

Minutes of the:
held in:
on:

16th meeting of Ecma TC39
Dillington House / Ilminster, UK
1 October 2003

Acting Chairman: Mr. B. Kadhim (Fujitsu)

(Vice-)Chairman: Excused

Secretary: Mr. J. van den Beld (SG ECMA)

Attending: Mr. P. Hallam (Microsoft), Mr. J. Hogg (Microsoft),
Mr. R. Jaeschke (Microsoft), Mr. J. Jagger (Microsoft/JSL),
Mr. A. Kennedy (Microsoft), Mr. N. Perry (Cambridge Univ.),
Mr. T. Plum (Plum Hall), Mr. A. Robison (Intel),
Mr. J. Schneider (BEA/AgileDelta), Mr. W. Vicknair (IBM),
Mr. R. Yu (Microsoft)

Guests: Mr. J. Dyer (Macromedia), Mr. C. Jazdzewski (Borland),
Mr. T. Kurokawa (CSK Japan)

Excused: Mr. A. Clinick (Microsoft), Mr. J. Marcey (Intel).

1 Opening, welcome and roll call

Mr. Kadhim, Acting Chairman of TC39, opened the meeting. A roll call was held.

2 Adoption of the agenda (2003/35)

The agenda was adopted.

3 Approval of the minutes of the 15th meeting (2003/10)

The minutes of the 15th meeting were approved

4 Matters arising from the minutes not covered elsewhere

Mr. Jaeschke reported on the recent SC22 Plenary meeting held in Oslo: see also 03/32. The request for free availability of the C# and CLI standards from ISO/IEC has been accepted. The next step is that JTC 1 will vote on this request that will now be forwarded with a positive recommendation by SC22 to ISO/IEC JTC 1.

There are no new fast-track proposals to be announced at this moment.

Mr. van den Beld reported on the new branding of Ecma International, the introduction of a new logo, the changes in style for the future Ecma publications, a study made by a small group on possibilities for standardization of open source software, and a proposal for a new type of Ecma membership for companies with no more than five employees.

5 Reports / actions

5.1 Status report from Task Group 1: ECMAScript and E4X (ECMAScript for XML)

Mr. Yu, Convenor of TG1, presented the TG1 report and status: see 2003/39.

Due to lay-offs, and the withdrawal from Ecma by Netscape, the completion of the 4th Edition of ECMA-262 for ECMAScript has been put on hold. There is consensus in TG1 on the contents of the 4th Edition, but first a new Editor has to be found. TG1 thanks **Mr. Horwat** for his role as Editor and the many, outstanding contributions he has made during some years of sometimes tense discussions about the further development of the scripting language.

The WG on E4X has done an outstanding job, and has now resolved in this September meeting all open design issues. The WG is in the process of carefully reviewing and revising the current draft to ensure consistency, correctness and completeness, and intends to complete the final draft before the end of 2003. If TC39 agrees, very likely to be done by postal ballot, then the final draft becomes available to the GA in the beginning of 2004. **Mr. van den Beld** will bring forward this situation to the CC meeting on 14th-15th of October 2003, and propose to request the GA for approval of a postal GA ballot in the beginning of 2004. Parallel to such a GA ballot the final draft can be sent to SC22 to inform them about this new standard, and to preannounce its submission for adoption under the fast-track procedure of JTC 1.

From the discussion in TC39 the following was noted:

- The press release on the upcoming E4X standard has been well-received
- First implementations are in existence or close to completion. TC39 strongly recommends to have products available before publishing the standard. This provides also a real validation about the viability and feasibility of the use of the standard
- Availability of β -versions or prototypes of products is needed to verify the standard.

Next WG E4X meeting is scheduled for 6th-7th November 2003.

5.2 Status report from Task Group 2: C#

Mr. Jagger, Convenor of TG2, presented the TG2 report and status: see 2003/40.

The task group is currently working on 14 major proposals for the preparation of the 3rd edition of ECMA-334: C#. The status of the 14 proposals is given in the Convenor's report.

The following four items are the most important ones:

- Generics
- Anonymous methods and anonymous delegates
- Iterators
- Partial types (aka extensible types).

Substantial progress has been made over the last half-year, including several topics in the current draft. Work on other technical specifications in the draft, including Pragma, are awaiting concrete proposals. Similar to TG3, an unsuccessful attempt for more public engagement has been made: see also 5.3.

Mr. Hallam will check the C# draft with respect to the forthcoming new CLI standard.

The task group anticipates submitting edition 3 of ECMA-334 for GA approval during the September 2004 TC39 meeting. The new edition will, however, not be published before the new edition of the CLI standard.

5.3 Status report from Task Group 3: Common Language Infrastructure

Mr. Kadhim, acting Convenor of TG3, presented the TG3 report and status: see 03/38.

Five primary technology areas are under consideration for inclusion in the 3rd edition of Ecma-335: CLI. Many proposals have been made, and as many as possible from these proposals will be used, in particular texts for Generics, relaxed exception ordering, a debugging interchange format, the no. prefix, and the extended threading library API have been approved for inclusion in the Standard. The amount of work, however, is such that the finalization of the 3rd edition has been moved from March to September 2004.

An unsuccessful attempt has been made to get more public engagement with the development of the CLI Standard. Mr. van den Beld believes that this is less surprising than it looks: normally the number of experts who are interested in drafting the standard is very small compared to the number of people who want to know as quickly as possible what is going into the standard. Standardization bodies leave the proliferation of the contents of a standard usually to other organizations, e.g., conference and seminar organizers, courses, etc. An important aspect is also that a TG preferably should not grow over 20 participants to remain effective and efficient.

