



## **Eurofighter Typhoon**

**Aloysius Rauen – CEO Eurofighter GmbH  
26th ICAS Congress, Anchorage 17 September 2008**



# Eurofighter Typhoon



- The Product
- The Programme
- The Partnership
- The Market
- The Facts



# Eurofighter Typhoon: The Product



## Air to Air Combat

- Beyond Visual Range
- Close Combat

## Air to Surface

- Close Air Support
- Counter Air Interdiction
- Maritime Attack
- Reconnaissance

## Performance

- Mach 2, +9 g
- Unstable airframe - designed for extreme agility
- Brakes off to Mach 1.6 at 36,000ft in 150 seconds
- Carefree handling
- Highly integrated human/machine interface



# Eurofighter Typhoon: The Product



## Cockpit – Main Features

- Helmet Mounted Display
- Wide Field-of-View Head-Up Display
- Multi-function colour Head-Down Displays
- Hands-On-Throttle-And-Stick controls
- Direct Voice Input
- Multifunction Data Entry
- Reversionary Flight Instruments
- Integrated voice warnings and status system



# Eurofighter Typhoon: The Product



<b>Main Development Contract</b>	<b>Phase 1 Enhancements</b>	<b>Phase 2 Enhancements</b>
<b>Concluded</b>	<b>Work in Progress</b>	<b>Proposal Submitted</b>
<p><b>Combat Ready</b></p> <p><b>Air-to-Air/Air-to-Ground-Swing Role</b>  <b>Carefree handling</b>  <b>Network Centric Operation</b></p>	<p><b>Simultaneous Swing-Role</b></p> <p><b>Laser Designator Pod</b>  <b>Enhanced GBU-16,</b>  <b>Paveway IV</b></p>	<p><b>More Reach</b></p> <p><b>Taurus, Storm Shadow, Meteor, Supersonic Paveway IV, Small Diameter Bomb, Brimstone</b></p>



