t57_fsm_1 (TMZA4kC8PLfWKo8wsCbvq8baDHb3GfFAkXb)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v8\_struct\_0 : \iota \Rightarrow o$ be given. Let $l2\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r5\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.(m2\_finseq\_1\ X2\ X0) \Rightarrow (\forall X3.((\neg v2\_struct\_0\ X3) \wedge (l2\_fsm\_1\ X3\ X0\ X1)) \Rightarrow (\forall X4.((\neg v2\_struct\_0\ X4) \wedge (l2\_fsm\_1\ X4\ X0\ X1)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X3)) \Rightarrow (\forall X6.((\neg v2\_struct\_0\ X6) \wedge ((v8\_struct\_0\ X6) \wedge (l2\_fsm\_1\ X6\ X0\ X1))) \Rightarrow (\forall X7.(m1\_subset\_1\ X7\ (u1\_struct\_0\ X6)) \Rightarrow (((X6 = k13\_fsm\_1\ X0\ X1\ X3\ X4) \wedge ((r1\_subset\_1\ (u1\_struct\_0\ X3)\ (u1\_struct\_0\ X4)) \wedge (X5 = X7))) \Rightarrow (k4\_fsm\_1\ X0\ X1\ X3\ X5\ X2 = k4\_fsm\_1\ X0\ X1\ X6\ X7\ X2)))))))))) \tag{1}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.((\neg v2\_struct\_0\ X2) \wedge (l2\_fsm\_1\ X2\ X0\ X1)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X2)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X2)) \Rightarrow ((r5\_fsm\_1\ X0\ X1\ X2\ X3\ X4) \Leftrightarrow (\forall X5.(m2\_finseq\_1\ X5\ X0) \Rightarrow (k4\_fsm\_1\ X0\ X1\ X2\ X3\ X5 = k4\_fsm\_1\ X0\ X1\ X2\ X4\ X5))))))) \tag{2}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow (\forall X2.((\neg v2\_struct\_0\ X2)\wedge((v8\_struct\_0\ X2)\wedge(l2\_fsm\_1\ X2\ X0\ X1)))\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge((v5\_fsm\_1\ X3\ X0\ X1)\wedge((v7\_fsm\_1\ X3\ X0\ X1)\wedge(l2\_fsm\_1\ X3\ X0\ X1))))\Rightarrow(\forall X4.((\neg v2\_struct\_0\ X4)\wedge((v5\_fsm\_1\ X4\ X0\ X1)\wedge((v7\_fsm\_1\ X4\ X0\ X1)\wedge(l2\_fsm\_1\ X4\ X0\ X1))))\Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X2))\Rightarrow(\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X2))\Rightarrow(\forall X7.(m1\_subset\_1\ X7\ (u1\_struct\_0\ X3))\Rightarrow(\forall X8.(m1\_subset\_1\ X8\ (u1\_struct\_0\ X3))\Rightarrow(\neg(X7 = X5)\wedge((X8 = X6)\wedge((r1\_subset\_1\ (u1\_struct\_0\ X3)\ (u1\_struct\_0\ X4))\wedge((X2 = k13\_fsm\_1\ X0\ X1\ X3\ X4)\wedge((\neg r5\_fsm\_1\ X0\ X1\ X3\ X7\ X8)\wedge(r5\_fsm\_1\ X0\ X1\ X2\ X5\ X6))))))))))))))$$