

Inference at *
of proof for Lemma dec_iff_ex_bvfun:

$\vdash \forall T:\text{Type}, E:(T \rightarrow T \rightarrow \mathbb{P}).$
 $(\forall x, y:T. \text{Dec}(E(x,y))) \iff (\exists f:T \rightarrow T \rightarrow \mathbb{B}. (\forall x, y:T. (\uparrow(x \ f \ y)) \iff E(x,y)))$
by (((Unfolds “infix_ap so_apply“ 0)
CollapseTHENM (GenRepD)).)
CollapseTHENA (
(Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n) (first_tok :t) inil_term))))).

1:

1. $T : \text{Type}$
 2. $E : T \rightarrow T \rightarrow \mathbb{P}$
 3. $\forall x, y:T. \text{Dec}(E(x,y))$
- $\vdash \exists f:T \rightarrow T \rightarrow \mathbb{B}. (\forall x, y:T. (\uparrow(f(x,y))) \iff (E(x,y)))$

2:

1. $T : \text{Type}$
 2. $E : T \rightarrow T \rightarrow \mathbb{P}$
 3. $\exists f:T \rightarrow T \rightarrow \mathbb{B}. (\forall x, y:T. (\uparrow(f(x,y))) \iff (E(x,y)))$
 4. $x : T$
 5. $y : T$
- $\vdash \text{Dec}(E(x,y))$

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