



**Information Command and Control
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Questions





Purpose of this Paper:

To emphasize the need to develop:

- **the methods and means to value information, and**
 - **techniques to visualize information value,**
- in order to decide among information alternatives**

To do Information Command and Control

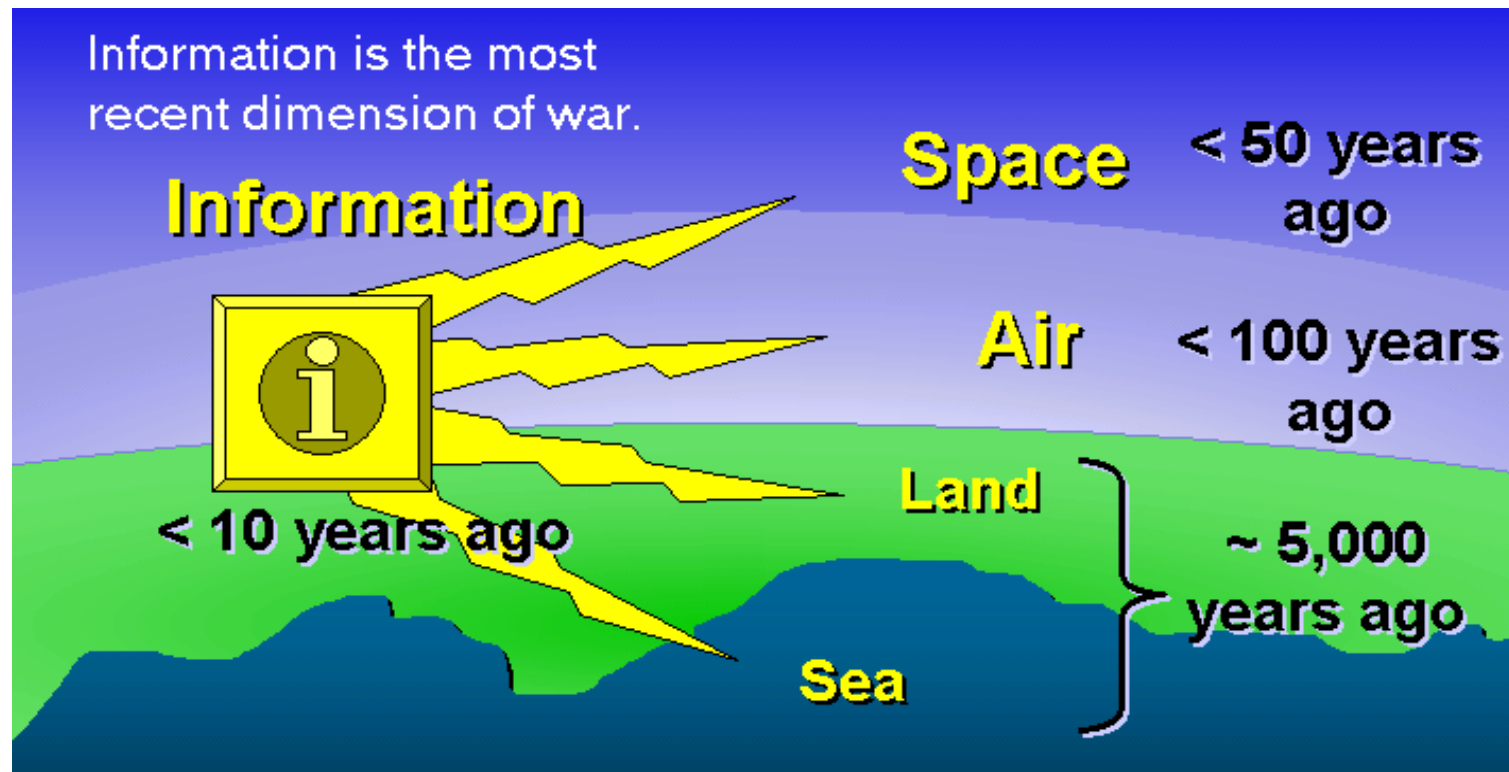


Take-Aways:

1. Net-Centric Warfare is based on the use of information; both in warfare and as warfare.
2. In the Information Age, we still have no methods or means to value information. So how will we know if or when we achieve Information Superiority?
3. Information Value has many dimensions: Context, Content, Timeliness, and Assurance, to name four. So how can we visualize information value in a multi-dimensional space?
4. Management of the GIG and Information Assurance mandate development of methods and means for placing a value on information.

