

Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect

Supply of the Spark Interconnect – Routing Equipment

Invitation To Tender

This document and the information it contains are provided solely for the purpose of allowing potential suppliers to provide a tender for the facilities being procured. It is issued under the Open Procedure of the EU Services Directive.

Any supplier wishing to submit a proposal must register this intent with UKERNA before submitting the proposal. Registration details are given in this document in Section 3.2 "Registration" on Page 6.

UKERNA will not accept proposals from suppliers who have not registered according to the procedure described in this document.

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	Position:	Network Development Director	Date:

Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect

CONTENTS

1.	INTRODUCTION	3
1.1	PURPOSE OF SPARK	3
1.2	THE CONTRACTING AUTHORITY AND THE PROCUREMENT AGENT	4
2.	OVERVIEW OF THE FACILITIES REQUIRED	4
2.1	NETWORK ARCHITECTURE	4
3.	PROCUREMENT PROCEDURE	5
3.1	GENERAL ISSUES	5
3.2	REGISTRATION	6
3.3	ELECTRONIC COPY	6
3.4	TIMETABLE	6
3.5	EVALUATION	7
3.6	DELIVERY OF TENDERS	7
3.7	FORMAT OF TENDERS	7
3.8	DOCUMENT NOTATION	8
4.	REQUIREMENTS FOR EVIDENCE OF COMPETENCE TO SUPPLY	8
4.1	FINANCIAL AND ECONOMIC STANDING	8
4.2	TECHNICAL CAPABILITY AND EXPERIENCE	8
4.3	REFERENCES	9
5.	REQUIREMENTS FOR THE OFFERED FACILITIES	9
5.1	CONTRACT FORM	9
5.2	DELIVERY	9
5.3	IP ROUTING TECHNOLOGY	10
5.4	MULTICAST AND IP ROUTING FACILITIES	10
5.5	IP NETWORK RELIABILITY	12
5.6	MANAGEMENT AND MONITORING	12
5.7	GENERIC ROUTER CONFIGURATIONS	12
5.8	MAINTENANCE	13
5.9	DOCUMENTATION	13
5.10	INSTALLATION	13
5.11	SAFETY	14
5.12	STANDARDS	14
6.	COSTS	14
6.1	CONTRACT TERM AND PAYMENT	14
6.2	COST TABLE TEMPLATES	15
7.	LOCATIONS OF SITES FOR DELIVERY OF ROUTING EQUIPMENT	17
8.	LA-POP - R-POP PROPOSED LINK BANDWIDTH	20
9.	ADDITIONAL INFORMATION	22

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

1. INTRODUCTION

The Spark Interconnect is a project that the Scottish Executive Education Department (SEED) has initiated as part of its overall plans to provide a Scottish Curricular Intranet for all schools within Scotland. The aim of the project is to provide a broadband network solution for all schools in Scotland. Using Spark it is envisaged that each of the 32 local authorities (LAs) in Scotland will be providing a broadband network solution for all their schools. In turn, these LA networks will need access to the Scottish Curricular Intranet for schools (dubbed “Spark ”). The Scottish Executive Education Department has appointed UKERNA to provide and operate the “Spark Interconnect” by utilising the existing SuperJANET backbone in Scotland to form the backbone to Spark. Each of the local authority schools’ networks will need to be connected to the backbone.

Tenders are invited for the provision of data communications equipment, which UKERNA will combine with telecommunications circuits (which are being procured separately) to provide the ‘Spark Interconnect’. The scope of this procurement is the provision of equipment to set up **access points of presence (LA-PoPs)** at each local authority or national agency offices. Provision of equipment for **regional points of presence (R-PoPs)** will not be included in this procurement.

This network will provide each LA with high speed Internet access via the Joint Academic Network (JANET) interconnection points at Aberdeen, Dundee, Edinburgh, Glasgow and Inverness.

This tender is concerned only with the supply, configuration and delivery of routing equipment to the participating sites.

This Invitation to Tender document is an integral part of the Open Procurement announced by UKERNA in the Supplement to the Official Journal of the European Community.

1.1 Purpose of spark

Spark, the Scottish national intranet and interconnect, will offer the means by which complex models of educational collaboration can be established across the myriad communities of interest that exist in Scottish education. It will also be a mechanism by which Scottish education can begin to transform itself in order to exploit the pedagogical riches that the new information and communication technologies will increasingly make available over the next few years. It will not be enough simply to extend broadband infrastructure to the door of every school, or indeed to every pupil’s desktop. The intranet will begin to offer pupils, teachers and others the tools and the resources necessary to find, isolate, synthesise and disseminate information from the vast stores of knowledge that will become ever more available to us all.

