t59_scm_halt (TMXF68DskB8hDkAEKLXtyejvJGg6qqJrhqX)

October 27, 2020

Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_compos\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_scmfsa\_2 : \iota$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v5\_funct\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_3 : \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_finset\_1 : \iota \Rightarrow o$ be given. Let $v1\_afinsq\_1 : \iota \Rightarrow o$ be given. Let $r1\_scm\_halt : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2\_scm\_halt : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_scmfsa8c : \iota \Rightarrow \iota$ be given. Let $k5\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_scmfsa\_m : \iota \Rightarrow \iota$ be given. Let $k8\_extpro\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11\_scmfsa\_2 : \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_numbers : \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_compos\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_scmfsa\_2 : \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Let $r6\_scmfsa7b : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r5\_scmfsa7b : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8\_memstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v4\_relat\_1\ X0\ (u1\_struct\_0\ k1\_scmfsa\_2)) \wedge ((v1\_funct\_1\ X0) \wedge (v5\_funct\_1\ X0\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2))))) \Rightarrow (k1\_funct\_1\ (k1\_scmfsa\_m\ X0)\ (k4\_scmfsa\_2\ k6\_numbers) = np\_\_1) \tag{1}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v5\_relat\_1\ X0\ (u1\_compos\_1\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X0)\wedge(v1\_partfun1\ X0\ k5\_numbers)))))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X1)\wedge((v5\_funct\_1\ X1\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2))\wedge(v1\_partfun1\ X1\ (u1\_struct\_0\ k1\_scmfsa\_2))))))\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ k5\_numbers)\wedge((v5\_relat\_1\ X2\ (u1\_compos\_1\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X2)\wedge((v1\_finset\_1\ X2)\wedge(v1\_afinsq\_1\ X2)))))))\Rightarrow((r2\_scm\_halt\ X2\ X1\ X0)\Leftrightarrow(r6\_scmfsa7b\ X2\ (k1\_scmfsa\_m\ X1)\ X0))))) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v5\_relat\_1\ X0\ (u1\_compos\_1\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X0)\wedge(v1\_partfun1\ X0\ k5\_numbers)))))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X1)\wedge((v5\_funct\_1\ X1\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2))\wedge(v1\_partfun1\ X1\ (u1\_struct\_0\ k1\_scmfsa\_2))))))\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ k5\_numbers)\wedge((v5\_relat\_1\ X2\ (u1\_compos\_1\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X2)\wedge((v1\_finset\_1\ X2)\wedge(v1\_afinsq\_1\ X2)))))))\Rightarrow((r1\_scm\_halt\ X2\ X1\ X0)\Leftrightarrow(r5\_scmfsa7b\ X2\ (k1\_scmfsa\_m\ X1)\ X0))))) \tag{3}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X0)\wedge((v5\_funct\_1\ X0\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2))\wedge(v1\_partfun1\ X0\ (u1\_struct\_0\ k1\_scmfsa\_2))))))\Rightarrow((k1\_funct\_1\ X0\ (k4\_scmfsa\_2\ k6\_numbers) = np\_\_1)\Rightarrow(k8\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2\ X0 = k1\_scmfsa\_m\ X0)) \tag{4}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X0)\wedge(v5\_funct\_1\ X0\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2)))))\Rightarrow(k1\_scmfsa\_m\ (k1\_scmfsa\_m\ X0) = k1\_scmfsa\_m\ X0) \tag{5}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v5\_relat\_1\ X0\ (u1\_compos\_1\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X0)\wedge(v1\_partfun1\ X0\ k5\_numbers)))))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X1)\wedge((v5\_funct\_1\ X1\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2))\wedge(v1\_partfun1\ X1\ (u1\_struct\_0\ k1\_scmfsa\_2))))))\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ k5\_numbers)\wedge((v5\_relat\_1\ X2\ (u1\_compos\_1\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X2)\wedge((v1\_finset\_1\ X2)\wedge(v1\_afinsq\_1\ X2)))))))\Rightarrow(((r5\_scmfsa7b\ X2\ X1\ X0)\wedge(r6\_scmfsa7b\ X2\ X1\ X0))\Rightarrow((k3\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ (k1\_scmfsa8c\ X2))\ (k5\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ (k1\_scmfsa8c\ X2))\ (k8\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2\ X1)\ (k8\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ X2)\ (k8\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2\ X1)))=k11\_scmfsa\_2\ k6\_numbers)\wedge(\forall X3.(m2\_subset\_1\ X3\ k1\_numbers\ k5\_numbers)\Rightarrow(\neg(r1\_xxreal\_0\ X3\ (k8\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ X2)\ (k8\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2\ X1)))\wedge(k3\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ (k1\_scmfsa8c\ X2))\ (k5\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ (k1\_scmfsa8c\ X2))\ (k8\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2\ X1)\ X3)=k2\_compos\_1\ k1\_scmfsa\_2)))))) \tag{6}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X0)\wedge(v5\_funct\_1\ X0\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2))\wedge(v1\_partfun1\ X0\ (u1\_struct\_0\ k1\_scmfsa\_2)))))\Rightarrow((v1\_relat\_1\ (k1\_scmfsa\_m\ X0))\wedge((v4\_relat\_1\ (k1\_scmfsa\_m\ X0)\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ (k1\_scmfsa\_m\ X0))\wedge((v5\_funct\_1\ (k1\_scmfsa\_m\ X0)\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2))\wedge(v1\_partfun1\ (k1\_scmfsa\_m\ X0)\ (u1\_struct\_0\ k1\_scmfsa\_2))))) \tag{7}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X0)\wedge(v5\_funct\_1\ X0\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2)))))\Rightarrow((v1\_relat\_1\ (k1\_scmfsa\_m\ X0))\wedge((v4\_relat\_1\ (k1\_scmfsa\_m\ X0)\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ (k1\_scmfsa\_m\ X0))\wedge(v5\_funct\_1\ (k1\_scmfsa\_m\ X0)\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2))))) \tag{8}$$

