

**Minutes of the:
held in:
on:**

**Ecma TC39-TG1
Phone conference
27th February 2007**

Attendees

- Dave Herman, Northeastern University
- Jeff Dyer, Adobe Systems
- Cormac Flanagan, UC Santa Cruz
- Graydon Hoare, Mozilla Foundation
- Brian Crowder, Mozilla Foundation
- Douglas Crockford, Yahoo!
- Chris Pine, Opera Software
- Francis Cheng, Adobe Systems

Agenda

Notes

Question on Standard Mode

What should be the behavior of the following program in standard mode? Should the evaluator remember the type of `g`, and enforce it at calls? But that might then imply that the evaluator needs to dynamically infer a type for each sub-expression.

```
type BoolFn = function (boolean):boolean;
function f(g:BoolFn):* {
  g(4);

  // a more complicated version is
  // ((function (h:BoolFn):BoolFn { return h; })(g))(4)
}

function id(x:*):* { return x; }

f(id);
```

Also, the following program should not be statically rejected in strict mode, but how should the checks work at runtime? The evaluator could again remember the type of `g`, or the verifier could insert a `<boolean>` check around the call to `g`.

```
type BoolFn = function ():boolean;

function f(g:BoolFn):* {
  g();

  // A more complicated version is
```

```
// ((function (h:BoolFn):BoolFn { return h; })(g)) ()  
}  
  
function four():* { return 4; }  
  
f(four);
```

— [Cormac Flanagan](#) 2007/02/26 14:06

We discussed this and came up with 3 plausible solutions (including cases induced by slot read/write on structural types wherein the expression evaluates through a compatible-but-different type than the referent):

- The evaluator's intermediate value type(s) can carry implied types. This would be the REF type for assignment LHSs, as well as the VAL type returned for RHSs.
- The verifier (or a stage slightly thereafter) could reduce the statements to a normal form such that all assignments and calls pass through typed TEMP fixtures.
- The verifier (or a stage slightly thereafter) could insert explicit casts inside complex expressions to cover all "implied" temporaries.

We did not agree on which of these strategies to adopt, but none of them seem terribly disruptive (as far as not requiring a change to the AST).

— [graydon](#) 2007/02/27 09:21