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Enabling Distributed, Low-SWAPC RESM for Information Superiority in Modern Operational Environments

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EW and Information Superiority

- The contribution of EW to Information Superiority goes back many years
- The EW battle is all about getting an information lead over an opponent
- The intercept of the early Luftwaffe Lichtenstein AI radar was a good example of an information lead that gave an advantage in the defence against night-fighters in WWII

RAF Vickers Wellington bomber used for RF intercept missions

Junkers JU88 night-fighter fitted with Lichtenstein AI radar

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EW and Information Superiority [contd]

- The modern battlespace has brought radar back into sharp focus
- Radar plays a key role in modern weapon systems
- This is driving the importance of the suppression of these radar systems as a fundamental element of information superiority

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Limitations of traditional RESM systems in modern battlespaces

- Achieving detection, identification and direction finding of radar systems is through radar ESM (RESM)
- Challenge is that cost, size, complexity and power consumption limit RESM to large, high value platforms
- Even in the land battlespace large vehicles have been required to operate such equipment

Redesigning RESM for tactical advantage whilst maintaining performance

- Reduce size and weight very significantly
- Power consumption commensurate with use of small batteries
- Reduce cost by a factor of ten or more
- Better availability of RESM supports strategic advantage as well as tactical

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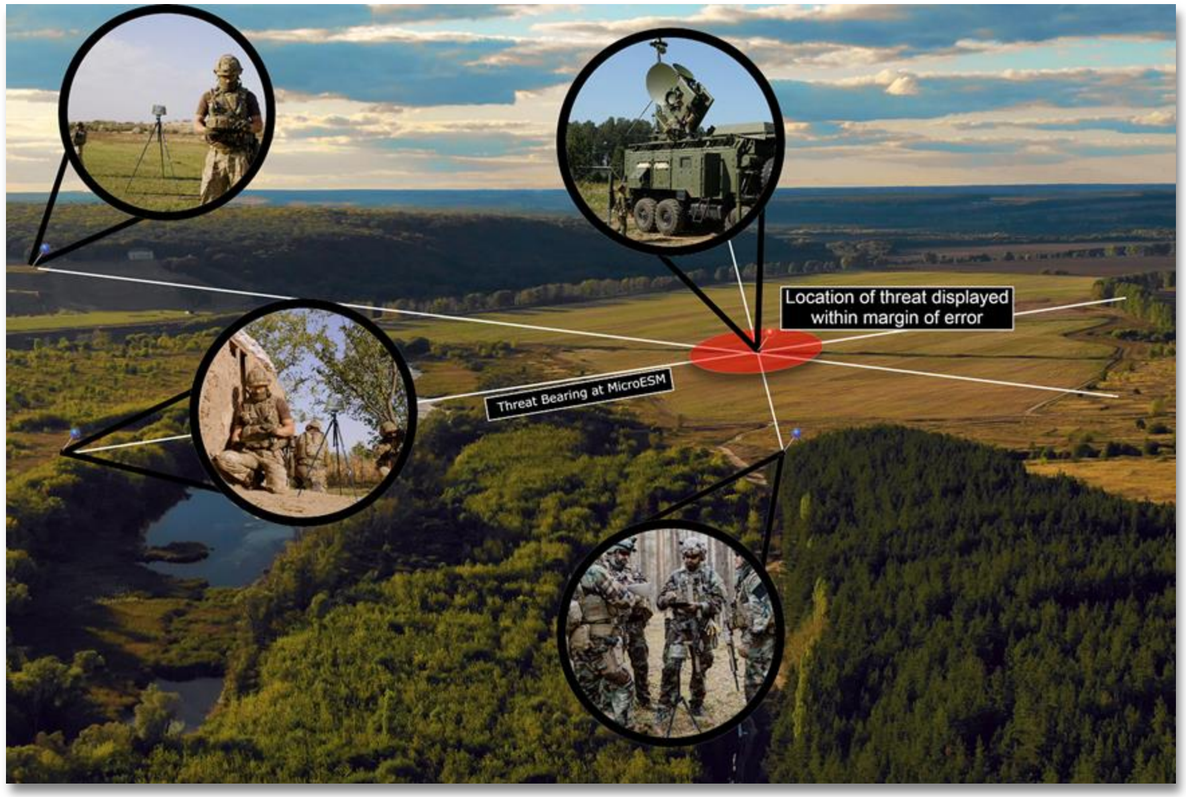
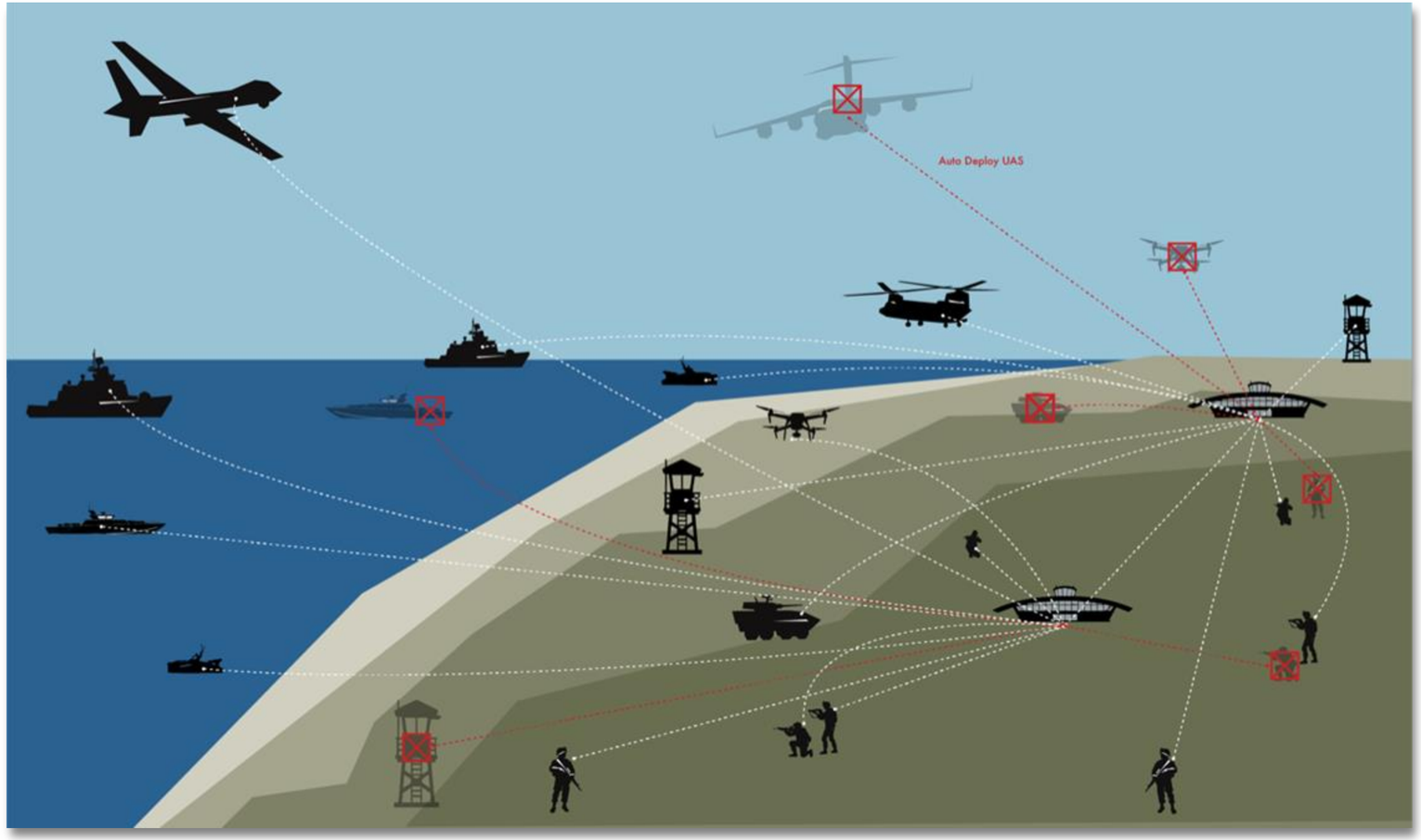
Enabling RESM geolocation

- Many more RESM systems in the battlespace introduces the possibility of target radar geolocation through multi-sensor networking
- Networking via any IP enabled comms
- Traditionally radar target geolocation has relied on single sensor geolocation on stand-off platforms



High impact, high resilience RESM

- Small RESM systems are almost impossible to detect
- Connecting many RESM sensors in a ‘plug-and-play’ network creates a high degree of resilience
- The network can consist of a disparate set of sensor platforms, from UAS to UGS
- The battlespace can be covered by 100’s or 1000’s of such sensors



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Move away from specialist signals units

- Small, low cost RESM can be embedded within non-specialist land forces units
- Remote operation can allow a few skilled operators to manage a number of systems on disparate platforms
- RESM capability can be considered for vehicles, boats and aircraft that are not currently fitted, without a requirement for skilled operators

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Conclusions

- Ukraine war illustrates the central role of radar in modern warfare
- Radar systems have become high value targets
- Large high value platforms for electronic sensing are vulnerable
- Distributed Low SWAPC RESM is not just an innovation – it is a necessity

Destroyed Zoopark counter battery radar

COTS low SWAPC RESM available today

See MicroESM at the **Aeronix** booth in the Exhibition Hall:

Booth #904

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