

Glossary of acronyms used in CMS presentations

ACWP	A ctual C ost of W ork P erformed
ANL	A rgonne N ational L aboratory, national laboratory in the suburbs of Chicago
AOD	A nalysis O bject D ata – the data format that contains just the physics objects for analysis and references to the data from which they were reconstructed.
API	A pplication P rogramming I nterface
ARDA	A rchitectural R oadmap towards D istributed A nalysis. LCG RTAG defines this for the project.
ASCB	A dvisory S oftware and C omputing B oard, advising the US CMS S&C project manager. Consists of ex-officio members, including the CCS and US CMS RP managers, the US physics coordinator and US CMS collaboration board chair, and also has elected members.
B&R	B udget and R eporting, the accounting name of the DOE funding source
BA	B udget A uthority – project management lingo: what you are allowed to spend.
BCWS	B udgeted C ost of W ork S cheduled
BNL	B rookhaven N ational L aboratory, national laboratory in Long Island, NY. The host lab for US-ATLAS.
CAS	C ore A pplication S oftware, subproject of the US CMS S&C project delivering engineering effort to CCS as a US contribution to CMS, and engineering support for the US CMS community, designated L2 manager Robert Clare/UC Riverside
Castor	M ass S torage S ystem developed and in use at CERN
CB	C ollaboration B oard for USCMS
CCS	C omputing and C ore S oftware project, Level-2 task in the CMS experiment, project lead David Stickland/Princeton, technical coordinator Lucas Taylor/Northeastern University
CE	C ompute E lement, term used in Grids to denote any kind of computing interface like a job entry or batch system

Chimera	Grid middleware component, GriPhyN deliverable, implementing a Virtual Data management system
CMSIM	CMS Geant3-based (Fortran) s imulation program
CMS	Compact M uon S olenoid experiment at the LHC at CERN -- compact does not necessarily mean "small", though
Condor	Grid middleware (Condor-G) developed at UW Madison
COBRA	CMS application framework
CPT	Computing and Core Software, P hysics Reconstruction and Selection, Trigger and DAQ, realizing that these three CMS Level-2 tasks need to be closely coordinated. Has joint meetings, including 2 CPT weeks per year, and a joint technical board
CPU	Central P rocessing Unit
CS	Computer S cience, US LHC is closely working with several computer science groups, including at UW Madison, U.Chicago, ANL, LBNL, U.Florida, U.Minnesota
CS-11	PPDG work area, on Interactive Analysis
DAGman	Grid middleware component to manage interdependent Grid jobs, provided by the Condor team
DAQ	D ata A cquisition
DAR	D istribution a fter r elease, distribution tool for binary software
DAWN	ITR Proposal D ynamic W orkspaces E nabling Scientific Discovery, submitted to the NSF jointly by US Atlas and US CMS, with Alice participation, as a collaboration between US CS groups and the US LHC program. The proposed project would provide Dynamic Workspaces capabilities to communities of scientists working in a Grid environment. PI John Huth/Harvard, co_PIs LATBauerdick/Fermilab, Miron Livny/UW Madison, Margot Selzer/Harvard, Rick Stevens/U.Chicago and NAL
DC04	D ata C hallenge planned for February 2004, CMS Level-2 milestone, exercising the CMS data streaming at a 5% level, to verify the computing model and to prepare for the Computing TDR

