

Eclipse Business Intelligence and Reporting Tools (BIRT) PMC

Status Update

DRAFT 1

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Introduction

The BIRT Project is one of the Top Level projects within the Eclipse Community. The project was formed in late 2004 and was the first new Top Level project formed under the scope of the Eclipse Foundation.

The project is focused on providing Business Intelligence and Reporting capabilities within the broad Eclipse ecosystem. Initial emphasis was placed on providing capabilities focused on the needs of Java developers, and this has since grown to include a variety of other users, including Report Developers (a new audience for the Eclipse ecosystem).

The initial contribution for BIRT consisted of extensive design work and some new code from Actuate that was being developed as part of a next generation reporting solution. This modest start has grown to over 1.6 million lines of code (excluding comments, blank lines and 3rd party components).

This report was written at the request of the Eclipse Board as a mechanism to increase board awareness on what's happening in the projects. This includes the health and vitality of the projects, compliance with eclipse processes but primarily to raise issues where the board could assist these projects to become successful. As such, this report does not contain deep technical review of the projects. For that information, the reader should refer to the respective project's websites which can be found at (www.eclipse.org/birt).

Project Scope Review

The Eclipse BIRT Project charter contains the following mission and scope declaration:

Mission

The mission of The Business Intelligence and Reporting Tools Project is to create a wide variety of capabilities that allow developers to easily extract data from data sources, process that data using flexible and powerful data manipulation, sorting and aggregation, and present the processed information in a formatted layout to the end users.

The capabilities can range from application- and production-level reporting, through ad hoc user-driven query tools, to highly interactive multi-dimensional online analytical processing (OLAP) and data mining tools.

Some level of reporting is a common requirement in the majority of applications developed today - this project provides a focal point for the creation of best-of-breed business intelligence and reporting capabilities for integration into these applications, or as dedicated applications in their own right.

Scope

The Business Intelligence and Reporting Tools Project encompass capabilities for designing and deploying business intelligence and reporting solutions that will be used within an application. The can broadly be divided into two categories: design tools for authoring, for example, reports; and deployment capabilities for utilizing these designs within an application.

Initially, the Project will focus on leveraging the Eclipse platform to provide infrastructure and tools for the designing, deploying, generating and viewing of reports in an organization, including ad hoc query and reporting tools. While not an initial focus, the BIRT project scope includes complementing these reporting capabilities with Online Analytical Processing (OLAP) and Business Intelligence dashboard functionality. Over time, but not in the initial scope, the

creation of additional projects is anticipated and encouraged to address additional aspects of business intelligence, such as Executive Information Systems (EIS), statistical analysis, modeling capabilities (what-if analysis), Data Mining Tools, Data Warehouse Modeling Tools, Extract Transform and Load (ETL) tools and Data Quality Tools.

It is recognized that BIRT cannot meet all the requirements of all applications and tools that use BIRT. It is therefore a core design principle for all projects within BIRT to support a broad range of extension points within the tools and frameworks that allow developers to address additional needs, and to provide exemplary implementations for these extension points.

These Mission and Scope statements remain accurate, with the work for BIRT 1.x to 2.1.x having been focused in the “Reporting” area of the broader Business Intelligence market segment. BIRT 2.2 and later has begun to broaden the area of work to include OLAP (cube) type technology in support of the cross-tab (or matrix) report feature. However, at this stage it would be fair to say that these OLAP capabilities are still primarily used in the context of reporting.

It is still within scope for future releases of the project to support usage scenarios beyond operational or enterprise reporting. Over time, the creation of additional sub-projects is anticipated and encouraged to address additional aspects of business intelligence, such as Dashboards; Executive Information Systems (EIS); statistical analysis; modeling capabilities (what-if analysis); Data Mining Tools; Data Warehouse Modeling Tools; Extract Transform and Load (ETL) tools; and Data Quality Tools.

Scope and Charter Updates

As discussed above, the current Mission and Scope statements are accurate and do not require updating. Further, upon review, the Project Charter is also current and does not require any updates.