The national intranet will help to break down barriers to learning that exist and have always existed. Geographical barriers will be minimised by the ability to communicate in real time with people across the country and across the globe. Social barriers will be lowered by the facility to bring young people together from all walks of life. Pedagogical barriers will be eased by the immense capacity that the intranet will provide for the sharing of practice, ideas and experience. Professional barriers can be further tackled by linking educational databases with those in other professional domains, such as health care, social work, children’s services and central government.

The purpose of the interconnect is to provide a broadband network bringing together every education authority and appropriate national agency, and to ensure that specified and agreed qualities of service (QoS) are available across the whole of the country, and to the edge of the network. The benchmark for the quality of service across the network will be whether voice telephony and real-time full-motion video are available end-to-end. Of course, the establishment of the requisite standards to deliver this QoS, and the

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

logical need therefore to make such QoS available to every node on the network, means that local authorities and others will have to ensure that, in time, their own internal networks meet these standards. The national interconnect will only be able to guarantee QoS to the outer edge of the local authority or to the outer edge of the national agencies that are connected.

1.2 The Contracting Authority and the Procurement Agent

The contracting authority and procurement agent for this project is the United Kingdom Education and Research Networking Association (UKERNA).

2. OVERVIEW OF THE FACILITIES REQUIRED

2.1 Network Architecture

This project is concerned with the supply and operation of a network providing a high-speed regional network and broadband Internet access into each of the 32 Scottish local authorities and three national agencies, which are Learning and Teaching Scotland (LTS), the Scottish Qualifications Authority (SQA) and SEEMIS. The overall architecture of the network will be a set of **regional points of presence (R-PoPs)**, which are interconnected via the SuperJANET network to form the network **backbone**. Each R-PoP will provide network connectivity, via **access links**, to **access points of presence (LA-PoPs)** at each local authority or national agency offices. By building on and enhancing their existing network infrastructure, the local authorities and national agencies will provide onward connection from the LA-PoPs to schools and other education sites within the local authority area. This ITT is concerned with the provision of routers for the LA-PoPs, the regional points of presence (R-PoPs) will be subject to a separate procurement.

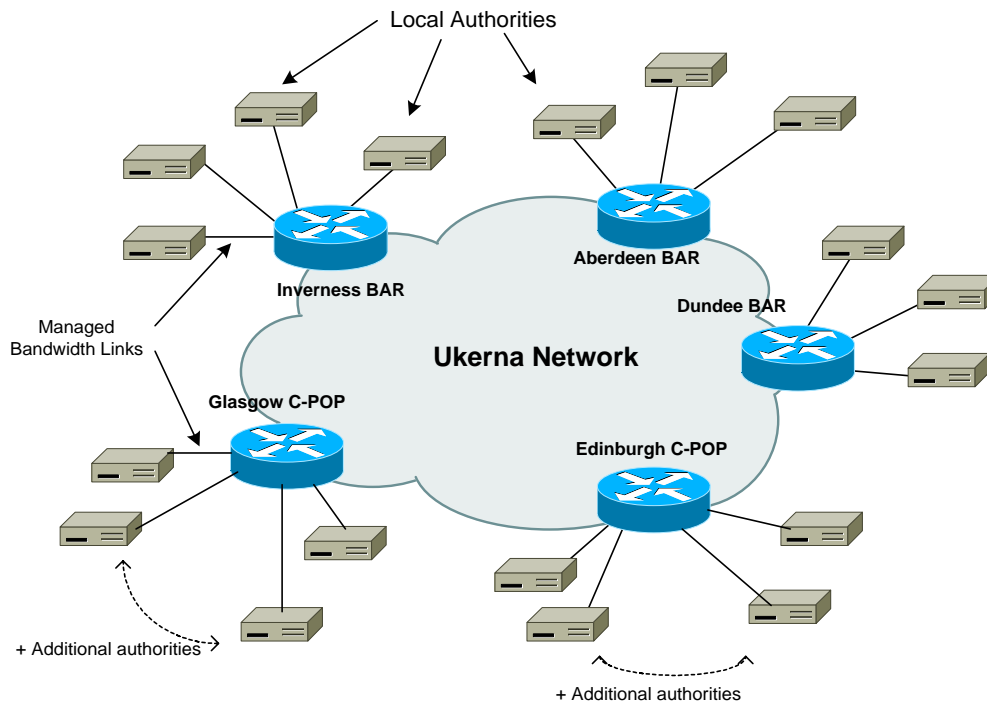
The network backbone will have R-PoPs located at the existing SuperJANET BAR sites at Aberdeen, Dundee and Inverness and at the SuperJANET C-POP sites in Edinburgh and Glasgow.

The elements of the network infrastructure are:

1. An **local authority access point of presence (LA-PoP)** in each local authority which will link to networks within the local authority;
2. Reliable **access links** to connect the LA-PoPs in local authorities to backbone R-PoPs at speeds ranging from 34Mbps to 155Mbps;
3. A **backbone** network providing high-bandwidth resilient connections between the R-PoPs which is the existing SuperJANET infrastructure in Scotland;
4. **Links** from the R-PoPs to existing SuperJANET BARs or C-POPs as appropriate that will be based on fibre operating Ethernet at Gigabit speed.

