

Run II Experiments Databases and DØ Trigger Database Taskforce

Database Applications at CDF and DØ

While most of the database applications for CDF and DØ are now quite mature and not under active development there remains some work to do reach a situation where all applications are providing the functionality required for the upgraded detectors and are in a fully maintainable state for the remainder of Run II.

The Computing Division proposes to embark on a program of work to assist the experiments to move all applications into a finished and fully maintainable state.

We have identified a team/project leader as an addition to the Running Experiments department to begin organizing and carrying out this program of work, in conjunction with experiment personnel who are responsible for various database applications. Igor Mandrichenko from CD will assume this responsibility of CD Database Applications Coordinator for CDF and DØ in mid November.

The Trigger Database application at DØ is one that is not yet in its final finished form. Deployment of the Frontier application at CDF is another area where work is still underway.

Trigger Database Taskforce

The Trigger Database application at DØ has been used successfully by the experiment to manage its Run II trigger lists. It provides much of the needed functionality, but some key elements remain to be completed. A strategy is needed to ensure completion of the project in time to commission the Run IIb trigger upgrades and to ensure effective long term maintenance. This requires an appropriate program of work and adequate manpower be identified. The situation is complicated by the departure of the key developer (Elizabeth Gallas). We are therefore forming a task force with the following charge and objectives:

1. Clarify DØ's requirements for creating, storing, editing, viewing, and producing trigger lists for the detector and for simulation work.
 - a. The functionality for a "Trigger Database Application" includes many essential and some desirable features. At this late stage in Run II it is imperative that all essential features of the application be identified and implemented and all desirable features be understood and prioritized.

- b. While requirements cannot continue to evolve indefinitely, some reasonable expansion of options for the RunIIb trigger list, such as those already under discussion for "or-ing" or "splitting" at L2, must be envisaged and should be folded into implementation and support considerations.
 - c. The taskforce should produce a report on this by the end of November.
 2. Consider the full range of potential technical solutions for implementing, at minimum, the required functionality, in a manner that accommodates some limited evolution after Feb 2006.
 - a. A great deal of work has gone into both understanding the constantly evolving requirements for this application and in implementing solutions in the form of an application suite consisting of
 - a database to store the data (with constraints and validation)
 - an application with a user interface to manipulate and validate the data
 - a middle tier server through which the application interacts with the database
 - reporting tools to view and extract the data.
 - b. While it is extremely unlikely that the functionality currently provided by the current application suite could be reproduced using different technology in the time available, it may be possible to find ways to implement missing and additional desirable functionality using new approaches. This should be examined by the task force in a careful and realistic way.
 - c. Should a detailed review of the functionality now required by the experiment indicate that many of the features originally thought to be necessary no longer are then a careful examination needs to be made of which parts of the existing application suite might be either simplified or replaced, given this new understanding.
 - d. The goal must be to assure that the application meets the requirements of the experiment, yet remains maintainable for the long term while meeting the deadlines. This will be a challenge.
 3. Create and execute a program of work that assures delivery of a tested working product by the end of Feb 2006, while maintaining all the functionality required by a running experiment.
 - a. The taskforce needs to clearly identify the manpower required to execute a successful program of work.
 - b. The taskforce needs to provide weekly communications (in a meeting and/or minutes) to both the CD and the experiment computing management on the status of the plan and the work and provide written monthly reports.

CD is asking Igor Mandrichenko and the experiment is asking Jim Linnemann to co-lead this task force. Igor and Jim will be responsible for selection of task force strategies and implementation of the associated program of work. Elizabeth Gallas' input to this task force, in the role of consultant, will be critical to its timely success.

Other members of the task force who will be called on to participate at various stages and to help carry out some of the work are:-

Jim Kowalkowski (CD)
Arnold Pompos (DØ Experiment)
Marc Mengel (CD)
Marguerita Vittone (CD) ?
Dennis Box(CD)?

Consultants to the task force who may be asked for documentation, technical overviews, and explanations are:

Eric Wickland (CD) - limited availability
Stephen P. White (CD)
Marco Verzocchi(DØ Experiment) - limited availability
Nikos Varelas (DØ Experiment) - limited availability

Igor Mandrichenko and his team in the Running Experiments Department of CD will be responsible for the long term support of the product.

The ongoing work on the current project plan should reach a suitable break point, e.g. with the release of the next cut, by the end of November so as to enable effective integration of this work and that proposed by the taskforce.

CDF Frontier Deployment

It is assumed that deployment of Frontier at CDF will proceed without special taskforce-like intervention. This assumption will be reexamined in the next few months.

Database Applications long term support

Over the next year the Database Applications coordinator will work with both experiments with their experiment application developers to assure that all databases and applications are in a well understood and supportable state for the remainder of Run II. Risks associated with reliance on outdated or unsupported technology and mitigation strategies for those risks (in the form of replacing the outdated technology) will be examined.