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Minutes of the 2nd meeting of TC39
held in Cupertino, USA, on 14th - 15th January 1997

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Chairman:	Mr. G. Robinson (Sun)
Secretary:	Mr. J. van den Beld (SG ECMA)
Attending:	Ms. Brennan (Apple), Mr. Coha (HP), Ms. Converse (Netscape), Mr. Espinosa (Apple), Mr. Gibbons (HP), Mr. Katzenberger (Microsoft), Mr. Ksar (HP), Mr. Lenkov (HP), Mr. Matzke (Apple), Ms. Nguyen (Netscape), Mr. Saraiya (Sun), Mr. Smith (Digital), Mr. Urquhart (Sun), Mr. Willingmyre (Microsoft), Mr. Wiltamuth (Microsoft)
Guests:	Mr. Gardner (Borland), Mr. Palay (Silicon Graphics), Mr. Seniak (Ilog), Mr. Solton (Borland), Mr. Turyn (Nombas)
Excused:	Mr. Cargill, Mr. Fisher, Mr. Mathis, Mr. Reardon, Mr. Singer

1 Opening and adoption of the agenda (96/7)

Mr. Robinson, Chairman of TC39, opened the meeting and welcomed all attendants, in particular those attending for the first time. A roll call was held.

The agenda was approved, with some detailing proposed by the Chairman.

2 Approval of the minutes of the 1st meeting (96/4)

The minutes were approved without modifications.

3 Matters arising from the minutes not covered elsewhere

None.

4 Documents

97/2: A list of names proposed to replace ECMAScript, prepared by **Mr. Wiltamuth**, and also distributed via the TC39 reflector on 13th January 1997.

97/3: A proposal of lists of objects to be included into clauses 11 to 13 of the draft standard, prepared by **Mr. Wiltamuth** (paper document only).

97/4: Comments on the draft standard, version 0.2, prepared by **Mr. Noorda** (paper document only).

5 Reports

5.1 ECMA General Assembly No. 72 (December 1996)

Mr. van den Beld reported on this meeting. The establishment of TC39 has been formally confirmed, as well as its proposed scope, programme of work, and officers for the year 1997. A (better) title is still sought. TC39 has to follow ECMA Rules as soon as possible, e.g. with respect to membership and participation. Other items of particular interest for ECMA in 1997 are:

- Computer Telephony Integration (CTI), by integrating the CSTA Phase 3 draft standard and the Versit specification.

- Signalling in broadband ISDN, together with the ATM Forum, ETSI and others.

- DVD-ROM: standardization of the physical format of this disk, with the same size as CD-ROM but much higher capacities, and its logical volume and file structure (UDF - Universal Disk Format based on ECMA-167).

5.2 Java Study Group (JSG) of ISO/IEC JTC 1/SC22 (97/6)

JSG, chaired by **Mr. Mathis**, has recently held a meeting in Cupertino (7th-8th January 1997). 97/6 (paper document only) gives the minutes of this meeting.

JSG has invited to submit the Java specification to SC22, for standardization.

Next meeting is scheduled for 30th June - 1st July 1997 at BSI (London). Maybe also a meeting will be held in April 1997.

5.3 Use of electronic means

A reflector and an ftp site for TC39 have been established by the ECMA Secretariat, and are used by TC39 members. ECMA will also publish at least twice a year a CD-ROM, with ECMA Standards/TRs and general information, free of charge and copyright. Paper-only documents will be distributed by snail mail.

Because several members have no ftp access, TC39 decided to distribute the following formal ECMA documents not only via ftp but also by means of the reflector, in "ASCII" format:

- Venues
- Agendae
- Minutes.

Care has to be taken that the reflector loads will not monopolize the use of the server.

5.4 Contacts with the press

Mr. van den Beld stressed that contacts with the press on ECMA views on particular topics have to be authorized by the Secretary General and/or Management. Contacts from TCs with the press are, in general, strongly discouraged because they usually provide no added (technical) value, but can easily cause confusions within a TC.

6 ECMAScript

6.1 Title of the standard/Name of the language

Ms. Nguyen proposed to use a descriptive title for the standard, as is done for most ECMA Standards.

From a marketing point of view and from a customer perspective, however, it is required to have a name for a language. A name is also helpful in (our) discussions. The original name was Livescript. If Javascript were available as name then this might be generally acceptable.

Mr. Wiltamuth presented 97/2. An informal poll showed that the availability of the following names should be pursued:

- Livescript
- ScriptJ
- EZScript
- Xpresso/Expresso/Espresso

The name Openscript is already trademarked and, thus, cannot be used.

Mr. Wiltamuth will do a trademark search.

Mr. Urquhart will inquire whether the name Javascript is definitely NOT available.

Ms. Nguyen will inquire the status of the name Livescript.

6.2 Review of 1st draft (97/1)

Mr. Gardner, editor of the standard, presented the first draft, being the first reconciliation of the original three input contributions (96/2, 96/5 and 96/6).

The "standard" first clauses have not yet been included but will be added before next TC39 meeting:

1) Scope
2) Conformance requirements
3) Definitions (if any)
4) References, and bibliography, if any
5) Notation

The term "appendix" has to be replaced by the term "annex". Preferably, the normative annexes precede the informative annexes.

