SOF in Contested Environments

**Colonel Mike McGuire
US Special Operations Command
SOFIC 2020**

Buhaug, Halvard and Rudolfsen, Ida. Global
distribution of armed civil conflict since 1946.

Agenda

- The Evolving Operating Environment
- Transforming Special Operations Capabilities
- Technology Priorities
- Discussion

Tactical FOE: What Does The Future Hold For Us? (2018)

- Dominance of air, space, and **information domains** cannot be assumed.

- **PNT/C4I** is not only disrupted, but unreliable.

- Proliferated advanced weapons (e.g., WMD, **cyber**) that are increasingly difficult to identify.

- Routine scrutiny by FIS, with **adversary data sharing and analytic tools**.

- Current MFF/air infil may not be feasible

- Enemy access to advanced technology including **artificial intelligence, quantum technologies**, enhanced human performance, synthetic biology/CRISPR, and **autonomous systems**.

- **Enemy cyber and informational domains** will extend their reach.

- Multiple, small actors will be synchronized, capable, and dispersed.

- Remain offensive, but more time/resources spent on securing our forces and systems.
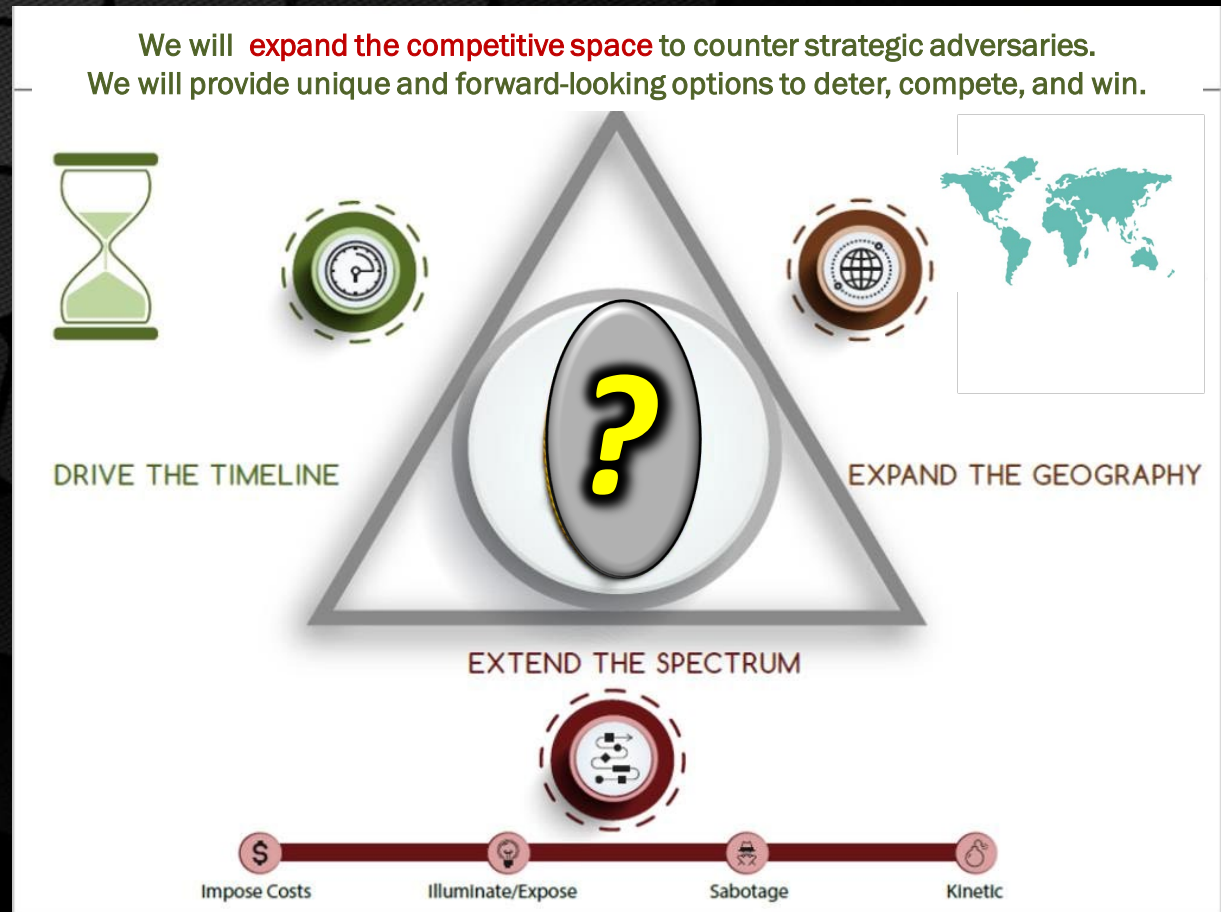
We will all have the same tools. Our competitive edge will come from better leveraging the tools we have: quickly **deriving information** from data, and more efficiently/securely delivering information, guidance, and authorities to the nodes that are able to act.

