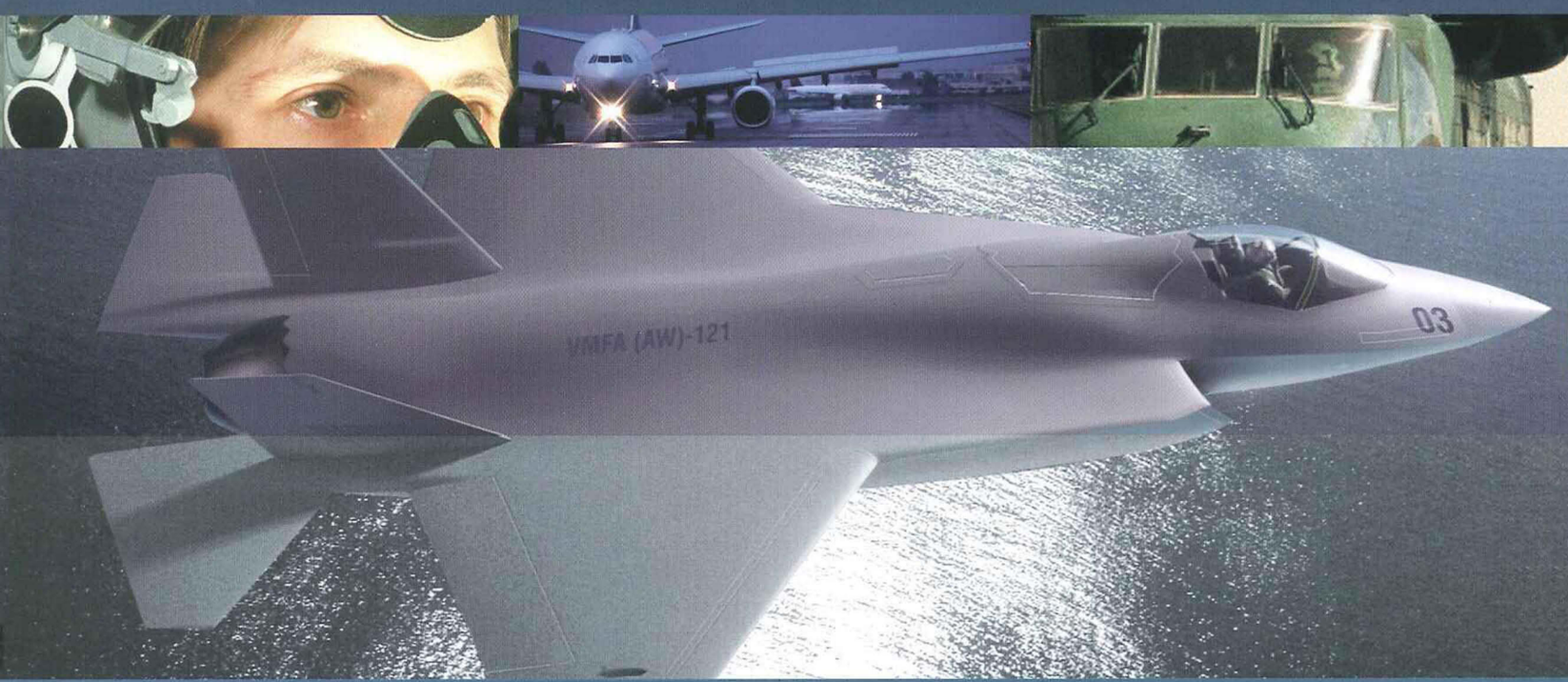
PLATFORM SOLUTIONS SECTOR



BAE SYSTEMS

BAE Systems Platform Solutions serves aerospace and defense end users and platform providers with capabilities and products that improve operational safety and enhance mission effectiveness. Platform Solutions supports a wide range of military and commercial platforms, with core expertise in fixed-wing and rotary-wing aircraft, ground vehicles, and unmanned systems, and with capabilities in vehicle management, human-machine interface, precision guidance, and power systems. The sector also is developing new technologies in all-weather operation, power management, real-time cockpit information, prognostics and health management, and air traffic management. A trans-Atlantic enterprise, Platform Solutions employs more than 6,500 people in design, development, and production operations in the United States and United Kingdom.

