



BAE SYSTEMS

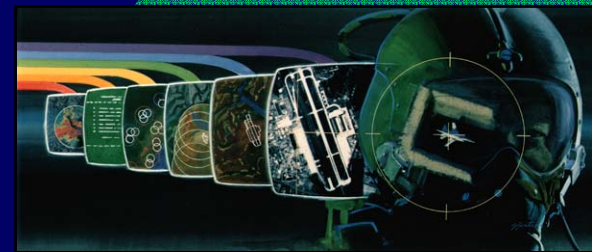
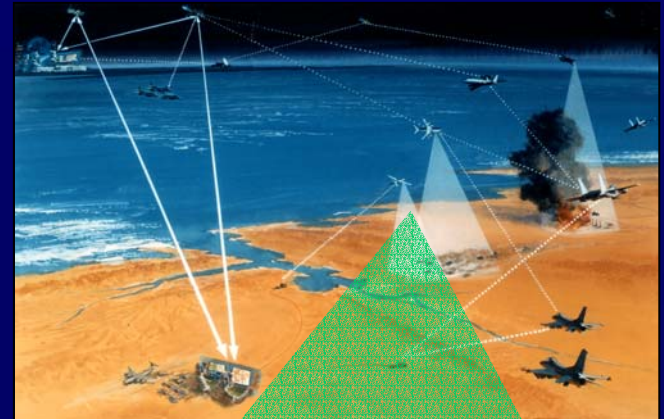
The Systems Company Innovating for a Safer World

BAE SYSTEMS
Developing Coalition Interoperability
Marcus Krackowizer - *September 2004*

Today's Objectives

BAE SYSTEMS

- Introduce the problem context and interdependencies.
- Discuss BAE SYSTEMS' Position
- Review example of enabling technologies and Operational analysis.
- Expand on Multi National Experiment 3



**Focusing on Coalition
Combat Effectiveness and
Capability**

Today's Discussion Context

BAE SYSTEMS

NATO CNAD R&T priorities;

Common Operating Picture

Joint Expeditionary Warfare

Network Centric RSTA Time Critical

Targeting

Knowledge, Maneuver & Precision

Engagement

Continuous Pressure

Interoperable Tactical Communications

Interfaces Between NATO and National

Intelligence Systems

Integrated Agency Actions

Aerospace Ground Surveillance

Situation Knowledge Based Operations

Infantry Personal Protection & Network

Centric Battle Dress

Interoperable Joint Combat

Identification System



Today's Discussion Context

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Joint Expeditionary Warfare:

- Rapid Global Mobility
- Interoperability
- Shared Battlespace Awareness

Self-Synchronized & Integrated Military Forces:

- Air & Space Superiority
- Network Centric Operations
- Open Systems Architectures

Knowledge, Maneuver & Precision Engagement:

- Precision Engagement
- Information Superiority

Continuous Pressure:

- Agile Combat Support
- Time Sensitive Targeting
- Dynamic Engagement Control

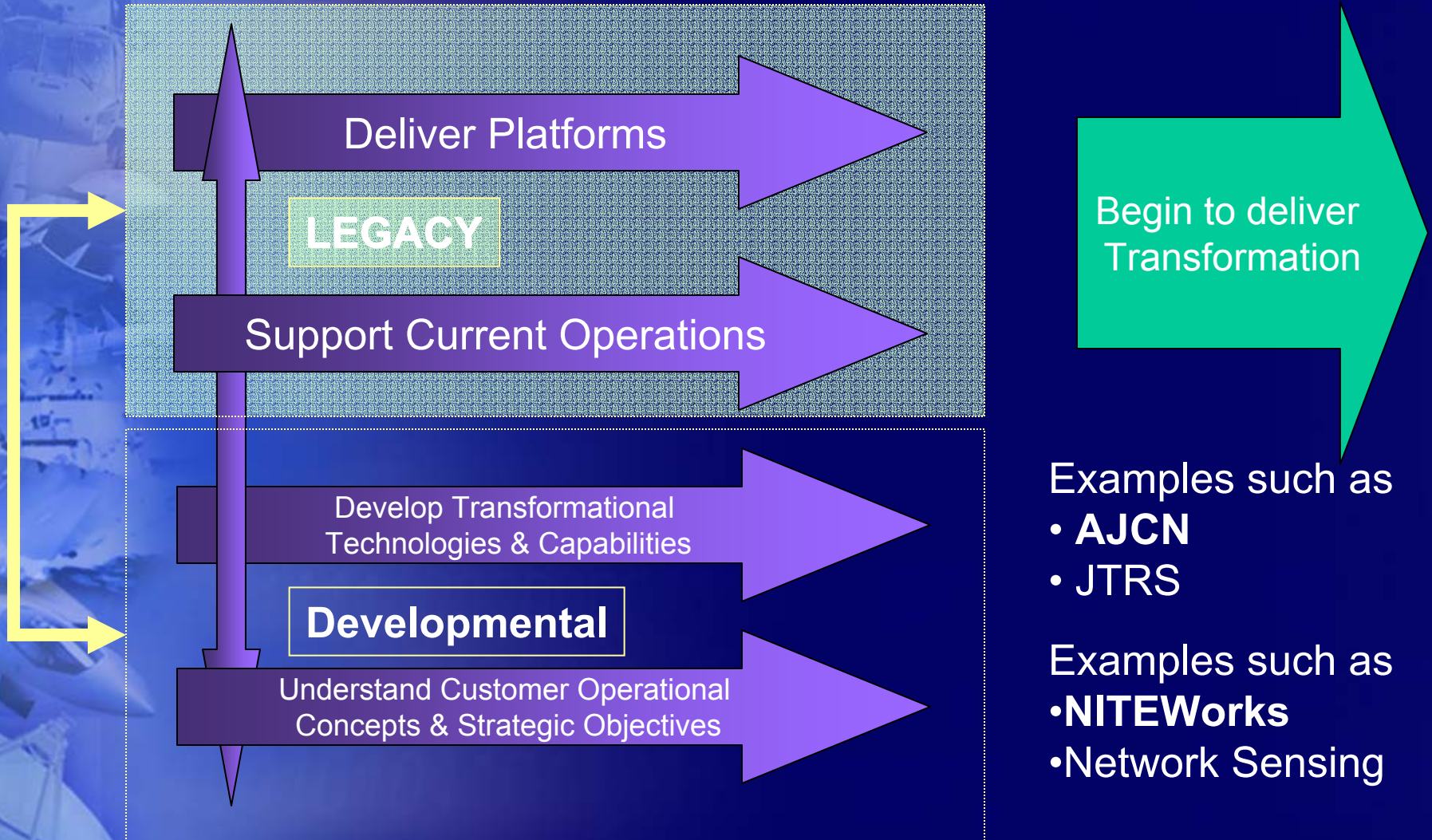


- **Integrated Agency Actions**
- **Situation Knowledge Based Operations**
- **Primarily Non-Linear**

External Drivers

- Fiscal Pressure
- Multinational Co-operation
- Manpower Challenges
- Political & Social Responsibility

