

Innovation, development and operational demands

- reflections from a Swedish Air Force Combat Air perspective

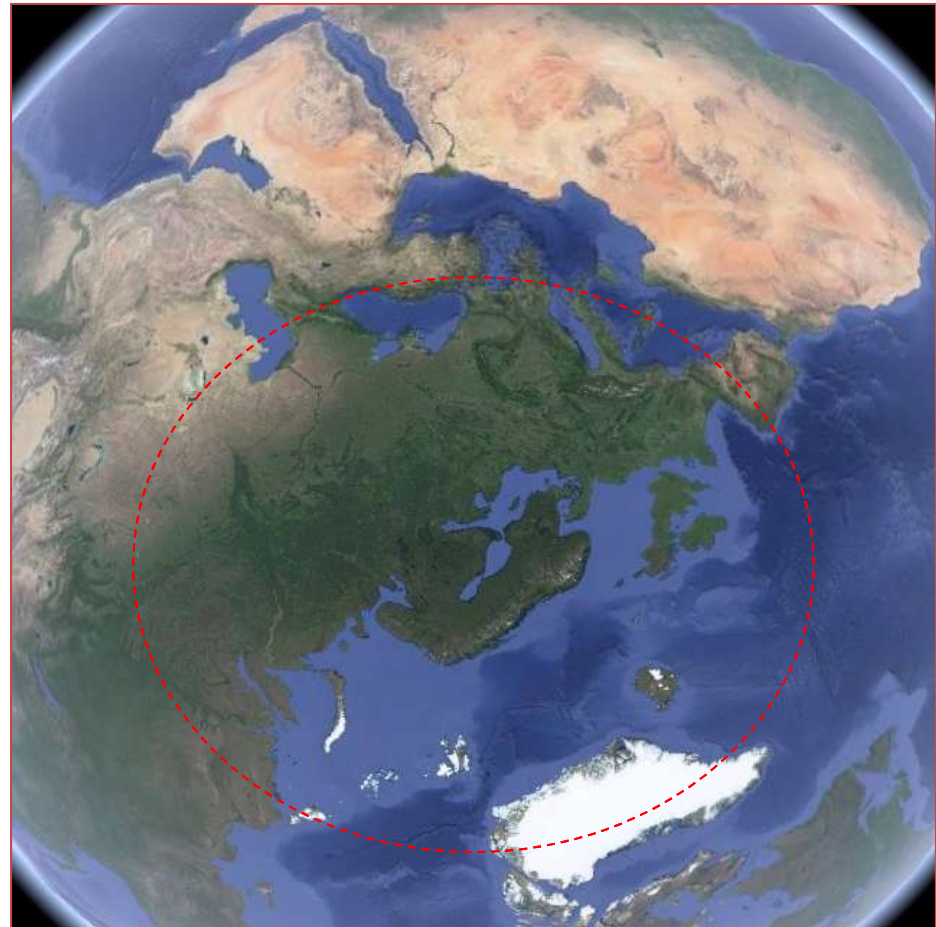
Swedish Air Force

Former Commander Swedish Air Force, Maj Gen Mats Helgesson



A Swedish perspective.

- UN
- EU
- NATO Partnership for peace
- NORDEFCO
- Trade, cooperation and innovation based economy Volvo/ SAAB / Ericsson / IKEA/ Spotify / Skype ...
- Not Neutral, but non military aligned
- During the cold war – neutrality – production of almost all our military equipment in Sweden. Combat Aircraft, Submarines, C2, Missiles, Tanks , EW etc.