Capabilities spanning the platform spectrum

Military fixed-wing aircraft

From fast jets to transport planes to trainers, Platform Solutions serves the full range of today's and tomorrow's premier military platforms with capabilities in electronic flight controls, vehicle management systems, electronic engine controls, human-machine interface (displays, pilot sticks, inceptors), precision navigation and guidance, mission and display processing, day/night, all-weather operation, and prognostics and health management.

Platform Solutions develops and produces equipment for military aircraft including the C-17 Globemaster III, KC-135 Stratotanker, C-130 Hercules, F-35 Joint Strike Fighter, F-16 Fighting Falcon, F/A-18 Hornet and Super Hornet, F/A-22 Raptor, A-10 Thunderbolt, Eurofighter Typhoon, and Hawk.

Rotorcraft

Platform Solutions provides capabilities that meet the growing demands placed on today's military and civil rotary-wing aircraft. These include digital and fly-by-wire flight controls, vehicle management systems, electronic engine controls, terrain-aided navigation, ground proximity warning, CFIT solutions, human-machine interface (displays and active control technology), precision guidance and navigation, day/night, all-weather operation, refueling systems, and prognostics and health management. Open-architecture, scaleable designs assure a high degree of flexibility.

Platform Solutions develops and produces equipment for rotorcraft including the H-60 Black Hawk, CH-47 Chinook, AH-64 Apache,S-92 civil transport, H-92 military transport, V-22 Osprey, and BA609 tilt-rotor.

Land systems

Applying decades of experience with airborne systems, Platform Solutions offers capabilities and services that provide efficient and reliable operation of ground vehicles and furnish electric power in remote locations. Areas of expertise include power management and distribution, hybrid electric propulsion, vehicle management systems, precision guidance and navigation, human-machine interface, and prognostics and health management.

Current Platform Solutions applications in land systems include hybrid electric propulsion and power management systems for develop-mental U.S. Army tactical trucks, combat vehicles, and utility vehicles, and hybrid electric drive systems for intracity buses that reduce emissions and fuel consumption.

Unmanned systems

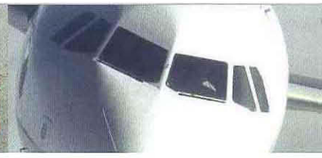
Platform Solutions serves the growing demand for unmanned vehicles with capabilities for development and deployment of tactical unmanned systems. These include vehicle control and navigation, mission computers, vision systems (including day-light TV, forward-looking infrared, and video equipment), air vehicle assembly, and logistics and support of UAV systems. Flexible approaches provide everything from individual capabilities to full systems integration.

Platform Solutions develops and produces equipment for unmanned vehicles including the Malaysian Eagle ARV, a vertical takeoff and landing UAV for the U.S. Army's Future Combat Systems initiative, Lockheed Martin's Orbital Space Plane, and BAE Systems' SKYEYE® turnkey UAV.

Commercial air

With a wide range of capabilities that contribute to safe and predictable aircraft operation and passenger safety and comfort. Platform Solutions is a leader in systems for large commercial aircraft and regional jets. Among them: electronic flight controls, full-authority digital engine controls, cockpit displays, head-up displays, actuation control electronics, navigation systems, autopilots, data distribution systems, and flight deck systems.

Platform Solutions equipment can be found on most Boeing and Airbus commercial aircraft and on Bombardier and Embraer regional jets.



Serving diverse mission needs

Platform Solutions serves its customers' current and emerging mission requirements with capabilities in vehicle management, power systems, precision guidance, and human-machine interface.

Vehicle management
Fly-by-wire controls, actuation control electronics, and autopilots that reduce pilot workload and enhance safety on fixed- and rotary-wing aircraft for both military and civil customers.

