

Assistant Secretary of Defense
for Networks and Information Integration/
DoD Chief Information Officer

Mr. Mike Kern
Deputy to the ASD(NII)/DoD CIO
Enterprise Wide System Engineering



EW
SE

Enterprise-Wide
Systems Engineering

Spanning the Government
and the Globe



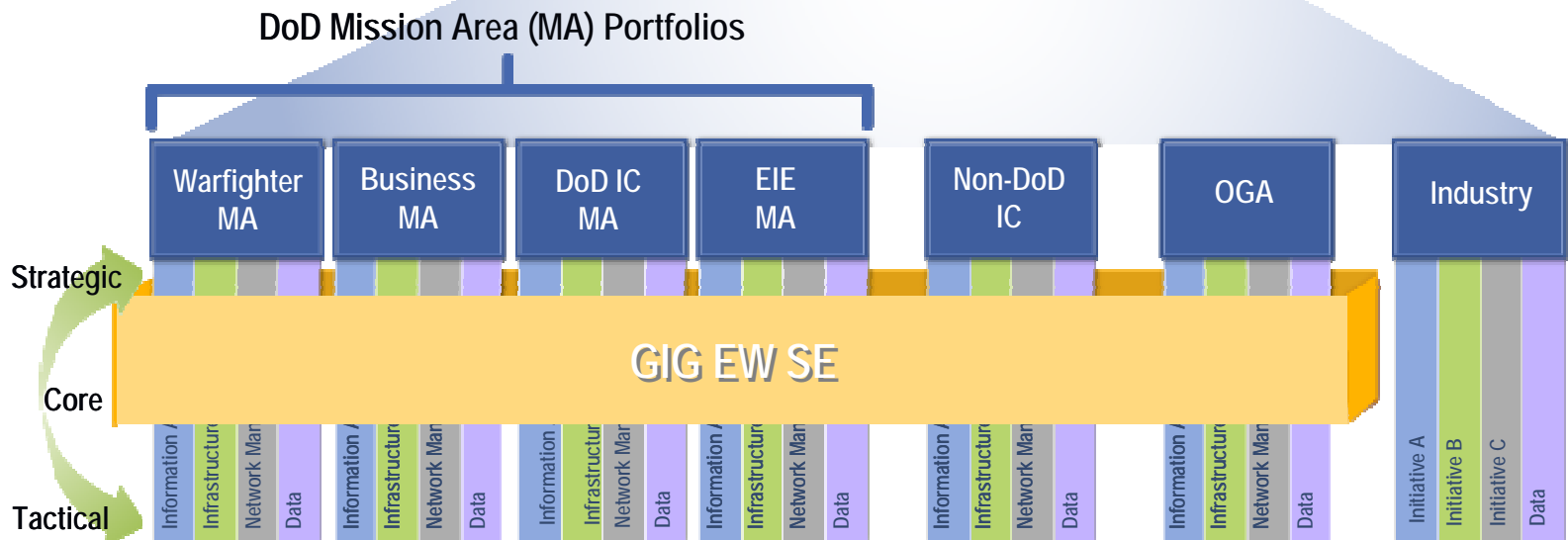
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GIG EW SE Mission

**Ensure the GIG meets the End-to-End
interoperability and performance requirements
needed to support DoD business, intelligence,
enterprise information environment and war
fighting operations.**

Global Information Grid EW SE Environment spans across...

- The entire Federal Government
- Multiple programs and statutory authorities
- Many technical domains



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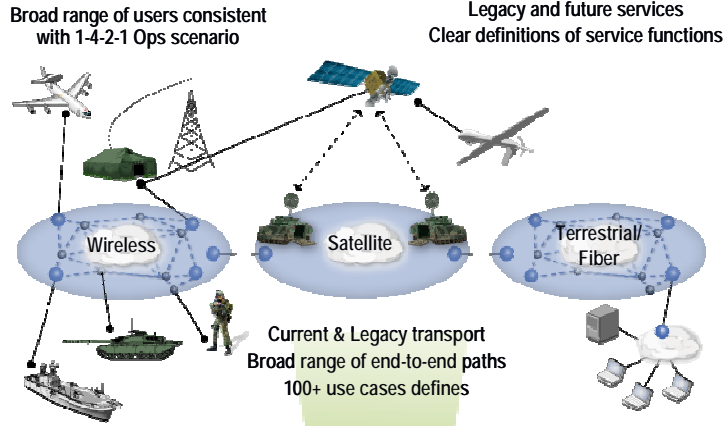


