─────────── MODULE SEC ───────────

EXTENDS $Naturals$

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VARIABLES
 $updateset,$
 $last\_updateset$

$SECvars \triangleq \langle updateset,\ last\_updateset \rangle$

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CONSTANTS
 $Replica$

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$Update \triangleq [r : Replica,\ seq : Nat]$

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$OpUpdate(r) \triangleq updateset[r] \setminus last\_updateset[r]$ for op-based $CRDT$
$StateUpdate(r) \triangleq updateset[r]$ for state-based $CRDT$

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$SECInit \triangleq$
 $\wedge\ updateset = [r \in Replica \mapsto \{\}]$
 $\wedge\ last\_updateset = [r \in Replica \mapsto \{\}]$

$SECUpdate(r,\ seq) \triangleq$
 $\wedge\ updateset' = [updateset \text{ EXCEPT } ![r] = @ \cup \{[r \mapsto r,\ seq \mapsto seq]\}]$
 $\wedge\ \text{UNCHANGED } \langle last\_updateset \rangle$

$SECSend(r) \triangleq$
 $\wedge$ $last\_updateset' = [last\_updateset \text{ EXCEPT } ![r] = updateset[r]]$
 $\wedge$ $\text{UNCHANGED } \langle updateset \rangle$

$SECDeliver(r,\ m) \triangleq$
 $\wedge\ updateset' = [updateset \text{ EXCEPT } ![r] = @ \cup m.update]$
 $\wedge\ last\_updateset' = [last\_updateset \text{ EXCEPT } ![r] = @ \cup m.update]$

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$Sameupdate(r1,\ r2) \triangleq$
 $updateset[r1] = updateset[r2]$

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\ * Last modified Mon May 06 16:50:42 CST 2019 by $jywellin$
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