
ATLAS Glossary

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Purpose of the ATLAS Glossary

- Definitions of ATLAS and related acronyms
- Definitions (and acronyms) of ATLAS terminology and jargon
- Standard ways to write ATLAS terminology, to ensure consistency
 - If you decide that you must do things differently, e.g. capitalization, then at least do it in a consistent way

Further sources

- [Athena Startup Kit Glossary](#)
- [Grid Acronym Soup](#)
- [HEP Acronyms from FNAL](#)

Main ATLAS Glossary

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\$ **AANT** Athena Nware NTuple.

\$ **ABC** ATLAS Binary Chip (Inner Detector).

\$ **ABCD** ATLAS Binary Chip in DMILL technology for SCT readout.

\$ **ABCD3TA** ABCD version 3 with trim DACs, revised version.

\$ **ACR** ATLAS Control Room.

\$ **ADA** ATLAS Distributed Analysis system.

\$ **ADC** Analogue to digital converter *or* [ATLAS Distributed Computing](#).

\$ **AFS** Andrew File System. A distributed network file system that enables file sharing from any machine running the AFS daemon.

\$ **AGILe** A Generator Interface Library.

\$ **AID** Analysis, Interpretation, Display (RTT).

\$ **AIDA** Abstract Interface for Data Analysis.

\$ **AIP** Alarm Integration Procedure.

\$ **ALFA** Absolute Luminosity For ATLAS.

\$ **Alpgen** Multi-parton process Monte Carlo event generator.

\$ **AMI** See [ATLAS Metadata Interface](#).

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- \$ **AMT** Atlas Muon TDC.
 - \$ **AOD** Analysis Object Data. Reduced size output of physics quantities from the reconstruction.
 - \$ **API** Application Program Interface.
 - \$ **ARA** [AtlasProtected.AthenaROOTAccess](#)
 - \$ **ARC** Advanced Resource Connector - NorduGrid (Grid).
 - \$ **ARDA** A Realization of Distributed Analysis of LHC (Grid).
 - \$ **ARTEMIS** A research training network for experimental HEP and phenomenology.
 - \$ **ASAP** Atlas Spectrometer Alignment Program.
 - \$ **ASDBLR** Amplifier, Shaper, Discriminator, and Baseline Restorer. The analogue front-end chip used in the Transition Radiation Tracker.
 - \$ **ASIC** Application-Specific Integrated Circuit. A custom-made chip.
 - \$ **A-side** The two ends of ATLAS are called the 'A-side' and the 'C-side' ('B' is the central barrel). The A-side is along the positive z-axis and is in the direction of the airport and the Saleve.
 - \$ **ASK** Athena Startup Kit.
 - \$ **Athena** ATLAS offline software framework.
 - \$ **ATCN** ATLAS point 1 Control Network.
 - \$ **Atlantis** ATLAS standalone event display.
 - \$ **ATLAS** A Toroidal LHC ApparatuS.

 - \$ **ATLAS Metadata Interface (AMI)** Tool to find datasets and obtain detailed information on them.
 - \$ **ATLCAL** Disk pool for ATLAS calibration data.
 - \$ **ATLDATA** Disk pool for ATLAS tier-0 reconstructed data.
 - \$ **ATLFAST** Software package for fast particle-level simulation.
 - \$ **ATN** Atlas Testing Nightly. A testing framework FOR nightly builds of ATLAS software releases.

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- \$ **barrel** The central-rapidity region of the ATLAS detector.
- \$ **BC** See Bunch-crossing.
- \$ **BCID** See Bunch-Crossing Identification *and/or* Bunch-Crossing Identifier (ambiguous).

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- \$ **BCM** Beam Conditions Monitor.
 - \$ **BC-MUX** Bunch-crossing multiplexing. Used in the Level-1 Calorimeter Trigger to double the number of trigger towers per serial link.
 - \$ **BCR** See Bunch Counter Reset.
 - \$ **beam 1** The LHC beam which rotates clockwise when seen from above. In ATLAS it goes from positive z to negative z.
 - \$ **beam 2** The LHC beam which rotates anti-clockwise when seen from above. In ATLAS it goes from negative z to positive z.
 - \$ **BER** Bit-Error Rate.
 - \$ **BDII** Berkely Database Information Index (LCGG GIIS replacement).
 - \$ **BGA** Ball-grid array (a technology for connecting chips with very large numbers of connections).
 - \$ **B-layer** The innermost layer of the Pixel Detector.
 - \$ **BNL** Brookhaven National Lab.
 - \$ **BOC** Back of Crate.
 - \$ **BPM** Beam Position Monitor.
 - \$ **BPTX** ATLAS beam pick-up detectors, 175 m from the detector.
 - \$ **BST** Beam Synchronous Timing.
 - \$ **Bunch Counter Reset (BCR)** Signal broadcast by the TTC system once per LHC orbit (88.924 microseconds) to control the phase of local bunch counters.
 - \$ **bunch-crossing (BC)** Proton-proton bunch crossing in the the LHC. The bunch spacing is 24.95 ns.
 - \$ **bunch-crossing identification (BCID)** The assignment of detector data to a specific bunch crossing.
(**ROD_BCID**) A 12-bit number that defines the bunch crossing at which an event occurred. It is provided by the TTC system to tag event fragments, and is reset each LHC orbit. Starts following LHC extractor gap, goes up to 3563.
 - \$ **ByteStream** The raw data from the detector, consisting of hierarchically arranged fragments formatted in a subdetector-dependent way.
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- \$ **C++** Primary programming language used in ATLAS.
- \$ **CA** Certification Authority (Grid).

