

A summary of Ultra's capability areas



April 2010

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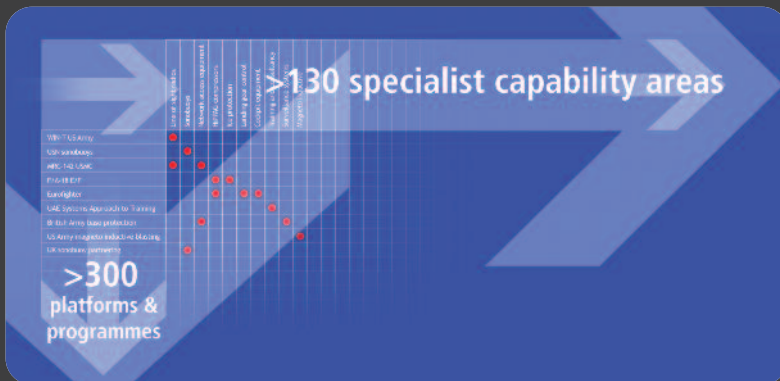


Ultra comprises 24 businesses in the UK, USA, Canada, Australia and the UAE. Across the Group we focus on developing our specialist capability areas and winning positions on as many long-term platforms and programmes as we can. Everyone in Ultra is encouraged to innovate to create solutions to customer requirements that are different from and better than those of our competitors.

Across the Group we can identify more than 130 specialist capability areas that are then mapped on to more than 300 platforms and programmes. This diverse picture gives great resilience as no single programme or capability dominates.

This complexity also brings the challenge of keeping Ultra’s staff informed about what else is going on in the Group. This booklet is intended to help by identifying which business specialises in which market-facing capability. Please use it to share experiences within the Group to harness the broad base of innovation that make Ultra such an exciting place to work.

Douglas Caster
Chief Executive



Introduction

This document is intended to act as a guide to Ultra's broad range of activities and to point to where in the Group the specialist capability resides.

The top level framework for the document is the collation of the detail into the following broad capability areas:

1. **Battlespace IT**
2. **Sonar systems**
3. **Military aircraft equipment**
4. **Specialist defence equipment and consultancy**
5. **Civil aircraft equipment**
6. **Specialist civil transport and energy systems and equipment**

At the top level, these capability areas can be summarised as follows:

Battlespace IT, the systems and equipment that allows coalition commanders to have an integrated, real-time picture of the disposition of friendly and enemy forces that is better than the one available to the enemy. This information superiority underpins rapid decision making which, together with effective command, control and communications, translates into military superiority. The use of battlespace IT is fundamental to the implementation of the military doctrines of 'network-centric warfare' or 'network-enabled capability' that are seen as transformational in the capability to win future battles. Expenditure on battlespace IT equipment therefore continues to represent an increasing share of the total defence budget in the main markets in which Ultra operates.

Sonar systems, which expand Ultra's traditional world-leading airborne anti-submarine warfare capability into broader activities in the underwater battlespace. These include integrated ship and submarine sonar systems, persistent seabed-deployed sensor arrays, torpedo defence and sea mine disposal systems. The fact that over forty countries have, between them, more than four hundred highly capable, stealthy submarines is continuing to focus expenditure in this sector.

Military aircraft equipment. Ultra provides specialist sub-systems and equipment for military aircraft. The main military aircraft programmes on which Ultra equipment is fitted continue to have political support, underpinned by consistent financial commitment. Ultra is increasing its presence on the F-35 Joint Strike Fighter aircraft, of which it is likely that at least 2,000 will be built.

Specialist defence equipment and consultancy, including power conversion and signature systems for naval ships and submarines. Ultra's specialist capability in high integrity controls for submarine nuclear reactors is included in this sector, for which there is continuing commitment to new platforms and the upgrade of existing boats. Ultra also supplies advanced sub-systems for modern armoured vehicles including those for electrical power management, indirect vision and weapon control. Ultra supplies acoustic hailing and mass notification systems for ships, armoured vehicles and land-based applications. The need for increased mobility and force protection is driving a number of large procurements of military vehicles in Ultra's main markets. Ultra also provides specialist training services and performance consultancy.

