t19_fsm_3 (TMHC699bxVZ2aoRCa7XuTrx4d1Cy2hqw77Q)

October 27, 2020

Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8\_afinsq\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $l2\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r4\_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_rewrite3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_fsm\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X2))) \Rightarrow (m1\_subset\_1\ X0\ X2) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(\neg(\neg r1\_xboole\_0\ X0\ X1) \wedge (\forall X2.\neg(X2 \in X0) \wedge (X2 \in X1))) \wedge (\neg(\exists X2.(X2 \in X0) \wedge (X2 \in X1)) \wedge (r1\_xboole\_0\ X0\ X1)) \tag{2}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k8\_afinsq\_1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X0))) \Rightarrow (\forall X3.((\neg v2\_struct\_0\ X3) \wedge (l2\_fsm\_3\ X3\ X0\ X2)) \Rightarrow ((X1 \in k6\_fsm\_3\ X0\ X2\ X3) \Leftrightarrow (\exists X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X3)) \wedge (\exists X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X3)) \wedge ((X4 \in u1\_fsm\_3\ X0\ X2\ X3) \wedge ((X5 \in u2\_fsm\_3\ X0\ X2\ X3) \wedge (r4\_rewrite3\ X0\ X2\ X3\ X4\ X1\ X5)))))))))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(\neg v1\_xboole\_0\ X2) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X2))) \Rightarrow (\forall X4.((\neg v2\_struct\_0\ X4) \wedge (l1\_rewrite3\ X4\ X3)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X4)) \Rightarrow ((X5 \in k3\_rewrite3\ X2\ X3\ X4\ X0\ X1) \Leftrightarrow (\exists X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X4)) \wedge ((X6 \in X1) \wedge (r4\_rewrite3\ X2\ X3\ X4\ X6\ X0\ X5))))))) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X0)))\wedge(l2\_fsm\_3\ X2\ X0\ X1)))\Rightarrow(m1\_subset\_1\ (u2\_fsm\_3\ X0\ X1\ X2)\ (k1\_zfmisc\_1\ (u1\_struct\_0\ X2))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X0))))\Rightarrow(\forall X2.(l2\_fsm\_3\ X2\ X0\ X1)\Rightarrow(l1\_fsm\_3\ X2\ X0\ X1)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X0))))\Rightarrow(\forall X2.(l1\_fsm\_3\ X2\ X0\ X1)\Rightarrow(l1\_rewrite3\ X2\ X1)) \tag{7}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k8\_afinsq\_1\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k8\_afinsq\_1\ X0)))\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge(l2\_fsm\_3\ X3\ X0\ X2))\Rightarrow((X1\in k6\_fsm\_3\ X0\ X2\ X3)\Leftrightarrow(\neg r1\_xboole\_0\ (k3\_rewrite3\ X0\ X2\ X3\ X1\ (u1\_fsm\_3\ X0\ X2\ X3))\ (u2\_fsm\_3\ X0\ X2\ X3))))))$$