



Rohde & Schwarz

THE NEW REALITY: INFORMATION WARFARE THE DYSTOPIAN WORLD

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- ▶ Working in Sales – Defense for 14 years
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- ▶ Business Development for Rohde & Schwarz

ROHDE & SCHWARZ

Make ideas real



ONE COMPANY, THREE DIVISIONS, DIVERSE MARKETS: WE ARE A RELIABLE TECHNOLOGY PARTNER

TEST & MEASUREMENT



Wireless | Industry, Components &
Research | Aerospace & Defense Testing |
Automotive

TECHNOLOGY SYSTEMS



Secure Communications | Critical
Infrastructure & Networks | Government |
IP Network Analytics | Broadcast, Amplifiers
& Media

NETWORKS & CYBERSECURITY

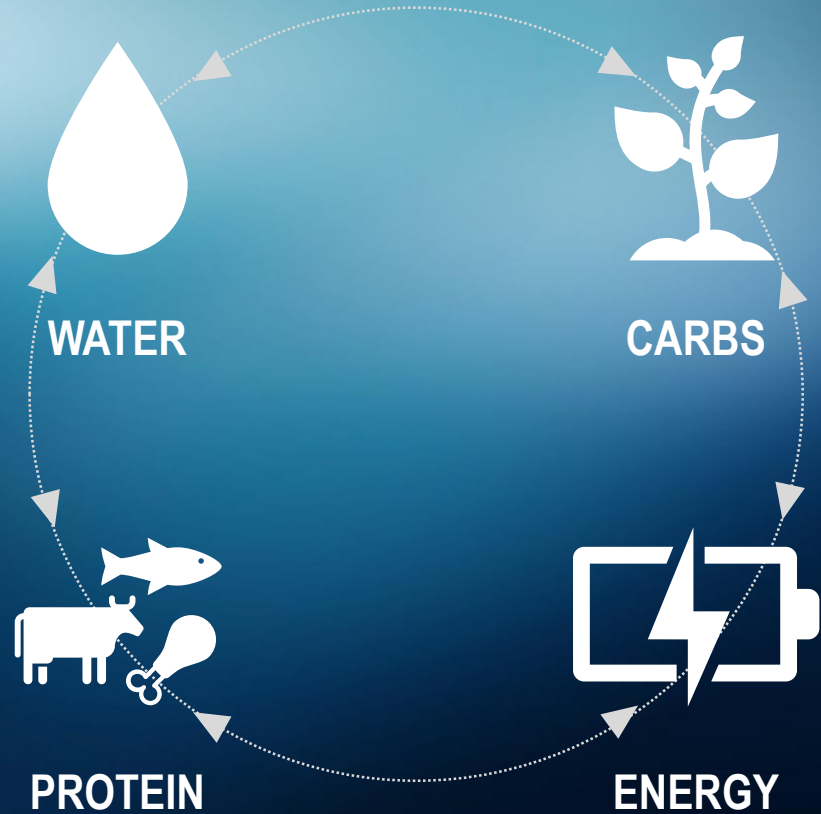


Network & Security Solutions |
Certified & High-Grade Crypto Solutions



TROUBLE ON THE HORIZON – SHORTAGES

- ▶ **Water:** Fresh water locked up in ice and in the ground
- ▶ **Carbs:** Space- and water-intensive cultivation of carbs worldwide
- ▶ **Protein:** growing demand for meat exceeding available animal protein
- ▶ **Energy:** growth of world energy consumption of every resource (oil, coal, natural gas, hydro, etc.)