Civil aircraft equipment. Ultra provides specialist sub-systems and equipment for civil aircraft. Record order intake performance by all major aircraft manufacturers underpins build rates for the medium term. Ultra has truly world-leading, innovative solutions in areas such as ice protection systems and active noise and vibration control systems.

Specialist civil transport and energy systems and equipment, including Ultra's advanced airport IT solutions. Airline passenger growth around the world is driving continuing expansion and upgrade of airport infrastructure. Ultra supplies trackside power equipment for rail transit systems, for which demand continues driven by the need to expand and upgrade rail networks. Ultra utilises its specialist power conversion capability to provide highly reliable, compact motor drives and electrical conversion systems where space is at a premium. The UK market for nuclear power generation is expanding and Ultra's offering derived from its equivalent military capability is well positioned to benefit.



Battlespace IT

1.1. Radio communication systems

1.1.1.	line of sight radios	
1.1.1.1.	high capacity, multi-channel	23
1.1.1.2.	electronic counter-counter measure radio systems	23
1.1.2.	over-the-horizon data links	2, 6, 21
1.1.3.	multiplexers and switches	10, 21
1.1.4.	LAN and group combiners and modems	10, 21
1.1.5.	wideband radio receivers	2, 5, 13, 21
1.1.6.	secure aircraft radio systems	2, 6

1.2. Communication network equipment

1.2.1.	network interface controllers and switches	10, 21
1.2.2.	network protocol converters	8, 10, 21
1.2.3.	IP-compliant communication switches	8, 10, 21
1.2.4.	circuit-to-IP conversion	10, 21
1.2.5.	magneto inductive communications equipment	15

1.3. Airborne surveillance systems

1.3.1.	targeting pods	6
1.3.2.	data links	6

1.4. Data link systems

1.4.1.	tactical data link systems	2, 6, 21
1.4.2.	UAV communication/downlink data links	6
1.4.3.	UAV imagery data links	6
1.4.4.	UAV control data links	6

1.5. Gunshot detection systems

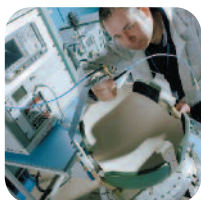
1.5.1.	rifle-mounted	22
1.5.2.	soldier-mounted	22
1.5.3.	vehicle-mounted	22
1.5.4.	helicopter-mounted	22
1.5.5.	air deployed	24

1.6. Cryptographic equipment

1.6.1.	embedded systems	6, 21
1.6.2.	high grade cryptos	6, 21
1.6.3.	software programmable cryptos	6, 21

1.7. Data recording and analysis solutions

1.7.1.	rugged data recorders for land, sea and air deployments	3
1.7.2.	software only option for limited space and power saving	3
1.7.3.	record and replay of audio, video, sensors, data links and mission data	3
1.7.4.	UAV communication/downlink data recording	3, 6
1.7.5.	audio analytical tools	3



Which Ultra business does what?

In the detailed list opposite, the numbers 1 to 24 are used to identify which business or businesses undertake that specialist activity. The key to these numbers is:

- 1 Airport Systems
- 2 Advanced Tactical Systems
- 3 AudioSoft
- 4 Avalon Systems
- 5 Command & Control Systems
- 6 Communication & Integrated Systems
- 7 Controls
- 8 Criticom
- 9 Dascam
- 10 DNE Technologies
- 11 Electrics
- 12 EMS
- 13 Flightline Systems
- 14 Manufacturing & Card Systems
- 15 Maritime Systems
- 16 MSI
- 17 Nuclear Sensors & Process Instrumentation
- 18 Ocean Systems
- 19 PMES
- 20 Precision Air Systems
- 21 ProLogic
- 22 Sonar Systems
- 23 Tactical Communication Systems
- 24 USSI

To find out more about any of our businesses, simply click on the relevant name (above) to take you to its website.

