

thm_2ETemporal_Logic_2EEVENTUAL_SIGNAL
(TM-
ciLzK6smqRwC9CGuWYn9Avqsxyd7CKHov)

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Let $ty_2Enum_2Enum : \iota$ be given. Assume the following.

$$nonempty\ ty_2Enum_2Enum \tag{1}$$

Let $c_2Earithmetic_2E_2B : \iota$ be given. Assume the following.

$$c_2Earithmetic_2E_2B \in ((ty_2Enum_2Enum^{ty_2Enum_2Enum})^{ty_2Enum_2Enum}) \tag{2}$$

Definition 1 We define $c_2Emin_2E_40$ to be $\lambda A.\lambda P \in 2^A$. **if** $(\exists x \in A.p (ap\ P\ x))$ **then** (the $(\lambda x.x \in A \wedge p\ x)$ of type $\iota \Rightarrow \iota$).

Definition 2 We define $c_2Emin_2E_3D$ to be $\lambda A.\lambda x \in A.\lambda y \in A.inj_o\ (x = y)$ of type $\iota \Rightarrow \iota$.

Definition 3 We define $c_2Ebool_2E_3F$ to be $\lambda A.\lambda P \in (2^{A-27a}).(ap\ V0P\ (ap\ (c_2Emin_2E_40\ A\ P)))$

Definition 4 We define $c_2Ebool_2E_T$ to be $(ap\ (ap\ (c_2Emin_2E_3D\ (2^2))\ (\lambda V0x \in 2.V0x))\ (\lambda V1x \in 2.V1x)))$

Definition 5 We define $c_2Ebool_2E_21$ to be $\lambda A.\lambda P \in (2^{A-27a}).(ap\ (ap\ (c_2Emin_2E_3D\ (2^{A-27a}))\ P))$

Definition 6 We define $c_2ETemporal_Logic_2EEVENTUAL$ to be $\lambda V0P \in (2^{ty_2Enum_2Enum}).\lambda V1t0 \in ty_2Enum_2Enum$

Assume the following.

$$True \tag{3}$$

Assume the following.

$$\forall A.\lambda P \in (2^{A-27a}).(nonempty\ A-27a \Rightarrow (\forall V0x \in A-27a.((V0x = V0x) \Leftrightarrow True))) \tag{4}$$

Theorem 1

$$(\forall V0a \in (2^{ty_2Enum_2Enum}).(\forall V1t0 \in ty_2Enum_2Enum. ((p\ (ap\ (ap\ c_2ETemporal_Logic_2EEVENTUAL\ V0a)\ V1t0)) \Leftrightarrow (\exists V2t \in ty_2Enum_2Enum.(p\ (ap\ V0a\ (ap\ (ap\ c_2Earithmetic_2E_2B\ V2t)\ V1t0)))))))$$