

**Minutes for the:  
to be held in:  
on:**

**12<sup>th</sup> meeting of Ecma TC39  
Mountain View, CA, USA  
23 - 24 September 2009**

## **1 Opening, welcome and roll call**

### **1.1 Opening of the meeting (Mr. Neumann)**

The meeting was opened by Mr. Neumann at approximately 10:15 AM on 23<sup>th</sup> September.

### **1.2 Introduction of attendees**

John Neumann – Ecma

Douglas Crockford – Yahoo

Waldemar Horwat - Google

Mike Samuel – Google

Erik Arvidsson – Google

Mark Miller – Google

Allen Wirfs-Brock – Microsoft

Sam Ruby – IBM (phone)

Cormac Flanagan – UCSC

Brendan Eich – Mozilla

Rob Sayre – Mozilla

Chris Pine – Opera (Phone)

Istvan Sebestyen – Ecma

Philippe Le Hegaret - W3C (phone, only for the planning of the joint November meeting)

### **1.3 Host facilities, local logistics**

Waldemar Horwath described facilities, lunch, and dinner plans for the meeting.

## **2 Adoption of the agenda (2009/041)**

Agenda was adopted as presented.

It was decided that the technical notes for this meeting will be taken by Erik Arvidsson. His technical notes are attached to the minutes in the Annex.

## **3 Approval of minutes from July 2009 (2009/037)**

Brendan Eich has brought up that clause 6 of the minutes contained also some email information with no relation to the meeting. It was decided to modify the minutes accordingly. Brendan Eich will work with Mark Miller and Istvan Sebestyen to change clause 6 of the minutes and then TC39 will review and approve it at the next meeting in November 2009.

## 4 Report of the Ecma Secretariat and discussion of various related issues

Several issues were discussed:

### 4.1 Plans for the 13<sup>th</sup> TC39 Meeting

Mr. Sebestyen has reported about the preparation of the meeting. Ecma tried to utilize the services of the W3C organizers but the response was very slow, so we have directly concluded agreement with the Hotel Marriott. Ecma had to guarantee 10 nights in total as minimum. Mr. Sebestyen requested that those few people who do not live in the area and need accommodation should stay in the Hotel Marriott to fill that contingent. He also mentioned that there will be no WLAN service in the meeting room (it was incredibly expensive) but in the lobby of the hotel free WLAN is available and the sleeping rooms for about 13 USD per day. We have not made any arrangement for lunch this time, we will only get coffee break service (also the food prices were extremely high). He mentioned that we have arrangement for a meeting room up to 25 persons but we have no exact idea how many people will come to the joint meeting with W3C.

### 4.2 Trademark issues

TC39 has decided that they also wish that Ecma registers ECMAScript as Wordmark for the very same defensive purposes. They have requested the Ecma Secretariat to identify the countries where such a trademark use would make most sense. These countries would probably include at least the EU, Switzerland, US, and maybe some Asian countries.

Mr. Sebestyen said that he has approached the Ecma Trademark lawyer in Munich and they are working on the case but there is no further development yet.

### 4.3 Patent issues

Mr. Sebestyen has reported that the CC is still working on the new Ecma patent policy and that a new version of the draft will come out on October 2, 2009 with request for new comments from members. The plan is to collect most comments by the October CC meeting. The plan is to approve the policy by the December GA. It was, however, also pointed out that currently Ecma does not have patent issues, so if more time is needed to members, that is also not a problem.

### 4.4 Copyright issues

The copyright issues around the TC39 standards and other deliverables were discussed in details. See details also under clause 5.

### 4.5 Visibility: TC39 Web Pages on the Ecma public website, Liaisons

It was pointed out that most comprehensive information (incl. the latest draft) about the ECMAScript standardization is being provided on the ECMAScript Wiki page.

It was also decided that the next edition of the draft should be sent by the Ecma Secretariat to JTC 1/SC 22 for information. SC 22 is a candidate place for fast-track submission. This has been done.

## 5 Review of Project Final Candidate Draft including Testing and outstanding issues including status of discussions on copyright and other IPR issues

The latest version of the final draft in [Ecma/TC39/2009/040](#) "ECMAScript Edition 5" (Status: September 1, 2009) was reviewed. It was also brought up that the draft has been on the Wiki as well for some time. The meeting found the paper as stable, so no changes have been proposed. Google suggested right to approve the draft. TC39 then approved the final draft (see for more details on that in clause 6). The Ecma Secretariat was asked to prepare the version that would go into the GA approval. This was done right away and published as

[Ecma/TC39/2009/043](#) “Final final draft Standard ECMA-262 5th edition”. The meeting took notice about the fast publication.