Theorem 1

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v5\_relat\_1\ X0\ (u1\_compos\_1\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X0)\wedge(v1\_partfun1\ X0\ k5\_numbers)))))\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ (u1\_struct\_0\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X1)\wedge((v5\_funct\_1\ X1\ (k2\_memstr\_0\ np\_\_3\ k1\_scmfsa\_2))\wedge(v1\_partfun1\ X1\ (u1\_struct\_0\ k1\_scmfsa\_2))))))\Rightarrow(\forall X2.((\neg v1\_xboole\_0\ X2)\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ k5\_numbers)\wedge((v5\_relat\_1\ X2\ (u1\_compos\_1\ k1\_scmfsa\_2))\wedge((v1\_funct\_1\ X2)\wedge((v1\_finset\_1\ X2)\wedge(v1\_afinsq\_1\ X2)))))))\Rightarrow(((r1\_scm\_halt\ X2\ X1\ X0)\wedge(r2\_scm\_halt\ X2\ X1\ X0))\Rightarrow((k3\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ (k1\_scmfsa8c\ X2))\ (k5\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ (k1\_scmfsa8c\ X2))\ (k1\_scmfsa\_m\ X1)\ (k8\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ X2)\ (k1\_scmfsa\_m\ X1)))) = k11\_scmfsa\_2\ k6\_numbers)\wedge(\forall X3.(m2\_subset\_1\ X3\ k1\_numbers\ k5\_numbers)\Rightarrow(\neg(r1\_xxreal\_0\ X3\ (k8\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ X2)\ (k1\_scmfsa\_m\ X1)))\wedge(k3\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ (k1\_scmfsa8c\ X2))\ (k5\_extpro\_1\ np\_\_3\ k1\_scmfsa\_2\ (k1\_funct\_4\ X0\ (k1\_scmfsa8c\ X2))\ (k1\_scmfsa\_m\ X1)\ X3) = k2\_compos\_1\ k1\_scmfsa\_2)))))))$$