Type Definitions (from Gamut vol 2, pp. 81-82

1. If □ is a variable or a constant of type a in L, then □ is an expression of type a in L.

2. If □ is an expression of type □a,b□ in L and □ is an expression of type a in L, then (□(□)) is an expression of type b in L.

3. If φ and Ψ are expressions of type t in L (i.e. formulas in L), then so are ¬ φ, (φ ∧ Ψ), (φ ∨ Ψ), (φ → Ψ), and (φ ↔ Ψ).

4. If φ is an expression of type t in L and v is a variable (of arbitrary type a) then ∀vφ and ∃vφ are expressions of type t in L.

5. If □ and □ are expressions in L which belong to the same (arbitrary) type, then (□ = □) is an expression of type t in L.

6. Every expression in L is to be constructed by means of (1)-(5) in a finite number of steps.

Restatement and Extension to Intensional Types (pp. 119-120)

1. If □ ∈ VAR_a or □ ∈ CON_a^L, then □ ∈ WE_a^L.

2. If □ ∈ $WE_{<a,b>}^L$ and □ ∈ WE_a^L, then (□(□)) ∈ WE_b^L.

3. If φ, Ψ ∈ WE_t^L, then ¬ φ, (φ ∧ Ψ), (φ ∨ Ψ), (φ → Ψ), and (φ ↔ Ψ) ∈ WE_t^L.

4. If φ ∈ WE_t^L and v ∈ VAR_a, then ∀vφ and ∃vφ ∈ WE_t^L.

5. If □ ∈ WE_a^L and v ∈ VAR_b, then λv□ ∈ $Var_{<b,a>}$.

6. If φ ∈ WE_t^L, then □φ, ◇φ ∈ WE_t^L.

7. If □ ∈ WE_a^L, then ˆ□ $WE_{<s,a>}^L$.

8. If □ ∈ $WE_{<s,a>}^L$, then ˇ□ WE_a^L.

9. Every element of WE_a^L for any a is constructed in a finite number of steps using (1)-(9).