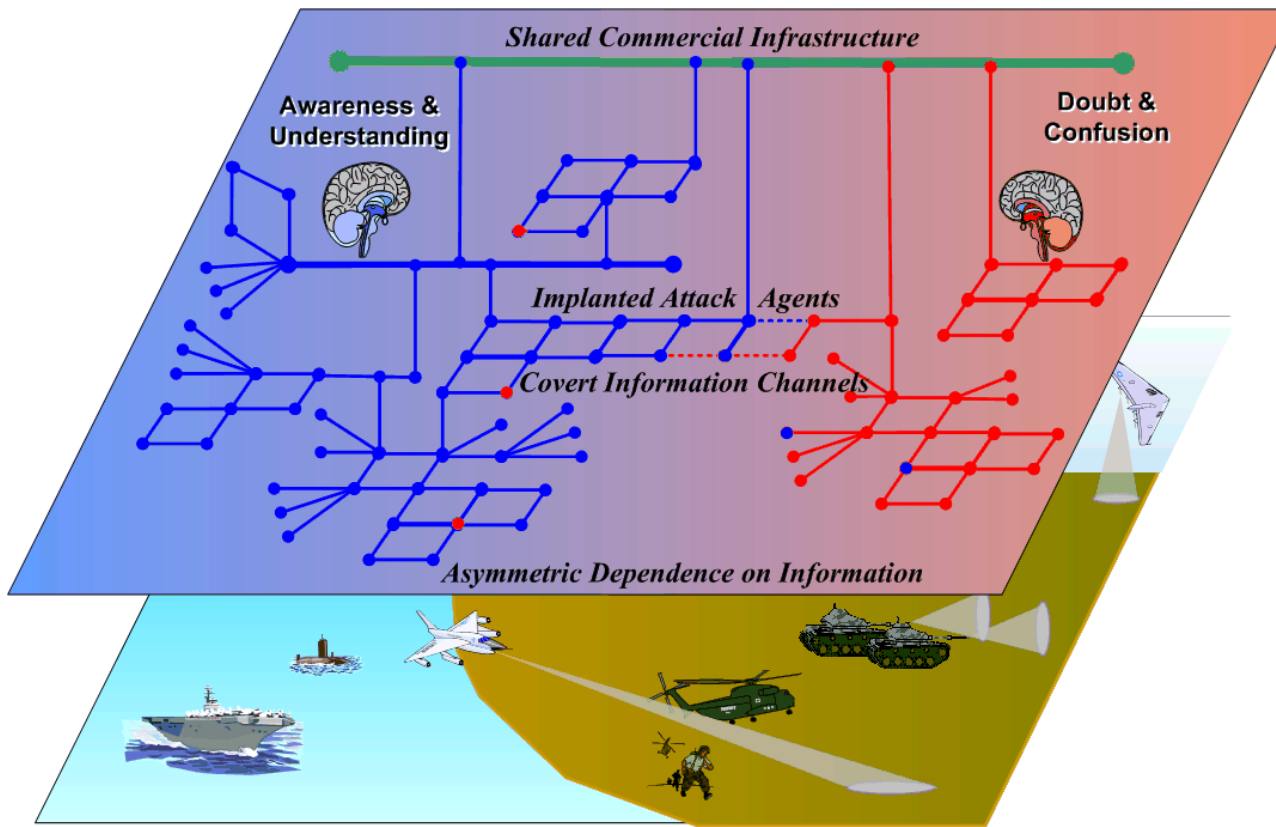


Evolution of the Five Military Domains





The Information versus the Kinetic Space

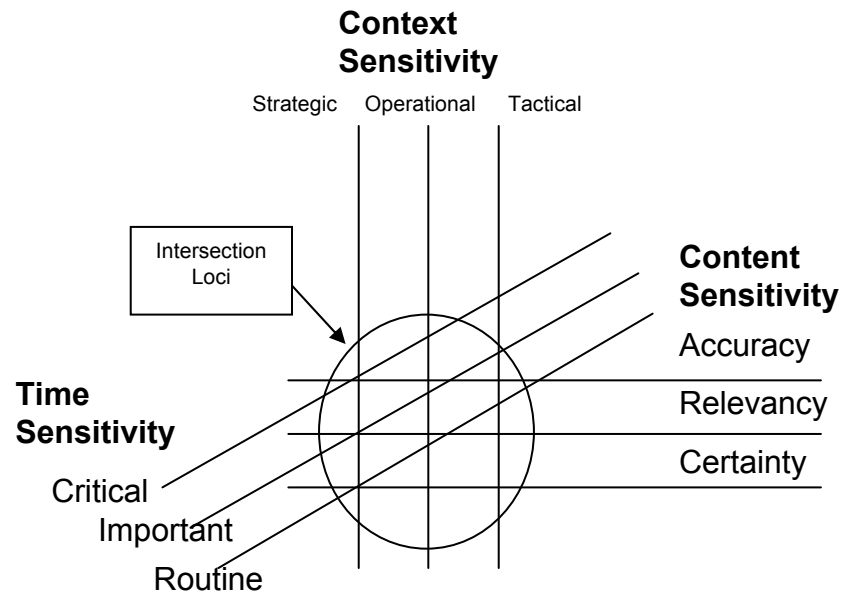


Information Space

Kinetic Space

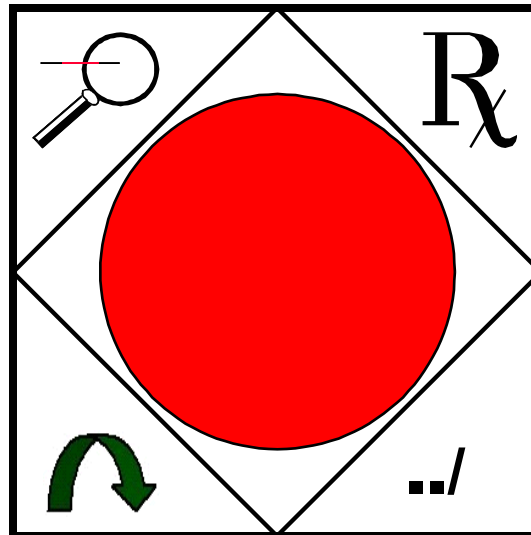


Multidimensional Approach for Determining the Perceived Value of Information



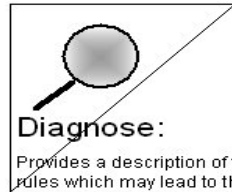


Information Value Cell Visualization



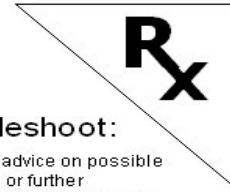


Information Value Cell Visualization



Diagnose:

Provides a description of the rule or rules which may lead to the indicated problem being detected. Also provides indication of which rule or rules were involved in the current diagnosis.



Troubleshoot:

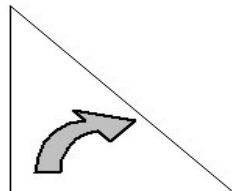
Provides advice on possible solutions or further investigative procedures for solving the indicated problem.



Information Value is High

More Information:

Provides the "raw" data used in the diagnosis of the indicated problem.



