

# Framework for the Dynamic Establishing of Command and Control (C2) Nodes in an Enterprise Environment

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2006 CCRTS  
THE STATE OF THE ART AND THE STATE OF THE PRACTICE  
June 20-22, 2006  
San Diego, CA

# Military Missions

- Operations Other War
  - Deter War
  - Resolve Conflict
  - Promote Peace
  - Support Civil Authorities
  - Peace Keeping
  - Humanitarian Relief
- General War
  - Large Scale
  - Sustained Combat Operation
  - Global Conflict Between Major Powers

# Activity Levels of War

- Strategic
  - Level of war where a nation or groups of nations determine national or multinational policy objectives.
  - Develops and uses national resources to accomplish these objectives.
- Operational
  - Level of war where campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or areas of operations.
- Tactical
  - Level of war where battles and engagements are planned and executed. Tactics refer to concepts and methods used to accomplish a particular mission.

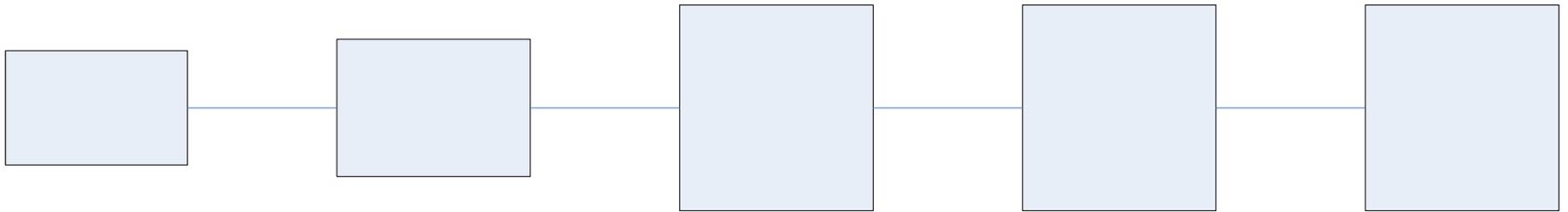
# Mission and Command and Control

- Command and Control (C2)
  - Supports the mission by coordinating forces to accomplish the mission
- C2 Nodes
  - Computer, network, and sensor systems that provide a portion of the C2 function
  - Supports an activity level of war
  - Support accomplishing of the mission

# Policy for C2 Nodes

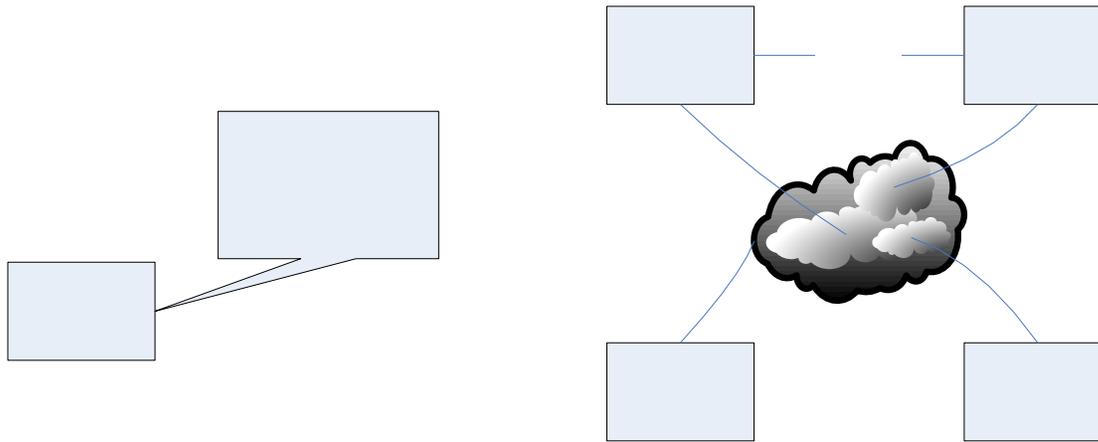
- Policies provide guidance to focus resources
- Policy breakdown
  - Macro Policies
    - Determine at Strategic Level
  - Sub Macro Policies
    - Decomposition of macro policies
  - Micro Policies
    - Breaking down of sub macro policies into implementable policies.

# Translating Macro Policy to Micro Policy



# Micro Policy Govern C2 Node

- Micro policies provide guidance on when and how a C2 Node is added to an enterprise support a mission.