# Eurofighter Typhoon: The Product

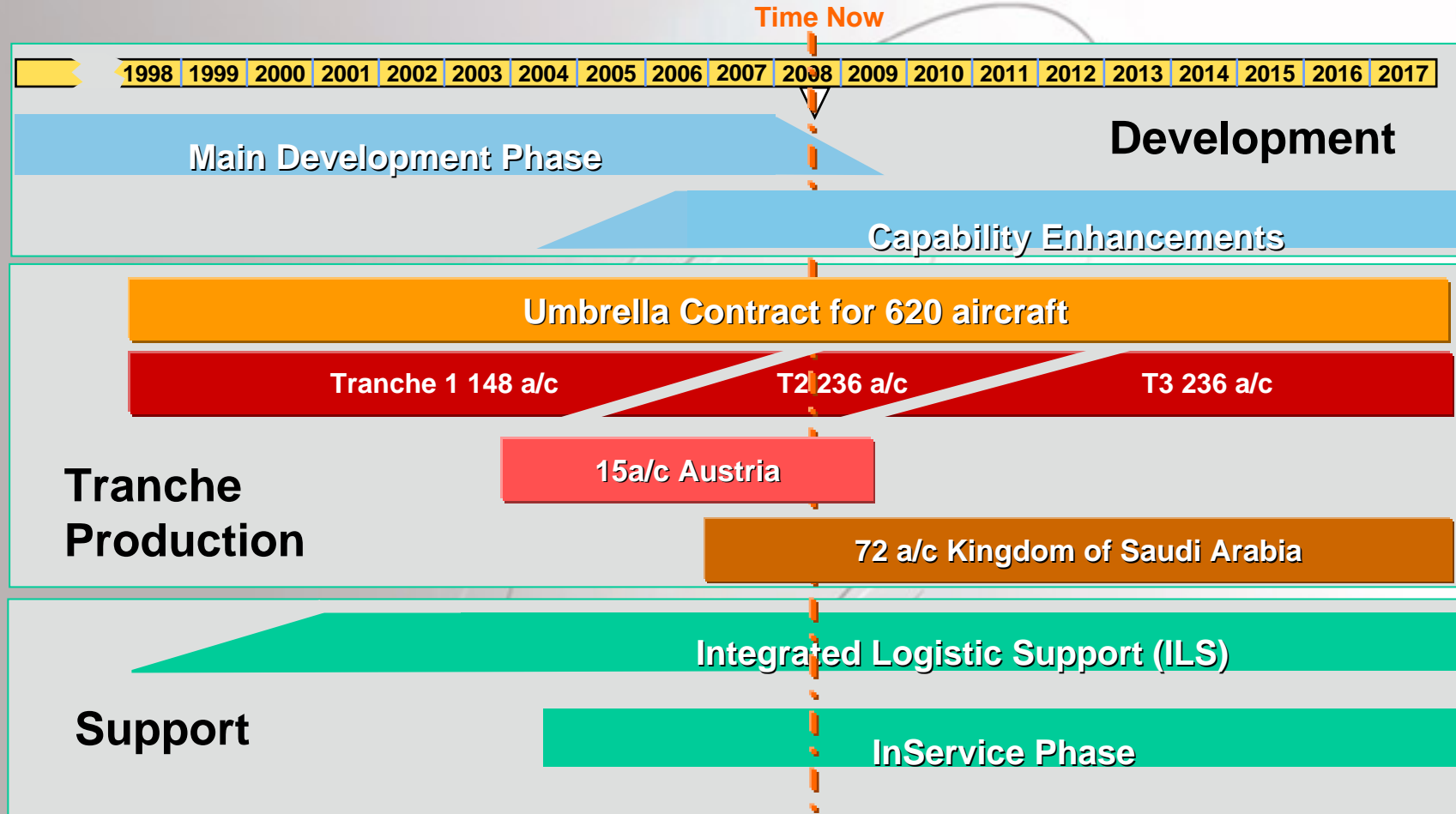


**The Swing-Role Fighter  
Air-to-Air & Air-to-Ground**

➤ Eurofighter Typhoon replaces eleven aircraft types in Six Nations



# Eurofighter Typhoon: The Programme

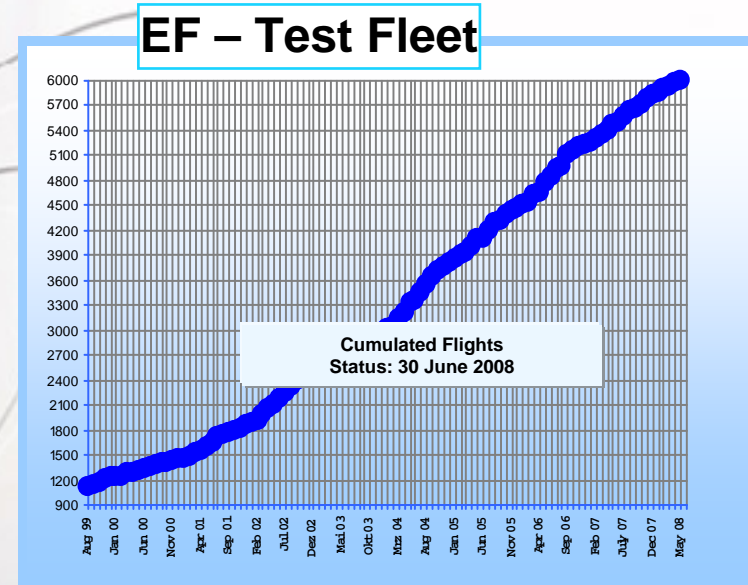




# Eurofighter Typhoon: The Programme

## Recent achievements:

- Main Development Work concluded
  - Basic Testing Helmet Assembly completed
  - Tranche 2 Type Acceptance Test activities completed
  - Tranche 2 Weapons and Radar testing underway
  - Longest Eurofighter flight ever 6 hours 49 minutes (detachment to a new customer nation): snag free
  - Microwave Landing System testing completed
- **6051 test flights performed totalling 5829 flight hours**



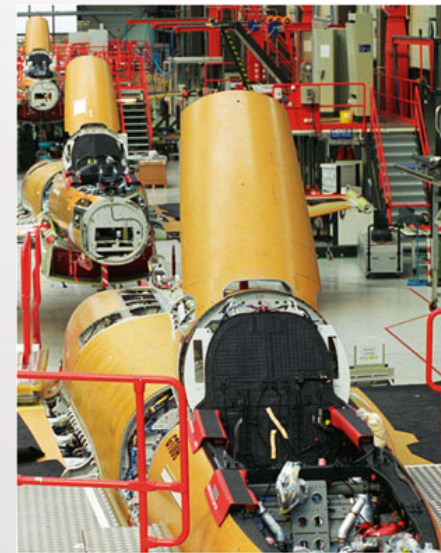


# Eurofighter Typhoon: The Programme



## Production Status

- 148 production aircraft delivered
  - Austria 9
  - GE 38+2
  - IT 27+1
  - SP 18+1
  - UK 49+3
- Tranche 1 deliveries completed
- 38 Tranche 2 aircraft in final assembly
- First Tranche 2 aircraft delivered 1 Febr 2008



# Eurofighter Typhoon: The Programme



## Ten Air Force Units operate Eurofighter Typhoon



Moron



Grosseto  
Gioia del Colle



Zeltweg



Laage  
Neuburg



No. 3, 11, 17 and 29 Sqn,  
Coningsby



➤ **Five Air Forces have accumulated over 40,000 flying hours**  
(June 2008)

# The Eurofighter Typhoon: The Partnership



Ownership of Eurofighter GmbH		
	Alenia	21%
	BAE Systems	33%
	EADS CASA	13%
	EADS Deutschland	33%





## Development Workshare – Major System Design Responsibilities

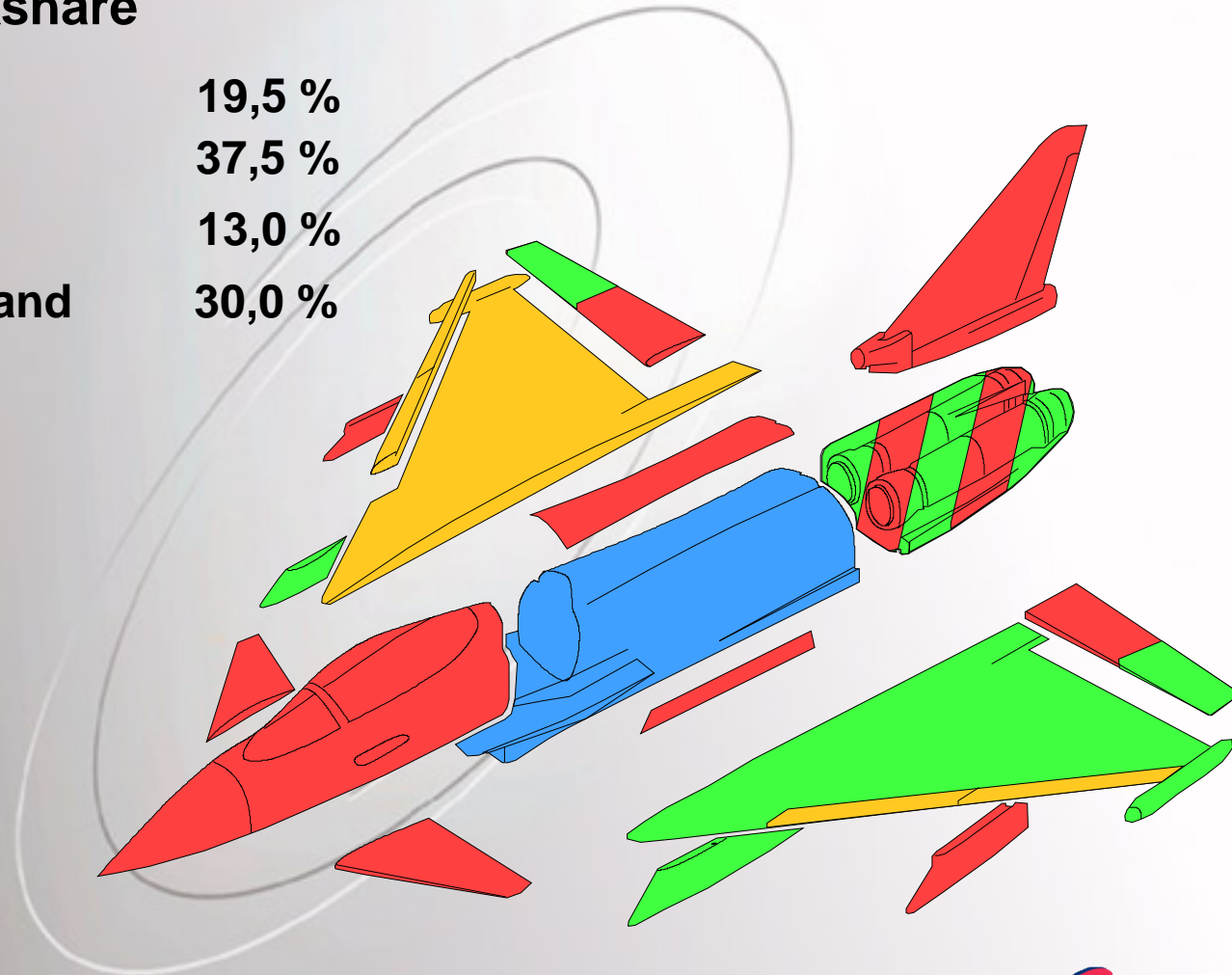
- Alenia: Utilities Control System, Wing design, Navigation Sub-System, Armament Integration
- BAE Systems: Avionics Integration, ECM, Lightning, Electrical & Fuel System
- EADS CASA: Structure Technology, Wing design, Environmental Control System
- EADS Deutschland: Flight Control System, Attack & Identification, Radar Signature



# The Eurofighter Typhoon: The Partnership

## Production Workshare

	Alenia	19,5 %
	BAE Systems	37,5 %
	EADS CASA	13,0 %
	EADS Deutschland	30,0 %





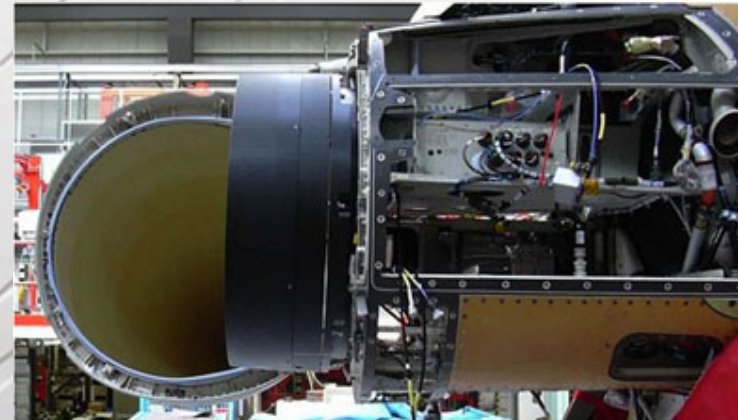
# Eurofighter Typhoon: The Partnership



**The Technology Challenge:**  
Maximum performance in intense combat scenarios demands complex leading-edge technology

## Consequences:

- High risk
- High cost
- Time to Maturity



# Eurofighter Typhoon: The Partnership



## The Winning Formula:

Meet the Technology Challenge through real Partnership

- Integrated teams
- Technology transfer
- Single Source
  - System Design Responsibility
  - Equipment Design Responsibility
  - Major Unit Production
- Risk and Cost sharing



- **Sharing advanced aerospace technologies sustains Europe's Technology Base and offers a Choice in Procurement**

# Eurofighter Typhoon: The Market



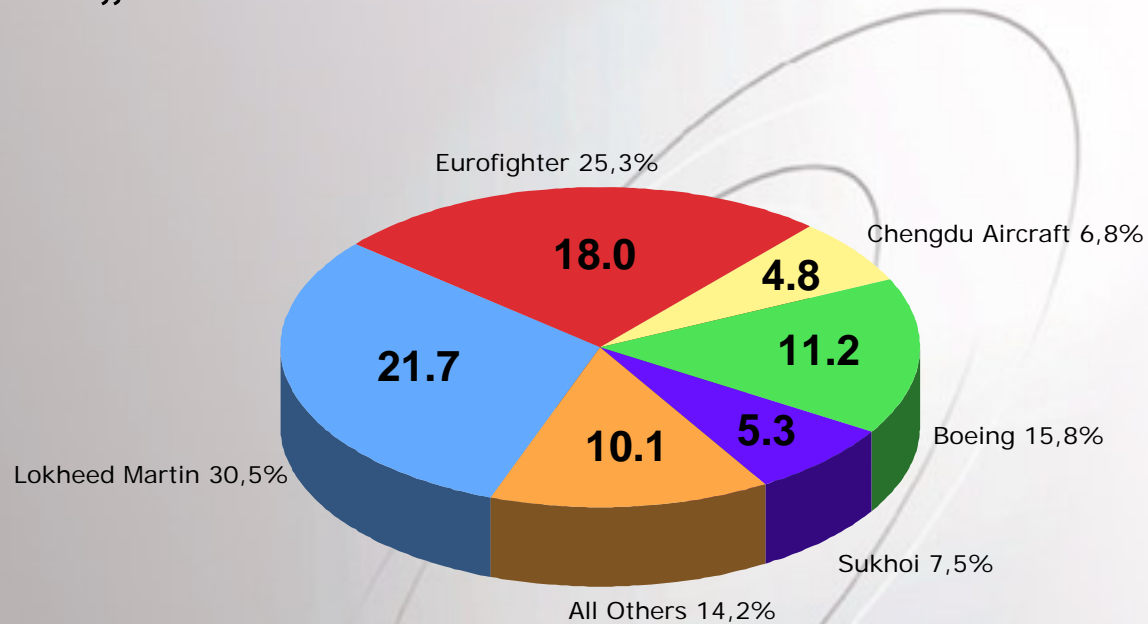
## Highest Order Book in the Next Generation Fighter Competition

- 707 ordered by six Nations
  - 620 core programme
    - Tranche 1 deliveries concluded
    - Tranche 2 in production, deliveries start summer 2008
    - Tranche 3 in authorization process
  - 9 of 15 aircraft for Austria delivered
  - 72 aircraft for Saudi Arabia in production
- **Eurofighter is Bestseller and Market Leader**



# Eurofighter Typhoon: The Market

## The „Value Creator“



**Total Five-Year Value of Production (2008-2012): \$ 71.1 billion**

Source: Forecast International/Aviation Week & Space Technology

All percentages and numbers rounded

Values (in billions of U.S. FY 08 dollars)





# Eurofighter Typhoon: The Market

## Requests For Proposal

- Responded to
  - India by EADS: up to 126 aircraft
  - Switzerland by EADS: up to 30 aircraft
- Expected from
  - Japan, to be responded by BAE Systems/Alenia: up to 50 aircraft
  - Romania, to be responded by Alenia: up to 48 aircraft

## Request For Information

- Responded to
  - Bulgaria by EADS: Up to 15 aircraft
  - Croatia by Eurofighter GmbH: Up to 12 aircraft
  - Turkey by Alenia: Up to 40 aircraft
  - Romania by Alenia: Up to 48 aircraft
- Received from
  - Brazil, to be responded by Alenia: up to 30 aircraft
- Greece: Further decisions expected, up to 30 aircraft

# Eurofighter Typhoon: The Facts



## Pole Position

- Largest Order Book: 707 aircraft for 6 Nations
- In Service in five Nations' Air Forces
- Over 40,000 hours flown in ten units, 5,800 hours test fleet

## Economic Significance

- 3.5 B € Revenues
- 19.1 B € Order Backlog
- 400 companies involved
- 100,000 jobs in eight nations

## Proven Partnership

- Partnership means Ownership
- Transparency as a principle
- Technology access without constraints



## COPYRIGHT STATEMENT



- *The authors confirm that they, and/or their company, hold copyright on all of the original material included in this paper. The authors also confirm that they have obtained permission, from the copyright holder of any third party material included in this paper, to publish it as part of their paper. The authors confirm that they give permission, or have obtained permission from the copyright holder of this paper, for the publication and distribution of this paper as part of the ICAS2008 proceedings or as individual off-prints from the proceedings.*