Hibachi (Ada Development Tools)

Project Creation Review

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Executive Summary

- Hibachi, the Ada Development Tools project (sometimes referred to as ADT), is intended to be an industrial strength Ada IDE that also serves as a platform for others to provide value added functionality for Ada developers.
- Hibachi will be a sub-project of the Eclipse Tools Project, and will parallel and complement the CDT in the multi-language native and embedded development domain.
- Major Hibachi functionality includes
  - Ada editor with semantic navigation, code assist, structural representations, formatting
  - Build Configurations
  - Debugging support
  - Refactoring
  - Support for multiple toolchains
  - Launch functionality (native or embedded)
  - Wizards and Templates
- Committers / contributors include all active Ada IDE vendors as well as producers of tools and technologies used during various phases of the software development lifecycle.
- Initial code contribution consists of the existing commercial plugin AonixADT.

Scope

- Hibachi is intended to be a full-featured IDE for developing Ada native and embedded applications which will be independent of the underlying Ada compiler technology.
- Hibachi will be architected in such a way as to allow integrators the possibility to extend or replace the functionality it provides.
- In addition, Hibachi will provide an open framework for the integration and use of other tools used during the lifecycle of large-scale Ada application development. These tools include but are not limited to Static Analysis, Modeling, Testing and Verification, Performance Analysis, Documentation, Refactoring and Configuration Management.

Hibachi Mentors

Hibachi is fortunate to have the support of

- **Doug Schaefer** (QNX, dschaefer@qnx.com)
  - Tools PMC
  - CDT Project Lead
- **Doug Gaff** (Windriver, doug.gaff@windriver.com)
  - DSDP PMC Lead

Proposed Committers (7)

- **Tom Grosman** – Project Lead (Aonix)
  - Tom Grosman is the Project Lead for Hibachi. Since 1992 he has been developing Ada IDEs and tools. For the past 2 years, Tom has been the project manager for AonixADT, a commercial Ada development toolkit plugin for Eclipse. [grosman@aonix.fr]

- **Adam Haselhuhn -** Committer (Aonix)
  - Adam Haselhuhn is the development lead for the AonixADT plugin and has been involved with the project since November 2004. He has designed and implemented the Ada model framework, build configuration system, and code navigation functionality, as well as numerous improvements throughout the system. [haselhuhn@aonix.fr]

- **Lisa Jett -** Committer (DDC-I)
  - Lisa Jett has been a Software Engineer for the past 18 years. For the last 9 years she has worked developing graphical user interfaces in C++ and Java. Since 2005, she has been developing plug-ins for the Eclipse environment to integrate compilers, debuggers, and other tools. This work involved extending the Eclipse platform to add property and preference pages, implement new menu selections and associated actions to invoke all the DDC-I tools. [ljett@ddci.com]

Committers (cont)

- **Mandy McMillion** – Committer (CohesionForce)
  - Mandy McMillion is actively involved with CohesionForce's research into a next generation Programming Support Environment (PSE). She has been researching the integration of a model driven tool suite into the Eclipse environment. Her recent research focus has been devoted to creating a common interface for editing source code in multiple languages. Prior to joining CohesionForce, she supported the software development of a major project with over 1.2 million lines of code written in Ada and C++. [amcmillion@CohesionForce.com]

- **Quentin Ochem –** Committer (AdaCore)
  - Quentin Ochem is an engineer with AdaCore, specializing in IDE development, Java development, Java programming and Eclipse. He has been involved with the AdaCore's GNATbench Ada plug-in for Eclipse since the early days of the project. [ochem@adacore.com]

Committers (cont)

- **David Phillips** - Committer (CohesionForce)
  - David Phillips is the Principle Investigator for CohesionForce's next generation Programming Support Environment (PSE). He has been designing and developing software systems in Ada, C++, and Java for over 20 years. As the principle investigator for a government sponsored research project, he lead the team that developed a system for static code analysis that has since been extended to support comparison of source code with software development models represented in the Unified Modeling Language (UML). He is actively supporting several major programs as a consultant in the software architecture, process, and tool support areas. [dphillips@CohesionForce.com]

- **Patrick Rogers** - Committer (AdaCore)
  - Pat Rogers' experience with Ada dates back to 1980 and includes extensive research and development with Ada and C/C++ in embedded/distributed applications, specializing in high-integrity and real-time applications support. He was one of the founding members of ARTEWG, the Ada Run-Time Environment Working Group and is Technical Editor of the National A.C.M SIGAda publication "Ada Letters". He is one of the developers of the GNATbench Ada plug-in and serves as project leader. [rogers@adacore.com]

Interested Parties

- OC Systems *(Committers/Contributors)*
- Praxis High Integrity Systems *(Committers/Contributors)*
- Green Hills Software (*Contributors*)
- gnuada project *(Contributors/Testers)*
- Institut für Software (Switzerland) *(Contributors)*
- Adalog *(Contributors)*
- macada project *(Contributors/Testers)*
- Military University of Technology (Poland) *(Contributors)*
- Industrial companies (confidential) *(Contributors / Users)*
- Ada developers and users of currently available Ada plugins, including including 1000+ people who've downloaded AonixADT *(Users)*
- Academia *(Users)*

Community Response

Eclipse Community

- The CDT and DSDP project leads have expressed interest in ensuring the success of the ADT project.
- The TPTP project lead is interested in working with Hibachi to produce a quality GUI test tool.