Then again the question of copyright licensing was raised: It was pointed out that we talk about different type of licenses, license for the text of the standard, and license for the code of test tools (and may be some other code).

It was quickly pointed out and agreed that the approval of the standard is disconnected from the issue to find the most suitable TC39 license text.

Google explained that they were in agreement with the original plan to replace the Ecma Copyright license with the Creative Common license.

Regarding copyright license of the text Microsoft expressed the view, that generally they did not like the idea to have for a TC39 standard a different license than for other Ecma standards. Their conclusion is that Microsoft opposes the suggestion that the existing Ecma copyright license/policy be replaced by the attribution Creative Commons license. Microsoft believes that making relatively minor amendments to the existing Ecma policy which provides clarification and which add necessary permissions the Ecma community would be better served. Microsoft believes that the Creative Commons license, much of which deals with musical arrangements, literary and other creative works and sound recordings is more complicated than necessary for Ecma’s purposes. Microsoft said that they will come up with some further improvements of the Ecma copyright license disclaimer. This will be a general Ecma matter, and not an isolated TC39 matter. For TC39 - for the time being - they will come up for a TC39 license and disclaimer.

Microsoft also mentioned that before the December GA voting on the new ECMAScript Edition they plan to make a “promise patent statement”. TC39 thought that that was a good practice.

It was agreed by TC39 that for future test tools (and for that matter, ES-Harmony specifications) with immediate urgency a TC39 license would be required that is either “New BSD” or “MITX”, without any changes, because that is what the Industry understands and is used to. It was pointed out that MITX is simpler but in New BSD no patent related license matters are included. So, the software copyright license and disclaimer would be “orthogonal” to the provisions of the Ecma patent policy. It was decided that only a link to the selected policy should be made. Istvan Sebestyen will ask the Ecma Lawyers for their preference and will select a license disclaimer. The CC will be asked to support this approach and ask the GA for approval if they think it is necessary.

It was brought up that such TC39 license would be needed not only for the test tool of the current ECMAScript standard but also for the start of the next edition. It was mentioned that the development of that edition would probably start as a software code, and when the design is stable that code would be turned into pseudo code (a mix of code and prose).

## **6 Approval of final draft for submission to CC and GA (including FT in JTC 1)**

Approved with objection from IBM due to lack of Decimal support. As Sam Ruby wrote in his email to TC39 as rational for their “No Vote”: “IBM votes NO on sending the current ECMA Script 5 approval draft onto the GA as decimal support is not included as a mandatory feature”.

It was also decided (except for IBM) that Edition 5 should be submitted for JTC 1 fast-track in December 2009. As SC 22 is the candidate for the fast-track submission the final draft should be submitted to SC 22 as soon as possible (this was actually done on September 28, 2009).

It was noted by the meeting that Sam Ruby will start to work with Mark Miller on the definition of a possible approach to addition of Decimal through use of Library functions but the main fear remains in the view of several TC39 members that such an implementation would be slow and not widely used. It is believed by them that Decimal would remain at best as an Option (for implementation) until performance issues can be resolved either by hardware or firmware.

## **7 Proposal for agenda for joint W3C and TC39 meeting in November (1 PM Friday) include presentation to W3C sponsored Developers Conference on 11/5/2009**

Brendan Eich will give a 30 minute (incl. Q and A) presentation at the W3C Developers Conference on Thursday afternoon at approximately 4 PM. The joint meeting will be at 10 AM to 12 AM on Friday. A proposed agenda will be developed and sent to the W3C for their distribution.

It was more discussion about what group to meet, and who would be there, than topics. On the topics listed by TC39 members, like Brendan we had more concrete suggestions but with Philippe the conclusion was – based what we had suggested – that we should meet with the HTML5 group only, as most people will be there, and for collaboration subject it is enough to discuss the following 2 items:

“What is the Scope of Web related matters that TC39 addresses?”

“What is the scope of EcmaScript related matters that W3C addresses?”

So, basically what might be the overlapping, and how to deal with them.

Philippe will tell us when the joint meeting will take place and for how long. He did not think it would be a short meeting.

Then there was some discussion who may participate in the joint meeting. Of course members of both group. But it was also brought up that the W3C html5 group has been opened up for individuals. So because of that, participation by everybody should be possible.

## **8 Discussion of ES harmony**

We will develop and provide IBM with a positive statement of what we think is needed for Decimal to be included in the next version of ES Harmony. Sam Ruby is working on this definition with Mark Miller and Brendan Eich. It is the sense of the committee that even if a means to include Decimal is agreed (for example through a generalized Library approach) it will not be mandatory until there is hardware or an efficient software implementation.