Delivering Transformation



BAE SYSTEMS plc

A Platform Prime and Partner

BAE SYSTEMS

90,000 Employees
£46B Order Book
£12.6B Annual Sales
£980m PBIT
£860m Net Debt

Air



Land



*World Leading Platform
Integration & Customer
Support*

Missiles



Sea



Supporting Current Network Centric Warfare

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Compass Call System

- Prime contractor for prime mission equipment

Low Cost Precision Weapons

- 100% direct hit operational testing by US Army

Enterprise-wide Intelligence System

Link 16

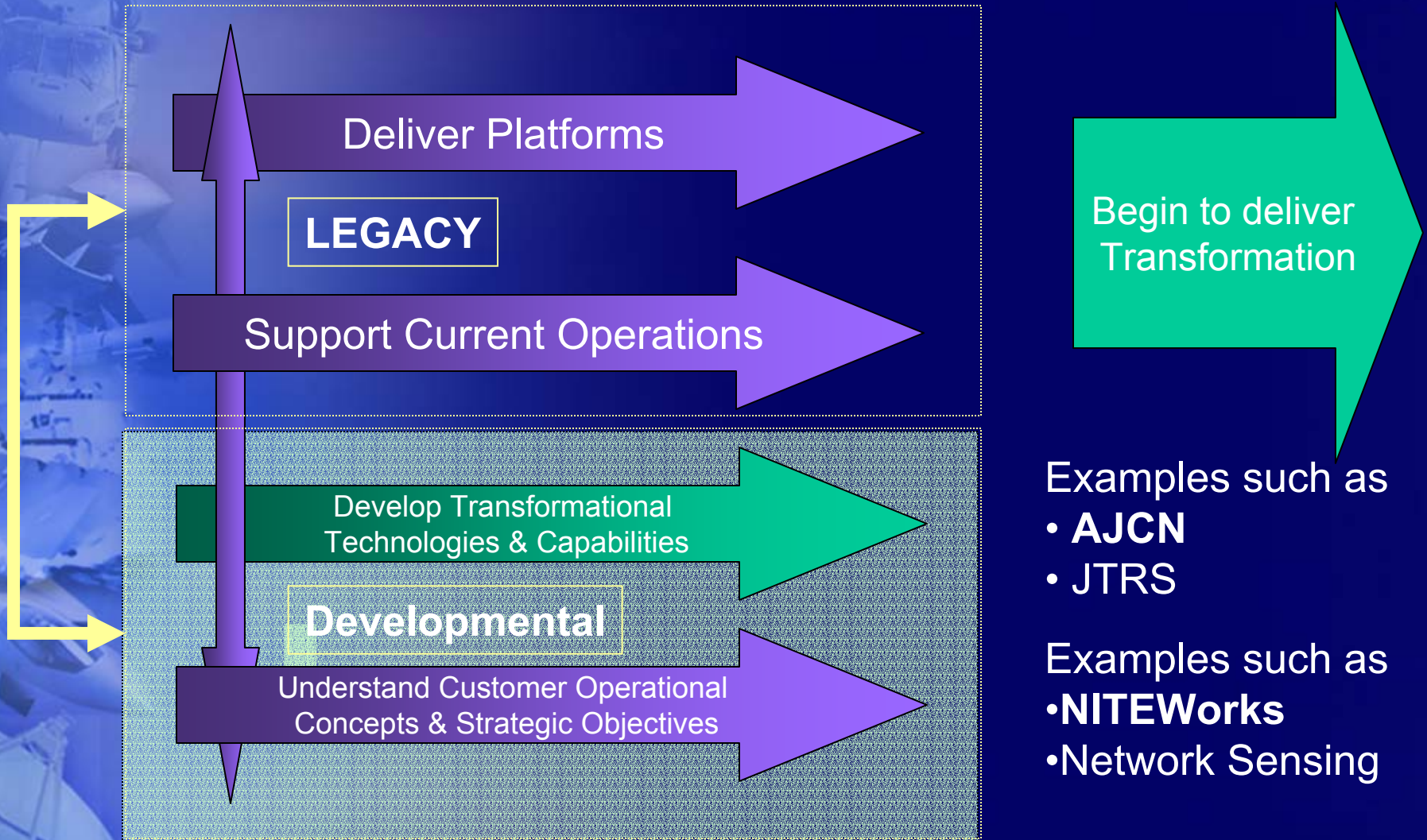
- More than 1,000 systems delivered to US forces and 8 NATO nations

Tactical Communications

Dynamic Battle Management

BAE Systems supported all the Flex Targeting (dynamic retasking) during OIF conducted through digital data links

