

$$\begin{array}{c}
 \frac{\text{Fr}(\mathbf{a}) \quad \text{Fr}(\mathbf{k})}{\text{Out}(\text{enc}(\mathbf{a}, \mathbf{k})) \quad \text{Key}(\mathbf{k}) \quad \text{St}(\mathbf{a}, \mathbf{k})} \\
 \searrow \\
 \text{St}(\mathbf{a}, \mathbf{k}) \quad \text{In}(\langle \mathbf{a}, \mathbf{a} \rangle) \quad \text{[Fin}(\mathbf{a}, \mathbf{k})]
 \end{array}
 \qquad
 \begin{array}{c}
 \frac{\text{K}(\text{enc}(\langle \mathbf{a}, \mathbf{a} \rangle, \mathbf{k}_1)) \quad \text{K}(\mathbf{k}_1)}{\text{K}(\text{dec}(\text{enc}(\langle \mathbf{a}, \mathbf{a} \rangle, \mathbf{k}_1), \mathbf{k}_1))} \\
 \swarrow \\
 \frac{\text{K}(\langle \mathbf{a}, \mathbf{a} \rangle)}{\text{In}(\langle \mathbf{a}, \mathbf{a} \rangle)} [\text{K}(\langle \mathbf{a}, \mathbf{a} \rangle)] \\
 \swarrow \\
 \text{In}(\langle \mathbf{a}, \mathbf{a} \rangle) \quad \text{[Fin}(\mathbf{a}, \mathbf{k})]
 \end{array}$$