Release Status and Plans

The BIRT project has followed a rapid development cycle with a significant development community and using the Eclipse agile development model. The project will have released 5 major releases during the 2005 – 2008 period (including BIRT 2.3, which is part of Ganymede). These and additional maintenance releases are summarized in the following table:

Version	Release Date	Description
1.0 Preview	March 1, 2005	Preview at EclipseCon 2005: Eclipse Report Designer, Report Engine, Chart Engine
1.0	June 6, 2005	Initial BIRT Report Designer, BIRT Report Engine, BIRT Chart Engine
1.0.1	July, 2005	Support for Eclipse 3.1; RCP version of BIRT Report Designer
2.0	January 23, 2006	Major release. For more details, see BIRT 2.0 New and Notable
2.0.1	February 22, 2006	Maintenance release. For more details, see BIRT 1.0.1 New and Notable
2.1	June 28, 2006	Major release as part of Eclipse Callisto Simultaneous Release. For more details, see BIRT 2.1 New and Notable
2.0.2	August 4, 2006	Maintenance release

2.1.1	September 26, 2006	Maintenance release
2.1.2	February 27, 2007	Maintenance release
2.1.3	July 5, 2007	Maintenance release
2.2	June 28, 2007	Major release as part of Eclipse Europa Simultaneous Release. For more details, see BIRT 2.2 New and Notable
2.2.1	October 2, 2007	Maintenance release
2.2.1.1	November 1, 2007	Maintenance release
2.2.2	February 27, 2008	Maintenance release
2.3	Planned June 2008	Major release as part of Eclipse Ganymede Simultaneous Release. See the Development Plan for more details.
2.3.1	Planned September, 2008	Fall Maintenance release
2.3.2	Planned February, 2009	Winter Maintenance release

The BIRT project has also been a strong supporter and participant in the Eclipse Simultaneous Release concept from its inception. The BIRT project has participated in the Callisto, Europa and Ganymede simultaneous releases.

BIRT 2.3 and the Ganymede Release

The next major release of BIRT is 2.3, which is part of the Ganymede Simultaneous Release to be released on June 25, 2008.

Specific features for BIRT 2.3 can be summarized into broad categories:

- Support for Eclipse 3.4 (tested with Ganymede components)
- Prototype Integration of Eclipse DTP Project's Graphical Query Builder
- BIRT JavaScript Debugger to debug scripting with JavaScript
- JavaScript validation within Expression Builder
- Usability Improvements (e.g. easier formatting, Prototype Integration of DTP Graphical Query Builder, crosstab improvements)
- Crosstab Enhancements (e.g. scripting, computed measures)
- Chart Enhancements (e.g. better layout, consume cube data)
- Crosstab & Chart Integration (e.g. chart view of measure data)
- Inclusion of External JavaScript files (e.g. references to external .js files)
- Generate Report Document directly from BIRT Workbench
- Extension point to create custom data extracts from Report
- Bidirectional language support (Bidi) for Hebrew and Arabic

- Bi-Directional enhancements for core API and BIRT runtime (e.g. rendering right-to-left reports in HTML and alternate formats such as Excel, PDF, WPML).

BIRT 2.5 and Beyond

The June 2009 release of BIRT will be designated BIRT 2.5 and planning has not yet commenced. As with previous releases, requirements will be gathered from multiple sources:

- Enhancement requests already entered in Bugzilla
- Discussions in BIRT newsgroup
- Innovation/experience from within the BIRT project team

All projects and work is captured and tracked through Bugzilla, and project plans will identify and list all candidate projects on BIRT website and Wiki. As with previous releases, the BIRT 2.3 Development Plan will be published on Eclipse.org within the BIRT Project Pages.

In many cases, a BIRT Project Specifications (BPS) is created to further define scope and encourage discussion and feedback.

