



LOCKHEED MARTIN

**10th Annual CAPITAL LINK Forum
GREECE: The New Reform Agenda
Investment & Business Opportunities in Greece Today**

**“Aerospace Investments in Greece Through
Offsets, Co-production and Industrial
Participation”**

***New York City
30 October 2008***

***Dennys S. Plessas
Vice President,
Business Development Initiatives
Lockheed Martin Aeronautics Company***

OUTLINE

- **AIR POWER CAPABILITIES FOR AN UNCERTAIN FUTURE**
 - *COMPONENTS OF AIR POWER*
 - *CHALLENGES TO AIR POWER*
 - *MEETING THE CHALLENGE WITH INNOVATION,*
- **TECHNOLOGY & PARTNERSHIPS**
- **LIFE CYCLE SUPPORT**
- **INVESTEMENTS IN GREECE THROUGH OFFSET BENEFITS**
- **PUBLIC PRIVATE PARTNERSHIPS IN THE FIELD OF DEFENSE**
- **CHALLENGES AND DILEMMAS FOR THE HELLENIC AIR FORCE & GREECE**



“Air Power Transformation” in the 21st Century

Air Power: As Important Today As Ever



*“Not to have an adequate air force
in the present state of the world is
to compromise the foundations of
national freedom and independence.”*

Winston Churchill, 1933

Components of Air Power



COMBAT AIR



AIR MOBILITY



ISR



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Worldwide Deployment



GLOBAL REACH



FROM THE SEA



WITH
COALITION PARTNERS

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Across the Spectrum of Requirements



PEACEKEEPING



Counter Terrorism
Operations



MAJOR
COMBAT
OPERATIONS



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Setting the Conditions



BATTLESPACE
ACCESS



FREEDOM TO
MANEUVER



OPERATIONAL
SUCCESS



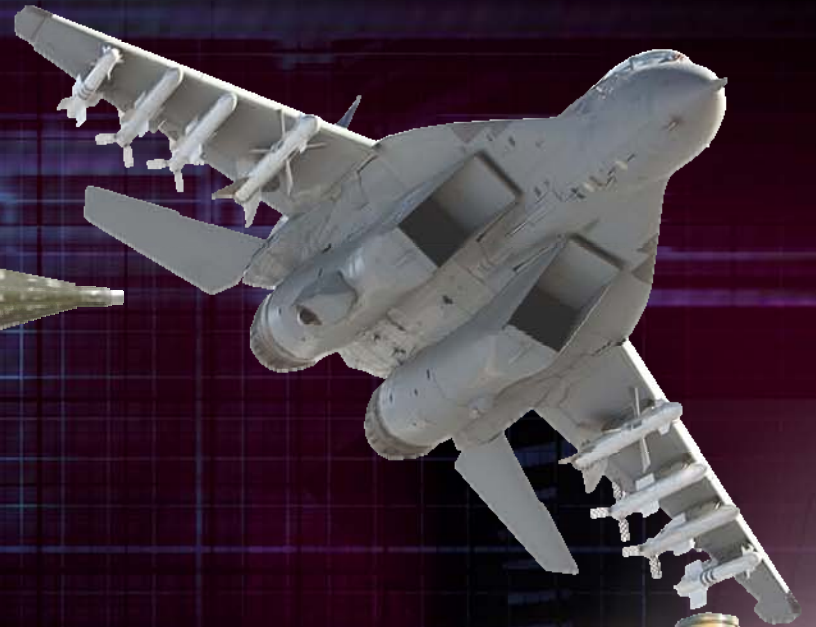
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Challenges To Air Power



- **Evolving Threat**
- **Force Structure Recapitalization**
- **Fiscal Constraints**

The Evolving Threat



- Terrorist Tactics
- Advanced 4th Gen Fighters
- Integrated SAM Systems
- Cruise & Ballistic Missiles
- Weapons of Mass Destruction



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Force Structure Recapitalization



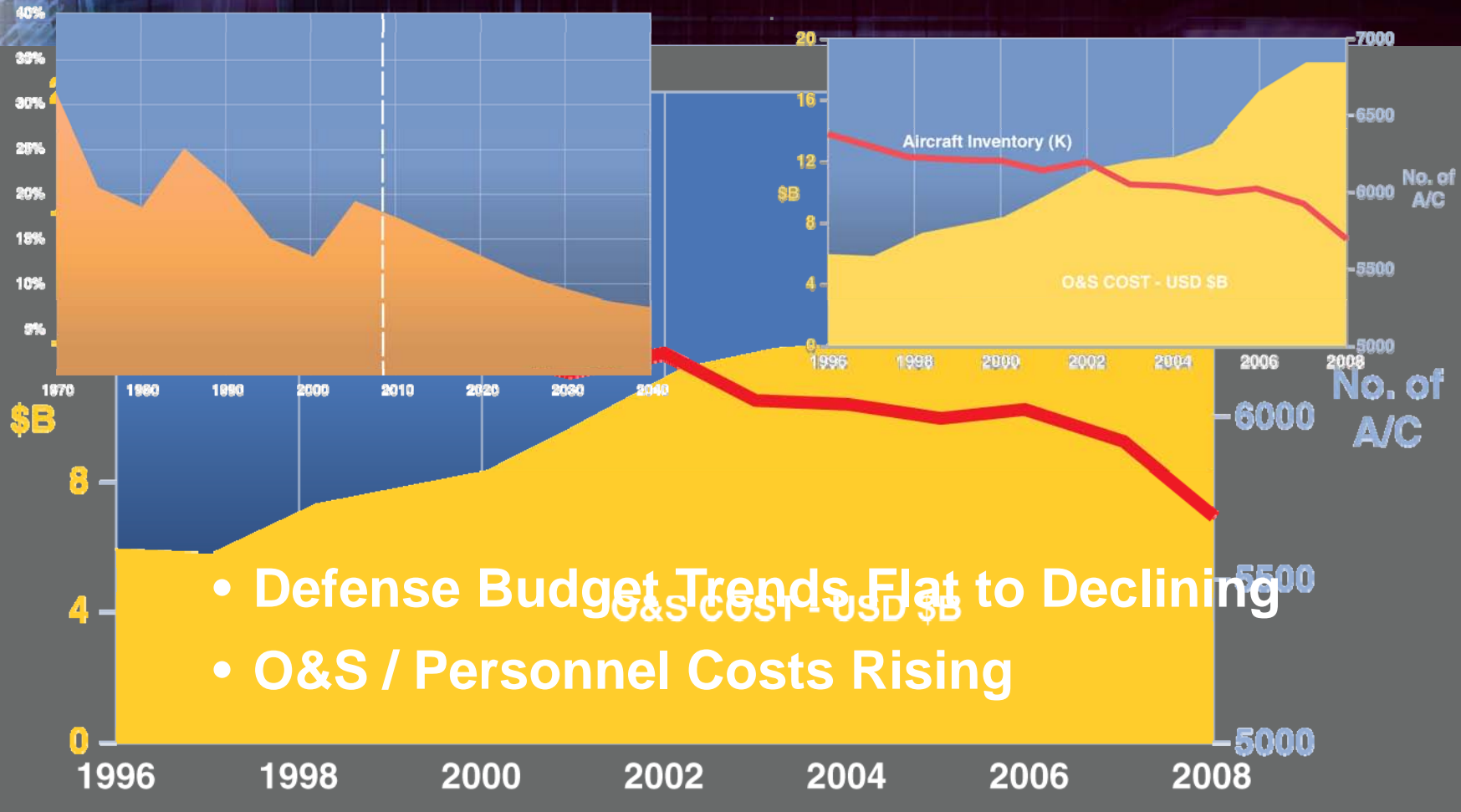
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U.S. Fighter & Bomber Aircraft IOC



