t32_sublemma (TMVMeucre4f4BTSc31fZktEpfsVcfCSytem)

October 27, 2020

Let $m1\_qc\_lang1 : \iota \Rightarrow o$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $k3\_qc\_lang1 : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_valuat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16\_substut1 : \iota \Rightarrow \iota$ be given. Let $k38\_substut1 : \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k19\_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_substut1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_sublemma : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_sublemma : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $k3\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $m1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_substut1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1) \wedge (v1\_funct\_1\ X1)) \Rightarrow (\forall X2.\ ((v1\_relat\_1\ X2) \wedge (v1\_funct\_1\ X2)) \Rightarrow ((X0 \in k9\_xtuple\_0\ X1) \Rightarrow (k1\_funct\_1\ (k3\_relat\_1\ X1\ X2)\ X0 = k1\_funct\_1\ X2\ (k1\_funct\_1\ X1\ X0)))) \tag{1}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0) \Rightarrow (\forall X1.(m2\_subset\_1\ X1\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)) \Rightarrow (\forall X2.(\neg v1\_xboole\_0\ X2) \Rightarrow (\forall X3.\ (m2\_funct\_2\ X3\ (k3\_qc\_lang1\ X0)\ X2\ (k2\_valuat\_1\ X0\ X2)) \Rightarrow (\forall X4.\ (m2\_subset\_1\ X4\ (k16\_substut1\ X0)\ (k38\_substut1\ X0)) \Rightarrow ((X1 \in k9\_xtuple\_0\ (k19\_substut1\ X0\ X4)) \Rightarrow (k3\_funct\_2\ (k3\_qc\_lang1\ X0)\ X2\ (k1\_sublemma\ X0\ X2\ X3\ (k3\_sublemma\ X0\ X4\ X2\ X3))\ X1 = k1\_funct\_1\ (k3\_sublemma\ X0\ X4\ X2\ X3)\ X1)))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.\ ((m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))) \wedge (m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ X3)))) \Rightarrow (k4\_relset\_1\ X0\ X1\ X2\ X3\ X4\ X5 = k3\_relat\_1\ X4\ X5) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0)\wedge(m1\_subset\_1\ X1\ (k16\_substut1\ X0)))\Rightarrow(k19\_substut1\ X0\ X1 = k2\_xtuple\_0\ X1) \tag{4}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\neg v1\_xboole\_0\ (k38\_substut1\ X0)) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Rightarrow(m1\_subset\_1\ X2\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X1)\wedge(m1\_funct\_2\ X2\ X0\ X1))\Rightarrow(\forall X3.(m2\_funct\_2\ X3\ X0\ X1\ X2)\Rightarrow((v1\_funct\_1\ X3)\wedge((v1\_funct\_2\ X3\ X0\ X1)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))))) \tag{7}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(m1\_subset\_1\ (k38\_substut1\ X0)\ (k1\_zfmisc\_1\ (k16\_substut1\ X0))) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0)\wedge(\neg v1\_xboole\_0\ X1))\Rightarrow(m1\_funct\_2\ (k2\_valuat\_1\ X0\ X1)\ (k3\_qc\_lang1\ X0)\ X1) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_substut1\ X0)))\Rightarrow((v1\_funct\_1\ (k2\_substut1\ X0\ X1))\wedge(m1\_subset\_1\ (k2\_substut1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k3\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0))))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.((m1\_qc\_lang1\ X0)\wedge(m1\_subset\_1\ X1\ (k16\_substut1\ X0)))\Rightarrow(m1\_subset\_1\ (k19\_substut1\ X0\ X1)\ (k1\_substut1\ X0)) \tag{11}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_substut1\ X0))\Rightarrow(k2\_substut1\ X0\ X1 = X1)) \tag{12}$$

Assume the following.

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m2\_subset\_1\ X1\ (k16\_substut1\ X0)\ (k38\_substut1\ X0))\Rightarrow(\forall X2.(\neg v1\_xboole\_0\ X2)\Rightarrow(\forall X3.(m2\_funct\_2\ X3\ (k3\_qc\_lang1\ X0)\ X2\ (k2\_valuat\_1\ X0\ X2))\Rightarrow(k3\_sublemma\ X0\ X1\ X2\ X3 = k4\_relset\_1\ (k3\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0)\ X2\ (k2\_substut1\ X0\ (k19\_substut1\ X0\ X1))\ X3))))) \tag{13}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_xboole\_0\ X1)) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \tag{15}$$

Theorem 1

$$\forall X0.(m1\_qc\_lang1\ X0)\Rightarrow(\forall X1.(m2\_subset\_1\ X1\ (k2\_qc\_lang1\ X0)\ (k3\_qc\_lang1\ X0))\Rightarrow(\forall X2.(\neg v1\_xboole\_0\ X2)\Rightarrow(\forall X3.(m2\_funct\_2\ X3\ (k3\_qc\_lang1\ X0)\ X2\ (k2\_valuat\_1\ X0\ X2))\Rightarrow(\forall X4.(m2\_subset\_1\ X4\ (k16\_substut1\ X0)\ (k38\_substut1\ X0))\Rightarrow((X1 \in k9\_xtuple\_0\ (k19\_substut1\ X0\ X4))\Rightarrow(k1\_funct\_1\ X3\ (k1\_funct\_1\ (k2\_substut1\ X0\ (k19\_substut1\ X0\ X4))\ X1) = k3\_funct\_2\ (k3\_qc\_lang1\ X0)\ X2\ (k1\_sublemma\ X0\ X2\ X3\ (k3\_sublemma\ X0\ X4\ X2\ X3))\ X1))))))$$