Power systems
Full-authority digital controls for aircraft engines and hybrid electric propulsion systems that save fuel and reduce emissions on commercial and military vehicles.

Precision guidance
Inertial sensors and measurement units that enable precision guidance and navigation on platforms from helicopters to missiles to automobiles.

Human-machine interface
Pilot-centered systems, including head-up and helmet-mounted displays and pilot inceptors, that provide prioritized data at the right time and in the right format to optimize situational awareness and increase mission effectiveness.

Technologies to meet future needs

With more than half a century of experience fielding high-performance systems for flight and other safety-critical applications, Platform Solutions is well equipped to meet the challenging needs of tomorrow's advanced platforms. The company also recognizes that its aerospace and defense customers increasingly seek suppliers that can provide end-to-end solutions. To address these needs, Platform Solutions is developing integrated capabilities in these areas:

Day/night, all-weather operation
Vehicle management, guidance, and mission information systems, integrated with human-machine interface capability to enable pilot visibility in dust, fog, rain, darkness, and other visibility-limiting conditions.

Power management
Setting new standards in efficiency, flexibility, and reliability in the way mobile systems generate, distribute, and consume power.

Air traffic management
Custom navigation, surveillance, and separation systems for efficient operations, gate to gate, in all weather and for all aircraft types.

Real-time cockpit information
Displaying real-time data to assist decision-making, maximizing survivability and operational effectiveness.

A strong trans-Atlantic footprint

The Platform Solutions Sector is a true trans-Atlantic enterprise, operating 15 facilities in the United States and the United Kingdom.

1 Redmond, Washington
Service of commercial avionics

2 Los Angeles
Product design and development

3 Westlake Village, California
Design and development of inertial sensors

4 Ontario, California
Design, development, and production of aircraft support equipment

5 Irving, Texas
Production of commercial aircraft electronics

6 Fort Wayne, Indiana
Production and service of aircraft subsystems

7 Heath, Ohio
Support of inertial sensors for missile systems

8 Johnson City, New York
Sector headquarters, product design, development, and production

9 Wayne, New Jersey
Design and development of inertial sensors

10 Cheshire, Connecticut
Design, development, and production of inertial sensors

11 Plymouth, U.K.
Design, development, and production of inertial sensors

12 Edinburgh, U.K.
Product design and development

13 Rochester, U.K.
Product design, development, and production

Platform Solutions also operates commercial aircraft electronics service centers in London and Singapore.

About BAE Systems
BAE Systems is an international company engaged in the development, delivery, and support of advanced defense and aerospace systems for use in the air, on land, at sea, and in space. The company designs, manufactures, and supports military aircraft, surface ships, submarines, fighting vehicles, radar, avionics, communications, electronics, and guided weapon systems. A pioneer in technology with a heritage stretching back hundreds of years, it is at the forefront of innovation, working to develop the next generation of intelligent defense systems.

The company has major operations across five continents and customers in some 130 countries. It employs more than 90,000 people and generates annual sales of approximately $20 billion through its wholly owned and joint-venture operations.
The Platform Solutions Sector is part of BAE Systems North America, a high-technology U.S. company employing approximately 30,000 people who live and work in some 30 states, the District of Columbia, and the United Kingdom. The company is dedicated to solving its customers' needs with highly innovative and leading-edge solutions across the defense electronics, systems, information technology, and services arenas.

