

# t15\_ff\_siec (TMJmFwbpyxvXKrwjtmpeS- GNnNh66BhL4vKq)

October 27, 2020

Let  $v1\_net\_1 : \iota \Rightarrow o$  be given. Let  $l1\_petri : \iota \Rightarrow o$  be given. Let  $k2\_relat\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_net\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_petri : \iota \Rightarrow \iota$  be given. Let  $u2\_petri : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((v1\_net\_1 X2) \wedge (l1\_petri X2)) \Rightarrow \\
& (((k4\_tarski X0 X1 \in k1\_net\_1 X2) \wedge (X0 \in u4\_struct\_0 X2)) \Rightarrow ((\neg X0 \in \\
& u1\_struct\_0 X2) \wedge ((\neg X1 \in u4\_struct\_0 X2) \wedge (X1 \in u1\_struct\_0 X2)))) \wedge \\
& (((k4\_tarski X0 X1 \in k1\_net\_1 X2) \wedge (X1 \in u4\_struct\_0 X2)) \Rightarrow ((\neg X1 \in \\
& u1\_struct\_0 X2) \wedge ((\neg X0 \in u4\_struct\_0 X2) \wedge (X0 \in u1\_struct\_0 X2)))) \wedge \\
& (((k4\_tarski X0 X1 \in k1\_net\_1 X2) \wedge (X0 \in u1\_struct\_0 X2)) \Rightarrow ((\neg X1 \in \\
& u1\_struct\_0 X2) \wedge ((\neg X0 \in u4\_struct\_0 X2) \wedge (X1 \in u4\_struct\_0 X2)))) \wedge \\
& (((k4\_tarski X0 X1 \in k1\_net\_1 X2) \wedge (X1 \in u1\_struct\_0 X2)) \Rightarrow ((\neg X0 \in \\
& u1\_struct\_0 X2) \wedge ((\neg X1 \in u4\_struct\_0 X2) \wedge (X0 \in u4\_struct\_0 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (k2\_relat\_1 (k2\_relat\_1 X0) = X0) \tag{2}$$

Assume the following.

$$\forall X0. (l1\_petri X0) \Rightarrow (v1\_relat\_1 (k1\_net\_1 X0)) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X0) \Rightarrow (v1\_relat\_1 (k5\_relat\_1 X0 X1)) \tag{4}$$

Assume the following.

$$\forall X0. (v1\_relat\_1 X0) \Rightarrow (v1\_relat\_1 (k2\_relat\_1 X0)) \tag{5}$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.(v1\_relat\_1 X1) \Rightarrow ((X1 = k2\_relat\_1 X0) \Leftrightarrow (\forall X2.\forall X3.(k4\_tarski X2 X3 \in X1) \Leftrightarrow (k4\_tarski X3 X2 \in X0)))) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_petri X0) \Rightarrow (k1\_net\_1 X0 = k2\_xboole\_0 (u1\_petri X0) (u2\_petri X0)) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.\forall X2.(v1\_relat\_1 X2) \Rightarrow ((X2 = k5\_relat\_1 X0 X1) \Leftrightarrow (\forall X3.\forall X4.(k4\_tarski X3 X4 \in X2) \Leftrightarrow ((X3 \in X1) \wedge (k4\_tarski X3 X4 \in X0)))))) \quad (8)$$

**Theorem 1**

$$\forall X0.((v1\_net\_1 X0) \wedge (l1\_petri X0)) \Rightarrow ((k2\_relat\_1 (k5\_relat\_1 (k1\_net\_1 X0) (u1\_struct\_0 X0)) = k5\_relat\_1 (k2\_relat\_1 (k1\_net\_1 X0) (u4\_struct\_0 X0)) \wedge (k2\_relat\_1 (k5\_relat\_1 (k1\_net\_1 X0) (u4\_struct\_0 X0)) = k5\_relat\_1 (k2\_relat\_1 (k1\_net\_1 X0) (u1\_struct\_0 X0)))$$