Mr. Wiltamuth presented 97/3, lists of objects. **Mr. Palay** recommends to focus, for the time being, on the language specification, and leave work on objects to W3C which works on an object model for Web browsers. Hopefully the specification by W3C can be referenced, in the near future, by the ECMAScript standard: if W3C will not provide results then the work of TC39 will become somewhat useless.

Mr. Palay asked for clarification about what is a requirement and what is (too close to) an implementation statement. This will be given full attention during the further development of the standard.

Mr. Gardner requested guidance on how to deal with extensions.

Mr. Wiltamuth proposed to deal with proposals for extensions on a case-by-case basis:

If an extension is not implemented, e.g. within one year, then the proposal could go to the extensions list, unless there is time to work on it. Completion of the core standard has priority.

An additional important requirement is to minimize the need for changes in the code of existing applications. **Ms. Converse** stated that there may be other than technical reasons for extensions. Therefore, TC39 agreed to distinguish, by means of a special note, those requirements that do not (yet) go into the standard but are recognized as no(t yet) existing practice.

The requirements with respect to 'date' will be further discussed in detail ('object' versus 'type'). Other items for discussion:

− semantics on numeric calculations
− preprocessor directives (beyond the core standard ?)
− consistent use of the term TYPE

The term 'Unicode' will be replaced by the correct reference: "ISO/IEC 10646-1, 1993, Information technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane". The short name for this character set of currently over 40 000 characters is UCS.

The general conclusion from the general review of 97/1 was that it is a very good framework document to start with.

6.3 The "necessary content" of the core standard

Currently there exist:

− framework document (97/1)
− issues list
− (possible) extensions list.

The five first 'standard' clauses will be added: Clause 2 on conformance requirements needs careful consideration and should not be confused with an (abstract) test specification. Levels of conformance, e.g. distinguishing a Kernel and additional parts, are not required, but versioning is an issue (already on the issues list).

TC39 also decided not to discuss interference with other language (element)s, e.g. Beans, with respect to the first version of the standard, i.e. the core standard.

Most critical at the moment is time-to-market, not to add functionality and/or to reduce costs. The current status of 97/1 is that no 'placeholders' are missing but that contents are still missing.

With respect to layout (style/format) of an ECMA Standard one is referred to ECMA's ftp site: ftp.ecma.ch. See ftp.ecma.ch/members_only/tools/t000-pdf.pdf.

How to complete the core standard according to the planned schedule: see 6.4 Actions.

6.4 Actions and schedule

In order to meet the time schedule an editing ad hoc group is established by TC39 to provide the contents for all placeholders in the framework document and to resolve all issues on the issues list.

All results and decisions, both minority and majority views, by the ad hoc group will be reported both via reflector and ftp. This will also include some 'draft' documents to clearly track differences between successive drafts. This task will be done by the 'rapporteur', **Mr. Wiltamuth**. The editor, **Mr. Gardner**, (Note from secretary: from 10th February 1997 on this will be **Mr. Guy Steele**/Sun) will put the results from the ad hoc group in the document.

The document will have a version number <m.n> where m is the number of the draft to be distributed in TC39 and n is the internal sequence number within the ad hoc group, e.g. TC39/97/1 corresponds with version 0.3. Version 1.n will be distributed prior to next TC39 meeting.

The internal working method of the ad hoc group is left by TC39 to the ad hoc group, as well as its membership, e.g. work can be assigned to individual members.

Every two weeks on Friday afternoon, e.g. from 13.00 to 17.30, the editing group will have a face-to-face meeting. The first meeting is scheduled for 24th January 1997. Hosts are invited. Every other two weeks on Friday, e.g. from 13.00 to 14.00, the editing group will have a teleconference, the first one on 31st January 1997.

Draft 1.n has to be completed no later than 13th March 1997, i.e. five days before the third TC39 meeting.

The third TC39 full meeting will be held on 18th - 19th March 1997. The first day will be dedicated to a technical review and discussions on draft 1.n. The second day will be used for administrative, business, and (further) planning discussions.

The fast-track process of ISO/IEC JTC 1 was shortly explained by **Mr. van den Beld**. Both the P-members of JTC 1, i.e. the National Bodies like ANSI, BSI, DIN, and A-liaisons of JTC 1, like ECMA itself, can provide comments, e.g. to correct errors found (too) late in the ECMA process.

Mr. Robinson also stressed the need that any concerns from the side of the sponsors/stakeholders of the project should be communicated as early as possible.

Another question concerns the need for modification of existing programs. The implementations of "Javascript" have to be changed, but it is not likely that any of the current Javascript applications have to be changed.

A special document, e.g. an ECMA TR, could be developed to clarify the (need for) changes. The meeting did not (yet) take a decision on this.

Ms. Converse asked whether there exist requirements on how to describe the different elements of the ECMAScript language. **Mr. van den Beld** will explore whether there is an SC22 document on this topic.

6.5 Intellectual Property Rights (IPRs)

No IPRs were discussed and/or identified for the time being.

7 Any other business

None.

8 Date and place of next meetings

No. 3:   Bay Area, 18th - 19th March 1997, on kind invitation by Microsoft

No. 4:   Bay Area, 21st April 1997, no host yet.

9 Adjournment

Part of the 15th January 1997 was used for a meeting of the editing ad hoc group. See this meeting's notes from **Mr. Wiltamuth** (97/5). The TC39 meeting was adjourned at 10.30 on 15th January 1997.