dCache	disc cache system developed at DESY and Fermilab, providing a hierarchical storage access solution, in use for CMS at Fermilab and US Tier-2 centers, also in production use for CDF
DDD	D etector D escription D atabase
DGT	D evelopment G rid T estbed
DPE	D istributed P roduction E nvironment that US CMS is putting together to automatically run CMS simulation applications on VDT/EDG-based Grids
EDG	E uropean D ata G rid project, initiated at CERN and EU countries, has developed a set of Grid services build upon VDT
Edge Computing Systems	Systems providing the interface between the CERN Tier-0 and Tier-1 centers; to facilitate data streaming and distribution
EGEE	EU proposal to the Sixth Framework solicitation, to provide Grid operations support in Europe and middleware engineering
Enstore	Mass Storage System developed and in use at Fermilab
EPP	E lementary P article P hysics
ESnet	US E nergy S cience n etwork
ESD	E vent S ummary D ata in event data structure hierarchy, ~200 kB/event
FAMOS	Fast Simulation
FAST	networking project of interest to LHC networks to develop high-throughput TCP-base internet connections
FB	F inance B oard of the CMS collaboration
FTE	F ull T ime E quivalent effort of one person -- FTE year is one years worth effort of one person
GAE	G rid enabled A nalysis E nvironment, Caltech project
GAG	L CG G rid A pplications G roup, defines "Grid Use Cases" for the LHC experiments, experiments reps (CMS has Rick Cavanaugh/UFlorida) and some Grid project participation (for the US Ruth Pordes/Fermilab)
GDB	G rid D eployment B oard of the LCG, with country representatives from regional centers (US rep: Vicky White/Fermilab)

Geant4	Object oriented detector and physics simulation package, replaces Geant3, which is Fortran-based
GECSR	ITR proposal Globally Enabled Collaboratories for Scientific Research , submitted to the NSF jointly by US Atlas and US CMS, PI: Harvey Newman
GFAL	Grid File Access Library , Grid middleware components provided by the LCG
GGF	Global Grid Forum , a forum to agree on Grid engineering standards and to follow the technical evolution of Grids
Globus Toolkit	Grid middleware toolkit developed by ANL, ISI
GOC	Grid Operations Center
Grid3	joint project between iVDGL, PPDG and the US LHC software and computing projects during the second half of 2003, to provide a VDT-based, cross-institution and cross-experiment Grid platform for LHC application. Milestone Nov 03 to demonstrate Grid performance with specific metrics
GridFTP	Grid version of the File Transport Protocol for moving large datasets between storage elements within a data grid
GriPhyN	Grid Physics Network , US Grid Project, NSF-funded, providing Grid technologies centered around the idea of Virtual Data
GSI	Grid Security Infrastructure , Grid middleware component Public Key-based, provided by the Globus Toolkit
HCAL	Hadron Calorimeter of CMS
HE(N)P	High Energy (and Nuclear) Physics
HICB	High Energy Physics international Grid coordination Board , chair Larry Price/ANL
HPSS	High Performance Storage System – joint IBM, DOE labs, CERN MSS system

IGT	Integration Grid Testbed, used to test and integrate Grid components and the CMS Distributed Processing Environment, before deployment in production
IGUANA	CMS visualization program
INFN	Italian organization for HEP and nuclear physics research
ISI	Information Sciences Institute, a dedicated institute operated by the University of Southern California.
ITR	NSF program for Information Technology and Research, that is funding several US LHC related projects, like GriPhyN, iVDGL and several "small" projects. The DAWN and the GECSR proposals were also submitted to the ITR solicitation
iVDGL	international Virtual Data Grid Laboratory, NSF project, PIs Paul Avery/UFlorida, Ian Foster/ANL, project coordination Mike Wilde/ANL and Rick Cavanaugh/UFlorida
Jlab	Thomas Jefferson Laboratory, formerly CEBAF
JOG	Joint Oversight Group, DOE and NSF oversight of the US LHC, construction and research program; chairs John O'Fallon and Jack Lightbody
Kerberos	security infrastructure based on passphrases, used by modern operations systems (Windows NT, MacOSX) and basis for security infrastructure at national labs and some Universities
L2PM	Level 2 Project Manager
LBL	Lawrence Berkeley National Laboratory, national laboratory run by the University of California.
LCG	CERN LHC Computing Grid Project
LCG-1	LCG milestone: initial deployment of a functional persistent LCG Grid
LCG-AA	Application Area (work package) of the LCG project
LCG-GDA	LCG Grid Deployment Area, leader Ian Bird/CERN, responsible for deploying the LCG Grid infrastructure
LHC	the Large Hadron Collider at CERN