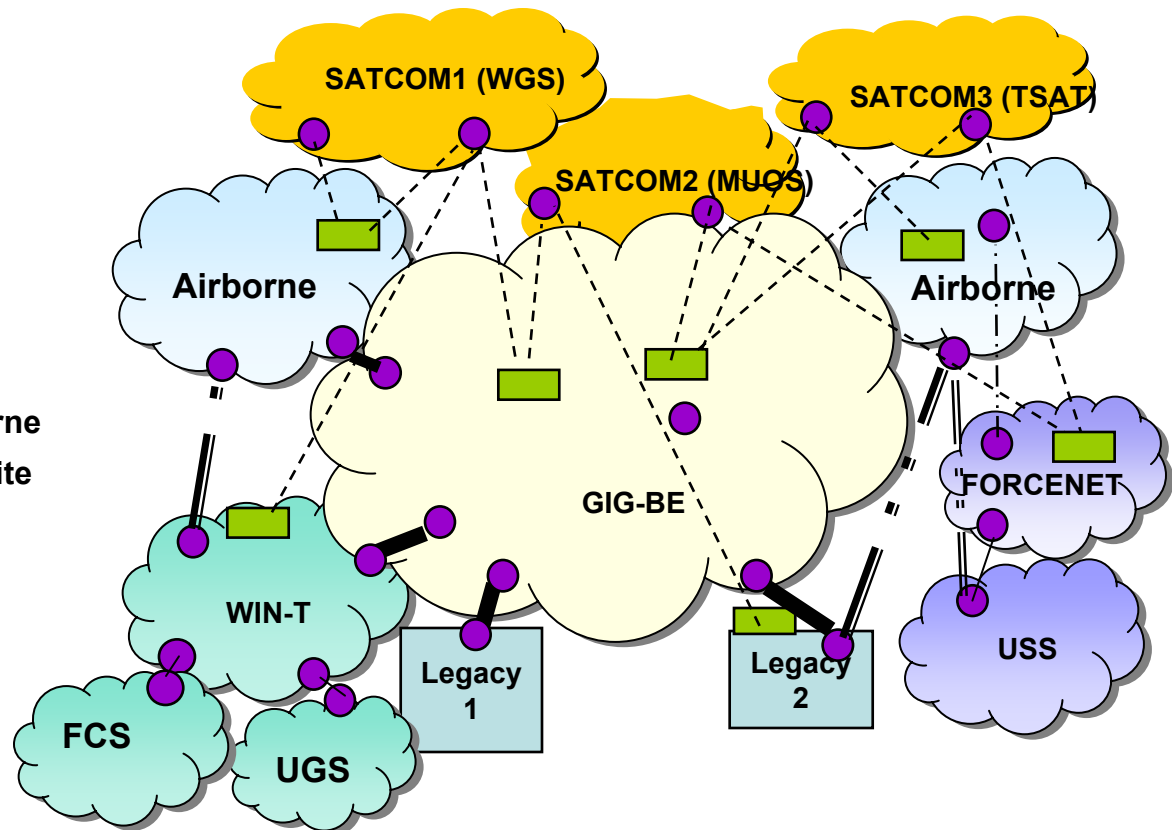
Comments:

Allows the insertion of comments relating to the indicated element and problem, including the resolution action (if any). Also allows the search and editing of previous comments.





Illustration of the GIG Networks



Where:

— — — — — Link from/to airborne

- - - - - Link from/to satellite

————— Wired link

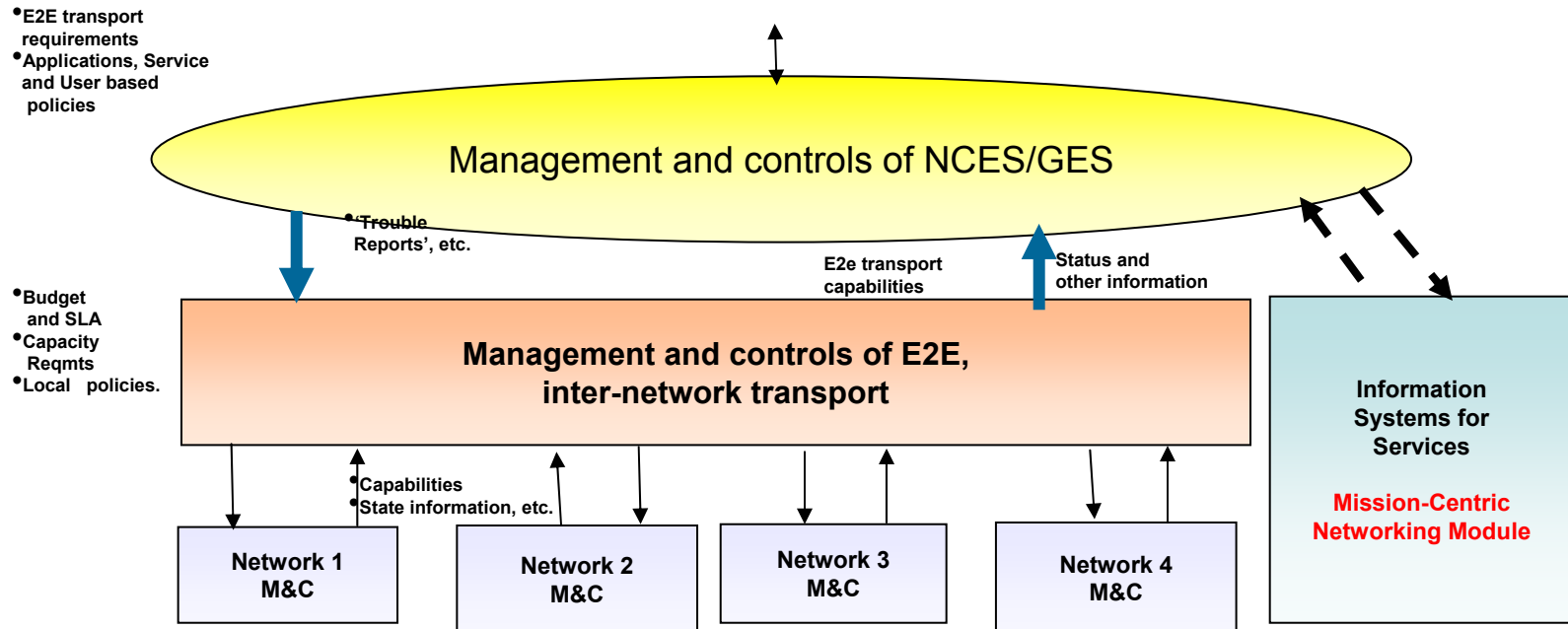
● Edge or Gateway

■ Satellite terminal/gateway



An Illustrative Schema for Managing the GIG

End user applications over core services in NCES/GES





A Possible IC2 Visualization for GIG Management

Level	Network IC2					
Strategic	Management and Controls of NCE S/GE S					
	Mission 1 	Mission 2 	Mission 3 	Mission 4 	Mission 5 	Mission 6
Operational	Inter-network Transport					
	Op 1 	Op 2 	NA	Op 3 	NA	NA
Tactical	Network 1	Network 2	Network 3	Network 4	Network 5	Network 6



Illustration of an Information Value Space

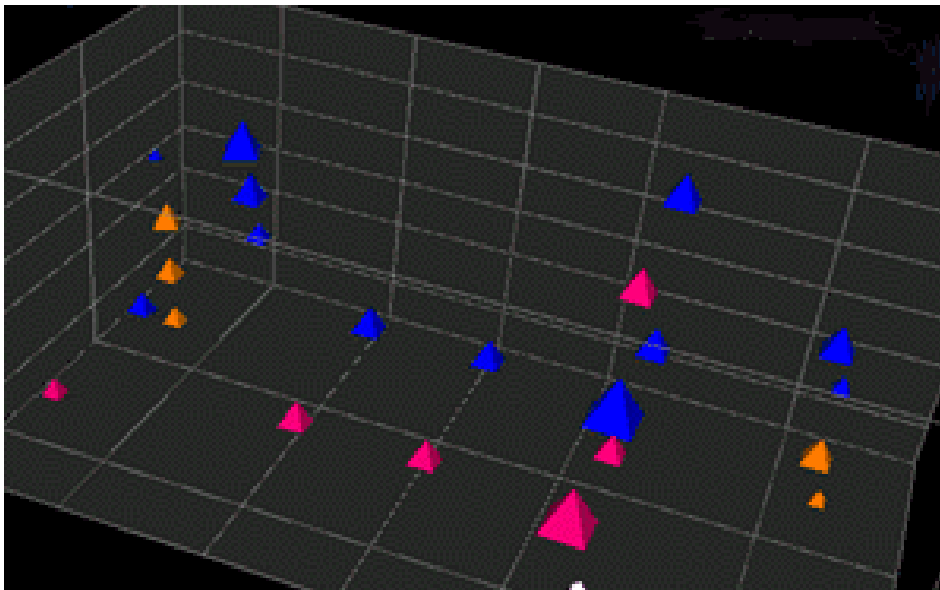




Illustration of Multi-dimensional Derivation of Visualization of Information Value

