



UKLight Dark Fibre

## Operational Requirement

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

Any supplier wishing to submit a proposal must register its intent with UKERNA before submitting the proposal. UKERNA will not accept proposals from suppliers who have not registered according to the procedure described in this document.

**UKERNA will not accept any registrations after 29<sup>th</sup> September.**

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Authorised	Name: Jeremy Sharp Position: Head of Strategic Technologies	Signature:  Date:
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## 1. INTRODUCTION

This document is the *Operational Requirement (OR)* for the provision of a Dark Fibre network.

The procurement process will be managed according to the open procedure as specified by the European Procurement Services Directive, 2004/18/EC, and this document is an integral part of the open procurement announced by UKERNA in the Supplement to the Official Journal of the European Union.

### 1.1 The Contracting Authority and the Procurement Agent

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

### 1.2 JANET

JANET is the wide-area network that was created in 1984 to serve the needs of the higher education and research sector in the United Kingdom.

JANET provides services to all Higher Education Institutions, Further Education Colleges and Research Council establishments in the UK. The network also provides services to Adult and Community Learning and Specialist Colleges, Schools Networks and various research institutes. JANET has grown from an X.25 based network in 1984 connecting 50 sites, to an IP based network today with more than 1000 direct connections available to a community of 18 million users. "SuperJANET" is the name given to the national core backbone of JANET, which currently operates at 10Gbit/s, with access links at mostly 2.5Gbit/s to 19 regional networks. The regional networks operate under contract to UKERNA to deliver JANET to Higher Education Institutions, Further Education Colleges and Research Council establishments. The current version of the backbone is SuperJANET4. The rollout of its successor, SuperJANET5, is underway and will be completed by the end of 2006.

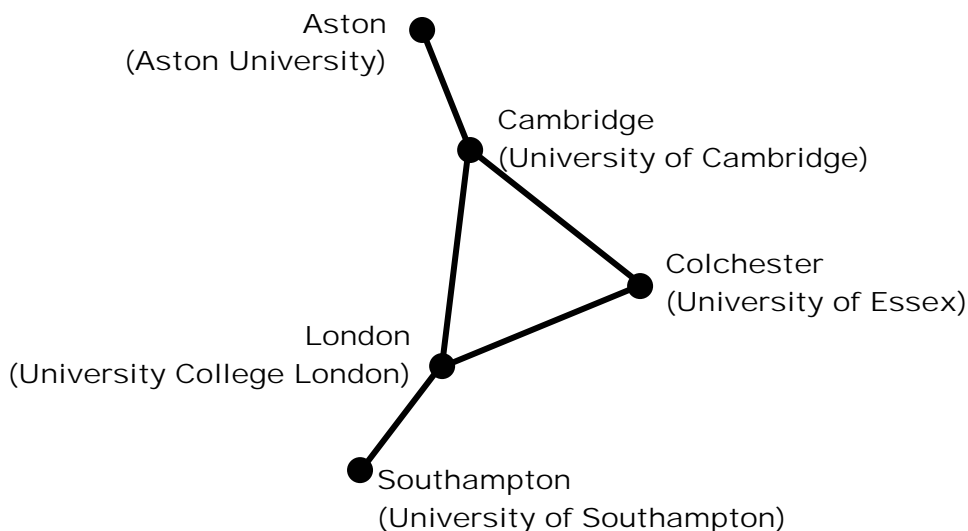
UKERNA is responsible for providing JANET through a service level agreement with the Joint Information Systems Committee (JISC) of the Higher Education Funding Council for England; the Learning and Skills Council; the Scottish Higher Education Funding Council; the Scottish Further Education Funding Council; the Higher Education Funding Council for Wales; the National Council for Education and Training for Wales; and the Department for Employment and Learning in Northern Ireland.

## 2. OVERVIEW OF THE FACILITIES REQUIRED

### 2.1 UKLight Dark Fibre Project

This project aims to interconnect up to five sites (details below) to provide a dark-fibre network as a research platform for University Research groups and collaborating partners. This will not form a “production standard” data transport network, but it is required to be a stable infrastructure to support research projects. The network is not required to be resilient and there is no specific relationship to the SuperJANET5 network, in particular fibre-paths are not constrained in any way by existing JANET infrastructure and may be considered completely independently. The diagram below shows the required network topology which is a triangle with two spurs. The ideal solution would be to implement the network as shown, but budget constraints may not permit this so costs for each segment of the network should be provided. Suppliers may bid separately for individual fibre segments, but UKERNA reserves the right not to proceed with procurement if it is not possible to build a viable topology from the offers available. Access to the fibres is required for a two year period, with an option to extend on an annual basis for a further two years at UKERNA’s request.