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- \$ **CAF** CERN Analysis Facility.
 - \$ **calorimeter cell** The smallest unit of calorimeter information to be read out.
 - \$ **CANbus** Control Area Network. A field bus for controlling and monitoring, used in the Detector Control System.
 - \$ **CASTOR** CERN Advanced STORage Manager.
 - \$ **Cathode Strip Chamber (CSC)** Muon chambers in the endcaps, used for both triggering and precision reconstruction.
 - \$ **CBNT** ComBined N-Tuples.
 - \$ **CE** Computing Element (Grid).
 - \$ **Central Trigger Processor** The part of the Level-1 Trigger System that combines results from the Level-1 Calorimeter Trigger and Level-1 Muon Trigger to make the global yes/no Level-1 Trigger decision for each bunch crossing.
 - \$ **CERN** European Laboratory for Particle Physics.
 - \$ **CINT** A C/C++ interpreter that is embedded in ROOT.
 - \$ **CLHEP** Class Library for HEP.
 - \$ **clock** The 40.08 MHz clock linked to the LHC machine bunch-crossings.
 - \$ **Cluster Processor (CP)** The part of the Level-1 Calorimeter Trigger that carries out the electron/photon and tau/hadron triggers.
 - \$ **CMM** Common Merger Module of the Level-1 Calorimeter Trigger.
 - \$ **CM** Coincidence Matrix of the Level-1 Muon Trigger.
 - \$ **CMT** Configuration Management Tool, used for building software releases, package dependency management, and setup of the run-time environment.
 - \$ **CondDB** See Conditions Database.
 - \$ **Conditions Database (CondDB)** Contains records of the detector conditions for all data taking. This includes calibration and any other parameters required for the data analysis.
 - \$ **CondorG** Grid Batch System.
 - \$ **ConfDB** See Configuration Database.
 - \$ **Configuration Database (ConfDB)** Stores the parameters necessary to describe the experiment's architecture, hardware and software components.
 - \$ **COOL** LCGG Conditions Database Project.
 - \$ **coordinate system** In ATLAS the x-axis points towards the centre of the LHC ring, the y-axis points upwards, and the z-axis points towards the airport and the Saleve, i.e. towards the A-side.
 - \$ **CORBA** Common Object Request Broker Architecture.
 - \$ **COTS** Commodity/Commercial Off-The-Shelf.

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- \$ **CP** See Cluster Processor.
 - \$ **CPLD** Complex Programmable Logic Device.
 - \$ **CPM** Cluster Processor Module of the Level-1 Calorimeter Trigger.
 - \$ **CSC** Computer System Commissioning *or* see Cathode Strip Chamber.
 - \$ **C-side** The two ends of ATLAS are called the 'A-side' and the 'C-side' ('B' is the central barrel). The C-side is along the negative z-axis and is in the direction of the Jura.
 - \$ **CTB** Combined Test Beam.
 - \$ **CTP** See Central Trigger Processor.
 - \$ **CVS** Concurrent Versioning System. Allows sharing of source code among a distributed development team. Code can be browsed and checked out. Records history of file modifications and allows retrieval of previous versions.

