

Inference at * 1 1 1 1 1
of proof for Lemma dec_iff_ex_bvfun:

1. $T : \text{Type}$
2. $E : T \rightarrow T \rightarrow \mathbb{P}$
3. $g : x:T \rightarrow \forall y:T. (E(x,y)) \vee (\neg(E(x,y)))$
4. $x : T$
5. $y : T$
6. $y_1 : y:T \rightarrow (E(x,y)) \vee (\neg(E(x,y)))$
7. $y_1 = g(x)$
8. $y_2 : (E(x,y)) \vee (\neg(E(x,y)))$
9. $y_2 = y_1(y)$
- $\vdash (\uparrow \text{case } g(x,y) \text{ of } \text{inl}(a) \Rightarrow \text{tt} \mid \text{inr}(b) \Rightarrow \text{ff}) \iff (E(x,y))$
by D 8

1:

8. $x_1 : E(x,y)$
9. $(\text{inl } x_1) = y_1(y)$
- $\vdash (\uparrow \text{case } g(x,y) \text{ of } \text{inl}(a) \Rightarrow \text{tt} \mid \text{inr}(b) \Rightarrow \text{ff}) \iff (E(x,y))$

2:

8. $y_3 : \neg(E(x,y))$
9. $(\text{inr } y_3) = y_1(y)$
- $\vdash (\uparrow \text{case } g(x,y) \text{ of } \text{inl}(a) \Rightarrow \text{tt} \mid \text{inr}(b) \Rightarrow \text{ff}) \iff (E(x,y))$

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