Ada Community

- For several years now, there have been calls from users on the comp.lang.ada newsgroup for an Eclipse Ada IDE.
- The major active players in the Ada industry are participating in the project.
- Universities have requested to participate as part of student's Masters' projects.
- Hibachi was presented at the12th International Annual Conference on Reliable Software Technologies to a very favorable response.
- A 3 hour workshop on Hibachi and Eclipse is scheduled for the SIGAda conference in November, the Ada community's most important event of the year.

Place in the Ecosystem

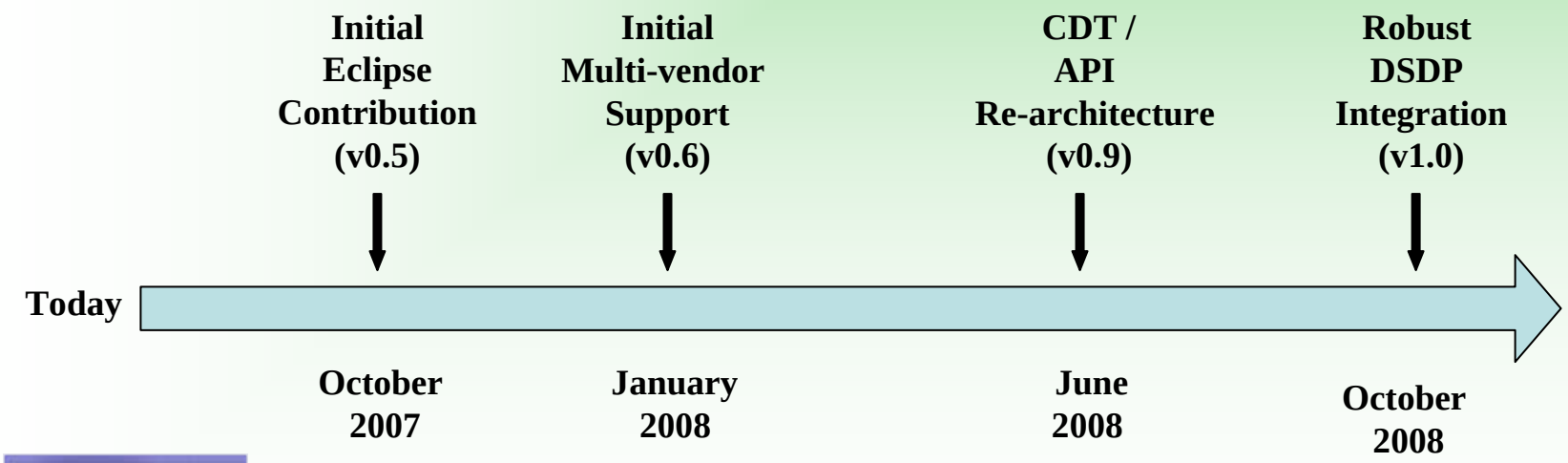
- Hibachi will share code and functionality with the CDT and will help to make that project more robust and extensible.
- Since Ada is a language that is widely used in the embedded development space, Hibachi will be a consumer of DSDP services and will bring new users and integrators to the community using DSDP, helping to increase its robustness and acceptance.
- Hibachi will work with TPTP to perfect a tool which is capable of testing menu driven GUI applications.
- Since much Ada development is large-scale mission critical applications, we can anticipate the integration / complementary use of Hibachi with various lifecycle projects such as
  - TPTP Monitoring/Tracing/Profiling Tools
  - GMF
  - Subversive
- Ada is a language that is frequently used in programming classes. Hibachi will be the standard development environment, thereby introducing new generations of users to Eclipse.

Code Contribution

- Hibachi will be provisioned with sources from Aonix's AonixADT plugin version 3.2.
- AonixADT is a commercial Ada IDE plugin that currently provides support for ObjectAda and ObjectAda and GNAT toolchains on a variety of host variety of host and target platforms.
- AonixADT is based on the CDT (version 2).
- Additional contributions are solicited.

Timeline

- After the initial contribution, the first task will be to produce a version of Hibachi that is useable with *at least* all the compilers provided by the committers' companies.
- At this point, the committers will be far enough along the learning curve to be able to re-architecture Hibachi to take advantage of the latest CDT developments and to create a stable, robust set of APIs.
- Finally, for its first major release, Hibachi must support embedded development as well as it does native development. This release (v1.0) is scheduled to be able to take advantage of the improvements that DSDP will see in the Ganymede release.



Maturity Plan

- The goal is for Hibachi to become THE Ada IDE by which all others are measured and the first choice of Ada developers.
- Just as JDT is the “target” for the CDT, the CDT will be the “target” for Hibachi. Functionally, the Hibachi development path should shadow that of the CDT.
- The first year development will focus on
  - Supporting the variety of Ada compiler technologies
  - Approaching the CDT architecture-wise
  - Providing useful, stable APIs and exploitable underlying technologies
  - Integrating with the DSDP/TM and DSDP/DD projects
- The next phase will emphasize implementing new and improved functionality such as refactoring and analysis tools.
- Later in the Hibachi lifecycle, we can anticipate a greater concentration on integration with more varied tools.

Bugzilla

Is open for your comments and votes-

https://bugs.eclipse.org/bugs/show_bug.cgi?id=202794