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- \$ **DAC** Digital to analogue converter.
- \$ **DAL** Data Access Library.
- \$ **DAQ** See Data Acquisition System.
- \$ **DAQ/HLT** Collective term for Data Acquisition System and High-Level Triggers.
- \$ **Data Acquisition System (DAQ)** System responsible for the assembly and permanent storage of events accepted by all three levels of the trigger system (Level-1, Level-2 and Event Filter). Comprises Data Flow, Online and Detector Control Systems.
- \$ **Data Collection (DC)** A subsystem of the Data Flow System, responsible for the movement of event data from the ROS to the Level-2 Trigger System, to the Event Filter, and also to mass storage.
- \$ **Data Collection Framework** A set of services used by all Level-2 and Event Builder applications, which provides a unified program structure and common interfaces to the Configuration Database, Run Control and other online software services.
- \$ **Data Flow Manager** Orchestrates the correct flow of data fragments between ROSs and SFIs. It is triggered by the Level-2 Supervisor, load balances the event-building tasks on the SFIs, and ensures that the ROSs do not overflow their internal memory buffers.
- \$ **Data Flow System (DF)** All software and hardware required for the management, transportation, and monitoring of physics data.
- \$ **DBMS** Database Management System.
- \$ **DC** Data Challenge *or* see Data Collection.

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- \$ **dCache** Disk Cache System. Transparently manages the storage and exchange of data which is distributed across various storage devices.
 - \$ **DCS** See Detector Control System.
 - \$ **DDC** DAQ-DCS Communication.
 - \$ **derandomizer** The memory in which data corresponding to a Level-1 Accept are stored before being read out.
 - \$ **Detector Control System (DCS)** The system that monitors and controls physical parameters of the subsystems of the experiment, such as gas pressure, flow-rate, high voltage settings, low-voltage power supplies, temperatures, leakage currents, etc.
 - \$ **DF** See Data Flow.
 - \$ **DIAL** Distributed Interactive Analysis of Large datasets.
 - \$ **DIG** Detector Interface Group.
 - \$ **DM** Data Management.
 - \$ **DN** Distinguished Name (Grid certificate).
 - \$ **doublet** Part of the muon spectrometer, consisting of two layers of thin-gap chambers.
 - \$ **DPD** Derived Physics Data.
 - \$ **DQ** Don Quixote, distributed data manager (Grid).
 - \$ **DQM, DQMF** Data Quality Monitoring, Data Quality Monitoring Framework.
 - \$ **DRD** Derived Reconstruction Data.
 - \$ **DSB** Doublet Slave Board of the Level-1 Muon Endcap Trigger.
 - \$ **DTMROC** Digital Time Measurement Readout Controller. The digital front-end chip used in the Transition Radiation Tracker.

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- \$ **EB** See Event Builder, *or* ATLAS Executive Board *or* Tile Calorimeter Extended Barrel.
- \$ **EBIF** Event Builder Interface.
- \$ **ECal** Liquid argon Electromagnetic Calorimeter.
- \$ **ECR** See Event Counter Reset.
- \$ **EDM** Event Data Model.

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- \$ **EDG** European Data Grid project.
 - \$ **EF** See Event Filter.
 - \$ **EGEE** Enabling Grid for E-sciencE.
 - \$ **ELMB** Embedded Local Monitor Board of the Detector Control System.
 - \$ **EMB** Liquid argon Electromagnetic Barrel calorimeter.
 - \$ **EMEC** Liquid argon Electromagnetic Endcap Calorimeter.
 - \$ **EMI** Electromagnetic interference.
 - \$ **EMS** Event Monitoring Sampler.
 - \$ **endcaps** The high-rapidity regions of the ATLAS detector.
 - \$ **ESD** Event Summary Data. Provides sufficient information to re-run parts of the reconstruction, as AOD information may not be enough.
 - \$ **event** The data resulting from a particular bunch-crossing.
 - \$ **Event Builder (EB)** The subsystem that combines data corresponding to one event from all the sub-detectors. This takes place after acceptance by the Level-2 Trigger.
 - \$ **Event Counter Reset (ECR)** Signal broadcast by the TTC system to reset local event counters.
 - \$ **Event Filter (EF)** The third level of event selection, responsible for reducing the trigger rate to a value acceptable for permanent storage as well as doing data monitoring and calibration, using offline-style algorithms operating on complete events accepted by the Level-2 Trigger.
 - \$ **event fragment** Generic term for a subset of event data. Examples are ROD and ROB fragments.
 - \$ **Event.ID (EVID)** A number that identifies an event uniquely within a run.
 - \$ **event type** See trigger type.
 - \$ **EVO** Enabling Virtual Organizations.

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- \$ **FADC** Flash Analogue to Digital Converter.
- \$ **FC** File Catalogue.
- \$ **FCal** Liquid argon Forward Calorimeter.
- \$ **FE** See Front-end electronics.

