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┌────────────────────────────────── MODULE xApp ───────────────────────────────────┐
EXTENDS API

LOCAL INSTANCE Naturals

LOCAL INSTANCE Sequences

LOCAL INSTANCE FiniteSets

CONSTANT App

ASSUME App ∈ STRING

CONSTANT Nodes

ASSUME  $\wedge IsFiniteSet(Nodes)$ 
       $\wedge \forall n \in Nodes : n \in STRING$ 

vars  $\triangleq \langle \rangle$ 

┌────────────────────────────────── MODULE Store ───────────────────────────────────┐
Init  $\triangleq$  TRUE

Next  $\triangleq$  FALSE

└──────────────────────────────────┘

LOCAL Store  $\triangleq$  INSTANCE Store

┌────────────────────────────────── MODULE SB ───────────────────────────────────┐
subscriptionDetails  $\triangleq$  [
  actions  $\mapsto [i \in Nat \mapsto [actionID \mapsto \{n \in Nat : n > 0 \wedge n < 256\}]]]$ 

SendSubscribeRequest(c)  $\triangleq$ 
   $\wedge API!E2T!Client!Send!SubscribeRequest(c, [foo \mapsto "bar"])$ 
   $\wedge UNCHANGED \langle e2apApiVars, topoApiVars \rangle$ 

HandleSubscribeResponse(c, m)  $\triangleq$ 
   $\wedge UNCHANGED \langle e2apApiVars, topoApiVars \rangle$ 

SendUnsubscribeRequest(c)  $\triangleq$ 
   $\wedge API!E2T!Client!Send!UnsubscribeRequest(c, [foo \mapsto "bar"])$ 
   $\wedge UNCHANGED \langle e2apApiVars, topoApiVars \rangle$ 

HandleUnsubscribeResponse(c, m)  $\triangleq$ 
   $\wedge UNCHANGED \langle e2apApiVars, topoApiVars \rangle$ 

Init  $\triangleq$ 
   $\wedge$  TRUE

```

$$\begin{aligned}
Next &\triangleq \\
&\vee \exists n \in Nodes, s \in API!E2T!Servers : API!E2T!Client!Connect(n, s) \\
&\vee \exists c \in API!E2T!Connections : API!E2T!Client!Disconnect(c) \\
&\vee \exists c \in API!E2T!Connections : SendSubscribeRequest(c) \\
&\vee \exists c \in API!E2T!Connections : SendUnsubscribeRequest(c) \\
&\vee \exists c \in API!E2T!Connections : \\
&\quad \vee API!E2T!Client!Receive!SubscribeResponse(c, HandleSubscribeResponse) \\
&\quad \vee API!E2T!Client!Receive!UnsubscribeResponse(c, HandleUnsubscribeResponse)
\end{aligned}$$

LOCAL $SB \triangleq$ INSTANCE SB

$$\begin{aligned}
Init &\triangleq \\
&\wedge SB!Init \\
&\wedge Store!Init
\end{aligned}$$

$$\begin{aligned}
Next &\triangleq \\
&\vee SB!Next \\
&\vee Store!Next
\end{aligned}$$

\ * Modification History
\ * Last modified Sat Aug 14 12:43:39 PDT 2021 by jordanhalterman
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