



The Need for SEAD!

**European Air Forces and Air Defence Suppression in a
Paradigm Shift**

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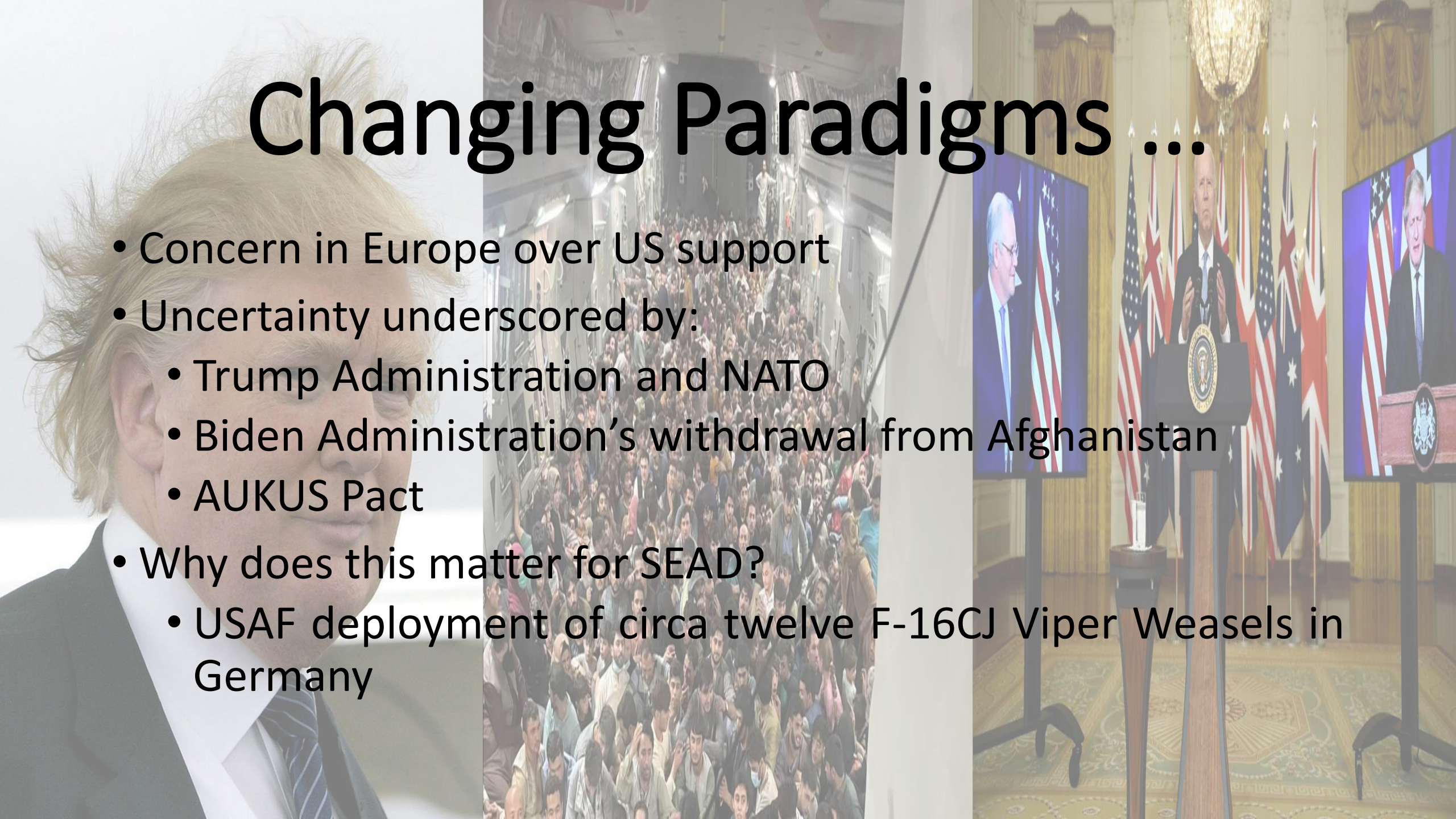
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Agenda

- The Strategic Picture
- The Strategic Threat
- European SEAD Strengths and Weaknesses
- Avenues for Development

Changing Paradigms ...

- Concern in Europe over US support
- Uncertainty underscored by:
 - Trump Administration and NATO
 - Biden Administration's withdrawal from Afghanistan
 - AUKUS Pact
- Why does this matter for SEAD?
 - USAF deployment of circa twelve F-16CJ Viper Weasels in Germany



What's Cooking on the Threat Board?