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- \$ **FE_BCID** A 12-bit number corresponding to the bunch number in the LHC machine, to identify the bunch crossing. It is generated locally in the RODs, reset by BCR, and used to cross-check against ROD_BCID when identifying event fragments to be read out.
 - \$ **FE_L1ID** A number, of 3-4 bits, corresponding to the event number and generated locally in the RODs by counting Level-1 Accept signals. It is used to cross-check against L1ID when identifying event fragments to be read out.
 - \$ **FIR** Finite-Impulse Response. A type of digital filter, used in Bunch-crossing identification.
 - \$ **FLUKA** Monte Carlo program used to simulate electromagnetic and hadronic particle showers in the ATLAS detector. Used for radiation calculations.
 - \$ **FORTRAN** Programming Language.
 - \$ **FP420** Forward Proton tagging in the 420 metre region.
 - \$ **FPGA** Field-Programmable Gate Array.
 - \$ **front-end electronics (FE)** The detector subsystems which generate and send trigger data to the Level-1 Trigger, and event data to their RODs for transmission to the data acquisition system.
 - \$ **FSI** Frequency Scanning Interferometry.
 - \$ **FSM** Finite State Machine.
 - \$ **FTP** File Transfer Protocol.

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- \$ **GACL** Grid Access Control List.
- \$ **GANGA** Gaudi/Athena Grid user interface.
- \$ **Gaudi** Data processing applications framework. Originally developed by and shared with LHCb experiment.
- \$ **GCS** Global Control Station of the Detector Control System.
- \$ **GE** Gigabit Ethernet.
- \$ **GEANT** Pan-European Gigabit Research and Education Network.
- \$ **Geant 4** A general Monte Carlo simulation package for describing detector geometry and tracking particles through detector material. Used to simulate the response of the ATLAS detector.
- \$ **GID** Global event IDentifier.
- \$ **GLIMOS** Group Leader In Matters Of Safety.
- \$ **gLite** Lightweight middleware for Grid computing.

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- \$ **Globus** Grid middleware.
 - \$ **GLUE** Grid Laboratory Uniform Environment.
 - \$ **GNAM** Gnam is Not AtIMon. Online monitoring software system.
 - \$ **GridFTP** Protocol extensions to FTP for the Grid.
 - \$ **GSI** Grid Security Infrastructure.
 - \$ **GUI** Graphical User Interface.
 - \$ **GUID** Globally Unique Identifier (in POOL files and Grid catalogs).

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- \$ **HBOOK** Legacy histogramming package.
- \$ **HCal** Hadronic Calorimeter (Tile Calorimeter barrel, Liquid-argon Hadronic Endcap Calorimeter).
- \$ **HEC** Liquid-argon Hadronic Endcap Calorimeter.
- \$ **HepMC** C++ event record for Monte Carlo generators.
- \$ **HEP** High-energy physics.
- \$ **HERWIG** A Monte Carlo package for simulating Hadron Emission Reactions With Interfering Gluons.
- \$ **High-Level Triggers (HLT)** Collective term for the Level-2 Trigger and the Event Filter, the two trigger levels that are implemented primarily in software.
- \$ **HLT** See High-Level Triggers.
- \$ **High-pT board** Board of the Level-1 Muon Trigger system that implements the high-pT muon trigger.
- \$ **HOLA** High-speed Optical Link for ATLAS.
- \$ **HSM** Hierarchical Storage Management.
- \$ **HTML** HyperText Mark-up Language.
- \$ **HVS** Hierarchical Versioning System.

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- \$ **ID** See Inner Detector.

\$ **IDC** Identifiable Container.

\$ **IGUI** Integrated Graphical User Interface.

\$ **Inner Detector** The inner tracking detector of ATLAS, made up of the Pixel, Semi-Conductor (SCT) and Transition Radiation (TRT) Trackers.

\$ **interval of validity (IOV)** The time interval during which an entry in the Conditions Database is valid.

\$ **IOV** See Interval Of Validity.

\$ **IP** Interaction Point.

\$ **IPC** Inter-Process Communication.

\$ **IS** Information Service of the online software.

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\$ **Java** Programming language.

\$ **JCOP** Joint Controls Project.

\$ **JEM** Jet/Energy Module of the Level-1 Calorimeter Trigger.

\$ **JEP** See Jet/Energy-sum Processor.

\$ **jet element** The smallest elements, 0.2x0.2 in eta-phi, used to form transverse-energy sums for the jet trigger. They are summed over the combined depth of the electromagnetic and hadronic calorimeters.

\$ **Jet/Energy-sum Processor (JEP)** The part of the Level-1 Calorimeter Trigger that carries out jet, missing-ET and total-ET triggers.

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\$ **Kerberos** A network authentication protocol.

