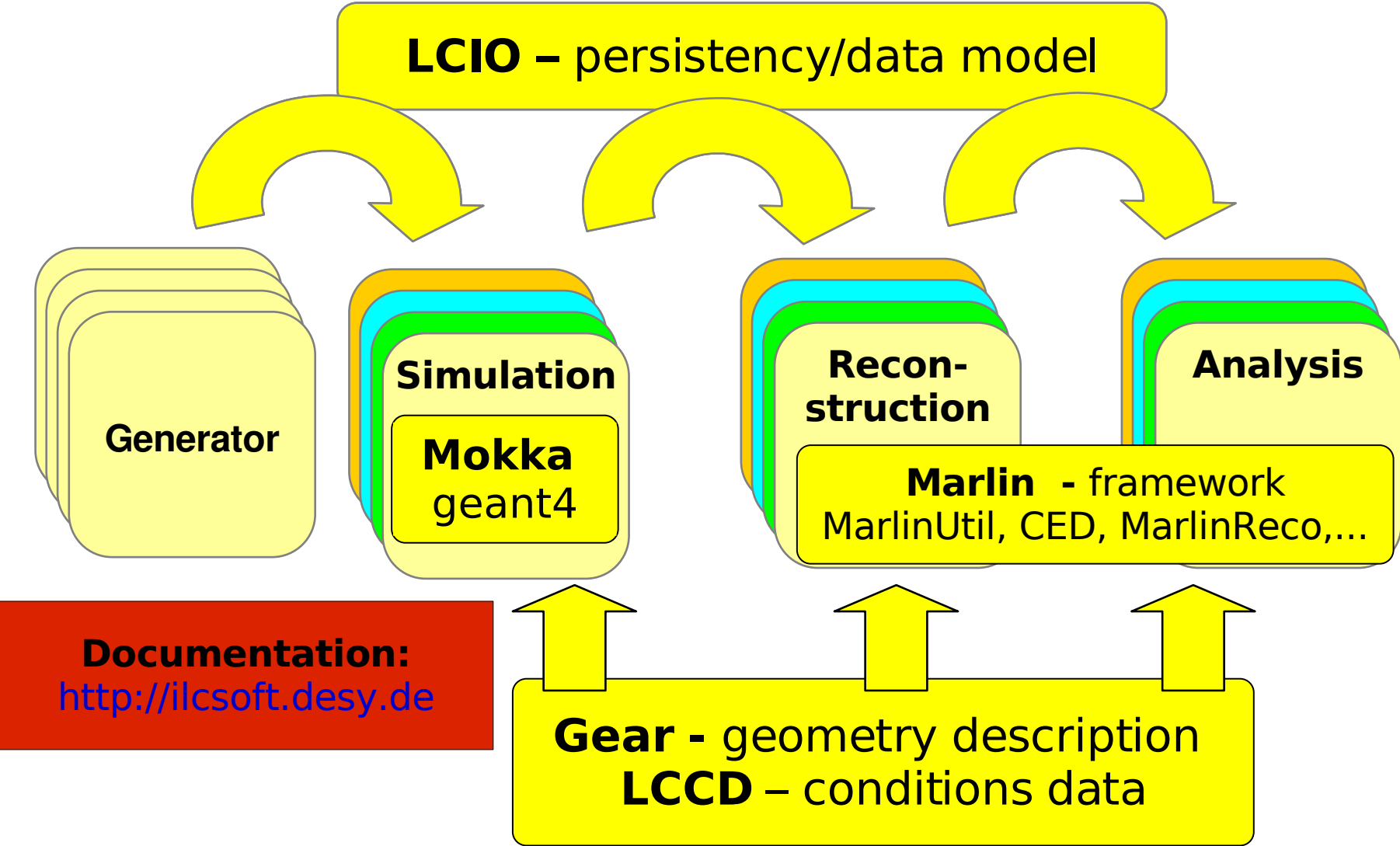
Recent Developments



Jan Engels

3rd EUDET Annual Meeting 2008
6th. October 2008 – Nikhef, Amsterdam

- Overview EUDET ILC Software framework
 - Usage of framework by EUDET activities
- Overview Build Tools
 - ilcinstall
 - cmake
- ILC Software installations and releases
 - AFS reference installations
 - Grid installations
 - Binary Releases
- Improvements ILCSoft Build Tools
- Summary