Research groups will connect their equipment directly to the fibres to undertake their work, and will require access to intermediate locations along fibre-spans where equipment might be located. This would typically be used for installing amplification equipment, perhaps with some co-located monitoring equipment and access to a network connection to enable the equipment to be managed remotely. University project staff would need to gain access to these locations reasonably easily for equipment installation and maintenance. Suppliers should describe any access mechanisms and procedures which will be used to manage access to these locations. Should access be required then this must be possible in a flexible and timely manner, ideally less than three working days.



### 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.

Responses to this OR will be accepted from any supplier providing it conforms to the requirements defined in this section 3.

#### 3.2 Registration

Suppliers are required to register their intention to submit a tender. 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 “UKLight Dark Fibre 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.

Procurement Co-ordinator UKERNA Atlas Centre Chilton, Didcot Oxfordshire OX11 0QS UK	Telephone: +44 (0)1235 822 341 Fax: +44 (0)1235 822 286 E-mail: <a href="mailto:Procurement@ukerna.ac.uk">Procurement@ukerna.ac.uk</a>
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#### 3.3 Electronic copy

An electronic copy of this OR is available on the World Wide Web at the URL <http://www.ja.net/latest/itt/uklight-darkfibre.html>

#### 3.4 Clarifications on the requirements

Suppliers will be provided with clarification of UKERNA’s requirements in accordance with the EU directives on procurement.

Suppliers should raise any issues of clarification with the Procurement Co-ordinator whose contact details are 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/latest/itt/uklight-darkfibre.html>

and sent by e-mail to each registered supplier. Suppliers should submit all clarification requests by 29<sup>th</sup> September 2006 because UKERNA cannot guarantee to answer any clarifications that are submitted after this time.

#### 3.5 Timetable

The steps and timetable for this procurement are as follows:

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Activity	Date
Notice to European Journal	16 <sup>th</sup> August 2006
Final date for registration	29 <sup>th</sup> September 2006
Final date for clarifications	29 <sup>th</sup> September 2006
Closing date for tenders	12:00 Noon on 6 <sup>th</sup> October 2006
Selection of preferred supplier	27 <sup>th</sup> October 2006
Contracts placed by	15 <sup>th</sup> December 2006
Service Commencement date	30 <sup>th</sup> March 2007

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 for six months after tender submission.

UKERNA may invite suppliers to attend tender clarification meetings if required.

### 3.6 Evaluation

The contract will be awarded on the basis of the offers that are the most economically advantageous. The main criteria to be used in determining which offers are the most economically advantageous will be, in order of decreasing importance:

- The supplier's ability to meet the mandatory requirements;
- Preference will be given to suppliers who can provide a complete package of fibre-segments for the lots in the core triangle, (lots A, B, C), or the full set of lots A-E.
- Capital and recurrent costs.
- Supplier's ability to add value to the overall package, e.g. inclusion of a second pair of fibres between locations within the budget available.
- UKERNA's assessment of the supplier's ability to provide the Dark Fibre network on a timely manner based on the responses to the mandatory and information requirements.

UKERNA reserves the right not to award a contract.

### 3.7 Delivery of tenders

All copies of the tender documents, both paper and electronic, must be delivered on or before 12:00 Noon on the date specified in section 3.5 above and to the contact listed in section 3.2.

**ONE paper copy and five electronic copies** of the tender documents are required. The electronic copies should be provided in PDF format with the exception of spreadsheets which should be provided in Excel 97 or 2000 format. Any non-standard fonts used in electronic submissions must be embedded in the document. Each electronic copy should be provided on an individual CD-ROM.

All tenders must be clearly marked "**UKLight Dark Fibre**" and returned in a sealed, plain package that does not identify the supplier. Any tender that identifies the supplier in any way will be deemed invalid.

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

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

### 3.8 Format of tenders

The response to the specific requirements must take the following format:

#### A. Management Summary

This section should be a single page summary describing the main points of the bid.

#### B. Description of Services Proposed

This section must describe the services proposed and provide all the specific information requested in this OR.

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

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.

### 3.9 Document notation

*MR<sub>n</sub>* 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 may exclude a tender from further consideration.

*IR<sub>n</sub>* An information requirement

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.