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- \$ **L1** See Level-1 Trigger System.
- \$ **L1A** See Level-1 Accept.
- \$ **L1Calo** See Level-1 Calorimeter Trigger.
- \$ **L1ID** A 24-bit number corresponding to the event number defined by counting Level-1 Accept trigger signals. It is provided by the TTC system to tag event fragments.
- \$ **L1Muon** See Level-1 Muon Trigger.
- \$ **L2** See Level-2 Trigger System.
- \$ **L2PU** See Level-2 Processing Unit.
- \$ **L2SV** See Level-2 Supervisor.
- \$ **LAr or Larg** Liquid argon; see Liquid Argon Calorimeters.
- \$ **LAN** Local Area Network.
- \$ **LCG** LHC Computing Grid.
- \$ **LCS** Local Control Station of the Detector Control System.
- \$ **LDAP** Lightweight Directory Access Protocol.
- \$ **Level-1 Accept (L1A)** A signal generated by Central Trigger Processor when an event has met the Level-1 Trigger criteria. It is distributed by the TTC system.
- \$ **Level-1 buffer** Buffer (analogue or digital) in the front-end electronics that retains the event data until the Level-1 Accept result is received.
- \$ **Level-1 Calorimeter Trigger (L1Calo)** The part of the Level-1 Trigger System based on information from the calorimeters. Trigger objects are e.m. (electron/photon) showers, taus, jets, missing ET and total ET.
- \$ **Level-1 Muon Trigger (L1Muon)** The part of the Level-1 Trigger System based on information from the muon detectors. Trigger objects are high-pT muons.
- \$ **Level-1 Trigger System (L1 or LVL1)** The first level of event selection, consisting of the Level-1 Calorimeter and Muon Triggers and the Central Trigger Processor, responsible for reducing the event rate from the bunch-crossing rate of 40 MHz to no more than 75 kHz. Based on custom hardware and uses a subset of detector data. For accepted events, it issues Level-1 Accept to the front-end electronics.
- \$ **Level-2 Processing Unit (L2PU)** The application running on one of the Level-2 processors, from which the Level-2 Trigger decision is derived.
- \$ **Level-2 Supervisor (L2SV)** The interface between the Level-1 and Level-2 Triggers via the RoI Builder. It is responsible for distributing events to the Level-2 farm and manages the computing resources by means of load balancing algorithms. L2SV receives the final Level-2 Trigger decision on an event based on the result from the L2PUs.

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- \$ **Level-2 Trigger System (L2 or LVL2)** The second level of event selection, responsible for reducing the trigger rate from about 75 kHz (upgradeable to 100 kHz) to a rate acceptable to the Event Filter, ~ 2.5 kHz. Uses Regions-of-Interest from the Level-1 Trigger to selectively read out only certain parts of the detector.
 - \$ **LFN** Logical File Name.
 - \$ **LHC** Large Hadron Collider.
 - \$ **Liquid Argon Calorimeters (LAr or Larg)** The barrel (EMB) and endcap (EMEC) electromagnetic calorimeters, the endcap hadronic calorimeters (HEC), and the forward calorimeters (FCal).
 - \$ **LMB** Local control Monitor Board of the Level-1 Muon Endcap Trigger.
 - \$ **LSF** Load Sharing Facility.
 - \$ **LS-Link** Local slave link. A cable link between slave boards in the Level-1 Muon Endcap Trigger logic via which data are read out.
 - \$ **LTP** Local Trigger Processor, a module used to general Level-1 Triggers when running independently of the Central Trigger Processor, e.g. for tests or calibration.
 - \$ **LUCID** LUminosity measurement using Cerenkov Integrating Detector.
 - \$ **LUT** Lookup Table.
 - \$ **LVDS** Low-voltage Differential Signalling.
 - \$ **LVL1** See Level-1 Trigger System.
 - \$ **LVL2** See Level-2 Trigger System.
 - \$ **LVL3** See Event Filter.

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- \$ **M&O** Maintenance and Operation.
- \$ **MBTS** Minimum Bias Trigger Scintillator.
- \$ **MC** Monte Carlo simulation.
- \$ **MDA** Monitoring Data Archive.
- \$ **MDS** Monitoring and Directory Service (Grid).
- \$ **MDT** See Monitored Drift Tube.
- \$ **Message Reporting System (MRS)** A facility that allows software components of the TDAQ system to report error messages to other components.

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- \$ **MIBAK** Backplane that connects modules of the MUCTPI.
 - \$ **MICTP** Module of the MUCTPI that drives data to the CTP.
 - \$ **MIOCT** Module of the MUCTPI that processes data for a muon spectrometer area of one octant in phi and half the detector in eta.
 - \$ **MIROD** Module of the MUCTPI that supplies data to the Level-2 Trigger System (for RoI building) and to the Readout Buffers.
 - \$ **MONARC** Models Of Networked Analysis at Regional Centres.
 - \$ **MoU** Memorandum of Understanding.
 - \$ **Monitored Drift Tube (MDT)** Muon chambers used for precision reconstruction, in both barrel and endcaps.
 - \$ **MOORE** muon Object Oriented REconstruction.
 - \$ **MRS** See Message Reporting System.
 - \$ **MSSM** Minimal SuperSymetric Model.
 - \$ **MTBF** Mean Time Between Failures.
 - \$ **MTTF** Mean Time To Failure.
 - \$ **MUCTPI** Level-1 Muon Trigger to CTP Interface.

