

EXTENDS *AJupiter*

We have omitted the history variables for recording operation contexts.

VARIABLES *c2ss*, *s2ss*

InitImpl \triangleq \wedge *Init*

\wedge on history variables for operation contexts

\wedge *c2ss* = $[c \in \text{Client} \mapsto \text{EmptyGraph}]$

\wedge *s2ss* = $[c \in \text{Client} \mapsto \text{EmptyGraph}]$

DoImpl(*c*, *op*) \triangleq \wedge *Do*(*c*, *op*)

\wedge on history variables for operation contexts

\wedge LET *cop* \triangleq [*op* \mapsto *op*,

oid \mapsto [*c* \mapsto *c*, *seq* \mapsto *cseq*[*c*], *ctx* \mapsto *ds*[*c*]]

IN *c2ss'* = [*c2ss* EXCEPT !*c*] =

@ \oplus [*node* \mapsto {*ds'*[*c*]},

edge \mapsto {[*from* \mapsto *ds*[*c*], *to* \mapsto *ds'*[*c*], *cop* \mapsto *cop*]}]

RevImpl(*c*, *m*) \triangleq \wedge *Rev*(*c*, *m*)

\wedge on history variables for operation contexts

\wedge LET *xform* \triangleq *xFormCopCopsShift*(*m.cop*, *cbuf*[*c*], *m.ack*,

IN *c2ss'* = [*c2ss* EXCEPT !*c*] = @ \oplus *xform.xg*)

SRevImpl(*m*) \triangleq \wedge *SRev*(*m*)

\wedge on history variables for operation contexts

\wedge LET *c* \triangleq *ClientOf*(*m.cop*)

xform \triangleq *xFormCopCopsShift*(*m.cop*, *sbuf*[*c*], *m.ack*)

IN *s2ss'* = [*cl* \in *Client* \mapsto

IF *cl* = *c* THEN *s2ss*[*cl*] \oplus *xform.xg*

ELSE *s2ss*[*cl*] \oplus *xform.lg*]

XJ \triangleq INSTANCE *XJupiter* WITH *c2ss* \leftarrow *c2ss*, *s2ss* \leftarrow *s2ss*