CONTEXT Sequence

SETS

S

CONSTANTS

$SEQ, head, tail, add$

AXIOMS

axm1 : $SEQ \subseteq \mathbb{N}_1 \pfun S$

axm2 : $\forall s \cdot s \in SEQ \limp (finite(s) \land dom(s) = 1 \upto card(s))$

axm3 : $head \in SEQ \setminus \{\varnothing\} \tfun S$

axm4 : $\forall s \cdot s \in SEQ \setminus \{\varnothing\} \limp head(s) = s(1)$

axm5 : $tail \in SEQ \setminus \{\varnothing\} \tfun SEQ$

axm6 : $\forall s \cdot s \in SEQ \setminus \{\varnothing\} \limp tail(s) = (\lambda i \cdot i \in 1 \upto card(s) - 1 \mid s(i + 1))$

axm7 : $add \in SEQ \times S \tfun SEQ$

axm8 : $\forall s, e \cdot (s \in SEQ \land e \in S) \limp add(s \mapsto e) = \{1 \mapsto e\} \bunion (\lambda i \cdot i \in 2 \upto card(s) + 1 \mid s(i - 1))$

THEOREMS

thm1 : $\forall s \cdot s \in SEQ \setminus \{\varnothing\} \limp dom(tail(s)) \subseteq dom(s)$

thm2 : $\forall s \cdot s \in SEQ \setminus \{\varnothing\} \limp (\forall i \cdot i \in dom(tail(s)) \limp tail(s)(i) = s(i + 1))$

END