weak-antecedent-surjection-conditional[11,40]

$\forall es$:ES, P_1, Q_1, P_2, Q_2:(E$\rightarrow \mathbb{P}$), dcd_P_1:(e:E$\rightarrow$Dec($P_1(e)$)), f:($\{e$:E$|\ P_1(e)\} \rightarrow \{e$:E$|\ Q_1(e)\}$),
g:($\{e$:E$|\ P_2(e)\} \rightarrow \{e$:E$|\ Q_2(e)\}$).
($\forall e$:E. ($P_1(e)$) $\Rightarrow$ ($\neg(P_2(e))$))
$\Rightarrow$ ($\forall e$:E. Dec($Q_1(e)$))
$\Rightarrow$ ($\forall e$:E. Dec($Q_2(e)$))
$\Rightarrow$ Q_1 $\leftarrow\leftarrow=$ $f==$ P_1
$\Rightarrow$ Q_2 $\leftarrow\leftarrow=$ $g==$ P_2
$\Rightarrow$ $\lambda e.(Q_1(e)) \vee (Q_2(e))$ $\leftarrow\leftarrow=$ $[P_1?\ f : g]==$ $\lambda e.(P_1(e)) \vee (P_2(e))$

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http://www.nuprl.org/FDLcontent/p0_963683_/p109_120331_{weak-antecedent-surjection-conditional}.html