Research Partnership

N8 SHARING FOR EXCELLENCE AND GROWTH PHASE II:

The N8 Equipment Sharing Toolkit (N8 EST)

Produced by The N8 Research Capital Operational Infrastructure Group. February 2014

Table of Contents

Part I - Framework Overview

Part II - N8 EST

Foreword

By Professor Luke Georghiou

Vice-President for Research and Innovation
The University of Manchester

When the N8 Research Partnership began its work on equipment sharing, an important motivation was to increase efficiency by making greater use of research capital assets and ultimately reduce the amount of equipment that needed to be purchased.

Underpinning this effort was the recognition that equipment is a key driver of discovery and increased scientific productivity. To remain competitive our researchers have to have access to state-of-the-art assets. At the same time the growing trend for collaboration in research is at the essence of the Partnership. Equipment provides a key focus for collaboration both within the group and with collaborators from industry and other universities.

The N8's first report on this subject, *Sharing for Excellence and Growth*, mapped out the territory by identifying the barriers that needed to be overcome to reap the benefits of sharing and by starting a systematic process of dealing with these. The principal concrete achievement from the first phase of the project was a Shared Research Equipment Inventory **www.n8equipment.org.uk**. This allows our researchers quickly to identify what is available and where. Practical experience was also gained as the principles garnered from this work were applied in the High Performance Computing Shared Facility (described in this publication). However, these were only the first steps. In the second phase of the project a great deal of expertise and hard work has gone into creating a pathway through the multiple management and financial issues that need to be addressed for the benefits of sharing to be realised.

From the beginning this project has had full support and cooperation from the funding bodies, notably the Engineering and Physical Sciences Research Council. This is gratefully acknowledged. As the work has proceeded there has been increasing productive interaction with other university groupings, a highly positive development which will help to ensure that the benefits are manifested at a national level. As the funding landscape evolves and the nature of equipment itself continues to develop new challenges will continue to emerge. For the present though I am very happy to commend to the reader this landmark document.

Professor Luke Georghiou

Preface

By Sarah A Fulton

Director of Research and Innovation Services
The University of Sheffield
Chair of the N8 Research Capital Operational Infrastructure Group

The N8 Equipment Sharing Toolkit (N8 EST) is intended to support and assist our capacity for effective and efficient sharing of equipment, where it is felt appropriate to do so.

The purpose of this report is to make available in one place, the outcome of the collective thinking of a wide range of research and financial support professionals and academic staff across the N8 universities, on how best to facilitate equipment sharing within a complex national policy and regulatory framework whilst taking cognisance of differing local HE cultures and practices. In undertaking this task we have worked in close collaboration with relevant funders, Government departments and other agencies and groups to ensure that what we are proposing is coherent and consistent with their requirements.

Our aim in making it easier to share equipment is to allow us to do better research more cost-effectively. The purpose of this toolkit is to help both individual academics and research groups to find the most appropriate solution for their circumstances. It is acknowledged that for a number of reasons the sharing of equipment may not always be practical or appropriate, so the toolkit is designed to guide the reader to the pathways that are most appropriate to them as their specific needs arise.

We hope that this toolkit will be regarded as a valuable resource in the challenging times ahead, as we continue to strive to be competitive in our research endeavours within a dynamic policy and economic environment and in actively contributing to the future sustainability of the UK's equipment base.

Sarah A Fulton

Acknowledgements

We would like to acknowledge the following who contributed to this project:

- The N8 Pro-Vice-Chancellors as champions of the Sharing for Excellence and Growth Programme

- Chair of the N8 Research Capital Operational Infrastructures Group:
  - Sarah Fulton, Director of Research and Innovation Services,
    The University of Sheffield

- The work strand leaders:
  - Andy Jamieson, VAT Manager,
    The University of Sheffield

  - Kirsty Lindley, Pricing and Contracts Manager
    The University of Sheffield

  - Melanie Lythgo, Head of Cost Accounting
    The University of Manchester

  - Dr John Pillmoor, Technology Facility Director
    The University of York

- All working group members (listed in appendix 1a)

- Case study development team:
  - Dr Simon Romani, Technical and Industrial Liaison Manager, NiCaL
    The University of Liverpool

  - Dr Gillian Sinclair, N8 HPC Service Development Manager
    The University of Manchester

  - Nick Goldspink, N8 Research Partnership (case study facilitator)

- Our N8 university colleagues for engagement and participation in the toolkit review

- RCUK, Government departments and agencies for their input and support

- Charlotte Lay, Research Infrastructure Development Manager (Project Coordinator)
  The University of Sheffield

PART I
FRAMEWORK OVERVIEW

1.1 Introduction

The link between delivering research excellence and ensuring access to state-of-the-art equipment is clear. The N8 Sharing for Excellence and Growth report outlined not only the changing context of equipment funding but also the barriers that arise as a result of the new equipment sharing agenda.

This report outlines the next phase of work by the N8 Research Partnership and looks to review and address the many operational issues that arise when equipment is shared. The work focuses on the development of a framework and set of guiding principles that can be utilised across the Higher Education (HE) sector to support universities to increase efficiencies and ensure effective utilisation of research equipment.

The framework has been divided into four key areas:

- Health & Safety and Training
- Pricing and Charging
- VAT
- Contracts and Legal

A primary outcome of this work has been the production of a suite of supporting documents that we will refer to as the N8 Equipment Sharing Toolkit (N8 EST) that can be used as templates and prompts to assist each Higher Education Institution (HEI) to support equipment sharing.

1.2 Why have we done the work?

The need for increased equipment sharing has become apparent over the last few years, particularly with restricted funding for capital equipment and a more rigorous review of capital funding proposals. Whilst formal equipment sharing as a benchmark or assessment criteria for funding may be new, sharing of equipment is a regular part of research activity for many academics; with collaborative research providing the clearest example of existing mechanisms for sharing.

Work strand 1 from Phase I of the Sharing for Excellence and growth project **(http://www.n8research.org.uk/asset-collaboration/sharing-for-excellence-and-growth)** outlined the most common existing sharing mechanisms as well as the barriers to and benefits of equipment sharing. Reducing the operational and administrative barriers to sharing equipment has been the primary aim of the N8 Research Capital Operational Infrastructure Group. It is hoped that the framework provided within this report will go some way to helping HEIs to make the sharing of equipment a more consistent part of everyday business.

Working to a set of shared guiding principles will allow HEIs to remain effective and efficient owners and users of world-class research infrastructure, encourage external funders to continue to support investments in university-led facilities and ensure that the UK does not lose its prominence as a leader in research excellence. The framework provided will support HEIs to work collectively and react quickly and efficiently to opportunities for new capital investments. It is expected that the N8 EST will support HEIs to prepare for collaborations at both a pre and post-award stage.

1.3 What have we done?

The output of the N8 Research Capital Operational Infrastructure Group work strands has been compiled to create a set of guiding principles and a toolkit (N8 EST) containing templates, process maps and FAQs, to help enable the effective facilitation of equipment sharing. These are designed to be both comprehensive and flexible; they can be used together or in isolation to facilitate the sharing

of equipment both internally within a single HEI and/or externally across multiple HEIs.

The framework developed as part of this work is not designed to be a prescriptive methodology applied to all equipment but has been produced to provide a flexible approach to support HEIs to nurture relevant opportunities for equipment sharing.

1.4 How have we done it?

The work of the N8 Research Capital Operational Infrastructure Group has been divided into four key work strands: Health & Safety and Training; Pricing and Charging; VAT; Contracts and Legal. The activities within each work strand have been led by dedicated work strand leads and coordinated by the Group chair. Working in this way has allowed each key area to be investigated in parallel, ensuring that work in all areas was complementary. Each work strand lead has coordinated consultation across the partnership and utilised expert advice and guidance from academic users, N8 colleagues, Pro-Vice-Chancellors, and where relevant, external consultants, to ensure that the principles developed as a result of this work are both suitable and effective to support the operational aspects of equipment sharing.

The N8 Research Capital Operational Infrastructure Group membership, together with members of work strand groups and HEI leads, is available in Appendix 1a.

Not all equipment available in HEIs is suitable for sharing, therefore the group has developed a banding model to help categorise equipment and guide sharing to ensure that the framework would be suitable to support sharing within all equipment band types. The provisional banding model used by the group is detailed below:

Band 1 – New Infrastructure Framework Applies	• Strategic Facilities as defined by N8 Universities that are part of the competitive award winning process and research growth of the eight universities.
Band 2 – New Infrastructure Framework Optional	• Larger pieces of equipment where formal/informal sharing may already exist as a result of collaborative working. • Equipment with the capacity and capability to be shared. For this equipment uptake of the model is optional.
Band 3 – New Infrastructure Framework Unlikely to apply	• Smaller equipment that does not normally lend itself to sharing and identified via the N8 database.

1.5 How can the N8 EST be used?

In order to demonstrate how the N8 EST can be used Appendix 1b and Appendix 1c provide examples of two N8 case studies:

- The Nano Investigation Centre (NiCaL - Appendix 1b)
- N8 High Performance Computer (HPC - Appendix 1c)

The two case studies identified have been chosen as they demonstrate the flexible nature of the N8 EST. The Nano Investigation Centre (NiCaL) example demonstrates how the N8 EST can be used to support a newly funded multi-user facility managed by a single HEI. The NiCaL case study demonstrates the diversity of the N8 EST to support sharing across a number of partners including; HEI-to-HEI as well as HEI-to-SME. The High Performance Computing case study provides an example of how the N8 EST can be used to support a collaborative capital facility, sharing with SMEs and multi-national corporations. Utilising the toolkit in this way has allowed the HPC facility to become an exemplar for the Cost Sharing Group finance model which is outlined further in section 4.1.

2.1 Work strand 1 - Health & Safety and Training

The activity of work strand 1 has been divided into two sections, these are:

- Risk Assessment, Ethics and Training
- Liability and Insurance

2.1.1 Risk Assessment, Ethics and Training

The varied nature of shared equipment often means that a bespoke approach to Health & Safety is needed when supporting the initiation and running of shared equipment. With this in mind the work undertaken in work strand 1 aims to provide relevant documentation and guidance to help unify the work within this area. A support structure has been created and road tested by several groups and is designed to encompass key aspects of the Health & Safety protocol that should be reviewed when preparing to share equipment (N8 EST pages 29-38, and FAQs page 64). This is a template summary and full questionnaire that can be utilised by those wishing to share new equipment (Band 1) for the first time or those seeking to review the Health & Safety procedures of existing equipment (Bands 2&3).

In summary, the template covers all essential aspects of Health & Safety including:

- Summary of the proposed activity including: types of use, details of the experience of the proposed user, types of samples involved, and availability of pre-existing Risk Assessments

- Equipment specific details including: identification of equipment hazards, recommended equipment control and training measures, data storage and computer access, facility access and security

- Sample and product details including: identification of hazards and exposure potential associated with the samples to be brought on site, recommended sample control measures and training, sample and product delivery and storage, waste disposal

- Other aspects associated with the proposed work, including potential ethical considerations with the expectation that the work will meet the general principles outlined by the Research Councils UK and Universities UK

- Declaration.

The structure will undoubtedly continue to be improved as experience in its use is gained and the initial FAQs extended. To this end the Lead Contacts for Health & Safety and Training have agreed to continue as a group to keep the structure under review and drive forward further developments. Denis Fowler (Director of Health, Safety, and Security at the University of York) has agreed to initially chair the group. Denis can be contacted at: **denis.fowler@york.ac.uk**. As demand increases, it is likely that the need for cross validation of safety training in some areas may be warranted and this would also be an area that the group will progress.

2.1.2 Liability and Insurance

Various approaches to establish the principles concerning liability and insurance have been considered during the project, ranging from detailed check lists to very general Heads of Agreement. Good consensus has been reached with the Insurance contacts within the N8 Universities that these aspects need to be incorporated into legal agreements. A set of guiding principles have been developed (N8 EST page 39), and will be incorporated into the N8 EST agreements.

2.1.3 Next Steps

1. Review and sign off the Liability and Insurance aspects of the legal agreements.

3.1 Work strand 2 - Pricing and Charging

This section provides guidance on:

1. Cost models for equipment sharing
2. Price and charging pathways
3. Funder approval
4. Treatment of costs and income

The aim of this work strand was to establish a framework for pricing and charging for access to equipment under the N8 Equipment Sharing agenda. Objectives were set as follows:

- Identify a mechanism to ensure that the project is manageable and achievable;
- Define principles for a costing and pricing methodology that is accepted and equitable;
- Create a framework for charging that is accepted by funders as well as by academics, administrators and Facility Managers;
- Ensure the solution does not pose an unrealistic burden for individual HEIs;
- Define the above to comply with the following Key Principles:
  - o Simple and Transparent
  - o Approved by Funders
  - o Non-bureaucratic

3.1.1 Cost Models for Equipment Sharing

The Research Facility Cost Model used for the Transparent Approach to Costing (TRAC) is a good starting point for costing. Practitioners are familiar with this approach. It is already an established mechanism for costing in the sector and, importantly, is approved by funders. Models have already been built up on this basis over time for existing facilities.

The Research Facility Cost Model provides the flexibility to deal with local differences in how facilities operate. This model gives a realistic picture of the total cost of running a facility and would allow for an accurate indication of what is required to make the facility sustainable, a key factor in how this initiative is taken forward.

Note that the TRAC Guidance is currently being updated and simplified and one of the areas being specifically included in this review is the guidance for Small Research Facilities (SRFs) and Major Research Facilities (MRFs). In advance of this, KPMG will shortly be issuing a report “A Guide to Equipment Sharing for TRAC Practitioners”.