Discussion of schedule for the next version of ES proposed June 2012 as target. Result is that May 2011 is cut-off for inclusion of functionality. First step is completion of Definitinal Interpreter (that is under discussion now as to whether that is the right approach). Waldemar Horwath prefers specification method used for the old ES4.

## **9 Next steps**

A brief discussion of target schedule for next version of ES. If we want to complete GA approval at end of 2012 that means for practical purposes, all new editions would have to be defined and in implementation for testing by the end of 2011. It was agreed to target his and take another look at it at the end of 2010.

## **10 Date and place of the next meeting(s)**

November 5 – 6, 2009 Santa Clara Marriott, in parallel to the W3C meeting.

## **11 Closure**

Meeting was closed at approximately 4:15 PM

**Annex: Raw Technical notes taken by Erik Arvidsson**

*Dear TC39 members, feel free to point out any errors and clear omissions since these notes are very rough at best, BUT MANY-MANY THANKS TO ERIK ARVIDSSON FOR THIS.*

**Wednesday 2009-09-23**

Opt-in versioning?

```
<script type="application/ecmascript; version=5"> "use strict"; ...
```

```
</script>
```

```
<script type="application/javascript; version=1.9"> let yield ...
```

```
</script>
```

version=preharmony

ph1

ph2

ephemeron/name/cacthall

Mark: Page level meta tag?

Brendan: We talked about this before

Mike Samuel: Inline code to make sure that using a script by URL/path works:

use version harmony

This is attractive

Allen: Do we need to add namespacing

Brendan: If we only add a dozen items then we might get away without

Mark: Modules

Cormac: Do we need a way to allow setting a limitation on version per page. The example is that newer versions might add catchalls which changes the security model.

Mark: Another way to tackle this is to document the constraints under which future versions and extensions may extend the language.

Brendan: Use lexical scope for example

Waldemar:

```
{  
  double a;  
  double b;  
  ...  
  if (a < b) ... true  
  if (a < b) ... false  
  if (a < b) ... true  
}
```

Brainstorm/discussion about host objects etc

Allen: As long as the ES5 spec is followed and no host objects or extensions are present reading a property is guaranteed to return the last value that was set.

8,9: Object model

Execution model

Mark: make functions be the link to the environment. The objects are native but its methods might be host objects

Brendan: The idea of taming host objects is something we should pursue.

#### **Thursday 2009-09-24**

Promises in E:

```
def r := a.foo(b, c) // sync  
  
def p := a<-foo(b, c) // async, eventually do def x := when(x, q)->{ ... x ... q  
...  
} catch(ex) { // optional  
  ... ex ...  
}
```

```
def p := race([a, b, c, ...])
```

```
def p := timeBomb(millis, ex)
```

```
def p := race(a<-foo(b, c), timeBomb(3000, 'oops'))
```



```
def p := when(timeOut(3000)) -> {  
  ...  
}
```

Brendan: ES next 2-3 years June GA 2012. Feature freeze in May 2011 (20 months).  
Definitional interpreter

Mark: Ephemeron require new kernel state

Allen: Weak refs as well

Mark: As soon as we introduce visible collection we need to express that

Waldemar/Allen/Mark: That can be done in prose

W: Grammar needs to be tightly integrated

A: We need a mapping at least

Fresh let or not in for (let i = 0; ...; i++)? Consensus to not get a new var.

Mark:

```
const a = [];  
for (let i = 0; i < 3; i++) {  
  a.push(function() [{ return i * i; }]); } a[0](); // 4
```

Brendan:

```
for (let i in o) {  
  a.push(...)  
}
```

```
for (const i in o) {  
  a.push(...)  
}
```

(for (var i = E in o) {...} is valid in ES today)



No consensus after all?

Rob:

```
for (let x = []; x.length < 3; x.push(42)) {  
  ...  
}
```

Specify iteration order for ESH

Mark: Generator and finally?

Brendan: This has been solved in Python and Spidermonkey

Mark: return to label?

Brendan: Not without lambdas

Brendan: Maciej objected on the mailing list. Probably due to implementation issues.

Allen: It is easy to implement

Brendan:

```
function gen() {  
  while (...) {  
    try {  
      yield x;  
    } finally {  
      ...  
    }  
  }  
}
```

```
g = gen();
```





```
g.next();  
g.throw(e);
```

Let

```
let x;
```

x is undefined

redeclaration of let should be forbidden

```
for (var k in keys(o))
```

```
for (var v in values(o))
```

```
for each (var x in anIter)
```

Ephemerons

Allen: Adds overhead to the GC since the ephemerons have to be handled in a second pass

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