Battlespace IT (continued)

1.8. Communication system integration

1.8.1.	magneto inductive	15
1.8.2.	integration of multiple wireless protocols	21, 24
1.8.2.1.	Bluetooth	21, 24
1.8.2.2.	Zigbee	21, 24
1.8.2.3.	inductive coupling systems	21, 24
1.8.3.	rugged compact packaging for extreme environments	
1.8.3.1.	high altitude airborne environment	2
1.8.3.2.	high temperature/open flame environments	24
1.8.3.3.	water submersion environments	15, 24
1.8.3.4.	spark suppression environments	15, 24
1.8.4.	shelterized systems	2, 21, 23
1.8.5.	portable systems	2, 21, 23

1.9. Voice, video, radio interface and data communications equipment

1.9.1.	voice amplification systems	24
1.9.2.	radio interface systems	2, 3, 5, 10, 13, 21, 23, 24
1.9.3.	mid-range team and data radios	24
1.9.4.	secure, compressed voice	10, 21, 23
1.9.5.	IP traffic management and service delivery managers	10
1.9.6.	head-up data display units	24
1.9.7.	video communication	8
1.9.8.	audio visual	8

1.10. Loitering munition systems

1.10.1.	complete systems	5
1.10.2.	advanced human/machine interface solutions	6, 21
1.10.3.	ground stations	6, 21
1.10.4.	imagery data links	6
1.10.5.	control data links	6
1.10.6.	capability demonstrations	6

1.11. Secure/non-secure video communications

1.11.1.	complete solutions	8
1.11.2.	endpoint	8
1.11.3.	video network structure design	8
1.11.4.	IP traffic management and service delivery managers	8, 10
1.11.5.	deployable systems	8
1.11.6.	managed services	8
1.11.7.	installation and training services	8



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Battlespace IT (continued)

1.12. Electronic warfare systems

1.12.1. interception	4, 21, 23
1.12.2. analysis	4, 21, 23
1.12.3. denial	4, 21, 23

1.13. Magneto inductive systems

1.13.1. guidance	15
1.13.2. signalling	15
1.13.3. communication	15

1.14. Command, control and information systems

1.14.1. Air Defense Systems Integrator	2
1.14.2. real-time C2 systems	2, 5, 6, 15, 21
1.14.3. electronic intelligence, secure/non-secure	2, 21, 23
1.14.4. real-time mapping	2, 5, 21
1.14.5. digital command	2, 5, 21
1.14.6. collaborative planning systems	5, 21
1.14.7. electronic architecture design and consultancy services	5, 11, 21
1.14.8. local situational awareness systems	5, 11, 21
1.14.9. airborne network shared situational awareness systems	2, 21
1.14.10. battlespace visualisation systems	2, 6, 21

1.15. Data fusion systems

2, 21

1.16. Ships' mission systems

1.16.1. combat systems	5
1.16.2. weapon interfacing electronics	5, 6
1.16.3. fire control systems	5, 6
1.16.4. charting systems	5, 21
1.16.5. navigation data distribution systems	4

1.17. Multi-function consoles

5, 16

1.18. Stabilised sensor platforms

1.18.1. custom design and build	5, 21
1.18.2. radar	5, 21
1.18.3. electro optical	5
1.18.4. missiles	5

1.19. Geographic data and mapping systems

1.19.1. real-time mapping	2, 5, 21
1.19.2. satellite imagery	2, 5, 21
1.19.3. multi-format mapping	2, 5, 21
1.19.4. geographic information systems	2, 5, 21
1.19.5. map management and distribution	5, 21



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Battlespace IT (continued)

1.20. Radar and electro-optical surveillance and tracking systems

1.20.1. offshore safety and security systems	5, 21
1.20.2. border control	5, 21
1.20.3. coastal surveillance	5, 21
1.20.4. cameras and vision systems (optical and thermal)	5, 11, 21
1.20.5. directors	5
1.20.6. stabilised platforms	5

1.21. Collaborative working environment solutions

1.21.1. hosted service	6
1.21.2. full solution provision	6

1.22. Crisis information management systems

1.22.1. incident planning	5, 21
1.22.2. incident mapping	5, 21
1.22.3. CBRN plume prediction and analysis	5, 21

1.23. Secure network systems

1.23.1. bulk encryption over IP protocol	10
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2

Sonar systems

2.1. Airborne anti-submarine warfare

2.1.1. sonobuoys	15, 22, 24
2.1.2. active	15, 22, 24
2.1.3. passive	15, 22, 24
2.1.4. multi-static	15, 22, 24
2.1.5. bathythermal buoys	15, 22, 24
2.1.6. sonobuoy receivers	13
2.1.7. wideband sonobuoy receivers	13
2.1.8. sonobuoy acoustic processors	22