GIG EW SE Challenge - Ensure technical integrity, interoperability, and performance across the GIG

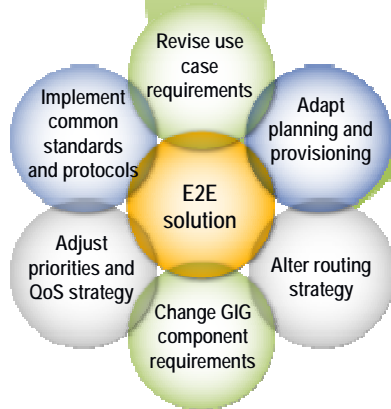


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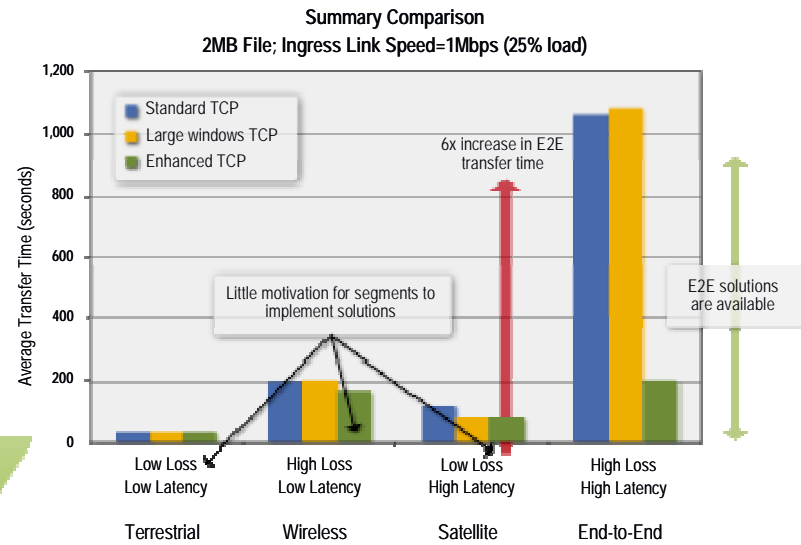
Packet Level End-to-End (E2E) Models



Wide Range of E2E Solutions



Significant E2E Performance Reduction



Individual network / program solutions DO NOT ensure E2E performance

EW SE Approach - Lead a community effort to enable a portfolio decision process to:

- ▶ Provide **EW SE services needed to oversee** GIG evolution
- ▶ Maintain a GIG **enterprise-wide coherent technical and operational baseline to insure interoperability**
- ▶ Establish GIG enterprise-wide **analysis capabilities for E2E Performance Assessment**
- ▶ Oversee GIG enterprise-wide **experiments & federated emulation/test**
- ▶ Establish a GIG **compliance management** program



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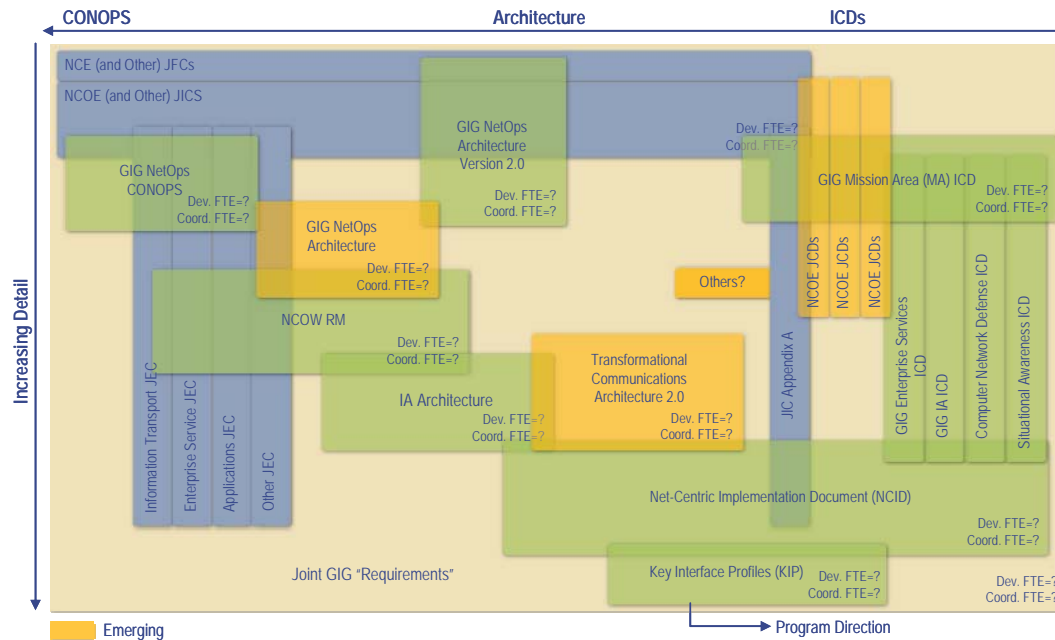