Delivering Transformation

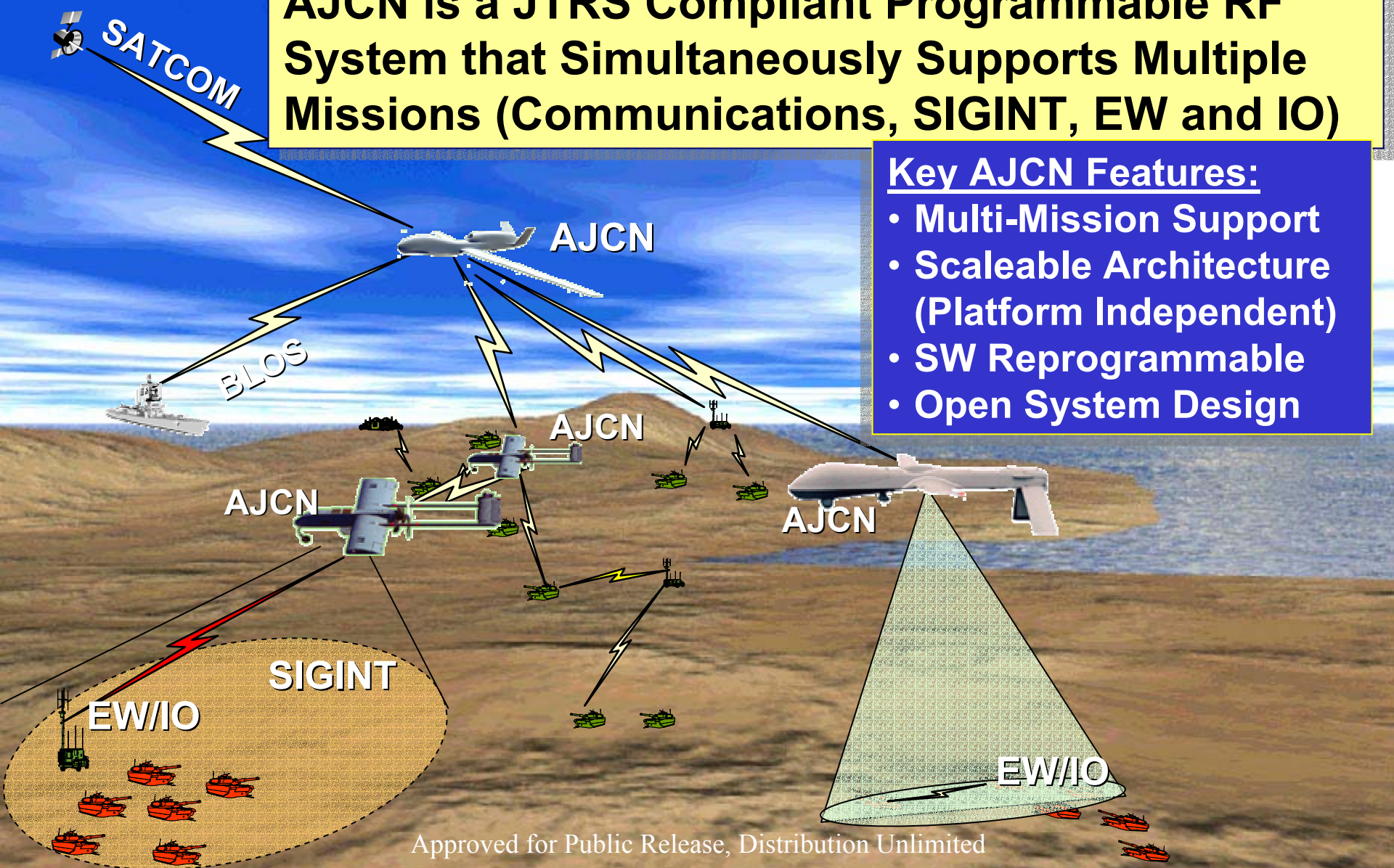


AJCN Overview



AJCN is a JTRS Compliant Programmable RF System that Simultaneously Supports Multiple Missions (Communications, SIGINT, EW and IO)

- Key AJCN Features:**
- Multi-Mission Support
 - Scalable Architecture (Platform Independent)
 - SW Reprogrammable
 - Open System Design