The Swedish Air Force - our concept today

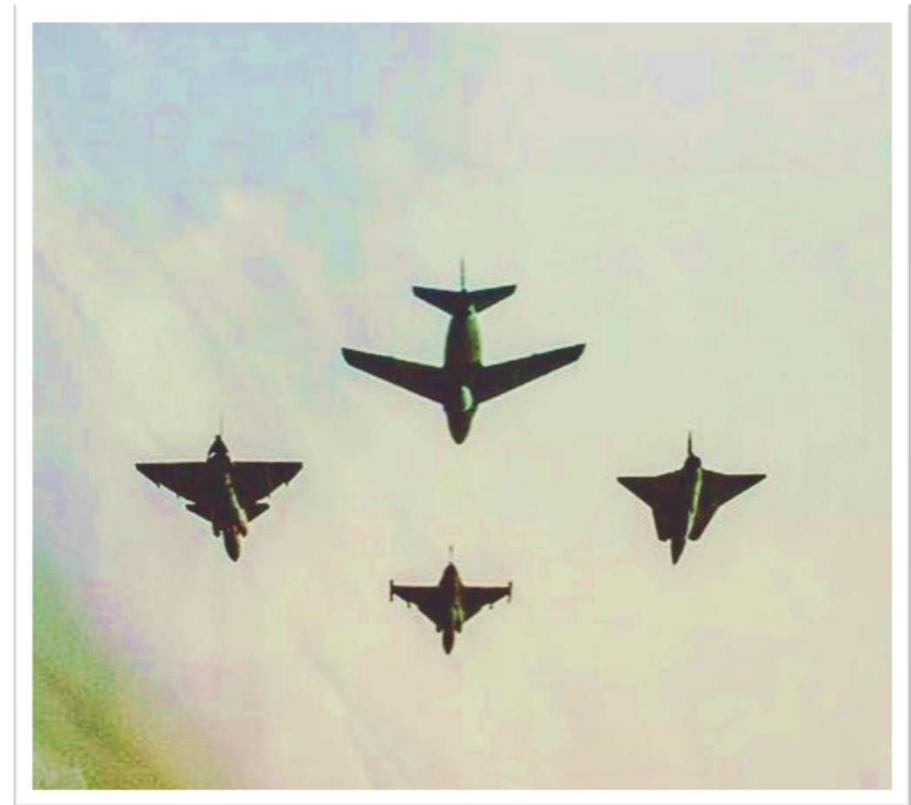
- Defensive Counter Air -Air Force
- SwAF = Joint Air Support (Transport/Helos)
- CONOPS
 - Dispersed bases (highways etc.)
 - Fighter Tactics based on links, EW and high performance weapons (METEOR/ AMRAAM/ IRIS-T ..)
 - Full interoperability
 - Robust national C2
 - Gradual fighter development (not MLU)
 - Conscripts, mechanics- base protection - log
 - Triple Helix (Gov't-Academia-Industry)



