

## fpf-split<sup>11,40</sup>

$\forall A:\text{Type}, eq:\text{EqDecider}(A), B:(A \rightarrow \text{Type}), f:a:A \text{ fp} \rightarrow B(a), P:(A \rightarrow \mathbb{P}).$

$(\forall a:A. \text{Dec}(P(a)))$

$\Rightarrow (\exists fp, fnp:a:A \text{ fp} \rightarrow B(a)$

$(f \subseteq fp \oplus fnp \ \& \ fp \oplus fnp \subseteq f$

$\ \& \ (\forall a:A. (\uparrow a \in \text{dom}(fp)) \Rightarrow P(a)) \ \& \ (\forall a:A. (\uparrow a \in \text{dom}(fnp)) \Rightarrow (\neg P(a)))$

$\ \& \ \text{fpf-domain}(fp) \subseteq \text{fpf-domain}(f)$

$\ \& \ \text{fpf-domain}(fnp) \subseteq \text{fpf-domain}(f))$