#### Variants

The term “variant” is used to describe one of a number of alternative solutions specified for achieving a particular requirement and where a priced solution for each alternative is required. The variants available are tabulated below.

Variant Number	Section Reference	Variant Description	Mandatory for Suppliers to offer the variant
1	5.2	For Lot D, if it would be simpler or more economical to connect Aston to a location other than Cambridge, then this would be permitted and suppliers should state which other site would be used and provide corresponding responses to individual MRs and IRs for this lot.	No

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Variant Number	Section Reference	Variant Description	Mandatory for Suppliers to offer the variant
2	5.2	For Lot E, if it would be simpler or more economical to connect Southampton to a location other than London, then this would be permitted and suppliers should say which other site would be used and provide corresponding responses to individual MRs and IRs for this lot.	No

### 3.10 Freedom of Information

UKERNA is subject to the provisions of the Freedom of Information (FOI) Act. If a supplier considers that any information supplied by them is either commercially sensitive or confidential in nature, this should be highlighted and the reasons for the sensitivity given. In such cases, the relevant material will in response to FOI requests be examined in the light of the exemptions provided in the FOI Act.

## 4. REQUIREMENTS FOR EVIDENCE OF COMPETENCE TO SUPPLY

### 4.1 Financial and Economic Standing

*MRI.....The supplier must warrant that none of the following circumstances set out in Article 45 of EU directive 2004/18/EC applies to the supplier:*

- *{item 2(a)} is bankrupt or is being wound up, where his affairs are being administered by the court, where he has entered into an arrangement with creditors, where he has suspended business activities or is in any analogous situation arising from a similar procedure under national laws and regulations;*
- *{item 2(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 2(g)} is guilty of serious misrepresentation in supplying the information required under this section or has not supplied such information.*
- *{item 2(h)} has been the subject of a conviction for participation in a criminal organisation, as defined in Article 2(1) of Council Joint Action 98/733/JHA.*
- *{item 2(i)} has been the subject of a conviction for corruption, as defined in Article 3 of the Council Act of 26 May 1972 and Article 3(1) of Council Joint Action 98/742/JHA3 respectively.*
- *{item 2(j)} has been subject of a conviction for fraud within the meaning of Article 1 of the Convention relating to the protection of the financial interests of the European Communities.*
- *{item 2(k)} has been the subject of a conviction for money laundering, as defined in Article 1 of Council Directive 91/308/EEC of 10<sup>th</sup> June 1991 on prevention of the use of the financial system for the purpose of money laundering.*

MR2.....*The supplier must provide evidence of financial and economic standing, as specified in Article 47 of EU directive 2004/18/EC using any or all of the methods described in paragraph 1 of Article 47.*

## 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 48 of EU directive 2004/18/EC:*

- *{item (a) of paragraph 2 (ii)} a list of the principle deliveries effected or the main services provided in the past three years, with the sums, dates and recipients, whether public or private, involved. Evidence of delivery and services provided shall be given – where the recipient was a contracting authority, in the form of certificates issued or countersigned by the competent authority; where the recipient was a private purchaser, by the purchaser's certification or, failing this, simply by a declaration by the economic operator;*
- *{item (b) of paragraph 2} an indication of the technicians or technical bodies involved, whether or not belonging directly to the economic operator's undertaking, especially those responsible for quality control.*
- *{item (c) of paragraph 2} a description of the technical facilities and measures used by the supplier or service provider for ensuring quality and the undertaking's study and research facilities;*
- *{item (e) of paragraph 2} the educational and professional qualifications of the service provider or contractor and/or those of the undertaking's managerial staff and, in particular, those of the person or persons responsible for providing the services or managing the work;*
- *{item (g) of paragraph 2} a statement of the average annual manpower of the service provider or contractor and the number of managerial staff over the last three years;.*
- *{item (h) of paragraph 2} a statement of the tools, plant or technical equipment available to the service provider or contractor for carrying out the contract;*
- *{item (i) of paragraph 2} an indication of the proportion of the contract which the services provider intends possibly to sub-contract.*

MR4.....*Suppliers must provide a description of their measures for ensuring quality as indicated in article 49 of 2004/18/EC. 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.*

IR5.....*The supplier shall supplement the information above with a brief description of its general capability to provide the services being offered.*

## 5. REQUIREMENTS FOR THE OFFERED SERVICE

### 5.1 Contract Form

UKERNA expects that UKERNA's standard form of contract will provide the starting point for any agreement. This will be provided to suppliers upon registration.

