Diagram 1

A1 (underlined), A2 — T_A

T_A —(0,N)— P_X —(1,N)— T_B

X1 — P_X

B1 (underlined), B2 — T_B

T_B —(1,N)— IS_A

T_A —(1,N)— P_W

T_A —(1,1)— P_Q

W1 — P_Q

Q1 — P_Q

Y1 — P_Y

P_X —(0,N)— P_Y

T_B —(0,N)— P_Z

Z1 — P_Z

P_W —(0,N)— T_C

P_Q —(0,N)— T_C

P_Y —(0,N)— T_D

P_Z —(1,1)— T_D

T_C —(0,N)— T_D

C1 (underlined), C2 — T_C

D1 (underlined), D2 — T_D

D — P_D —(0,M)

T_D — P_D

IS_A — T_B1, T_B2

B11 (underlined), B12 — T_B1

B21 (underlined), B22 — T_B2

Diagram 2

A1 (underlined), A2 — T_A

T_A —(0,N)— P_X —(1,N)— T_B

X1 — P_X

B1 (underlined), B2 — T_B

T_B —(0,N)— P_V —(0,N)— T_F

V1 — P_V

T_B —(0,1)— P_W —(0,N)— T_F

F1 (underlined) — P_W

W1 — P_W

F2 — T_F

T_A —(0,N)— P_Q

P_Q —(1,1)— ID — T_C (double box)

P_X —(0,N)— P_Y

Y1 — P_Y

T_B —(0,N)— P_Z

Z1 — P_Z

P_Y —(0,N)— T_D

P_Z —(1,1)— T_D

C1 (underlined), C2 — T_C

D1 (underlined), D2 — T_D

T_D —(1,N)— IS_A

IS_A — T_D1, T_D2

D11 (underlined), D12 — T_D1

D21 (underlined), D22 — T_D2

T_D2 —(1,1)— P_R —(0,N)— T_E

T_E —(0,1)— ... — P_S

E1, E2 — T_E

S1 — P_S

P_S —(0,N)— T_E

1.)

T_C ({C1, C2}, {C1})

T_A ({A1, A2, C11, Q1}, {A1})

P_W ({A1, C1, W1}, {A1+C1})

P_W[A1] $\subseteq$ T_A[A1], T_A[A1] $\subseteq$ P_W[A1], P_W[C1] $\subseteq$ T_C[C1]

T_A[C11] $\subseteq$ T_C[C1], dom(C11) $\subseteq$ dom(C1), Null(T_A, C11) = $\perp$

T_B({B1, B2}, {B1})

P_X({A1, B1, X1}, {A1 + B1})

P_X[A1] $\subseteq$ T_A[A1], P_X[B1] $\subseteq$ T_B[B1], T_B[B1] $\subseteq$ P_X[B1]

T_D({D1, D2, B1, Z1}, {D1})

T_D[B1] $\subseteq$ T_B[B1], Null(T_D, B1) = $\perp$

P_D({D1, D11, D}, {D1 + D11})

P_D[D1] $\subseteq$ T_D[D1], P_D[D11] $\subseteq$ T_D[D1], dom(D11) $\subseteq$ dom(D1)

P_Y({D1, A1, B1, Y1}, {D1 + A1 + B1})

P_Y[D1] $\subseteq$ T_D[D1], P_Y[A1 + B1] $\subseteq$ P_X[A1 + B1]

T_B1({B1, B11, B12}, {B1, B11})

T_B2({B1, B21, B22}, {B1, B21})

T_B1[B1] $\subseteq$ T_B[B1]

T_B2[B1] $\subseteq$ T_B[B1]

T_B[B1] $\subseteq$ T_B1[B1] $\cup$ T_B2[B1]

2.)

T_A({A1, A2}, {A1})

T_C({C1, C2, A1}, {A1+C1})

T_C[A1] $\subseteq$ T_A[A1]

T_F({F1, F2}, {F1})

T_B({B1, B2, F11, W1}, {B1})

P_V({B1, F1, V1}, {B1 + F1})

T_B[F11] $\subseteq$ T_F[F1], dom(F11) $\subseteq$ dom(F1), Null(T_B, F11) = T

P_V[F1] $\subseteq$ T_F[F1], P_V[B1] $\subseteq$ T_B[B1]

P_X({A1, B1, X1}, {A1 + B1})

P_X[A1] $\subseteq$ T_A [A1], P_X[B1] $\subseteq$ T_B[B1], T_B[B1] $\subseteq$ P_X[B1]

T_D({D1, D2, B1, Z1}, {D1})

P_Y({D1, A1, B1, Y1}, {A1 + B1 +D1})

T_D[B1] $\subseteq$ T_B[B1], Null(T_D, B1) = $\perp$

P_Y[D1] $\subseteq$ T_D[D1], P_Y[A1 + B1] $\subseteq$ P_X[A1 + B1]

T_E({E1, E2, E11, S1}, {E1})

T_E[E11] $\subseteq$ T_E[E1], dom(E11) $\subseteq$ dom(E1), Null(T_E, E11) = T

T_D1({D11, D12, D1}, {D1, D11})

T_D2({D21, D22, D1, E1}, {D1, D21})

T_D1[D1] $\subseteq$ T_D[D1], T_D2[D1] $\subseteq$ T_D[D1], T_D[D1] $\subseteq$ T_D1[D1] $\cup$ T_D2[D1]

T_D2[E1] $\subseteq$ T_E[E1], Null(T_D2, E1) = $\perp$