Observations OFF battlefield

SURVIVAL THROUGH MORE INFORMATION



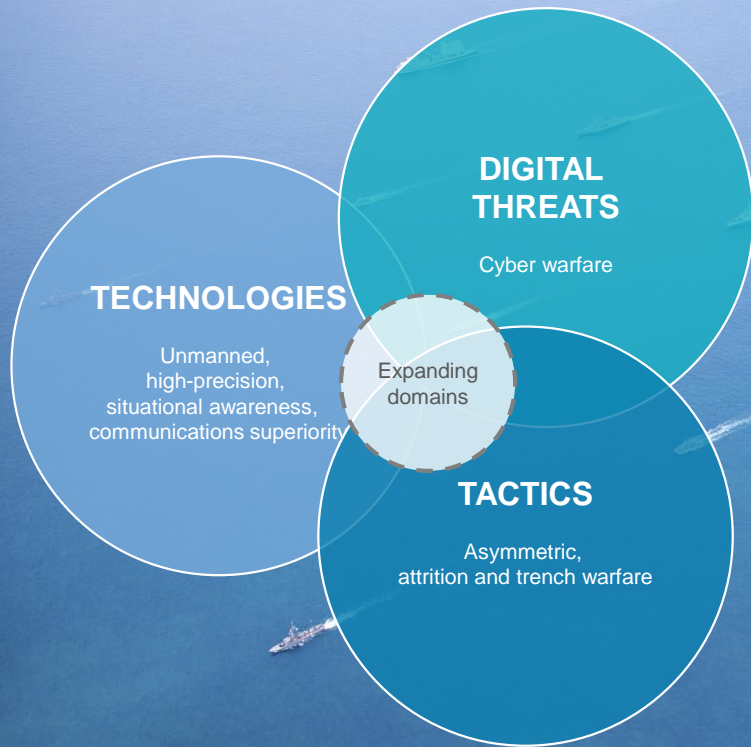
Observations ON battlefield

THE NEW REALITY: INFORMATION WARFARE

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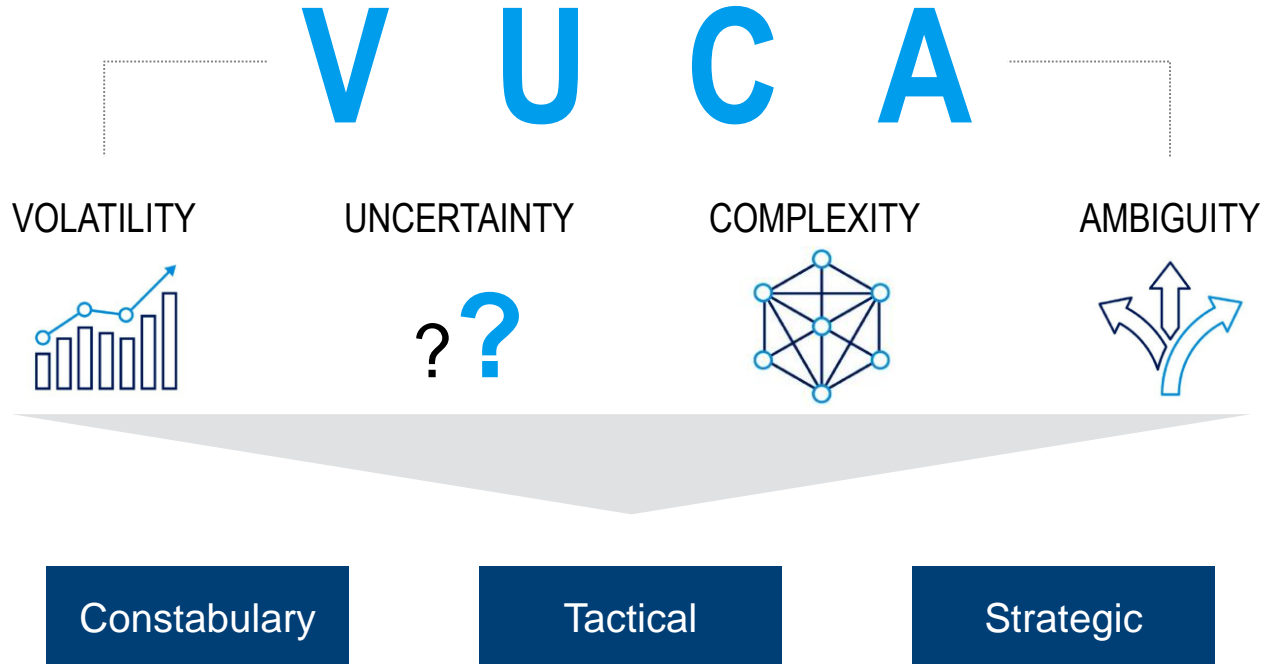
2022

