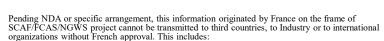


FRENCH PERSPECTIVES ON FUTURE COMBAT AIR SYSTEMS

An ambitious European project open to partnership

Stockholm - October 8th, 2019





French information transmitted to Swedish Government

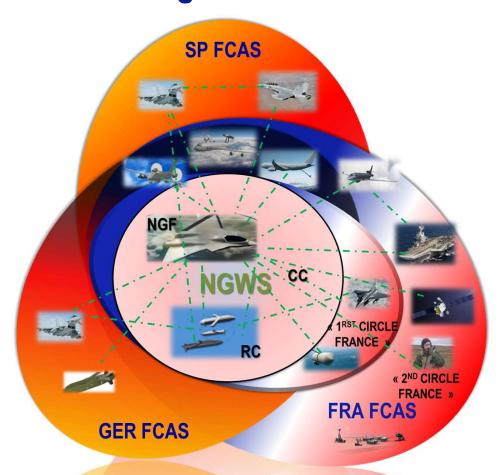
oint information

Information that Sweden could produce from French or joint data



« Next Generation Weapon System (NGWS) within a FCAS » : a

FR/GE/SP converged vision



Missions

- Acquire & maintain air superiority
- Execute operations from the 3rd dimension

Interoperability

- Connectivity
- Simulation

Challenges

- Set up a standard
- Master connectivity network





MISSIONS Requirements

- Operate in an highly contested environment
 - Gain and maintain Air superiority
 - Fight through 3D on all environment spectrum (air, ground, sea, space, cyber)
- Interoperability: within Eu NATO/US

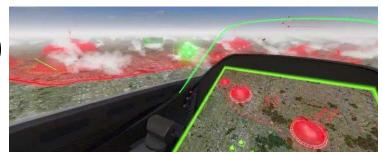
CONCLUSIONS

- Duel is past/ "one-fits-all" is no more realistic
- Need:
 - System of systems approach
 - (Dynamic) performance distribution
 - Flexibility-Agility



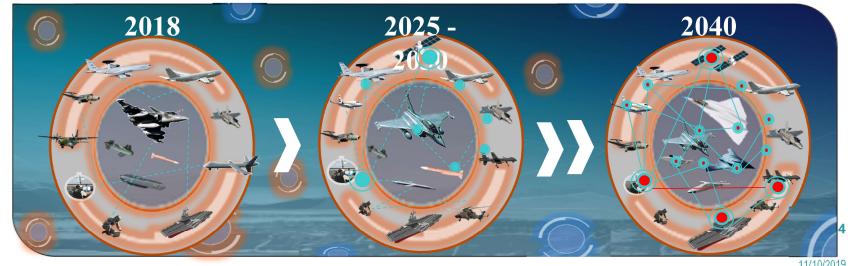


CONNECTIVITY AND COMBAT CLOUD CHALLENGE



Immediate take off needed now to be ready in 2040

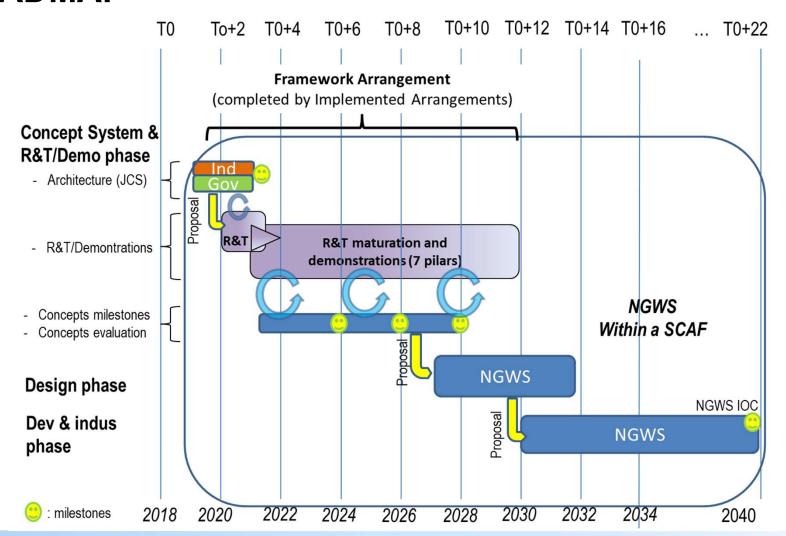
- From now, on all the future capabilities (Fighters NG and legacy Fighters, AWACS, navy and ground elements)
- Step by step approach :







ROADMAP





11/10/2019



R&T STUDIES: a demonstration project built upon 7 pillars

NGF

- Objectives : Validation of new trade-offs supersonic flight / maneuverability / LO
- Technologies / concepts
 - Supersonic flight with or w/o fin
 - LO material for supersonic aircraft
 - Armament release from an internal bay at supersonic speed
 - LO apertures integration
 - NG cockpit

Engine

- · Objectives: validation of key NGA engine technologies
- Technologies/concepts:
 - HP core technologies
 - Hvbridization
 - Variable cycle

Sensors

- · Objectives : Sensors suite efficiency demonstration
- Technologies/concepts:
 - Digital BackBone
 - Multifunctions Radar
 - Multispectral optronics

SimLab

- End-to-end demonstrations
- · Smart mission systems demonstrations (ECOA, AI, MMI)

Remote Carriers

- **Objectives**: Disruptive RC concepts assessment
- Technologies/concepts:
 - Low cost connectivity and sensors
 - Swarm RCs management

Very Low Observability

- Objectives : Demonstrations of all sectors and all frequency bands survivability
- · VLO integration of technologies and concepts:
 - VLO inlet and exhaust
 - Antenna and apertures
 - EW devices
 - Weapon Bay integration

System of Systems / Connectivity

- Objectives: FCAS global architectures assessment / Combat Cloud and connectivity demonstrations
- Technologies/concepts:
 - Big data exchanges (connectivity) and processing (AI)
 - Connected sensors suites
 - Interfaces standardization
 - Quality of services / end-to-end functions
 - Cyberdefence and security



11/10/2019