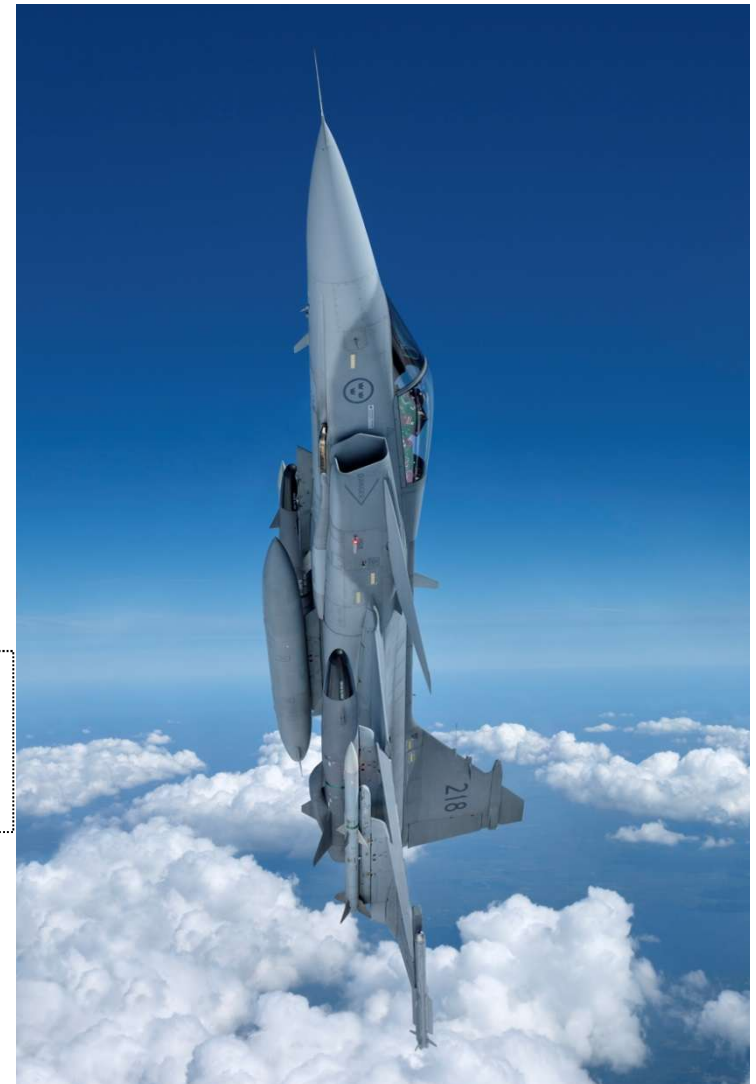
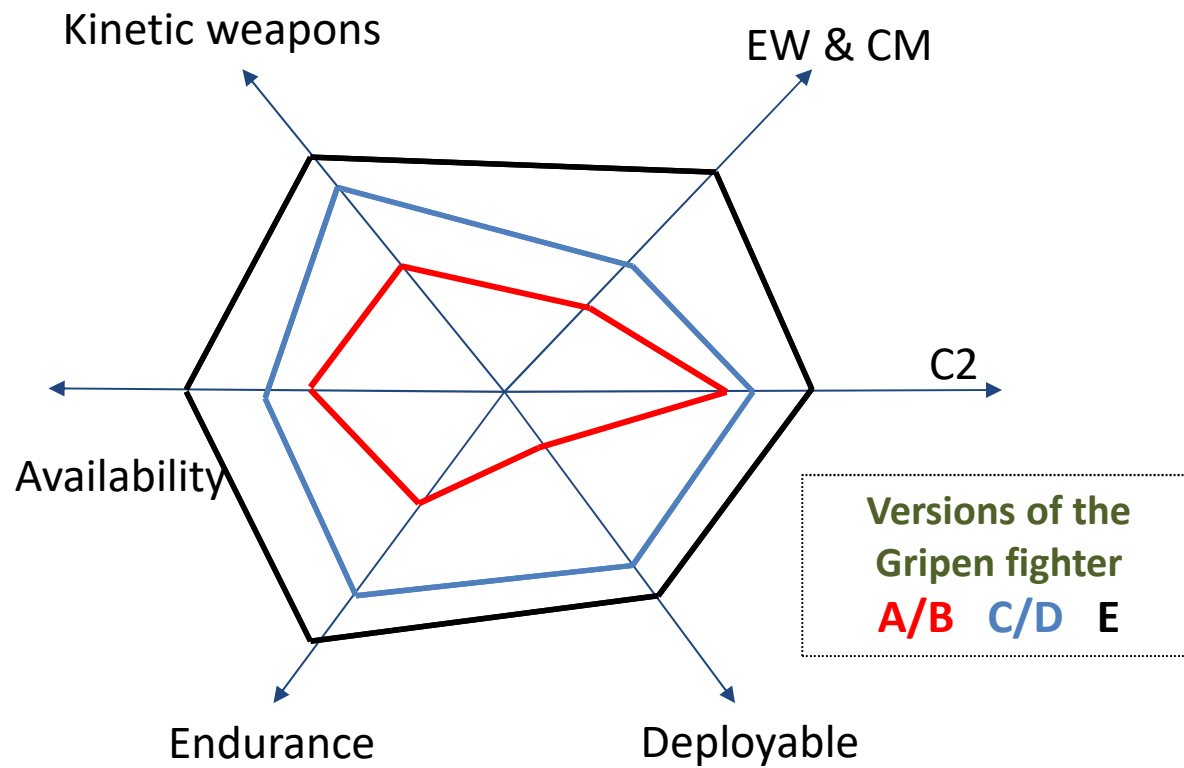


Why develop? Why innovate?

- Being on second place in combat is not good
- Threat
- Initiative
 - New technologies
- Cost efficiency
 - Affordability
 - Security
 - Safety
 - Follow the general development
 - Avoid obsolescence