3.1.2 Principles for Cost Inclusion

There is no suggestion that templates should be imposed for costing. This is partly due to the fact that all facilities are different but also to allow for the fact that individual institutions have built up robust and auditable cost models over time which can be further built upon. The N8 EST accompanying this report does include example templates for adoption in cases where these might prove helpful.
In line with TRAC Guidance for the costing of Research Facilities, costs can be included in the following groups:

a. Pay Costs
b. Non Pay Costs
c. Replacement Cost Depreciation
d. Space Charges where material

Utilisation levels should be defined as "Efficient Usage" as per TRAC.

a. **Pay Costs** - Definition of Direct Pay costs is relatively straightforward. Further guidance on the types of staff who might be included here is provided as part of the N8 EST Section 3.3. The N8 EST also highlights key things to consider as part of this data gathering.

b. **Non Pay Costs** - Definition of Direct Non Pay costs is also relatively straightforward. Further guidance on the potential categories of Non Pay costs is provided as part of the N8 EST. The N8 EST also highlights key things to consider as part of this data gathering.

c. **Replacement Cost** - A definition of Replacement Cost is given in the N8 EST. RCUK have left this largely to HEIs to define in stating that cost should be included for an appropriate specification of kit for the research to be carried out.

d. **Depreciation** - There has been considerable debate over the methodology for calculating lifespan and whether this should be open to institutional policy or defined by an N8 agreement. It is recommended that Useful Life for the purposes of this calculation is defined by the Facility Manager. This allows for some flexibility to reflect local circumstances and is based on the conclusions drawn below. This can be benchmarked against the Useful Lives pilot work carried out at the University of Leeds and based on MRC guidelines (ii below) if this is felt to be helpful.

The possible methods for calculating lifespan are:

i. Useful Economic life as per the financial statements
This does not reflect the useful life of the equipment (but rather the accounting treatment which tends to favour shorter lives) and is also normally the most expensive option.

ii. Asset Lives work carried out by the University of Leeds based on MRC guidelines
This was originally an internal MRC document but has been used as a basis for pilot work to define Useful Lives based on the N8 Taxonomy classifications. It is included as part of the N8 EST Section 3.7.1 for reference.

iii. Useful life as defined by Facility Manager/Academic Lead
This has been agreed by the group as the most appropriate mechanism and is already the current basis for facility costing for several N8 members.

iv. Two step depreciation.
This was particularly favoured by academics. This would reflect the varying use of equipment over its lifetime, with a higher depreciation charge in the early years to reflect its most productive research-intensive period. This method has many complexities and practical difficulties and is untested with funders.

Inclusion of depreciation where the equipment was originally research funded

This is particularly an issue since we are arguing for non-facility status under TRAC for charging. There is therefore no deduction from the rates to reflect the research funded element that is included. There is a view that depreciation should be included however originally funded. These charges will not build up enough of a replacement fund to replace the equipment in question but will provide a contribution to capital generally. RCUK are no longer fully funding lower value equipment and the amounts included are not likely to be material particularly in the early stages of equipment sharing. This has been raised by KPMG with RCUK representatives. RCUK are unable to respond on this at this stage stating the need to assess the impact of allowing this.

e. **Space Charges** - Space Charges should be included where material. This is in line with TRAC guidance for the costing of Research Facilities. For these purposes a suggested level of materiality at which these costs might be considered is 10% of total cost. The N8 EST gives some examples of how these might be calculated based on TRAC outputs.

Efficient Usage
Usage should be defined in line with TRAC Guidance-Currently Sections C.4 and C.5 of the TRAC Statement of Requirements **(http://www.jcpsg.ac.uk/guidance/require/)** but shortly due to be updated. RCUK have already confirmed that costing should be based on fEC methodology and that estimated utilisation levels remain acceptable for new equipment calculations.

Usage has a potentially dramatic impact on price. Issues to consider as part of this estimate are included in the N8 EST.

3.2 Price and Charging Pathways

3.2.1 Price

Research Facility guidance is very clear in that price should be based on cost with no profit element built in. Adoption of the Research Facility Model above for price calculations ensures that this should be the case.

3.2.2 Charging Pathways

Pathways for payment for access to equipment fall into two broad areas:

- Where an institution is "selling" the use of a piece of equipment or facility;
- Where an institution is participating in the actual research, i.e. academic or research staff time is included as part of the bid.

The various routes and outcomes for charging are defined in the Charging Pathways Flowchart opposite and included as part of the N8 EST.

Access to Equipment – Proposed routes for when to Charge

University A requires access to equipment as part of a research project.
Access will be provided by Universities B and C.
Costs are recorded as Research Expenditure in University A.

University C is a subcontractor on the research project led by University A .
This includes collaborations where research income is routed via a lead University.

University B is not a subcontractor on the project. Equipment access is simply being provided. This includes research collaborations with separate funding streams. Equipment may or may not be a Facility under TRAC.

Equipment is not a Facility under TRAC therefore costs are included in the overhead rates for research.

Equipment is not a Facility under TRAC therefore costs are included in the overhead rates for research.

Equipment is a Facility under TRAC, therefore costs are not included in the overhead rates for research.

Costs on the grant at University C do include academic staff and therefore some overhead.

Costs on the grant at University C do not include academic staff and therefore no overhead.

Treatment in books of Universities

Access Charge NOT Levied
This is the only scenario where any costs towards running the equipment are recovered as part of this research project by the University providing access to the equipment.

Access Charge Levied Research Income-where participating in the research
Other Income where not participating in the research.

Access Charge Levied Research Income-where participating in the research
Other Income where not participating in the research.

Access Charge Levied-Other Income.

3.3 Funder Approval

3.3.1 Research Facility Status under TRAC

The TRAC Statement of Requirements states that for access charges to facilities to be included in Research Grant applications to the Research Councils, the costs of running these facilities should be deducted from the Indirect and Estates Rates.

This is to ensure that funders are not being charged for this access twice. This is correct where the academic using those facilities is based at the HEI providing the facilities since the overhead associated with that academic is charged on the grant. Where this is not the case, there is no mechanism for the HEI providing the access to recover these costs other than through a charge since there will be no overhead chargeable for that piece of work.

To require Facility status under TRAC represents a financial risk to HEIs and would be a serious disincentive to the comprehensive sharing of equipment envisaged by the Research Councils. In addition provision of access to external HEIs increases running costs and administrative costs. These are direct costs of implementation and therefore should be met. It is worth noting that if an HEI bought this access outside the sector this would be a valid cost on the grant and funded.

RCUK have responded favourably to the charging flowchart included in the N8 EST. This makes clear the non-requirement of facility status with the exception of the pathway whereby the HEI providing access to the equipment is also recovering some overhead via the staff involved on the grant.

3.4 Treatment of Costs and Income

3.4.1 Whether to charge as Directly Incurred (DI) or Directly Allocated (DA)

Local policies for the charging of Equipment Access Charges to grants have been developed over time by individual HEIs. Where these are defined as Research Facilities under TRAC initial TRAC guidance stated that these should be treated as a Directly Allocated cost. This was amended shortly afterwards to also include the option of charging these as Directly Incurred. Both approaches are currently used.

There are benefits to each approach and these are outlined in the N8 EST. Many N8 members prefer charging for access to equipment as a Directly Allocated cost. Securing payment upfront is a method used by many facilities since this lessens the administrative burden of issuing individual bills and invoices and introduces some certainty on revenues due. There is however a possibility that funders will prefer the more detailed auditable records associated with charging as a directly incurred cost.

In addition to this, one of the requirements of the VAT solution may necessitate the treatment of these costs as Directly Incurred in order for them to be routed through a Cost Sharing Group. VAT guidance issued by HMRC specifies that they will only able to seek “exact reimbursement” of costs from members. This may necessitate demonstration of charge according to use which may therefore impact on the approach adopted. In addition HMRC require that there is no profit element, this should be addressed by the use of the TRAC Research Facility model for costing.

3.4.2 Accounting Treatment

Treatment of income will vary according to the nature of the relationship with the HEI requesting access to the equipment. This has been outlined in the Charging Pathway flowchart.

Where the institution is simply "selling" the use of a piece of equipment or facility these should be treated as "Other" income in the books of the Institution providing the access.
Where an institution is participating in the actual research, either with or without academic or research staff time as part of the bid this would constitute "Research" income. Treatment should also comply with the Frascati definition for research.

3.5 Summary - Key Principles for Pricing and Charging

The principles on pricing and charging below have been agreed by the N8 Pricing and Charging Group. They have also been presented to RCUK (via discussions with KPMG in their role as provider of the TRAC Helpdesk service) and discussed with some HEIs outside of this Group:

- TRAC Research Facility Model to form basis for Costing;
- Small Research Facility/Medium Research Facility (SRF/MRF) status is not a requirement under TRAC for equipment sharing i.e. these costs are not necessarily deducted from Institutional overhead rates to allow for access to be charged;
- A comprehensive review of Facility status for shared equipment could be undertaken once equipment sharing is properly established. This should be carried out in the normal way for TRAC to assess the impact of this treatment on Institutional income levels going forward;
- Where SRF/MRF status is already adopted there should be no change in the current year. An assessment of the benefits of Research Facility status under TRAC should be made at the next TRAC round in the normal way;
- Where there is existing MRF/SRF status there should be no immediate change in policy on cost inclusion. If the equipment forms part of Band 1 and is subject to sharing as a result of this initiative then the new infrastructure framework should be adopted;
- Charging Pathways are defined in the Charging Pathways Flowchart along with treatment of income.

3.6 Next Steps

1. Before considering whether depreciation can be included in the costing where originally funded from research, funders wish to make an assessment of the implications of allowing this and guidance will be updated once feedback is known. In the interim for applications to RCUK these costs should be excluded.

2. RCUK are happy to remain flexible on issuing guidance regarding how equipment sharing will work. They are happy for KPMG (in their role as provider of the TRAC Helpdesk service and whilst updating the TRAC guidance) to draft guidelines for the sector. This work is ongoing and is expected to be published in mid-2014.

4.1 Work strand 3 - VAT

4.1.1 Why is VAT important for sharing equipment and capital assets?

VAT has always been seen in the sector as a barrier for sharing assets between partly exempt[1] organisations such as universities. This is because, in most circumstances, when an asset is supplied from one party to another VAT must be levied on that charge. The VAT charge will be, at best, only partly reclaimable by the recipient, thereby introducing a worst case 20% cost to asset sharing, which could negate the financial efficiency reasons for sharing.

In order to minimise the impact of VAT charges associated with sharing equipment the VAT working group have been liaising with HMRC to review the most appropriate methodologies that can be used to maximise relevant VAT exemptions. Work within this area has concentrated around making the most of the VAT exemption for "Cost Sharing Groups" legislation introduced by HMRC in autumn 2012.

This work strand is primarily focused on creating a framework that will enable HEIs sharing equipment to meet the terms of the VAT Cost Sharing Exemption (CSE). Unless the terms of the CSE are met then 20% is required to be added to charges for equipment, which is a clear financial dis-incentive, increasing the costs of sharing assets and services. Initial work completed by the work strand lead identified a particular Cost Sharing Group (CSG) model as the most appropriate mechanism to enable VAT CSE; this work has also been reviewed and validated by external consultants from Deloitte and agreed with HMRC Policy. It is the first CSE model to be approved in the sector for operation between HEIs.

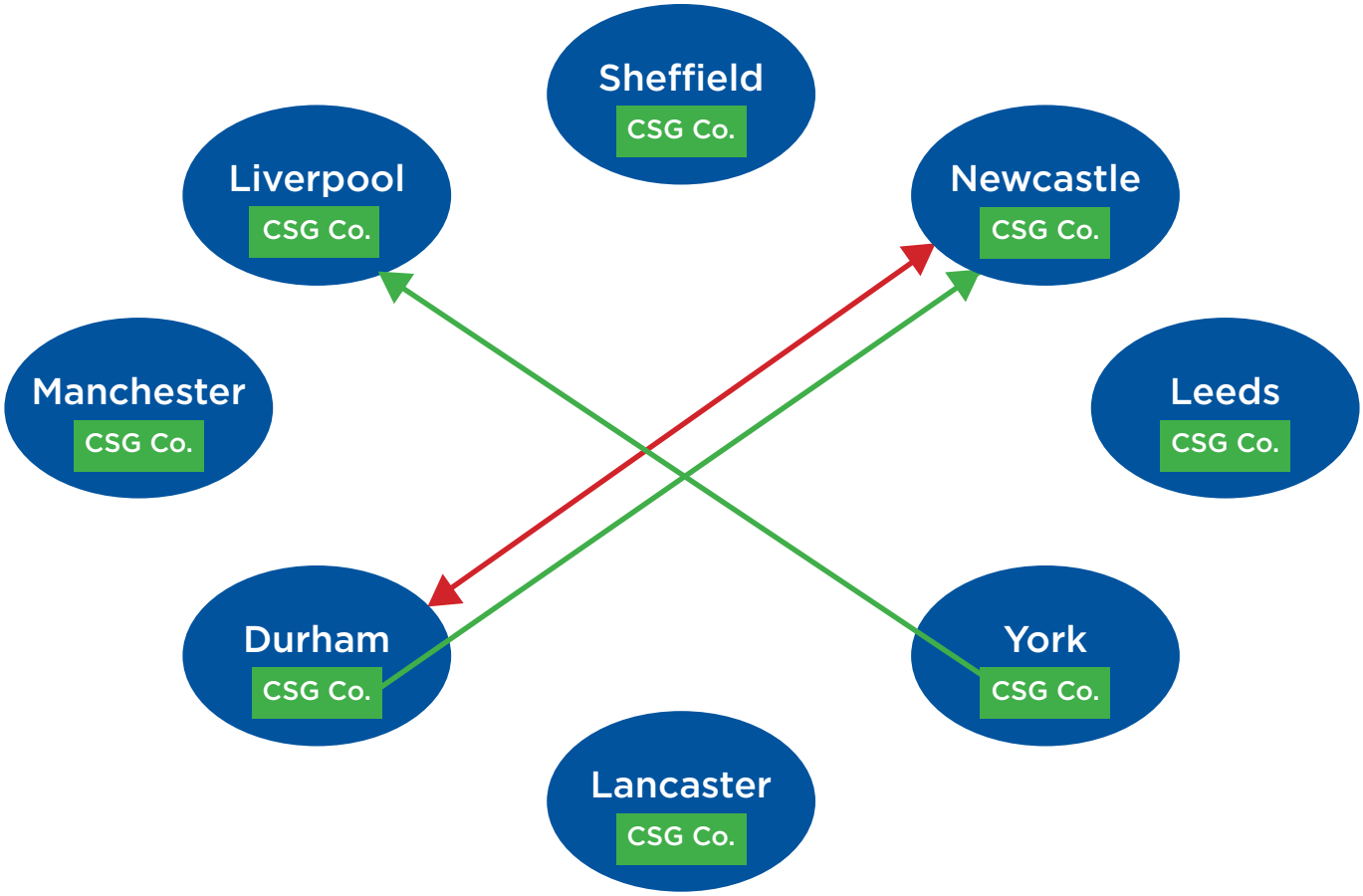
The VAT efficiencies created via the effective use of a CSG will be an important benefit; the real value of CSGs will be in the impact of their application as part of an overall package to facilitate effective collaborative research which contributes to the efficiency of the HE sector in general, and efficient use of the Science budget in particular. In addition, recent applications to some Research Councils for strategic equipment subject to assessment (over £135,688) have demonstrated that a lot of weight is being given to research collaboration between institutions and the infrastructure for efficient sharing of equipment in the success of bids. In some cases the extent of efficient collaboration can also influence the expected level of matched funding required from bidding institutions. It is expected that CSGs will mainly be used where the criteria for sharing the equipment will be part of the competitive award winning process, and thereby assist the N8's collaborative research growth.