BAE SYSTEMS

BAE SYSTEMS



BAE SYSTEMS plc
Mike Turner
CEO

- 90,000 Employees
- £12.6B Annual Sales

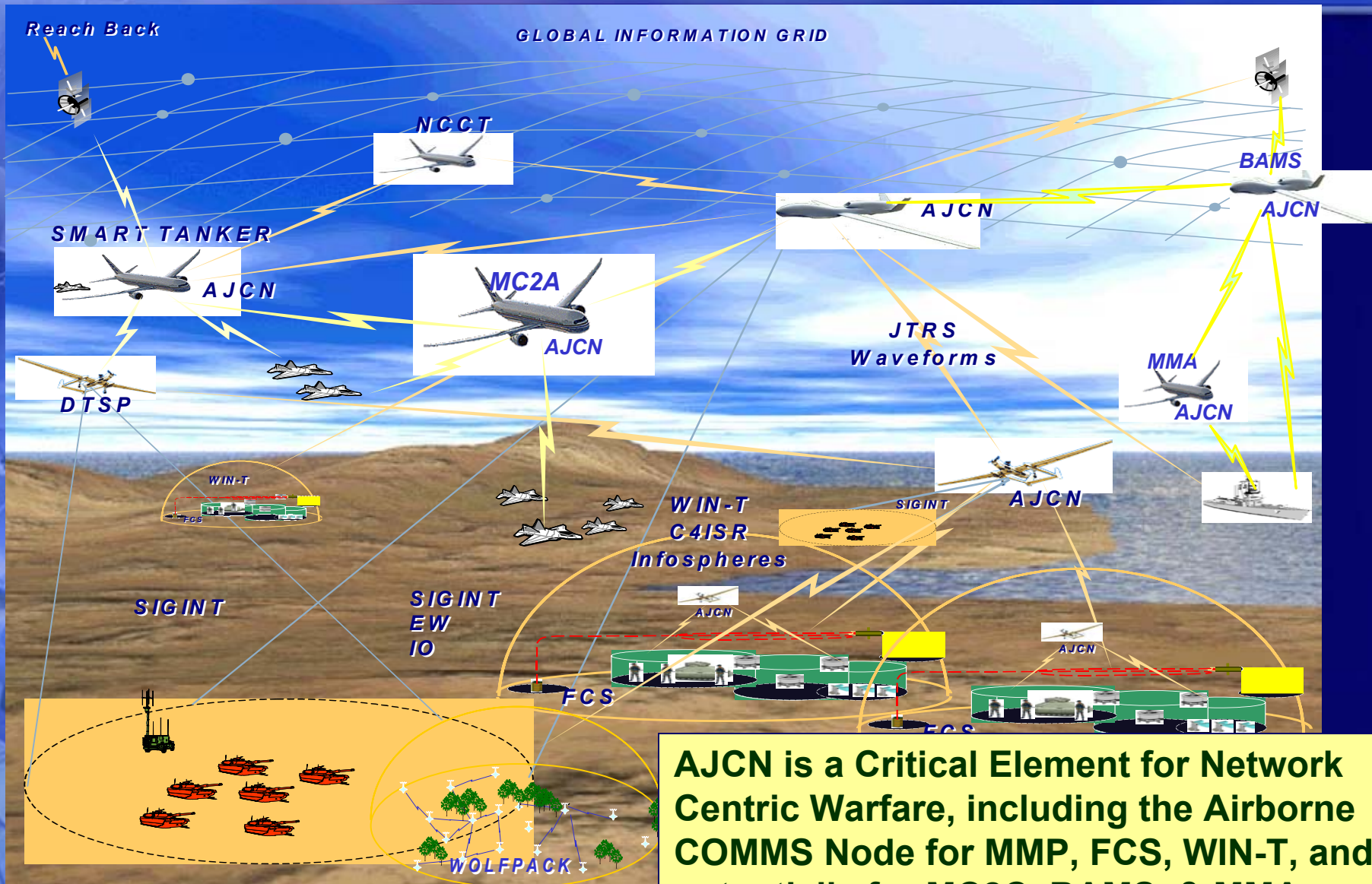
Special Security Agreement



BAE SYSTEMS
North America
Mark Ronald
CEO

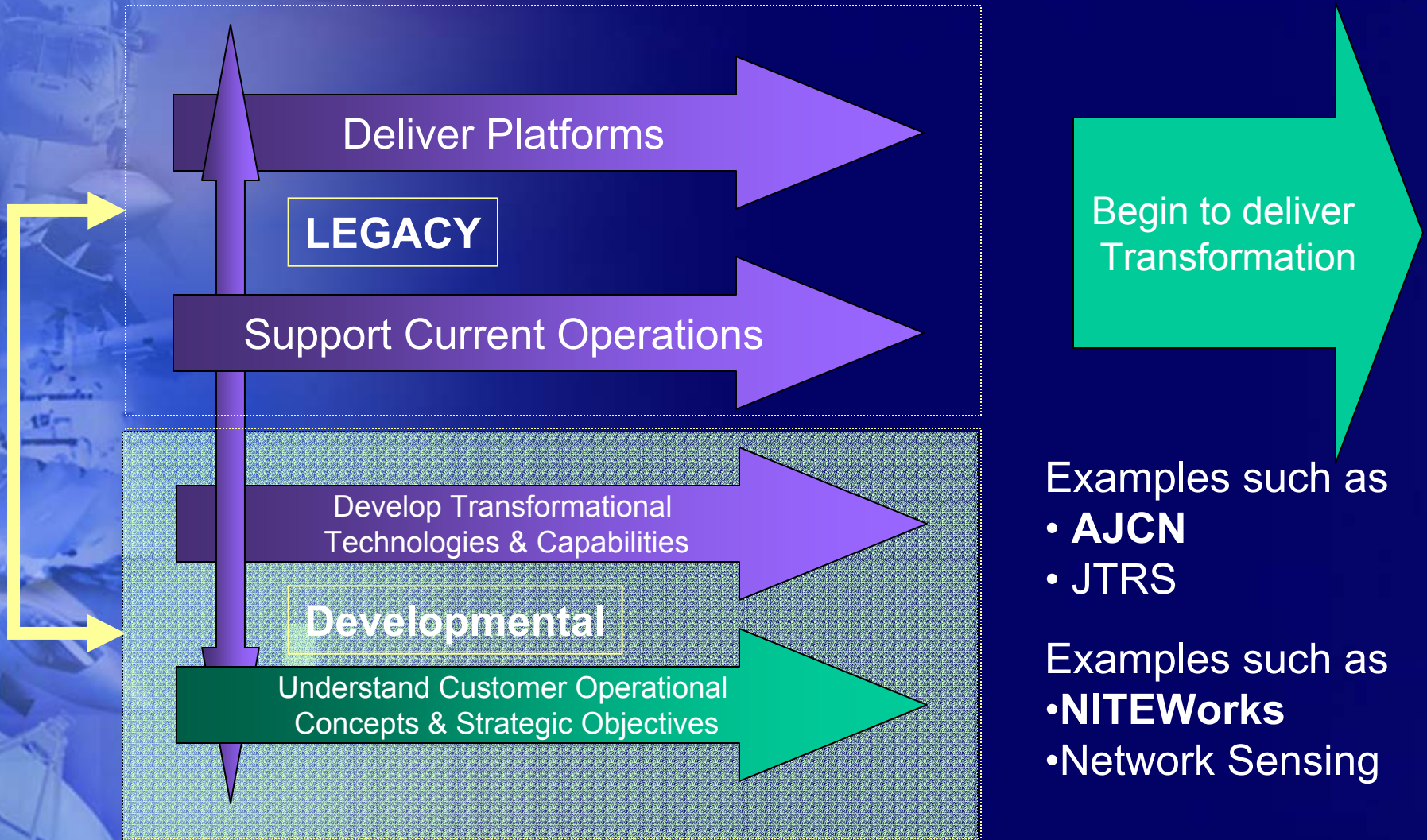
- 26,000 employees
- \$5.1B annual sales
- Top 10 DoD Supplier

AJCN is a Network Centric Warfare Enabler



AJCN is a Critical Element for Network Centric Warfare, including the Airborne COMMS Node for MMP, FCS, WIN-T, and potentially for MC2C, BAMS, & MMA

Delivering Transformation



Network Integration Test and Experimentation Works

A MoD/Industry partnership providing an experimental environment which allows our customer community to assess the benefits of NEC and the options for its effective and timely delivery

- **10 partner companies and 33 associates**
- **MoD directed and industry managed**
- **‘Solution Concept Teams’ responding to customer questions**
- **An integrated MoD/Industry environment**

Modus Operandi

- Verified capability options in response to customer-initiated questions
 - experimental resources (human, technical, analytical)
 - contextual information (battlespace & business understanding)
- Iterative Problem/Question response cycle
- Report key decision-points to the Customer
 - Low riger visulisation and experimentation
 - cases for detailed experimentation (where merited) are developed

Focus on modification of current procedures with existing assets to enhance NEC vision

