An Event-B Specification of

SimpleTheoryTest

This model tests a machine that uses a theory that in turn uses another theory.

MACHINE LePond 1

VARIABLES 1.1

fish Where is the fishy fish?
fush Where did that fish go?

INVARIANTS

inv1: $fish \in \mathbf{Salmon}\langle\mathbb{Z}\rangle$ Invariant 1 comment
inv2: $fush \in \mathbf{Salmon}\langle\mathbf{Crustean}\langle\mathrm{BOOL}\rangle\rangle$ Invariant 2 comment

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EVENT INITIALISATION
THEN

act1: $fish := \mathbf{LeBigFish}$ Constructor makes Salmon(ℤ)
act2: $fush := \mathbf{LeBigFish}$ Constructor make Salmon(Crustean(BOOL))

END

DEPLOYED THEORY Crabs T 139699E14454CC343C86B45D3BB41D64 2

DATATYPE **Crustean**⟨T⟩ 2.1

nilfish
conshel

OPERATOR **compo** 2.2

OPERATOR **yesbox** 2.3

OPERATOR **inc** 2.4
END

DEPLOYED THEORY Fishes T C00A26B28581228CB8AA241CE776224D 3

IMPORTS Crabs

DATATYPE **Salmon**⟨T⟩ 3.1

LeBigFish
LeSmallFish

DATATYPE **Bass**⟨T⟩ 3.2

boson
oson

OPERATOR **addo** 3.3

THEOREMS

thm1: $1 \in \mathbb{N}$
thm2: $(\mathbf{LeBigFish} \fatsemi \mathbf{Salmon}\langle T\rangle) \in \mathbf{Salmon}\langle T\rangle$
thm3: $\top$

END