



Standards and the Government-Industry Data Exchange Program

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GIDEP Mission

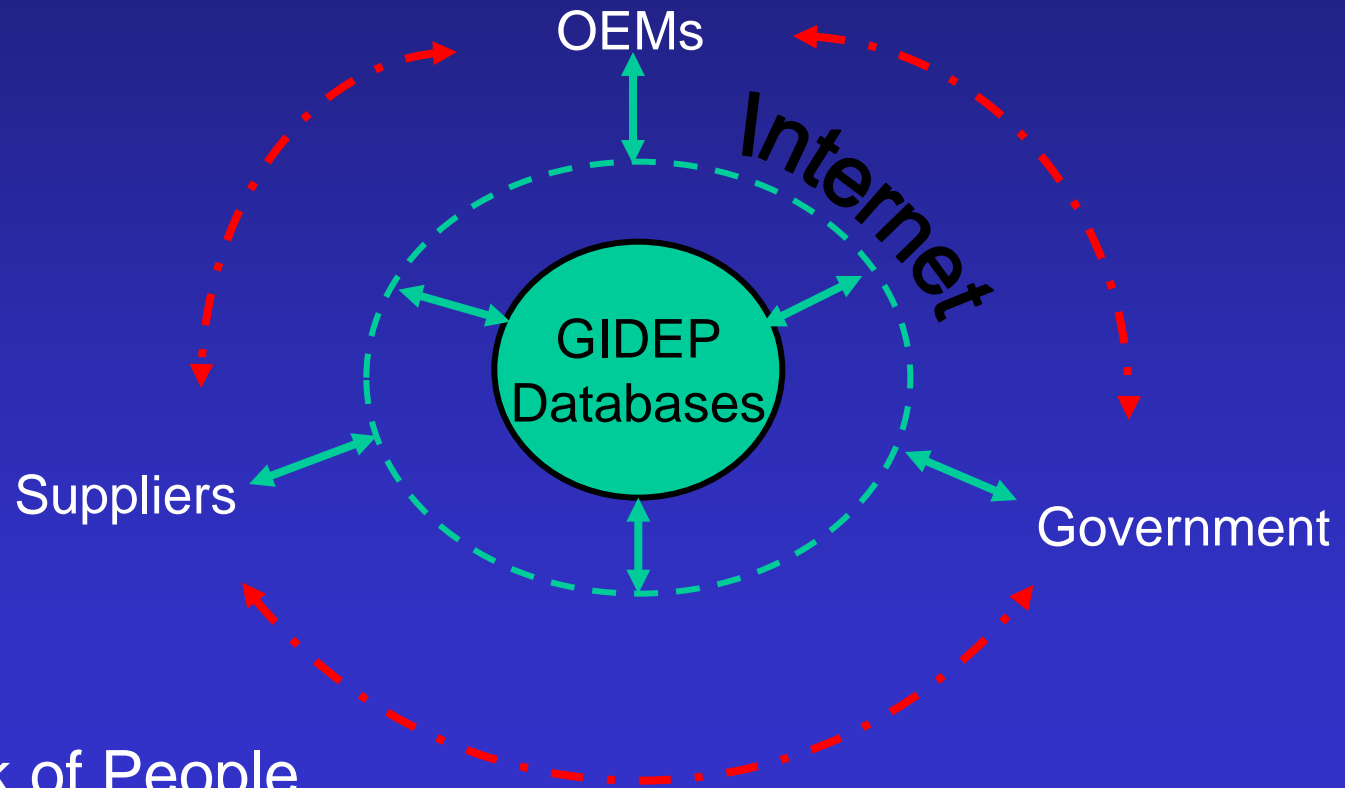
- Chartered by the Department of Defense Joint Logistics Commanders to foster technical information sharing among Government and Industry partners to:
 - Increase systems' safety, reliability, and readiness
 - Reduce systems' development, production, and ownership costs

GIDEP Goals

- Share information that would not otherwise be shared in a competitive environment
- Act as the honest broker of fact-based technical information

GIDEP Is:

A Partnership Between Government & Industry Teamed to Share Technically Valid, Fact-Based Information.



- Active Network of People
- Web-Accessible Databases

GIDEP is...

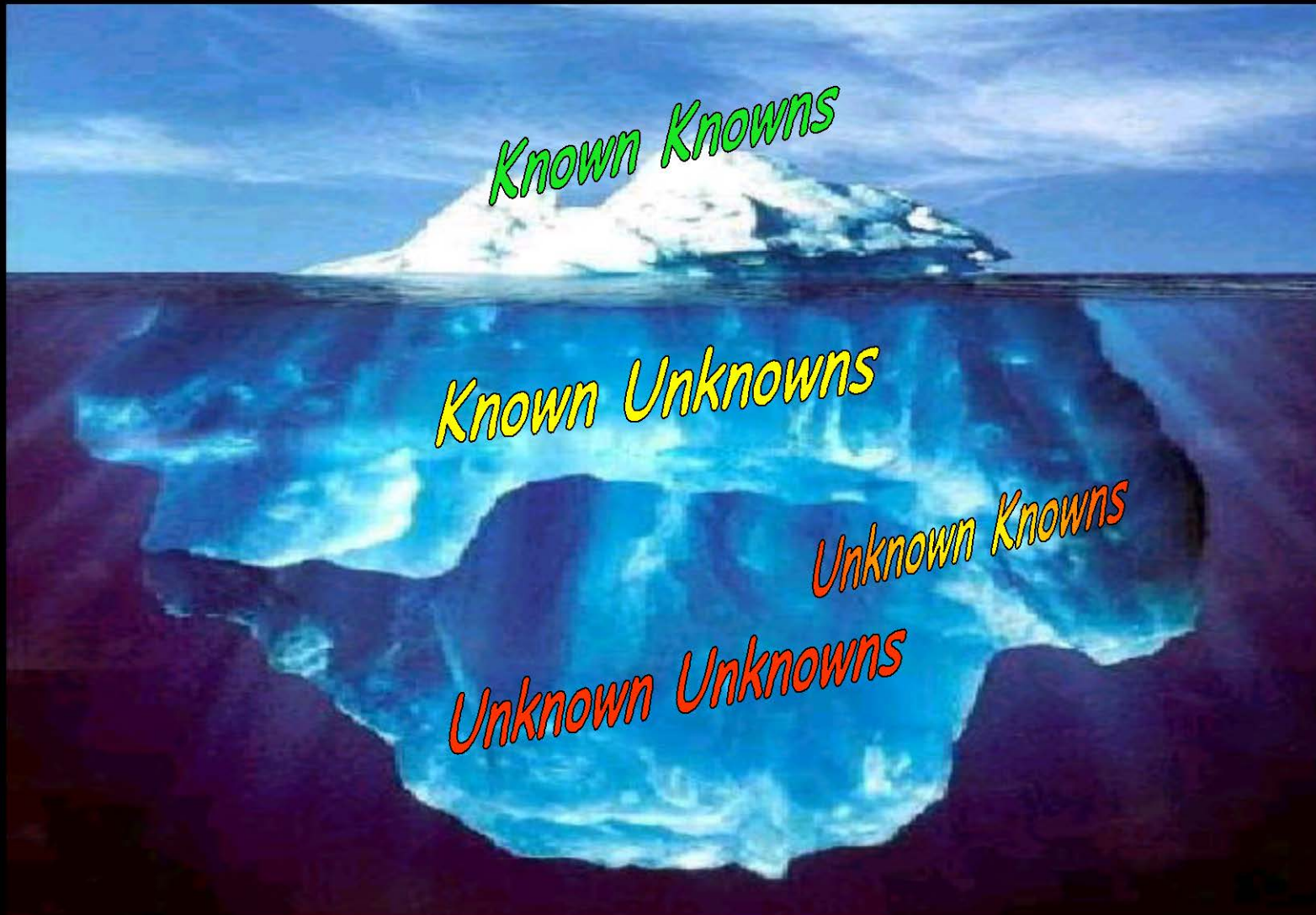
GIDEP Data & Information

GIDEP Products & Services



**A source of the Unknown Knowns -
Have you checked GIDEP today?**

Strengthen Engineering Processes: The Risk Iceberg



The Four Levels of the Risk Iceberg

- Known Knowns
 - Flight Data
 - Demonstrated performance
 - Flight or test-validated analysis, simulations and models, operation within certification limits
- Risk Mitigation: sound program, engineering, and operational management, Test as you fly (understanding waiver implications)
- Known Unknowns
 - Generic but unseen failure modes and hazards
 - Risk analysis uncertainties
 - Acknowledged test and analysis limitations
 - Unverified modeling and simulation based predictions
 - Envelope expansion and operations within certification but out of family
- Risk Mitigation: conservative flight rules, technical standards and safety factors, attention to anomalies, trending, prove it is safe

The Four Levels of the Risk Iceberg

- Unknown Knowns
 - Mis-communicated test or analysis results
 - Hesitancy in coming forward with issues
 - Uneven understanding of data or environment
 - Poor documentation combined with loss of corporate memory
- Risk Mitigation: clear organizational structure, open and upward communications, peer review, skill retention, contractors as true team members
- Unknown Unknowns
 - Bad assumptions
 - Untested new or changed environments
 - Inadvertent operation outside of certification limits (temperature, Q, tire speed, etc.)
 - Unknowable complex interactions
- Risk Mitigation: research and testing, challenging past assumptions, independent assessment

A Grim (sic) Fairy Tale

Once upon a time ...

- Parts selection based on published specs
- “De-rating” was all the rage

Now ...

- Parts selected based on the attributes shown in the published spec sheets
- “Up-rating” is sometimes required

From the Global Production Super Highway

- Industry and Commercial specs and standards meet broadest needs
- Manufacturers build the most commonly used parts
- Parts frequently meet the military and space needs

... To The Road Less Traveled

- Then reality sets in.
 - Military environment: still harsh.
 - Military procurement: using more COTS.
 - Challenge: ensuring parts selected will work
 - When used beyond the advertised spec the ALCHEMY begins
- “Off-label” - Beyond the boundaries contained on the product label (chemicals industry term)

Understanding the Alchemy

How did integrator decide part was acceptable?

- Made from?
- Tested to?
- Supportability implications?
- ECP and T&E implications?
- Legal implications?

GIDEP's Role

- GIDEP is a tool for sharing technically valid, fact based information
- Establish a convention for discussing up-rating:
 - processes/procedures
 - lessons
 - other implications
- A feedback loop to Specifications and Standards developers and others

GIDEP:

A source of Unknown Knowns

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