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ICAS 2022

Future Combat Air Systems Requirements & Technologies

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LEGACY AIR COMBAT SYSTEMS AND THE FUTURE

Legacy Air Combat Systems…

- Efficient, reliable, available/produceable
- Evolutions already planned beyond 2030

RAFALE F6… - TBC

RAFALE F5 - 2030/2040

RAFALE F4 - 2025/2030

RAFALE F3R - Now

METEOR AAM
TALIOS EOTRS

Connectivity
New weapons
Sensors +
Survivability +

Enhanced Connectivity
New weapons and sensors
New Nuclear deterrence
AI
Extended life

… the Backbone of our Air Defense for the next decade

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OLD MISSIONS, NEW THREATS

Air Forces priorities

Conquer & maintain Air Superiority

Penetrate the most contested environment

Establish information dominance

Emerging trends

Integrated Air Defense Systems

Air vehicles with superior capabilities

Multi-domain warfare

Rise of the digital age

Develop future systems for enhanced Collaborative Air Combat

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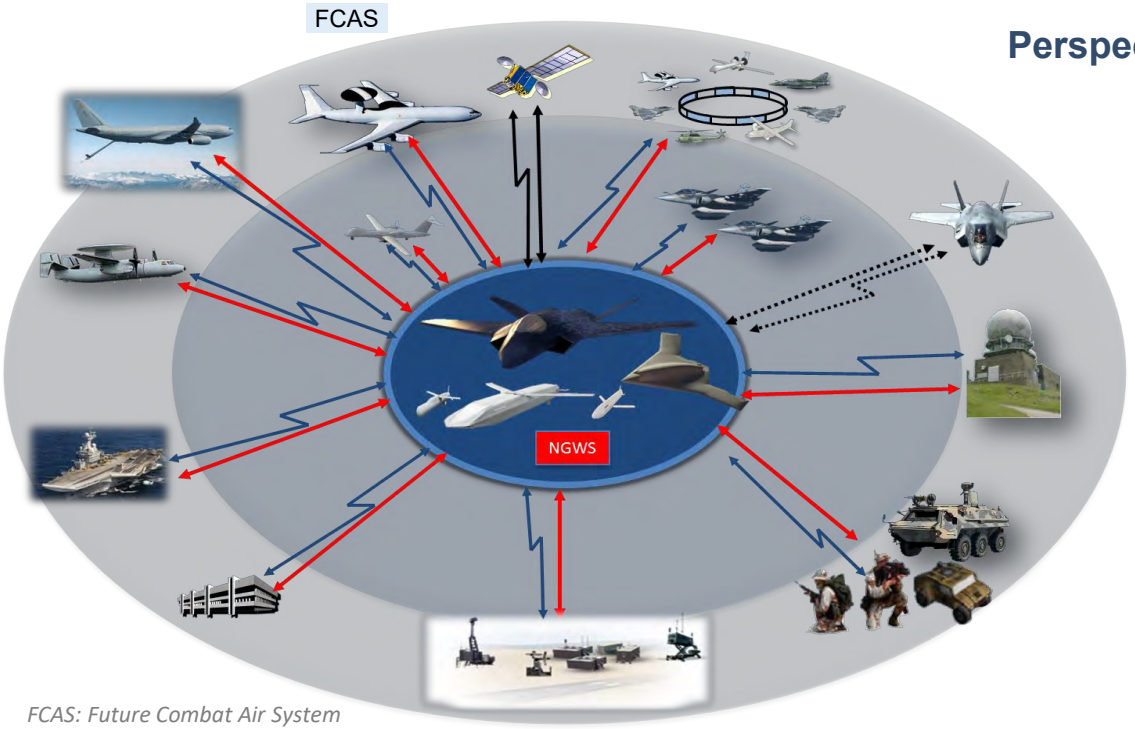
A NEXT GENERATION WEAPON SYSTEM WITHIN FCAS