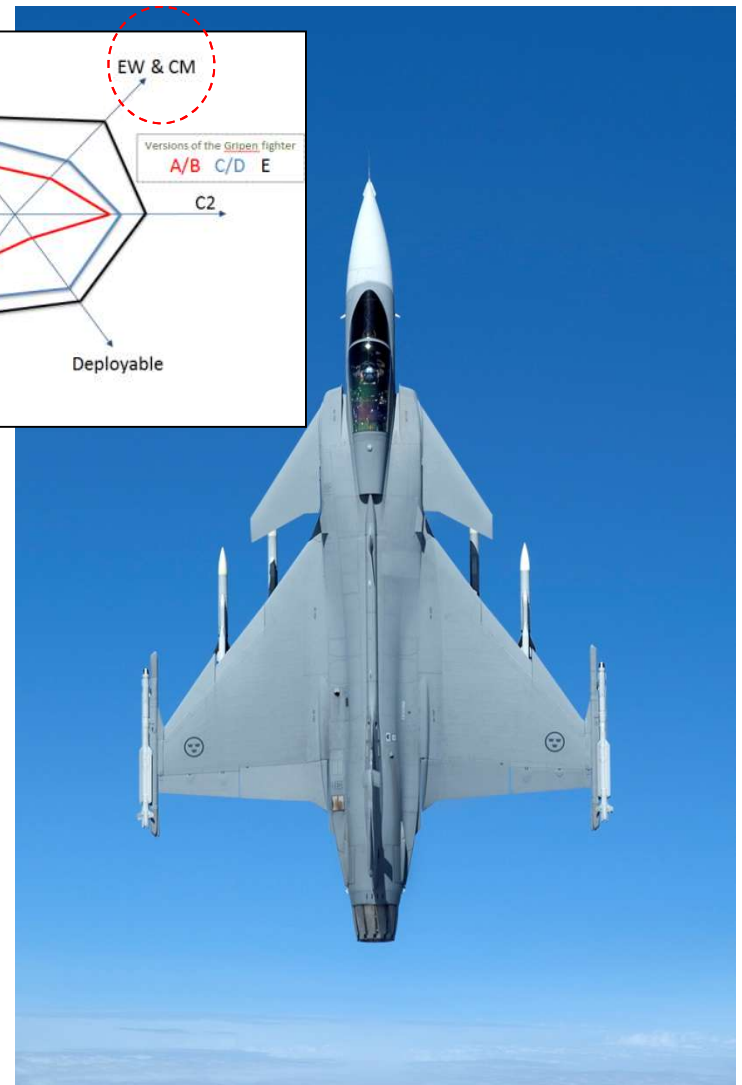
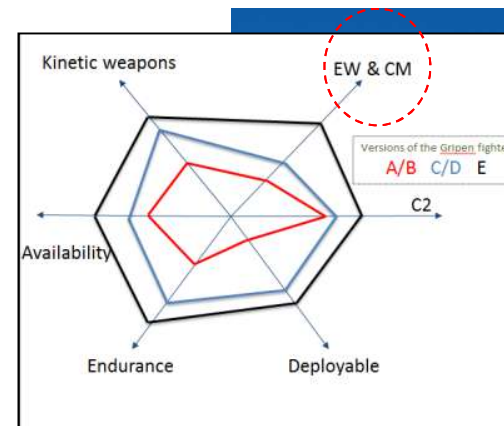