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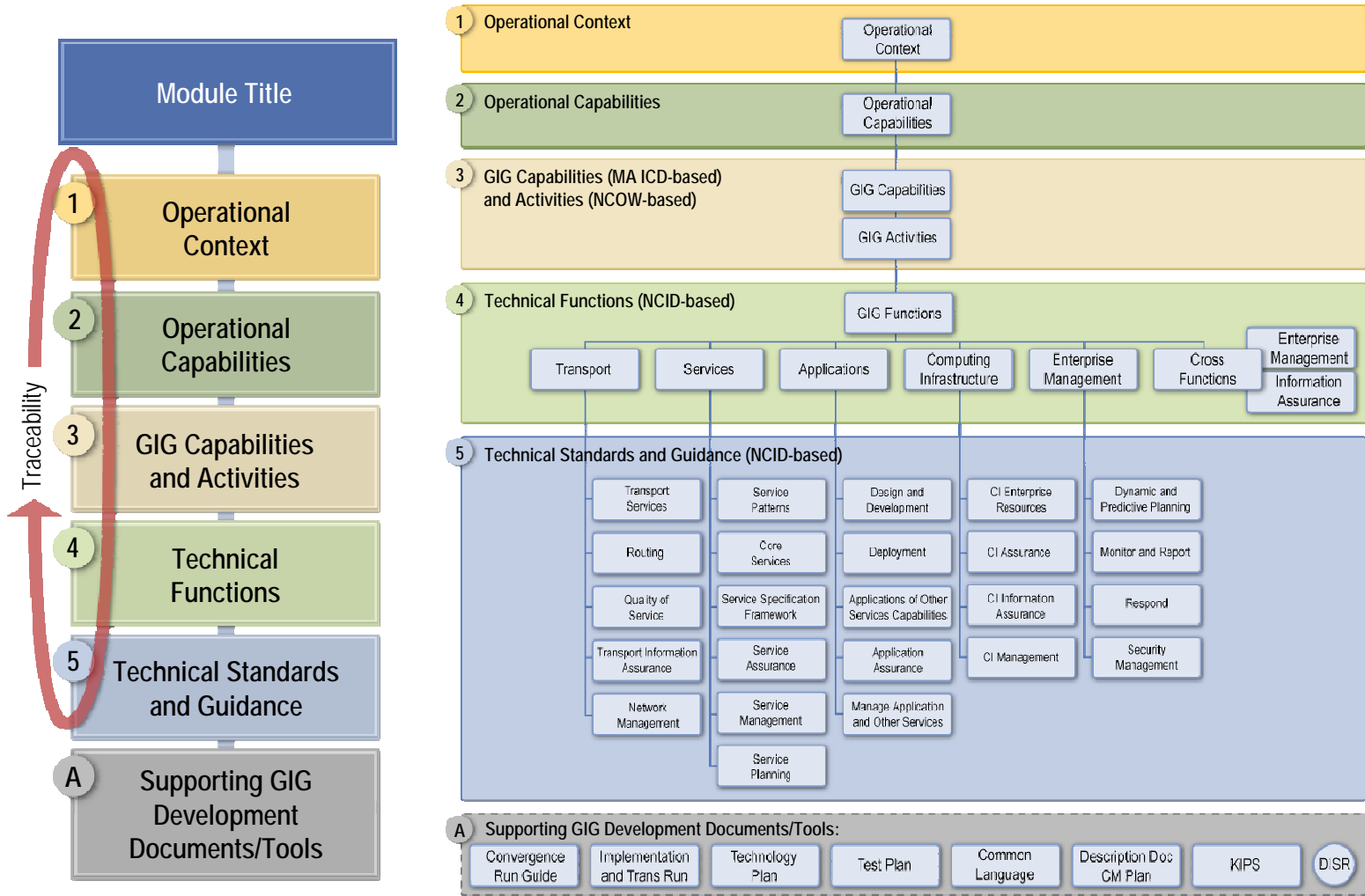
Maintain a GIG EW coherent operational and technical baseline