1980 1985 1990 1995 2000 2005 2010

Fiscal Constraints



Meeting the Challenge With Innovation



- **Advanced Technology**
- **Life Cycle Support**
- **Partnerships**

Advanced Technology



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Advanced Technology



Life Cycle Support



- **Best Value Sustainment Solutions**
- **Government/Industry Partnerships**
- **High Readiness and Mission Availability**

Multi-National Partnerships



- Shared Development Costs
- Affordable Production Base
- Best Value Industrial Participation



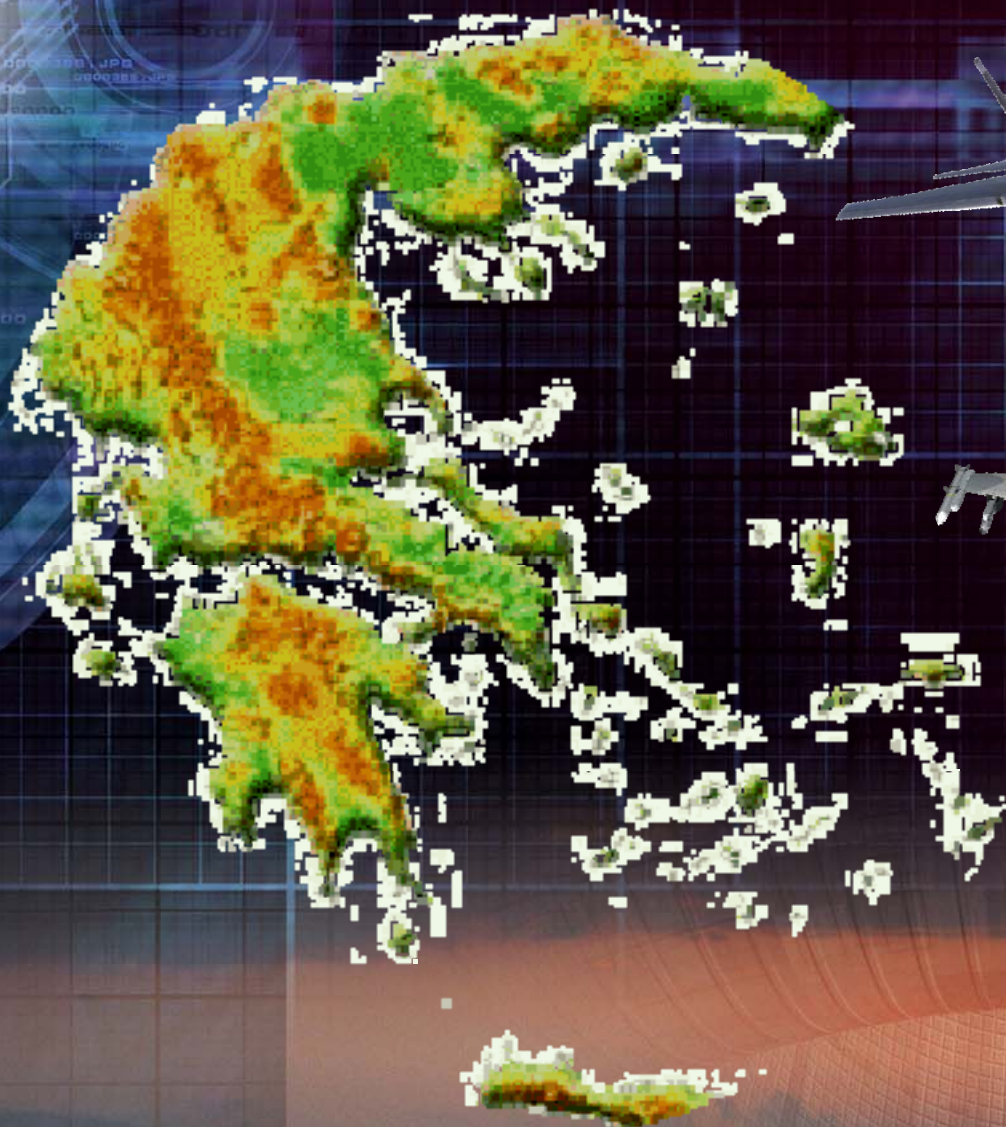
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Summary



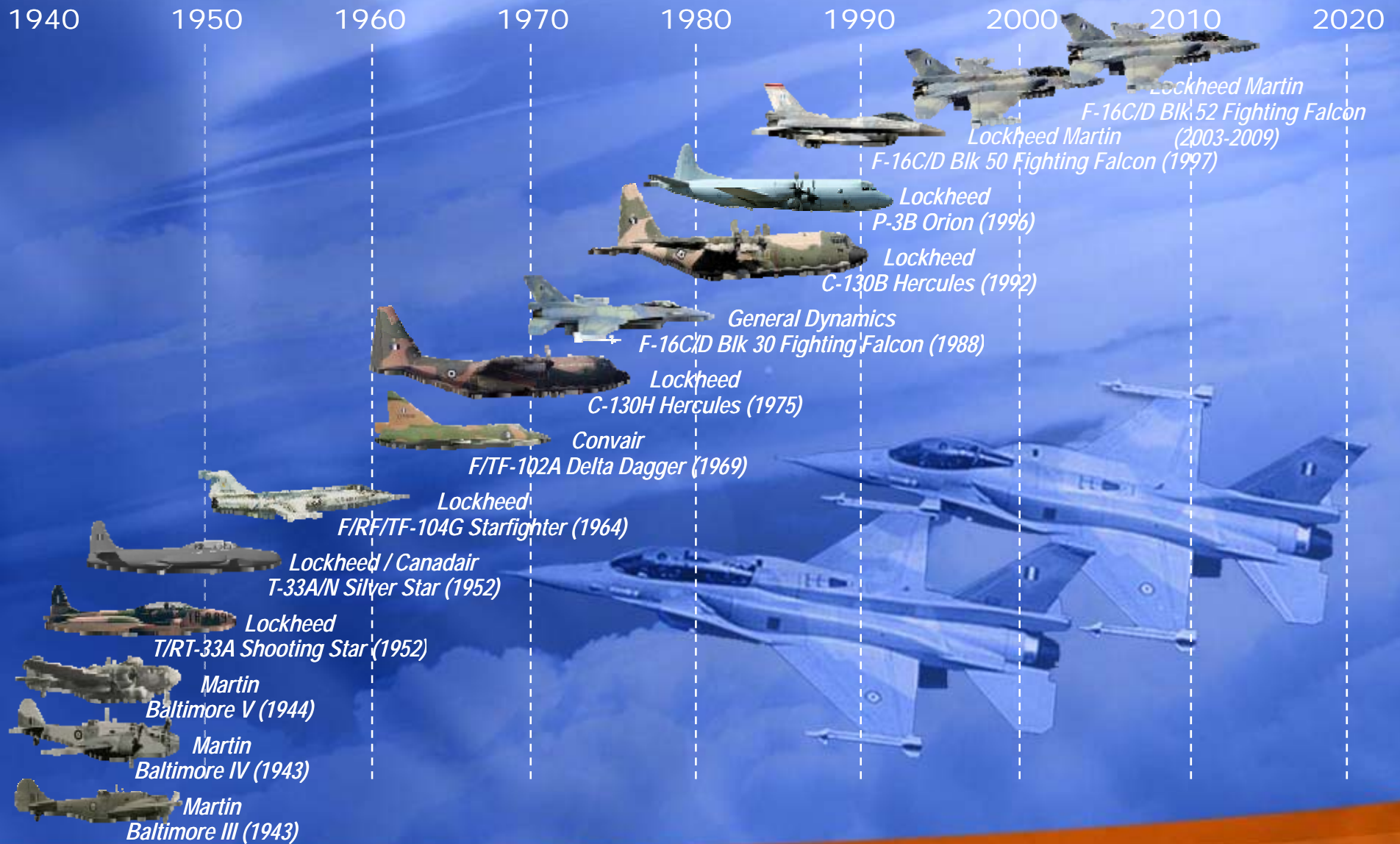
- **Airpower Critical to National Security**
- **Force Structure Recapitalization Challenges**
- **Innovative Solutions Maintain Airpower Advantage**

