MACHINE Generic
SEES GenericCtx
VARIABLES

t
x_p
x_s

INVARIANTS

inv1: $t \in RRealPlus$
inv2: $x\_p \in RReal \pfun S$
inv3: $Closed2Closed(Rzero, t) \subseteq dom(x\_p)$
inv4: $x\_s \in STATES$

EVENTS
Initialisation

begin

act1: $t := Rzero$
act2: $x\_p :\in \{Rzero\} \fun S$
act3: $x\_s :\in STATES$

end

Event Transition ⟨ordinary⟩ $\widehat{=}$

any

s

where

grd1: $s \in \mathbb{P}_1(STATES)$

then

act1: $x\_s :\in s$

end

Event Sense ⟨ordinary⟩ $\widehat{=}$

any

s
p

where

grd1: $s \in \mathbb{P}_1(STATES)$
grd2: $p \in \mathbb{P}(STATES \times RReal \times S)$
grd3: $(x\_s \mapsto t \mapsto x\_p(t)) \in p$

then

act1: $x\_s :\in s$

end

Event Behave ⟨ordinary⟩ $\widehat{=}$

any

tp
e
Inv

where

grd0: $tp \in RRealPlus \land t \mapsto tp \in lt$
grd1: $e \in DE(S)$
grd2: $Solvable(Closed2Closed(t, tp), e)$
grd3: $Inv \subseteq RRealPlus \times S$
grd4: $(t \mapsto x\_p(t)) \in Inv$

then

act1: $t, x\_p :| x\_p' \in RReal \pfun S \land t' = tp \land Closed2Closed(Rzero, t') \subseteq dom(x\_p') \land CBAPsolutionOf(t, t', x\_p, x\_p', e, Inv)$

end

Event Actuate ⟨ordinary⟩ $\widehat{=}$

any

tp
e

s
Inv

where

grd0: $tp \in RRealPlus \land t \mapsto tp \in lt$
grd1: $e \in DE(S)$
grd2: $Solvable(Closed2Closed(t, tp), e)$
grd3: $s \subseteq STATES$
grd4: $x\_s \in s$
grd5: $Inv \subseteq RRealPlus \times S$
not S
grd6: $(t \mapsto x\_p(t)) \in Inv$
not x_p(t)∈ Inv

then

act1:
$t, x\_p :| x\_p' \in RReal \nrightarrow S \land t' = tp \land Closed2Closed(Rzero, t') \subseteq dom(x\_p') \land CBAPsolutionOf(t, t', x\_p, x\_p', e, Inv)$

end

END