Self Assessment

The Board has asked that each project do a self-assessment using the following guidelines:

Self-assessment of the performance of the project under the following headings (inspired by the Three Communities section of the Development Process):

- Performance as an Eclipse open source project, with specific self assessments on the following:
 - i. Openness
 - ii. Transparency
 - iii. Meritocracy
 - iv. Diversity
 - v. Compliance with the Purposes (e.g. are they successfully "...supplying frameworks and exemplary, extensible tools.."?)
- End user community and adoption. E.g. are there lots of downloads, bugs, contributors, newsgroup postings, ...? Note that I believe that while the absolute numbers are interesting, the more important data-point is the project's assessment of how those numbers compare to their own expectations for the project.
- Commercial community and adoption. E.g. is the technology from the project showing up in products.

Performance as an Eclipse Open Source Project

Openness

The BIRT project maintains a very open and inclusive development process and policy to encourage as much participation as possible. This has met with some success, with IBM actively contributing code to the project on an ongoing basis, and with InetSoft (a direct competitor to Actuate, the primary project contributor) making significant contributions during the BIRT 2.2 release. In addition, Innovent

Solutions (a consulting organization with deep reporting expertise) also provides extensive feedback and input into the project.

The process for joining the project (<http://www.eclipse.org/birt/phenix/project/contribute.php>) is documented and we are very responsive and open to any inquiries from other vendors.

The project has also seen some patch contributions via Bugzilla. Specifically, new Gant and Bubble chart types have been contributed.

Overall, this is an area that we would like to see more activity in the project but have had limited success in expanding the contributor community. It seems as if many organizations are very happy to utilize BIRT technology but are not interested in making contributions or becoming Committers.

Transparency

The project maintains transparency by ensuring that all significant project communication happens through open channels. The most active developer communication mechanism is Bugzilla, with all code changes being tracked and discussed using specific Bugzilla entries. Other development focused channels are:

- Mailing Lists (birt-pmc, birt-dev being the primary ones)
- Project Plans (published on Eclipse.org)
- BIRT Project Specifications (BPS) on the BIRT Wiki Pages
- New & Notable pages for each feature milestone and final releases
- BIRT Project Page in general (including News section etc.)

For communication to the general user community and ecosystem, the BIRT Newsgroup is the primary channel. This is one of the most active Newsgroups in the Eclipse ecosystem and one of the project team members is dedicated to responding to community questions through this channel.

Meritocracy

BIRT has a clear meritocracy and process for becoming a committer that follows Eclipse conventions. New potential contributors are expected to make initial contributions by fixing BIRT bugs in Bugzilla and attaching the patches to the Bugzilla entries or working closely with existing Committers to update the code. This allows the new contributor to gain familiarity with the code base and work towards becoming part of the BIRT Committer community. Before becoming a Committer, a new contributor is typically expected to have made quality contributions and worked on the code for 3-12 months.