Hellenic AF Force Structure Requirements And Defense Investments



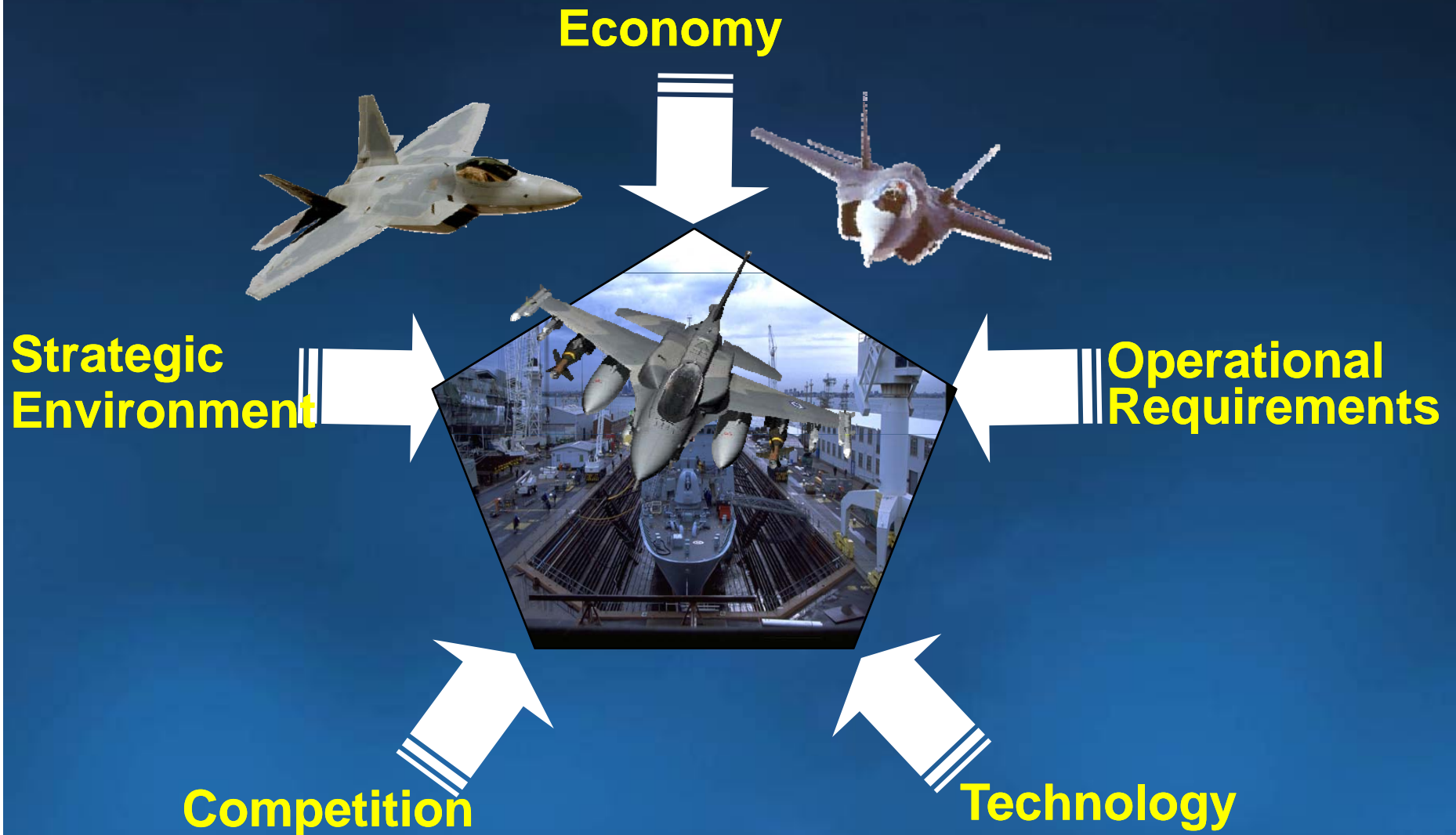
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Greece