FCAS: Future Combat Air System
NGWS: Next Generation Weapon System

Perspectives for Collaborative Air Combat

At Theater Level

Multi-domain, multi-assets

Several partners, within coalitions

Network connectivity with variable latency

Mission coordination & re-planning

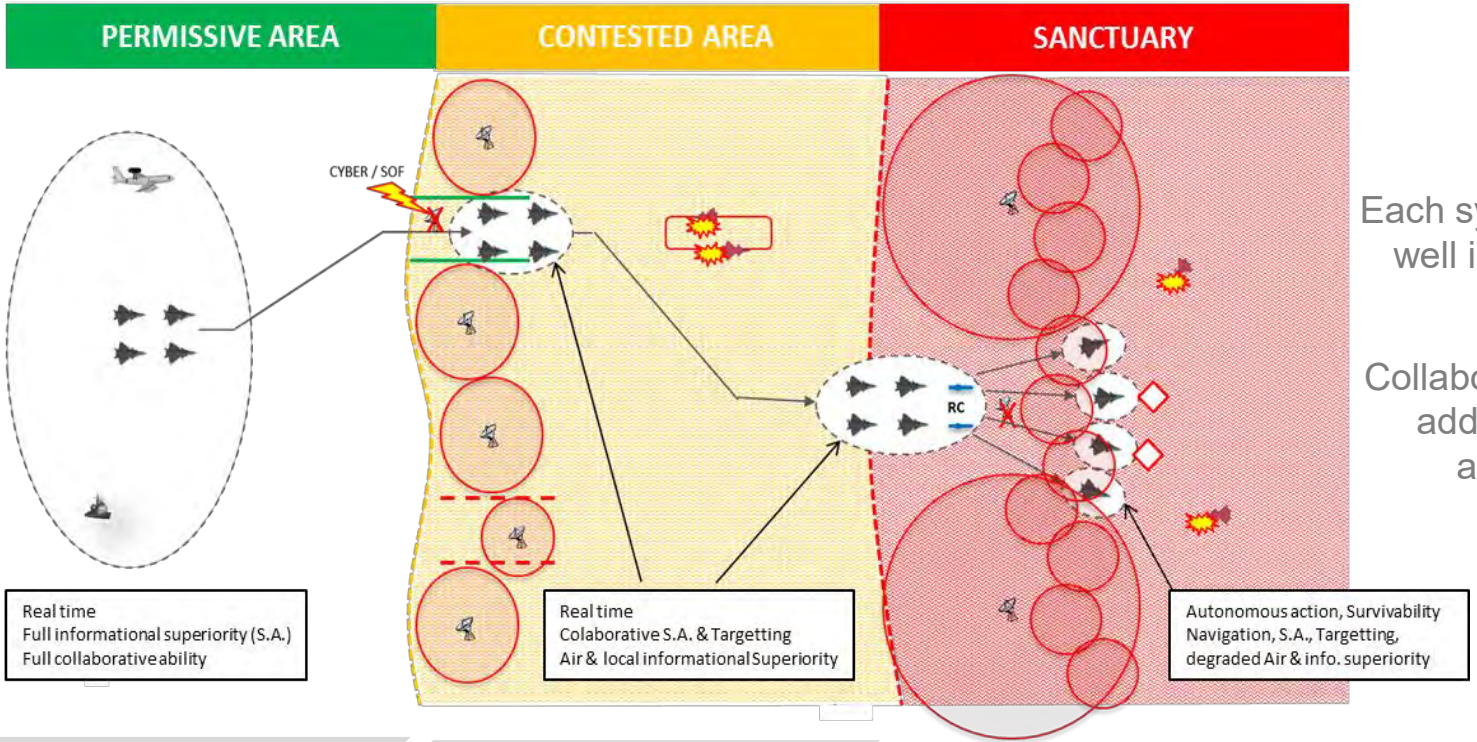
At Tactical Level (combat patrol)