To take advantage of the CSG it will be necessary for each N8 university to establish a CSG itself and to have a membership/shareholding in each of the other CSGs. Each N8 university will also be required to lease capacity to its CSG, and in order to access the asset, the using University will need to purchase use from the relevant CSG. Additionally the CSG will be required to have some form of membership structure in place.

For full details of the CSG model see diagram 1 opposite, and section 4.1 of the N8 EST. The Toolkit also provides a useful list of FAQs regarding the CSE and CSG model which can be found at the end of the document.

1 "Partly exempt" organisations are those which have a mix of activities for VAT purposes. Some activities are exempt from VAT (e.g. fee charging education), some are taxable (e.g. consultancy) and some are "non-business" (e.g. grant funded research). The net result is that most universities can only claim less than 10% of the VAT they incur back from HMRC, meaning 90% of VAT incurred is a real cost.

Diagram 1-N8 - Sharing Equipment with VAT Cost Sharing Groups - full model



Key:

University VAT Group

Company controlled by University — CSG Co.

Notes:

- All Universities must be Members of all CSGs
- A VAT exempt supply can be made through a CSG
- A supply by a University to another University is subject to VAT

Activity is currently underway to utilise the N8 High Performance Computing facility hosted by Leeds to test the CSG. This case study will be used to illustrate how to put a facility through the CSG process. In addition to this Sheffield has secured University Council approval for the establishment of a Cost Sharing Group for the purposes of VAT exemption for Sharing Capital Equipment within the N8. Moving forward it will be important to consider the following:

- Membership fees for CSG
- Leasing/licensing equipment to CSG

It is clear that to meet the criteria of the CSE using the N8 model the CSG will need to provide 'qualifying' services to all of the members. This includes the CSGs parent company (which will be a University member) as well as those who wish to use the assets of the University. Initially HMRC were of the view that this meant a host University would be required to lease any asset 100% to the CSG and then buy back its own use. This would be extremely cumbersome and possibly lead to a prohibitive amount of administration connected to using a CSG. However, having discussed this point at length with HMRC we have gained agreement that the qualifying service does not have to be the same for each Member, so that the host University may receive a different service to the other members, such as resource management.

This therefore means that the asset does not have to be leased in its entirety to the CSG as long as another qualifying service is provided. Our view is that the CSG can provide a valuable resource management service to its host University, helping it to manage the assets and promote the use through the web portal to members.

4.1.2 Next Steps

1. Develop a model business plan for CSGs to ensure they provide qualifying services to meet the CSE criteria.
2. Disseminate best working practice amongst the Finance and Departmental Manager communities at all universities in N8.

5.1 Work strand 4 - Contracts and Legal

Contractual agreements can often be the most complicated and lengthy aspects of formalising collaborations. The aim of work strand 4 is to provide template agreements to simplify the process and help HEIs formalise the terms and conditions for sharing assets and establish legal structures for sharing assets exempt of VAT costs.

To support this activity, the legal firm DLA Piper was appointed, via a tender process, to produce four template agreements on behalf of the N8. Figure 1 opposite outlines the different agreements, all of which are available to download from the N8 website.

The first agreement will be used to establish a Cost Sharing Group (CSG) at each N8 HEI (further information on CSG is available in work strand 3 - VAT). Agreement 2 facilitates membership to a CSG and allows a member to take advantage of a cost sharing VAT exemption, therefore reducing the cost of sharing by 20%. Agreements 3 and 4 provide the detail required to share assets. Agreement 3 is for use with members of the CSG and will allow the transaction to be VAT exempt. Agreement 4 is for use with non-members of the CSG who will incur a VAT charge. It is envisaged that each CSG will have an initial membership of N8 HEIs and other UK HEIs will also eventually become members. An overview of how the agreements will be used and the process for sharing assets is available in part II of this N8 EST (Figures 5.1 and 5.2).

Figure 1 - Agreements Required for Establishing Asset Sharing

	TITLE	PURPOSE	PARTIES	PROVISIONS
1.	N8 Founder Member Agreement.	To establish a CSG at institution.	The Founder Member.	Articles of Association, Business plans etc.
2.	N8 CSG Members Agreement.	To form a shareholding in each CSG.	Each N8 University to each CSG.	Shareholding, Appointing Directors, Exit Rights, annexes of access agreements.
3.	N8 CSG Member Access Agreement.	To allow an N8 University to use the asset VAT exempt.	N8 University and the relevant CSG.	IPR, Health and Safety, Publicity, Publication, Access rights, Use, Charge Rates etc.
4.	N8 Third Party Access Agreement.	To allow third parties to use the asset, incurring a VAT charge.	Third party and the relevant N8 host University.	IPR, Health and Safety, Publicity, Publication, Access rights, Use, Charge Rates etc.

A small review group of colleagues from the Universities of Leeds, Liverpool and Sheffield volunteered to review the agreements and provide amendments on behalf of the N8. Using a small review group has enabled the key contractual issues for HEIs to be incorporated appropriately into the agreements. The agreements also include input from the other work strands, for example, the VAT work strand established the CSG structure, whilst the Health & Safety and Training work strand determined the most practical liability position for the agreements.

The operational aspects of how the agreements might be managed within each institution has also been considered and incorporated into the agreements. Figure 5.3, part II of the N8 EST, suggests a process for adoption by each N8 HEI to facilitate the administrative process of sharing assets. An example of how the money will flow between the institutions and CSG is shown in figure 5.4, part II of the N8 EST.

It is envisaged that once finalised the agreements developed as part of work strand 4 will be used in a similar way to the Brunswick agreement[1], allowing HEIs to prepare and share agreements effectively across the partnership.

5.1.1 Next Steps

1. A review from all of the N8 Universities is required to ensure the agreements are suitable for each institution. The agreements are working documents; it is therefore recognised that the templates will need to be amended and revised to ensure they are fit for purpose.

2. Each N8 University to follow their own internal protocols to establish a CSG at their institution.

1 A group of senior research administrators from research-intensive HEI's, known as the Brunswick Group, developed a number of template agreements for use between universities or similar not-for-profit organisations. Further information on the agreements can be found at: https://www.arma.ac.uk/resources/brunswick-agreements

6.1 Framework Overview - Conclusion

In summary, we hope that the work undertaken as part of this project will assist HEIs to operationalise equipment sharing and support the long-term sustainability of our key research assets.

The N8 EST has been provided as a framework of templates that can be:

- utilised in their current form to support effective and efficient sharing of equipment;
- developed over time to incorporate feedback from partners; and
- modified in response to relevant policy changes.

In addition to the examples provided within Part II of this report the full N8 EST including a comprehensive list of FAQs has been made available online at: **http://www.n8research.org.uk/asset-collaboration/n8-est/**

Considering the complex and changeable nature of the environments in which HE exists the N8 EST represents a significant step in the journey towards successfully sharing equipment. However, it is therefore also acknowledged that these templates will evolve over time.

In light of this, it is our aim that the online repository will encourage users to provide feedback and contribute to the ongoing development of the N8 EST; ensuring that the documents remain up to date and relevant to all key user groups.

In closing we would like to take this opportunity to invite all interested parties from professional services, facilities management and across the academic community to make the most of the N8 Equipment Sharing Toolkit, and in doing so realise its true value; as a critical tool in optimising our capacity for sharing, increasing the sustainability of existing facilities and supporting the success of proposals for new equipment.

Membership of N8 Capital Assets Operational Infrastructure Group

Sarah A Fulton (Chair)	Director of Research and Innovation Services (Sheffield)
Melanie Lythgo	Head of Cost Accounting (Manchester) Pricing and Charging work strand lead
Kirsty Lindley	Pricing and Contracts Manager (Sheffield) Legal work strand lead
Andy Jamieson	VAT Manager (Sheffield) VAT work strand lead
John Pillmoor	Technology Facility Director (York) Health and Safety and Training work strand lead
Charlotte Lay	Research Infrastructure Development Manager (Sheffield) Project work strand co-ordinator
Nick Goldspink	Project Manager (N8) Link with broader N8 strategy

Project Members

Name **N8 Research Partnership**	**Role**	**Institute**
Sarah Jackson Nick Goldspink	Director Project Manager	N8 N8
N8 Asset Sharing Lead Contacts		
Sarah Fulton Andy Binley Danielle Hankin Jim Walsh Johanna Gascoigne-Owens Chris French	Director of Research and Innovation Services Professor of Hydrogeophysics Research Facilities and Infrastructure Manager Business Development Manager, Biomedicine Research Funding Development Manager Strategic Projects Manager	Sheffield Lancaster Leeds York Newcastle Liverpool
Pricing/Charging		
Melanie Lythgo Angela Quail Graham Smith Paul Farley Paul Woodhouse Mike Clark James Dougall Helen Kelt Kirsty Dillingham	Head of Cost Accounting Assistant Director of Finance Head of Financial Reporting Professor Strategic Cost Accountant Science Lead in Finance Cost Accountant Proposal and Project Support Officer Faculty Finance Manager	Manchester Liverpool Durham Lancaster Sheffield York Newcastle Newcastle Leeds
Legal/Contracts		
Kirsty Lindley James Fox Lisa Murphy Tess Mantzoros Sue Final Máire Nolan Andrea Wright-Watkinson Adrian Slater	Pricing and Contracts Manager Legal and Research Governance Manager Research, and Business Engagement Support Services Head of Legal Support IP Manager Contracts Manager Head of Intellectual Property University Solicitor	Sheffield Liverpool Manchester Durham York Lancaster Newcastle Leeds

Project Members

Name *Health, Safety, Training*	Role	Institute
John Pillmoor	Lead Technology Facility Director	York
John Stone	Risk and Insurance Manager	Liverpool
Stephen Dunkley	University Safety Officer	Liverpool
Melanie Taylor	Head of Safety Services	Manchester
Dr Martin Hampar	Procurement & Commercial Officer	Manchester
Claire Robinson	Insurance Manager in Procurement	Durham
Jacky Glanville	Insurance Officer	York
Denis Fowler	Health, Safety & Security	York
Angie Park	Head of Safety, Health, and Wellbeing	Lancaster
Kevin Oxley	Departmental Manager, Department of Infection and Immunity, Medical School	Sheffield
Brian McBride	Head of Occupational Health and Safety Service	Newcastle
Kelly Lovelock	Insurance Officer	Newcastle
Lee Dewhurst	Head of Health and Safety Services	Leeds
Louise McCunniff	Insurance Officer	Leeds
Michael McElroy	Deputy Director, Health and Safety Service	Durham
VAT		
Andy Jamieson	VAT Manager	Sheffield
Clare Butcher	Deputy Director of Finance	Durham
Virginia Choi	Assistant Financial Accountant (Taxation)	Durham
Michael Slade	Management Accountant	York
Helen Stephens	Tax Manager	Liverpool
Juliet Smith	Tax and Systems Manager	Leeds
Mike Colley	VAT Officer	Newcastle
Tina Bleasdale	Team Leader for Cashiers and Financial Accounting	Lancaster
Joanne Rodger	Tax and Companies Accountant	Manchester

APPENDIX 1b

Case Study: Nano Investigation Centre (NiCaL)

N8 universities have a strong portfolio of externally-facing facilities at the individual institutions in addition to the shared N8 facilities (e.g. N8 HPC) that the group are looking to develop. In many cases these facilities may already be available for sharing, e.g. allowing access to academics from other universities or to industrial users. There are also facilities that may wish to become shared facilities, either through addition of new equipment, creation of capacity, or through removal of restrictions associated with funding.

The University of Liverpool's Nano Investigation Centre at Liverpool (NiCaL) is supported by ERDF and provides regional SMEs free access to the University's most advanced and powerful electron microscope facilities. Whilst the facility is currently partially funded by ERDF, it is possible that the facility would look to be badged as an "N8 Shared Facility" in the future.

A number of benefits to being an 'N8 facility' were identified:

- Shared facilities across the group allow for redundancy in case of failure or maintenance time at individual facilities.
- Shared best practice of scientific excellence, technical and operational expertise, and professional services (including negotiating maintenance agreements with original equipment manufacturers (OEMs)).
- By working as a group N8 can develop a coordinated networked offering to the academic sector, as well as to industrial users.