The operating landscape evolved
as we expected…

…but much faster than anticipated.

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The Competitive Space Expanded…

- **Environment dominates enemy**

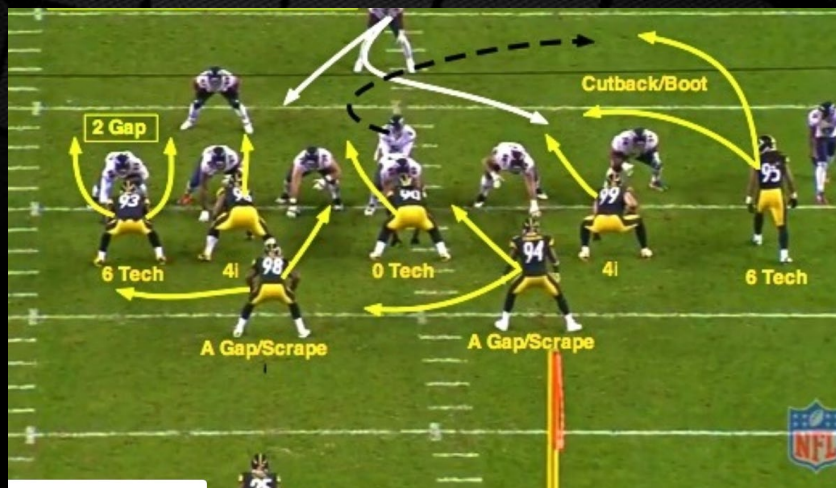- **Soft power with "hard" effects**

- **Non-escalatory responses?**

We will expand the competitive space to counter strategic adversaries.
We will provide unique and forward-looking options to deter, compete, and win.

DRIVE THE TIMELINE

?

