

EXTENDS *Integers*

VARIABLES *big, small*

TypeOK \triangleq $\wedge big \in 0 \dots 5$
 $\wedge small \in 0 \dots 3$

Min(*m*, *n*) \triangleq IF *m* < *n* THEN *m* ELSE *n*

Init \triangleq $\wedge big = 0$
 $\wedge small = 0$

FillSmall \triangleq $\wedge small' = 3$
 $\wedge big' = big$

FillBig \triangleq $\wedge big' = 5$
 $\wedge small' = small$

EmptySmall \triangleq $\wedge small' = 0$
 $\wedge big' = big$

EmptyBig \triangleq $\wedge big' = 0$
 $\wedge small' = small$

SmallToBig \triangleq
 LET *poured* \triangleq *Min*(*big* + *small*, 5) - *big*
 IN $\wedge big' = big + poured$
 $\wedge small' = small - poured$

BigToSmall \triangleq
 LET *poured* \triangleq *Min*(*big* + *small*, 3) - *small*
 IN $\wedge big' = big - poured$
 $\wedge small' = small + poured$

Next \triangleq $\vee FillSmall$
 $\vee FillBig$
 $\vee EmptySmall$
 $\vee EmptyBig$
 $\vee SmallToBig$
 $\vee BigToSmall$

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