

Outline for April 13, 2004

1. 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
2. Comparing Expressive Power of Models
 - a. Graph representation
 - b. Go through 3-parent joint create as simulated by 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)
3. 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. In command, child type if something of that type created; otherwise, a parent type
 - d. Show type graph and cycles in it
 - e. Safety decidable for systems with acyclic MTAM schemes
4. Policy
 - a. Define *security policy*, *secure system*, *breach of security* formally
 - b. Security models
 - c. Confidentiality, integrity policies; distinguish from military, commercial policies
 - d. Role of trust in modeling
 - e. DAC *vs.* MAC *vs.* ORCON