EXPAND THE GEOGRAPHY

EXTEND THE SPECTRUM

Impose Costs   Illuminate/Expose   Sabotage   Kinetic

…but it was not all us

End use devices and connectivity

The Opti Project,
Creative Commons

Unprecedented Digital Expansion…

Cyber defense and seams

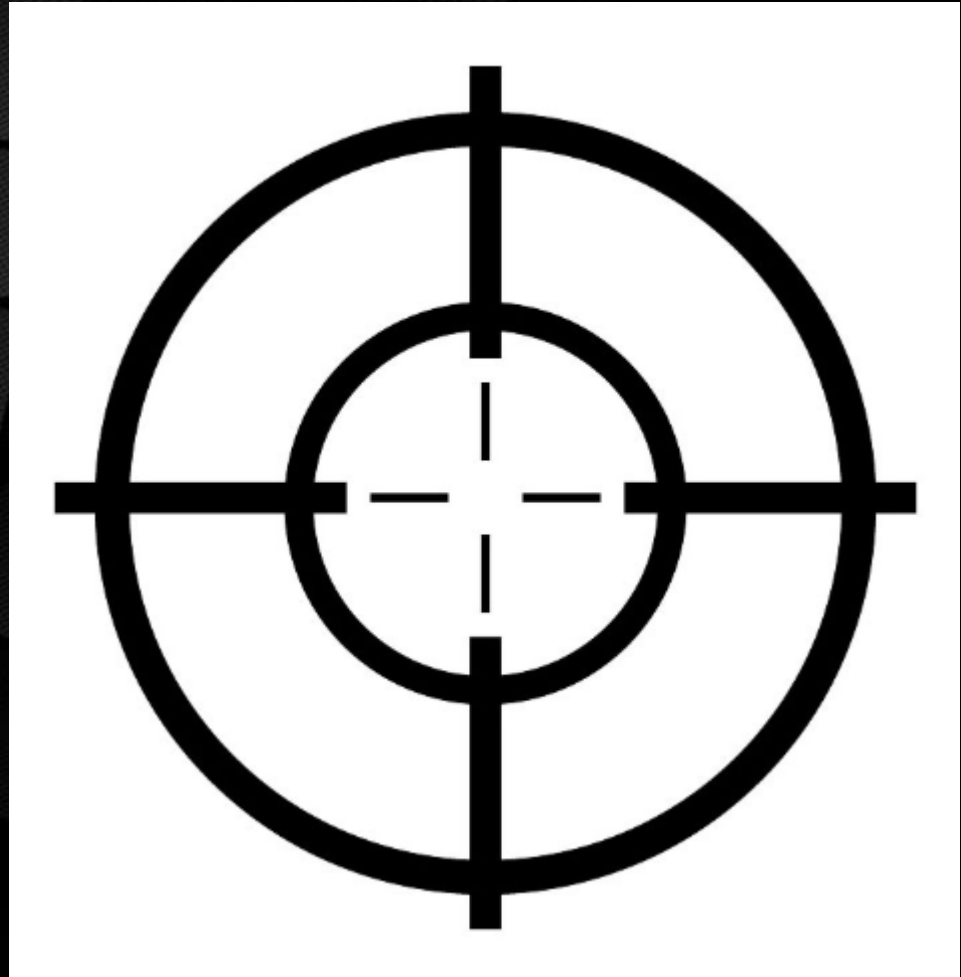Bleacher Report.com

…the double-edged sword

Distributed compute and storage capability
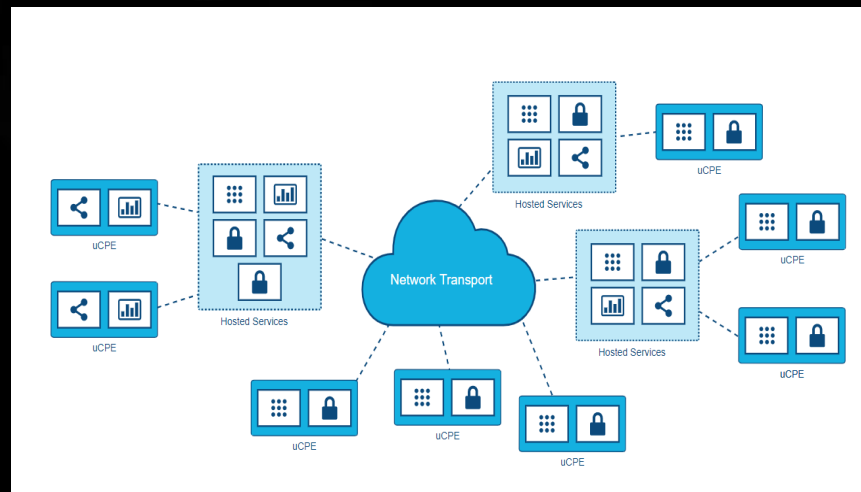
OpenStack.org

Targeting Environment Evolves…

- **Convergence of EW, Cyber, SIGINT**

- **Decreasing return on exploitation, SSE**
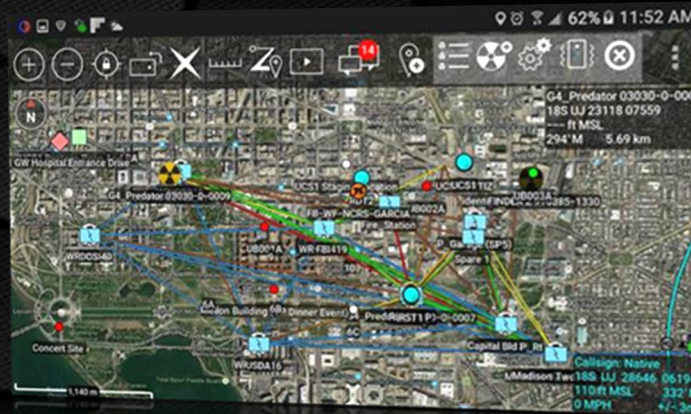
- **Rise of open source**

…so must our tools
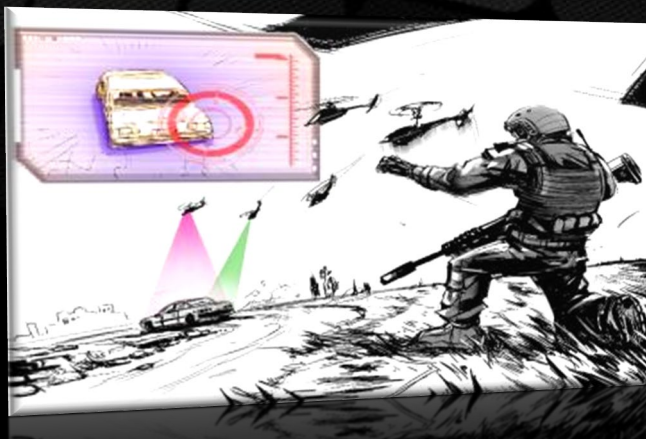
Transformation Priorities