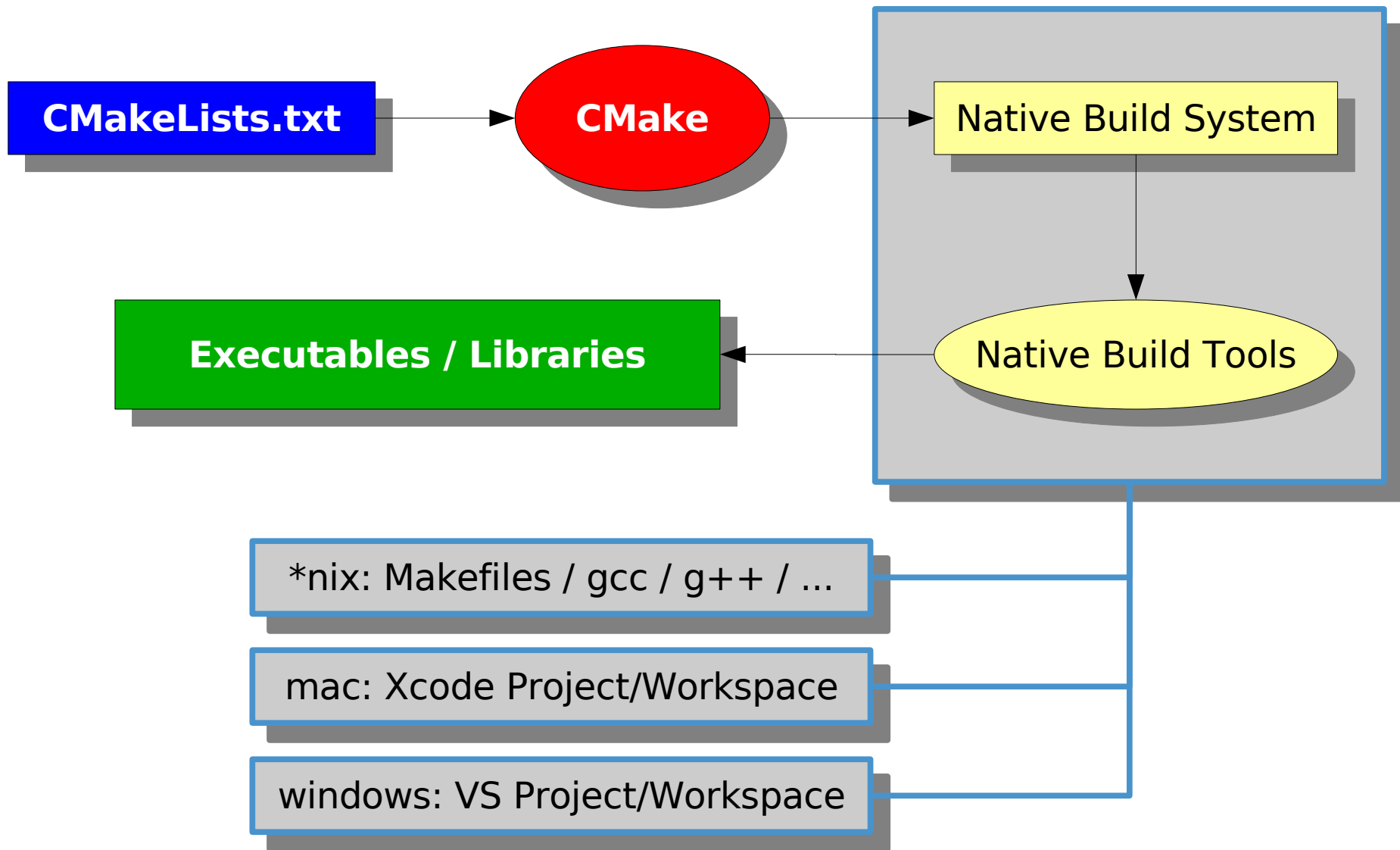
- **JRA3 - CALICE tbeam software**
 - ~35 TB tbeam data taken at DESY, FNAL and CERN
 - fully processed and analysed in ilcsoft framework
 - usage of Mokka, LCIO, Marlin, Gear, LCCD
- **JRA2 – MarlinTPC**
 - very active development of TPC reconstruction and digitization code
 - usage of LCIO, Marlin, Gear, LCCD
- **JRA1 – EU Telescope**
 - first tbeam data taken and analyzed (DESY, CERN)
 - ported existing code to common framework last year and actively used it for test beam analysis
 - usage of Mokka, LCIO, Marlin, Gear



- **ilcinstall** (current version: v01-04)
 - Python script for installing the ilc software framework
 - Support for external packages: CLHEP, GSL, QT, ...
 - Automated features
 - **Dependency-checking**
 - Generate configurations files
 - Auto-detects external packages (cmake, java, qt)
 - No user-intervention required
 - e.g. **Nightly builds**
 - Fully configurable (via configuration file)
 - Use/Link/Install packages
 - **Dynamic** assignment of **environment/cmake variables**
 - Modular, Flexible & Extendable
 - Abstract class for adding new Marlin plugins on-the-fly (**MarlinPKG**)
 - CMake integration
 - ilcsoft is configured with cmake
 - Download URL:
 - http://ilcsoft.desy.de/portal/software_packages/ilcinstall