CURRENT SITUATION: WAR IN EUROPE



**GENERATION 6:
INFO WARS**

MODERN DYSTOPIA OR: CHAOS VS. LAW AND ORDER

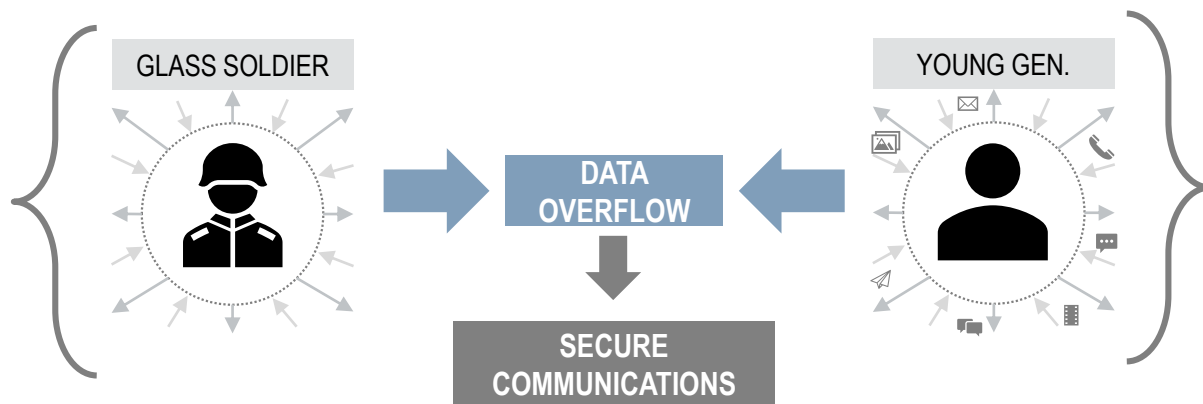


THE SPEED OF RELEVANCE

- ▶ VUCA can only be solved by timely handling of the abundance of information:
 - The right information
 - to the right people
 - at the right time.



CHALLENGES FOR LOS COMMUNICATIONS



Needs	2022	2025	2027-29	2035
Bandwidth for data transfer	10 - 15 MBit/s	50 - 100 MBit/s	100 - 200 MBit/s	X MBit/s



Series 4400 optimal configuration VUHF:
1,9MBit/s

(as a Network & with full LOS reach)



CHALLENGES FOR BLOS COMMUNICATIONS

2 case studies	HF	SATCOM	HFWB
File size picture	247kByte		
Typ. Data throughput	6.4 kbps ^{1*)}	>> Mbps	76.8 kbps ^{1*)}
Throughput time	5 min 9 sec	<< 1 sec	25.7 sec
Auto Link setup (ALE3G/4G reasonable conditions)	8 seconds	-	4.2 seconds
Total time energy in the air	5 min 17 sec	<< 1 sec	32 seconds

^{1*)} typical average data throughput rate for sky wave under reasonable conditions

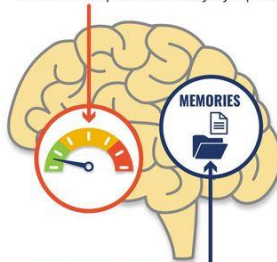
CHALLENGES FOR ICS

- ▶ Less radio operators – more multitasking
- ▶ Young generations to join navies with different expectations and user habits
- ▶ Technology needs to be handled under extreme (stressful/trauma) conditions

The 'Everyday' Brain

The Amygdala:

The brain's alarm system (the amygdala) is activated when we are faced with a potential threat (such as an unexpected loud bang). Providing nothing too distressing occurs, it will work alongside other areas of the brain to process our everyday experiences

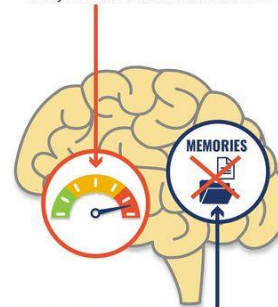


The Hippocampus:
Memories are processed in the brain and stored in the normal way through the hippocampus

The Brain During Trauma

The Amygdala:

The threat level is so high that the amygdala is fully activated and overwhelms the brain



The Hippocampus:
The hippocampus shuts down and can't store memories in the normal way



The NAVICS Philosophy:

COMMUNICATING ON BOARD AS EASY AS AT HOME

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