Example of Current Themes

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- **Multi National Experiment 3**
 - coalition synthetic experimentation aimed at improving UK/US/NATO interoperability
- **Kill Chain Development (KCD)**
- **Indirect Fires Integration (IFI)**
- **Command and Battlespace Management (land)**
- **ISTAR (Collection and Exploitation Coordination)**
- **Others include; Land Tactical Picture 2005, Under Water Autonomous Vehicles, Combat ID**

Multi National Experiment 3

- Assessed and developed an operational level EBP concept
 - current Afghanistan scenario
 - examined the process, organisation and technology required to support EBP
- Six Multi Interoperability Council nations
 - Australia, Canada, France, Germany, UK & US plus NATO
 - ran from 2-20 February 2004.
 - UK participation was led by D CBM/J6

MNE3 Objectives

Effects Based Planning is the core concept under consideration in this theme

- Coalition Objectives

- processes to support coalition EBP
- organisations to support coalition EBP
- technology requirements to support coalition EBP

- UK Objectives

- Influence development of international EBP process
- Assist in the management of EBP to UK military doctrine
- 21 UK experimental questions

MNE3 Method

- Quasi-Experiment
- Afghanistan Vignette
- Global Coalition Federated Battle Lab (CFBL) Network



MNE3 Outcome

- Good learning opportunity and environment to exchange ideas
- Differences between US and coalition partners' experimentation approach
- EBP offers potential for improved coalition and UK military operations.
 - analysis suggests, if poorly implemented it will detract from current operations planning capabilities.

Conclusions

- Many factors driving transformation.
 - US will steer coalition transformation
- Nation's need to be independent presents a challenge
- NITEworks – True solutions to the customer
 - addressing complex, multi stakeholder environments that drive a NEC
- UK needs to address national NEC as a priority to solving coalition interoperability.



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Questions

Combat ID

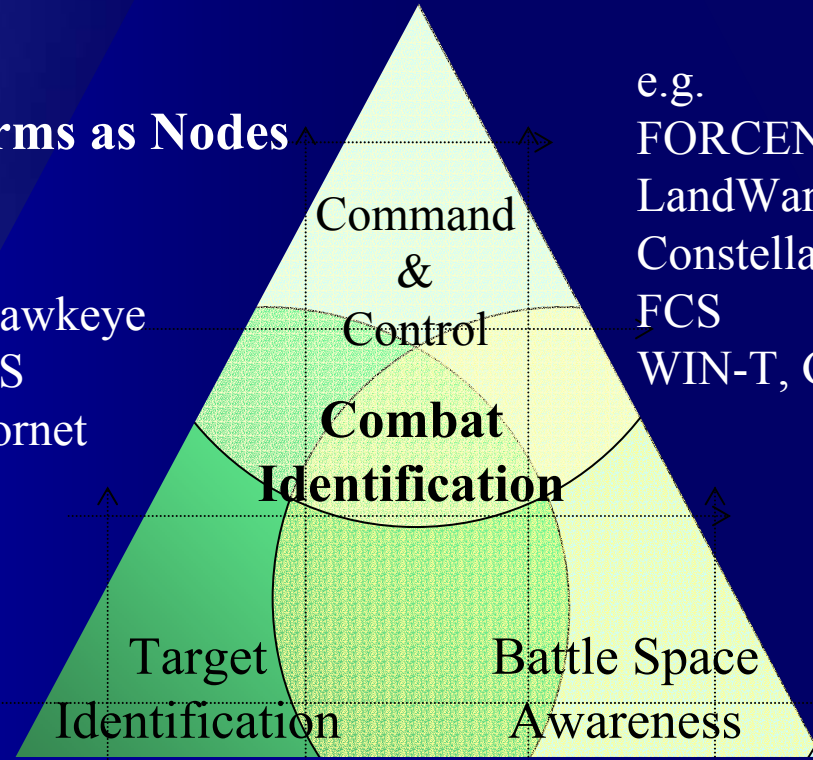
•One Corollary of MNE3

Integrating Systems

Platforms as Nodes

e.g.
E-2C Hawkeye
AWACS
F-18 Hornet
LCS
JSF

e.g.
FORCENet
LandWarNet
ConstellationNet
FCS
WIN-T, GiG



Less Tangibles

Doctrine & Process

Training

Human Factors
-Stress
-Workload
-Fatigue