

rock-paper-scissors^{0,22}

R-Feasible(ecl-machine at "b" with state ecl

```
eclcatch([eclseq(ecland(eclbase(rcv(lnk1{input to b},"play"));λs,v.
true2);eclbase(locl("choose1"));λs,v.
true2));eclor(eclthrow(eclbase(locl("diff"));λs,v.
true2);1);eclbase(locl("same"));λs,v. true2))]*;[1]).1
```

state variables "x1" : $\mathbb{N}_{<3} \oplus$ "v1" : $\mathbb{N}_{<3} \oplus$ "win" : $\mathbb{Z} \oplus$ "x2" : $\mathbb{N}_{<3} \oplus$ "v2" : $\mathbb{N}_{<3}$

```
actions rcv(lnk1{input to b},"play") :  $\mathbb{N}_{<3} \oplus$  locl("choose1") : Unit  $\oplus$ 
      locl("diff") : Unit  $\oplus$ 
      locl("same") : Unit  $\oplus$  rcv(lnk1{b to output},"hello") :  $\mathbb{B}$ 
```

sends locl("diff") sends on lnk1{b to output}
with tag "hello" [$s,v.rps(s("x1");s("v1"))$], at marker 1

```
updates update-spec1(locl("diff");"win";1;s,v.s("win")+if rps(s("x1");s("v1"))→
      1
      else 0 fi)
```

\oplus @"b" precondition for "diff"(v:Unit):

$\lambda s,v. \neg s("x1") = s("v1") \in \mathbb{Z} \text{ State}("x1" : \mathbb{N}_{<3} \oplus "v1" : \mathbb{N}_{<3}) v$

\oplus @"b" precondition for "same"(v:Unit):

$\lambda s,v. s("x1") = s("v1") \in \mathbb{Z} \text{ State}("x1" : \mathbb{N}_{<3} \oplus "v1" : \mathbb{N}_{<3}) v$

\oplus @"b" precondition for "choose1"(v:Unit):

$\lambda s,v. \text{True State}() v$

\oplus @"b" effect rcv(lnk1{input to b},"play")(v: $\mathbb{N}_{<3}$) "x1" := $\lambda s,v. v \text{ State}("x1" : \mathbb{N}_{<3}) v$

\oplus @"b" effect locl("choose1")(v:Unit) "v1" := $\lambda s,v. \text{random}(0;2) \text{ State}("v1" : \mathbb{N}_{<3}) v$