

```

1  |----- MODULE XJupiterH -----|
   | XJupiterH: XJupiter with a history of all list states across the system. |
6  | EXTENDS XJupiter |
7  |-----|
8  | VARIABLE list
9  | varsH  $\triangleq \langle vars, list \rangle$ 
11 | TypeOKH  $\triangleq TypeOK \wedge (list \subseteq List)$ 
12 |-----|
13 | InitH  $\triangleq Init \wedge list = \{InitState\}$ 
15 | DoH(c)  $\triangleq Do(c) \wedge list' = list \cup \{state'[c]\}$ 
17 | RevH(c)  $\triangleq Rev(c) \wedge list' = list \cup \{state'[c]\}$ 
19 | SRevH  $\triangleq SRev \wedge list' = list \cup \{state'[Server]\}$ 
20 |-----|
21 | NextH  $\triangleq$ 
22 |    $\vee \exists c \in Client : DoH(c) \vee RevH(c)$ 
23 |    $\vee SRevH$ 
25 | SpecH  $\triangleq InitH \wedge \Box[NextH]_{varsH} \wedge WF_{varsH}(NextH)$ 
26 |-----|
   | Weak List Consistency (WLSpec) |
30 | WLSpec  $\triangleq comm!EmptyChannel$ 
31 |    $\Rightarrow \forall l1, l2 \in list :$ 
32 |      $\wedge Injective(l1)$ 
33 |      $\wedge Injective(l2)$ 
34 |      $\wedge Compatible(l1, l2)$ 
36 | THEOREM SpecH  $\Rightarrow WLSpec$ 
   | Strong List Consistency (SLSpec) |
40 |-----|
   | \ * Modification History
   | \ * Last modified Wed Oct 10 15:41:28 CST 2018 by hengxin
   | \ * Created Wed Oct 10 15:40:13 CST 2018 by hengxin

```