

MODULE $xApp$
EXTENDS API LOCAL INSTANCE $Naturals$ LOCAL INSTANCE $Sequences$ LOCAL INSTANCE $FiniteSets$ CONSTANT App ASSUME $App \in \text{STRING}$ CONSTANT $Nodes$ ASSUME $\wedge IsFiniteSet(Nodes)$ $\wedge \forall n \in Nodes : n \in \text{STRING}$

MODULE SB
$SendSubscribeRequest(c) \triangleq$ $\wedge API!E2T!Client!Send(c, [type \mapsto API!E2T!Protocol.SubscribeRequest])$ $\wedge \text{UNCHANGED } \langle \rangle$ $HandleSubscribeResponse(c, m) \triangleq$ $\wedge API!E2T!Client!Receive(c)$ $\wedge \text{UNCHANGED } \langle \rangle$ $SendUnsubscribeRequest(c) \triangleq$ $\wedge API!E2T!Client!Send(c, [type \mapsto API!E2T!Protocol.UnsubscribeRequest])$ $\wedge \text{UNCHANGED } \langle \rangle$ $HandleUnsubscribeResponse(c, m) \triangleq$ $\wedge API!E2T!Client!Receive(c)$ $\wedge \text{UNCHANGED } \langle \rangle$ $HandleMessage(c, m) \triangleq$ $\wedge \vee \wedge m.type = API!E2T!Protocol.SubscribeResponse$ $\wedge HandleSubscribeResponse(c, m)$ $\vee \wedge m.type = API!E2T!Protocol.UnsubscribeResponse$ $\wedge HandleUnsubscribeResponse(c, m)$ $\wedge \text{UNCHANGED } \langle \rangle$ $Handle(c) \triangleq API!E2T!Client!Handle(c, HandleMessage)$ $Servers \triangleq API!E2T!Servers$ $Connections \triangleq API!E2T!Connections$ $Connect(s, d) \triangleq API!E2T!Client!Connect(s, d)$

$Init \triangleq \text{TRUE}$

$Next \triangleq$
 $\vee \exists s \in Nodes, d \in Servers : Connect(s, d)$
 $\vee \exists c \in Connections : Handle(c)$

LOCAL $SB \triangleq$ INSTANCE SB

$Init \triangleq \text{TRUE}$

$Next \triangleq$
 $\vee \exists s \in Nodes, d \in SB!Servers : SB!Connect(s, d)$
 $\vee \exists c \in SB!Connections : SB!Handle(c)$

\ * Modification History
\ * Last modified *Fri Aug 13 06:00:31 PDT 2021* by *jordanhalterman*
\ * Created *Tue Aug 10 04:55:35 PDT 2021* by *jordanhalterman*