It was noted that the availability of the toolkit as a working framework would be useful for those designing facilities like NiCaL, as it highlights not only the questions that need to be considered in developing a shared facility, but also provides a best practice approach for some of the solutions. For example:

- As a shared facility with high-value equipment, issues around training, insurance and liability need to be considered. Having a broad logistical framework across the N8 would allow for more efficient use of equipment and help to identify training needs.
- How are the needs of capital investment balanced with the needs of research and what mechanisms exist to allow both to take place?

For NiCaL, beyond the ERDF funding, new costing models to provide sustainability and future development/investment would need to be identified and this task may be assisted by looking at those developed and agreed by the N8:

- Agreed charging models would make it easier for facilities to share their equipment and services by providing templates and a framework.
- Shared costing models, which would need to be in line with faculty procedures, would allow users to engage with facilities based on scientific need rather than cost.
- Cost-Sharing Groups would allow for VAT-free sharing of equipment and services, further reducing the barriers to sharing.

Using the N8 guidelines and toolkit would provide a framework for NiCaL to work with in moving forwards and would ease the transition from ERDF to self-sustaining funding.

APPENDIX 1c

Case Study: N8 High Performance Computing

N8 universities have a background of sharing high-performance computing (HPC) capability which is an important tool for both multidisciplinary research and as an enabler for collaboration with industry (who would also wish to have direct access to the facility).

With leadership from Chris Taylor of Manchester and David Hogg from Leeds a proposal was developed for EPSRC funding in December 2011. Leeds had the physical capacity to site the equipment (5000+ cores using the latest Intel technology and costing £3.2 million) and a governance model was developed whereby Manchester would be the lead bidder and commission the facility from Leeds on behalf of all N8 members. This was intended to make all actions transparent for partners.

Key components of the proposal were a strong science and engineering case founded on world-class computational science and engineering, support from industry and the local economy, the procurement and technology partnership and building in capacity for future upgrade and sustainability. The established N8 relationship with its high degree of mutual trust was critical for success – early results from the assets-sharing project were used to structure the partnership and its rules of operation: running costs were to be allocated on a fair share basis.

The bid was successful and procurement took place in under three months, with the facility installed, tested, and launched by March 2013. To date, 225 users have utilised the facility with an average of 93% usage across all eight universities.

Computing is perhaps an easier area to share than other types of equipment being a foundational technology which is used remotely by users, removing many of the recognised barriers to sharing. The running costs, however, are allocated on a fair share basis and shared between the N8 universities.

Over the last 12 months N8 HPC has demonstrated the success of running shared models by embedding the running of N8 HPC into normal university activities. It has tapped into the existing Business Development activities, graduate training and HPC support to ensure a seamless approach to the use of the HPC in research.

The N8 Equipment Sharing Toolkit contains guidance on the development of Cost Sharing Groups and N8 HPC is being used as an exemplar for this financial model. Considering that the major running cost for the facility is utility costs, utilising a VAT exemption through a cost-sharing group has the potential to save the partner universities a substantial amount over the five year lifetime of the facility.

PART 2
N8 EQUIPMENT SHARING TOOLKIT (N8 EST)

2.1 Health and Safety Questionaire Template

Sample Submission and Work Activity Form and Checklist - version 5

Summary Checklist

The N8 Equipment Sharing Toolkit aims to promote equipment sharing. Successful sharing requires prior discussion between visitor and host to evaluate any risks associated with the equipment and/or any samples or products involved. Below is an N8 agreed checklist of the key areas that should be considered before any work commences. Further information regarding each area is available in the detailed Sample Submission and Work Activity Form.

Proposed Activity

1. Has the proposed activity been discussed and agreed?	Yes/No

Equipment Details (if the visitor is operating the equipment themselves)

2. Have the risks associated with the operation of the equipment been considered?	Yes/No/NA
3. Have the equipment control measures and training requirements been agreed?	Yes/No/NA
4. Have the data storage and computer access been agreed?	Yes/No/NA
5. Have the necessary access arrangements been put in place?	Yes/No/NA

Samples and Products (if samples and/or products are involved)

6. If any samples are to be brought on site by the visitor, have the risks, control measures, and approval requirements associated with these samples been agreed?	Yes/No/NA
7. Have sample and product storage, return and waste disposal been agreed?	Yes/No/NA

Other Aspects

8. Have any potential ethical issues and approvals that might be associated with the work or the samples involved been considered and agreed?	Yes/No

The host and visitor are strongly advised to formally record the details covering the agreed access, in particular the required training and its subsequent delivery.

Declaration:
To the best of our knowledge, we have covered the above aspects. The recommended control measures and training will ensure that any risk to all persons and equipment associated with the proposed activity is as low as reasonably practicable. All identified requirements and training will be completed before the work commences.

Signed (Visitor): _____ Name: _____

Date:_____

Signed (Host): _____ Name:_____

Date:_____

Sample Submission and Work Activity Form Introduction

The N8 Equipment Sharing Initiative aims to maximise the research performance and efficiencies of all the partners within the N8 through promoting equipment sharing wherever this is feasible. To reduce inertia barriers to equipment sharing, this form outlines the aspects agreed within the N8 that must be considered when undertaking a risk assessment of proposed equipment sharing. The form can be used as a stand-alone pro forma but can also be used in conjunction with existing protocols and procedures, or even just as a prompt to ensure all the key areas have been considered.

Access to each piece of equipment is at the absolute discretion of the owner and not all equipment will be available or appropriate for sharing. Prospective visitors should initially check with the owner whether access might be possible in principle prior to commencing detailed considerations. The type and frequency of access requested will also influence the final decision by the owner and this form is also designed to help identify any major issues.

Completing the form will undoubtedly require a dialogue between the prospective visitor and host and these discussion should be commenced well in advance of the proposed activity. While it is recommended that the full form is used for each new area of sharing, the Summary Checklist can also be used as a quick reminder of the potential areas to consider.

Prospective Visitor Details

Name:

Email:

Telephone:

Web:

Organisation (School/Department/University):

Prospective Host Details

Contact name:

Email:

Telephone:

Web:

Organisation (School/Department/University):

You are strongly advised to check with the prospective host whether access might be possible in principle prior to attempting to fill in this form. The form should be completed through discussion between both the prospective visitor and host.

Contents

Section A – Proposed Activity

A1 Summary of Proposed Activity

Equipment (where applicable - make/model/database):

Type of Access (please tick one option)

- ☐ Full service (host undertakes all the experimental work)
- ☐ Supervised access (appropriate training and support provided by the host)

For supervised access please indicate the level of experience with this type equipment (please tick one option)

- ☐ Highly competent user
- ☐ Some experience
- ☐ No experience

Will samples be brought on site?

- ☐ No
- ☐ Yes

If Yes, please specify:

Brief description of the proposed work (objectives, measurements to be made, process to be undertaken, etc.):

Does a risk assessment already exist for the sample and/or the proposed work?

- ☐ No
- ☐ Yes

If Yes, please provide a copy:

Please indicate the estimated level and frequency of usage as far as it is practical to predict.

Section B: Equipment Specific Details

Only to be completed if the visitor will be operating the equipment themselves.

B1. Identification of Equipment Hazards

Can the proposed work be covered by the host's generic risk assessment that already exists for the equipment involved?

YES: ☐ **NO:** ☐

If Yes, please ensure that a copy if provided to the visitor.
If No, please answer the following questions:

Are there any significant hazards associated with the use of the identified equipment to analyse/ process the samples and/or undertake the proposed work activity?

YES: ☐ **NO:** ☐

If YES, which ones? (Please append further details if required)

☐ **Lasers**
If YES, please specify the category of laser involved and what interlocks are in place.

☐ **Electrical**
If YES, please specify the type of electrical hazard.

☐ **Mechanical**
If YES, please specify the type of mechanical hazard.

☐ **Manual handling**
If YES, please specify the type of manual handling involved.

☐ **Other Hazards** not listed above (please specify).

B2. Recommended Equipment Control And Training Measures

Special Precautions:
Are special precautions required to prepare the equipment, operate the equipment and decontaminate the equipment for the proposed work beyond the normal operating procedures for the equipment?

YES: ☐ **NO:** ☐

If YES, please specify:

Training:
Is specific and/or statutory training required?

YES: ☐ **NO:** ☐

If YES, please specify along with details of any previous training the visitor has already received and any future training requirements that have been agreed between the visitor and the host.

B3. Data Storage And Computer Access

Will the proposed work require any data to be stored at the host site after the completion of the work or access to proprietary analysis software at the host site?

YES: ☐ NO: ☐

If YES, please specify the following:

a) Estimated amount of storage space required

b) Period over which the storage space will be required

c) The software that will be required and over what time period

B4. Facility Access And Security

What arrangements will be required for the visit or to gain access to the facility?

☐ Accompanied at all times

☐ Issue of visitor card/pass

☐ Other (please specify)

Section C – Sample And Product Details

Only to be completed where samples are to be brought onto the host's site, provided for analysis by the host, or where the use of the equipment will generate physical products and materials (rather than just results).

C1. Identification Of Sample Hazards

Are there any significant hazards associated with your samples?

YES: ☐ NO: ☐

If YES, which ones? (Please append further details if required)

☐ **Chemicals**

If YES, which chemicals are involved? Please identify any substances that are considered to carry a high or exceptional level of danger as these will require a specific safety assessment to be agreed with the host Departmental Safety Officer / Lab Manager. The host will identify the need to provide Safety Data Sheets and COSHH assessments as required under the local rules.

☐ **Radioisotopes**

If YES, which isotopes, level of activity in use, and disposal routes? A local assessment will need to be agreed with the host Radiation Protection Advisor (RPA).

☐ **Micro-organisms**

If YES, which ACDP category? All pathogens (Hazard Group 2 to 4), will require a specific assessment to be agreed with the host Departmental Safety Officer.

☐ **Genetically Modified Material**

If YES, what type (microbial, plant, animal) and what Containment Level has the material been associated with? All work with GM organisms must be covered by an assessment, approved by the host GM safety committee.

☐ **Human Derived Material**

If YES, provide details and state whether as assessment has been agreed with the host Safety Officer and, if appropriate, with the host Ethics Committee.

☐ **Other Hazards not listed above (please specify)**

C2. Identification Of Exposure Potential

Where the samples pose a significant hazard, please answer the following questions:

Sample Pre-processing

Will the samples need to be processed at the host site prior to use with the equipment?

YES: ☐ **NO:** ☐

If YES, please specify below and identify any additional risks associated with the processing to be undertaken at the host's site:

Sample Exposure during Operation of the Equipment

Will the proposed operation of the equipment result in the potential for the operator to be exposed to the samples brought on site?

YES: ☐ **NO:** ☐

If YES, please detail below:

C3. Recommended Sample Control Measures

Identify appropriate measures that are required to adequately control the risks associated with the hazards identified above. These may include containment of samples in a fume hood or safety cabinet; the use of personal protective equipment, following a standard operating procedure or protocol. Also consider any specific training of personnel that may be required.

☐ There are no significant hazards associated with the identified samples and all work can be conducted using standard laboratory practice only.

☐ Specific control measures recommended for the transport, storage and handling the identified samples (including action to be taken in the event of spillage) are summarised below. Reference should be made to any specific assessments required or undertaken as appropriate.

Statutory Training
Is any statutory training required to handle the types of samples described?

YES: ☐ **NO:** ☐

If YES, please specify and state any previous training the visitor has received and the future training requirement that has been agreed between the host and the visitor:

General Training
Is any general training required to handle the types of samples described?

YES: ☐ **NO:** ☐

If YES, please specify and state any previous training the visitor has received and the future training requirement that has been agreed between the host and the visitor:

C4. Sample Delivery

Will the samples be sent prior to attendance at the Host site?

YES: ☐ **NO:** ☐

If YES, please provide the following information:

a) How will the samples be sent (post, courier, etc.)?

b) What action is required on receipt and how should the samples be stored?

The Host should provide the correct delivery address to use below:

FAO XXX
Address line 1
Address line 2
Post Code

It is the visitor's responsibility to ensure that the samples are packed and labelled appropriately.

It is the visitor's responsibility to obtain any approval required to remove the samples from their home site.

If the visitor is bringing the samples themselves it is assumed that these will be transported appropriately.

In all cases, only those samples identified in the previous sections can be brought on site unless additional agreement with the host is made in advance.

C5. Sample And Product Storage, Return And Waste Disposal

Samples and Products Produced

Will there be any samples or products produced as a result of the work?

YES: ☐ **NO:** ☐

Will you remove all samples or products along with any waste generated from site after completion of the work?

YES: ☐ **NO:** ☐

If you require the Host to store and/or return any samples or products, please answer the following questions.

a) How should the samples or products be stored after completion of the work?
b) How should the samples or products be sent to you?
c) Are there any packing or labelling requirements?
Please provide the full delivery address:

FAOXXXX
Address line 1
Address line 2
Post Code

Sample and Waste Disposal

If you are NOT removing all excess samples and any waste generate from site, please answer the following questions:

Are there any specific and/or statutory waste disposal requirements? If you answer "no" you are confirming that any waste can be safely disposed of through normal landfill and/or waste water routes.

YES: ☐ **NO:** ☐

If YES, what routes of disposal should be used (e.g. autoclaving, incineration, specialist waste disposal contractor, etc.)?

Section D – Other Aspects

D1. Ethical Considerations

It is expected that any potential ethical issues and approvals that might be associated with the work or samples involved have been considered and agreed. All of the N8 Universities follow the general principles of the Research Councils UK **(www.rcuk.ac.uk/research/Pages/ResearchIntegrity.aspx)** and Universities UK **(www.universitiesuk.ac.uk/highereducation/Pages/Theconcordattosupportresearchintegrity.aspx)**

As outlined in the Universities UK Concordat, all work should meet the range of ethical, legal and professions frameworks, obligations and standards that reduce the potential for harm, in particular to human participants, the environment, and animals involved in research.