Align documentation framework for Program Managers

- GIG description **documentation is unclear**
- Test plans **difficult to develop**
- **Weak linkage** to operational needs
- Business and Intelligence mission areas **not currently included**
- ~7000 pages of conflicting guidance



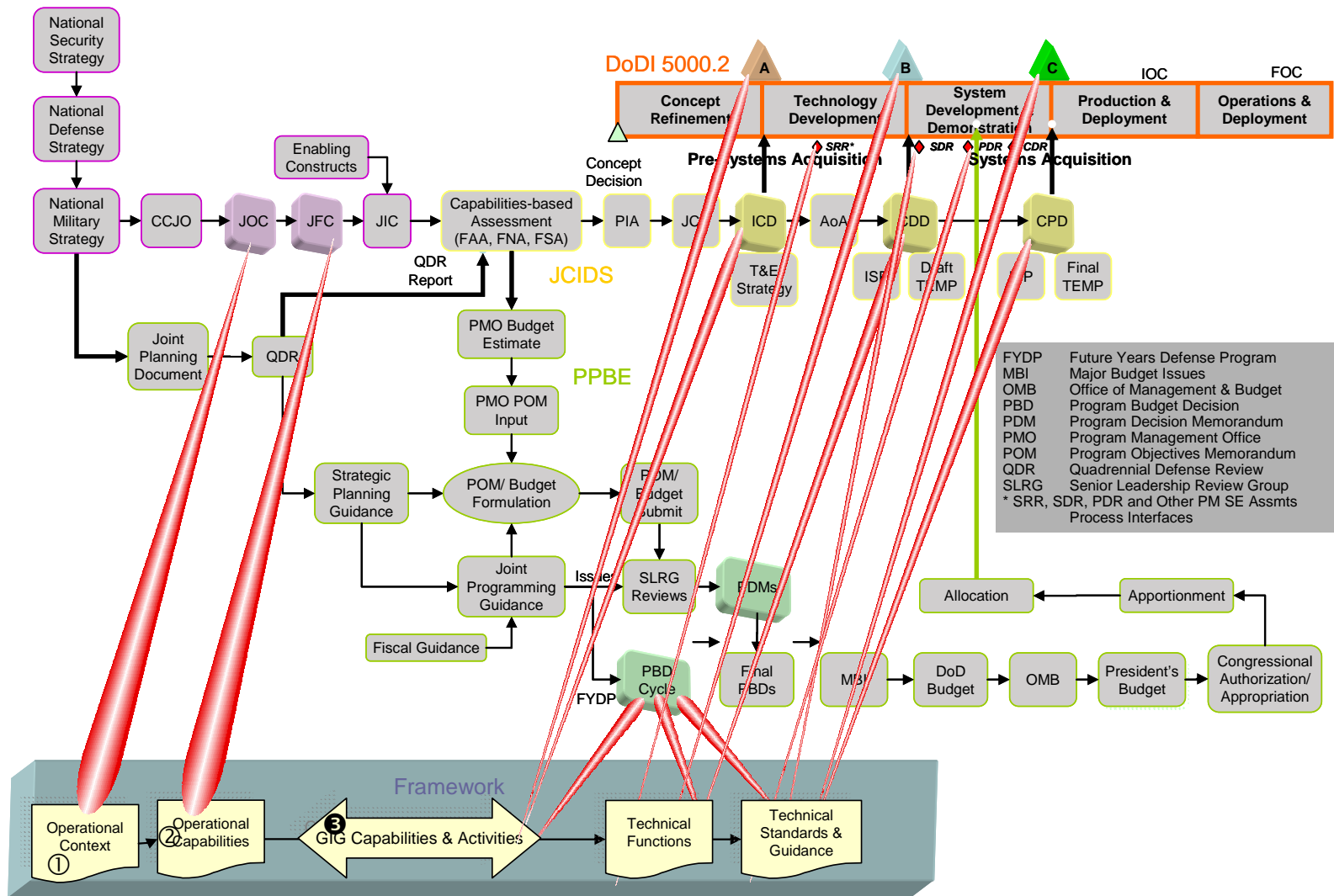
New Coherent operational/technical baseline improves stability and raises confidence in guidance



Revised framework will provide structure and traceability similar to that of a document tree

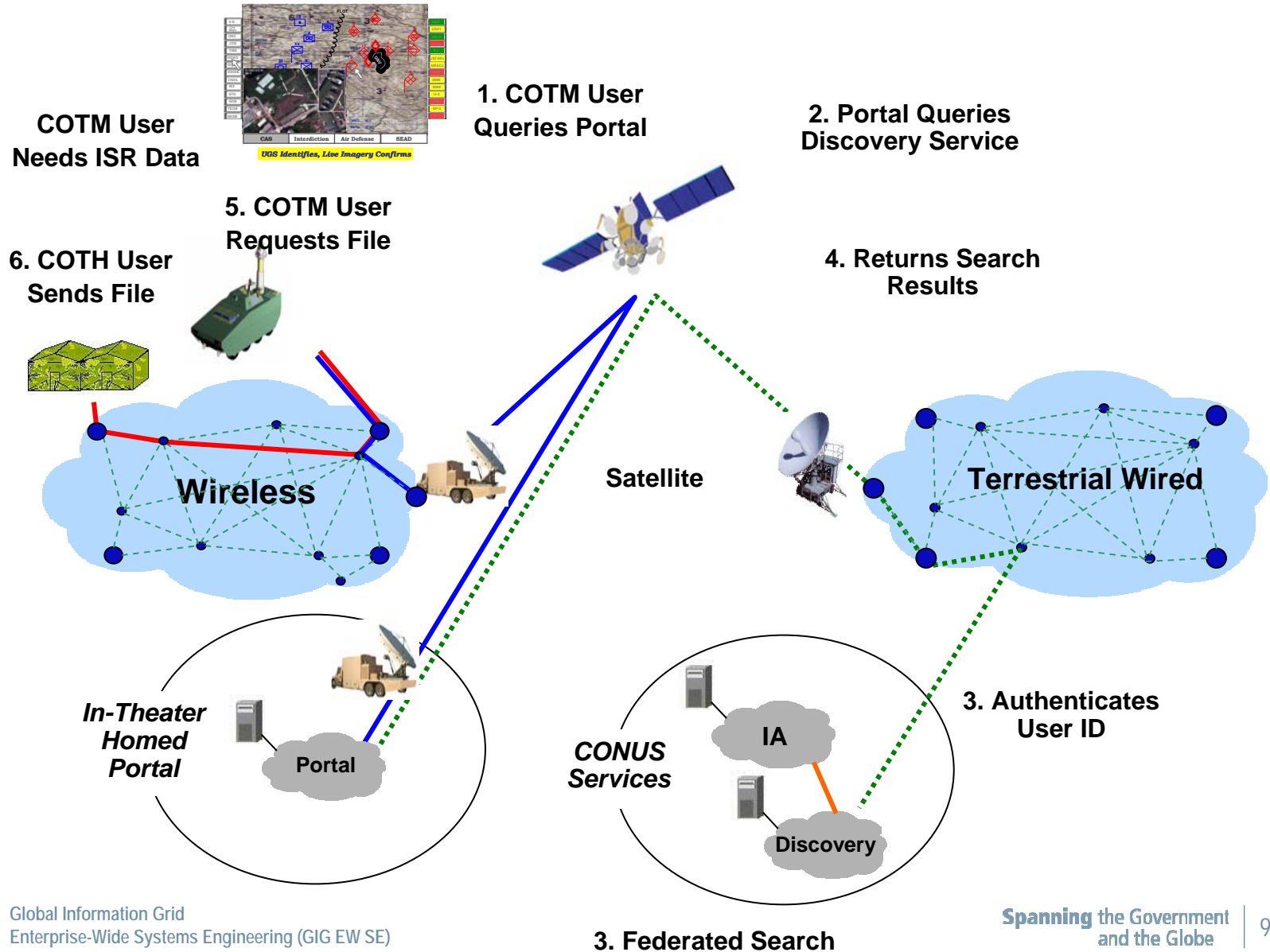


New Baseline feeds directly into established oversight and decision processes



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End-to-End Performance - why is it so complicated?



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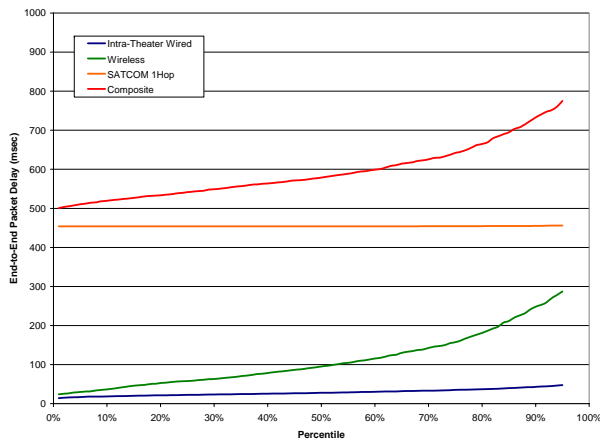
GIG performance questions across the community

- ▶ End-User
 - Which applications can I successfully use over the GIG?
 - What performance can I expect on GIG?
 - Which technologies should I employ?
 - What are the impacts of different operating conditions?
- ▶ Transport Developer
 - What service and applications must I support?
 - Is the E2E performance acceptable?
 - What are inter-segment interface impacts?
 - What are the E2E impacts of segment performance trades?
- ▶ Application & Services Developer
 - How will my application perform across the GIG?
 - Is the E2E performance acceptable?
 - What are acceptable service architectures?
 - What are the E2E impacts of protocol and messaging trades?
- ▶ Operator
 - Where should servers be deployed?
 - What are acceptable operating loads?
 - What SLA performance do I need?

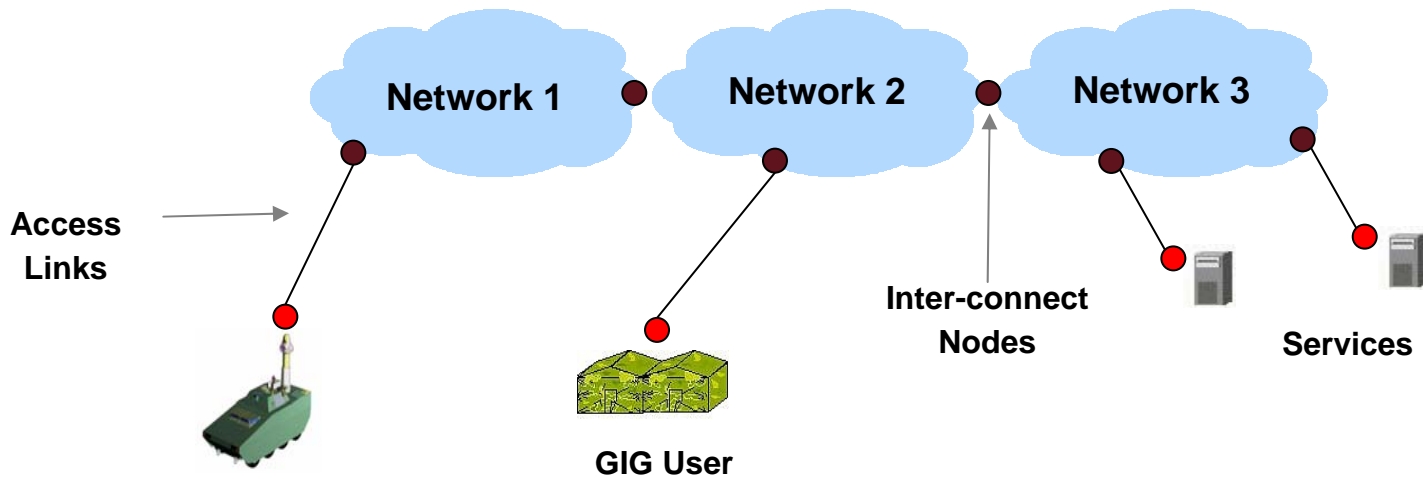
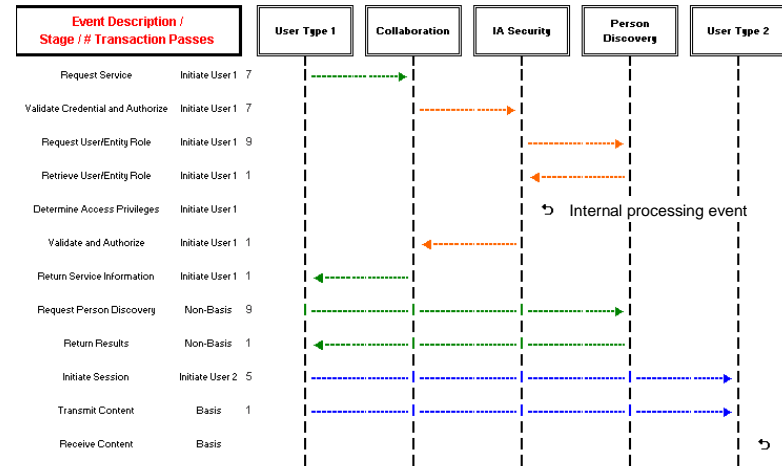


Performance Assessment Framework highlights critical problems to guide end-to-end trades and implementation

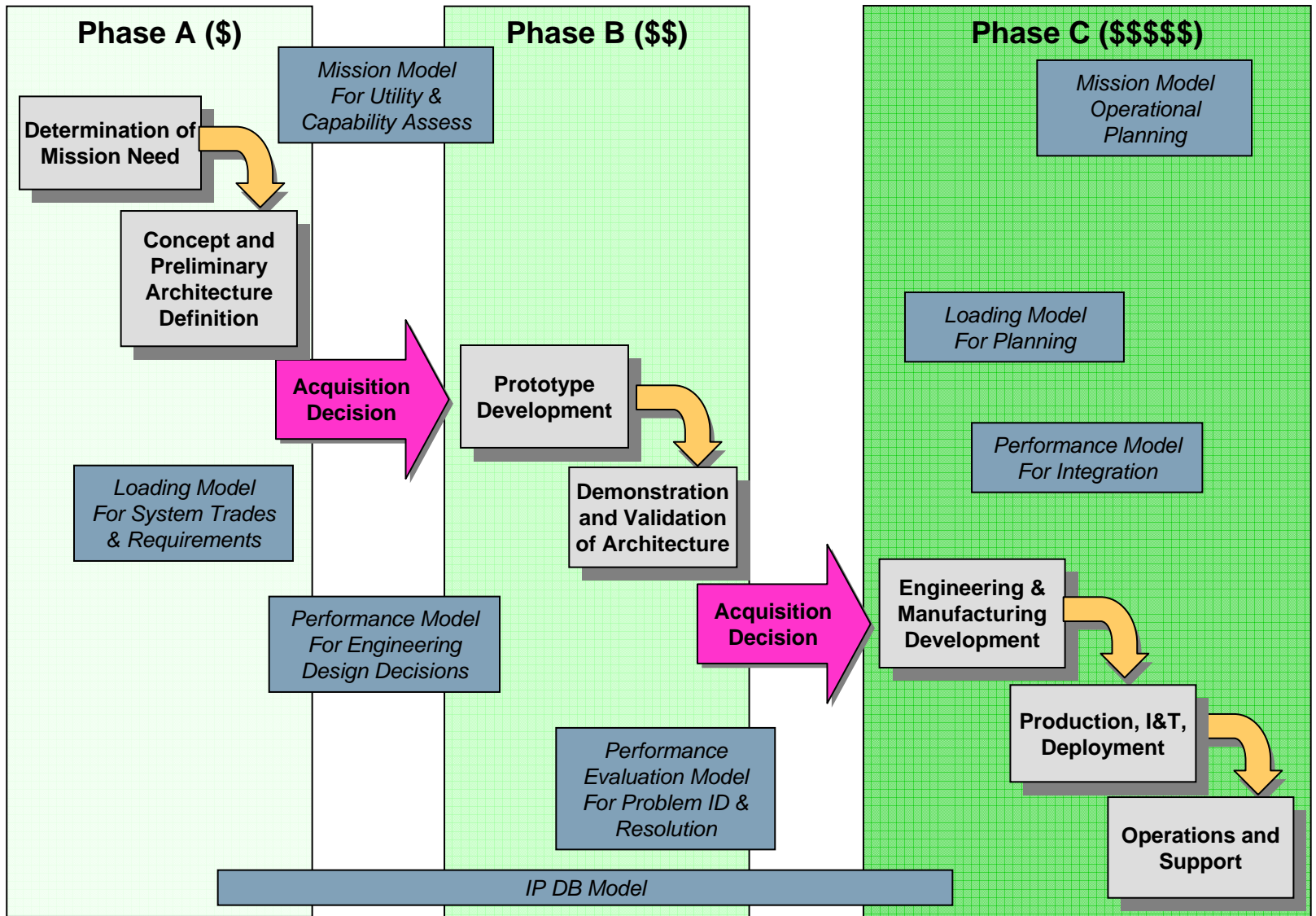
Composite Network Performance



Application & Service Messaging



Global Information Grid analysis, emulation and test in the acquisition lifecycle

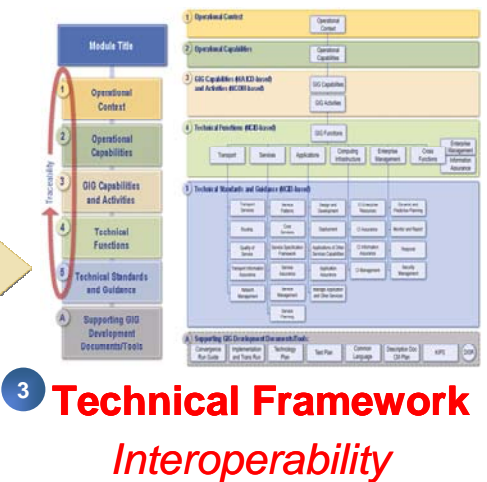
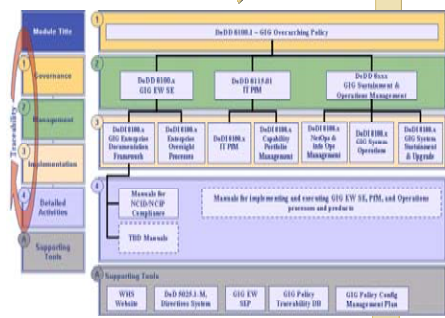
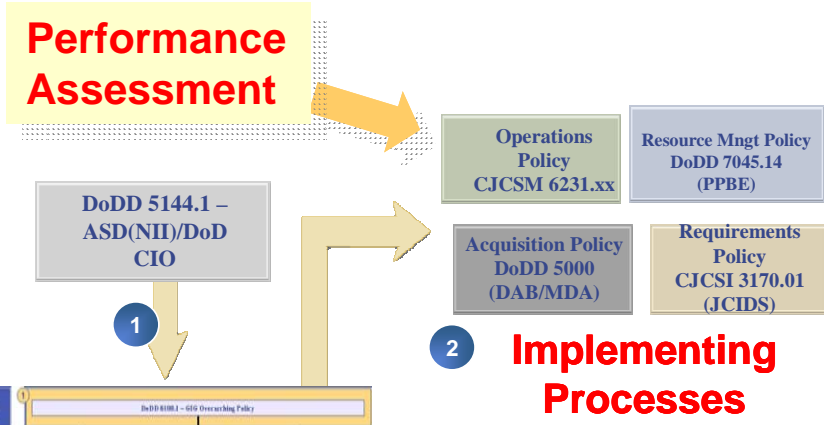




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Summary - EW SE provides the Technical Framework for DOD's GIG Business Process Improvement

- 1 DoDD 5144.1 provides DoD CIO authority and responsibilities for defining and implementing GIG
- 2 GIG Policy must support existing decision processes (Requirements Generation, Acquisition, Budget and Operations) beyond-GIG
- 3 GIG Policy establishes authority for *EW SE* processes and *GIG Technical Baseline* development and establishes authority for *GIG program compliance* with Technical Baseline





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