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

The following diagram illustrates the proposed structure.



The routers supplied will directly or indirectly connect each of the LA sites listed in Section 7 to an R-PoP. The R-Pops will be located at each of the BAR sites at Aberdeen University, Dundee University and the University of Highland and Islands Millennium in Inverness and at the SuperJANET C-PoPs in Edinburgh and Glasgow sites also listed in Section 7.

UKERNA has been commissioned to manage the operation of the infrastructure for the Scottish Executive Education Department and to be responsible for the levels of service and technical standards supplied.

The routers must be delivered and accepted and operational by the 31st July 2003.

Potential suppliers should note that this procurement is for the supply, configuration, installation and commissioning of IP routing equipment.

3. PROCUREMENT PROCEDURE

3.1 General Issues

All formal communication with suppliers over the course of the procurement will be handled or arranged by UKERNA.

The procurement is being conducted according to the Open Procedure of the EU Services Directive. Responses to this ITT will be accepted from any supplier, providing they conform to the requirements defined in sections 3.1 to 3.8.

Suppliers will be provided with clarification of our requirements in accordance with the EU directives on procurement. Suppliers may request a meeting, on an individual and confidential basis, to discuss any approach being considered and the likely consequences in terms of products offered and costs involved.

Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect

3.2 Registration

Suppliers are required to register their intention to submit a proposal. Each registration will be acknowledged with a printed copy of this document and allocated a registration number that should be quoted in the tender document and in any other correspondence.

Suppliers shall register their intention to bid by sending, to the address below, a request for "The Invitation to Tender for the Supply of the Spark Interconnect - Routing Equipment as announced in the EU Journal" by fax or letter on official headed notepaper or by email. Suppliers are asked to register as soon as they start to consider a response to this invitation to tender. In any case, suppliers **must** register before a proposal will be accepted and before requests for meetings will be considered.

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3.3 Electronic copy

An electronic copy of this ITT and the cost table templates are available on the World Wide Web at the URL http://www.ja.net/development/spark/spark_itt.html

3.4 Timetable

The steps and timetable for this procurement are as follows:

Activity	Date
Notice to European Journal	10 th March 2003
Closing date for ITT responses	Noon 30 th April 2003
Contract placed by	19 th May 2003
Delivery by	30 th June 2003
In service by	31 st July 2003

UKERNA reserves the right to vary this timetable if the need arises, within the constraints of the EU Services Directive.

Tenders will be expected to remain valid until 31st July 2003.

Clarification meetings will be used to ensure that suppliers fully understand the requirements in the ITT prior to responding and that UKERNA fully understands the suppliers' subsequent tender responses. Suppliers wishing to book a meeting should contact the primary contact given in section 3.2 above.

Where issues of clarification arise which are relevant to more than one supplier, these will be posted on the web site at the URL http://www.ja.net/development/spark/spark_itt.html and sent by e-mail to each supplier.

UKERNA will invite selected suppliers to tender response clarification meetings as necessary.

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

3.5 Evaluation

The contract will be awarded on the basis of the offer, which is the most economically advantageous. The main criteria to be used in determining which offer is the most economically advantageous, will be:

- a. The supplier's ability to meet the mandatory requirements;
- b. UKERNA's assessment of the supplier's ability to provide the equipment required based on the responses to the mandatory and information requirements;
- c. The overall cost to UKERNA of deploying the supplier's proposed equipment over the contract term.

The Scottish Executive Education Department and UKERNA reserve the right not to make an award for the required facilities.

3.6 Delivery of tenders

All copies of the tender documents, on paper and electronically, must be delivered on or before Noon on 30th April 2003 to the contact details listed in section 3.2.

SIX paper copies and one electronic copy of the tender including all cost tables must be delivered to the above address, sealed and clearly marked "**Routing Equipment for the Spark Interconnect**". The electronic copy should be in Word 97 or Word 2000 format for the main tender document and Excel 97 or Excel 2000 format for the Cost Tables. Electronic copies can be submitted on CDROM or 3.5" Floppy Disc, or by email. Any non-standard fonts used in electronic submissions must be embedded in the document.

Delivery of the tender by FAX is **not** acceptable.

Tenders submitted after the deadline will **not** be considered.

3.7 Format of tenders

The response to the specific requirements of the offered facilities must take the following format:

A. Management Summary

This section should be a single page summary describing the main points of the bid, and should summarise the total cost of each solution proposed, including all equipment, installation and maintenance options.

B. Description of Facilities Proposed

This section must describe the facilities proposed, using diagrams or illustrations where appropriate. The information required to satisfy all the specific requirements must be provided in this section with the exception of the requirements relating to the cost of the proposed facilities, which must be given in section C, below.