Of particular concern is likely to be work associated with:
- samples comprising or derived from human tissue.
- samples comprising or derived from animal experimentation.

Other areas that should generally be discussed with the host include work that involves:
- materials associated with or intended for use as weapons.
- tobacco products.
- cosmetics testing.

Please confirm below whether there are any potential ethical issues and approvals that might be associated with the material being brought on site or the work to be undertaken?

YES: ☐ **NO:** ☐

If Yes, please give details:

Any identified ethical issues may need consideration by the appropriate Ethics Committee at the host institution.

D2. Other Considerations Specific To The Proposed Work And Not Covered Elsewhere

Are there any other considerations that should be brought to the attention of the prospective host that are not covered elsewhere?

YES: ☐ **NO:** ☐

If Yes, please give details below:

N8 EST Insurance And Liabilities – Proposed Principles Of Operation

Discussions between the insurance contacts at the N8 Universities have led to the following operating principles being formulated for incorporation into the formal agreements.

1. Insurance and liability should be covered in the agreements.

2. All Universities will have in place a minimum of £10m Employers and Public Liability insurance.

3. The Host University will decide on the appropriate level of maintenance and repair cover to put in place to deal with any breakdowns due to normal usage. This could include having no cover. For equipment purchased as a joint N8 project the level of maintenance and repair cover will be agreed in advance between the parties involved and stated in the purchase agreement.

4. The Host University will not be obliged to repair the equipment in the event of a breakdown. For jointly purchased equipment the level of cover will have previously been agreed between the parties involved and stated in the purchase agreement.

5. The Host University will take out Material Damage cover in respect of equipment offered for sharing as it sees fit. The extent of the cover, the excess and the inclusion of both repair/replacement and any losses due to business interruption will be at the discretion of the Host University. For equipment jointly purchased as an N8 project the extent of cover will be agreed in advance between the parties involved and stated in the purchase agreement.

6. The Host University will be responsible for any excess in the event of any non-negligent damage or breakdown. For equipment jointly purchased as an N8 project the mechanisms to deal with the policy excess will be agreed in advance between the parties involved and stated in the purchase agreement.

7. In the unlikely event of negligent damage it is presumed that the Host University or their Insurer may seek a recovery against the negligent third party.

8. For equipment that is being borrowed and removed from site, the appropriate insurance, including handling and loading/unloading is the responsibility of the University who is borrowing the equipment.

3.1 Provisional Banding Model Summary

The provisional banding model used by the group is detailed below:

- **Band 1:** strategic facilities, where the criteria for sharing the equipment will be part of the competitive award winning process, and will form part of the research growth of N8 (new infrastructure framework to be applied).
- **Band 2:** larger pieces of equipment where formal/informal sharing already exists as a result of collaborative working. Equipment with the capacity and capability to be shared. For this equipment uptake of the model is optional.
- **Band 3:** smaller equipment that does not lend itself to sharing and identified via the new N8 database.

Equipment Bands
These provide a useful framework with which to use the toolkit:

Band 1 – New Infrastructure Framework Applies	• Strategic Facilities as defined by N8 Universities that are part of the competitive award winning process and research growth of the eight universities.
Band 2 – New Infrastructure Framework Optional	• Larger pieces of equipment where formal/informal sharing may already exist as a result of collaborative working. • Equipment with the capacity and capability to be shared. For this equipment uptake of the model is optional.
Band 3 – New Infrastructure Framework Unlikely to apply	• Smaller equipment that does not normally lend itself to sharing and identified via the N8 database.

3.2 - Access to Equipment – Proposed routes for when to Charge

University A requires access to equipment as part of a research project.
Access will be provided by Universities B and C.
Costs are recorded as Research Expenditure in University A.

University C is a subcontractor on the research project led by University A .
This includes collaborations where research income is routed via a lead University.

University B is not a subcontractor on the project. Equipment access is simply being provided. This includes research collaborations with separate funding streams. Equipment may or may not be a Facility under TRAC.

Equipment is not a Facility under TRAC therefore costs are included in the overhead rates for research.

Equipment is not a Facility under TRAC therefore costs are included in the overhead rates for research.

Equipment is a Facility under TRAC, therefore costs are not included in the overhead rates for research.

Costs on the grant at University C do include academic staff and therefore some overhead.

Costs on the grant at University C do not include academic staff and therefore no overhead.

Treatment in books of Universities

Access Charge NOT Levied
This is the only scenario where any costs towards running the equipment are recovered as part of this research project by the University providing access to the equipment.

Access Charge Levied
Research Income-where participating in the research
Other Income where not participating in the research.

Access Charge Levied
Research Income-where participating in the research
Other Income where not participating in the research.

Access Charge Levied-Other Income.

3.3 Research Facility Cost Model – Cost Elements and Key Points

Cost Element	Further Detail	Key points to note
1. Pay Costs	These might include: • Technicians • Experimental Officers • Dedicated support staff • Academic Lead • Project/Facility Manager	• Check coding. Where staff are funded from Research (in whole or in part) these costs should be excluded. • Check if any time records exist-these may help. • Can a proportion of time be allocated specifically to one piece of equipment? • Can time be split between fixed time maintaining kit and variable time supervising use? Is there a benefit to splitting this? • If not, discuss basis for spreading time with key personnel eg. Lead Technician/Facility Manager. Example bases include: • Usage • Facility Manager weighting • Cost (less likely)
2. Non Pay Costs	These might include: • Maintenance/Service Contracts • Spare parts if not included in above • Consumables • Administrative costs • Utilities costs where directly charged • Other costs where significant e.g. travel, training	• Are Maintenance/Service Contracts in place? If not, are there plans to take these up? Do they cover the cost of spare parts? • Include consumables directly attributable to the Facility. • Some facilities may have utilities charged direct, particularly where these are significant. • Note if utilities form part of the cost here they should not also be part of a generic space charge which would also cover these types of costs. • Specific training may be required for new users. This should be factored in.
	These would not include: • Indirect Costs	• Indirect Costs are specifically excluded from Research Facility costings in the guidance and should be excluded here.

Cost Element	Further Detail	Key points to note
3. Replacement Cost Depreciation	<u>Replacement Cost</u> • Replacement Cost should be defined by the HEI. RCUK's view is that this should cover an appropriate specification of equipment for the research to be carried out.	• As defined by what is required to fulfil the terms of the work to be carried out at the point that the equipment is replaced.
	<u>Useful Life</u> • TRAC guidance allows for inclusion of depreciation based on the Facility Manager's assessment of Useful Life. Review of different approaches for definition of Useful Life has demonstrated this to be the most appropriate mechanism.	• Facility Managers can assess Useful life to take into account factors such as how the equipment is used locally. • Care is needed to ensure that there is no manipulation here to set price at either at an unrealistically low level or to deter use through under estimating this figure. Please document reasons for Useful Life where it does not fall between 5 and 10 years.
	• Work was commenced by Leeds to look at Useful Asset Lives based on the Taxonomy. This work is available as a point of reference if required.	
	• Factoring in the sustainability of equipment is a key concern for HEIs and RCUK. Their preference would be to fund depreciation costs in preference to funding a replacement piece of equipment.	• RCUK have not yet confirmed that they will fund on this basis. This is being argued for on the grounds of sustainability.
4. Space Charges	• Include Space Charges where material. A suggested level of materiality would be >10% impact on cost.	• Modelling of pilots has shown that Space charges associated with particular equipment tend to be either immaterial or significant.
	• If a decision is made to include Space Charges a suggested mechanism is to use an appropriate Space Rate as calculated through TRAC.	• Each HEI will have its own way of including Space charges. TRAC allows for varying levels of sophistication based on type and/or category of space eg. Research Laboratory Category 4 space would be more expensive than Class Based Category 2 space. Equally, simply a generic rate for Space or Research space could be used. Impact on price may be a factor here.

Cost Element	Further Detail	Key points to note
5. Efficient Usage	• This plays a key part in setting price. All usage should be taken into account in line with the TRAC guidance on the Research Facility Model i.e. unfunded internal use such as use by PhD students should also be included in the figure.	• Usage has a major impact on price. Getting it wrong has a major impact on recovery. • There may be a temptation to over-estimate efficient usage and thereby reduce the price-making the price more competitive, but if this usage is not achieved the facility cannot cover its costs. • Is there any usage data available? Look at the usage history, say for the last 3 years compared to what is being estimated. What's the average? Does the current estimate look reasonable in the light of this and if there are large differences are the reasons for these clearly understood? E.g. A large research project due to start shortly?

3.4 Notes on Methodology

Staff Time (See also Staff Time and Cost Breakdown, page 48)
Costs for staff should include "on costs" and these will be added by your Finance team.

1) Technical Staff
Please provide an analysis of all EOs/ Technicians by Facility.
The time of the EOs/Technicians should be split as follows:
Time spent on maintenance, cleaning etc of the kit.

Time spent on general running of the facility to include supervision of equipment operation and training.

The total number of hours should equal 37.5 per week over a 44 week year ie. 1650 hours per year in total. This is prescribed as per the TRAC guidelines for costing Research Facilities

Only the proportion of EO/Technician time spent working in the Facility should be included. Any time funded from a Research project should be highlighted and excluded from the costings (since this is already being recovered elsewhere).

2) Administrative Support Staff
Include administrative costs associated with running the facility.

3) Academic Staff
Include costs of academic staff overseeing operation of the facility.

Service
Include actual service contract costs if a service contract is in place. If not, include an estimate of likely service costs arising.

Spare Parts
Include a reasonable estimate for spare parts if these are not covered in the Service Contract. Consider likely replacement timescales.

Consumables
Include projection of consumables costs for the coming year taking account of actual costs incurred per Finance Ledger, usage variations and likely price rises where known.

If you are unsure of likely price rises highlight with the Cost Accounting team who will build this in for you.

Equipment Depreciation
This should be included at Replacement Cost Depreciation, even though it is not University policy to depreciate in this way in the published accounts.

An estimate of Useful life should be made. See further guidance on Equipment tab

Space Charges
These should be added where material to the costing in line with TRAC guidance.

A rate per square metre may be appropriate based on the TRAC calculated space charges.

Allocation of Facility Related Costs
Several of the costs identified above may not be attributable directly to one piece of equipment and we therefore need a mechanism to apportion these over all activity of the facility. This could be simply based on usage or weighted accrding to the relative complexity of each piece of equipment for example. There may be Health and Safety requirements which require more resource in a particular area. Please provide a suitable basis for allocating these costs.

Usage
This data is crucial for the cost calculation and can have a significant impact on the final rate. It is extremely important that an estimate of efficient usage is used but one that is reasonable for the facility. If the usage is set too high then the facility will under recover its costs, if set too low it is likely to lead to too high a price for the market.

Usage could be weighted eg, training time v actual use. See further guidance on Table 3.9 on page 54.

3.5 N8 Facility Costing Template

Equipment Fixed Costs		Equipment 1	Equipment 2
Technical Staff		24,000.00	8,000.00
Service		30,000	20,000
Spare Parts		0	0
Consumables		50,000	10,000
Sub-total fixed costs		104,000.00	38,000.00
Depreciation on Replacement Cost			
Replacement cost		1,000,000.00	500,000.00
Useful life in years		6	5
Annual depreciation		166,666.67	100,000.00
General Facility Costs			
Technical Staff - General Support	12,000.00		
Facility Administration			
Academic Lead	3,000.00		
Sub-total Facility staff	15,000.00		
Non-staff Costs	12,000.00		
No. of square metres occupied	80.00		
TRAC calculated rate from 2011-12 TRAC Return	200.00		
Sub-total general Facility costs			
Basis for allocation of Facility Costs - Staff		25%	25%
Basis for allocation of Facility Costs - Non-Staff		37%	53%
Basis for allocation of Facility Costs - Space		31%	56%
Facility Costs allocated - Staff		3,750.00	3,750.00
Facility Costs allocated - Non-Staff		4,441.28	6,405.69
Facility Costs allocated - Space		5,000.00	9,000.00
Total Costs - Staff		27,750.00	11,750.00
Total Costs - Non-Staff		84,441.28	36,405.69
Total Costs -Depreciation		166,666.67	100,000.00
Total Costs - Space		5,000.00	9,000.00
TOTAL COSTS		283,857.95	157,155.69
Usage Data			
Forecast based on Current Usage	Enter Units	1,800	2,500
Forecast based on Estimated Efficient Usage	Enter Units	2,080	3,000
Costings			
fEC		£ /unit	£ /unit
fEC Costs based on Current Usage		157.70	62.86
fEC costs based on Estimated Efficient Usage		136.47	52.39
Indexation Rate			
fEC Calculated Charge Rate		136.47	52.39

Note: If Variable costs are incurred per process these should be added in to the fEC rate once calculated

Equipment 2	Total	Notes
16,000.00	48,000.00	Staff direct time specific to kit-maintaining, cleaning kit etc
5,000	55,000.00	Actual or estimated cost of service/contract
0	0.00	If not included in a Service contract
8,000	68,000.00	Where identifiable to piece of kit
29,000.00	171,000.00	
800,000.00		Replacement cost at todays prices-"new for old"
8		Estimated useful life - See Eqt tab
100,000.00	366,666.67	
	12,000.00	Deduct any staff that are research funded
	0.00	Admin cost if applicable
	3,000.00	Academic Lead time if applicable
	15,000.00	General staff costs of facility to be split over separate kit
	12,000.00	General non staff costs of facility to be split over separate kit
	16,000.00	Base on sq m at TRAC rate for space type (if material)
	43,000.00	
50%	100%	For example, percentage estimate
10%	100%	For example, base on efficient usage projected
13%	100%	For example, specific space occupied where known
7,500.00	15,000.00	
1,153.02	12,000.00	
2,000.00	16,000.00	
23,500.00	63,000.00	
14,153.02	135,000.00	
100,000.00	366,666.67	
2,000.00	16,000.00	
139,653.02	580,666.67	
540	4,840	Enter number of hours/days etc Current Use
540	5,620	Enter number of hours/days etc Efficient Use
£ /unit		
258.62		
258.62		
		As calculated based on TRAC Guidance
258.62		

3.6 Staff Time and Cost Breakdown

				Directly Allocated time-Hours or %			
Staff Details	Full Costs inc. On Costs (excl. any research funded time)	Proportion of time spent on Facility work	Full Cost inc. On Costs for time spent on Facility work only	Equipment 1 Time	Equipment 1 Cost	Equipment 2 Time	
Staff Detail 1-Tech/EO	40,000.00	100%	40,000.00	10%	4,000.00	20%	
Staff Detail 2-Tech/EO	40,000.00	50%	20,000.00	50%	20,000.00	0%	
Staff Detail 3-Academic	60,000.00	5%	3,000.00		-		
Lead			63,000.00		24,000.00		

3.7 Equipment Breakdown and Useful Life

Equipment Fixed Costs	Equipment 1	Equipment 2	Equipment 3
Replacement Cost	1,000,000.00	500,000	800,000
Facility Manager assessment of Useful Life (Years)	6	5	8
Years Per Taxonomy Useful lives work-Leeds based on MRC guidelines			
Please provide justification for number of years assessed as Useful Life where outside range 5-10 years			

	Directly Allocated time-Hours or %						
	Equipment 2 Cost	Equipment 3 Time	Equipment 3 Cost	General Facility support time	General Facility cost- to be split based on proxy eg. Usage	Total time to equal Col C	Total Cost
	8,000,00	40%	16,000,00	30%	12,000.00	100%	40,000.00
	-		-		-	50%	20,000.00
	-		-	5%	3,00.00	5%	3,000.00
	8,000,00		16,00.00				63,000.00

APPENDIX 2

3.7.1 Asset Life preliminary work

Following on from the development of the asset register taxonomy, Leeds reviewed the possibility of developing a common view as to the productive lifespan of equipment for each of the genus in our N8 taxonomy.