2.2. Sonar systems

2.2.1. integrated, networked, multi-static systems	18, 22, 24
2.2.2. bow and hull-mounted sonar systems	18, 22
2.2.3. off-board multi-static sonar systems	22, 24
2.2.4. hull conformal arrays	15, 18, 22, 24
2.2.5. intercept sonars	18, 22
2.2.6. towed passive arrays	15, 18, 22
2.2.7. towed array sonar processing	22
2.2.8. multi-beam sidescan sonars	22
2.2.9. hydrographic sonars	22
2.2.10. synthetic aperture sonars	22
2.2.11. high frequency imaging and survey sonars	22
2.2.12. transducers and arrays	15, 18, 22
2.2.13. torpedo array sonar	18, 22
2.2.14. advanced technology wideband transducers	18, 22
2.2.15. variable depth sonar and processing	15, 22
2.2.16. in-line towed active sonar	15, 22
2.2.17. towed body active sonar	15, 22
2.2.18. sea-mine survey and disposal systems	22
2.2.19. forward-look 3-D imaging sonar	22
2.2.20. multi-sensor integrated ASW systems	22

2.3. Torpedo and sonar defence systems

2.3.1. towed torpedo countermeasure systems	18, 22
2.3.2. submarine acoustic torpedo countermeasures	18, 22
2.3.3. surface ship acoustic torpedo countermeasures	18, 22
2.3.4. ships' defence systems	18, 22
2.3.5. torpedo detection, classification and localisation	18, 22
2.3.6. advanced towed arrays	15, 18, 22



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2

Sonar systems (continued)

2.4. Autonomous underwater surveillance and protection systems

2.4.1.	tactical surveillance and cueing systems	24
2.4.2.	harbour entrance	16, 22, 24
2.4.3.	coastal	16, 22, 24
2.4.4.	aquatic life diversion and control solutions	18

2.5. Submarine communication systems

2.5.1.	submarine-to-surface	15, 18, 22, 24
2.5.2.	submarine-to-aircraft	15, 18, 22, 24
2.5.3.	submarine-to-satellite	15, 18, 22, 24
2.5.4.	expendable unidirectional pre-programmed	15, 18, 22, 24
2.5.5.	expendable unidirectional low data rate acoustic	15, 18, 22, 24
2.5.6.	expendable bidirectional tethered	15, 18, 22, 24
2.5.7.	expendable high data rate acoustic	15, 18, 22, 24
2.5.8.	expendable pre-programmed submarine rescue beacons	15, 18, 22, 24
2.5.9.	expendable situational awareness buoys	15, 18, 22, 24
2.5.10.	retrievable tethered optical fibre buoy	15, 18, 22, 24



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3

Military aircraft equipment

3.1. HiPPAG airborne compressors	
3.1.1. missile sensor cooling	20
3.1.2. pneumatic weapons ejection	20
3.2. High pressure pneumatic products	
3.2.1. cold gas cartridges for stores ejection	20
3.2.2. high pressure gas vessels	20
3.2.3. pressure regulating valves	20
3.2.4. solenoid operated valves	20
3.2.5. pressure relief valves	20
3.2.6. pressurisation units	20
3.2.7. high pressure gas dryers and filters	20
3.2.8. pressure switches	20
3.3. Tactical data links	
3.3.1. unmanned aerial vehicle control	6
3.3.2. VOIP/ROIP switching	2
3.3.3. tactical data link forwarding	2, 5, 21
3.3.4. on-board sensor control	6
3.4. High integrity software systems	
3.4.1. software development and support	7
3.4.2. system development	7
3.5. Rugged data bus network infrastructures	
3.5.1. high integrity data bus gateways	11
3.5.2. intelligent latch control	11
3.5.3. power management nodes	11
3.5.4. remote data concentrator units	11
3.6. Airframe system electronics	
3.6.1. landing gear control systems	7
3.6.2. proximity sensors and interface electronics	7
3.6.3. gyroscopes	13
3.6.4. lighting control systems	11
3.6.5. central warning panels	7, 11
3.6.6. aerial refuelling amplifiers	10
3.6.7. cargo handling system electronic modules	11
3.7. Active noise and vibration control systems	
3.7.1. cabin noise and vibration reduction systems	7
3.7.2. propeller balancing systems	7
3.8. Electro-thermal ice protection systems	
3.8.1. integrated airframe ice protection systems	7
3.8.2. integrated engine intake ice protection systems	7
3.8.3. ice detection sensors	10



