Inference at $*$ 1
of proof for Lemma nat_ind_a:

1. $P : \mathbb{N} \to \mathbb{P}\{\mathrm{k}\}$
2. $P(0)$
3. $\forall i{:}\mathbb{N}^+.\ P(i - 1) \Rightarrow P(i)$
4. $i : \mathbb{N}$

$\vdash P(i)$

by ((((((D 4)
CollapseTHENM (IntInd 4))·)
CollapseTHENM (D 0))·)
CollapseTHENA (
(Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·

1:

4. $i : \mathbb{Z}$
5. $i < 0$
6. $((i{+}1) \geq 0\ ) \Rightarrow P(i{+}1)$
7. $i \geq 0$

$\vdash P(i)$

2:

4. $0 \geq 0$

$\vdash P(0)$

3:

4. $i : \mathbb{Z}$
5. $0 < i$
6. $((i - 1) \geq 0\ ) \Rightarrow P(i - 1)$
7. $i \geq 0$

$\vdash P(i)$

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http://www.nuprl.org/FDLcontent/p0_942988_/p121_94460_{nat_ind_a}1.html