The response must address all the requirements both Mandatory Requirements (MR) and Information Requirements (IR) detailed in all sections of this ITT.

The order of replies to requirements (MR and IR) must be given in the same numerical order as they are stated in this document. The reference number and the text of the requirement to which it relates must precede each response.

C. Costs of Facilities Proposed

This section must clearly specify the cost of the proposed facilities as a spreadsheet workbook in the format as illustrated in section 6.2. An electronic copy of the spreadsheet is provided at the URL http://www.ja.net/development/spark/spark_itt.html

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

Paper copies of all completed spreadsheets must be appended to the response document.

The response must provide a detailed breakdown of the costs (excl. VAT) for the solution proposed. In addition to providing costs for a complete solution UKERNA requires that a price be given for each individual router configuration offered. These costs should be submitted on the Standard Router Specs spreadsheet provided.

3.8 Document notation

MRn A mandatory requirement.

A solution that does not meet all mandatory requirements will not be acceptable.

Suppliers must state how all requirements will be met, considering the issues and the points raised. **A statement of the form ‘this requirement will be met’ is not sufficient. Tenders must satisfy all mandatory requirements.** Failure to satisfy a mandatory requirement will exclude a tender from further consideration.

IRn An information requirement

The nature of this procurement is such that it is vital that suppliers provide full information on specific topics. These topics are identified as information requirements. Failure in a tender to provide full, relevant information in answer to information requirements may prevent the evaluation from being conducted properly, and hence lead to exclusion of the tender. Assessment of the quality of the tender will be based on the responses to these requirements, and will influence the selection process.

4. REQUIREMENTS FOR EVIDENCE OF COMPETENCE TO SUPPLY

4.1 Financial and Economic Standing

MR1. The supplier shall warrant that none of the following circumstances set out in Article 29 of EU directive 92/50/EEC apply to the supplier:

- [item (a)] is bankrupt or is being wound up, whose affairs are being administered by the court, who has entered into an arrangement with creditors, who has suspended business activities or who is in any analogous situation arising from a similar procedure under national laws and regulations.
- [item (b)] is the subject of proceedings for a declaration of bankruptcy, for an order for compulsory winding-up or administration by the court or for an arrangement with creditors or of any other similar proceedings under national laws or regulations.
- [item (c)] has been convicted of an offence concerning his professional conduct by a judgement which has the force of *res judicata*.

MR2. The supplier must provide evidence of financial and economic standing, as specified in Article 31 of EU directive 92/50/EEC using any or all of the methods described in paragraph 1 of Article 31.

4.2 Technical Capability and Experience

MR3. The supplier must provide evidence of skills, experience and reliability as specified in the following areas taken from paragraph 2 of Article 32 of EU directive 92/50/EEC:

- [item (d) of paragraph 2] A statement of the service provider’s average annual manpower and the number of managerial staff for the last three years.

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

- *[item (f) of paragraph 2] A description of the service provider's measures for ensuring quality. For this item, a copy of the supplier's ISO 9000 certificate will be adequate. If the supplier is not registered under ISO 9000, then a brief description of the policy used to ensure quality will be acceptable.*
- *[item (h) of paragraph 2] An indication of the proportion of the contract which the service provider may intend to sub-contract.*

IR4. The supplier is invited to supplement the information above with a brief description of their general capability to provide the services being offered.

4.3 References

MR5. The proposed product(s) must be capable of operating in a production network of a similar type and size to that outlined in section 2. The evidence used to support this may be drawn from manufacturer case studies and shall be presented in a summarised form.

IR6. The supplier is invited to provide details of customers to whom they have supplied the proposed products for similar projects. Contact details shall be provided, together with an indication of whether UKERNA may approach the contact directly or through the supplier.

5. REQUIREMENTS FOR THE OFFERED FACILITIES

5.1 Contract Form

UKERNA expects the supplier's standard form of contract to provide the starting point for any agreement.

Documents will have the following decreasing order of priority in determining resolution of any conflicts once a contract is in place:

1. The body of the contract
2. The schedules to the contract;
3. The supplier's response to this ITT, as modified by any written clarifications and amendments;
4. Ancillary information supplied with the supplier's response

MR7. The supplier must indicate that they will accept a contract under English law, and the principle and order of the document priority listed above.

5.2 Delivery

The successful supplier will be expected to sign a contract by no later than 9th May 2003. All routing equipment will need to be delivered, installed, configured, tested, made ready for service by the supplier and accepted by UKERNA no later than 31st July 2003

UKERNA will seek contractually enforceable penalty payments to ensure that all reasonable costs incurred by us as a result of late delivery can be reclaimed from the supplier.

MR8. The supplier shall warrant that, subject to a contract being placed by 9th May 2003, it will be able to deliver (i.e. install and prove operability of) the offered facilities before 31st July 2003.

