The second formula follows from the fact that $(\mathsf{FCD})(\mathsf{RLD})_{\mathrm{in}}g = g$.

$$(\mathsf{RLD})_{\mathrm{in}}(\mathsf{FCD})f = \bigsqcup\left\{\frac{a \times^{\mathsf{RLD}} b}{a \in \operatorname{atoms}^{\mathfrak{F}(A)}, b \in \operatorname{atoms}^{\mathfrak{F}(B)}, a \times^{\mathsf{FCD}} b \sqsubseteq (\mathsf{FCD})f}\right\} = \bigsqcup\left\{\frac{a \times^{\mathsf{RLD}} b}{a \in \operatorname{atoms}^{\mathfrak{F}(A)}, b \in \operatorname{atoms}^{\mathfrak{F}(B)}, a\ [(\mathsf{FCD})f]\ b}\right\} = \bigsqcup\left\{\frac{a \times^{\mathsf{RLD}} b}{a \in \operatorname{atoms}^{\mathfrak{F}(A)}, b \in \operatorname{atoms}^{\mathfrak{F}(B)}, a \times^{\mathsf{RLD}} b \not\asymp f}\right\} \sqsupseteq \bigsqcup\left\{\frac{p \in \operatorname{atoms}(a \times^{\mathsf{RLD}} b)}{a \in \operatorname{atoms}^{\mathfrak{F}(A)}, b \in \operatorname{atoms}^{\mathfrak{F}(B)}, p \not\asymp f}\right\} = \bigsqcup\left\{\frac{p \in \operatorname{atoms}^{\mathsf{RLD}(A;B)}}{p \not\asymp f}\right\} = \bigsqcup\left\{\frac{p}{p \in \operatorname{atoms} f}\right\} = f.$$

□

COROLLARY 833.

1°. $(\mathsf{FCD})\bigsqcup S = \bigsqcup\langle(\mathsf{FCD})\rangle^* S$ if $S \in \mathscr{P}\mathsf{RLD}(A;B)$.
2°. $(\mathsf{RLD})_{\mathrm{in}}\bigsqcap S = \bigsqcap\langle(\mathsf{RLD})_{\mathrm{in}}\rangle^* S$ if $S \in \mathscr{P}\mathsf{FCD}(A;B)$.

PROPOSITION 834. $(\mathsf{RLD})_{\mathrm{in}}(f \sqcap (\mathcal{A} \times^{\mathsf{FCD}} \mathcal{B})) = ((\mathsf{RLD})_{\mathrm{in}}f) \sqcap (\mathcal{A} \times^{\mathsf{RLD}} \mathcal{B})$ for every funcoid f and $\mathcal{A} \in \mathfrak{F}(\operatorname{Src} f)$, $\mathcal{B} \in \mathfrak{F}(\operatorname{Dst} f)$.

PROOF.

$$(\mathsf{RLD})_{\mathrm{in}}(f \sqcap (\mathcal{A} \times^{\mathsf{FCD}} \mathcal{B})) = ((\mathsf{RLD})_{\mathrm{in}}f) \sqcap (\mathsf{RLD})_{\mathrm{in}}(\mathcal{A} \times^{\mathsf{FCD}} \mathcal{B}) = ((\mathsf{RLD})_{\mathrm{in}}f) \sqcap (\mathcal{A} \times^{\mathsf{RLD}} \mathcal{B}).$$

□

COROLLARY 835. $(\mathsf{RLD})_{\mathrm{in}}(f|_{\mathcal{A}}) = ((\mathsf{RLD})_{\mathrm{in}}f)|_{\mathcal{A}}$.

CONJECTURE 836. $(\mathsf{RLD})_{\mathrm{in}}$ is not a lower adjoint (in general).

CONJECTURE 837. $(\mathsf{RLD})_{\mathrm{out}}$ is neither a lower adjoint nor an upper adjoint (in general).

EXERCISE 838. Prove that $\operatorname{card} \mathsf{FCD}(A;B) = 2^{2^{\max\{A,B\}}}$ if A or B is an infinite set (provided that A and B are nonempty).

LEMMA 839. $\uparrow^{\mathsf{FCD}} \{(x;y)\} \sqsubseteq (\mathsf{FCD})g \Leftrightarrow \uparrow^{\mathsf{RLD}} \{(x;y)\} \sqsubseteq g$ for every reloid g.

PROOF.

$$\uparrow^{\mathsf{FCD}} \{(x;y)\} \sqsubseteq (\mathsf{FCD})g \Leftrightarrow \uparrow^{\mathsf{FCD}} \{(x;y)\} \not\asymp (\mathsf{FCD})g \Leftrightarrow \{x\}\ [(\mathsf{FCD})g]^*\ \{y\} \Leftrightarrow \uparrow^{\mathsf{RLD}} \{(x;y)\} \not\asymp g \Leftrightarrow \uparrow^{\mathsf{RLD}} \{(x;y)\} \sqsubseteq g.$$

□

THEOREM 840. $\operatorname{Cor}(\mathsf{FCD})g = (\mathsf{FCD})\operatorname{Cor} g$ for every reloid g.