

# TDAQ Acronyms

## TDAQ Acronyms

This is a compilation of acronyms frequently used in the ATLAS Trigger and Data Acquisition systems. The list emerged from listening to the presentations during the [ATLAS TDAQ week at CERN, May 15-19, 2006](#). It is made up of the acronyms that were most commonly used. It is neither complete nor necessarily 100% correct. For a more comprehensive list, see the [ATLAS TDAQ Glossary](#) compiled by [Marc Dobson](#) from which this heavily draws.

### TDAQ

Trigger and Data Acquisition

### ROS

Read-Out System - A sub-system of the ATLAS TDAQ responsible for reading out the ATLAS RODs and for supplying event fragments to the LVL2 and EB sub-systems.

### ROD

Read-Out Driver - The detector specific Front-End Functional element which gathers data from the derandomizers over one or more data streams and builds ROD fragments of events to be sent to the ROS or RoIB.

### RoIB

Region of Interest Builder - The element which combines RoI information from different parts of LVL1 and forwards it to a LVL2 supervisor.

### RoI

Region of Interest - A region limited in eta and phi, indicated by the LVL1 trigger to contain candidates for objects requiring further computation.

### ROB

Read-Out Buffer - Standard module which receives data from one or more RODs, stores them and makes them available to the LVL2 trigger processors and, for LVL2-selected events, to the EB. Data are stored during the LVL2 build time and for selected events until the event is built in the EB.

### ROBIN

Read-Out Buffer Input Stage

### ROL

Read-Out Link - The physical link between ROD and ROS through which the data are sent at the event rate of the LVL1 trigger.

### ROC

Read-Out Crate - The combined functionality of the LDAQ, TRG, EBIF and one or more ROBs.

### L2PU

Level 2 Processing Unit - The L2PU is the application running on one of the Level-2 processors, hosting the HLT processing algorithms and also incorporating the calculations from which the LVL2 trigger decision is derived.

### L2SV

Level 2 Supervisor - The L2SV is the interface to the LVL1 system via the RoI Builder. It is responsible for distributing events to the LVL2 farm/subfarms and manages the computing resources by means of load balancing algorithms. L2SV computes the final LVL2 decision on an event based on the result from the LVL2 Processing Unit. The decision results are communicated to the DataFlow Manager (DFM) so that accepted events can be further analyzed, and rejected events can be flushed from the Read-Out System memory.

### DFM

Data Flow Manager - The DFM orchestrates the correct flow of data fragments between ROSs and SFIs. It is triggered by the L2SV, load balances the event building tasks on the SFIs and ensures that the ROSs do not overflow their internal memory buffers.

### SFI

Sub-Farm Input - Part of the data collection sub-system. The location where full events are built by the EB.

### SFO

Sub-Farm Output - Part of the data collection which outputs to mass storage the complete events received from the EF.

## LVL1

Level 1 Trigger - The ATLAS First Level Trigger system provides a hardware based first trigger decision using only a sub-set of an event's data (Calorimeter and Muon only).

### **Level 1 Calorimeter Trigger**

#### SL

Sector Logic

#### PPM

Preprocessor Module

#### CPM

Cluster Processor Module

#### JEM

Jet/Energy Module

#### CMM

Common Merger Module

### **High Level Trigger**

#### HLT

High Level Trigger - Comprised of both the LVL2 and EF, the two ATLAS trigger levels that are implemented primarily in software.

## LVL2

Level 2 Trigger - The ATLAS Second Level Trigger system provides a software based second stage trigger decision, to reduce the rate of triggers from LVL1 by about a factor of 100. It uses 'Regions of Interest' (RoI) as given by the LVL1 trigger to selectively read out only certain parts of the ATLAS detector hardware and computes a LVL2 trigger decision.

#### EF

Event Filter - The hardware and software required for the final stage of the on-line event selection, data monitoring and calibration using offline style algorithms operating on complete events accepted by LVL2.

#### PESA

Physics Event Selection Architecture

#### DCS

Detector Control System

#### LVPS

#### TTC

Timing, Trigger and Control - Standard system which allows the distribution of timing, trigger and control signals. The system delivers the standard TTC signals such as the LHC clock, L1A and Fast Controls, and provides for the distribution of other detector-specific commands and data.

#### LTP

#### MRS

Message Reporting System - Facility which allows all software components in the ATLAS TDAQ system to report error messages to other components.

#### DDC

DCS to DAQ Communication

#### CTP

Central Trigger Processor - The component that generates the LVL1 Trigger

## MUCTPI

Muon to CTP Interface

## OKS

Object Kernel Support - Package which provides a simple active persistent in-memory object manager which is used to implement run-time configuration databases.

## Detector

### ***Muon System***

#### CSC

Cathode Strip Chamber

#### MDT

Monitored Drift Tube

#### RPC

Resitive Plate Chamber

#### TGC

Thin Gap Chamber

### ***Inner Detector***

#### ID

Inner Detector

#### SCT

Semiconductor Tracker

#### TRT

Transition Radiation Tracker

### ***Experimental Areas***

#### UX15

Underground experimental area 15 (ATLAS cavern)

#### USA15

Underground services area 15 (ATLAS electronics cavern)

### ***Data Formats***

#### AOD

Analysis Object Data - High-level analysis objects, such as traks and clusters. Elsewhere referred to as the "Micro DST".

#### ESD

Event Summary Data - - Hit level information. Sometimes referred to as the "Mini".

## Organization

### TOB

Trigger and Offline Board - Sub-committee of the EB. Consists of: ATLAS Management, Computing and Software Coordinators, Physics Coordinator, TDAQ PLs, Data Preparation Coordinator.