Definition (Sum of functionalities for monoidal posets)
If the poset $\mathbf{P}$ is monoidal with monoidal product $\otimes$, then the "*sum*" of m copies of $\mathbf{P}$ is a design problem given by

$$\Sigma_m : \mathbf{P} \times (\mathbf{P}^m)^{\mathrm{op}} \longrightarrow_{\mathbf{Pos}} \mathbf{Bool}$$

$$\langle p^*, \langle q_1, \ldots, q_m \rangle \rangle \longmapsto (p \preceq_{\mathbf{P}} q_1 \otimes \cdots \otimes q_m).$$

Diagrammatically: