Maritime Cyber Security
"It's definitely a VUCA* environment"

Bob Day & Associates

* - Army War College 1990's

Maritime Cyber Security
“It’s definitely a VUCA environment”

Volatile

Maritime Cyber Security
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Volatile

Uncertain

Maritime Cyber Security
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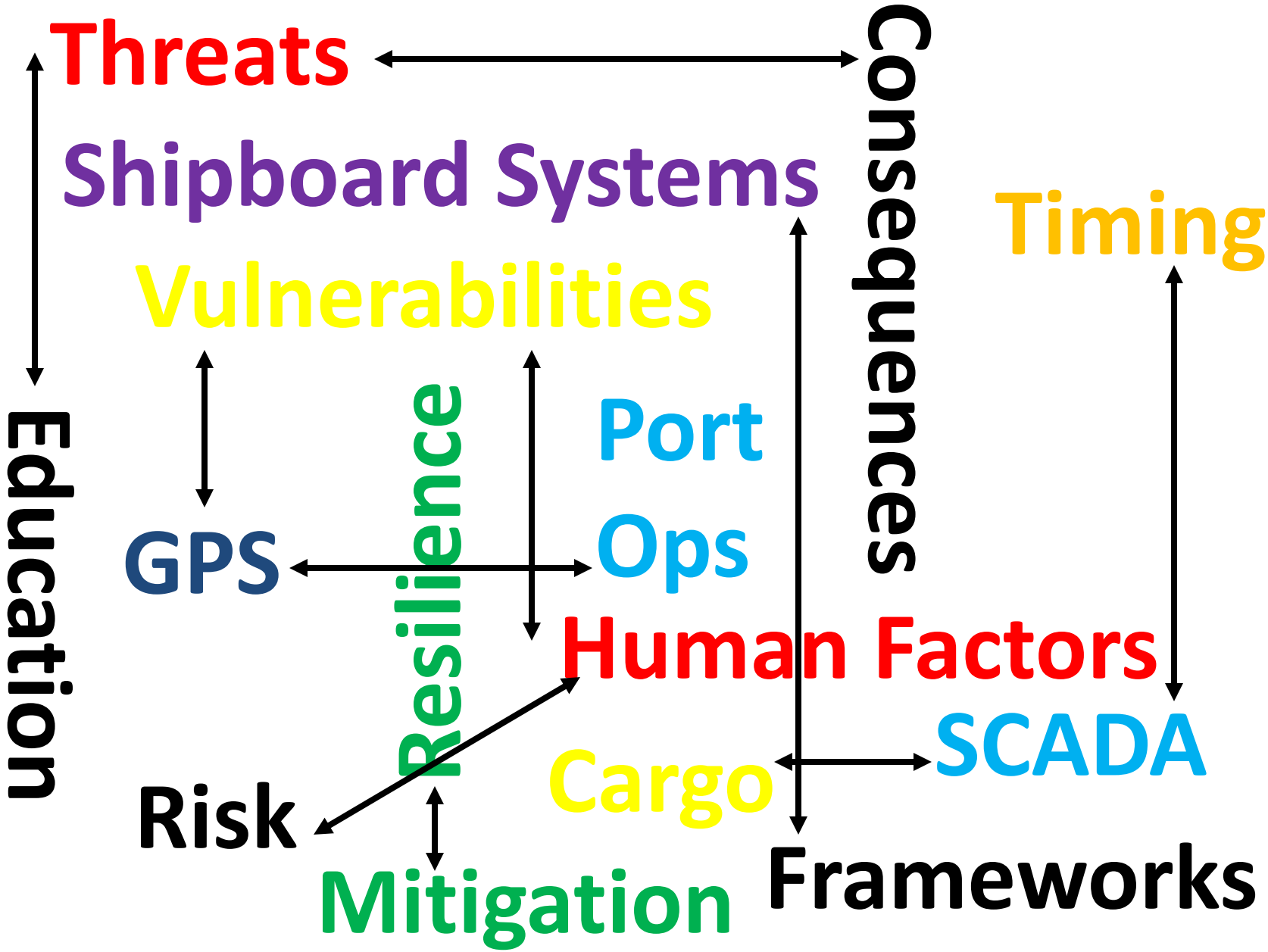
Volatile
Uncertain
Complex

Maritime Cyber Security
“It’s definitely a VUCA environment”

Volatile
Uncertain
Complex
Ambiguous


Threats
Shipboard Systems
Vulnerabilities
Consequences
Timing
Education
GPS
Resilience
Port
Ops
Human Factors
SCADA
Cargo
Risk
Mitigation
Frameworks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To function in a VUCA environment organizations must:

- **Anticipate the Issues that Shape Conditions.**
- **Understand the Consequences of the Issues and Actions.**
- **Appreciate the Interdependence of Variables.**
- **Prepare for Alternative Realities and Challenges.**
- **Interpret and Address Relevant Opportunities.**

Based on the presentations and discussions during this event:

- **We are just beginning to understand the broad array of issues that impact this domain.**
- **We do not fully understand the potential consequences of the issues and actions that we might undertake.**
- **We do not fully understand the interdependence of the variables especially the impacts in other domains.**
- **We are far from developing strategies to operate in alternative/degraded environments.**
- **We, as a maritime community, need to interpret all of the above and develop comprehensive strategies to develop mitigations and improve resilience.**

Laying down a new track line!

- **Continued research and collaborative approaches to identify the core issues and ability to mitigate their impact.**

- **Leverage Risk Management Frameworks to begin to understand the consequences and prioritize the actions we undertake.**

- **Conduct broad reaching exercises to test our plans and fully understand the impacts in other domains and the supply chain.**

- **Leverage the above to enhance overall resilience of the MTS.**

Key way points!

- **Build the community and be inclusive. Fed, State, Public, Private, Industry, Supply Chain, and Academia. Look at what the financial community has done.**

- **Unfettered exchange of threat, impact, and mitigation information. Leverage existing architectures and evolving information exchange policies to overcome liability concerns.**

- **Develop and codify voluntary standards and best practices for all cyber aspects of the MTS. Certify third party entities to conduct assessments and certifications.**

- **Create and share best of class training/outreach programs.**

We are underway but need to turn a few more knots!

- **Leverage the information and contacts obtained from this event. Share broadly and engage others.**

- **Watch for, read, and share the forthcoming CG Cyber Strategy.**

- **Engage in local Area Maritime Security Councils, FBI InfraGard, and Maritime ISAC.**

Questions?