Inference at $*$
of proof for Lemma exists_over_and_r:

$\vdash \forall T$:Type, A:$\mathbb{P}$, B:$(T \to \mathbb{P})$. $(\exists x{:}T.\ (A\ \&\ B(x))) \iff (A\ \&\ (\exists x{:}T.\ B(x)))$
by ((GenExRepD)
CollapseTHEN ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat
3:n)) (first_tok :t) inil_term)))·

1:

1. T : Type
2. A : $\mathbb{P}$
3. B : $T \to \mathbb{P}$
4. x : T
5. A
6. $B(x)$

$\vdash \exists x{:}T.\ B(x)$

2:

1. T : Type
2. A : $\mathbb{P}$
3. B : $T \to \mathbb{P}$
4. A
5. x : T
6. $B(x)$

$\vdash \exists x{:}T.\ (A\ \&\ B(x))$

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http://www.nuprl.org/FDLcontent/p0_942988_/p121_99776_{exists_over_and_r}.html