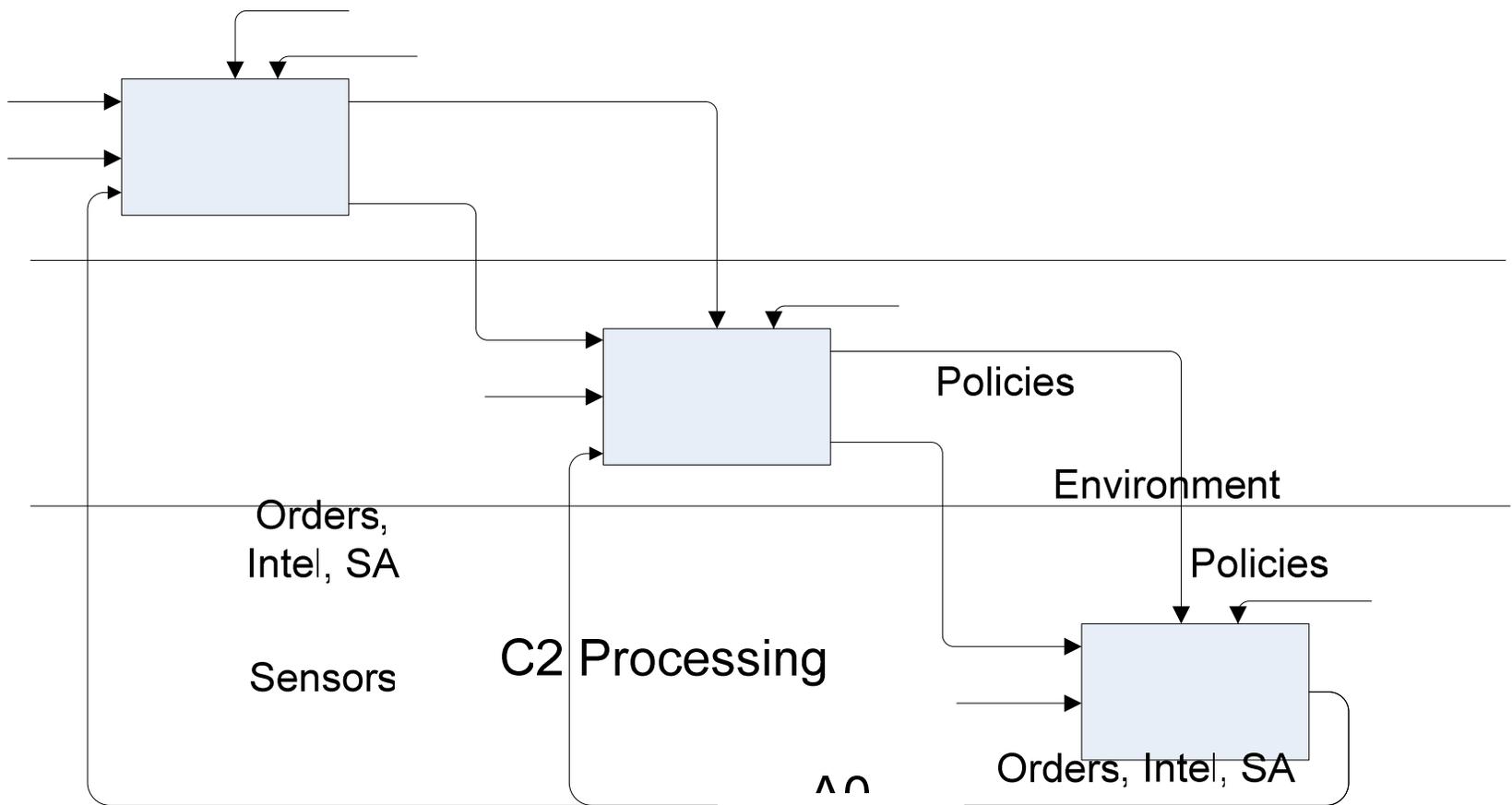
# C2 Node Oracle

- C2 Node Oracle
  - contains profiles of all nodes in the enterprise and each profile includes the capabilities of that node
  - Micro policies governs the additions and removal of C2 Nodes in an enterprise

