MODULE OT

Specification of OT (Operational Transformation) functions.

EXTENDS Op

$OTII(lins,\ rins) \triangleq$ *lins* is transformed against *rins*

```
IF lins.pos < rins.pos
 THEN lins
 ELSE IF lins.pos > rins.pos
        THEN [lins EXCEPT !.pos = @ + 1]
        ELSE IF lins.ch = rins.ch
               THEN Nop
               ELSE IF lins.pr < rins.pr
                      THEN lins
                      ELSE [lins EXCEPT !.pos = @ + 1]
```

$OTID(ins,\ del) \triangleq$ *ins* is transformed against *del*

```
IF ins.pos ≤ del.pos
 THEN ins
 ELSE [ins EXCEPT !.pos = @ − 1]
```

$OTDI(del,\ ins) \triangleq$ *del* is transformed against *ins*

```
IF del.pos < ins.pos
 THEN del
 ELSE [del EXCEPT !.pos = @ + 1]
```

$OTDD(ldel,\ rdel) \triangleq$ *ldel* is transformed against *rdel*

```
IF ldel.pos < rdel.pos
 THEN ldel
 ELSE IF ldel.pos > rdel.pos
        THEN [ldel EXCEPT !.pos = @ − 1]
        ELSE Nop
```

$OT(lop,\ rop) \triangleq$ *lop* is transformed against *rop*

```
CASE lop = Nop ∨ rop = Nop → lop
   □ lop.type = "Ins" ∧ rop.type = "Ins" → OTII(lop, rop)
   □ lop.type = "Ins" ∧ rop.type = "Del" → OTID(lop, rop)
   □ lop.type = "Del" ∧ rop.type = "Ins" → OTDI(lop, rop)
   □ lop.type = "Del" ∧ rop.type = "Del" → OTDD(lop, rop)
```

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