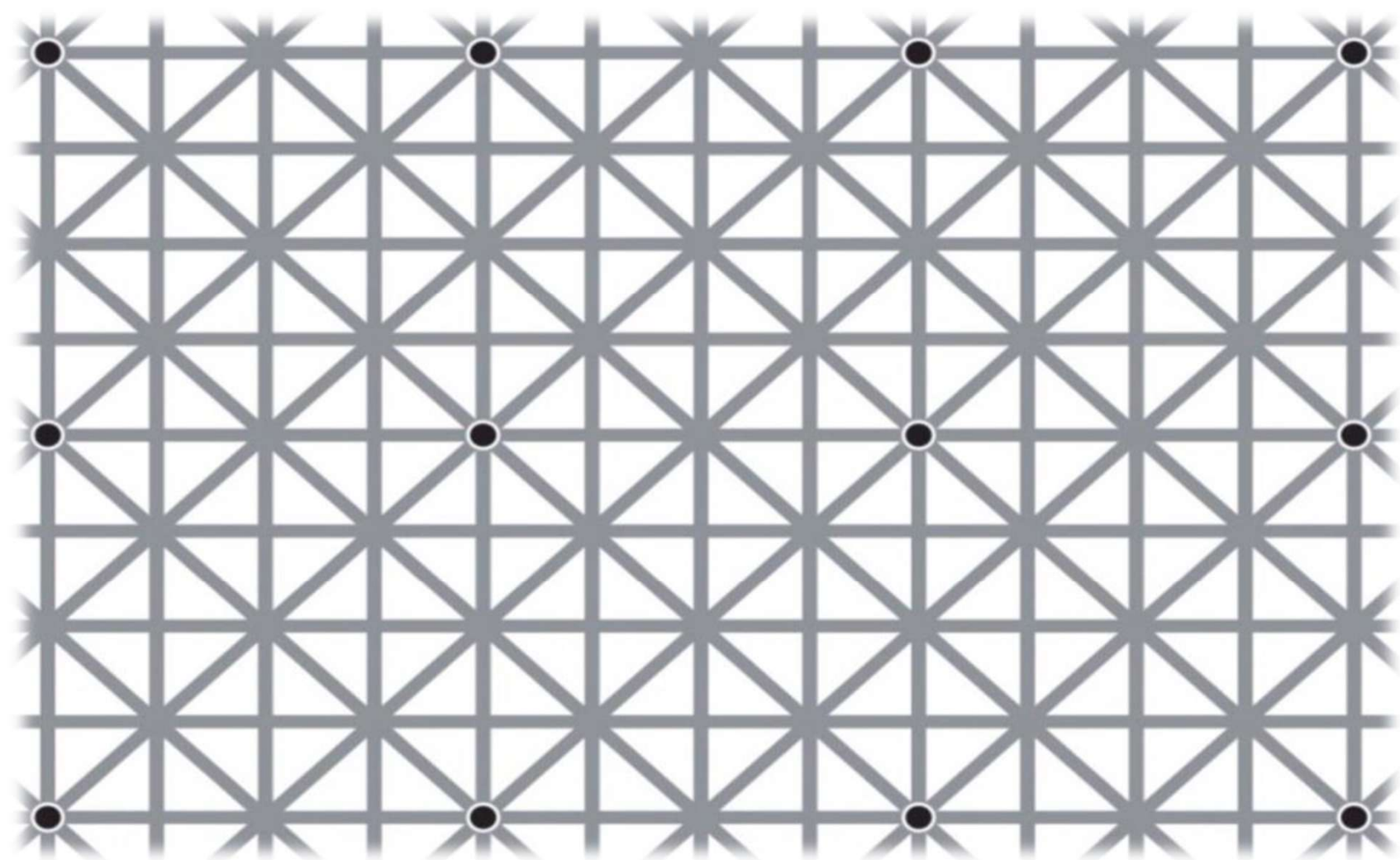
Threat/tech/innovation driven development



Swedish Air Force view on Electronic Warfare

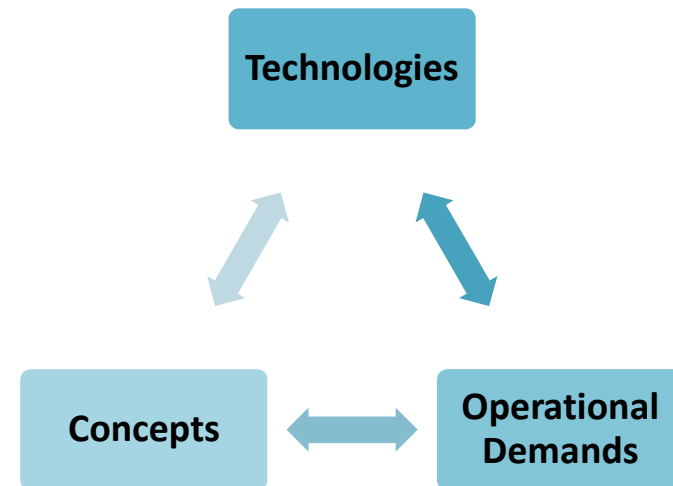
- A major weapon both offensively and defensively
- Requires constant attention and upgrading, MLU will not work
- Needs to be trained, a lot (sims + irl)
- Requires specialists and focused intel
- Can never replace a/c performance, but it is a very strong multiplier
- A basic design criteria when building Combat Aircraft
- A part of the DNA of Combat Air tactics