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- \$ **NIM** Nuclear Instrumentation Module. A modular system of fast logic, used for trigger systems in particle-physics experiments in much simpler times (1960s-80s). Still in use, most commonly in test-beam triggering.
- \$ **NOVA** Networked Object-based Environment for Analysis.

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- \$ **OBK** Online Book Keeper of the online software.
- \$ **Octant** A collection of Thin Gap Chambers comprising one-eighth of a Level-1 Muon trigger plane in azimuth.

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- \$ **OHP** Online Histogram Presenter.
 - \$ **OHS** Online Histogramming Service.
 - \$ **OKS** Object Kernel Support. A package that provides a simple, active, persistent in-memory object manager which is used to implement run-time configuration databases.
 - \$ **OLE** Object Linking and Embedding.
 - \$ **OMD** Operational Monitoring Display.
 - \$ **OO** Object Oriented software.
 - \$ **Open Science Grid** US Grid system.
 - \$ **Orbit** A signal transmitted by the LHC to the TTC at a fixed point in the LHC cycle. The ORBIT signal is the broadcast to the TTC partitions.
 - \$ **OS** Operating System.
 - \$ **OSG** See Open Science Grid.
 - \$ **OTSMOU** Operation Task Sharing and Maintenance & Operation Update.

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- \$ **Pacman** Package Manager for software.
- \$ **partition** The physical or logical separation of one or more elements of the experiment into mutually exclusive subsets. Allows subdetectors to work independently; see TDAQ partition.
- \$ **PASTA** LCGG technology tracking team.
- \$ **PAW** Physics Analysis Workstation (legacy data analysis package).
- \$ **PBS** Portable Batch System.
- \$ **PESA** Physics and Event Selection Architecture.
- \$ **PID** Partition Identifier.
- \$ **pivot plane** Plane of chambers that defines the Rol position in the muon Resistive Plate Chambers or Thin Gap Chambers. Equivalent to 'reference plane'.
- \$ **Pixel Tracker** The innermost layers of the Inner Detector.
- \$ **PMG** See Process Manager.
- \$ **PMT** Photomultiplier tube.
- \$ **POOL** Pool Of persistent Objects for LHC.

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- \$ **PPM** PreProcessor Module of the Level-1 Calorimeter Trigger.
 - \$ **PPr** See PreProcessor.
 - \$ **PreProcessor (PPr)** The part of the Level-1 Calorimeter Trigger that digitizes the calorimeter signals, does bunch-crossing identification, and uses a lookup table to do final ET calibration.
 - \$ **PPrASIC** PreProcessor ASIC of the Level-1 Calorimeter Trigger.
 - \$ **PPrMCM** PreProcessor Multi-Chip Module of the Level-1 Calorimeter Trigger.
 - \$ **prescale factor** Reduces the rate of events accepted by a specific Level-1 Trigger logic item.
 - \$ **Process Manager (PMG)** Performs basic job control of TDAQ software (starting, stopping, and monitoring basic status).
 - \$ **processing node** The hardware on which one or more Level-2 Processing Units or Event Filter processing tasks run.
 - \$ **PROOF** Parallel ROOT Facility.
 - \$ **PS-Pack** Patch-panel and slave-board package of the Level-1 Endcap Muon Trigger.
 - \$ **PV** Primary Vertex.
 - \$ **PVSS** Prozessvisualisierungs-und Steuerungs-System (Process Visualization and Control System). Commercial software used by the Detector Control System.
 - \$ **PYTHIA** A Monte Carlo program used to generate simulated proton-proton interactions for various physics processes.
 - \$ **Python** An interpreted, interactive, object-oriented, open-source programming language.

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- \$ **RAL** Relational Access Layer *or* Rutherford Appleton Laboratory.
- \$ **raw data** Data provided by the front-end electronics to the readout buffer.
- \$ **RB** Resource Broker (Grid).
- \$ **RC** See Run Control, *or* Replica Catalog (Grid).
- \$ **RCD** ROD crate DAQ.
- \$ **RDBMS** Relational Database Management System.
- \$ **RDO** Raw Data Object. The data as it comes off the detector.

