An immediate sequel to EWD398: "Sequencing primitives revisited."

I have fixed the semantic definition of the if...fi and of the do...od constructs as introduced in EWD398.

Let "Sif" be: \[ \text{if } B1:S1 \ldots \ldots \ldots Bn:Sn fi ; \text{then } wp(Sif, P) = \{(E : i: 1 \leq i \leq n : B_i) \text{ and } (A : i: 1 \leq i \leq n : (B_i \text{ and } wp(Si, P)) \text{ or } \text{non } B_i)\} \]

Let "Sdo" be: \[ \text{do } B1:S1 \ldots \ldots \ldots Bn:Sn od ; \text{then } wp(Sdo, P) = \{(E : i: 0 \leq i : H_i(Sdo, P)) \}, \text{where the } H_i(Sdo, P) \text{ are given by the recurrence relation: } \]
\[ H_0(Sdo, P) = \{P \text{ and non } (E : i: 1 \leq i \leq n : B_i)\} \]
for \( i > 0 \):
\[ H_i(Sdo, P) = \{wp(Sif, H_{i-1}(Sdo, P)) \text{ or } H_{i-1}(Sdo, P)\} \]

Here the "wp(Sif, ...)

The decision to postulate --EWD398 - 4, last paragraph-- "fair random selection" so that the construct as described on top of page 5 and in the middle of page 8 is guaranteed to terminate, was a mistake: for such constructs we prefer now not to exclude non-termination. It is just too tricky if the termination --and in particular: the proof of the termination-- has to rely on the fair randomness of the selection and we had better restrict ourselves to constructs were each guarded command, when executed, implies a further approaching of the terminal state.

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