The list (shown on pages 50-53) which has been tested out on colleagues in Leeds, is based on a draft internal MRC policy document on equipment depreciation. The document was submitted to MRC and EPSRC for their comments, and additionally to N8 PVCs for discussion.

If a common understanding as to the productive life of our assets could be reached, this could be incorporated into our respective databases, which will give us a powerful tool, both in terms of equipment planning within our own and across N8 institutions, but also will assist in our discussions with RCUK/HEFCE/BIS of the need for capital investment to protect the UK's infrastructure. Therefore it would be useful to have feedback from N8 partners as to whether the lifetimes which have been used seem reasonable.

Asset Life preliminary work

Productive lifespan of equipment for each of the genus in our N8 taxonomy:

Class	Order	Genus	Productive Lifespan
Process Equipment - Physical	Thin Film Deposition	Evaporator	11
		Molecular Beam Epitaxy	15
		Sputterer	15
		Pulsed Laser Deposition	11
		Chemical Vapour Deposition	11
		Electrodeposition	11
		Ion Beam Deposition	15
	Lithography	Optical	11
		Electron Beam	15
		Ion Beam	15
		Laser (Direct-Write)	11
	Etching	Reactive Ion	11
		Plasma	11
		Laser	11
		Mechanical	11
		Ion Beam Milling	15
	Controlled Environment	Furnace	11
		Rapid Thermal Annealer	11
		Glove Box	11
		Atmospheric Reactors	11
	Packaging	Wire Bonding	15
		Dicing	11
		Encapsulation	11
	Characterisation	Ellipsometry	15
		Profilometry	15
	Chemical Reactor	Crystallisation	11
		Distillation	11
		Parallel Synthesis	11
		Particle Formation	11
		Automated Extraction	11
		Automated Synthesis	11
	Sample Manipulation	Liquid Handling	8
		Robot	8
		Stopped Flow	11
	Textiles	Textiles Production	15
		Textiles Printer	11
Process Equipment – Biological	Growth and Manipulation	Bacteriology	11
		Virology	8
		Cell Culture	11
		Fermentology	8
	Centrifuge	Ultracentrifuges	11
		High Speed	8
	Tissue Processing	Tissue Processor	8
		Cryostat	8
		Microtome	5
		Immunostainer	5
		Dehydration	8
		Cell Disruptor	5

Class	Order	Genus	Productive Lifespan
	Sterilisation	Autoclave	11
		Water Purification	5
		Irradiation	11
		VHP Decontamination	11
	Characterisation	Fluorescent Readers	5
		UV	8
		Infra-Red	8
		Cell Counters	5
		Plate Readers	5
		Analysers	5
		Scintillation Counters	11
Materials Characterisation	Spectroscopy	Raman	11
		Infra-Red	11
		Nuclear Magnetic Resonance	11
		Optical	8
		EPR	11
		X-Ray Photoemission	11
		Fluorescence	8
		Circular Dichrometer	8
	Spectrometry	Spectrophotometry	8
		X-ray	11
		Mass Spectrometry	8
	Imaging	Magnetic Resonance	15
		X-ray	15
		Infra-Red	15
		Ultrasound	8
		In vivo fluorescence	5
	Optical Microscopy	Confocal	11
		Near Field	11
		Transmission	15
		Reflection	15
		Microdissection	8
		Live Cell	8
		Fluorescence	11
		Stereo	15
	Electron Microscopy	Scanning	15
		Scanning Transmission	15
		Transmission	15
		Detectors	15
		Sample Manipulation	8
	Surface Probe Microscopy	Atomic Force	11
		Scanning Tunnelling	11
		Magnetic Force	11
	Surface Analysis	Charge	8
		Adsorption	8
	Diffraction	X-ray	15
		Low energy electron	11
		High energy electron	11

Class	Order	Genus	Productive Lifespan
	Magnetometry	Vibrating Sample	11
		SQUID	11
		Kerr Effect	11
	Mechanical Properties	Tensometer	15
		Rheometer	15
		Load	15
		Hardness	15
		Tribometer	15
		Vibration	15
	Chemical Analysis	Air Analysis	8
		Distillation Analysis	8
		Water Analysis	8
		Solids	8
		Chromatography	8
		Macromolecular	5
		Electrophoresis	8
	Physical Properties	Particle Size Analysis	11
		Zeta Potential	11
		Thermal	11
		Geometric	11
		Balance	11
		Fibre	11
		Analytical Centrifuges	11
Sample Measurement / Analysis	Cryogenic	77K	15
		4K	15
		1.4K	15
		He3	15
		Milli-Kelvin	15
	Electronic	Network Analyser	8
		Microwave	8
		RF	8
		Oscilloscope	8
	Motion	High Speed Video	8
		Low Speed Video	5
		Telemetry	8
		Fluid	8
		Haptics	8
	Laser	Characterisation	11
		Dye	11
		Excimer	11
		Fibre	11
		High Power	11
		Opto-Acoustic Systems	11
		Pulsed Femtosecond	11
		YAG	11
	Optical	Quantum Information	8
		Surface Plasmon Resonance	5
		Dual-Polarisation	8

Class	Order	Genus	Productive Lifespan
		Bolometric	8
		High Resolution Imaging	8
	Proteins/Nucleic acids	Arrays	5
		PCR	5
		Sequencers	5
		Synthesisers	5
		Electrophoresis	8
	Bio-medical	Cardiovascular	8
		Orthopedic Wear	8
		Dental	8
		Whole Body	11
		Cells	5
		Tissues	5
	Acoustic	Doppler	8
		Ultrasound	8
		Audio	8
	Field Deployable	Solids	5
		Liquids	5
		Gases	5
		Plasmas	5
Large Scale Instruments	Simulated Environments	Acoustics	15
		Combustion	15
		Driving	15
		Flight	15
Infrastructure	IT	Server	5
		Storage	5
		Workstation	3
		Parallel Computing	3
		Data Management	3
		Display	5
	Mechanical	Hydraulic	15
	Workshop	CNC Machines	15
		Drill	15
		Grinding	15
		Joining	15
		Lathe	15
		Milling	15
		Sawing	15
		Sintering	15
		Other Cutting	15
	Laboratory	Fluids	15
		Medical	15
		Controlled Atmosphere	15
		Controlled Environment Growth	15
		Controlled Environment Storage	15
		Electromagnetic Screening	15
		Optical	15
		Field Deployable	8
	Cryogenic	Liquefier	15
	Vehicles	Personnel	5
		Equipment	5
		Agricultural	5
	In vivo	Washing and Watering Systems	5

3.8 Space Breakdown

To be added by Cost Accounting Team based on room details provided by Facility
Include extract space database or similar. For example:

Building ID	Floor ID	Room ID	Room Name	Room Catergory	Equipment Housed	School	Discipline	Functional Suitability	TRAC/fEC Catergory	% Research	% Teaching	% Other	% Commercial	% Admin	
ABC	1	1A	QUIET/CONSULTING ROOM	SPECIALIST	Equipment 1 prep area	MHS-CES	CES-IGP	2	2	100	0	0	0	0	
ABC	1	1B	PREP ROOM	SPECIALIST	Equipment 1	MHS-CES	CES-IGP	2	2	100	0	0	0	0	
ABC	1	1C	PET SCANNER	SPECIALIST	Equipment 2	MHS-CES	CES-IGP	2	3	100	0	0	0	0	
ABC	1	1D	PREP ROOM	SPECIALIST	Equipment 3	MHS-CES	CES-IGP	2	2	100	0	0	0	0	

3.9 Usage Breakdown

Usage
Further analysis of Usage to show any split and associated weighting applied

Proportion of facility use relating to Teaching, Research and Other	%
Teaching	
Research	
Other	

Research activity includes use by PGRs, institution/own funded research and externally sponsored research.

Justification for Usage
Data to be provided where available

	Equipment 1	Equipment 2	Equipment 3
Mean actual usage 2010 - 2013			
Estimated efficient usage 2012 - 13			
Actual usage 2012 - 2013	1800	2500	540
Proposed estimated efficient usage Aug 2013 - July 2014	2080	3000	540
Proposed less mean actual			
Justification for difference in proposed less mean			

	% Balance	Room Area	% Space	Research Area m2	Teaching Area m2	Other Area m2	Commercial Area m2	Admin Area m2	Balance Area	CTU Area m2	Unalloc Space m2	Total Area	School	Description
	0	10	100	10	0	0	0	0	0			10	MOZ	Imaging, Genomics & Proteomics
	0	15	100	15	0	0	0	0	0			15	MOZ	Imaging, Genomics & Proteomics
	0	45	100	45	0	0	0	0	0			45	MOZ	Imaging, Genomics & Proteomics
	0	10	100	10	0	0	0	0	0			10	MOZ	Imaging, Genomics & Proteomics
												80		

Justification for Weighting (if applied) not currently weighted at MCR.

Breakdown of activity - Equipment 1	No. Of hours	Weight	Weighted No. Of Hours	Justification
Training Hours	100.00	0.80	80.00	
Productive Hours	2 ,000.00	1.00	2,000.00	
Total Hours	2 ,100.00	-	2,080.00	

Breakdown of activity - Equipment 1	No. Of hours	Weight	Weighted No. Of Hours	Justification
Training Hours	-	-	-	
Productive Hours	3 ,000.00	1.00	3 ,000.00	
Total Hours	3 ,000.00	-	3 ,000.00	

Breakdown of activity - Equipment 1	No. Of hours	Weight	Weighted No. Of Hours	Justification
Training Hours	50.00	0.80	40.00	
Productive Hours	500.00	1.00	50.00	
Total Hours	550.00	-	540.00	

4.1 Overview of the Cost Sharing Group VAT Exemption

VAT on Sharing Equipment and Capital Assets

VAT has always been seen in the sector as a barrier for sharing assets between partly exempt[1] organisations such as universities. This is because, in most circumstances, when an asset is supplied from one party to another VAT must be levied on that charge. The VAT charge will be, at best, only partly reclaimable by the recipient, thereby introducing a worst case 20% cost to asset sharing, which could negate the one of the reasons for sharing - financial efficiency.

VAT exemption for "Cost Sharing Groups"

In autumn 2012, HMRC introduced the VAT exemption, enacting a piece of European VAT legislation which has been in place since 1978. Unfortunately the legislation is drafted in such a manner to be ambiguous. HMRC's guidance on interpreting the legislation is helpful in that it seeks to make the best of the exemption within the restrictions placed upon it by EU law.

Use of a CSG

In order to test its validity, both from a VAT technical perspective and also from a practical perspective, N8 engaged Deloitte (through the University of Sheffield) and set up a sub-group of University Tax & VAT Managers (from all N8 universities). The workstrand lead from Sheffield drafted guidance for implementing the CSG structure. This was peer reviewed and then reviewed by Deloitte. Having completed the guidance in May 2013 an approach was made to HMRC to gain sign off that it met the criteria, this being new legislation. Finally, in November 2013, after a lengthy exchange of correspondence, HMRC Policy consented to a meeting in which they expressed approval of the model.

What legal form should the separate legal entity take?

The legal entity may take any legal form, for example, it could be a company limited by shares, a company limited by guarantee, an LLP, etc. The proviso is that it must have a membership structure so that members can influence its activities. Initial thinking from the legal advisors is that a CLG will be the most appropriate legal form for the company.

Corporation Tax position

Where the CSG trades only with its members (and this trade has to be at cost to satisfy the Cost Sharing Exemption rules) then this is exempt from corporation tax. Therefore trade amongst the N8 members will be exempt. The transfer pricing rules will need to be considered where the host university and the CSG interact, but these will not create any cost implication. However, where trade occurs outside of the N8 membership then VAT will be levied on the transaction and it will be liable to corporation tax on any profits/ surpluses arising. A CSG may make a profit, but not on any transactions which it wishes to fall under the cost sharing exemption. An N8 university will need to decide its stance on whether to extend membership to other universities (or similar non-profit making organisations) and how it wishes to trade with industrial partners. For example, it may wish to trade with industrial partners from the main university or through its CSG. Trade with non-members is subject to tax in the university CSG or as non-charitable trade in the universities.