Our Heritage – Proven Partnership Since 1943

Key Parameters Affecting the Selection and Acquisition of Major Defence Systems



F-16 The World's Most Sought After Fighter

4,520

4,051

3,446

998
Initial

Significant
International
Opportunities

1970-79

1980-89

1990-99

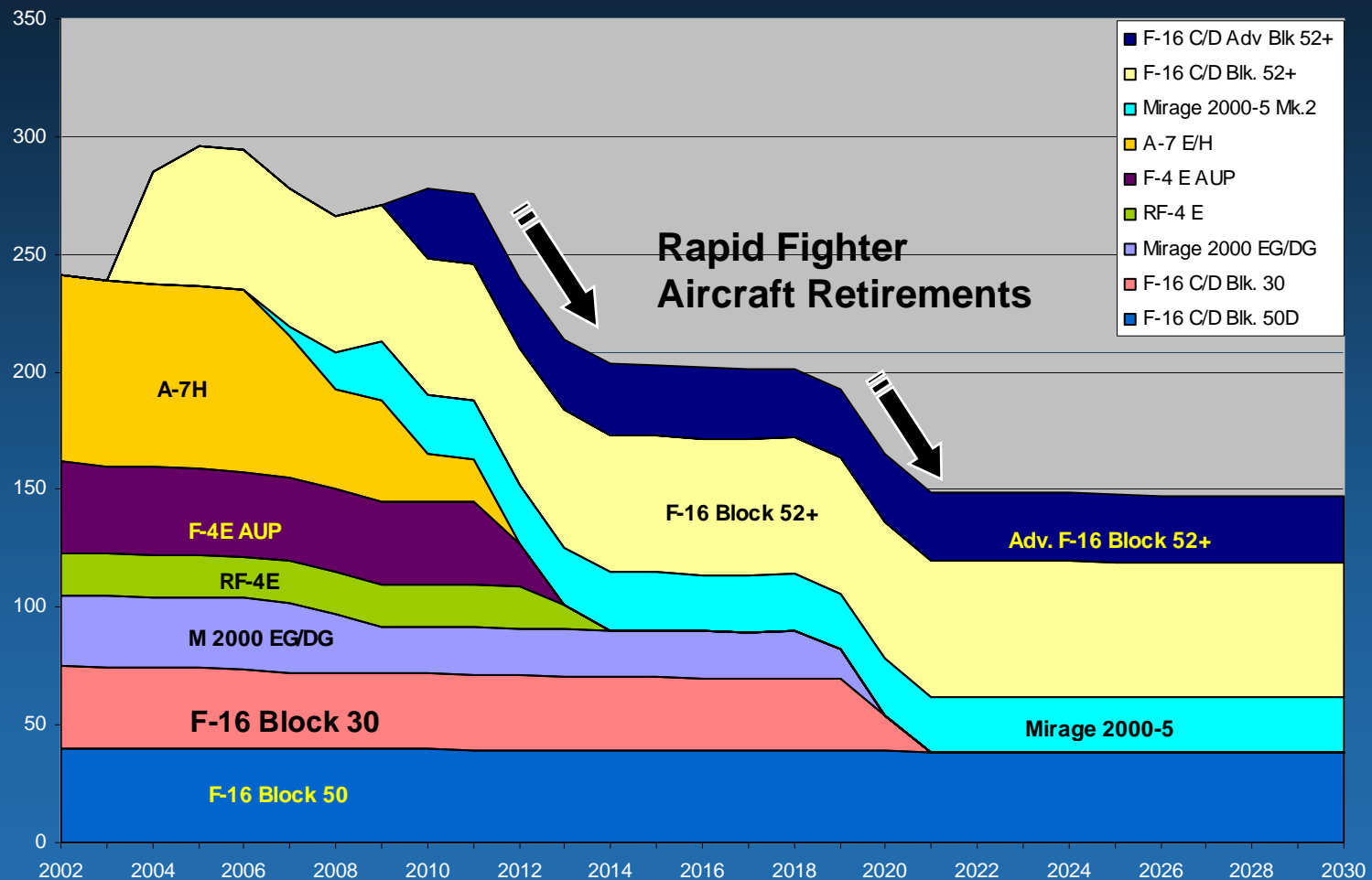
2000-Present

Future

Cumulative Aircraft Orders

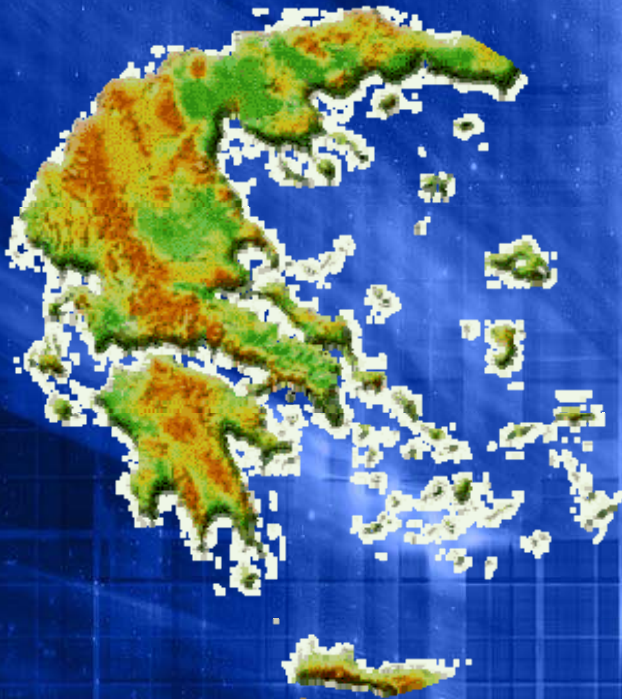
*Production Opportunities
Continue Into the Future*

Hellenic Air Force Anticipated Inventory*



* Public sources information

Environment



- Increased Ops Tempo
 - Tighter Budgets
 - Aging Fleets
 - Fighter Retirements
 - Changing Responsibilities
-
- Worldwide Financial Crisis
 - Geopolitical Uncertainty

Partnerships Supporting Readiness and Reducing Cost

F-16 Product Lines

LOCKHEED MARTIN

Advanced
Block 50/52



All-Weather,
Day/Night
Targeting



APG-68(V)9 Radar
With SAR

Conformal
Fuel Tanks



Integrated FLIR
and Targeting



Helmet-Mounted
Cueing System



Advanced EW



New Precision
Weapons



Advanced
Cockpit



Block 60



AESA APG-80
Radar



Propulsion

Sustainment Potential Enhanced by Global Customer Base

LOCKHEED MARTIN

- **F-16A/B Mid-Life Update (MLU)**
 - Capabilities From the Block 50/52 Configuration
- **F-16C/D Common Configuration Implementation Program (CCIP)**
 - Upgrades for Block 40 and 50 Aircraft
- **World-Class and Worldwide Support Structure**
 - Provides the Best Capability at the Lowest Life-Cycle Cost

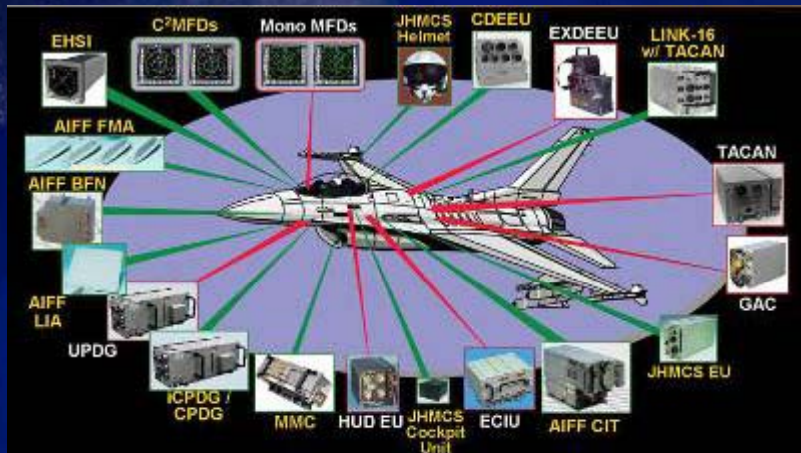


F-16 Has More Bases and Depots Worldwide Than Any Other Fighter

A Sustainable Strategic Industrial Partner



In Excess of \$3 Billion Offset Credits Provided to Greece Through F-16 Programs to Date



**F-16 CCIP
Configuration Block
40/42 at HAI**



F-16 Coproduction at HAI



Infrastructure Facilities at Araxos AFB



LOCKHEED MARTIN

***Successful Offset Programs
Creation of Economic Stimulus***

F-16 PROGRAM – Lockheed Martin Offset History



LM Aero: 1978-Present
Delivered 3,484 F-16s



TAI, Turkey: 1987-2012
Delivered 308 F-16s



KAI, Korea: 1995-2004
Delivered 128 F-16s

- Over 30 Years Experience in Industrial Participation / Offset

- \$37B Offset Completed to Date In More Than 40 Countries

- Current International Offset Activities:
 - 61 Ongoing Offset Commitments
 - 20 Countries
 - Total Current Ongoing Offset Obligations Value ~ \$22B



SABCA, Belgium: 1979-1991
Delivered 222 F-16s



Fokker, The Netherlands:
1979-1992
Delivered 300 F-16s

*Over 3,900 Multiple
Equipment and Component
Manufacturers
Worldwide*

Lockheed Martin is Committed to Satisfy Offset Regulations

Truths / Misconceptions About Offset



- ***Offset is NOT Free***
 - ***The Cost of Offset Impacts the Final Cost of the Item Procured***
 - ***Bank Guarantees, High Penalties, Low Multipliers, Difficult or Changing Offset Regulations = Risk and Add Cost***
- ***Offset is a Added Benefit to a Government Procurement***
 - ***Offset Should NEVER be the Reason for the Procurement***
- ***Offset ≠ Investment***
 - ***Offset is an Economic Stimulus and Opportunity Creator***
 - ***Include Investments, Exports, Training, Technology Transfer, etc.***
- ***Severe Penalties and Overly Bureaucratic Regulation Do NOT Insure a Successful Offset Program***
- ***Offset Credit is NOT Actual Money***
 - ***Credits are Generated or Created by the Offsetor Spending Real Money on Economic Development***

Elements of a Successful Offset Program



Offset Program Execution MUST be Based on Sound Business Principles

- ***All Parties Should Have the Opportunity to Benefit***
- ***Capable, Competitive Business Partners***
 - ***No Forced Relationships***
- ***Offset Programs Should Provide Opportunities – Not Entitlement***
- ***Offset Alone Cannot Make a Failing Business a Success***
- ***Success Should be Measured at the Program Level, Not Each Project***

A Project Based on Sound Business Principles Will Create Benefit Long After the Offset Period is Over

Elements of a Successful Offset Program



A Formal, Stable and Realistic Offset Policy

- ***Involve Many Economic Sectors***
- ***Encourage Long-Term Benefits not Short Term Fixes to Current Problems***
- ***Offset Policy Needs to Recognize Investment, Technology Transfer, and Training as Viable Offset Opportunities***
- ***Properly Value Offset Projects***
 - ***Multipliers Consistent with Long Term Value***
 - ***Share the Performance Risk***

Elements of a Successful Offset Program



A Stable, Non-biased, Empowered Offset Authority

- ***The Decision Maker for Project and Credit Approval***
- ***Responsive to Project Schedules***
 - ***Opportunities Can Appear and Vanish Quickly***
- ***Flexibility to Adapt to Unique Situations***
 - ***Guidelines Rather than Law Allow the Authority to Evaluate Projects on Merit and Economic Benefit***
- ***Accountable for Actions or Lack of Action***
 - ***The Offset Authority Shares Responsibility for Program Implementation and Must be Accountable for Required Actions and Consequences of inaction***

