

Outline for January 22, 2008

1. Schematic Protection Model
 - a. Model components
 - b. Link function
 - c. Filter function
 - d. Example: Take-Grant as an instance of SPM
 - e. Create operations and attenuation
 - f. Flow functions, maximal state
 - g. Safety analysis
2. Expressive power
 - a. HRU vs. SPM
 - b. Multiparent joint creates in HRU
 - c. Adding multiparent joint creates to SPM (giving ESPM)
 - d. Simulation of multiparent joint creates by 2-parent joint creates
 - e. Monotonic ESPM, monotonic HRU equivalent
 - f. Safety question in ESPM decidable if acyclic attenuating scheme
3. Comparing Expressive Power of Models
 - a. Graph representation
 - b. Simulate 3-parent joint create using 2-parent joint create
 - c. Correspondence between two schemes in terms of graph representation
 - d. Formal definition of scheme A simulating scheme B
 - e. Model expressive power
 - f. Result: monotonic 1-parent models less expressive than monotonic multiparent models (so ESPM more expressive than SPM)
4. Typed Access Matrix Model
 - a. Add notion of type for entities — set of types T , set of subject types $TS \subseteq T$
 - b. New create rules: specify subject/object type
 - c. Safety decidable for systems with acyclic MTAM schemes