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- \$ readout buffer (ROB or ROBin)** A standard module that receives data from one or more RODs via standard Readout Links, passes on request a subset of the data to the Level-2 Trigger, and buffers the data until a Level-2 Trigger decision has been reached. It then sends the data to the Event Builder.
- \$ Readout Driver (ROD)** The detector-specific last element in the readout chain that is still considered part of the front-end electronics. Collects data streams from the Derandomizers and merges them into a single stream which is fed via a standard Readout Link into a Readout Buffer.
- \$ Readout Link (ROL)** The ATLAS-standard data-transmission link between a ROD and a ROB.
- \$ ROOT** A class library for data analysis, with extensive facilities including data display, persistency, minimization, etc.
- \$ Readout System (ROS)** The first element in the readout chain that is considered part of the Data Acquisition System. Collects data from Readout Drivers via Readout Links and supplies it to the Level-2 Trigger and the Event Builder.
- \$ Receiver Station** Modules into which analogue trigger-tower signals from the calorimeters are received, and their gains adjusted to be on a calibrated scale proportional to ET. Signals are also available for waveform monitoring by the calorimeter groups.
- \$ RecExCommon** A CMT run-time environment for reconstruction.
- \$ reference plane** Plane of chambers that defines the RoI position in the muon Resistive Plate Chambers or Thin Gap Chambers. Equivalent to 'Pivot plane'.
- \$ region-of-interest (RoI)** A geographical region of the experiment, identified by the Level-1 Trigger System as containing candidates for Level-2 Trigger objects requiring further computation.
- \$ Region-of-Interest Builder (RoIB)** A unit that collects and formats level-1 Region-of-Interest information and sends it to the Level-2 Supervisor for use by the Level-2 Trigger.
- \$ Resistive Plate Chamber (RPC)** Muon chamber used for the Level-1 Muon Trigger in the barrel region.
- \$ RFIO** Remote File I/O.
- \$ RHEL** Redhat Enterprise Linux.
- \$ RIO** Reconstruction Input Object.
- \$ RLS** Replica Location Service (Grid).
- \$ ROB or ROBin** See Readout Buffer.
- \$ ROB fragment** Set of ROD fragments for one event within one Readout Buffer.
- \$ ROC** Readout Crate (specific implementation of a ROS) *or* ROD Controller module for Liquid Argon Calorimeters.
- \$ ROD** See Readout Driver.
- \$ ROD_BCID** See Bunch-Crossing_Identifier.
- \$ ROD_BUSY** A signal to indicate that the ROD is busy, used to inhibit Level-1 Triggers.

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- \$ **ROD fragment** Data provided by the front-end electronics to the Readout System for one event.
 - \$ **RoI** See Region-of-Interest.
 - \$ **RoIB** See Region-of-Interest Builder.
 - \$ **ROL** See Readout Link.
 - \$ **ROOT** A class library for data analysis.
 - \$ **ROS** See Readout System.
 - \$ **ROS fragment** The set of ROB fragments for one event within a ROS. Deprecated.
 - \$ **RPC** See Resistive Plate Chamber.
 - \$ **RSL** Resource Specification Language (Grid).
 - \$ **RT** Real-time.
 - \$ **RTAG** Requirements Technical Assessment Group (LCGG).
 - \$ **Run Control** The online software system that controls data-taking by coordinating operation of the TDAQ subsystems, online software components, and external systems.

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- \$ **SBC** Single-board Computer. For example, controlling the VMEbus and running software for the modules in the VME crate.
- \$ **SCADA** Supervisory Control and DAQ.
- \$ **SCT** Semiconductor Tracking detector.
- \$ **SCX** Surface Control Room.
- \$ **SDP** Software Development Process.
- \$ **SDO** Simulation Data Objects.
- \$ **SDX** Surface Counting Room.
- \$ **SE** Storage Element (Grid).
- \$ **SEAL** The Shared Environment for Applications at LHC.
- \$ **SFI** See Sub-Farm Input.
- \$ **SFO** See Sub-Farm Output.
- \$ **SG** See Storegate.

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- \$ **SGE** Sun Grid Engine.
 - \$ **SI2K** SpecInt2000 CPU benchmark.
 - \$ **SIM** Simulated Data, in RAW Format.
 - \$ **SIT** Software Infrastructure Team of ATLAS.
 - \$ **SL** Scientific Linux *or* Sector Logic of the Level-1 Muon Trigger.
 - \$ **SLC** Scientific Linux CERN.
 - \$ **SLHC** Super LHC. Refers to LHC after major future luminosity upgrade.
 - \$ **SLIMOS** Shift Leader In Matters Of Safety.
 - \$ **S-Link** Simple Link interface. Protocol for data transmission on Readout Links.
 - \$ **SRM** Storage Resource Manager (Grid).
 - \$ **STL** Standard Template Library of C++.
 - \$ **StoreGate** The transient data store for ATHENA.
 - \$ **Sub-Farm Input (SFI)** The part of the Data Collection subsystem where full events are built by the Event Builder.
 - \$ **Sub-Farm Output (SFO)** The part of the Data Collection subsystem where complete events received from the Event Filter are output to mass storage.