- Georgia
- Ukraine
- Litvinenko and the Skripals
- Maskirovka
- Alleged Election Interference

Russian Strategic Air Defence Threat

The background of the slide features a photograph of several S-400 missile launchers. These large, green, cylindrical launchers are mounted on a dark, heavy-duty vehicle. They are positioned in a row, angled upwards, and are situated on a flat, snow-covered ground. The scene is captured in a slightly desaturated, high-contrast style, emphasizing the industrial and military nature of the equipment.

- Defends critical infrastructure not area
- Deployable in times of tension
 - S-400 (SA-21 Growler) - circa 60 battalions
 - S-300 (SA-10 Grumble) - circa 74 battalions
 - 96K9 Pantsir (SA-22 Greyhound) - point defence of SAM batteries
 - S-350 and S-500 in the near future
- Large HF and V/UHF radar network
- Protected fibre optic communications and resilient internet

Russian Battlefield Air Defence Threat

- Russian Army deploys GBAD to prosecute targets at:
 - Altitudes of 650ft (200m) to 40,000ft (12,000m)
 - Ranges of ten kilometres (6.2 miles) to 100km (62.2 miles)
- Operational GBAD includes 9K37 Buk-M3 (SA-17 Grizzly) medium range/altitude SAM, S-300V3/VM and S-400
- Each manoeuvre brigade supported by one organic SAM and one organic AAA/SAM battalion plus radars and HQ
 - 9K330 Tor (SA-15 Gauntlet) low-altitude, short/medium-range SAM
 - 9K35 Strela-10 (SA-13 Gopher) SHORAD SAM
 - 2K22 Tunguska (SA-19 Grison) SHORAD SAM/AAA
 - 9K310 Igla-1 (SA-24 Grinch) MANPADS
- GBAD fully networked

SEAD – A (Very) Short History

- Operation Desert Storm
 - 78 dedicated SEAD shooters, 22 electronic attack aircraft, ten SIGINT planes – Two percent of deployed air assets for 43-day air campaign
- Operation Deliberate Force
 - 34 dedicated SEAD shooters, nine electronic attack aircraft, eleven SIGINT planes – Nine percent of deployed air assets for 41-day air campaign
- Operation Allied Force
 - 126 dedicated SEAD shooters, two electronic attack aircraft, ten SIGINT planes – 13 percent of deployed air assets for 78 day air campaign
- Operation Iraqi Freedom
 - 82 dedicated SEAD shooters, five electronic attack aircraft, 14 SIGINT planes – four percent of deployed air assets for 41 day air campaign
- Operation Odyssey Dawn/Unified Protector
 - 17 dedicated SEAD shooters, one electronic attack aircraft, five SIGINT planes – nine percent of deployed air assets for 222 air campaign

SEAD – A (Very) Short Conclusion

- Taken together these five air campaigns involved:
 - Average of 1,800 aircraft for an average air campaign of 85 days' duration in an average theatre size of 563,178 square kilometres
 - Average deployment of 68 SEAD shooters, eight electronic attack aircraft and ten SIGINT planes
- Majority of SEAD assets deployed by the United States!

European Dedicated SEAD Assets



- 37 dedicated SEAD Shooters
 - 20 *Luftwaffe* Tornado-ECRs
 - Five *Aeronautica Militare* Tornado-ECRs
 - Twelve USAF F-16CJ Viper Weasels
- Zero Electronic Attack aircraft, but 15 *Luftwaffe* EA-18G Growlers forthcoming
- 14 SIGINT aircraft spread across seven European NATO members
- Deficient in SEAD Shooters even with US deployment of F-16CJs



YEAH WHAT ARE YOU

Watchya Gonna Do About It?

- Buy more SEAD Shooters?
 - Expensive!
- Buy more AGM-88E/Fs?
 - More practical!
- Leverage emerging capabilities:
 - SPEAR-EW, Stand-Off Weapons, UCAVs/UAVs, Loyal Wingman, Cyber
- Embrace emerging technologies:
 - Artificial Intelligence and Machine Learning, MDO and deep networking, Cubesats

GOING TO DO ABOUT IT

Conclusions

- US support (and SEAD assets) might not always be given
- Europe faces a tangible Russian threat
- Based on previous air campaigns, European NATO members are deficient in some SEAD assets
- European NATO members need to address these deficiencies in imaginative ways through new capabilities and technologies
- Europe must have robust SEAD assets exclusive of US for deterrence as well as war