t12_fsm_1 (TMFUtAurphdtbLM-CLyAuU8wSS8KcesrhFKy)

October 27, 2020

Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l2\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_rfinseq : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_numbers : \iota$ be given. Let $k4\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u3\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m2\_finseq\_1\ X1\ X0) \Rightarrow (\forall X2.(m2\_finseq\_1\ X2\ X0) \Rightarrow (k2\_rfinseq\ X0\ (k3\_finseq\_1\ X1)\ (k8\_finseq\_1\ X0\ X1\ X2) = X2))) \tag{1}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.(m2\_finseq\_1\ X2\ X0) \Rightarrow (\forall X3.(m2\_finseq\_1\ X3\ X0) \Rightarrow (\forall X4.((\neg v2\_struct\_0\ X4) \wedge (l2\_fsm\_1\ X4\ X0\ X1)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X4)) \Rightarrow (\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X4)) \Rightarrow ((r1\_fsm\_1\ X0\ X4\ X2\ X5\ X6) \Rightarrow (k4\_fsm\_1\ X0\ X1\ X4\ X5\ (k8\_finseq\_1\ X0\ X2\ X3) = k8\_finseq\_1\ X1\ (k4\_fsm\_1\ X0\ X1\ X4\ X5\ X2)\ (k4\_fsm\_1\ X0\ X1\ X4\ X6\ X3)))))))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0) \Leftrightarrow (m1\_finseq\_1\ X1\ X0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_finseq\_1\ X1\ X0) \wedge (m1\_finseq\_1\ X2\ X0)) \Rightarrow (k8\_finseq\_1\ X0\ X1\ X2 = k7\_finseq\_1\ X1\ X2) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(((\neg v2\_struct\_0\ X2)\wedge(l2\_fsm\_1\ X2\ X0\ X1))\wedge((m1\_subset\_1\ X3\ (u1\_struct\_0\ X2))\wedge(m1\_finseq\_1\ X4\ X0)))))\Rightarrow(m2\_finseq\_1\ (k4\_fsm\_1\ X0\ X1\ X2\ X3\ X4)\ X1) \tag{5}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(\forall X2.((\neg v2\_struct\_0\ X2)\wedge(l2\_fsm\_1\ X2\ X0\ X1))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X2))\Rightarrow(\forall X4.(m2\_finseq\_1\ X4\ X0)\Rightarrow(\forall X5.(m2\_finseq\_1\ X5\ X1)\Rightarrow((X5 = k4\_fsm\_1\ X0\ X1\ X2\ X3\ X4)\Leftrightarrow((k3\_finseq\_1\ X5 = k3\_finseq\_1\ X4)\wedge(\forall X6.(m1\_subset\_1\ X6\ k5\_numbers)\Rightarrow((X6 \in k4\_finseq\_1\ X4)\Rightarrow(k1\_funct\_1\ X5\ X6 = k1\_funct\_1\ (u3\_fsm\_1\ X0\ X1\ X2)\ (k4\_tarski\ (k1\_funct\_1\ (k2\_fsm\_1\ X0\ X2\ X3\ X4)\ X6)\ (k1\_funct\_1\ X4\ X6)))))))))))) \tag{6}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(\forall X2.(m2\_finseq\_1\ X2\ X0)\Rightarrow(\forall X3.(m2\_finseq\_1\ X3\ X0)\Rightarrow(\forall X4.((\neg v2\_struct\_0\ X4)\wedge(l2\_fsm\_1\ X4\ X0\ X1))\Rightarrow(\forall X5.((\neg v2\_struct\_0\ X5)\wedge(l2\_fsm\_1\ X5\ X0\ X1))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X4))\Rightarrow(\forall X7.(m1\_subset\_1\ X7\ (u1\_struct\_0\ X4))\Rightarrow(\forall X8.(m1\_subset\_1\ X8\ (u1\_struct\_0\ X5))\Rightarrow(\forall X9.(m1\_subset\_1\ X9\ (u1\_struct\_0\ X5))\Rightarrow(\neg(r1\_fsm\_1\ X0\ X4\ X2\ X6\ X7)\wedge((r1\_fsm\_1\ X0\ X5\ X2\ X8\ X9)\wedge((k4\_fsm\_1\ X0\ X1\ X4\ X7\ X3 \neq k4\_fsm\_1\ X0\ X1\ X5\ X9\ X3)\wedge(k4\_fsm\_1\ X0\ X1\ X4\ X6\ (k8\_finseq\_1\ X0\ X2\ X3) = k4\_fsm\_1\ X0\ X1\ X5\ X8\ (k8\_finseq\_1\ X0\ X2\ X3)))))))))))))$$