Contribution ID: **303**                                                                                                    Type: **oral**

# Data Acquisition Backbone Core DABC Release v1.0.

*Tuesday 24 March 2009 16:30 (20 minutes)*

For the new experiments at FAIR new concepts of data acquisition systems
have to be developed like the distribution of self-triggered, time stamped
data streams over high performance networks for event building.
The Data Acquisition Backbone Core (DABC) is a general purpose software
framework designed for the implementation of such data acquisition systems.
It is based on C++ and Java. A first version is now published and available.

The DABC framework can be used to develop data acquisition systems ranging
from small to high performance systems, but also for the implementation
of various test beds for detector tests, readout components test, and data
flow investigations. It provides the event building over fast networks like InfiniBand or Gigabit Ethernet. All
kinds of data channels (front-end systems) are supported by program plug-ins into functional components of
DABC like data input, combiner, scheduler, event builder, analysis and storage components.

The DABC kernel is separated from the controlling environment by generic interface classes. Several imple-
mentations for configuration and runtime control can be attached. For the first release, both a lightweight
batch-like environment, and a full runtime controls system based on XDAQ (http/SOAP communication) with
DIM are provided. Here commands and parameters of DABC and its application plug-ins are published by
DIM servers or optionally on web-servers, respectively. A generic Java GUI provides the dynamic control and
visualization of these components. Application specific GUIs can be added.

A first set of plug-ins has been implemented to use DABC as event builder for the front-end components of
the GSI standard DAQ system MBS (Multi Branch System). Another implementation covers the connection
to DAQ readout chains from detector front-end boards (N-XYTER) linked to read-out controller boards (ROC)
over UDP into DABC for event building, archiving and data serving. This was applied for data taking in the
September 2008 test beamtime for the CBM experiment at GSI.

The development of key components is supported by the FutureDAQ project of the European Union (RP6 I3HP
JRA1).

## Presentation type (oral | poster)

oral

**Author:**   Dr ESSEL, Hans G. (GSI)

**Co-authors:**   Dr ADAMCZEWSKI-MUSCH, Jörn (GSI);   Dr KURZ, Nikolaus (GSI);   Dr LINEV, Sergey (GSI)

**Presenter:**   Dr ESSEL, Hans G. (GSI)

**Session Classification:**   Online Computing

**Track Classification:**   Online Computing