

# ARCHIVED REPORT

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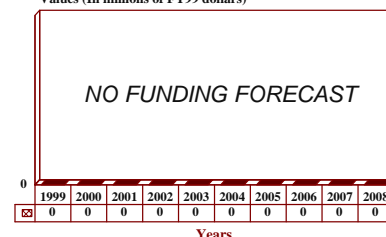
## UKAIR CCIS - Archived 8/2000

### Outlook

- Presumably operational, but no major contracts/funding expected
- **BARRING ANY UNEXPECTED ACTIVITY, THIS REPORT WILL BE ARCHIVED NEXT YEAR (2000)**

Forecast Funding Levels  
1999 - 2008

Values (In millions of FY99 dollars)



### Orientation

**Description.** Distributed command, control and administration system linking RAF Strike Command headquarters with every RAF and USAF base in the UK.

#### Sponsor

Contracts Branch CB/SLS31b  
Ministry of Defence  
Room 630  
St George's Court  
New Oxford Street  
London WC1A 1EJ  
United Kingdom  
Tel: +44 171 637 3633

#### Contractors

ICL - Defence Technology Center  
Eskdale Road  
Winnersh  
Berkshire  
United Kingdom  
Tel: +44 1734 693131  
WWW: <http://www.icl.com>

Computer Sciences Company (CSC)  
Heathcoat House  
20 Saville Row  
London W1X 1AE  
United Kingdom  
Tel: +44 171 469 6252

IPL Information Processing Ltd  
Brook Road  
Bath  
United Kingdom  
Tel: +44 1225 446263

Lynwood Scientific Developments  
Park House  
High Street  
Alton  
Hampshire GU34 1AN  
United Kingdom  
Tel: +44 420 87024

ICL provided dual SX mainframe computers for UKAIR with an Ada operating system. Applications software was provided by Computer Sciences Co, while Lynwood Scientific Developments and IPL Information Processing supplied the terminals and attendant software.

**Licensee.** No production licenses have been granted.

**Status.** In service.

**Total Produced.** Due to its role as an integrated system, UKAIR is not produced as a single unit, but is an amalgamation of various equipment. However, the "complete" UK system encompasses two geographically separate, dual SX mainframes as well as 350±

ruggedized, alpha numeric, and graphics stations for use at various nodes within the UKAIR framework.

**Application.** UKAIR CCIS equipment was installed at air bases operated by the UK Royal Air Force Strike Command and US Air Force Europe.

**Price Range.** Overall costs for RDT&E and setup of the system as a whole are estimated at US\$168 million (1994 dollars). No individual cost breakout for specific equipment has been found.

## Technical Data

**Design Features.** The UKAIR CCIS incorporates much of the technology already proven as part of the NATO naval CCIS system OPCON. This system was installed by ICL at the Northwood HQ. The central hardware will be two real-time computer complexes linked by the Boxer-Unitar secure trunk radio network to intelligent terminals at the 300 plus RAF and USAF bases in the UK. ICL will further develop the architecture used in OPCON, in particular toward widening the scope for users to bundle together items of data held in the database for scrutiny or modification.

The UKAIR system is composed of two geographically separated ICL-produced dual SX mainframes tied to 350± ruggedized, alpha numeric and graphics stations installed at all indigenous UK located at US and UK airbases, logistics centers and Strike Command headquarters. The system was programmed in Ada to facilitate integration of UKAIR with other NATO/allied systems.

The workstation units were specially ported as part of a technology insertion program to allow the use of commercial off-the-shelf (COTS) technology and Sun Sparc processors operating under a UNIX system.

Current plans indicate that the development of a Windows NT workstation is under way.

The UKAIR system is capable of handling 800+ formatted and coded signal traffic per hour. To transmit and receive messages, an X.400 link to the MoD's ACP 127 communications network and Naval Shore Telecommunication Network (NSTN) was procured.

Security of these transmissions are handled by an ICL-developed multilevel security system. This system is an integral part of the transaction processing system and surrounds the main IDMSX database. The scope and cost of the security system were considered critical items, and it is understood that at least two of the original bids were found to be non-compliant on these grounds.

**Operational Characteristics.** The UKAIR CCIS is tasked with providing the commander of the UK air space region with continuous information on operations in his region and on the status of resources such as aircraft and missiles. It will also carry commands to RAF and USAF bases in the UK and interface with parallel systems in the UK and overseas.

## Variants/Upgrades

There are no variants of this system.

## Program Review

**Background.** UKAIR is a Major Subordinate Command (MSC) under the Supreme Allied Commander Europe formed in 1975. UKAIR is responsible to SACEUR for the air defense of Great Britain and for protecting the UK Air Defense Region against air attack. It draws on forces provided by three subordinate Royal Air Force formations, including Number 1 Group (strike), Number 11 Group (air defense) and Number 18 Group (Offensive support, tactical reconnaissance and airlift). UK AIR is tasked with providing SACEUR with combat-ready air forces for employment on the European central front.

