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1  |----- MODULE OT -----|
   | Specification of OT (Operational Transformation) functions. |
5  | EXTENDS Op |
6  |-----|
7  OTII(lins, rins)  $\triangleq$  lins is transformed against rins
8      IF lins.pos < rins.pos
9      THEN lins
10     ELSE IF lins.pos > rins.pos
11         THEN [lins EXCEPT !.pos = @ + 1]
12     ELSE IF lins.ch = rins.ch
13         THEN Nop
14     ELSE IF lins.pr < rins.pr
15         THEN lins
16     ELSE [lins EXCEPT !.pos = @ + 1]

18 OTID(ins, del)  $\triangleq$  ins is transformed against del
19     IF ins.pos  $\leq$  del.pos
20     THEN ins
21     ELSE [ins EXCEPT !.pos = @ - 1]

23 OTDI(del, ins)  $\triangleq$  del is transformed against ins
24     IF del.pos < ins.pos
25     THEN del
26     ELSE [del EXCEPT !.pos = @ + 1]

28 OTDD(ldel, rdel)  $\triangleq$  ldel is transformed against rdel
29     IF ldel.pos < rdel.pos
30     THEN ldel
31     ELSE IF ldel.pos > rdel.pos
32         THEN [ldel EXCEPT !.pos = @ - 1]
33     ELSE Nop

35 OT(lop, rop)  $\triangleq$  lop is transformed against rop
36     CASE lop = Nop  $\vee$  rop = Nop  $\rightarrow$  lop
37     □ lop.type = "Ins"  $\wedge$  rop.type = "Ins"  $\rightarrow$  OTII(lop, rop)
38     □ lop.type = "Ins"  $\wedge$  rop.type = "Del"  $\rightarrow$  OTID(lop, rop)
39     □ lop.type = "Del"  $\wedge$  rop.type = "Ins"  $\rightarrow$  OTDI(lop, rop)
40     □ lop.type = "Del"  $\wedge$  rop.type = "Del"  $\rightarrow$  OTDD(lop, rop)
41 |-----|

   \ * Modification History
   \ * Last modified Sun Jan 13 10:41:55 CST 2019 by hengxin
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