Panel 2: ACCA Roadmap
An Autonomic Governance Dynamic

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Rationale: Governance of Autonomic Systems

- Autonomic system must be *Governed* by humans rather than managed
  - Maintain operational goals and constraints as Policies
- Requires on-going human understanding of adaptive space and its governance potential
  - System exposes *Governance Space*
    - We can't govern what we don't understand
  - Governance Space is operationally accessible portion of an *Adaptive Space*
    - Adaptive capabilities of system is fluid
    - Contextual space plus possible adaptive behaviours
  - Restrictions in Governance Space *between* groups
    - Must reflect *organisational and social* policy-making
  - Non-functional aspects of policy-making
    - Stability, responsiveness, potential for conflict

Vision: A Governance Dynamic

- Governance is a *dynamic two way process*
- Downflow
  - Governance policies
  - Delegation of decision making authority
- Upflow
  - Governance Space violations i.e. policy conflicts
  - Escalation of decision making
  - Adaptive Space violation – semantic mismatch
- Apply recursively between communities of agents **within** System
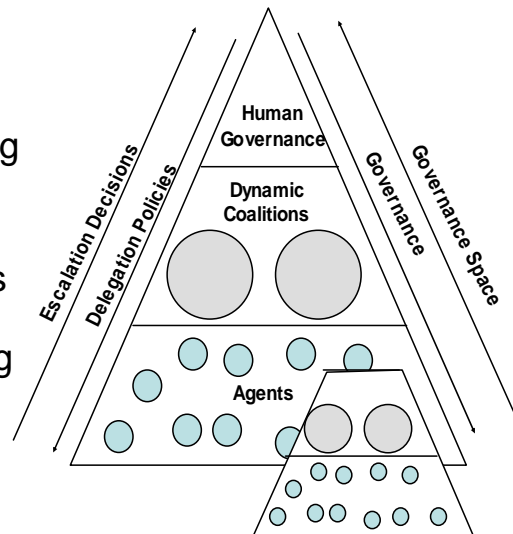
Research Objectives

- Policy-based management mechanisms for handling this Dynamic
  - e.g Community based policy management
- Fast stablilisation of policy set for a given Governance Space
  - Building govenor confidence
- Handling volatile Governance Spaces
  - Changing contexts, service offerings, value chains
- Semantic mappings for conveying Adaptive Space
- Recursive application of the Governance Dynamic between communities of agents

Roadmap Plan

- Step 1: Gain understanding of human decision making dynamics
  - STREPs/CAs (FP6?) with sociologists, game theorists, applied organisational theorists
- Step 2: Establish benchmarks for assessing governance effectiveness and explaining benefits
  - NoE/CA with current/future operators and regulators
- Step 3: Develop forms of adaptive and governance spaces, build and evaluate solutions for the governance dynamic
  - STREPs/IPs using results from SAC projects
  - Apply to different domains, communications, pervasive computing, electronic markets, collaborative spaces