ADAM
ATLAS Data API Mechanism

a generic web interface for the retrieval and display of the ATLAS TDAQ information

ALL IN ONE VIEW

The ATLAS experiment is the largest particle physics experiment ever built. Many systems have been deployed to monitor the detector and the dataflow while running. Most of these systems have their own set of log messages and statistics provided through various custom user interfaces.

The ADAM **project goal is to reduce the time an expert needs to investigate a problem** through the correlation of various statistics. A plug and play mechanism allows any provider to connect to the system, advertise capabilities, and expose its data using a flexible communication protocol named the ADAM interface.

The Vision

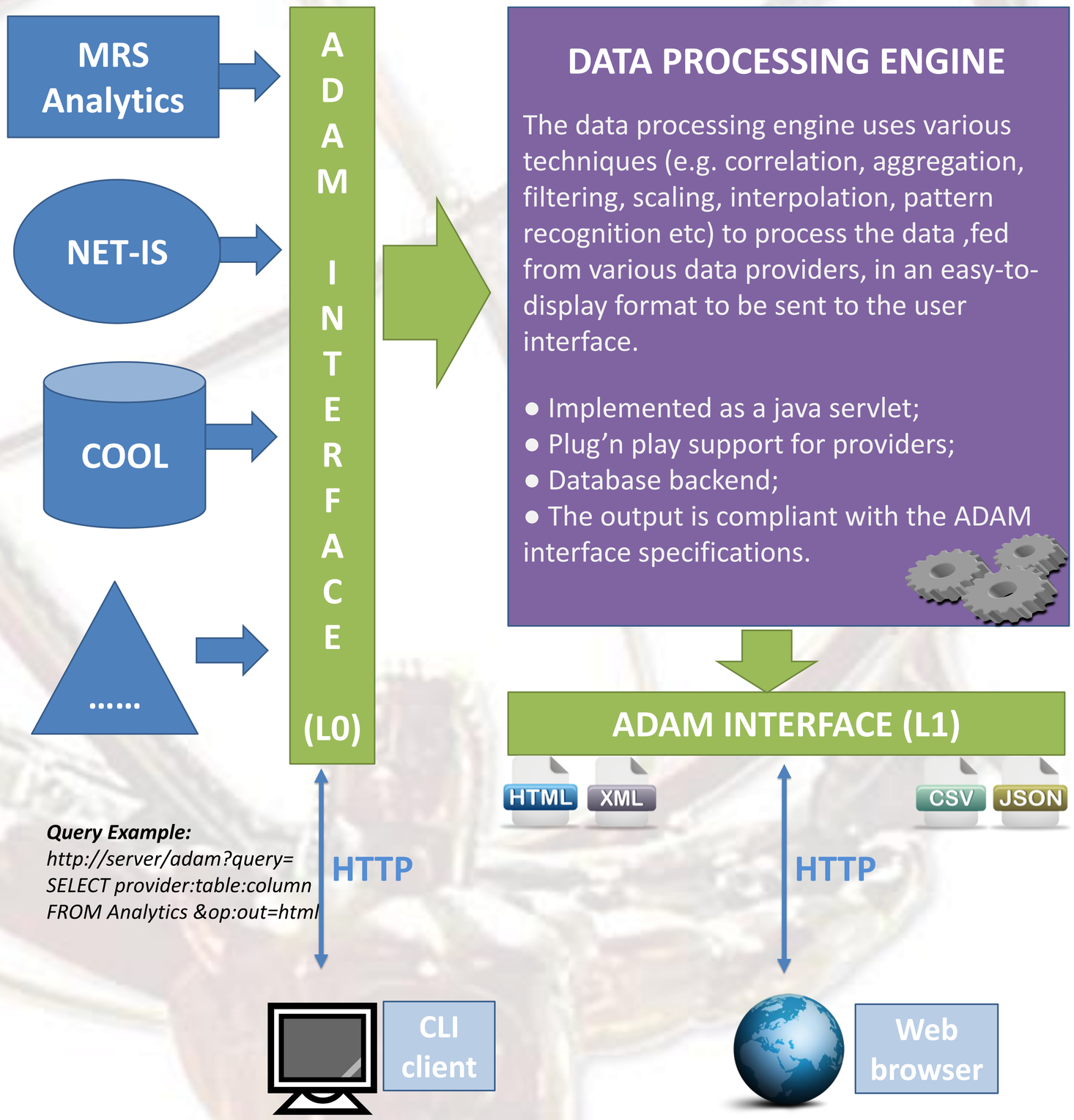
1. Design an **abstraction layer** to deal with data retrieval from all the monitoring applications (the ADAM interface);
2. Build a **correlation and aggregation engine** to mix data from any provider according to user needs;
3. Develop a web-based **visualization interface** to display raw or aggregated data in a meaningful way. The interface was inspired from the Google Visualization project.

The Data

- The ATLAS monitoring systems collects various type of information (e.g. time-series statistics, event-triggered messaged etc) and use many storage technologies for the collected data (e.g. relational databases, RRD files, custom formats etc);
- Some systems have custom interfaces to expose their data to other applications while others have none;
- While the storage technology is an internal aspect of a monitoring system (provider), all the data types recorded by the ATLAS TDAQ monitoring tools are supported by the ADAM interface.

The ADAM interface

- A flexible and highly customizable REST-full interface to transfer formatted data between a server and a client. Data communication is done via HTTP;
- A client has to use a SQL-like query language to ask for provider data;
- Support for various data delivery packaging: XML, JSON, CSV and HTML.



The visualization portal

- User customizable web-based interface;
- Single source or multiple source support, through the data processing engine.
- Easy-to-interpret charts;
- Real-time, interactive graphs;
- Adjustable and configurable chart displays;
- Hierarchical plot pages navigation supporting user defined branches.

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