MR9. The supplier shall agree with UKERNA the acceptance tests that will need to be carried out in order to prove that the installation of the routers has been carried out properly. The supplier will be required to carry out these acceptance tests and to provide all test results to UKERNA.

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

IR10. The supplier shall provide details of the penalty payments/credits to which they will contract in the event of late delivery or installation.

5.3 IP routing technology

The supplied equipment will be used to implement a routed IP-based network providing a robust, high-speed, low-latency IP routing capability.

There will be two types of router within the network - core routers located at the R-PoPs (to be procured separately by UKERNA) and access routers located at the LA-PoP locations (the subject of this ITT). The key functionality of the core routers is the ability to route high volumes of traffic at line rates on all interfaces.

*MR11. An IP router must be provided at every local authority access point at each of the local authority premises listed in section 7.1. In addition to the interface connected to the access link, these **access routers** must provide at least two routed interfaces, capable of full operation at the minimum bandwidth specified, for connection to the local authority network. The bandwidth requirements are listed in section 7.3. Generic router specifications are defined in section 5.7. UKERNA will require the following number of routers:*

<i>Option A</i>	<i>17 routers</i>
<i>Option B</i>	<i>5 routers</i>
<i>Option C</i>	<i>9 routers</i>
<i>Option D</i>	<i>6 routers</i>

IR12. The supplier shall provide the following information about the interfaces in each of the proposed routers:

- number of interface slots in each of the proposed routers;*
- maximum number of interfaces that can be operational in the proposed routers;*
- constraints on mixing different interface types in the proposed routers;*
- constraints on the number of operational interfaces due to addition of router resilience/redundancy features.*

IR13. The supplier shall list other interfaces supported on the proposed routers.

5.4 Multicast and IP Routing Facilities

UKERNA is interested to know what the specification is for the routers that are being proposed for the Spark network. Suppliers are therefore requested to fully answer the Information Requirements in this section in order that the proposed router capabilities are well understood by UKERNA.

IR14. The supplier shall indicate whether the proposed routers supports the following IP routing protocols:

- OSPF;*
- ISIS;*
- BGP4 with support for private ASs, confederations, route reflectors and multiprotocol extensions.*

IR15. The suppliers shall state all other IP routing protocols supported by their proposed solutions.

IR16. The supplier shall indicate whether the proposed routers supports IP multicasting

- using Sparse Mode Protocol Independent Multicast - PIM-SM ;*

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

- *Multicast Address Family Extensions to BGP 4*
 - *MSDP*
- IR17. Suppliers are asked to provide details of the IP traffic management features that are supported on the proposed routers. UKERNA is interested in enabling the provision of IP guaranteed bandwidth and Quality of Service, thereby providing the capability of offering different classes of service.*
- IR18. The supplier must state how classes of service (ranging from guaranteed bandwidth to best effort) can be implemented using the proposed routing platform(s).*
- IR19. The supplier shall confirm that the proposed routers supports H.323 traffic.*
- IR20. The suppliers shall provide a summary of the IP traffic management and QoS features supported on the proposed platforms and summarise any development plans, with timescales, in this area. In particular the supplier shall provide information on the following:*
- *QoS using techniques to: mark packets; place packets into queues that are given a weighted priority; network signalling to 'reserve' network capacity for end-to-end QoS; match traffic to available network capacity (traffic shaping), network congestion anticipation;*
 - *Traffic engineering using MPLS.*
 - *Traffic engineering using DiffServ.*
 - *The impact on performance of the proposed routers when Quality of Service mechanisms are used should be described.*
- MR21. The proposed access routers must support the ability to filter packets by address or application per interface and to log all of these activities. The supplier must confirm that this is supported and provide details on the impact that doing this has on the performance of the proposed core and access routers.*
- IR22. The supplier shall provide details of the security features supported on the proposed routers. In particular, the following features must be covered:*
- *security of clients - (application proxying and address translation);*
 - *security of the routing plane - (encryption and signing of routing protocols);*
 - *security of the router itself - (encryption and authentication mechanisms for management access to the router).*
- IR23. During the lifetime of the routers support for IP version 6 may be required. The supplier shall state the current status of support for IP version 6 on the proposed router platform(s) and summarise the roadmap, with timescales, for its development.*
- MR24. The supplier shall provide all routers with chassis space for more interface cards, and confirm that additional high-speed interfaces, running at a minimum of 34Mbps, can be added in the future.*
- IR25. The supplier shall provide full details of the router models proposed. These details should include:*
- *make, model number;*
 - *hardware configuration;*
 - *upgradability (spare slots, other interfaces supported, etc.);*
 - *Maximum capacity (interfaces etc)*
 - *performance characteristics.*

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

- *Throughput specifications of routers*

5.5 IP network reliability

High levels of reliability and resilience are important, especially on the backbone. UKERNA requires 99.9% reliability from the IP routing infrastructure, with long intervals between hardware faults and the need to reload router software or configuration. Features influencing this requirement include router hardware and software reliability, recovery from IP routing changes, load sharing capabilities, redundant hardware modules etc.