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3 Military aircraft equipment (continued)

3.9. Structural integrity/crack detection and monitoring systems	
3.9.1. ground based	7, 22
3.9.2. airborne	7
3.10. Propeller control systems	7
3.11. Human/machine interface equipment	
3.11.1. control equipment for unmanned vehicles	6, 11, 16
3.11.2. pilot's sticks and throttles	11, 16
3.11.3. gunners' and commanders' controls	11, 16
3.11.4. joysticks	11, 16
3.11.5. trackballs	16
3.11.6. high integrity switches and indicators	11, 16
3.11.7. switch and display panels	11
3.11.8. racking controls	11, 16
3.11.9. lighting systems	
3.11.9.1. panel lighting	11
3.11.9.2. flood lighting	11
3.11.9.3. task lighting	11
3.11.9.4. formation lighting	11
3.11.9.5. NVG compatible lighting	11
3.12. Temperature sensors	
3.12.1. resistance temperature detectors	17
3.12.2. thermocouples	17
3.12.3. surface-mount sensors	17
3.13. Aircraft system test equipment	
3.13.1. sonobuoy simulators	13
3.13.2. fuel system	11
3.13.3. avionics data bus	11
3.13.4. avionics electronic filtering	11
3.13.5. calibration services	11
3.14. Health and usage monitoring systems	
3.14.1. on-board monitoring and diagnostics systems	7, 11
3.14.2. off-board analysis and prediction system	7, 11
3.14.3. structural health measurement systems	7, 22
3.15. Cockpit indication and display equipment	
3.15.1. aircraft instruments	13
3.15.2. analogue	11, 13
3.15.3. digital	7, 11, 13
3.16. Ruggedised harness systems	
3.16.1. complete electrical harness systems	11
3.16.2. discrete harness components	11



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4 Specialist defence equipment and consultancy

4.1. Vehicle electronic system design

4.1.1. electronic architecture design	5, 11
4.1.2. consultancy services	5, 11

4.2. Electrical power management systems

4.2.1. battery health management systems	11, 12
4.2.2. power management nodes	11, 12
4.2.3. control systems	11

4.3. Local situational awareness systems

4.3.1. indirect vision systems	5, 11, 21
4.3.2. electro optical sensors	5, 11, 21
4.3.3. networked video data bus solutions	11
4.3.4. displays including picture-in-picture solutions	11

4.4. Magneto inductive communication and signalling equipment

4.4.1. voice, data communications	15
4.4.2. remote detonation control	15
4.4.3. surface to sub-surface communication	15

4.5. High pressure pneumatic products

4.5.1. high pressure gas vessels	20
4.5.2. pressure regulating valves	20
4.5.3. solenoid operated valves	20
4.5.4. pressure relief valves	20
4.4.5. pressurisation units	20
4.4.6. pressure switches	20

4.6. High integrity software systems

4.6.1. software development and support	7
4.6.2. system development	7

4.7. Rugged data bus network infrastructures

4.7.1. high integrity data bus gateways	11
4.7.2. power management nodes	11
4.7.3. remote data concentrator units	7, 11

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4

Specialist defence equipment and consultancy (continued)

4.8. Human/machine interface equipment

4.8.1.	control equipment for unmanned vehicles	6, 11, 16
4.8.2.	land	6, 11, 16
4.8.3.	sea (surface or underwater)	6, 11, 16
4.8.4.	remote weapon station control equipment	16
4.8.5.	hand controls	11, 16
4.8.6.	joysticks	16
4.8.7.	trackballs	16
4.8.8.	high integrity switches and indicators	11, 16
4.8.9.	switch and display panels	11, 21
4.8.10.	tracking controls	11, 21
4.8.11.	lighting systems	
4.8.11.1.	panel lighting	11
4.8.11.2.	flood lighting	11
4.8.11.3.	task lighting	11
4.8.11.4.	NVG compatible lighting	11

4.9. Health and usage monitoring systems

4.9.1.	on-board monitoring and diagnostics systems	7, 11
4.9.2.	off-board analysis and prediction system	7, 11
4.9.3.	structural health measurement systems	7, 22