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- \$ **TAG** Event-level metadata.
- \$ **TCP/IP** Transmission Control Protocol/Internet Protocol.
- \$ **TDAQ** Collective term for Trigger, Data Acquisition and Detector Control systems.
- \$ **TDR** Technical Design Report.
- \$ **TDS** Transient Data Store.
- \$ **TES** Transient Event Store.
- \$ **TGC** See Thin Gap Chamber.
- \$ **Thin Gap Chamber (TGC)** Muon chamber used for the Level-1 Muon Trigger and precision muon tracking in the endcap regions.
- \$ **TileCal** See Tile Calorimeter.

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- \$ **Tile Calorimeter (TileCal)** Hadronic barrel and extended-barrel calorimeters of ATLAS, using scintillating tiles as active medium.
 - \$ **Timing, Trigger and Control (TTC)** The system that provides and distributes trigger signals (e.g. Level-1 Accept), timing signals (e.g. LHC clock), and fast control signals to the various subsystems of ATLAS.
 - \$ **TLA** Three-letter acronym.
 - \$ **TOF** Time Of Flight.
 - \$ **trigger chamber** Generic term for Resistive Plate Chambers and Thin Gap Chambers, used in the Level-1 Muon Trigger.
 - \$ **trigger menus** The set of trigger conditions in use at any particular time. They specify a list of items, each with its ET threshold and multiplicity, and the logic to be applied to them.
 - \$ **trigger tower** The smallest element of calorimeter information used in the Level-1 Calorimeter Trigger, with dimensions of approximately 0.1x0.1 in eta-phi and summed over the full depth of either the electromagnetic or hadronic calorimeter.
 - \$ **trigger type** An 8-bit word transmitted with the Level-1 Accept and giving information about the type of event, e.g. physics or calibration.
 - \$ **TriP** Trigger Presenter online software.
 - \$ **Triplet** Three layers of Thin Gap Chambers.
 - \$ **TRT** Transition Radiation Tracker of the Inner Detector.
 - \$ **TSB** Triplet slave board of the Level-1 Muon Endcap Trigger.
 - \$ **TTC** See Timing, Trigger and Control.
 - \$ **TTCex** TTC encoder/transmitter.
 - \$ **TTCmi** TTC machine interface.
 - \$ **TTCrx** TTC receiver chip. An ASIC that delivers the decoded and de-skewed TTC signals, bunch and event counters required by front-end electronics controllers.
 - \$ **TTCvi** TTC VME interface module. Delivers the TTC A-channel and B-channel signals to the TTC transmitter crate. The A-channel transmits only the Level-1 Accept signal. The B-channel transmits framed and formatted commands and data.
 - \$ **TURL** Transfer URL (Grid).

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- \$ **U** Unit of length used to measure rack height, equal to 1.75 inches (4.45 cm).

\$ UI User Interface.

\$ UML Unified Modelling Language.

\$ URL Universal Resource Locator (address used by worldwide web).

\$ US15 ATLAS underground service area. On the positive-x side of UX15, i.e. inside the LHC ring.

\$ USA15 Main ATLAS underground electronics cavern. On the negative-x side of UX15, i.e. outside the LHC ring.

\$ UX15 ATLAS underground experimental cavern.

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\$ VCSEL Vertical-Cavity Surface-Emitting Laser.

\$ VHDL VHSIC (Very high speed integrated circuit) Hardware Description Language. A language for specifying the designs of electronic systems, widely used for FPGA firmware.

\$ VMEbus Versa-Module Euro. A crate backplane bus system.

\$ VO Virtual Organization (Grid).

\$ VOMS Virtual Organization Membership Service (Grid).

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\$ WAN Wide Area Network.

\$ WLS Wavelength-Shifting.

\$ WMS Workload Management System (Grid).

\$ WN Worker Node (Grid).

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\$ **XML** Extensible Markup Language.

\$ **ZDC** Zero-Degree Calorimeter.

\$ **ZEBRA** Legacy data management system.

Originally taken from <http://wlav.home.cern.ch/wlav/athena/athask/glossary.html> and <http://atlas-proj-computing-tdr.web.cern.ch/atlas-proj-computing-tdr/Html/Computing-TDR-72.htm#pgfId-1011143>

Workbook Glossary

Merged Computing Workbook glossary, Style Guide glossary, and some others

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