1 "Partly exempt" organisations are those which have a mix of activities for VAT purposes. Some activities are exempt from VAT (e.g. fee charging education), some are taxable (e.g. consultancy) and some are "non-business" (e.g. grant funded research). The net result is that most universities can only claim less than 10% of the VAT they incur back from HMRC, meaning 90% of VAT incurred is a real cost.

Complying the with VAT exemption criteria

Once a CSG is established it will need to invite membership of other N8 universities. In order to prevent VAT being chargeable by the host university on its supply to the CSG, the CSG needs to be included in a VAT group registration with the host. To qualify for inclusion in a VAT group the CSG must be >50% owned by the host university. For VAT grouping purposes this is not simply owning >50% of any shares, etc it is having controlling rights of the CSG.

Does the CSG need to have an 'exclusive interest' in the asset?

The CSG needs to have a 'right' of access to the asset in order to be eligible make an onward supply of the asset to CSG members. We would expect in most cases that the host university will purchase the asset (using any grant funding as applicable, etc) and then only the use by CSG members will be licensed to the CSG. This means that the hosts own use of the asset will not be charged out to the CSG and then recharged back again. The host university will reclaim any VAT charged to it subject to its 'normal' VAT reclaim position when purchasing such an asset. Most universities would expect to partly reclaim the VAT charged under their partial exemption methods. The CSG is therefore only placing the host university in its normal position.

HMRC Policy insist that in order to meet the terms of the CSE there must be a 'qualifying supply' made to all members, including the host. A qualifying supply is one that the recipient uses in order to make its own exempt or non-business supplies. Therefore for the CSG members other than the host university, the qualifying supply is of research equipment, which will be used in non-business research or exempt education. However, for the host university it will not buy in the equipment from the CSG.

What services will the CSG provide to its host University?

The CSGs will be established to provide a resource management service to the host. It will primarily have responsibility to:

1) Disseminate best practice for meeting the CSE criteria for the host's staff.
2) Manage and monitor asset use by members, report annually to the host University.
3) Locate assets to share to reduce costs of research for members.
4) Licence access to a database for members, of host University's assets.
5) Populate and maintain the database with host University's assets.
6) Facilitate sharing of the host University's assets amongst members.

Membership fee

It is suggested that each university charges a membership fee to enable it to cover the administration costs of running its own CSG. A nominal sum is suggested, say £500, which should provide initial working capital to cover day to day administration.

Key points to be aware of with the VAT Cost Sharing Exemption

- It does not remove VAT on purchases of equipment. i.e there is no improvement on normal VAT costs associated with equipment purchases.
- Not all services made by the CSG automatically qualify for exemption.

The second bullet point introduces another condition of the CSG exemption legislation, namely that the services supplied must be 'directly necessary' for the recipient of the service to carry out VAT exempt or non-business activity. For the asset sharing project this will not present a major obstacle. HMRC has stated that providing a university's overall VAT recovery position is that it reclaims 15% or less than the VAT which it incurs, all services supplied to it will benefit from the exemption. However, if a university reclaims more than 15% of the VAT it incurs through its partial exemption and business/ non-business apportionment methods then it must look directly at the service being provided and how the recipient uses the service. The member will need to ensure that when it buys in the use of assets from another CSG that it uses the assets in a discrete area which is >85% exempt/ non-business. This should not be difficult to achieve with the vast majority of research being publicly funded (which is non-business).

If the research is commercially funded then the member will be charging VAT on its supply to its customer meaning that although the CSG should charge VAT to it on equipment access it will be able to claim this VAT charge from HMRC making the overall transaction VAT neutral.

VAT Cost Sharing Exemption - Alternatives

Alternative structures have been considered for satisfying exemption criteria. However, the selected structure has been deemed most appropriate for the asset sharing project. The full N8 structure is shown in diagram 1. It demonstrates that where an N8 university has an asset to share with other members it needs to create its own CSG entity. This will then allow the VAT exempt use of assets around the N8 members, which should facilitate the sharing in excellence and growth agenda.

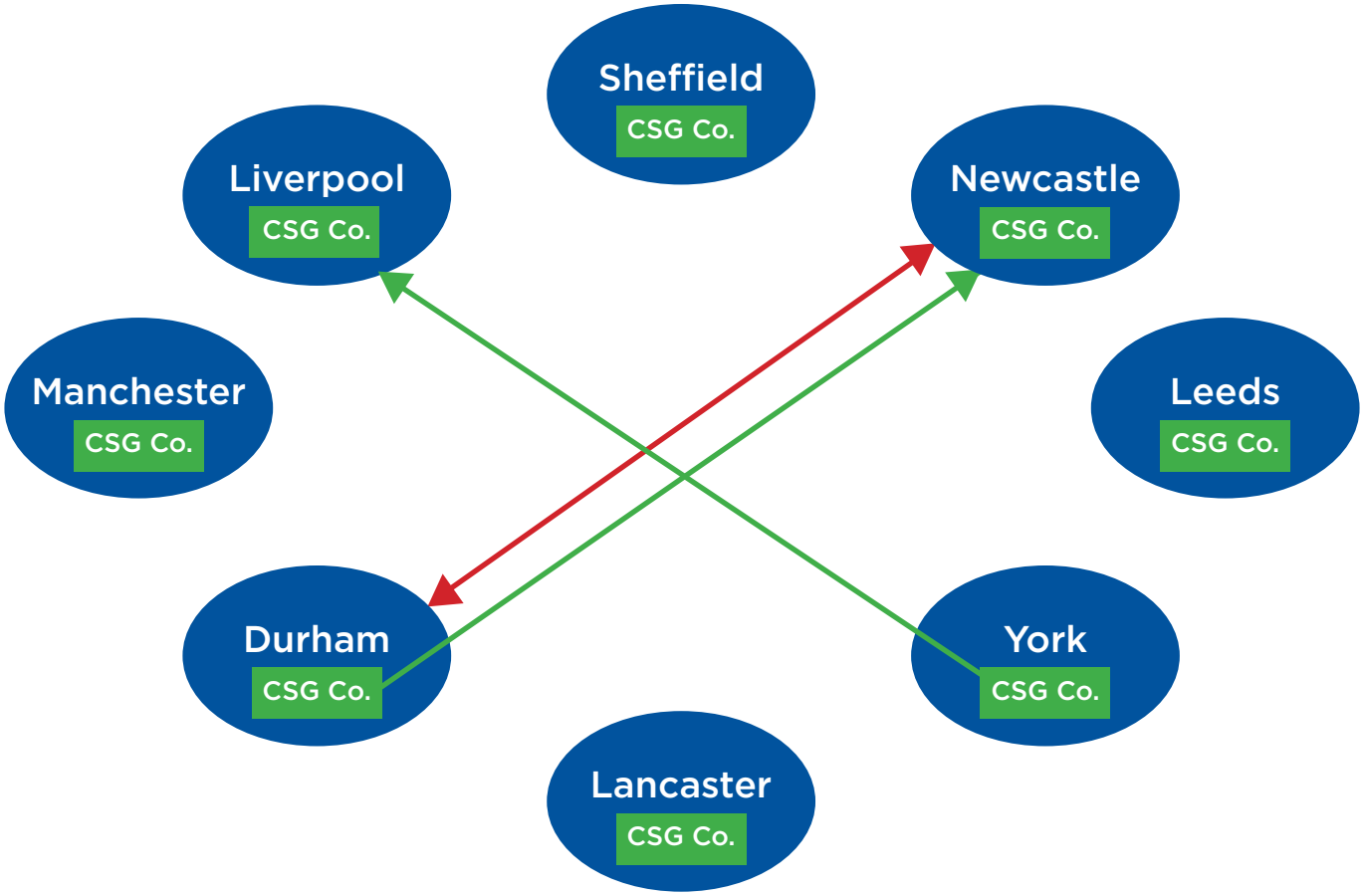
Process

Each N8 university will create a CSG which it will have 'control' over. This will allow the CSG to be included within the university's VAT group registration. This will allow the VAT exempt movement of staff and assets between the university and its CSG. Where all N8 universities create their own CSG it will allow further VAT exempt supplies to be made. For example if a member of staff from a different university to that of the host university was required to provide technical input to a project for a third N8 member, this technical advice should also be provided VAT exempt through the structure.

Conclusion

Our work has now proven that existing assets and new assets can be shared in a VAT efficient manner between N8 universities. Clearly there are administrative hurdles to overcome to satisfy the CSE criteria, but we are confident that once CSGs are established and operated as part of a normal working practice that they will become second nature to operate and deliver significant VAT savings, helping to further enhance the sharing agenda. Where new equipment or medical equipment is being purchased other structures may be more efficient and individual universities will need to determine their preferred mode of operation. There is a real cost to implementing the Cost Sharing Exemption, but if it is not operated through such a structure there will remain a real VAT cost to sharing assets. This VAT cost is likely to significantly outweigh the administrative costs. N8 universities must therefore be prepared to commit additional resources to facilitate the successful operation.N8 universities must therefore be bold and prepared to commit additional resources to facilitate the successful operation of CSGs in order to reap the much wider financial and collaborative benefits stemming from sharing equipment and ideas.

Diagram 1-N8 - Sharing Equipment with VAT Cost Sharing Groups - full model



Key:

University VAT Group

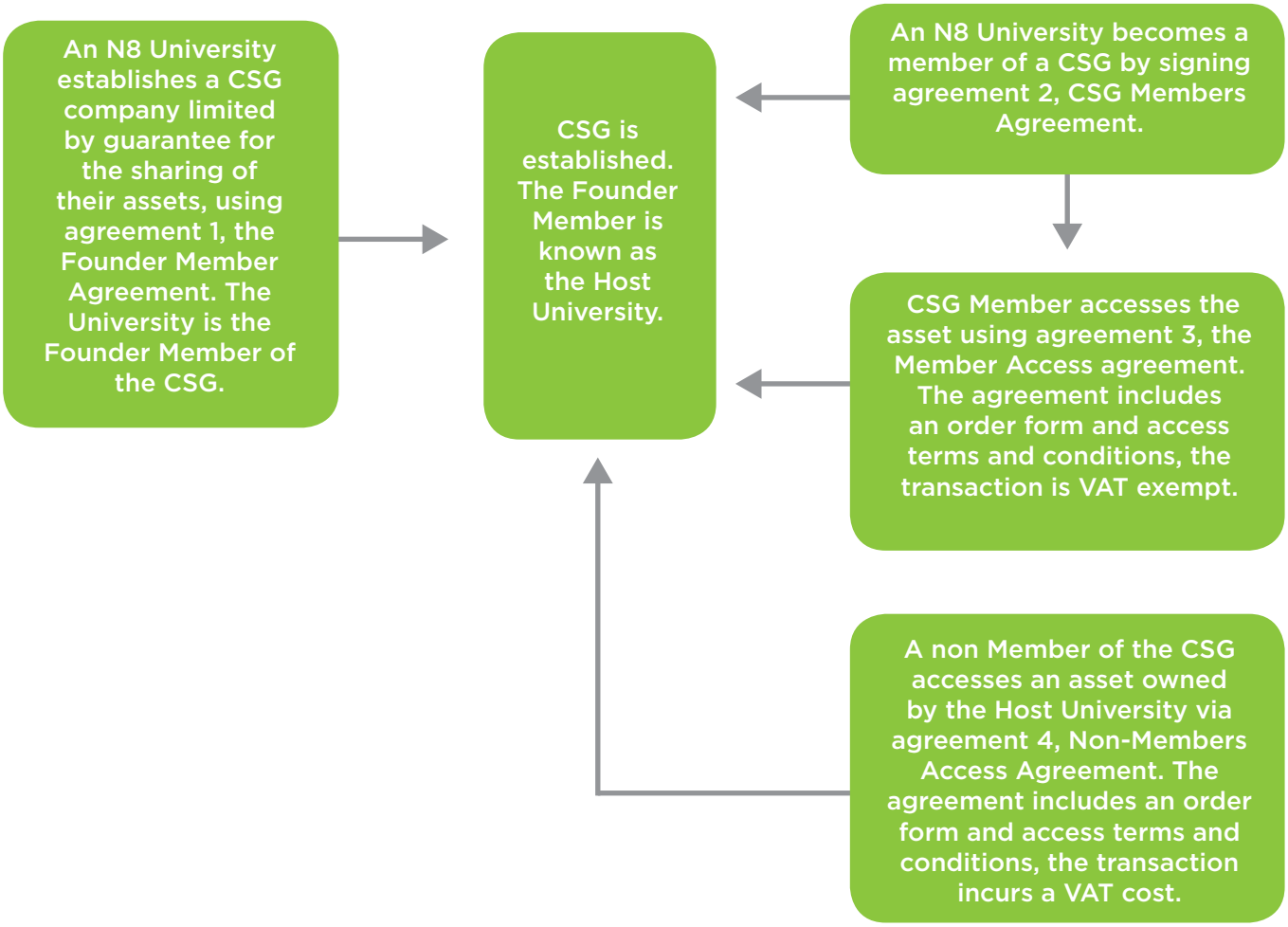
Company controlled by University — CSG Co.