4.10. Land mine countermeasure systems

4.10.1.	remote detonation of ordnance	15
4.10.2.	hand-held detection equipment	5
4.10.3.	enhanced personal protection equipment	5
4.10.4.	marking equipment	5
4.10.5.	man-portable rapid minefield breaching system	5
4.10.6.	training equipment and facilities	5

4.11. Long range acoustic hailing

4.11.1.	wide area, mass notification systems	24
4.11.2.	focused acoustic hailing devices	24
4.11.3.	integrated acoustic hailing devices	24

4.12. Nuclear reactor control and instrumentation systems

4.12.1.	reactor control and instrumentation systems	5, 19
4.12.2.	reactor simulation equipment	7
4.12.3.	reactor rod control equipment	19
4.12.4.	nucleonic sensors	5
4.12.5.	super-screened radiation-tolerant cables	5



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- 23 Tactical Communication Systems
- 24 USSI

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4

Specialist defence equipment and consultancy (continued)

4.13. Nuclear qualified sensor systems

4.13.1. resistance temperature detectors and thermocouples	17
4.13.2. thermowells	17
4.13.3. temperature transmitters	17
4.13.4. gauge, differential and absolute pressure transmitters	17
4.13.5. analogue data links and contact closures	17

4.14. Naval power conversion and control

4.14.1. power dense motors and drives	12, 19
4.14.2. electric cruise drives	12, 19
4.14.3. AC and DC power distribution and conversion	12, 19
4.14.4. high integrity power control systems	11, 12, 19
4.14.5. specialised control consoles	
4.14.5.1. manoeuvring room consoles	19
4.14.5.2. submarine control consoles	19
4.14.5.3. starting platform consoles	19
4.14.6. static frequency converters	12, 19
4.14.7. power dense electrical power conversion systems	12, 19
4.14.8. variable speed drives	12, 19
4.14.9. aircraft ground services systems	19
4.14.10. emergency propulsion systems	19

4.15. Gas turbine electric start systems

4.15.1. military and civil	12, 19
4.15.2. electric start	12, 19
4.15.3. regeneration solutions	12, 19

4.16. Signature measurement and control of naval vessels

4.16.1. integrated signature management systems	12, 19
4.16.2. magnetic and electric signature modelling	12, 19
4.16.3. open loop degaussing systems	12, 19
4.16.4. closed loop degaussing systems	12, 19
4.16.5. impressed current cathodic protection systems	12, 19
4.16.6. multi-influence signature measurement ranges	12, 19
4.16.7. magnetic field measurement sensors	19
4.16.8. electric field sensors, including three-axis	19

4.17. Training services and performance consultancy

4.17.1. training services	9
4.17.1.1. in-house	9
4.17.1.2. full service provision	9
4.17.2. performance consultancy	9



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5

Civil aircraft equipment

5.1. High integrity software systems

5.1.1. software development and support	7
5.1.2. system development	7

5.2. Rugged data bus network infrastructures

5.2.1. high integrity data bus gateways	11
5.2.2. power management nodes	11
5.2.3. remote data concentrator units	7, 11

5.3. Airframe system electronics

5.3.1. landing gear control systems	7
5.3.2. proximity sensors and interface electronics	7
5.3.3. lighting control systems	11
5.3.4. central warning panels	7, 11
5.3.5. cargo handling system electronic modules	11

5.4. Active noise and vibration control systems

5.4.1. cabin noise and vibration reduction systems	7
5.4.2. propeller balancing systems	7

5.5. Electro-thermal ice protection systems

5.5.1. integrated airframe ice protection systems	7
5.5.2. integrated engine intake ice protection systems	7
5.5.3. ice detection sensors	10

5.6. Structural integrity/crack detection and monitoring systems

5.6.1. ground based	7, 22
5.6.2. airborne	7

5.7. Propeller control systems

	7
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5.8. Human/machine interface equipment

5.8.1. control equipment for unmanned vehicles	6, 11, 16
5.8.2. joysticks	16
5.8.3. trackballs	16
5.8.4. high integrity switches and indicators	11, 16
5.8.5. switch and display panels	11
5.8.6. tracking controls	11
5.8.7. lighting systems	
5.8.7.1. panel lighting	11
5.8.7.2. flood lighting	11
5.8.7.3. task lighting	11