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Creating VALUE

Avionic Systems Conference

17 February 2005

Lunch Menu

Poached Salmon Pieces

Vegetarian Quiche

Marinated Chicken Pieces

Rolled Ham Salad

Mixed Salad

Selection of Salads

Minted New Potatoes

French Bread & Butter

Tortellini filled with Ricotta Cheese coated with a herb sauce

Lamb Koftee's (Lamb and Mint Kebab) served with a cucumber and yoghurt sauce

New Potatoes roasted with red and green peppers

Selection of Desserts

Creating VALUE

Programme

08.15	Welcome
	Performance against 2004 objectives
	Blue Ribbon Update
	Open Questions and Answers
	Coffee
	Business Environment
	2005 Business Objectives
	2005 Financial Objectives
12.30	Lunch
	Customer Focus
	PDG Key Objectives
	Product Quality
	Coffee
	Product Development / Engineering
	People
	Structured Questions and Answers
	Final Words
17.30	Close

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EMPS - ECMO Mobile Perfusion System

'Taking the Treatment to the Patient'

Concept Demonstration
Design Review

14 April 2005

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Agenda

- Need for Mobile ECMO
- How BAE Systems came to be involved
- Brief introduction to BAE Systems / Team
- How we got to where we are
- Technical description and demonstration of mobile ECMO
- Feedback from all parties

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Need for Mobile ECMO

- Respiratory support using extra corporeal membrane oxygenation technology (ECMO) has been a major component in Intensive Care Units for many years.
- To access ECMO treatment capability patients have to be transported over long distances to specially equipped ITUs. The consequence is that many potential patients are excluded from treatment as a result of the impact of delays between the patient event and the application of the treatment and access constraints from transportation logistics. Consequently those candidates who are excluded from treatment have a high probability of loss.
- Mobile ECMO enables the treatment to be taken the patient thereby reducing the delay time between the patent event and the application of the treatment. The consequence is that potential patient candidates have a high probability of survival.

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How BAE Systems came to be involved

- October 2002 - Presentation by 'CELL' (Clinical Engineering at Leicester and Loughborough Hospitals) to SEIC (Systems Engineering Innovation Centre) Start up team at Loughborough University.

  2003/4 - MEng Part C Student Group project sponsored by CELL and BAE Systems - solution demonstrated in July 2004 at formal opening of the SEIC.

  August 2004 - As part of its commitment to 'care in the community' BAE Systems PSS Avionic Systems agreed to sponsor the creation of an Engineering Prototype via its Apprenticeship Training Scheme.

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BAE Systems and the Sponsoring Organisations

- 'We wish to acknowledge the contributions made by all the sponsoring organisations to support the creation of this equipment solution to address the obvious 'social need' for this treatment capability.'

Sponsoring Organisations:-

Glenfield Hospital Cardiothoracic Department
BAE Systems PSS Avionic Systems
Xchanging Training Services
Direct Training Solutions
Ferno UK
Medos ag
Chalice Medical Supplies
Kent Ambulance Trust

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BAE Systems Team

Training Manager
Gary Dawson

Communications
Leanne Wells

Engineering Design Coordinator
Richard Smith

Student Team
Robert Andrews
Nick Pike
Marc Reeves
Adam Wallis

BAE SYSTEMS

BAE Systems Organisation

BAE SYSTEMS

BAE SYSTEMS plc — Key Facts

- Sales — $20 billion
- Order book — $76 billion
- More than 90,000 employees worldwide, including joint ventures
- Major player in military aircraft, naval platforms, and guided weapons

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Commanding Breadth of Capabilities

Military platforms
- Air
- Land
- Sea
- Missiles

Commercial platforms
- Boeing
- Airbus

Electronics and software
- Sensors
- Data links
- Platform avionics
- Information management
- Enterprise management
- Mission and battle management

Full-spectrum support solutions
- Systems engineering and analysis
- Product support
- Output services

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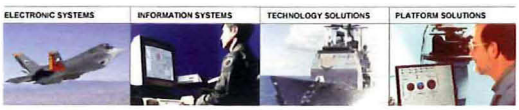
BAE SYSTEMS North America

A high-technology aerospace and defense company operating in 30 U.S. states and the United Kingdom.

Core competencies in:



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People

- Avionic Systems employees 2170 people of which;
  - 880 are in Engineering and Project Management
  - 700 are in Operations and Procurement of which
    - 400 are skilled or semi-skilled shop floor operatives
  - 60 Commercial and Business Development
  - 70 Finance

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Capability Summary

- 2003 Turnover of £263 million
- Global customer base - civil and military.
- Wide spread product range covering many technologies.
- Original Equipment provider with resources skilled to design, develop, qualify, manufacture and support the provision of application specific electronic systems to the aerospace markets.
- Extensive capability to lead programme partnerships and provide system integration services.

