Definition (Product operator $\otimes$). For two maps $h_1 : \mathbf{F}_1 \to \mathcal{A}\mathbf{R}_1$ and $h_2 : \mathbf{F}_2 \to \mathcal{A}\mathbf{R}_2$, define

$$h_1 \otimes h_2 : (\mathbf{F}_1 \times \mathbf{F}_2) \to \mathcal{A}(\mathbf{R}_1 \times \mathbf{R}_2),$$
$$\langle f_1, f_2 \rangle \mapsto h_1(f_1) \times h_2(f_2),$$

where $\times$ is the product of two antichains.