LHCC	CERN LHC Committee, scientific and technical oversight of the LHC
M&O	Maintenance and Operations
M&S	Materials and Services
MB	Management Board of CMS
Mantis	validation framework for CMS GEANT4 simulation
MCAT	Grid middleware component, Meta Data Catalog used by SRB
McRunjob	CMS and D0 project, Workflow Planner for Grid Production Processing, used for CMS worldwide simulation production and for all D0 Monte Carlo processing
MDS	Grid middleware component “Meta Data System”, providing a Grid information service, part of the Globus toolkit
ME	Muon Endcap systems of the CMS detector
MonALISA	Grid middleware component, Monitoring infrastructure based on "intelligent agents" implemented through a distributed services architecture, developed at Caltech, used in the US CMS testbed and slated to become part of the VDT
MOP	Monte Carlo Production tool
MOU	Memorandum of Understanding
MSS	Mass Storage System, denoting tape storage libraries and other tertiary storage systems
NAS	Network attached storage
OC12	Wide area networking standard providing a bandwidth of 622 Mega bits per second
OGSA	Open Grid Services Architecture, the next generation Grid architecture based on Web Services, Globus Toolkit 3 is being implemented using this standard
OGSI	Open Grid Services Infrastructure, Grid infrastructure based on OGSA
OSG	Open Science Grid is the proposed joint US LHC Grid in the US that would provide an open Grid services infrastructure that facilities provider

and service provider could participate in, and that Application alliances like the LHC experiments or other scientific organizations could use

ORCA	CMS Reconstruction Program
OSCAR	CMS Geant4 Simulation Program
OSCC	Open Science Consortium, the proposed organizational structure to facilitate building the OSG and other joint Grid projects in the US, peering with international Grid efforts including the EGEE, with proposed initial constituency of the LHC labs, Grid PIs, Tera Grid
OSG	Open Science Grid, proposed roadmap towards an open US national grid infrastructure for science
PAC	Physics Analysis Center
Pacman	Grid middleware component for Packaging and distribution of software, developed at Boston U., supported by the iVDGL, used by the VDT, Atlas and CMS
Pasta	CERN future computing capabilities report, last issued 2002 evaluates and predicts future industry capabilities, costs
PCP	CMS Pre-challenge production, fully simulating 50 Million events in preparation of the DC04 milestone
PEB	LCG Project Execution Board, executes the LCG project, chair Les Robertson/CERN, US membership from Grid projects (Ruth Pordes/Fermilab) and Middleware Providers (Miron Livny/UW Madison)
Peta	1000 x Tera or 1 million times Giga or 10^{15}
PG	US CMS production Grid
PMG	Project Management Group, exercising project oversight of US CMS S&C, chair Hugh Montgomery/Fermilab
PNFS	Software component “perfectly normal file system” used by dCache
PO	Project Office
POB	LCG Project Oversight Board, oversees the LCG project and reports to the LHCC and RB

POOL	LCG software system and project, developed with US participation, to replace the Objectivity database system in the US LHC software and to provide object storage ("persistence") and data management tools
POP	Networking Point of Presence of a network provider
PPDG	Particle Physics Data Grid project, DOE funded, PIs: Harvey Newman/Caltech, Richard Mount/SLAC, Miron Livny/UW Madison, project coordination Doug Olsson/LBNL, Ruth Pordes/Fermilab
Profound	PRS foundation for CMS physics reconstruction and selection
PRS	CMS Physics Reconstruction and Selection project, consisting of physics groups that prepare CMS event reconstruction, triggers and event selections
R&D	Research and Development
RAL	Rutherford Appleton Lab, LHC Tier-1 center in the UK
Raw	Raw detector data in event data structure hierarchy, ~1,5 MB/event
RB	CERN Research Board
RB	Grid middle ware component Resource Broker, that brokers the running of Grid jobs, making use of information services to obtain grid status information about available resources, and schedules jobs. The EDG has developed an implementation of a resource broker
RefDB	CMS database to handle production assignments and to manage CMS datasets
RFIO	Remote File IO library used mostly at CERN and DESY
RGMA	Grid middleware component providing a Grid information management system, developed by the EDG in collaboration with IBM
RLI	Grid middleware component, Replica Location Interface, used to distribute RLS information
RLS	Grid middleware component, Replica Location Service, providing information about location of data sets within the data grid. EDG and Globus (ISI at USC) have both developed implementation of RLS
ROOT	HEP software package for object oriented physics data analysis

RP	US LHC R esearch P rogram
(C-)RRB	CERN R esource R eview B oard and Computing- R esource R eview B oard; funding agencies representation, fiscal oversight of LHC project
RTAG	LCG R equirements and T echnical A ssessment G roups, that the SC2 starts to provide technical and policy input into the LCG project
S&C	Software & Computing (as part of the US CMS Research Program)
SC	Steering C ommittee of the CMS collaboration
SC2	LCG S oftware and C omputing C ommittee, sets requirements for the LCG project, with experimental reps and some regional center representation. US regional center rep LATBauerdick/Fermilab, US middleware expert Ian Foster/ANL
SCOP	Software and Computing Oversight Panel, peer review body of the PMG to review and advise project oversight and project management
SE	Storage Element, term used in Grids to denote any storage interface
SEAL	Shared E nvironment for A pplications LCG project
SI2000	SpecInt 2000, Standardized CPU Performance Benchmark based on integer operations – a modern PC CPU has about 800 SI2000
SOW	Statement of Work, yearly updated document between the US LHC projects and US institutions defining the work assignments and budget allocation for the fiscal year
SRB	Grid middleware component Storage Resource Broker for data management, developed by the San Diego Supercomputing Center with support from PPDG
SRM	Grid middleware component Storage Resource Manager for data management and virtualization of storage interfaces, developed by LBNL with support from Jefferson Lab and Fermilab, PPDG supported
STAG	Strategy and Technical Advisory Group, a committee of experts who advise the Grid Technology area of the LCG project.
StarLight	US networking hub in Chicago providing very high bandwidth networking capabilities

SurfNet	networking organization in the Netherlands, with a 2.5Gbps line to StarLight in Chicago
T1	Tier-1
T2	Tier-2
TDR	Technical Design Report
Tier-1	First tier in the hierarchy of LHC regional center, Tier-0 is the facility at CERN taking, reconstructing and storing the data. In the US Tier-1 centers will be at BNL and Fermilab
Tier-2	regional computing facilities at University institutions providing a distributed Grid of facilities. The LHC expects to have about 10 Tier-2 centers in the US
TriDAS	Trigger and Data Acquisition Software (CPT component)
Trillium	the three US HEP-related Grid projects, iVDGL, GriPhyN and PPDG are coordinating their activities and are collectively called Trillium
UAF	User Analysis Facility for physicists to run analysis jobs
UC	University of California
UF	User Facilities subproject of USCMS S&C, to deliver the computing facilities in the US to allow US physicists to fully participate in the LHC research program, and to provide the US share of computing resources to CMS. Level-2 manager is Ian Fisk/Fermilab
UI	User Interface, term used in the EDG to denote the user interface machine to any of the Grid service, like a Grid portal etc.
US CMS	The group of US institutions in the CMS collaboration. Collaboration chair is Harvey Newman/Caltech
US CMS RP	US CMS Research Program, which consists of the US CMS Software and Computing Project and of US CMS Detector Maintenance and Operations. RP manager is Dan Green/Fermilab
VCR	Virtual Control Room , (component of the US CMS M&O program) to allow US physicists to man shifts and control the experiment (and the LHC) without leaving the country.

VDT	Virtual Data Toolkit, providing deployment and integration of US Grid middleware to the Trillium and US LHC projects, most notable components are the Globus Toolkit and Condor
Virtual Data	GriPhyN deliverable... concept that data can be stored as the information about how it can be reproduced
VO	Virtual Organization, that uses and shares a Grid infrastructure
VOMS	Grid middleware component Virtual Organization Management System, provided by the EDG
VOX	joint USCMS iVDGL Fermilab BNL project Virtual Organization Management extensions
WBS	project management term for Work Breakdown Structure,
WN	Worker Node, term used to denote any kind of processing unit, like a CPU farm node