

Inference at \*  
of proof for Lemma do-apply-p-lift:

$\vdash \forall A, B: \text{Type}, P: (A \rightarrow \mathbb{P}), d: (x:A \rightarrow \text{Dec}(P(x))), f: (\{x:A \mid P(x)\} \rightarrow B), x:A.$   
 $(\uparrow \text{can-apply(p-lift}(d;f);x)) \Rightarrow (\text{do-apply(p-lift}(d;f);x) = f(x))$   
by (((Auto·)  
CollapseTHEN (MoveToConcl (-1)))·)  
CollapseTHEN (RepUR “  
can-apply do-apply p-lift“ ( 0)·).

1:

1.  $A : \text{Type}$
  2.  $B : \text{Type}$
  3.  $P : A \rightarrow \mathbb{P}$
  4.  $d : x:A \rightarrow \text{Dec}(P(x))$
  5.  $f : \{x:A \mid P(x)\} \rightarrow B$
  6.  $x : A$
- $\vdash (\uparrow \text{isl}(\text{case } d(x) \text{ of } \text{inl}(a) \Rightarrow \text{inl}(f(x)) \mid \text{inr}(a) \Rightarrow \text{inr } a ))$   
 $\Rightarrow (\text{outl}(\text{case } d(x) \text{ of } \text{inl}(a) \Rightarrow \text{inl}(f(x)) \mid \text{inr}(a) \Rightarrow \text{inr } a ) = f(x))$
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