Successor of GNU auto-tools

- **CMake:**
 - Cross-platform build-system manager
 - Used for building KDE
 - Generates native build environments
 - UNIX/Linux -> Makefiles
 - Windows -> VS Projects/Workspaces
 - Apple -> Xcode
 - Takes as input simple text files (CMakeLists.txt)
 - Simple, intuitive syntax!
 - Support for regular expressions (*nix style)
 - In-source vs Out-of-source builds
 - Modular, Flexible & Extendable
 - Macros, Modules for finding/configuring software, custom targets
 - Integrated Testing (ctest) & Packaging (cpack)
 - Open-Source :)
 - Check www.cmake.org !

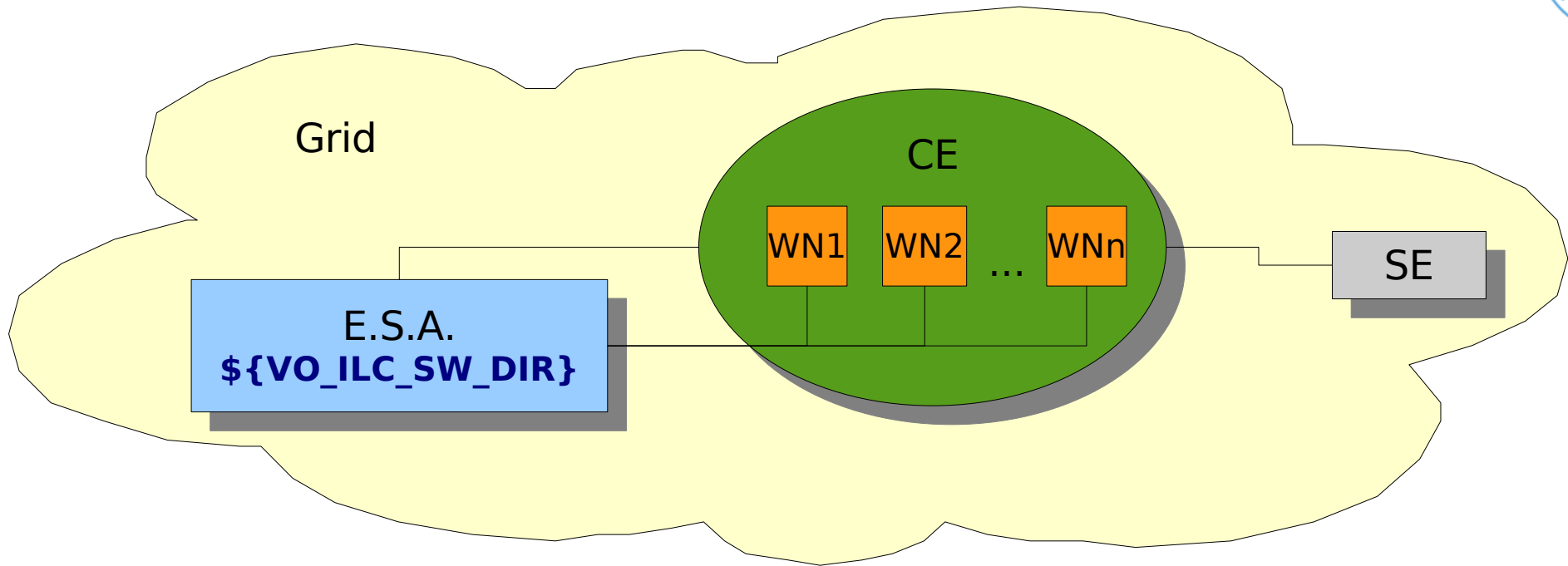


Standalone packages (**without** dependencies) are kept at a lower level

- /afs/desy.de/group/it/ilcsoft/
 - lcio/
 - v01-09
 - v01-10-01
 - gear/
 - v00-08
 - v00-09
 - clhep/
 - 2.0.3.1
 - 2.0.3.2
 - gsl/
 - 1.6
 - 1.8
 - ...