- IR26. *Reliability of equipment is important to UKERNA. Suppliers are asked to provide figures for Mean Time Between Failures (MTBF) for the configurations that the solution that they propose.*
- MR27. *The supplier shall confirm that a redundant power supply unit is included in the proposed routing equipment and confirm if any external equipment is required to provide this feature.*
- MR28. *All interface cards must be hot swappable so that they can be replaced as required with the least possible disruption to the production service. Any service disruption should be stated*

5.6 Management and Monitoring

UKERNA has a requirement to monitor the operation of the network and may decide to carry out management at the level of router configuration. UKERNA intends to use out of band facilities for both management and monitoring functions by accessing the Routers by means of an ISDN Basic Rate Interface.

- MR29. *The supplier shall confirm that UKERNA operations staff can monitor the network. These must include, but need not be limited to:*
- *monitor link status;*
 - *monitor router status;*
 - *pinpoint failures in the network;*
 - *monitor traffic levels.*
- IR30. *The supplier shall provide the technical data sheets for the configurations proposed in order that UKERNA can confirm that the routers can be properly managed by UKERNA operations staff.*
- IR31. *The supplier shall provide details of the ways in which the proposed network components can be assessed by UKERNA for the purposes of monitoring and management and shall include both in band and out of band (using ISDN) approaches.*
- IR32. *The supplier shall provide details of any traffic accounting and billing features on the proposed routers. Suppliers must also provide details on strategies for collecting statistics on each interface. Suppliers must provide an indication of the impact of billing on router performance.*
- MR33. *The supplier shall specify whether management of the facilities of the proposed routers can only be fully achieved through the manufacturers management system or identify other management platforms into which it can be integrated without loss of features.*

5.7 Generic Router configurations

The circuit bandwidths give in Section 7.3 are provisional until the procurement of the communication circuits has been completed. UKERNA intends to confirm these figures as soon as possible. In order to allow for any variations in link specifications it will be helpful to have the individual costs for the router configurations to be itemised. It is anticipated that there will be a

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

limit to the router specification based on the link type and the connection to the LAN. UKERNA intends to use an ISDN interface on the routers to gain access to the routers management system to perform 'Out of Band' maintenance and configuration.

UKERNA wishes to keep the number of variations of routers supplied to a minimum. UKERNA considers the following WAN/LAN/Management interface combinations to be required.

	LAN Mbps (Ethernet)	WAN Mbps	Management Interface
Option A	100	34 (E3)	BRI ISDN
Option B	100	45 (T3)	BRI ISDN
Option C	100	100	BRI ISDN
Option D	1Gbps (Fibre Optic)	155 (STM 1)	BRI ISDN

MR34..... Suppliers are requested to provide prices for 17 Option A routers, 5 Option B routers, 9 Option C routers and 6 Option D routers. These should be submitted on the Spreadsheet called Standard Router Specs as provided.

5.8 Maintenance

UKERNA has an existing maintenance contract for all of the routers on the JANET network. UKERNA therefore reserves the right to decide how to maintain the routers that are being purchased as part of this ITT procedure. It may wish to include them on the existing maintenance contract or it may decide to maintain them via the supplier. In order to assist in this decision suppliers are asked to provide information on what their maintenance arrangements are for their equipment.

- IR35. The supplier shall provide information on what maintenance cover they could provide on all equipment for the duration of the contract.*
- IR36. Suppliers are asked to quote what fix time they would be prepared to commit to for all reported faults relating to all routing equipment.*
- IR37. The supplier shall provide details of all warranty and maintenance options and associated costs.*

5.9 Documentation

MR38. The supplier shall provide comprehensive and comprehensible English documentation on the routing equipment. Documentation must be available in hardcopy as well as on CD or available via the Internet. The supplier must also provide at least one hardcopy or electronic copy of all relevant documents for each set of routing equipment at the time of delivery and must detail in their proposal a list of documentation to be supplied.

5.10 Installation

- MR39. The supplier shall commit to installing the routers at each of the locations and to connect to the network. UKERNA anticipates that this will involve one visit per location. The routers will be configured in conjunction with UKERNA's staff. UKERNA's staff will specify a standard configuration with a list of router names and /30 addresses. UKERNA will prioritise the order in which the routers are installed to ensure that the relevant connections are in place prior to installation.*
- MR40. The supplier shall carry out all of the pre-stage testing and will be responsible for building the systems.*

Invitation To Tender for the Supply of Routing Equipment for the Spark Interconnect

5.11 Safety

IR41. Suppliers must provide information on any properties of their proposed equipment that may have safety implications, e.g. microwave or laser radiation. Suppliers should state what precautions would need to be taken, or operational procedures adopted, by institutions or organisations where equipment is sited.

5.12 Standards

MR42. Under the terms of the EU Council Decision 87/95/EEC (on standardisation in the field of information technology and telecommunications), where European standards or pre-standards or international standards have been agreed for the facilities proposed, the facilities must meet these standards. The supplier must state which standards apply to their proposed facilities and which of these standards the proposed facilities meet.

6. COSTS

6.1 Contract term and payment

The tender will cover the supply, installation, and configuration of routers. All costs, including equipment costs, for the supply of the proposed facilities must be included in the **Total Tender Cost**. Costs that appear elsewhere in the tender but are not included in the **Total Tender Cost** will be deemed to have been waived.

If UKERNA finds it necessary to place some interpretation on any aspect of the total tender cost, UKERNA will seek confirmation of our interpretation with the supplier. The **Total Tender Cost** is to be indicated in a particular format as specified below, in section 6.2.

*MR43. The supplier shall provide the **Total Tender Cost** at current sterling prices excluding VAT and any other duty. Costs must be supplied for each and every solution proposed in a tabular form using the appropriate template in section 6.2. The costs of routers must also be provided according to the types of routers proposed for each solution. The costs of all other associated equipment and items such as installation, which form part of each solution proposed, must also be itemised clearly.*

IR44. The supplier shall provide the cost for maintaining the routers over a three year period using the appropriate template in section 6.2.

MR45. The supplier shall indicate on which elements of the tender VAT or any other duty is applicable.

Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect

6.2 Cost Table Templates

Suppliers shall use the template spreadsheets provided to show costs. The MS Excel spreadsheet can be obtained from: <http://www.ukerna.ac.uk/spark-procurement>. The sheets are interdependent. The supplier should provide each proposed solution as a complete spreadsheet “workbook”. Examples of the workbook sheets are illustrated in the following sections.

Unshaded fields are available for data entry; all other fields are locked. The supplier should start by completing the Summary sheet. The supplier should then complete each of the other sheets as appropriate. The Total Tender Cost will be calculated on the Summary sheet automatically. The costs of Options are not included in the Total Tender Cost on the Summary sheet.

6.2.1 Summary of Total Costs

ITT for Supply of the Spark Interconnect – Routing Equipment			
Summary of Total Costs			
Supplier:		<input style="width: 100%;" type="text"/>	
Registration Number:		<input style="width: 100%;" type="text"/>	
Solution Number:		<input style="width: 100%;" type="text" value="1"/>	
Delivery Date:		<input style="width: 100%;" type="text" value="20th June 2003"/>	
In Service Date:		<input style="width: 100%;" type="text" value="31st July 2003"/>	
	Year 1	Year 2	Year 3
Access Routers	£0.00		
Maintenance	£0.00	£0.00	£0.00
Totals	£0.00	£0.00	£0.00
Note Enter Data in white Cells only			

Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect

6.2.2 Access Routers (Partial Sheet Shown)

ITT for Supply of the Spark Interconnect – Routing Equipment - Standard Specs							
Access Router Schedule and Costs							
		Supplier: <input type="text" value="0"/>	Solution Number: <input type="text" value="0"/>				
		Registration Number: <input type="text" value="0"/>					
		Delivery Date: <input type="text" value="20th June 2003"/>					
Router Option See Section 5.7	Router Manufacturer	Router Model	Detailed Router Specification - Chassis and Card details required	Purchase Cost	Annual Maintenance Cost		Quantity
1	A			£0.00	£0.00		17
2	B			£0.00	£0.00		5
3	C			£0.00	£0.00		9
4	D			£0.00	£0.00		6
						Total	37
Note to Tenderers							
Note Enter Data in white Cells only							
Summary of Total Costs							
				Purchase Cost	Annual Maintenance		
A				£0.00	£0.00		
B				£0.00	£0.00		
C				£0.00	£0.00		
D				£0.00	£0.00		
Total Costs				£0.00	£0.00		

Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect

7. LOCATIONS OF SITES FOR DELIVERY OF ROUTING EQUIPMENT

The following tables give the location of each of the sites for delivery and installation of routing equipment. Where more than one address is given the correct address will be confirmed once a supplier is selected.

