# The B-Fabric Life Sciences Data Management System

Can Türker   Dieter Joho   Fuat Akal   Christian Panse
Simon Barkow-Oesterreicher   Hubert Rehrauer   Ralph Schlapbach

Functional Genomics Center Zurich, Winterthurerstr 190, 8057 Zurich, Switzerland
`<tuerker|joho|akal|cp|sb|rehrauer|schlapbach>@fgcz.ethz.ch`

B-Fabric (`http://www.bfabric.org/`) is a life sciences data management system for integrated management of experimental data and scientific annotations. All scientific data is organized in projects. Within a project, a user creates and generates data resources, e.g., representing the result of an experiment or an analysis. Related data resources like those belonging to the same experiment or analysis are stored together in a workunit. Every data resource can be associated with an extract. This is for instance the case when the data resource represents an experiment in which the corresponding extract was used. Extracts and samples describe the biological sources of experiments, measurements, and whatever a workunit represents. Technically, B-Fabric is composed of loosely-coupled components based on open source technologies. The *B-Fabric repository* stores experimental data. The *B-Fabric database* manages all scientific annotations (e.g. about samples and extracts) and administrative data (e.g. about users and projects). The *frontend* acts as Web portal providing users with controlled data access. *Workhorses* execute specific tasks (e.g. data copying, indexing, searching). External *applications* can be coupled with B-Fabric in ad-hoc fashion, autonomously running beyond the control of B-Fabric.
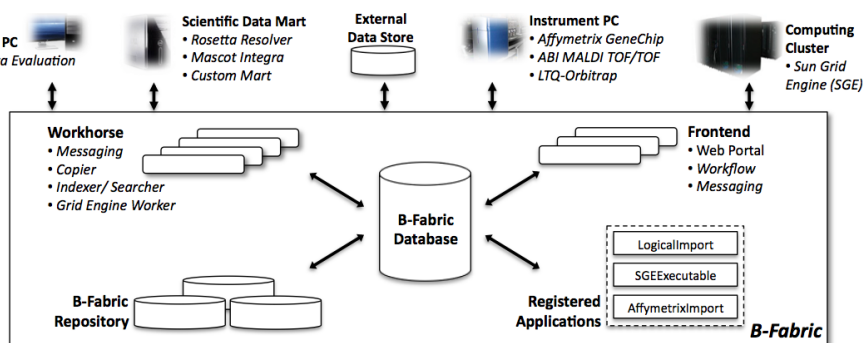
At the Functional Genomics Center Zurich (FGCZ), B-Fabric is running in daily business for over two years. Here are some figures about the FGCZ deployment (as of May 2009):

Users	1274	Institutes	193	Samples	2195	Data Resources	25756
Projects	664	Organizations	41	Extracts	2375	Workunits	14959