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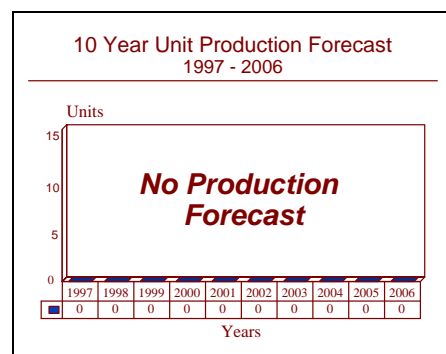
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Vixen - Archived 11/98

Outlook

- UK cancelled Vixen project in February 1997
- Operational problems responsible for cancellation
- Siemens-Plessey is disputing the cancellation
- No resurrection of the project is expected
- This report will be dropped next year, 1998



Orientation

Description Automated data processing system for processing communications intelligence information and performing the mechanical tasks associated with communications intelligence functions.

Sponsor

Directorate of Command, Control, Communications and Information Systems

UK Ministry of Defence
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Contractors

Siemens-Plessey Defence Systems

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Licensee. No production licenses have been granted.

Status. Development cancelled.

Total Produced. None.

Application. Vixen was intended to process electronic intelligence data up to 10 times faster than existing systems. Most mechanical and administrative tasks were to be automated, freeing personnel for other tasks.

Price Range. As of 1997, R&D program costs for the system surpassed US\$80 million.

Technical Data

Design Features. Vixen was to be installed in soft-skinned vehicles and operated by the 14th Signals

Regiment in Germany. Vixen would have made use of the service's existing Vampire direction-finding system mated to a new interceptor complex. Vampire is be-

lieved to have entered service during the early 1980s and, in the new system, was being updated so that it could automatically relay bearing data back to the interceptor complex via combat net radio. Multiple bearings are processed within the complex to establish emitter location. Intercepted transmissions are further processed both for their technical characteristics and their content.

Vixen incorporated multiple operator stations allowing each operator to input his comments into a central processor/data base, while dedicated analysis staff can interrogate the system on freshly received data as well as material derived from the sum of previous intercepts. Once processed in this way, information is fed from the Vixen system to command headquarters intelligence staffs.

Vixen incorporated technology from Siemens-Plessey's 0.5- to 1,000-MHz PRS 3830 broadband receivers. The new rack-mounted processing equipment, which was to be installed at both the Regimental Command Post (RCP) and intercept complexes, was based on Siemens-Plessey Microsystems range of Intel 80286 cards and

Siemens-Plessey Defence Systems series of boards from the company's Multi-Role System. Processors were to be distributed throughout the network of Vixen vehicles in order to provide high survivability.

The PRS 3830 receivers utilize a common hardware/signal processing configuration which can become application specific (i.e., monitoring, analysis, acquisition, etc.) via the addition of appropriate software modules in their signal processing sections. They can also act as multirole undedicated units with role allocation being dictated by software loaded into a central system processor.

The PRS 3830 technology is further supported by a receiver control unit which is applicable to stand-alone or system-integrated monitoring units. Vixen made use of Siemens-Plessey's GENERICS modular integrated command system. Data management is fully relational, distributed and replicated. The system could be rapidly built and reconfigured as required with easy simulation of applications.

Variants/Upgrades

No upgrades of or variants of the basic system have been or are expected to be developed. Vixen was to be built to the requirements of the British army, but was cancelled in early 1997. However, systems based on the

generic ACEWS system will be widely promoted throughout NATO and to traditional British armaments clients.

Program Review

Background. Vixen is understood to be the result of a competition for a new-generation mobile COMINT system held in the mid-1980s. Activity on this program commenced during 1988 with the award to Plessey Defence Systems of a 36.5 million pound development contract for Vixen.

In August 1991 it was revealed that part of the reorganization of the British army under the "Options for Change" defense review was the formation of a dedicated electronic warfare regiment. This would be created by merging the electronic warfare elements of the existing British Army Signals Regiments into a single unit. The implication is that a substantial expansion of the original Vixen system will be required to fully exploit the capabilities of the new unit.

As part of "Options for Change" it was also revealed that the British army on the Rhine will be halved in strength and made part of the new NATO rapid reaction force. The implications of this for Vixen were not clear.

In the 1991 "Statement on the Defence Estimates: Britain's Defence for the 90s," it was clearly indicated

that the Vixen electronic warfare system had not been brought into service by the originally-planned date of July 1991. During 1991 Vixen completed its automotive trials successfully with five Vixen vehicles undergoing assessment testing at the Defence Research Agency testing ground. These confirmed that the electronics systems comprising Vixen were sufficiently robust to manage the demands of the tactical environments envisaged.

