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1  |----- MODULE JupiterH -----|
   | Specification of Jupiter with a history variable “list”, upon which we define the weak list specification WLSpec. |
7  | EXTENDS Jupiter, AdditionalSequenceOperators |
8  |-----|
9  VARIABLES list

11  VarsH  $\triangleq \langle \textit{Vars}, \textit{list} \rangle$ 

13  TypeOKH  $\triangleq$ 
14       $\wedge \textit{TypeOK}$ 
15       $\wedge \textit{list} \subseteq \textit{List}$ 
16  |-----|
17  InitH  $\triangleq$ 
18       $\wedge \textit{Init}$ 
19       $\wedge \textit{list} = \{\textit{InitState}\}$ 

21  DoH(c)  $\triangleq$ 
22       $\wedge \textit{Do}(c)$ 
23       $\wedge \textit{list}' = \textit{list} \cup \{\textit{state}'[c]\}$ 

25  RevH(c)  $\triangleq$ 
26       $\wedge \textit{Rev}(c)$ 
27       $\wedge \textit{list}' = \textit{list} \cup \{\textit{state}'[c]\}$ 

29  SRevH  $\triangleq$ 
30       $\wedge \textit{SRev}$ 
31       $\wedge \textit{list}' = \textit{list} \cup \{\textit{state}'[\textit{Server}]\}$ 
32  |-----|
33  NextH  $\triangleq$ 
34       $\vee \exists c \in \textit{Client} : \textit{DoH}(c) \vee \textit{RevH}(c)$ 
35       $\vee \textit{SRevH}$ 

37  SpecH  $\triangleq \textit{InitH} \wedge \Box[\textit{NextH}]_{\textit{VarsH}} \wedge \text{WF}_{\textit{VarsH}}(\textit{NextH})$ 
38  |-----|
   | Weak List Consistency (WLSpec) |
42  WLSpec  $\triangleq \forall l1, l2 \in \textit{list} :$ 
43       $\wedge \textit{Injective}(l1)$ 
44       $\wedge \textit{Injective}(l2)$ 
45       $\wedge \textit{Compatible}(l1, l2)$ 

47  THEOREM SpecH  $\Rightarrow$  WLSpec
   | Strong List Consistency (SLSpec) |
51 |-----|

\ * Modification History
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