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;

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2. The schedules to the contract including UKERNA's standard Terms and Conditions;
3. The supplier's response to this OR, as modified by any written clarifications and amendments;
4. Ancillary information supplied with the supplier's response

*MR6.....The supplier must indicate that it will accept a contract under English law, and the principle and order of the document priority listed above.*

*MR7.....The supplier must state that it will deliver the Dark Fibre Network Service on or before the dates indicated in the timetable in section 3.5. A project plan showing how this will be achieved must be submitted.*

*MR8.....The supplier must confirm that it will accept UKERNA's standard form of contract as the basis for provision of the Dark Fibre Network Service.*

*IR9.....The supplier shall highlight any material issues arising from UKERNA's standard form of contract which it would wish to raise if it were to be invited to conclude an agreement.*

### 5.2 Detailed technical requirements

The following sections provide detail on the specific requirements for the UKLight Dark Fibre Network.

#### Topology / Fibre Segments

The ideal topology of the Dark Fibre network was described in section 2. This does not mandate a particular physical implementation, for example if no direct path was to be available between London and Cambridge, then it would be acceptable to implement this using Colchester as an intermediate location, although in general the most direct paths will be preferred for technical reasons and to minimise liability for rates payable on fibres. This principle can be applied to any of the lots below. The most important criterion will be to achieve the required connections between the sites, and variants have been allowed to permit greater flexibility in responding to the requirements

*MR10.....Fibre segments*

*Fibre segments are required between the following locations and these are tabulated as individual lots below. (addresses for the locations are given in Annex A):*

<b>Lot</b>	<b>Fibre segment end-points</b>	
A	Cambridge	London
B	Cambridge	Colchester
C	Colchester	London
D	Aston	Cambridge
E	Southampton	London

*Initially priority will be given to the core sites on the triangle - Lots A, B and C connecting Cambridge, Colchester and London - if budgets permit, then the network will be extended to include Lots D and E - Aston and Southampton.*

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*Each segment will be treated as a separate lot, and suppliers may offer solutions for any combination of lots, but preference will be given to suppliers who offer a complete sets of lots for the core triangle (lots A,B and C) or the full set of lots A-E.*

*Suppliers must describe which lots they are offering and provide the following information about the fibre segments for each lot offered.*

- *Total Fibre segment length*
- *A map showing the route taken by the fibre segment*
- *Locations and distances between any intermediate access points and amplification stations – these should be marked on the map*

*Costs for each segment offered should be provided using the spreadsheet provided as described in section 6.*

*If no acceptable network can be constructed within the budget from the ensemble of segments offered from all suppliers, then UKERNA reserves the right not to proceed with the procurement.*

### *MR11.....Variants*

*If for whatever reason it is simpler or more economical to connect Aston or Southampton to sites on the core triangle other than those indicated above, then costs and connection details should be provided for these variants. Suppliers do not have to offer variants, but if they choose to then they must describe the variant being offered as noted in section 3.9, and provide costs as described in section 6.*

### **Fibre Type**

Section 2 of this document describes the background to this project, and that a true “dark fibre” network is required to enable the research groups to undertake their work. No amplification will be required as part of this procurement, and it is essential that there is no active equipment on any of the fibre segments. Research groups will attach their own equipment to the fibres, and if necessary will install their own equipment (such as optical amplifiers) at the intermediate locations.

*MR12.....Optical fibre conforming to the ITU-T G.652 recommendation is UKERNA’s preferred fibre type. Suppliers must state the type of fibre offered for each fibre segment.*

*MR13.....Suppliers must state the fibre attenuation expected for each path offered.*

*MR14.....Suppliers must confirm that each fibre path is completely dark with no intermediate equipment between end points (other than fibre inter-connection points).*

### **Intermediate Access points**

*MR15.....Equipment co-location facilities will be required at intermediate access points along each fibre-span. Typically projects would want to install their own amplification equipment on the fibres. Suppliers must confirm that these facilities will be available to UKERNA and members of the university research project teams.*

*MR16.....Suppliers shall describe the nature of each co-location facility, including how much space would be available for equipment (up to 1 rack may be required) and whether it is possible to extend this if space requirements increase.*

IR17.....Suppliers shall describe any environmental considerations at each facility.

IR18.....Suppliers shall describe the power supplies available at each facility.

MR19.....Facilities for remote management of equipment may be required. Suppliers must state what facilities are available for remote equipment management at each intermediate access point. e.g. is there telecommunications access (e.g. circuits, IP network access).