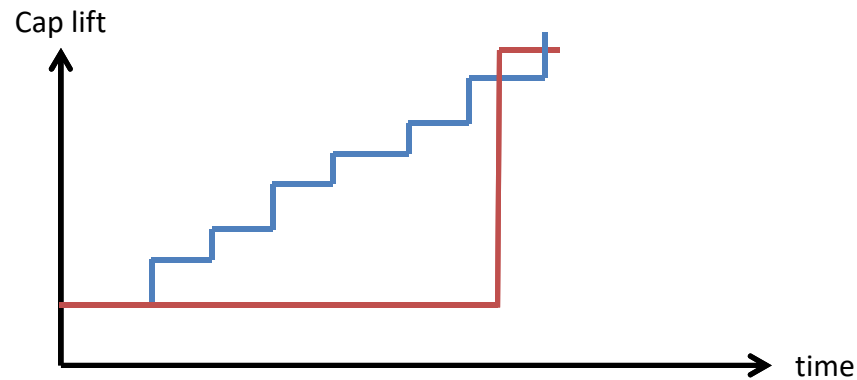


Our concept for development

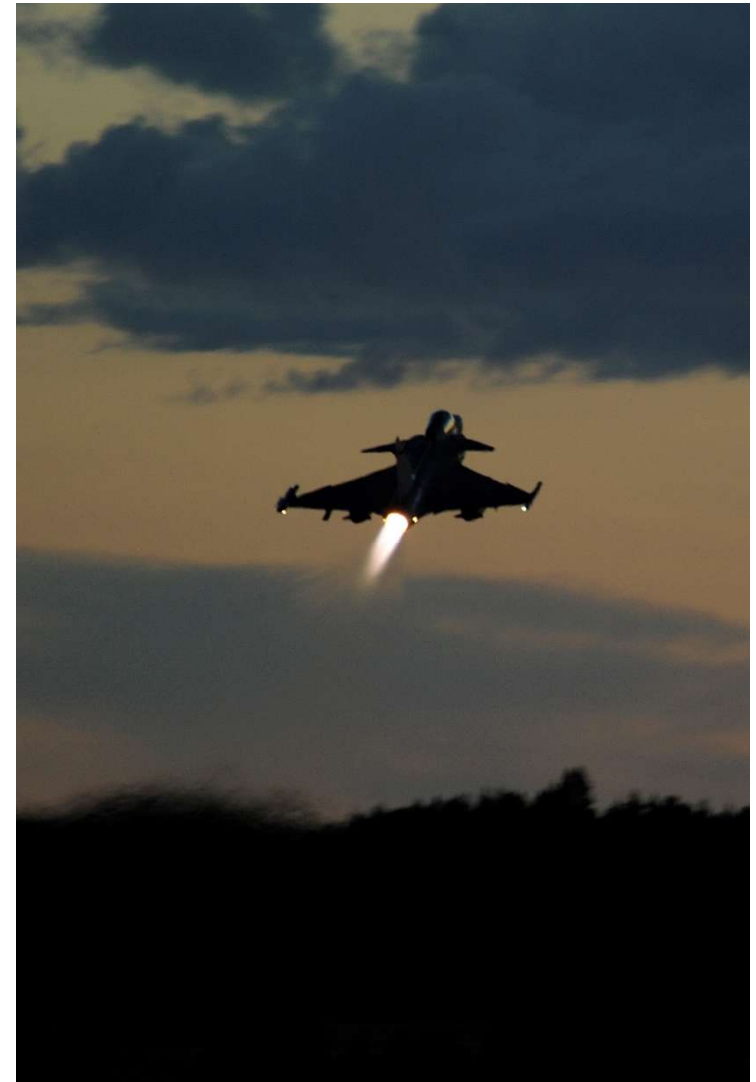
- **A national/Air Force - Combat Air Masterplan.**
- **Capability/effect first - technology agnostic** (at start)
 - Holistic view on defense
 - Domestic development – security of supply.
 - Cooperation and collaboration
 - Gradual development
- **Assessing and analyze - new or already operational or mixed technologies?**
 - “Three perspectives” at the same time, - now, next ten years and beyond (+30 years).
- **Norman Augustines Law Number XVI***
 - Affordability



Gradual development vs mid life updates



- Faster adaption of new tech
- Constant attention on development
- Foreseeable economy = affordable
- Industrial competence over time
- Operators will have increased "workload"
- Operating with many configurations



Development of combat air summing up,

- Much more than only a high performing airframe.
- You need to have a holistic and joint view on Air Combat Power.
- Cooperation is essential.
- Affordability.
- And if you look far enough into the future you are not bound only to follow current development trends, you could actually lead and shape your own future.

