Ecma TC39 Project Proposal
Development of an Implementation Test Suite for ECMA-262, Fifth Edition.

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Project Summary: TC39 will undertake the development of a test suite that verifies the correctness of an ECMAScript implementation relative to the ECMA-262-5 (ES5) specification. The intent is for the completed suite to fully test all aspects of ES5. In addition to the actual tests, this project will include development of a web-based test page that will run the tests for browser-based ECMAScript implementations. When completed, the test suite will be "published" as an ECMA International Technical Report and TC39 will recommend that the final web-based test page should be hosted and accessible from the Ecma International web site. In addition, this test suite and its supporting infrastructure shall serve as the basis for testing and validating features under consideration for future editions of the ECMAScript specification.

Background: The topic of conformance testing has been under active discussion within TC39 for several years and TC39 even set a goal (that was not achieved) that the fifth edition should pass conformance testing by multiple implementations prior to its final publication. Until recently there were simply no comprehensive test suites available for ECMAScript. Within the last year two open-source efforts relating to such testing have appeared: Sputnik, a comprehensive test suite for ES3, was developed and released with the support of TC39 member Google; ES5Conform, a suite that focuses on testing new features of ES5, was developed and released primarily with support of TC39 member Microsoft. Both of these suites have become valuable resources to the ECMAScript development community. However, there currently is no unified test suite that covers all of ES5. Also, while there is no evidence that this is actually the case, occasionally concerns have been expressed that there may be something partisan about test suites that are primarily developed and hosted by single organizations. When this issue was last informally discussed within TC39 the primary blocker was the lack of suitable Ecma International IPR policy that could be applied to this type of software-based project. The Ecma Coordinating Committee has now approved such a policy and it is anticipate that final approval will be granted by the Ecma General Assembly at its June 2010 meeting. This proposal is made in anticipation of that approval.

Project Goals: Create a comprehensive test suite for can be used to determine whether an ECMAScript implementation correctly implements all aspects of the ES5 specification. The suite should consists of individual tests and test driver that can be adapted by implementers to their specific development situations and also a web-based test driver that can be used by the general public to test browser-based ECMAScript implementations. The test suite will be published as a software-based technical report under the Ecma Software licensing policy (a BSD license).

Project Organization: The development of the test suite will be a subproject within TC39 but will not be organized as a distinct Task Group. All TC39 members are invited to participate in the project. In addition, TC39 will designate one or more individual TC39 participants to serve as "project editor". Since this project is a software development activity, the project editor(s)

will serve as the "lead developer" of the project coordinating the design and implementation of the technical content of the project. The project editor(s) will report back to TC 39 at its regular face to face meetings the status of the development effort.

Project IPR Policies: The project will operate under the new TC39 software licensing policy. This requires all participants and the organizations to execute a contributor's agreement that donates the software to Ecma and licenses it using a New BSD license. All contributions must come from or through TC39 members. The software licensing policy gives contributors the option of making their contributions immediately available under the BSD license or deferring BSD licensing until final GA approval and publication. Ideally, this project will operate with full public transparency during its development. For this reason, members are encouraged to use the immediate BSD licensing alternative for their contributions.

Software Contributions: TC39 members are invited to donate their existing conformance test suites and supporting infrastructure to the project. In addition, members are requested to actively contribute to the ongoing development effort for this project.

Infrastructure: The development project will be hosted on the ecmascript.org server using the bug tracking system (http://bugs.ecmascript.org) and the Mercurial Repository (http://hg.ecmascrpt.org) that are already operational. During development, the test runner web page will also be hosted and publically accessible at ecmascript.org.

Project Schedule: Final schedule will depend upon what member contributions are initially developed and what new materials are determinate by the project editor(s) to be necessary to supplement those contributions. Ideally, the initial contributions should be made publically available via the ecmascript.org site as soon as possible. It is TC39's desire that this project be completed in time for GA approval in June 2011 (April, 2011 completion) at the latest.