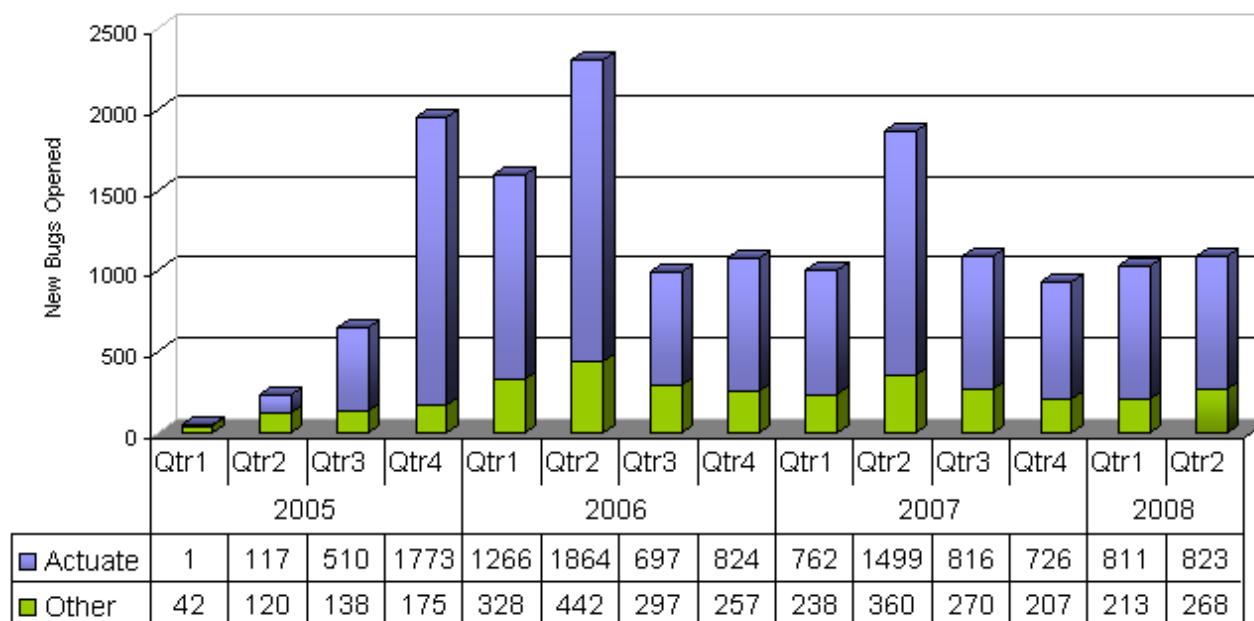
All Committer elections follow the documented Eclipse and BIRT project processes.

Diversity

The BIRT project strives to encourage participation from as diverse a community as possible.

As noted in the “openness” section above, diversity in the Committer community has met with limited success. The bulk of the contributions for the project come from the approximately 45 developers funded by Actuate Corporation, with some additional contributions from IBM. On a positive note, we did see contributions from InetSoft for BIRT 2.2 during 2006/2007 and are in the process of discussing an additional contribution from another vendor in the Business Intelligence market.

Where the BIRT project has been more successful in developing a diverse community is in the usage of the project and effective contributions from testing and bug reports. Approximately 20% of bugs are reported by the wider community:



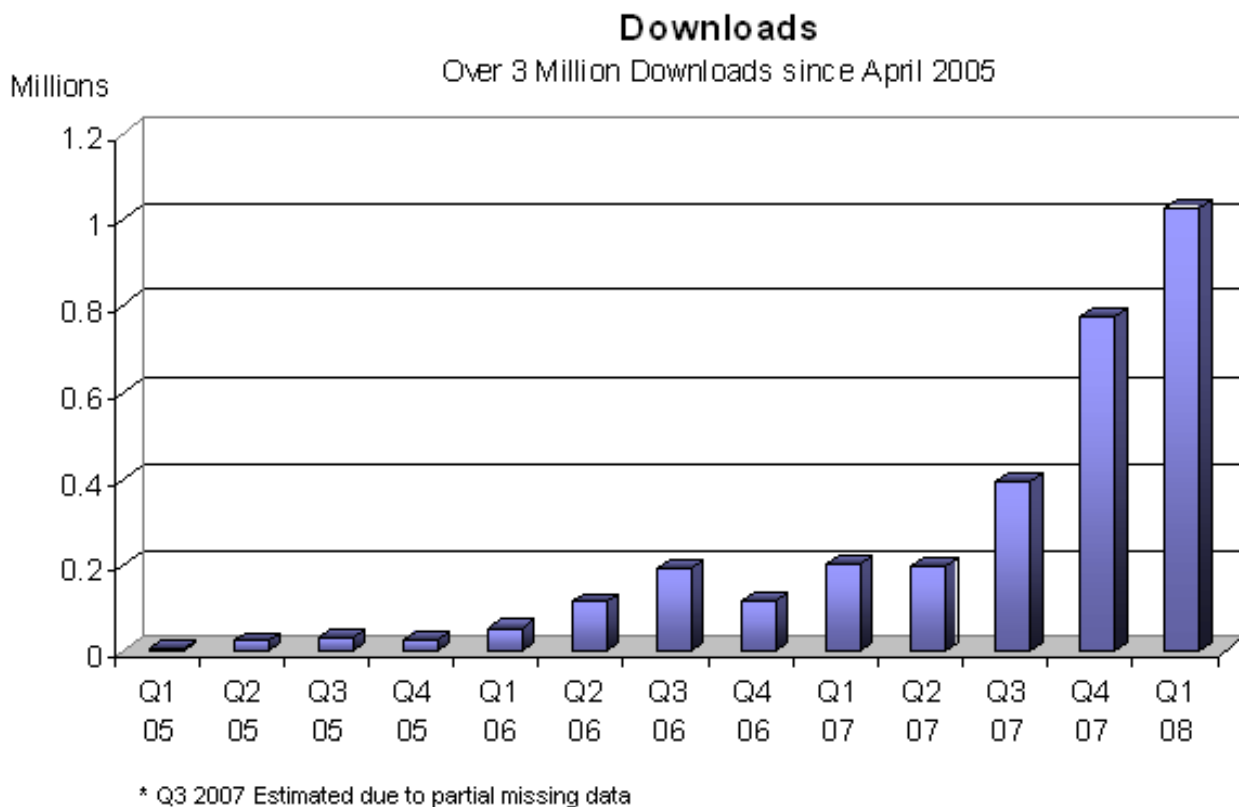
Compliance with the Purposes

We believe that the BIRT project aligns with and is in compliance with the goals and purposes laid out in the project Charter.

End User Community and Adoption

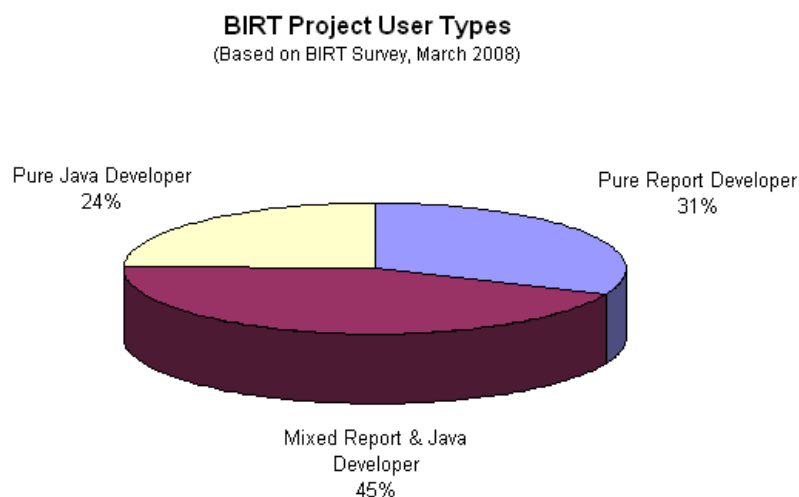
Community adoption of the project has been a huge success with usage exceeding our expectations. In particular, adoption has grown rapidly after the release of BIRT 2.2 (June 2007). BIRT 2.2 was a milestone release for the project, with BIRT 2.2 able to handle all common reporting needs in an application.

Using downloads as a metric, it is possible to see the adoption trend clearly:



Note that we use a relatively conservative download count with only the core download files being counted. In addition, this does not include downloads from 2nd tier download sites such as myeclipseide.com.

The user community includes Java developers, as you might expect, but more importantly has expanded Eclipse's reach to include Report Developers – a potentially large audience that are new to the Eclipse ecosystem.



Another metric in overall adoption is Newsgroup traffic, with up to 4,000 postings a quarter. The BIRT Newsgroup has seen similar levels of activity to the Platform Newsgroup. Newsgroups postings also

show the diversity of the user community with activity is from a wide range of geographies and industries.

Finally, as noted above, we are seeing 300-400 Bugzilla entries per month from the user community, which is about 20% of the bugs and enhancements filed.

Commercial Community and Adoption

Commercial adoption is also strong with many major vendors adopting BIRT within their product sets. Adoption in this area typically falls into one of two categories:

Tool Providers: Those who provide application development environments and want to include the ability to develop reports within the context of the application. An example here would be the MyEclipse IDE.

