MACHINE StableLassaleGeneric
REFINES Generic
SEES StableLassaleCtx
VARIABLES

t
x_p
x_s

INVARIANTS

V_o_Sol_Deriv: $x\_p(Rzero) \in K \Rightarrow x\_p; V \in D1(Closed2Closed(Rzero, t), RReal)$

EVENTS

Initialisation

begin

act1: $t := Rzero$
act3: $x\_s :\in STATES$
act2: $x\_p :\in D1(\{Rzero\}, S)$

end

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

any

s

where

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

then

act1: $x\_s :\in s$

end

Event Sense ⟨ordinary⟩ $\widehat{=}$
extends Sense

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⟩ $\widehat{=}$
refines Behave

any

tp
e
Inv

where

grd0: $tp \in RRealPlus \wedge t \mapsto tp \in lt$
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:
$t, x\_p :| \; x\_p' \in RReal \mathrel{+\!\!\!\!\to} S \wedge t' = tp \wedge Closed2Closed(Rzero, t') \subseteq dom(x\_p') \wedge$
$CBAPsolutionOf(t, t', x\_p, x\_p', e, Inv)$

end

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

any

tp
e
s

where

grd0: $tp \in RRealPlus \wedge t \mapsto tp \in lt$
grd1: $e = ode(F, x\_p(Rzero), Rzero)$
grd3: $s \subseteq STATES$
grd4: $x\_s \in s$
grd2: $Solvable(Closed2Closed(t, tp), ode(F, x\_p(Rzero), Rzero))$
grd6: $(t \mapsto x\_p(t)) \in Closed2Closed(t, tp) \times S$

with

Inv: $Inv = Closed2Closed(t, tp) \times S$

then

act1:
$t, x\_p :\mid x\_p' \in RReal \nrightarrow S \wedge t' = tp \wedge Closed2Closed(Rzero, t') \subseteq dom(x\_p') \wedge$
$CBAPsolutionOf(t, t', x\_p, x\_p', ode(F, x\_p(Rzero), Rzero), Closed2Closed(t, tp) \times S)$
Der({t},S,x_p)=Der({t},S,x_p')

end

END