1 Current State

1.1 General First-Order Encoding Template

1.2 Natural Numbers Program

$$\texttt{Zero}(x.\ \epsilon) \tag{1}$$
$$\texttt{Succ}(x.\ x.p :: \texttt{Nat}) \tag{2}$$
$$\forall x.\ x :: \texttt{Zero} \Rightarrow x :: \texttt{Nat} \tag{3}$$
$$\forall x.\ x :: \texttt{Succ}, x.p :: \texttt{Nat} \Rightarrow x :: \texttt{Nat} \tag{4}$$
$$\texttt{prev}(x.\ x :: \texttt{Nat}) : [y.\ y :: \texttt{Nat}] \tag{5}$$
$$\texttt{prev}(x.\ x :: \texttt{Zero}) : [y.\ y :: \texttt{Nat}] := \textbf{new}\ \texttt{Zero}() \tag{6}$$
$$\texttt{prev}(x.\ x :: \texttt{Succ}, x.p :: \texttt{Nat}) : [y.\ y :: \texttt{Nat}] := x.p \tag{7}$$

1.3 First-Order Encoding for Natural Numbers Program