

**Definition 12.13** Let  $K = (T, Q_i, 1 \leq i \leq k)$  be an FCMI on  $X_1, X_2, \dots, X_n$ . The image of  $K$ , denoted by  $Im(K)$ , is the set of all atoms of  $\mathcal{F}_n$  such that

$$Y_j = \begin{cases} \tilde{X}_j & \text{if } j \in W_i \\ \tilde{X}_j^c & \text{if } T \cup \bigcup_{i=1}^k (Q_i - W_i). \end{cases}$$

where  $W_i \subseteq Q_i$ ,  $1 \leq i \leq k$ , and there exist at least two  $i$  such that  $W_i \neq \emptyset$ .