$X \vdash \alpha X \vDash \alpha$

$X \nvdash \alpha X \nvDash \alpha X \vDash \alpha X \vdash \alpha$
$X \Leftrightarrow X$
$X \nvdash \alpha \Leftrightarrow X \bigcup \{\neg\alpha\}$
$X X$

$X \vdash \neg\alpha X \vdash \alpha\alpha X$
$X \subseteq Y Y X$
X
$X X$
$\Rightarrow$
$\Leftarrow$
X
$Y X \subseteq Y$
v

$$Y \vdash p_i \Leftrightarrow v(p_i) = T$$
$$Y \vdash \neg p_i \Leftrightarrow v(p_i) = F$$

$v \vDash Y \alpha \in Y$
$v \vDash Y$
$X v \vDash X$
$v \vDash \alpha\alpha \in Y \alpha \in X$
$X \vdash \alpha X \vDash \alpha$
$X \nvdash \alpha X \vDash \alpha$
$X \bigcup \{\neg\alpha\}$
v

$$v \vDash X$$
$$v \vDash \neg\alpha$$
$$v \vDash \alpha$$
$$X \vDash \alpha \Rightarrow v \vDash \alpha$$

$X \vdash \alpha$

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

$$\boxed{\text{X} \vdash \alpha \Leftarrow X \vDash \alpha}$$

$$\begin{array}{ccc} X \nvDash \alpha & \Leftarrow & X \nvdash \alpha \\ \Uparrow & & \Updownarrow \\ (\text{Sfika}) X \bigcup \{\neg \alpha\} & \Leftrightarrow & (\text{Ikvit}) X \bigcup \{\neg \alpha\} \end{array}$$

$\{v \vDash Xv\} M(X)$
Xv
X
$X \Leftrightarrow X$
$\Leftrightarrow$
$\Leftrightarrow$
$\Sigma_2 \Sigma_1$

$\Sigma_2 \Sigma_1$
$M(\Sigma_1) \bigcap M(\Sigma_2) = \emptyset$

$\Sigma_2 \Sigma_1$

$\Sigma_2 = \{\neg p_0 \vee \neg p_1\} \Sigma_1 = \{p_0 \wedge p_1\}$
$\Sigma_2 \Sigma_1$

$v \vDash p_1 \Leftrightarrow v \vDash \Sigma_1 v \Sigma_1 p_1$
$\Sigma_2 p_2$
$p_1 = \bigwedge_{\alpha \in \Sigma_1} \alpha$
Σ_1
$\Sigma_1 \Sigma_1 = \{p_0, \neg p_0, p_0 \vee \neg p_0\} \bigcup \{p_i, \neg p_i | i \in \mathbb{N}\}$
$\Sigma_2 \Sigma_2 = \{p_0 \vee \neg p_0\}$
$\Sigma_1 \cup \Sigma_2$
$D \subseteq \Sigma_1 \bigcup \Sigma_2$
$D \subseteq \Sigma_1 \bigcup \Sigma_2$
D
$D_1 = D \bigcap \Sigma_1 D_2 = D \bigcap \Sigma_2$
$D D_2 D_1$
D_1

$D_1 = \{\alpha_1, \alpha_2, \ldots, \alpha_k\} \subseteq \Sigma_1$
$p_1 = \alpha_1 \wedge \alpha_2 \wedge \ldots \alpha_k$
$p_2 = \neg p_1$
v
$v \models \Sigma_1 \Leftrightarrow v \models p_1$

- $\alpha \in \Sigma_1 v \models \alpha \Leftarrow v \models \Sigma_1 \Rightarrow$
$\alpha_i \in D_1$
$v \models \alpha_1 \wedge \cdots \wedge \alpha_k = p$

- $v \models D_2 \Leftarrow v \models \Sigma_2 v \not\models \Sigma_1 \Leftarrow$
$v \not\models D_1 D = D_1 \bigcup D_2$
$v \not\models p_1 v \not\models \alpha \alpha \in D_1$

$\neg p_1 = p_2$
$v \models p_2 \Leftrightarrow v \models \Sigma_2 v$"

$$v \models \neg p_1 \Leftrightarrow v \not\models \underset{\underset{p_2}{\parallel}}{p_1} \Leftrightarrow v \not\models \Sigma_1 \Leftrightarrow v \models \Sigma_2$$

$\alpha_M M$
φ
$\alpha_M \wedge \neg\varphi$

-
-

$p_2 p_1 2$

- (request$P_i R_1$
- G_i
$p_1 G_1$
$P_2 G_2$

- $p_1 D_1$
- $p_2 D_2$

EXEC$=$

$(\overset{1}{G_1} \leftrightarrow (\overset{1}{R_1} \wedge (\neg \overset{0}{R_2} \vee \overset{1}{D_2})))$

$(\overset{1}{G_2} \leftrightarrow (\overset{1}{R_2} \wedge (\neg \overset{0}{R_1} \vee \overset{1}{D_1})))$

$$\varphi_1 = \neg(G_1 \wedge G_2)$$

$$\mathrm{EXEC}_1(\overbrace{G_1}^{1} \wedge \overbrace{G_2}^{1})$$

$$\mathrm{EXEC}_1 \neg(D_1 \wedge D_2) = \alpha_M^{'}$$
$$\alpha'_M \wedge (G_1 \wedge G_2)$$

$$\neg(G_1 \wedge G_2)$$

$v \models \mathbf{EXEC} \wedge \neg(D_1 \wedge D_2)$

$\wedge\, (G_1 \wedge G_2)$

$\Rightarrow \overline{v}(G_1) = T \quad \overline{v}(G_2) = T$

$\Rightarrow \overline{v}(R_1 \wedge (\neg R_2 \vee D_2)) = T$

$\Rightarrow \overline{v}(R_1) + T$

$* \, \overline{v}(\neg R_2 \vee D_2) = T$

$\overline{v}(G_2) = T \Rightarrow \overline{v}(R_2) = T$

$* * \overline{v}(\neg R_2) = F$

$\underbrace{\Rightarrow}_{*+**} \overline{v}(D_2) = T$

$$\varphi_2 = (R_1 \wedge \neg R_2 \rightarrow G_1)$$
$$\alpha'_M \wedge (R_1 \wedge \neg R_2 \wedge \neg G_1)$$