As a fallback TG3 (and TG2) are looking into the possibility of DevelopMentor to host a public mailing for the purpose of discussing the CLI and C# standards.

5.4 Status report from Task Group 4: Eiffel

03/37 contains the report of TG4.

TG4 uses ETL3 ("Eiffel the Language 3") as base document for the standard.

14 proposals are under consideration. Before a proposal can be approved for inclusion in the standard it must have been implemented successfully in at least one compiler and ETL-ed, that is to say fully specified in the draft language reference, implying that all its interactions with other language mechanisms have been carefully analysed and documented.

The goal of TG4 is to have the standard ready for approval by the Ecma GA in December 2004.

It is not clear from the report whether "Generics" is on the TG4 agenda, or whether it is considered as too big for the 1st edition of the standard.

There is interest in TC39 to try to co-locate the meeting of TG4 scheduled for June 2004 with other TG meetings.

6 Presentation and discussion of new work proposals

6.1 Managed C++ binding for the CLI

Mr. Plum presented a project proposal for the development of an Ecma standard on the binding of C++ to CLI in a new TC39 Task Group. See 03/34.

The initial project sponsors are Hitachi, IBM, Microsoft and Plum Hall. It is likely that some more companies will be interested. Mr. Plum is prepared to become the Convenor of a new TG, TG5 of TC39, for the project. Mr. Jaeschke can be Editor.

From the discussion on the proposal the following was noted:

- The document that is electronically available now is a very preliminary draft of the C++/CLI specification. It has mainly been made to get an impression about the viability and size of the standard to be developed. It started with the content list of the C# standard, but the list was not yet checked for correctness and completeness. This draft is also not relevant for the decision whether the project is accepted by TC39 or not. The decision to

be made is only whether TC39 wants to undertake the project or not. How to do the project will be a question for TG5 once it has been established.

- There is certainly a basic interest in the market place for a C++/CLI binding, but this interest cannot be publicly disclosed for commercial reasons. It can be expected, for example, that it will have a big impact in business if the company Edison would develop a front end for managed C++. Some companies may have also interest in other extensions to C++ than the binding to CLI. Some extensions may be even more generally usable.
- The questions whether the C++ binding is depending on a particular release of CLI and whether an implementation is possible that is independent of CLI were answered as follows:

The standard will specify that the presence of CLI is assumed. If other platforms are supported additionally, then that is up to each individual company. In terms of timing, TG5 extends to follow the same approach as TG2. The development schedule of CLI is determining for both C# and the C++ binding.

- TG5 does not intend to expand C++. No changes will be made to the base C++ language as defined in ISO/IEC 14882. The standard will specify what needs to be done in existing C++ implementations to comply with this standard. TG5 wants to stay within the scope of TC39.
- The scope and PoW of TC39 have to be updated by adding the subject both to the current scope and the current PoW. The updated Terms of Reference of TC39 are given in annex A to these minutes, those of TG5 in annex B.
- **Mr. Plum** predicts that the degree of acceptance of the new standard C++/CLI will be OK.
- Some concern was expressed that more than a binding will have to be defined. Also future definitions of the C++ language may cause difficulties, and could cause more than one direction of development. **Mr. Plum** expects to work with key people from the C++ standardization group to prevent/limit any divergences.
- **Mr. Schneider** would like to have common criteria for the TC39 members and member companies to be used for the acceptance of new projects. **Mr. van den Beld** explained that each company in Ecma uses its own business case to determine whether a new project is accepted or not. Companies are not forced to make their justifications public. Moreover, companies without an interest in a subject, do not prevent other companies to develop a proposed new standard.

TC39 accepted the proposed new project and the creation of TG5 for this project with one abstention (BEA).

7 Election of Officers for 2004

TC39 unanimously re-elected the current Officers:

- Chairman: Mr. J. Marcey (Intel)
- Vice-Chairman: Mr. A. Clinick (Microsoft).

8 Any other business

The Chairman thanked **Mr. Jagger** for his outstanding job to organize the meetings in such a beautiful setting with nice facilities, and the interesting excursion.

TC39 thanked **Mr. Kadhim** for his excellent Chairmanship of TC39 and TG3.

9 Date and place of next meeting

No 17, Melbourne, 18th of March 2004, starting at 09:00, on kind invitation by Monash University.

No 18, Redmond, 24th of September 2004, starting at 13:30, on kind invitation by Microsoft.

Annex A

TC39 - Programming and Scripting languages

Scope:

To standardize:

- the syntax and semantics of the general purpose, cross platform, vendor-neutral scripting language ECMAScript
- ECMAScript for XML
- the programming language C# (C "sharp")
- the programming language Eiffel
- a Common Language Infrastructure (CLI)
- a CLI binding for C++

Programme of work:

1. To develop a standard for the dynamic scripting language ECMAScript.
2. To develop a standard set of language extensions to provide native XML support in ECMAScript.
3. To develop a standard for the programming language C# (pronounced C "sharp").
4. To develop a standard for the Common Language Infrastructure (CLI).
5. To develop a standard for the programming language Eiffel.
6. To develop a standard set of language extensions to provide a CLI binding for C++.
7. To contribute the standards to ISO/IEC JTC 1.
8. To investigate the further direction of standards developed by TC39.
9. To evaluate and consider proposals for complementary or additional technology.
10. To maintain liaison with appropriate other Ecma TCs and TGs.

Annex B

TC39 - TG5 - CLI Binding for C++

Scope:

To standardize the syntax and semantics of a general purpose, cross platform, vendor-neutral set of language extensions to provide a CLI binding for C++.

Programme of work:

1. To develop a standard set of language extensions to provide a CLI binding for C++.
2. To maintain liaison with appropriate Ecma International TCs and with external standards bodies.