Malink's (2006) System $\mathcal{A}$

Axioms of $\boldsymbol{\mathcal{A}}$ (Malink 2006: 115)

(ax$_1$)	$\boldsymbol{\Upsilon}aa$
(ax$_2$)	$\boldsymbol{\Upsilon}ab \wedge \boldsymbol{\Upsilon}bc \supset \boldsymbol{\Upsilon}ac$
(ax$_3$)	$\widehat{\mathbf{E}}ab \supset \boldsymbol{\Upsilon}ab$
(ax$_4$)	$\mathbf{E}ab \wedge \boldsymbol{\Upsilon}bc \supset \mathbf{E}ac$
(ax$_5$)	$\widetilde{\mathbf{E}}ab \wedge \boldsymbol{\Upsilon}bc \supset \widetilde{\mathbf{E}}ac$

Definitions of $\boldsymbol{\mathcal{A}}$ (Malink 2006: 115)

(df$_1$)	Σa	$:=$	$\exists z\, \mathbf{E}za$
(df$_2$)	$\mathbf{K}ab$	$:=$	$\Sigma a \wedge \Sigma b \wedge \neg\exists z\, (\boldsymbol{\Upsilon}az \wedge \boldsymbol{\Upsilon}bz)$
(df$_3$)	Πab	$:=$	$\neg(\Sigma a \wedge \Sigma b) \wedge \neg\mathbf{E}ab \wedge \neg\mathbf{E}ba \wedge ((\Sigma a \vee \Sigma b) \supset \exists z\, (\boldsymbol{\Upsilon}az \wedge \boldsymbol{\Upsilon}bz))$
(df$_4$)	$\overline{\Pi}ab$	$:=$	$\Pi ab \vee \boldsymbol{\Upsilon}ab$
(df$_5$)	$\widehat{\mathbf{E}}ab$	$:=$	$\mathbf{E}ab \vee \widetilde{\mathbf{E}}ab$
(df$_6$)	$\widehat{\Sigma}a$	$:=$	$\exists z\, \widehat{\mathbf{E}}za$
(df$_7$)	$\overline{\mathbf{E}}ab$	$:=$	$\mathbf{E}ab \vee (\Sigma a \wedge \boldsymbol{\Upsilon}ab)$

Abbreviations for Modal Syllogistic Copulae in $\boldsymbol{\mathcal{A}}$ (Malink 2006: 116)

$\mathbb{X}^{\mathbf{a}}ab$	$:=$	$\boldsymbol{\Upsilon}ab$	$\mathbb{M}^{\mathbf{a}}ab$	$:=$	$\forall z\, (\boldsymbol{\Upsilon}bz \supset \overline{\Pi}az)$
$\mathbb{X}^{\mathbf{e}}ab$	$:=$	$\forall z\, (\boldsymbol{\Upsilon}bz \supset \neg\boldsymbol{\Upsilon}az)$	$\mathbb{M}^{\mathbf{e}}ab$	$:=$	$\forall z\, (\boldsymbol{\Upsilon}bz \supset \neg\overline{\mathbf{E}}az) \vee \forall z\, (\boldsymbol{\Upsilon}az \supset \neg\overline{\mathbf{E}}bz)$
$\mathbb{X}^{\mathbf{i}}ab$	$:=$	$\exists z\, (\boldsymbol{\Upsilon}bz \wedge \boldsymbol{\Upsilon}az)$	$\mathbb{M}^{\mathbf{i}}ab$	$:=$	$\exists z\, (\boldsymbol{\Upsilon}bz \wedge \overline{\Pi}az)$
$\mathbb{X}^{\mathbf{o}}ab$	$:=$	$\neg\boldsymbol{\Upsilon}ab$	$\mathbb{M}^{\mathbf{o}}ab$	$:=$	$\neg\overline{\mathbf{E}}ab$
$\mathbb{N}^{\mathbf{a}}ab$	$:=$	$\widehat{\mathbf{E}}ab$	$\mathbb{Q}^{\mathbf{a/e}}ab$	$:=$	$\forall z\, (\boldsymbol{\Upsilon}bz \supset \Pi az)$
$\mathbb{N}^{\mathbf{e}}ab$	$:=$	$\mathbf{K}ab$	$\mathbb{Q}^{\mathbf{i/o}}ab$	$:=$	Πab
$\mathbb{N}^{\mathbf{i}}ab$	$:=$	$\exists z\, ((\boldsymbol{\Upsilon}bz \wedge \widehat{\mathbf{E}}az) \vee (\boldsymbol{\Upsilon}az \wedge \widehat{\mathbf{E}}bz))$			
$\mathbb{N}^{\mathbf{o}}ab$	$:=$	$\exists z\, (\boldsymbol{\Upsilon}bz \wedge \mathbf{K}az) \vee \exists zv\, (\widehat{\mathbf{E}}bz \wedge \widehat{\mathbf{E}}av \wedge \forall u\, (\boldsymbol{\Upsilon}au \wedge \widehat{\Sigma}u \supset \mathbf{K}zu))$			