

member-countable-p-union^{11,40}

$\forall p:\text{FinProbSpace}, A:(\mathbb{N} \rightarrow \text{p-open}(p)), s:(\mathbb{N} \rightarrow \text{Outcome}).$
 $(\exists i:\mathbb{N}. s \in A(i)) \Rightarrow s \in \text{countable-p-union}(i.A(i))$