NGWS acting as a single asset

Direct connectivity with low latency and high robustness

Mission execution & coordination

« MISSION CENTRIC » SYSTEM-OF-SYSTEM APPROACH



Each system functions well independently

+

Collaborative services add value when assembled

Global Collaborative Air Defence requirements

Local Collaborative Air Combat requirements

High-end Collaborative Air Combat requirements

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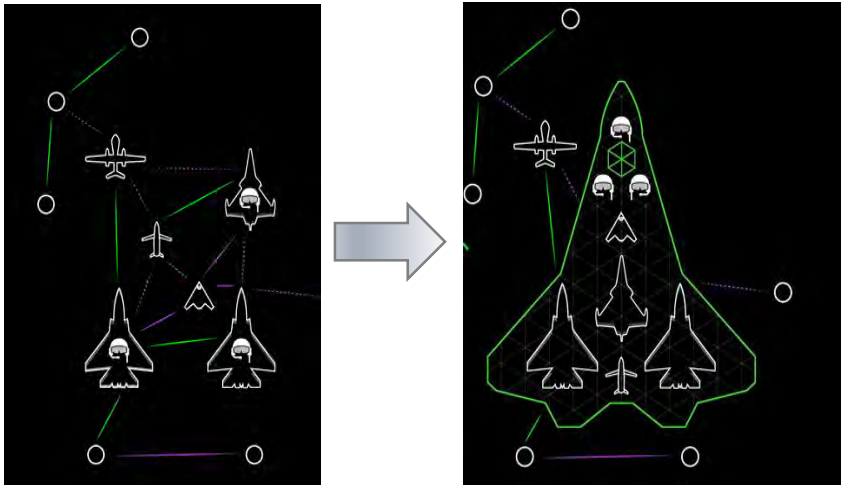
NGWS COLLABORATIVE COMBAT CONCEPT



“Mission centric” System-of-Systems approach

Allocation of requirements between assets

Combat Cloud

Enabler of data distribution and processing

Man Machine Teaming

Each asset designed for collaboration (HMI)

Progressive AI development

Legal issues

Human control => Trust

Responsibility of the chain-of command

NGWS KEY REQUIREMENTS & TECHNOLOGIES

Survivability

Power & speed
Manned fighter
Remote Carriers

Internal & external payload capability

Navy/Air versions

Deterrence Mission

Multi-spectrum Sensors

Robust multi-band comms

Man Machine Teaming

Evolutionary avionics

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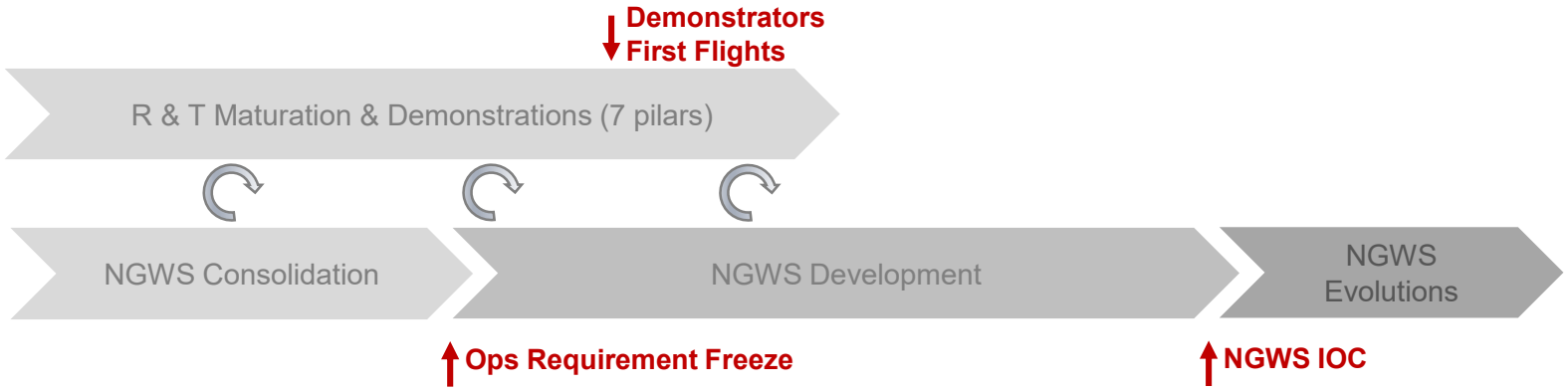
FROM TECHNOLOGICAL DEMONSTRATORS TO OPERATIONAL READINESS

Key technologies maturation plans structured in 7 pillars

New Gen Fighter	NGF Engine	Remote Carriers	Combat Cloud	Simlab	Sensors	Enhanced LO Technologies

Key technologies maturation in parallel to main system definition



Lessons-learnt during R & T demonstration phase forge the teams for NGWS development