5.9. Temperature sensors

5.9.1. resistance temperature detectors	17
5.9.2. thermocouples	17



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5

Civil aircraft equipment (continued)

5.10. Aircraft system test equipment

5.10.1. sonobuoy simulators	13
5.10.2. fuel system	11
5.10.3. avionics data bus	11
5.10.4. avionics electronic filtering	11
5.10.5. calibration services	11

5.11. Health and usage monitoring systems

5.11.1. on-board monitoring and diagnostics systems	7, 11
5.11.2. off-board analysis and prediction system	7, 9, 11
5.11.3. structural health measurement systems	7, 22

5.12. Cockpit indication and display equipment

5.12.1. aircraft instruments	13
5.12.1.1. analogue	11, 13
5.12.1.2. digital	9, 11, 13
5.12.2. engine management systems	13

5.13. Ruggedised harness systems

5.13.1. complete electrical harness systems	11
5.13.2. discrete harness components	11

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6

Specialist civil transport and energy systems and equipment

6.1. Airport and airline information management systems

6.1.1.	airport operational systems	
6.1.1.1.	flight information display system	1
6.1.1.2.	airport operational database	1
6.1.1.3.	integration and message broker	1
6.1.1.4.	resource management	1
6.1.1.5.	revenue management and invoicing	1
6.1.1.6.	building systems integration	1
6.1.1.7.	airport SCADA control systems	1
6.1.2.	passenger processing systems	
6.1.2.1.	common use check-in	1
6.1.2.2.	common use self-service kiosk	1
6.1.2.3.	local departure control	1
6.1.2.4.	boarding gate management	1
6.1.2.5.	ground handling systems	1
6.1.3.	baggage management, tracking and reconciliation	
6.1.3.1.	baggage reconciliation	1
6.1.3.2.	baggage reflighting	1
6.1.3.3.	ULD (Unit Load Device) tracking	1
6.1.3.4.	weight and balance management	1
6.1.4.	airport IT systems integration consultancy and management	1

6.2. Long range acoustic communications

6.2.1.	wide area mass notification systems	24
6.2.2.	focused acoustic hailing devices	24
6.2.3.	integrated acoustic hailing devices	24

6.3. ID card systems

6.3.1.	Magocard range of dye-sublimation ID Card printers	14
6.3.2.	dyefilm and PVC card consumables	14
6.3.3.	magnetic, barcode, smartcard and contactless encoders	14
6.3.4.	polyester overlaminating units and supplies	14

6.4. Nuclear reactor control and instrumentation systems

6.4.1.	reactor control and instrumentation systems	5
6.4.2.	reactor simulation equipment	5, 7
6.4.3.	reactor rod control equipment	5, 19
6.4.4.	nucleonic sensors	5
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6

Specialist civil transport and energy systems and equipment (continued)

6.5. Fibre optic converters for bus systems and serial data interfaces

6.5.1.	repeaters	17
6.5.2.	analogue and digital data links	17
6.5.3.	contact closures	17
6.5.4.	multiplexers	17
6.5.5.	managed and unmanaged Ethernet switches	10, 17

6.6. Temperature measurement

6.6.1.	resistance temperature detectors and thermocouples	17
6.6.2.	temperature transmitters	17

6.7. Contract electronic manufacturing

6.7.1.	automated surface mount PCB production	14
6.7.2.	rack and unit wiring and electro-mechanical assembly	14
6.7.3.	automated test and environmental screening	14

6.8. Transit system power conversion and control

6.8.1.	sub-stations	19
6.8.2.	transformer rectifier units	19

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Manufacturing & Card Systems

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www.ultra-cems.com
www.magicard.com

Measurement Systems Inc.

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Precision Air Systems

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Information & Power Systems

Advanced Tactical Systems

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www.ultra-ats.com

Airport Systems

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Command & Control Systems

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www.ultra-ccs.com

EMS Development Corporation

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Tactical & Sonar Systems

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Communication & Integrated Systems

419 Bridport Road
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England
Tel: +44 (0) 20 8813 4567
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Criticom

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Maryland 20706
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DNE Technologies

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Maritime Systems

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SONAR & UNDERSEA SYSTEMS

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Ocean Systems

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