20th International Conference on Computing in High Energy and Nuclear Physics (CHEP2013)

Contribution ID: **260** Type: **Oral presentation to parallel session**

Looking back on 10 years of the ATLAS Metadata Interface: Reflections on architecture, code design and development methods

Thursday 17 October 2013 12:09 (20 minutes)

The "ATLAS Metadata Interface"framework (AMI) has been developed in the context of ATLAS, one of the largest scientific collaborations. AMI can be considered to be a mature application, since its basic architecture has been maintained for over 10 years.

In this paper we will briefly describe the architecture and the main uses of the framework within the experiment (Tag Collector for release management and Dataset Discovery). These two applications, which share almost 2000 registered users, are superficially quite different, however much of the code is shared and they have been developed and maintained over a decade almost completely by the same team of 3 people.

We will discuss how the architectural principles established at the beginning of the project have allowed us to continue both to integrate the new technologies and to respond to the new metadata use cases which inevitably appear over such a time period.

These principles are:
- Integration of a schema description in the AMI databases enabling an advantageous use of generic code
- Modularity, in particular decoupling of generic database and application specific layers
- Benefiting from the "open/closed principle"a well-known concept of object-oriented programming
- Development methods and use of tools which assure the stability of the project.

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Session Classification: Data Stores, Data Bases, and Storage Systems

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