**Offset is a Partnership Between the Obligator,
the Offset Authority, and the Beneficiary**

Elements of a Successful Offset Program



Encourage Long-Term Relationships

- ***Offset Credit Banking***
- ***Reasonable Performance Periods***
- ***Reasonable Penalties***

Create a Win-Win Atmosphere

Offset is Joint Venture Between the Offset Provider and the Offset Authority

**The Proper Use of Offset Can Create Significant,
Long Term, Positive Economic Impact**

LOCKHEED MARTIN



PEACE XENIA IV

Enhancing Greece's Defensive Needs

***F-16 Peace Xenia IV Offset Benefits
Status Review***

PX IV First Aircraft In Final Assembly





Peace Xenia IV First Aircraft In Final Assembly





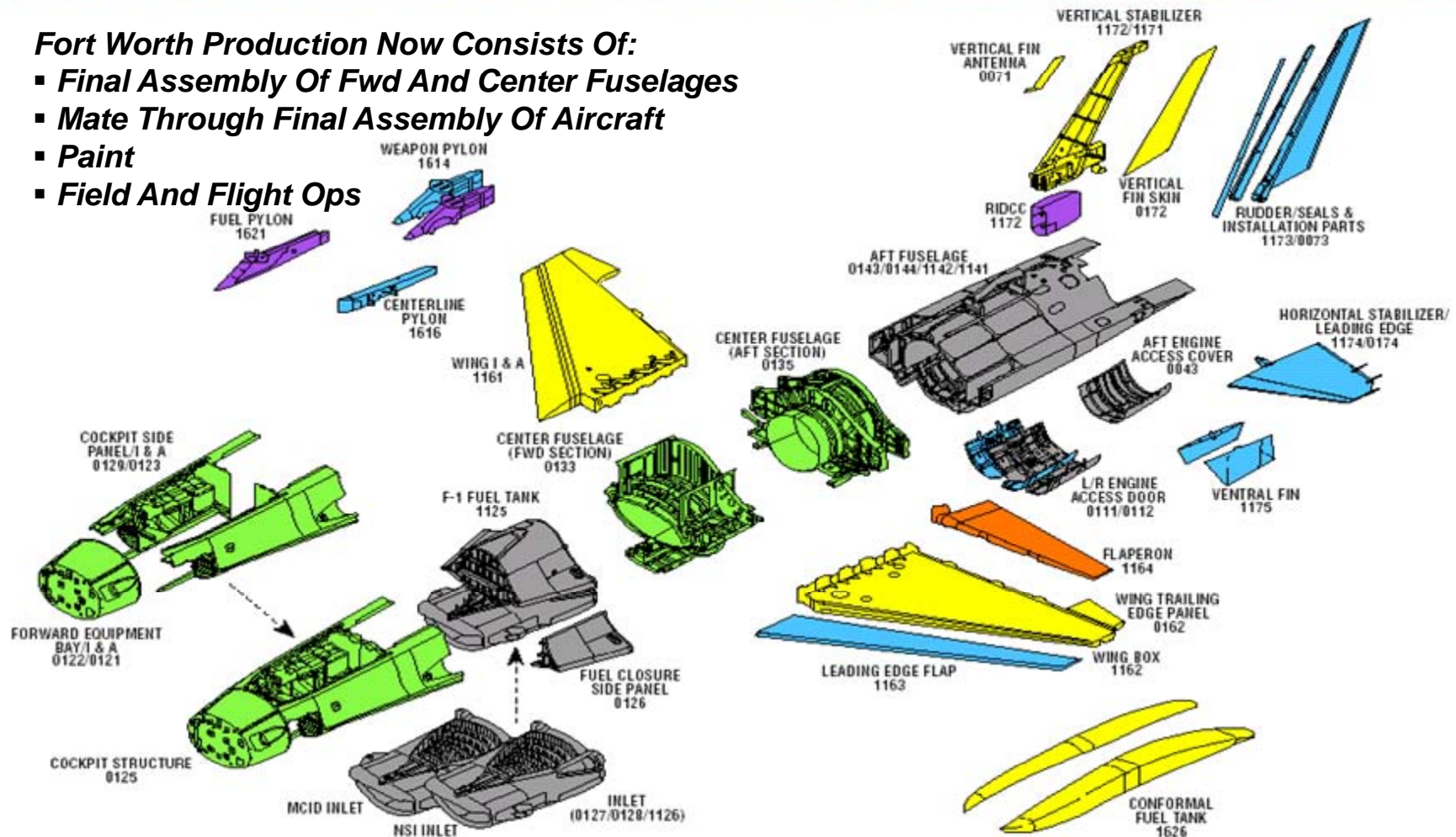
Peace Xenia IV Coproduction



F-16 Current Coproduction Component Breakdown

Fort Worth Production Now Consists Of:

- Final Assembly Of Fwd And Center Fuselages
- Mate Through Final Assembly Of Aircraft
- Paint
- Field And Flight Ops





Peace Xenia IV Coproduction



- *Over 4,400 F-16s Delivered From Five Assembly Locations*
- *Successfully Implemented Programs in 16 Nations, Totaling More Than \$25B*
- *Hellenic Aerospace Industry: A Key Strategic Partner*

Lockheed Martin Has Met Or Exceeded Every Offset Commitment

F-16 Peace Xenia IV Offset Programs



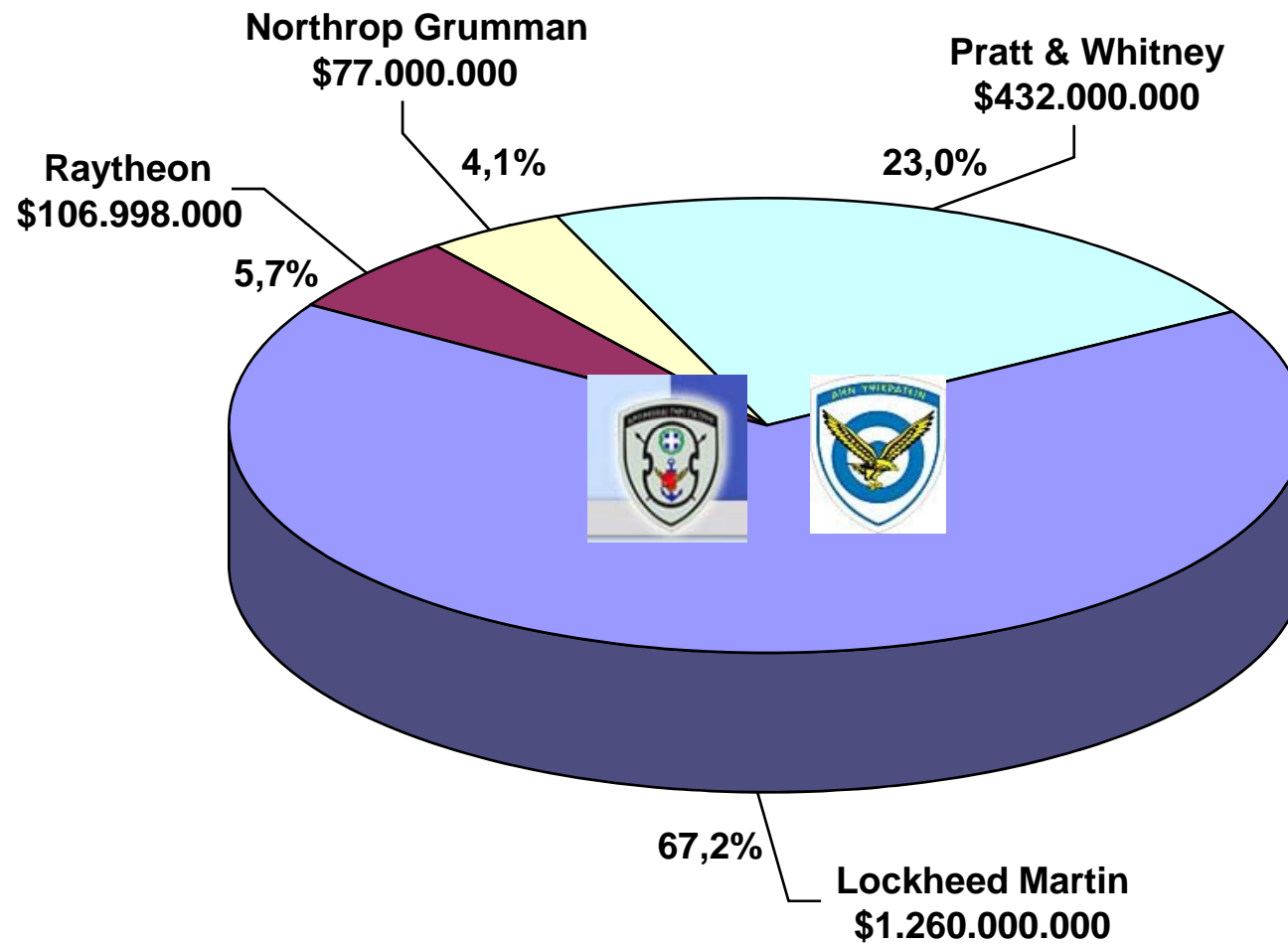
- **F-16 Co production Programs**
- **HAF Systems - Grants**
- **HAF Medical Equipment - Grants**
- **HAF Infrastructure - Araxos**
- **HAI Partnership Programs**
- **Social Role Programs**
- **Miscellaneous**



Offset Benefits Programs from the Latest F-16 Acquisition Program of the Hellenic Air Force



F-16 Peace Xenia Offset Programs





F-16 Offset Programs Contributions to the Greek Economy



Lockheed Martin Aeronautics Offset Programs

Defense Industry Programs

(HAI C-130 Service Center Expansion and Modification Work, Assignment of Various Aircraft, Engines and Aircraft Parts Overhaul Work to HAI, Establishment of New Capabilities in Apella for aircraft parts)

18,2%

HAF Infrastructure Programs

(HAF F-16 Infrastructure)

12,7%



HAF Programs

(Grant of: Biplane Angiography System, ULS, HAF ADIS, HAF NARS)

24,2%

F-16 Co-production

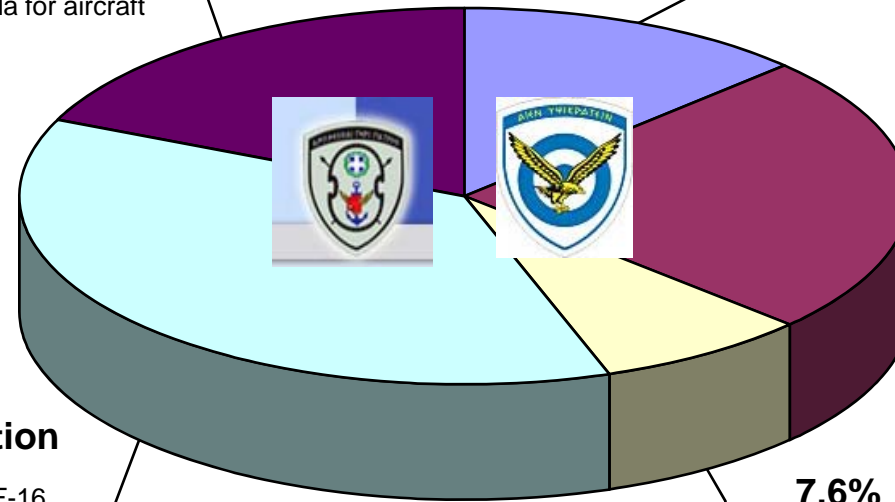
(HAI Manufacturing of: F-16 EAC and NSI Inlets, Aft Fuselage, Forward Engine Access Doors, Fuel Closure Side Panels and F-1 Fuel Tank, ELFON: F-16 Wire Harnesses Manufacturing)

37,2%

General Defense Staff, Infrastructure Programs

(Grant of: HMOD Medical Equipment, Athens Academy Foundation for Biomedical Research)