Next Generation Information

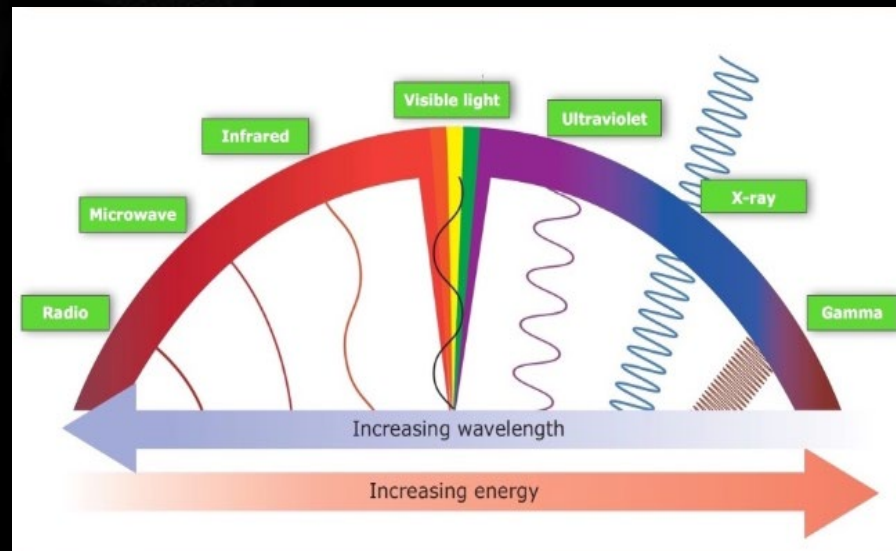**Robust Tactical Communications**

Human Machine Teaming

Expand the Competitive Space

Expeditionary Protect and Project

Protect the Force: Expeditionary

Shutterstock.com

University of Waikatu

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Project the Force: Expeditionary

RealClearDefense.com

- **Organic**
- **Long-Range**
- **Precise**
- **PNT Resilient**
- **Expeditionary**

- **Organic**
- **Modular**
- **PNT Resilient**
- **Integrated**
- **Expeditionary**

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Supporting Technology Focus Areas

(Visit https://www.socom.mil/SOF-ATL/Pages/Capabilities.aspx)

- Data transport, storage, analysis:

  - Secure, flexible data architecture.

  - Edge compute capability.

  - Reduce data transport signature

- Non-RF navigation and timing.

- Human-machine team: training and intent.

- Standoff, multi-spectral, networked sensors.

- Information fusion and visualization.

- Signature management.

- Expeditionary force protection.
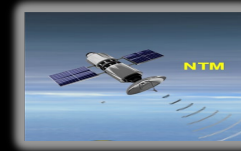
- Organic targeting and lethality.
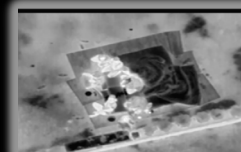

| Next Generation Targeting |
| Tactical Signature Management |
| Resilient Comms and Navigation |
| Space Based Assets |
| Competitive Offset (Near-Peers) |
| Human Machine Teaming |
| Power Generation, Storage |

We will all have the same tools. Our competitive edge will come from better leveraging the tools we have, more effectively analyzing the data we collect, and more efficiently pushing information, guidance, and authorities to the nodes that are able to act.

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What do we need from Tomorrow's SOF Operator?

- Be **trained** for the mission and the environment

- Be tactically proficient and **strategically aware**

- Have the **right information** at the **right time**

- Be positioned, capable, and **empowered** to act

- Use technology to **extend reach**, **multiply effects**, and **manage risk**

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Combat Development Lessons Learned

- Spend more time in the problem phase

- Develop to evolve with technology

- Avoid stand-alone solutions

- Provide interface and data standards– own the ecosystem

- Iterate early with the end user

- Operational testing is more important than equipment testing

- Use all of DoD's acquisition tools

- Evolve our workforce

**Equipping SOF in today's environment is a moving target.
We need to accept that, and leverage the tools we have available.**

INFORMATION

DATA TRANSPORT