

## **ANES, Atlas Network Supervisor (or Expert System)**

The Atlas TDAQ network has over 200 network devices and more than 5000 active ports. Because the traffic is not regular user traffic but experiment data traffic, the behavior of the network can provide useful information to the network team; if everything is working as expected or if there is (or will be in near future) any problems.

Currently, for monitoring the data flow inside Atlas TDAQ network, there are installed various systems that gather detailed information about network traffic. This information is stored and presented to operators (mainly the networking team) as network activity graphs. Because the system architecture and network activity are very complex, the process of supervising normal network operation represents a difficult task. Thus, anything but the usual network activity should be immediately brought into the attention of the ATLAS networking team.

The goal of the ANES project is to analyze data from various data sources (in our case data sources will be all the implemented monitoring systems for ATLAS TDAQ network) according to a set of predefined rules stored in a knowledge base. When an abnormal activity is detected on the network some users should be notified about this behavior, according to the user role in the system. ANES will be designed in such a way to be easily adapted to different traffic patterns and will have support for plugins and distributed data analysis, in order to avoid CPU bottlenecks. The knowledge base will be updated permanently (both automatically and by user input) to adapt to new needs.