7,6%



F-16 Co production Programs



Hellenic Aerospace Industry - HAI

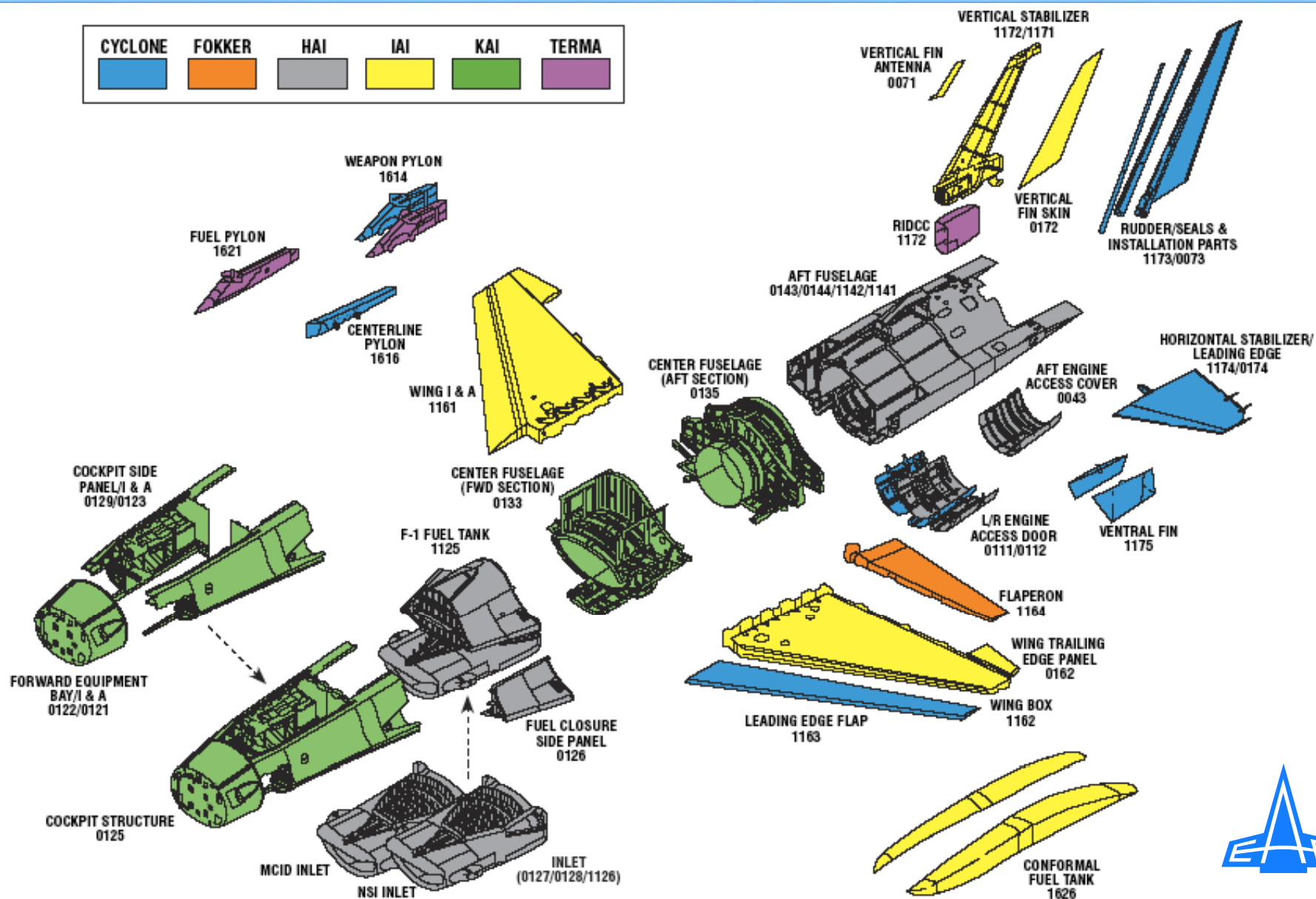




F-16 Co-Production Breakdown –



CYCLONE	FOKKER	HAI	IAI	KAI	TERMA



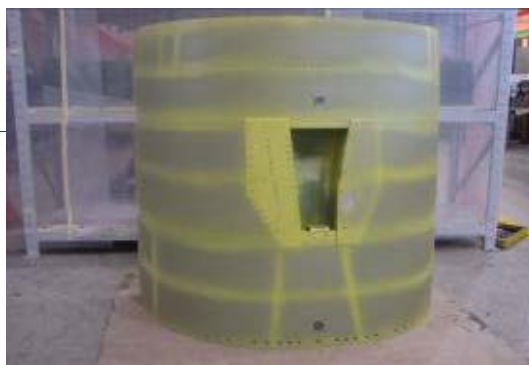


THE STRATEGIC PARTNERSHIP

Lockheed Martin / HAI



**TODAY MORE THAN 300 EMPLOYEES ARE DEDICATED TO THE F-16 PROGRAM AT HAI,
PRODUCING MORE THAN 25 PERCENT OF THE F-16 STRUCTURE FOR
LOCKHEED MARTIN**





HAI F-16 Coproduction Build





HAI Partnership Programs

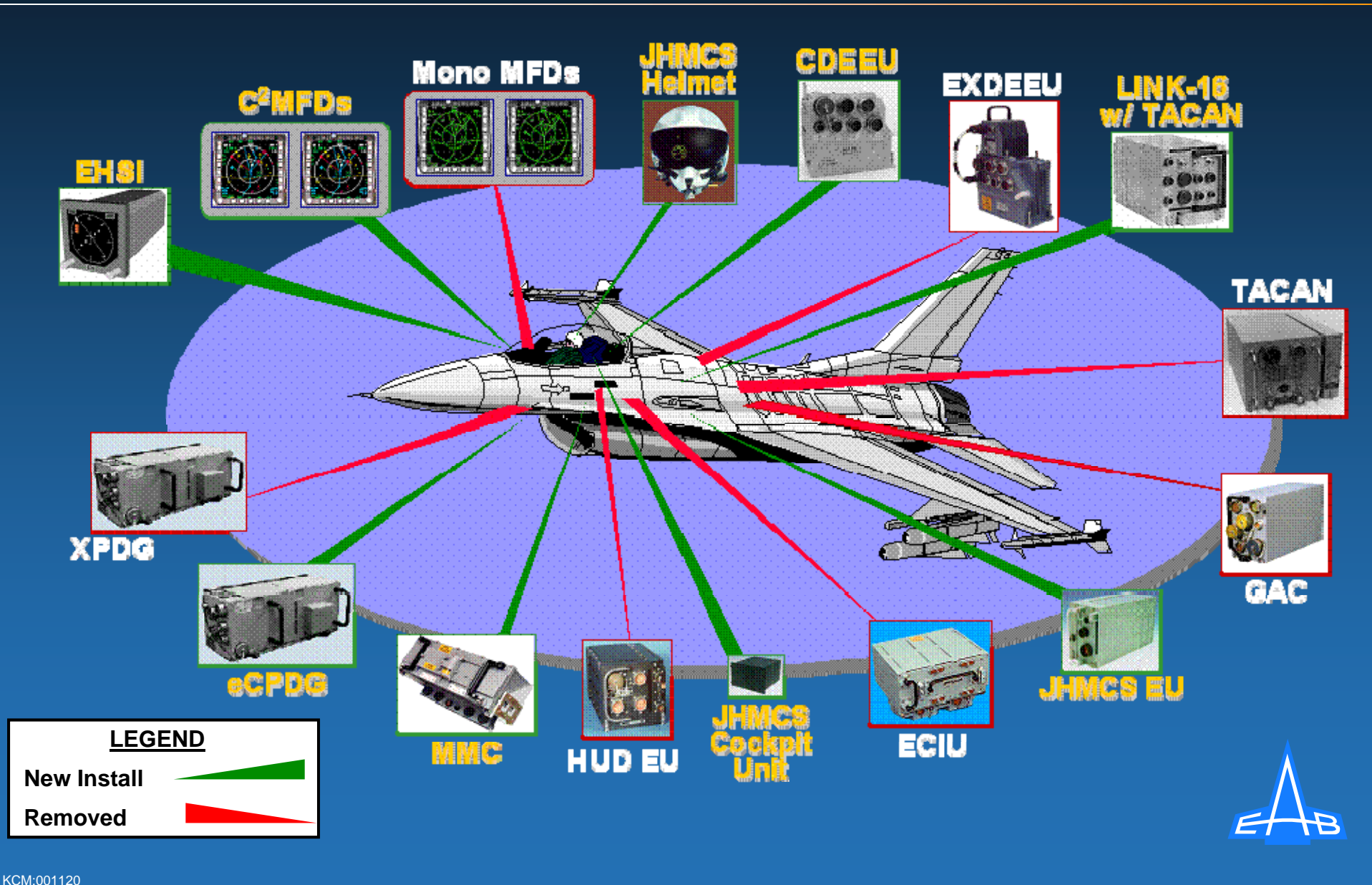


Common Configuration Implementation Program

- Involves the structural and avionics upgrading of 94 USAFE F-16 fighter aircraft .
- Awarded to HAI in April 2007, following an International tender by the United States Government.
- First aircraft delivered to the USAFE on March 20th, 2008
- Creates opportunities for increased workload from Domestic and International Air Forces.



USAF F-16 CCIP Configuration - Block 40 / 42



HAI Partnership Programs

Dry Paint Stripping Factory



- **Construction of a state of the art Dry Paint Stripping Factory at HAI's facilities.**
- **Removes aircraft & helicopters paint using plastic media.**
- **Environment friendly and workers safe by the usage of plastic media instead of chemicals.**
- **In support of the HAI programs, completed in the record time of six (6) mos.**





HAI Partnership Programs



Lockheed Martin C-130 Service Center

- HAI is established as an Authorized Service Center (ASC) for both military and civilian versions of the C-130 aircraft since 1981.
- Service Center Agreements with HAI include not only the domestic market but also additional countries of interest to HAI.
- Update of all HAI's technical documentation for the C-130.





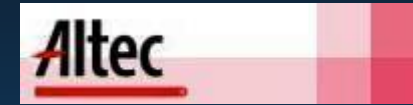
ELFON LTD

- Partnership established in 1999
- Wire Harnesses Manufacturing
- Over 100 unique harnesses under production
- LM Provided financial and technical assistance to ELFON covering Training, Software and Hardware





Wing Operations Management (WOM) System



- *An integrated, state-of-the-art automated command and control system for managing an F-16 Combat Wing.*

Extended Integrated AIR Battlespace (EIABS) System

Singular Logic Integrator S.A.

- *An integrated, state-of-the-art Air Surveillance and Air Defense system. (Sensor Management, Track data exchange, Maintains and Disseminates an Integrated Air Picture etc.)*
- *Has a Fixed and Mobile Capability*

Wing Operations Management (WOM) Program



Increased Combat Effectiveness of 111 Combat Wing



**21st Century Wing Enterprise
Management System**



**Full-Up System
Activation Mid 2009**

At the Leading Edge of Wing C2 Automation in NATO!



Universal Link System (ULS) System

- *Receipt of external surveillance information from airborne, seaborne, and ground base platforms.*
- *Fusion of the information and forward it via data links in real time to C²I centers.*

Παροχή Ενοποιημένου Συστήματος Διασύνδεσης Δεδομένων (ULS) στην ΠΑ

Military Message Handling (MMHS) System

- Implementation of an automated Military Message Handling System to the Hellenic Armed Forces General Staff.



