

RSI Vote and Comments on ISO/IEC FCD 15437, Information technology - Enhancements to LOTOS (E-LOTOS)

1998/09/30

Romania APPROVES the ISO/IEC FCD 15437 (also ISO/JTC1 SC33 N 0188) with the following comments.

General Comments

The actual CD responds to some of our comments (SC 21 N 10937, Romanian Comments on CD, June 1997) in a satisfactory manner. However, it may be furthermore improved by tacking into account the three technical items below.

Romania supports the continuation of this work item.

Technical Comments

ITEM: RSI-1 Inout parameters

CLAUSE: General

QUALIFIER: Major technical

RATIONALE:

Actually, only two kinds of value parameters may be declared: “**in**” and “**out**”. We believe that “**inout**” parameters should be also introduced. The main reasons are the following:

- *Compatibility with IDL:* The ODP IDL language supports this kind of parameters.
- *Convenience:* Since E-LOTOS has a imperative specification style, it would be necessary to describe functions modifying one or more input parameters. If only “**in**” and “**out**” parameters are provided, the user have to declare twice this parameters: once like an “**in**” parameter and once like an “**out**” parameter. For example, the following function actualizes both the list of orders and stocks by eliminating orders of `ords1` which may be satisfied with the actual stock `stk1` and correspondingly decreasing the amount of the stocks.

```
function Invoice (in ords1:ListOfOrder, in stks1:ListOfStock,
                 out ords2:ListOfOrder, out stks2:ListOfStock)
is
  (* Pre-condition      ords1 : the list of actual orders
                        stks1 : the list of actual stoks
                        Post-condition ords2 : the list of orders which cannot be satisfied
                        stks2 : the list of stocks which are not used
  *)
  ...
endfun
```

This kind of declaration may become very cumbersome for large list of parameters.

If “**inout**” parameters are used, this function may be declared with only two parameters, as follows:

```
function Invoice (inout ords:ListOfOrder, inout stks:ListOfStock)
is
  (* Pre-condition      ords : the list of actual orders
                        stks : the list of actual stoks
  Post-condition      ords : the list of orders which cannot be satisfied
                        stks : the list of stocks which are not used
  *)
  ...
endfun
```

- *Inefficient implementation:* The example above shows also that having only “**in**” and “**out**” duplicates the memory used for parameters at the run time.

PROPOSED CHANGE: Introduce the “**inout**” parameters.

ITEM: **RSI-2** **Run-time typing**

CLAUSE: General

QUALIFIER: Major technical

RATIONALE: As discussed in several documents and argued in the previous voting document (ITEM 2 of 21 N 10937), we deplore the introduction of run time type-checking in E-LOTOS.

PROPOSED CHANGE: We proposed to eliminate the built-in subtyping on records (“**etc**”).

ITEM: **RSI-3** **Overloading**

CLAUSE: General

QUALIFIER: Major technical

RATIONALE: As discussed in several documents and argued in the previous voting document (ITEM 3 of 21 N 10937), we deplore the lack of overloading facilities in the language.

PROPOSED CHANGE: The overloading should be introduced instead of subtyping.