

$$X \vdash \alpha X \models \alpha$$

$$\begin{array}{c} X \not\models \alpha X \not\models \alpha X \models \alpha X \vdash \alpha \\ X \Leftrightarrow X \\ X \not\models \alpha \Leftrightarrow X \bigcup \{\neg \alpha\} \\ XX \end{array}$$

$$\begin{array}{c} X \vdash \neg \alpha X \vdash \alpha \alpha X \\ X \subseteq Y Y X \\ X \\ XX \\ \Rightarrow \\ \Leftarrow \\ X \\ Y X \subseteq Y \\ v \end{array}$$

$$\begin{array}{l} Y \vdash p_i \Leftrightarrow v(p_i) = T \\ Y \vdash \neg p_i \Leftrightarrow v(p_i) = F \end{array}$$

$$\begin{array}{c} v \models Y \alpha \in Y \\ v \models Y \\ X v \models X \\ v \models \alpha \alpha \in Y \alpha \in X \\ X \vdash \alpha X \models \alpha \\ X \not\models \alpha X \models \alpha \\ X \bigcup \{\neg \alpha\} \\ v \end{array}$$

$$\begin{array}{l} v \models X \\ v \models \neg \alpha \\ v \models \alpha \\ X \models \alpha \Rightarrow v \models \alpha \end{array}$$

$$X\vdash\alpha$$

$$\boxed{\vdash\alpha\quad\Leftrightarrow\quad\models\alpha}$$

$$\boxed{X\vdash\alpha\Leftarrow X\models\alpha}$$

$$\begin{array}{ccc} X\not\models\alpha & \Leftarrow & X\not\models\alpha \\ \uparrow & & \Downarrow \\ (\text{Sfika})X\bigcup\{\neg\alpha\} & \Leftrightarrow & (\text{Ikvit})X\bigcup\{\neg\alpha\} \end{array}$$

$$\begin{array}{c} \{v\models Xv\}M(X)\\Xv\\X\\X\Leftrightarrow X\\ \Leftrightarrow\\ \Leftrightarrow\\ \Sigma_2\Sigma_1 \end{array}$$

$$\begin{array}{c} \Sigma_2\Sigma_1\\M(\Sigma_1)\bigcap M(\Sigma_2)=\emptyset \end{array}$$

$$\Sigma_2\Sigma_1$$

$$\begin{array}{c} \Sigma_2=\{\neg p_0\vee\neg p_1\}\Sigma_1=\{p_0\wedge p_1\}\\ \Sigma_2\Sigma_1 \end{array}$$

$$v\models p_1\Leftrightarrow v\models \Sigma_1v\Sigma_1p_1$$

$$\begin{array}{c} \Sigma_2p_2\\p_1=\bigwedge_{\alpha\in\Sigma_1}\alpha\\ \Sigma_1 \end{array}$$

$$\begin{array}{c} \Sigma_1\Sigma_1=\{p_0,\neg p_0,p_0\vee\neg p_0\}\bigcup\{p_i,\neg p_i|i\in\mathbb{N}\}\\ \Sigma_2\Sigma_2=\{p_0\vee\neg p_0\} \end{array}$$

$$\Sigma_1\cup\Sigma_2$$

$$D\subseteq\Sigma_1\bigcup\Sigma_2$$

$$D\subseteq\Sigma_1\bigcup\Sigma_2$$

$$D$$

$$D_1=D\bigcap\Sigma_1D_2=D\bigcap\Sigma_2$$

$$DD_2D_1$$

$$D_1$$

$$\begin{array}{l}
D_1 = \{\alpha_1, \alpha_2, \dots, \alpha_k\} \subseteq \Sigma_1 \\
p_1 = \alpha_1 \wedge \alpha_2 \wedge \dots \wedge \alpha_k \\
p_2 = \neg p_1 \\
v \\
v \models \Sigma_1 \Leftrightarrow v \models p_1 \\
\\
\alpha \in \Sigma_1 v \models \alpha \Leftarrow v \models \Sigma_1 \Rightarrow \bullet \\
\alpha_i \in D_1 \\
v \models \alpha_1 \wedge \dots \wedge \alpha_k = p \\
\\
v \models D_2 \Leftarrow v \models \Sigma_2 v \not\models \Sigma_1 \Leftarrow \bullet \\
v \not\models D_1 D = D_1 \bigcup D_2 \\
v \not\models p_1 v \not\models \alpha \alpha \in D_1 \\
\\
\neg p_1 = p_2 \\
v \models p_2 \Leftrightarrow v \models \Sigma_2 v \\
v \models \neg p_1 \Leftrightarrow v \not\models p_1 \Leftrightarrow v \not\models \Sigma_1 \Leftrightarrow v \models \Sigma_2 \\
\parallel \\
p_2 \\
\\
\alpha_M M \\
\varphi \\
\alpha_M \wedge \neg \varphi \\
\\
\bullet \\
\\
\bullet \\
\\
p_2 p_1 2
\end{array}$$

$$(\text{request } P_i R_1 \bullet$$

$$\begin{array}{l}
G_i \bullet \\
p_1 G_1 \\
P_2 G_2
\end{array}$$

$$p_1 D_1 \bullet$$

$$p_2 D_2 \bullet$$

$$\text{EXEC=}$$

$$(\overset{1}{G}_1 \leftrightarrow (\overset{1}{R}_1 \wedge (\neg \overset{0}{R}_2 \vee \overset{1}{D}_2)))$$

$$(\overset{1}{G}_2 \leftrightarrow (\overset{1}{R}_2 \wedge (\neg \overset{0}{R}_1 \vee \overset{1}{D}_1)))$$

$$\begin{array}{c} \varphi_1 = \neg(G_1 \wedge G_2) \\ \text{EXEC}_1(\underbrace{G_1}_1 \wedge \underbrace{G_2}_1) \end{array}$$

$$\begin{array}{c} \text{EXEC}_1 \neg(D_1 \wedge D_2) = \alpha'_M \\ \alpha'_M \wedge (G_1 \wedge G_2) \\ \neg(G_1 \wedge G_2) \end{array}$$

$$\begin{array}{l} v \models \mathbf{EXEC} \wedge \neg(D_1 \wedge D_2) \\ \wedge (G_1 \wedge G_2) \\ \Rightarrow \bar{v}(G_1) = T \quad \bar{v}(G_2) = T \\ \Rightarrow \bar{v}(R_1 \wedge (\neg R_2 \vee D_2)) = T \\ \Rightarrow \bar{v}(R_1) + T \\ * \bar{v}(\neg R_2 \vee D_2) = T \\ \bar{v}(G_2) = T \Rightarrow \bar{v}(R_2) = T \\ * * \bar{v}(\neg R_2) = F \\ \underbrace{\Rightarrow}_{***} \bar{v}(D_2) = T \end{array}$$

$$\begin{array}{c} \varphi_2 = (R_1 \wedge \neg R_2 \rightarrow G_1) \\ \alpha'_M \wedge (R_1 \wedge \neg R_2 \wedge \neg G_1) \end{array}$$