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Design Rationale

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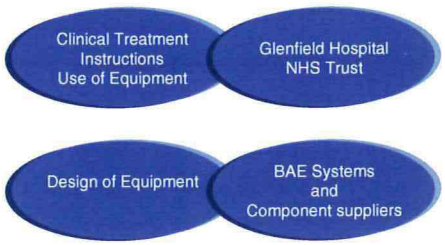
Roles and Responsibilities



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Design Management Challenge

- Definitions:
  - A Model - Concept Demonstration
  - B Model - Engineered Prototype suitable for Trials
  - C Model - Fully Engineered Design suitable for series production

Money Challenge
- Commercial development price £M.

Technical Challenge
- Differing skill sets.

Equipment Challenge
- Focus on use of Commercial of the Shelf products.

April 2005
A model

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Student Challenge

- To create an engineered A Model Prototype solution for mobile ECMO.

  The prototype is to provide:-

  1) Stretcher mounted perfusion with 30 minute full independent operational capability for emergency treatment initiation.

  2) Trolley mounted perfusion including temperature maintenance with 4 hour full independent operational capability to sustain treatment during patient transportation in buildings, by land ambulance or air ambulance.

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Product Design Challenge

Need to provide an 'all terrain rescue' emergency treatment capability.

Need to provide full independent mobility for patient transport tasks in buildings, by ambulance and by air ambulance.

Physical layout - relationship between the patient and the blood circuit.

Physical size - relationship between mobility and actual size of available components.

Concept solution selection in relation to size of equipment components.

Selection of components - Size 'v' Cost of Acquisition.

Selection of COTS components - preference for Qualified Units.

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Solution Selection Rationale - Components

Blood Pump- Selection of Medos-ag Deltastream BDS product based on acceptability to Clinical Team and physical size.

Heater (1kW) - Selection based on representative component with known upgrade potential.

Stretcher/Trolley - Critical Care Trolley (CCT) selected to host Mobile ECMO. (Based on technical discussions with Ferno).

Rationale:-
1) Physical size is adequate to enable the COTS equipment items to be accommodated by the trolley structure.
2) CCT can be modified to provide a separable stretcher unit that can accommodate equipment to provide basic ECMO emergency treatment.

Power components selected on minimum cost; all are known to be capable of size reduction.

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Solution Selection Rationale - Layout

Need to provide an 'all terrain' emergency treatment capability.

Need to provide full independent mobility for patient transport tasks in buildings, by ambulance and by air ambulance.

Physical layout - relationship between the patient and the blood circuit.

Physical size - relationship between mobility and actual size of available components

Need to provide way forward for compatibility with East Midlands Ambulance Services

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Programme Schedule Challenge

Milestones:

A Model - Q1/2005. Where we are

Possible Way Forward
B Model - Q4 / 2005 ➡ Trials - 2006.

C Model – 2006 / 7 ➡ Qualification - 2007.

Way forward is TBD
- with agreement by all parties.
Requires a separate review.

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Technical Description & Demonstration

Mobile ECMO Equipment Design Team

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How we got to where we are

Initial consultation to decide upon the requirements of the project and our involvement

Evolution of possible concepts, determining what equipment would be needed and research into respective technologies

Final discussions to conclude our preferred system and the components to be included in the system

Procurement of essential system items to enable the team to conduct testing

Integration and assembly of components

System testing and refinement

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Lunch

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Conclusion

Feedback from all parties

Way forward suggestions

Close

PRIESTFIELD CONFERENCE & BANQUETING

Kent's
newest
and finest
venue for:

- Conferences
- Exhibitions
- Seminars
- Meetings
- Banquets
- Weddings
- Parties
- Festivals
- Concerts