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

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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)
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.