Local Authority locations		
Aberdeen City Council 6 th Floor Centre St Nicholas House Broadstreet Aberdeen AB101AY	Aberdeenshire Council Education Department Headquarters Woodhill House Annex Westburn Road Aberdeen, AB165GB	Angus Council County Buildings Market Street Forfar DD83WE
Argyll & Bute Council 64a John Street, Helensburgh, G848JX	Clackmannanshire Council Click Learning Centre Market Street Alloa FK101HR	Comhairle Nan Eilean Siar Sandwick Road Stornoway Isle of Lewis HS12BW
Dumfries and Galloway Council Data Room, IS Dept Carruthers House Council HG English Street Dumfries DG12HP	Dundee City Council Tayside House Crichton Street Dundee, DD13RZ	East Ayrshire Council Education Department London Road Centre London Road Kilmarnock, KA3 7BU
East Dunbartonshire Council Tom Johnstone House Civic Way Kirkintilloch G66 4TJ	East Lothian Council John Muir House Haddington EH41 3HA	East Renfrewshire Council St Johns Primary School Commercial Road Barhead Glasgow G781AJ
Edinburgh Council, City of Chesser House 500 Gorgie Road Edinburgh EH11 3AJ or Capital Exchange, 357 Gorgie Road, Edinburgh EH11 2RW	Falkirk Council Municipal Buildings Falkirk FK1 5RS	Fife Council Computer Centre North Street Glenrothes Fife KY7 5LT

Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect

Glasgow Council, City of Education Services Nye Bevan House 20 India Street Glasgow G2 4PF	Highland Council Longman Industrial Estate Inverness IV1 1ST Or Drummond School, Drummond Road, Inverness IV2 4NZ Or Council HQ, Glenurquhart Road, Inverness IV3 5NX Or Caledonia House, 63 Academy Street, Inverness IV1 1LU	Inverclyde Council Municipal Building Greenock PA15 1LY
Midlothian Council Greenhall Education Centre Gorebridge Midlothian EH234PE	Moray Council Elgin High School, High School Drive, Elgin, IV30 6UD	North Ayrshire Council Department of Education Cunninghame House Friar's Croft Irvine KA12 8EE
North Lanarkshire Council Education Computer Centre, Towers Road, Aidrie, ML6 8PG	Orkney Islands Council Kirkwall Orkney KW15 1NY	Information Systems & Technology Perth & Kinross Council Carpenter House Carpenter Street Perth PH1 5LZ
Renfrewshire Council Education Services North Building Cotton Street Paisley PA1 1LE	Scottish Borders Council Regional Headquarters Newton St Boswells Melrose TD6 0SA	Shetland Islands Council ICT Centre Garthspool Lerwick ZE1 0NY
South Ayrshire Council Department of Educational Services County Buildings Wellington Square Ayr, KA7 1DR	South Lanarkshire Council Education Service WAN Centre SLC Depot Pollock Avenue Hamilton ML3 9FZ	Stirling Council Viewforth Stirling FK8 2ET
West Dunbartonshire Council Regional Offices Garshake Road Dumbarton G82 3PU	West Lothian Council West Lothian House, Almondvale Boulevard, Livingston, EH54 6QG	

**Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect**

National Agencies Locations		
Learning and Teaching Scotland 74 Victoria Crescent Glasgow G12 9JN	Learning and Teaching Scotland Gardyne Road Dundee DD5 1NY	Scottish Qualification Authority Hanover house 24 Douglas Street Glasgow G2 7NQ
Scottish Qualifications Authority Ironmills Road Dalkieth Midlothian EH22 1LE	The SEEMIS Group Hope Street Hamilton ML36BR	

Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect

8. LA-PoP – R-PoP Proposed Link Bandwidths

R-PoP/C-PoP	LA Connected	Bandwidth Required (Mbps)
Aberdeen R-PoP	Aberdeen City Council	100
	Aberdeenshire Council	100
Dundee R-PoP	Dundee City Council	100
	Angus Council	34
	Perth and Kinross Council	155
	Learning and Teaching Scotland	100
Edinburgh C-PoP	Clackmannanshire Council	34
	Edinburgh City Council	100
	East Lothian Council	34
	Falkirk Council	34
	Fife Council	155
	Midlothian Council	34
	Scottish Borders Council	45
	West Lothian	45
SQA (Dalkieth)	34	
Glasgow C-PoP	Dumfries and Galloway	155
	East Ayrshire Council	34
	East Dumbartonshire Council	34
	East Renfrewshire Council	100
	Glasgow City Council	155
	Inverclyde Council	34
	North Ayrshire Council	34
	North Lanarkshire	100
	Renfrewshire Council	45
	South Ayrshire Council	34
	South Lanarkshire Council	155
	Stirling Council	34
	West Dumbartonshire Council	34
	Learning and Teaching Scotland (Glasgow)	100
	SQA (Glasgow)	100
SEEMIS	45	

**Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect**

Inverness R-PoP	Comhairle Nan Eilean Siar Council	34
	Shetland Islands Council	34
	Highland Council	155
	Moray Council	34
	Orkney Council	34
	Argyll and Bute	45

Invitation To Tender for the Supply of
Routing Equipment for the Spark Interconnect

9. ADDITIONAL INFORMATION

Scottish Executive	http://www.scotland.gov.uk/
spark	http://www.spark.gov.uk
JANET	http://www.ja.net/
SuperJANET	http://www.ja.net/superjanet/
JANET Multicast	http://www.ja.net/development/multicast/