IR20.....Flexible and timely access to intermediate points will be required. Suppliers must state what mechanisms and procedures would be used for gaining access to these locations.

IR21.....Suppliers shall state how rapidly access to intermediate points could be obtained. Ideally UKERNA would like to obtain access within three working days of a formal request.

IR22 .....Suppliers shall state the distances between access points along all fibre paths offered. If possible these should be at a maximum separation of 50km between neighbouring points.

### 5.3 Handover Documentation

MR23.....For each segment provided, suppliers must produce handover documentation containing details of fibre characteristics, lengths, losses, test results, and maps showing fibre routes including locations of any intermediate access points or amplification stations. Suppliers must confirm that complete handover documentation will be provided on delivery of the fibre infrastructure to UKERNA.

### 5.4 Usage Policy

MR24.....The supplier must confirm that it will place no restriction on the use of the facilities provided, other than those that arise from statutory requirements.

### 5.5 Fault Management

It is essential that faults are detected, reported and resolved in the shortest possible time. UKERNA expects that the supplier will have fault management and help desk staff who can respond to problems reported during the standard working day for JANET Operations (08:00-17:00).

MR25.....The supplier must provide UKERNA's operations staff with a means of reporting problems with the fibres during the hours 08:00-17:00 as a minimum. Suppliers must state the daily period during which their reporting systems are covered by working staff.

IR26.....Suppliers shall state their times to respond to fault reports.

IR27.....Suppliers shall describe any mechanisms they operate to detect faults on fibres.

IR28.....The supplier shall provide a full description of the fault management process. Details must include descriptions of the fault tracking systems.

MR29.....Subsequent to each fault, the supplier must provide a report on the nature of the fault, the action taken to correct it, and the time to restore service. Should there be more than one fault during any calendar month, a single report covering all faults in that month will be sufficient.

## 6. COSTS

All services are to be available for two years, and costs should be provided on an annual basis. UKERNA expects to pay for the service annually in advance, and prefers a profile with similar annual costs for each of the first two years. There should be an option to extend the agreement on an annual basis for up to a further two years at UKERNA's choice. All prices must be provided in sterling and be shown **without** the addition of VAT.

Costs must be entered into the spreadsheet supplied (Excel 97 or 2000 format). This includes itemised costs on an annual basis, including costs for the third and fourth years should these be taken up. If any variants are offered, each must be described and costs per variant provided in the same format.

All charges to UKERNA must be included in this response. Any charges not included here will be deemed to have been waived.

*MR30.....The supplier must provide pricing for the service specified in this OR, based on:*

- *individual costs for a single fibre pair per lot.*
- *individual costs for a second fibre pair per lot.*
- *individual costs for any variants.*
- *all other associated costs.*
- *all additional costs associated with access to the facilities.*

UKERNA would expect to conduct a price review prior to extending the lifetime of the contract beyond the initial two year period.

*IR31.....The supplier shall propose a mechanism for price review and indicate the timing of such review during the contract period.*

## 7. FREEDOM OF INFORMATION (FOI)

UKERNA is subject to the provisions of the Freedom of Information (FOI) Act. If a supplier considers that any information supplied in a response to this Operational Requirement document is either commercially sensitive or confidential in nature, this should be highlighted and the reasons for the sensitivity given. In such cases, the relevant material will in response to FOI requests be examined in the light of the exemptions provided in the FOI Act.

*MR32.....Suppliers must highlight any information that is either commercially sensitive or confidential in nature and reasons for the sensitivity should be given.*

*MR33.....Suppliers must provide contact details (name, telephone number and email address) of the person within their organisation that is responsible for dealing with FOI requests.*

**Annex A: Addresses for the Locations of the Dark Fibre sites**

The addresses given below are general site addresses for the Universities to be connected by the Dark Fibre Network. Precise termination points for the fibres on each University Campus will be determined through discussion with representatives of the Universities in question.

If suppliers wish to make site surveys then this **MUST** be arranged through UKERNA via the contact given in section 3.2 of this operational requirement. No direct approaches should be made to staff at the University sites without prior arrangement with UKERNA.

<b>University Address</b>
University of Cambridge Computing Services New Museums Site Pembroke Street Cambridge CB2 3QH
Computing Services University of Essex Wivenhoe Park Colchester Essex CO4 3SQ
University College London Gower Street London WC1E 6BT
Aston University Aston Triangle Birmingham B4 7ET
University of Southampton University Road Highfield Southampton SO17 1BJ