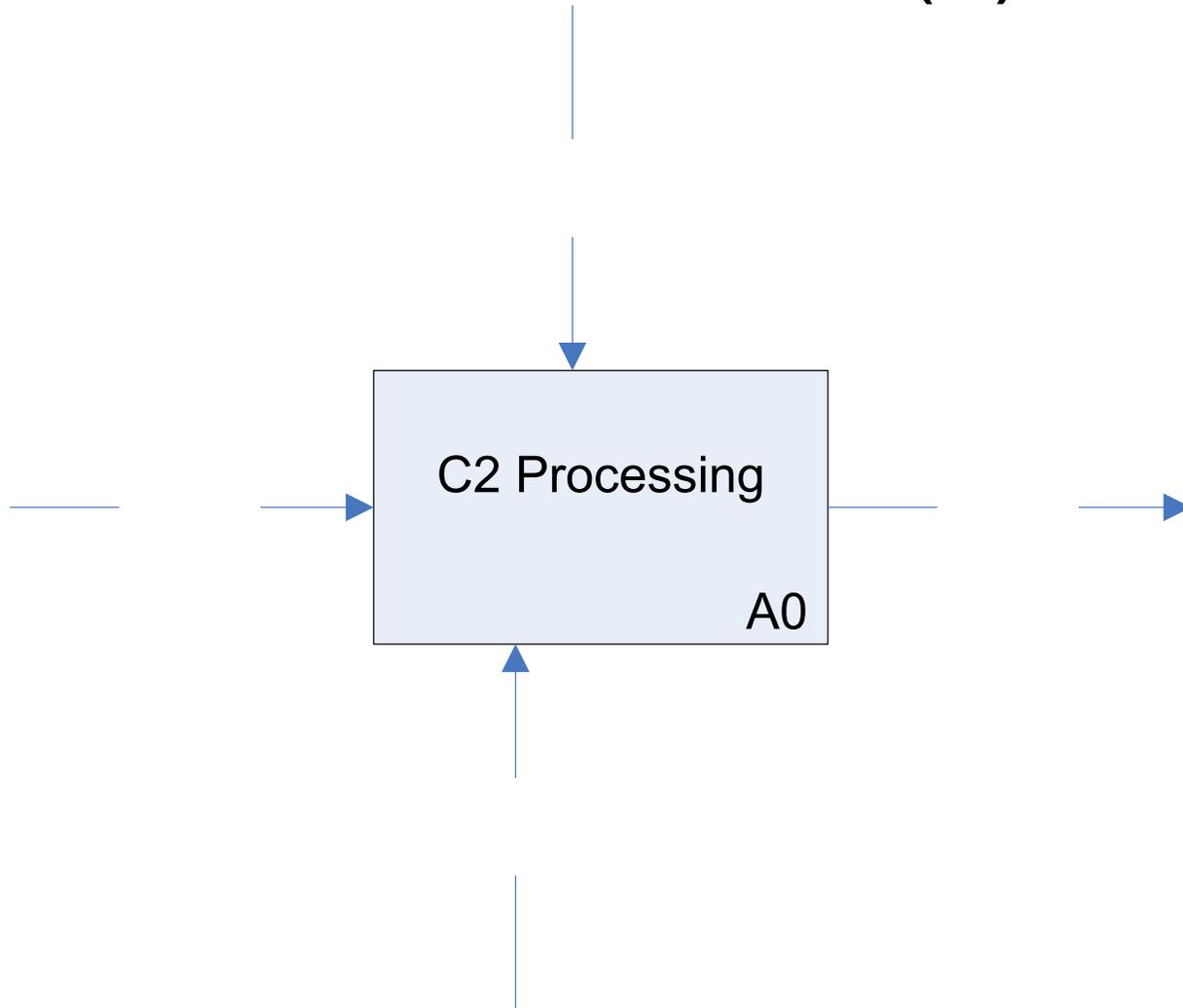
# C2 Node

- C2 Node provides services to support the accomplishing of a mission

# C2 Processing in the Levels of War



# Generic C2 Node Characteristics (1)



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# Generic C2 Node Characteristics (2)

- C2 Node Inputs
  - Command from Superiors
  - Request for Resources
    - CPU Computation
    - Storage Capacity
    - Network Bandwidth
  - Events
  - Situational Awareness

# Generic C2 Node Characteristics (3)

- C2 Node Outputs
  - Command to Subordinates
  - Results of Request for Resources
    - CPU Computation Results
    - Storage Capacity Request Status
    - Network Bandwidth Request Status
  - Collaboration with a Community of Interest
  - Raw Sensor Observation
  - Situational Awareness

# Generic C2 Node Characteristics (4)

- C2 Node Controls
  - Computation Constraints
  - Storage Constraints
  - Network Constraints
  - Environmental Constraints
  - Micro Policies

# Generic C2 Node Characteristics (5)

- C2 Node Mechanism
  - Intelligence Analyst Product
  - C2 Operator Product

# Conclusion

- Described framework for the dynamic and controlled establishing of C2 nodes in an enterprise environment.
- Establishing of a C2 node into an enterprise is governed by micro policies.
- These policies are derived from macro policies that provide guidance on how and when a C2 node is added or removed from an enterprise.
- These C2 nodes provide services to support the successful accomplishment of a mission.
- Disruptive activities minimized by mission and policy objectives

# References

- *Warfighting*, United States Marine Corps Doctrinal Publication 1, 1997.