The UKAIR CCIS contract was the subject of competitive bidding by three groups other than the winning consortium. Two of these consortia, one led by Thorn-EMI and including Scicon, Control Data, ESG of West Germany and Sobemap of Belgium, and the other led by GEC-Marconi teamed with Logica and Honeywell, were unable to demonstrate their capability for producing a multilevel security system. The third consortium, comprised of Plessey and Hughes, was competed with ICL in the final run-up, but submitted a bid reported to be 50 percent larger than the winning quotation.

Following the contract award in 1987 development work commenced, with significant equipment deliveries and cabling installation occurring during 1989. In August 1989, the UK Ministry of Defence gave ICL the go-ahead to change the UKAIR programming language to the NATO-standard Ada. In the original winning bid, ICL used a combination of languages based around Pascal but also utilized RTL2, FORTRAN and Coral 66. NATO approval was required for the change, since UKAIR is a jointly funded project. A delay of 15 months was forecast as a result of the decision to rewrite the programming in Ada. It is hoped, however, that the language change will ease systems integration and that this may reclaim some of the delays incurred.

In the House of Commons Statement on the 1991 Defense Estimates, the expenditure entry for the UKAIR CCIS was buried in a table in an appendix. Examination of this item revealed that the expenditure projected for this program had risen to US\$150 million (£83 million), and that the planned in-service date had slipped to 1995. Some of the expenditure increase and most of the time delay can be attributed to the Ada rewrite, but other factors were involved as well. Interestingly, the more accessible figures in the 1992

version of this document reverted to the original estimated in-service date of 1993 and indicated a program cost of US\$100 million. The implication is that the 1991 figures were an inadvertent admission of the cost overruns and that the British government was, yet again, being overly optimistic.

The UKAIR system is believed to have achieved initial operational status in either 1992 or early 1993 when Air Chief Marshal Sir Richard Johns was appointed Chief of Staff to UKAIR at High Wycombe. It is believed that full operational capability was achieved between 1994-1995.

In November 1995, Sanders, a Lockheed Martin Company, announced that it had won a US\$3.6 million subcontract from Siemens-Plessey Systems to develop software similar to the Air Force Mission Support System (AFMSS) used by the USAF for UKAIR. This contract (with a total value of US\$44 million) suggests that the program is either undergoing or recently completed an upgrade.

In late 1997, a support and development contract was awarded to ICL by the RAF for the continued upgrading of software for UKAIR.

## Funding

The UKAIR CCIS system was originally budgeted at US\$136 million. The bid submitted by the winning consortium was for a total of US\$63 million, the considerable cost saving being due to the greater than envisioned use of existing technology. However, the projected expenditure on this program has now risen to US\$150 million as of the last available report. Approximately 50 percent of the cost will be borne by NATO.

The 1996 UK Statement on the Defence Estimates, as well as The Government's Expenditure Plans 1996-99, completely omits the program due to complete operational status being obtained. Therefore, there is little information available on which to base estimates of the current funding levels for this program.

## Recent Contracts

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Sanders	3.6	November 1995 – A contract via Siemens-Plessey Systems for subcontracting work on the LYCHGATE program. Contract includes the development of software similar to the Air Force Mission Support System (AFMSS) used by the USAF. Contract completed January 1998.
ICL	1.6	November 1997 – A £1 million (US\$1.6 million) support and development contract awarded by the RAF to ICL. Contract is believed to be for additional programming of the database and overall system. Contract is believed to run through the year 2000+, but cannot be confirmed.

## Timetable

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<u>Month</u>	<u>Year</u>	<u>Major Development</u>
May	1987	UKAIR letter of intent awarded
Aug	1987	UKAIR supply contract awarded
Aug	1989	Decision to rewrite into Ada made
	1989	Initial hardware deliveries made
	1992/93	Initial operational status achieved
	1994/95	Full operational status achieved

## Worldwide Distribution

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UKAIR CCIS is a **UK** system specifically tailored to the requirements of the RAF Strike Command and associated forces. It will not be exported in its current form, though the hardware and software technology used may well generate considerable export interest subject to security constraints.

## Forecast Rationale

Information on the UKAIR CCIS is usually non-existent due to the program's classified nature. However, it is known that UKAIR CCIS is a distributed command, control, and administration system linking RAF Strike Command headquarters with every RAF and USAF base located in the UK. It is also known that two identical mainframes, which are geographically separated, are hooked up to 350± terminals in order to link bases and secondary sites.

UKAIR CCIS primarily defends UK airspace by providing an overall picture of the surrounding situation(s). This ranges from current tactical and strategic situations of threat forces to the ability to respond in a co-operative/coordinated procedure to performing logistic functions for friendly forces.

The UKAIR CCIS appears to be operational, with last known funding occurring in the UK defense estimates of 1992/93. Although continued upgrades and maintenance on this system seem likely, UKAIR CCIS appears to have no significant funding in its future. Also, no export sales of the present UKAIR CCIS are known to have occurred or are expected. Finally, other than upgrade/maintenance contracts, there have been no known contracts for UKAIR CCIS since 1995.

Due to the decreasing to almost non-existent activity surrounding UKAIR CCIS, and barring any unexpected activity in the near future, this report will be archived next year (2000).

## Ten-Year Outlook

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