The 1992 "Statement on the Defence Estimates" confirmed that Vixen still had not yet materialized in concrete form. This report indicated that the earliest operational date expected for the system was 1993, implying the project had drifted steadily backwards during the year. It was then running some 18 months late.

There is no indication within the report as to whether this delay reflects technical problems or the incorporation of combat experience from the Gulf War into the system. Information from within the defense industry suggested that the problems stemmed from the communications intercept side of the system which has

proved to have inadequate computing power to cope with the demands placed upon the equipment.

Some solid information on the Vixen system finally became available in the 1993 UK Defence Estimates "Defending Our Future." While most information on the Vixen system remained classified, the Estimates did reveal that the total cost of the system will be less than US\$110 million (75 million pounds) and that the current in-service date was then projected to be no earlier than 1995. This confirmed that the program is now four years behind schedule. The 1994 Statement on the Defence Estimates continued to project a 1995 in-service date.

The 1995 Defence Estimates "Stable Forces in a Strong Britain" continued to state that the Vixen system will be enter service in 1995. Unfortunately this proves little other than that work on the system continues. A stronger indicator was a February 1995 contract awarded to Siemens Plessey for major enhancements to the Vixen system. These were aimed at extending system capability for out-of-NATO-area operations and were scheduled to take approximately one year. This suggested that service entry could not really be expected until 1996 at the earliest.

Once again, this assumption was proved to be accurate by the publication of the 1996 Statement on the Defense

Estimates. This explicitly stated that the entry to service date of the Vixen system had been slipped to 1997.

By early 1997, however, the UK MoD determined that the development of this system had gone on long enough without producing a workable system and decided to cancel the program claiming that operational shortcomings and developmental problems prevented the system from meeting the contractual development schedule. The cost of the program through 1997 was over US\$80 million.

Siemens Plessey claimed that Vixen did meet the specifications spelled out in the contract, but that in the trials the MoD wanted the system to perform above and beyond the terms of the contract. Shortly after the Vixen program was cancelled, Siemens Plessey began arbitration proceedings against the MoD for wrongful termination of the contract. The matter is to be settled by an independent arbitrator chosen by both parties. If the arbitrator finds that the termination was rightfully based on the system's poor performance, Siemens Plessey may be liable to pay back some or all of the US\$80 million spend by the MoD on the development of Vixen.

Funding

Vixen development was funded by a UK MoD contract. There is a major difference in the administration of development and production contracts between the UK and USA. The UK MoD frequently awards a major research, development and initial production contract in a single year which then acts as a form of drawing account covering expenditures over a number of years.

Recent Contracts

Contractor	Award (\$ millions)	Date/Description
Siemens-Plessey	64.6	May 1988 – UK MoD contract for the development and production of Vixen
Siemens-Plessey	N/A	Feb 1995 – UK MoD contract for major enhancements to the Vixen system

Timetable

May	1988	Plessey awarded ACEWS development contract
Feb	1989	ACEWS renamed Vixen
	1991	Anticipated entry to service date
Jul		Defense statement indicates Vixen not in service
		Vixen completes automotive trials

Feb 1997 Project cancelled

Worldwide Distribution

Development was halted before completion of project. No systems have been fielded.

Forecast Rationale

Four successive years' data from the British government indicating further delays in delivery and the award of a major "enhancement" contract revealed that the Vixen program had hit serious technical difficulties. The latest British defense estimates confirmed that the program was six years behind schedule. Vixen was developed under a fixed price contract with Siemens- Plessey as prime contractor, fully responsible for meeting the specifications laid down.

Ultimately, the operational problems identified in a series of trials, the, scheduling delays and the escalating cost of the program lead the UK MoD to cancel Vixen in early 1997 after a total of US\$80 million had been spent on its development.

Shortly following the cancellation, Siemens Plessey launched arbitration proceedings against the MoD claiming wrongful termination of the contract. Siemens claims that the system did perform under the contract's specifications; the MoD disagrees. If the arbitrators

decide that the contract was rightfully terminated for operational reasons, Siemens Plessey could be liable for some or all of the US\$80 million the MoD spent on the contract.

Since the Vixen program was launched there has been a major change in British defense policy. The British forces in Europe are being reduced by half with their complete withdrawal being likely within the next few years. On the other hand, British intervention and out-of-area forces are being strengthened.

It is probable that the MoD will move to procure a new, higher-technology off-the-shelf system for the rapid deployment of forces. This strategy would be more in line with the reality of current threat environments. The new system will likely be lighter-weight (to improve transportability) and more flexible to handle a much wider variety of threats. Towards the end of the program, it appeared as if these were the parameters into which the MoD was trying to make the Vixen fit.

Ten-Year Outlook

Project cancelled in 1997. No production forecast. THIS REPORT WILL BE DROPPED NEXT YEAR, 1998.

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