Παροχή Δικτύου Αυτόματης Διαχείρισης Στρατιωτικής Αλληλογραφίας στο ΓΕΕΘΑ.



Air Defense Integrated (ADIS) System

- *Enhancement of the operational capabilities and further integration of assets within the existing HAF Air Defense centers and systems.*
- *Provision of Link 16 terminals that will allow enhanced communication and information dissemination within HAF C²I centers.*

Παροχή Ολοκληρωμένου Συστήματος Αεράμυνας στην Πολεμική Αεροπορία.





National ARS (NARS) System

- Provision of an ARS within the existing HAF Air Defence centres and systems as a national asset.
- Provides backup capability for National air defense if the NATO Air Command and Control System becomes inoperative .
- Accommodates joint operations for both defensive and offensive operations in the air, maritime and land.

Εθνικό Σύστημα ARS (Εθνικό Σύστημα Αεροπορικού Ελέγχου & Διοίκησης, Παραγωγής Διευκρινισμένης Εικόνας και Αισθητήρων Αεράμυνας)

The abbreviation "ARS" describes a system comprise of three functional entities

- **Air Control Center (ACC) is the "A" in ARS.**
- **Recognized Air Picture Production Center (RPC) is the "R" in ARS.**
- **Sensor Fusion Post (SFP) is the "S" in ARS.**





Biplane Angiography System

- *Provision of a state of the art Biplane Angiography System to the Interventional Radiology Clinic of the 251 HAF Hospital.*
- *One of the three new generation Biplane systems operating in Europe .*
- *Complete renovation of the facilities of the Interventional Radiology Clinic.*

SIEMENS

Biplane Angiography System

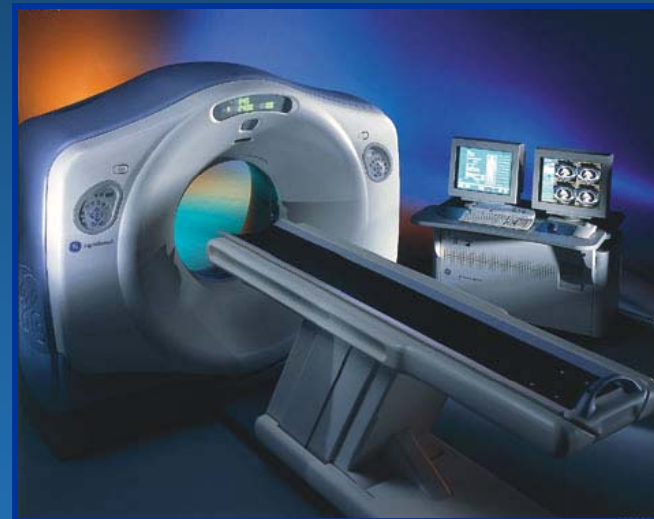


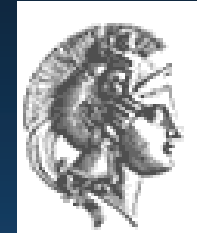
HAF Medical Systems



Spiral Computerized Tomography System

- *Provision of a Multi Slice Spiral Computerized Tomography System to the Radiology Clinic of the 251 HAF Hospital.*
- *State of the Art Advantage-8 Slice Acquisition Scan.*





Athens Academy Biomedical Research Foundation

- *Provision of funding to the Biomedical Foundation Research (FBR), established by the Academy of Athens*



Environment Protection Engineering

- Provision of equipment and training to the Hellenic company Environmental Protection Engineering for the establishment of a waste treatment facility on EPE's premises.

Development Of Ammunition Assessment And Disassembly Capability

- Provision of capital equipment and funds to the Hellenic Company For Destruction Of Defense Material SA (DEMIL) in order for DEMIL to establish local capability for ammunition assessment and disassembly.



F-16 Systems Support

APELLA S.A.

- *Establishment of New F-16 support capability*

Integration of the Hellenic Defense Industries into EXOSTAR

- *EPICOS S.A. an Exostar strategic alliance partner in Europe will integrate 100 Hellenic Defense companies into the EXOSTAR global e-Marketplace for Aerospace & Defense procurement.*

HAF Infrastructure



Overview

- *Construction of five (5) buildings at the 116 Combat Wing (Two Squadron Buildings, Two Maintenance Hangars and one Base Maintenance Squadron - Engine Workshop)*
- *All buildings will be completed prior to the arrival of the PX-IV F-16 Block 52+ aircraft (within a record time schedule of thirteen months).*









Our Experience Working with Greek Industry



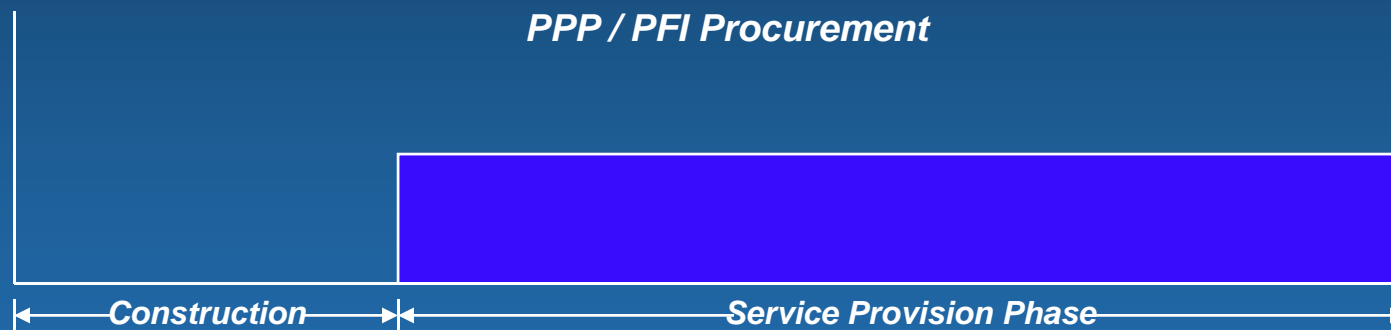
- **Highly Capable**
- **Excellent Quality Standards**
- **Fast Learning**
- **Ability to comply to Aggressive Schedules**
- **Need More Flexibility**
- **Have Potential for Exports**
- **Need Investments to Improve Competiveness**
- **Must Secure Stable and Long Term Projects**

Introducing PPP in Major Defense Equipment Acquisitions



- **Training is a the Ideal Example**
- **Equipment Follow On Support (FOS) – Another Good Candidate**
 - *Share Development Cost*
 - *Introduce Missing Expertise*
 - *Establishes Unique Capabilities*
 - *Opens Export Opportunities and Potential*

PPP and PFI Reducing Costs Further...



PPP & PFI procurements avoid large up-front expenditures while assuring long-term cost confidence

Global Cooperation Leader



30+ Years of Production



Over 4,400 Delivered

Global Program



F-16 Like Potential



Advanced F-16GR

Proven Combat Effectiveness



Advanced
F-16GR

Air-to-Air Combat	72 Victories/ 0 Losses
Combat Campaign Experience	4 Major Campaigns

A Unique Combat
Track Record



Summary

- Affordable, Proven Platform With a Viable Upgrade and Production Future
- Modern Technologies and Advanced Capabilities
- Responding To Customer Needs
- F-16 Is the Bridge to F-35



LOCKHEED MARTIN 

F-16

Fighting Falcon

F-16 . . . The Worldwide Choice

The F-16 and the F-35 . . . For Today and Tomorrow

Aeronautics

LOCKHEED MARTIN



Advanced F-16GR Fighting Falcon and F-35 Lightning II JSF



**The right choice for Quality and Quantity
Now and for the Future
Securing for Greece the Highest Industrial Participation content**