Releases are placed in sub-directories (e.g. **v01-04**)
Links are used for referring packages at a lower level

- /afs/desy.de/group/it/ilcsoft/v01-04/
 - lcio/v01-10-01 -> link to ../lcio/v01-10-01
 - gear/v00-09 -> link to ../gear/v00-09
 - clhep/2.0.3.2 -> link to ../clhep/2.0.3.2
 - gsl/1.8 -> link to ../gsl/1.8
 - Marlin/v00-10-03
 - MarlinUtil/v00-11
 - MarlinReco/v00-10-04
 - ...



- Currently installed on the grid: **v01-03-06, v01-04**
 - **root installation recently fixed!**
- Installations available at: `#{VO_ILC_SW_DIR}/ilcsoft/sl4/`
- Easy setup:
 - `. #{VO_ILC_SW_DIR}/initILCSOFT.sh v01-04`
- Check documentation:
 - http://ilcsoft.desy.de/portal/general_documentation -> "Grid Installations"

- Web page for checking ilcsoft grid installations and status
 - <http://ilcsoft.desy.de/grid/results/User.html>

ILC Software Grid Tests (User)

[Overview](#)
[Install Status](#)

CE	SW-VER	SW-OS	DATE	TIME	SYS	SE	SAM	JOB	TAGGED	HIST-LOGS
cclcgceli01.in2p3.fr	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
cclcgceli02.in2p3.fr	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
ce.bfg.uni-freiburg.de	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
ce.glite.ecdf.ed.ac.uk	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
ce01.dur.scotgrid.ac.uk	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
ce01.tier2.hep.manchester.ac.uk	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
fal-pygrid-18.lancs.ac.uk	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
grid-ce3.desy.de	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
grid10.lal.in2p3.fr	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
lcg-ce1.ifh.de	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
lcgce02.gridpp.rl.ac.uk	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
polgrid1.in2p3.fr	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History
svr021.gla.scotgrid.ac.uk	v01-04	sl4	2008-09-25	15-14-43	OK	OK	OK	OK	VO-ilc-ilcsoft-v01-03-06-sl4 VO-ilc-ilcsoft-v01-04-sl4	History

Almost all sites upgraded to SL4



New!

- Tarballs available on the web containing ilcsoft binary releases:
 - http://ilcsoft.desy.de/portal/general_documentation/ -> "ILCSoft binary release tarballs"
 - Same binaries as in grid/afs reference installations
 - initialization script ([initILCSOFT.sh](#)) available
 - **Simple and easy setup:**
 - wget "<http://ilcsoft.desy.de/ilcsoft-bin-releases/v01-04/v01-04-sl4-32bit-with-root.tgz>"
 - tar xzvf v01-04-sl4-32bit-with-root.tgz
 - . initILCSOFT.sh v01-04
 - Marlin -h
 - export MARLIN_DLL="libMarlinReco.so:libPandoraPFA.so:libLCFIVertex.so"
 - Marlin -x > mysteer.xml
 - ...



Moving over to SVN



- Planning to [switch to SVN soon!](#)
- New [Central SVN Server](#) setup by [DESY Zeuthen](#):
 - <https://svnsrv.desy.de/>
 - Features:
 - Web interface: <https://svnsrv.desy.de/viewvc>
 - Public checkout: <https://svnsrv.desy.de/public>
 - Generated Tarballs
 - Uses grid certificate for developers
- [Advantages](#) of SVN:
 - [Atomic commits](#)
 - More [intuitive interface](#)
 - [Global commits](#)
 - cp/mv/rm files/directories
 - ...





- ilcinstall
 - New **patch-feature**:
 - e.g. `ilcsoft.patch = ["001-v01-04-3264bit"]`
 - New feature for **multi-core** systems:
 - `ilcsoft.env["MAKEOPTS"] = "-j4"`
 - **KEK Soft** (<http://jlccvs.kek.jp/>) integration in progress:
 - **Jupiter** already installable!
 - **SVN** support **soon available!**
 - <https://svnsrv.desy.de>
 - to be released soon!





- Planning to switch to **CMake 2.6** soon!
 - User-friendly GUI
 - Generation of dependency-graphs
 - Improved cross compiling (64 bit systems)
 - Lots of bug fixes and improvements
- Builds on **64 bit systems**:
 - **32 bit compatibility mode**
 - requires **CMake 2.6**
 - can be tested with ilcinstall patch [001-v01-04-3264bit](#)
 - **64 bit native builds**
 - work in progress!
 - still experimental!



- EUDET ilcsoft framework v01-00 available since last year
- EUDET report 2007-11 (F. Gaede, J. Engels)
- Focused on LOI Monte Carlo mass production
 - 15 M events fully simulated and reconstructed
- Main improvements on the build system
- Binary releases
- Working on 64 bit compatibility
- Integrating KEK Soft
- Updating Documentation

Thank you! Your feedback is welcome!