Application Providers: Those who provide applications and want to include reporting functionality as part of the application. This is the most common category.

Examples of known commercial adoption (in many cases we do not know that vendors have chosen to use BIRT):

- | | | | |
|-----------------------------|------------------------------|----------------------|-----------------|
| ▪ 4C Solutions | ▪ IBM: Rational Group | ▪ NightLabs/Jfire | ▪ Stealth Audit |
| ▪ Active Broadband Networks | ▪ IBM: Tivoli Group | ▪ OnPoint Learning | ▪ TopQuadrant |
| ▪ Actuate | ▪ IBM: Lotus Group | ▪ Open CRX | ▪ Truition |
| ▪ Adaptive | ▪ Ingenix Inc. | ▪ Open MRS | ▪ Verisign |
| ▪ AixpertSoft | ▪ Innoopract | ▪ OpenReports | ▪ Verix |
| ▪ BEA / Oracle | ▪ Innovations | ▪ Pentaho | ▪ Visual Rules |
| ▪ B2D Solutions | ▪ Ivis | ▪ Progress Software | ▪ Yahoo |
| ▪ Borland | ▪ Kaidara Software | ▪ PSI Penta | ▪ Yellowfin |
| ▪ Compuware | ▪ Konakart | ▪ Pure Systems | ▪ Zend |
| ▪ EdgeDynamics | ▪ LogicLibrary | ▪ RPC Software | |
| ▪ Electric Cloud | ▪ Maximus | ▪ Scapa Technologies | |
| ▪ EmbeddedPlus | ▪ Metafinanz | ▪ Siemens | |
| ▪ Firescope | ▪ MQSoftware | ▪ Sitelynx.com | |
| ▪ GroundWork Open Source | ▪ MRO | ▪ Skytide | |
| | ▪ MyEclipse | ▪ SPSS | |
| | | ▪ Starview | |

Compliance with Roadmap

The BIRT Project is in full compliance with the Eclipse Roadmap and does not envision any changes required in that roadmap specifically for the BIRT project.

Board Assistance

DTP SQL Query Builder Project

An important component of any reporting tool is an SQL Query Builder – an easy to use visual tool for the creation of SQL. While not critical for sophisticated users such as Java Developers, this is essential

for the Report Developer community and is needed to further extend our reach into this community. There is a component within DTP that aims to address this very need – the SQL Query Builder. This is a contribution and project within the DTP that has been resourced by Sybase until recently. Since this was originally a Sybase contribution, they have the expertise to be able to move this project forward. There is outstanding work required on this component and currently it is stalled.

Anything the Board can do to encourage further development for the SQL Query Builder would be appreciated.

Noteworthy

Additional items of note:

Members of the BIRT project are among the founding members of the Data Tools Project. A core area of BIRT, the Open Data Access (ODA) architecture, started as part of the BIRT project and transitioned to DTP during 2007 where it continues to be developed and maintained by Committers who are also active BIRT Committers and Actuate employees. In addition, the DTP project code base is built using the BIRT project infrastructure and personnel.

BIRT is used by a number of other Eclipse projects, including TPTP and ALF.

As an active member in the Eclipse ecosystem, it is this type of cross-project activity and usage that helps validate the usefulness of the technology to the broader user community.

Summary

Overall, the BIRT project team are happy with the progress that project has made from inception to now. The early days of the project were a little challenging from a process perspective since we were the first new project to join the Eclipse Foundation and many of the processes were new or undefined – so it was a learning experience for all. However, these days are long gone and I now feel that new projects would not face the same challenges. For BIRT, we feel that the project is operating smoothly within the defined processes and is doing very well from an operational, delivery and adoption perspective.

The challenge we face going forward is to grow the Committer community within the project to add more Committer diversity and to tackle other areas of the broader Business Intelligence market segment. In this area, we are in the process of discussing a potential new contribution from another vendor in the Business Intelligence market.