

pred-total^{11,40}

$\forall E, X_1, X_2: \text{Type}, \text{info}: (E \rightarrow ((\text{Id} \times X_1) + (\text{IdLnk} \times E) \times X_2)), \text{pred}?: (E \rightarrow (?E)).$
 $\text{wellfounded}\{\text{i:l}\}$
 $(E; e, e'. (\neg(\uparrow\text{first}(e'))) \text{ c} \wedge (e = \text{pred}(e') \in E)))$
 $\Rightarrow (\forall e: E. (\neg(\uparrow\text{first}(e))) \Rightarrow (\text{loc}(\text{pred}(e)) = \text{loc}(e) \in \text{Id}))$
 $\Rightarrow (\forall e, e': E. (\text{loc}(e) = \text{loc}(e') \in \text{Id}) \Rightarrow (\text{pred}?(e) = \text{pred}?(e')) \Rightarrow (e = e'))$
 $\Rightarrow (\forall e, e': E.$
 $\quad (\text{loc}(e) = \text{loc}(e') \in \text{Id})$
 $\quad \Rightarrow ((e \text{ rel_plus}(E; (\lambda e, e'. (\neg(\uparrow\text{first}(e'))) \text{ c} \wedge (e = \text{pred}(e')))) e')$
 $\quad \quad \vee (e = e')$
 $\quad \quad \vee (e' \text{ rel_plus}(E; (\lambda e, e'. (\neg(\uparrow\text{first}(e'))) \text{ c} \wedge (e = \text{pred}(e')))) e)))$