Notes:

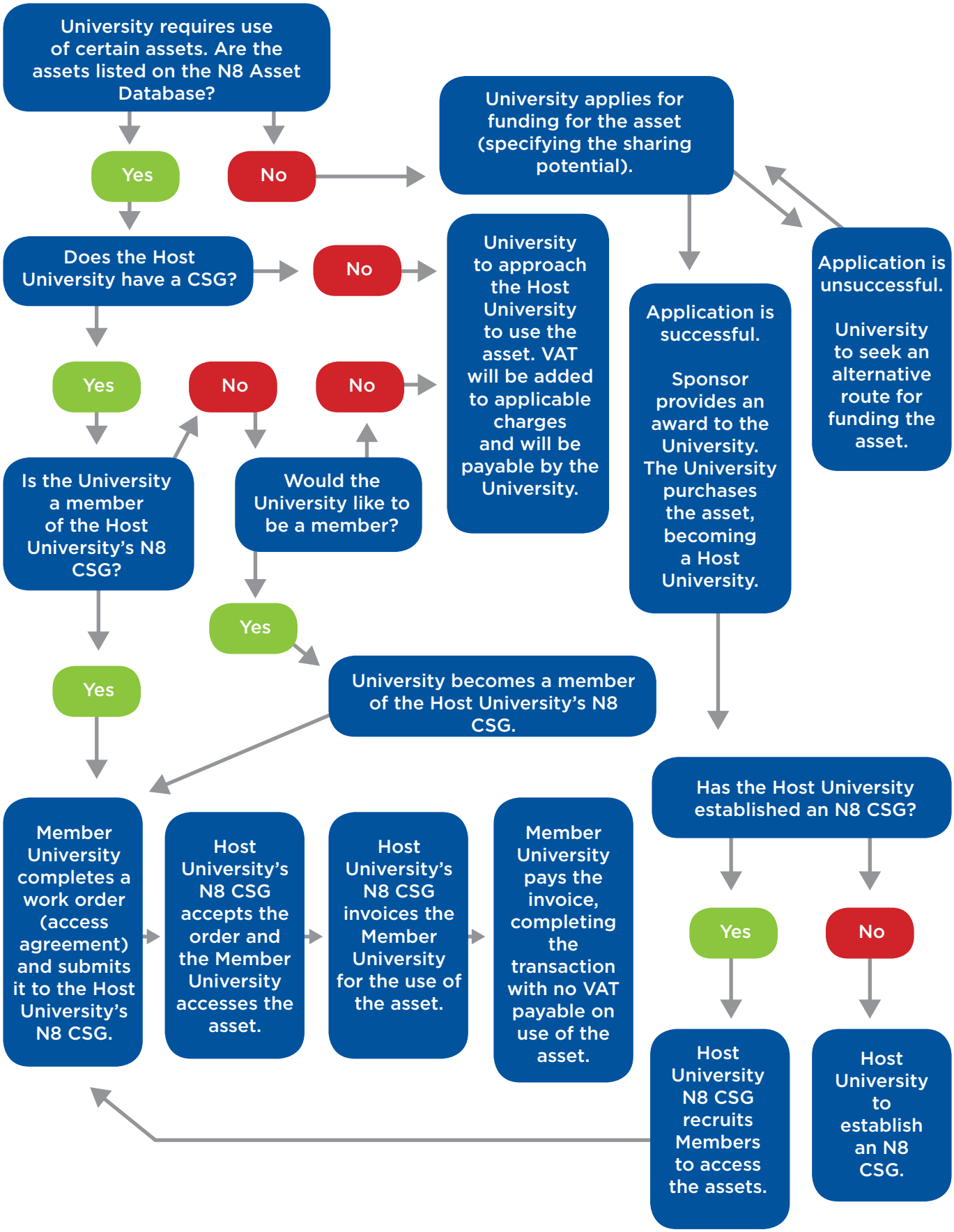
- All Universities must be Members of all CSGs
- A VAT exempt supply can be made through a CSG
- A supply by a University to another University is subject to VAT

Figure 5.1 Legal documents – Flowchart of agreements

The flow chart below provides an overview of when each agreement will be required in the sharing of assets.

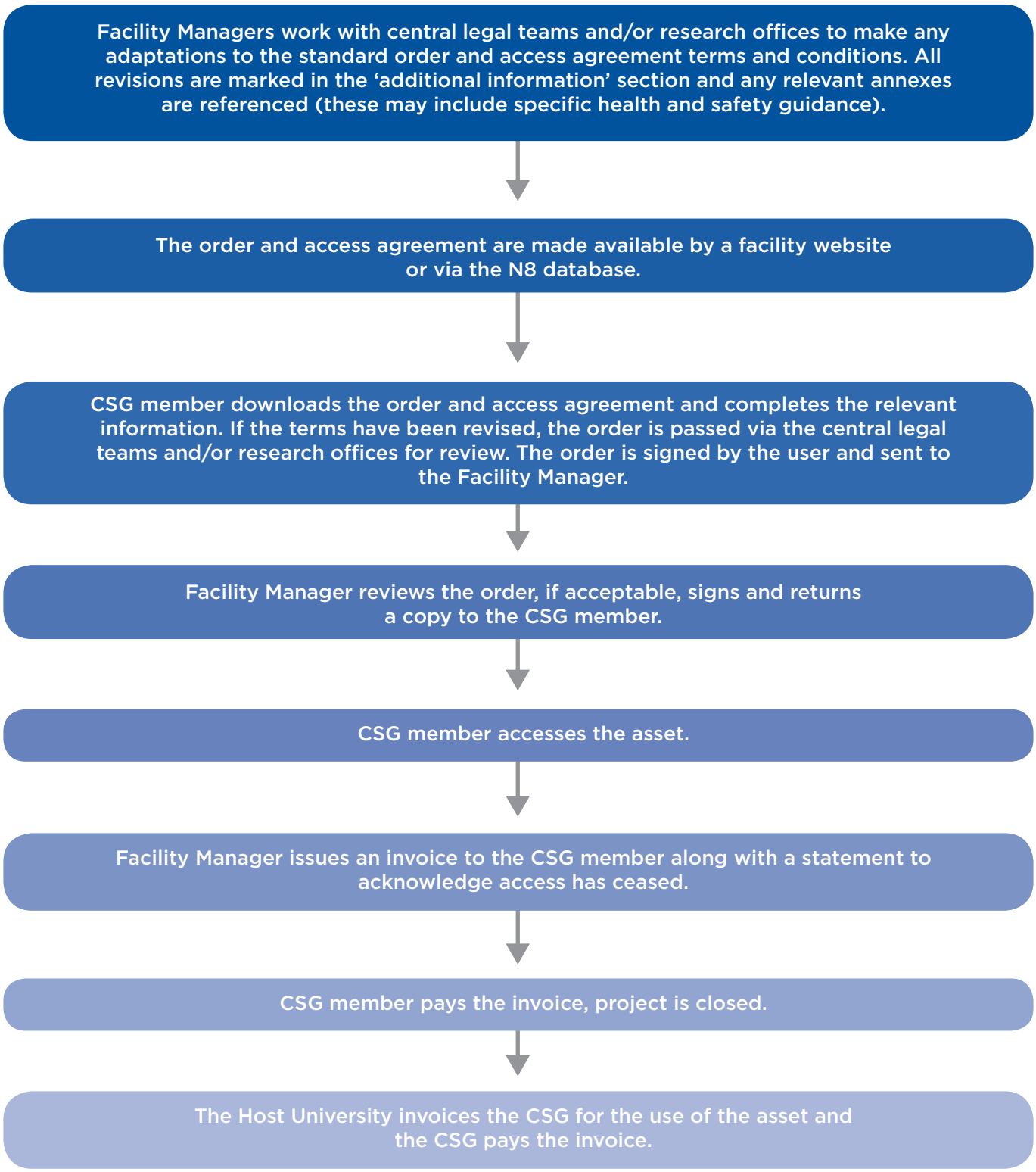


5.2 Legal documents – Flowchart of the overall process for sharing assets



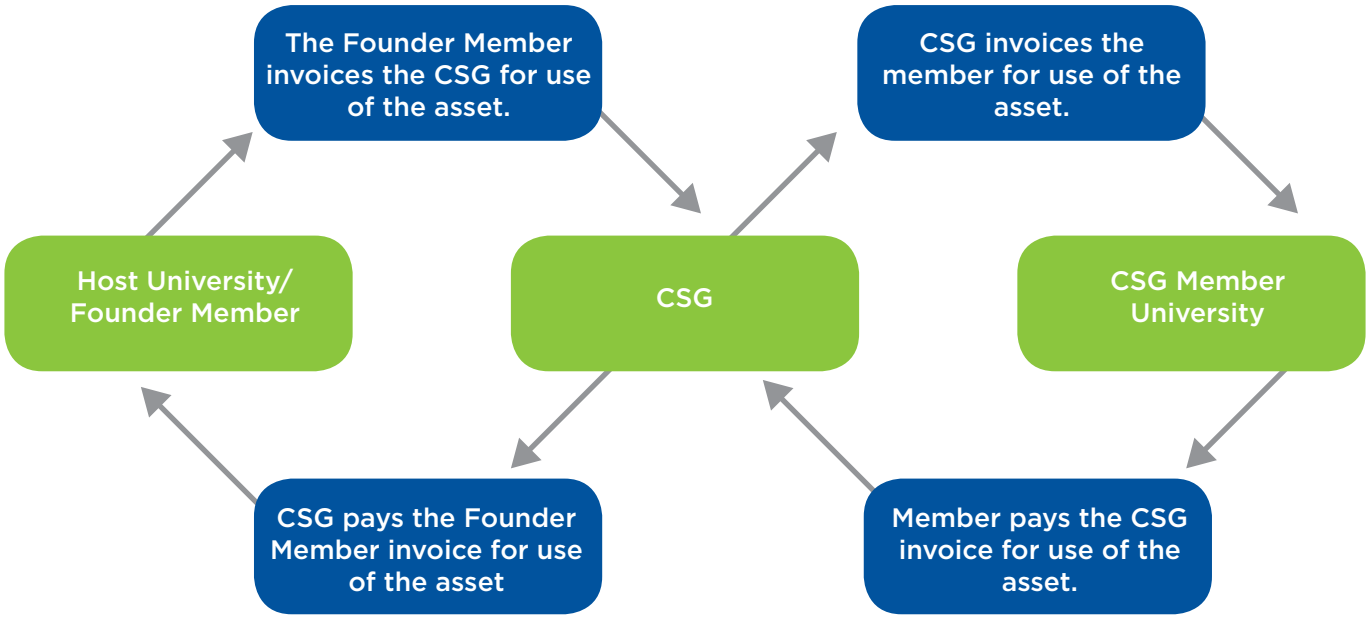
5.3 Legal documents - Flowchart of using the N8 CSG member access agreement

The flowchart below sets out how the contracting process for sharing assets with CSG members may be managed by an institution. It is recognised that each University will establish its own process for managing the contractual arrangements which may vary from this suggested route.



5.4 Legal documents - Flowchart flow of finances

The flowchart below provides an overview of how the money will flow for an N8 University using equipment of another N8 University via a CSG.



The University owning the asset is the Host University and therefore is the Founder Member of the CSG.

The University using the asset will be a CSG Member University.

Frequently Asked Questions

Health & Safety and Training

1 Do I have to complete the form?

No, you can use your own system if you wish. However, it is important that all of the aspects outlined are covered, the appropriate level of training is provided, and that this can all be substantiated if required, for example should there be any problems associated with the work.

2. Where statutory training is required to undertake the proposed work and the visitor has been trained at their own university, do they also need to go through our training?

This will need to be discussed with your local safety advisor. In some cases there will be cross-validation of training programmes which will mean that the training already received will be sufficient. In other cases it may be necessary to attend the local training as well. Where there is significant demand, we will seek to put in place the necessary cross-validation to avoid the need for double training.

3. What happens if I need specialist software to analyse the data?

This will need to be discussed with your host. If the host has a copy of the software you require they would normally provide you with access where this is allowed under their licence. However, the software may only be accessible on-site and you need to take this into consideration if you were intending to undertake the analysis of the data back at your own university.

4. Why have ethical considerations been included in what is really a health & safety document?

As any ethical issues are likely to be associated with the samples being analysed, this seemed to be the appropriate place to consider whether there could be any potential issues. Although there are unlikely to be any problems with the vast majority of the work associated with equipment sharing, it is felt to be important that the host can reassure themselves that the types of sample involved have been ethically sourced and will not compromise any local rules and regulations. For example, in one area there is a local rule that proscribes any work involving tobacco products due to the level of charity funding, even if the work was associated with making tobacco products less harmful.

Pricing and Charging

Further questions and responses will be added here as they arise.

1. Can I include all types of staff in the costing?

The most common types of staff in costing access to equipment are the technicians/Experimental Officers who maintain and run the equipment.

Other staff costs can also be included where directly attributable to the Facility. For example, a proportion of the time of a Lead Academic or an administrative member of staff running bookings.

Note that if this area is being costed as a Research Facility under TRAC then a mechanism must be in place to ensure that these costs do not also form part of the overhead rates.

If the area is not being costed as a Research Facility under TRAC then this does not apply.

2. My equipment is already shared on an agreed charge basis. Do I need to re-cost?

Not necessarily. If you already have an agreement in place which is working effectively there is no requirement to change this unless you feel there is a benefit in doing so.

The principles and templates are provided as an aide to do this if you so choose.

3. My equipment is already a Research Facility under TRAC but includes only direct costs. Should I change the cost model and when?

You should not change the cost model in the current year since these costs have already been deducted from the rates calculated through TRAC. A good time for review is at the time facilities are re-costed for the next TRAC round and an assessment of the benefits of doing this can be made at this time.

4. Is it ok to charge if the equipment is not a facility under TRAC?

Yes, as long as there are no staff at your HEI providing access to the equipment who are also attracting overhead as part of this project. The rationale for this is that you are not recovering these costs in any other way as part of this work.

5. What about charging different types of funders?

Not all funders pay the overhead rates, for example charitable funders. For these types of funders there is no other mechanism to recover the cost other than through a direct charge. Funders do however have different rules on the types of costs that are allowed on research projects, for example whether or not they will pay depreciation and space costs. Please check their Terms and Conditions.

6. What will the Research Councils pay?

The Research Councils have indicated that they will pay for these costs for charging pathways as shown in the Charging Pathways Flowchart. We are awaiting confirmation on whether depreciation will be funded in all cases or just in cases where the original source of funding was not from a research grant. Guidance will be updated once we have this.

7. My equipment has been funded/part funded from a Research Grant. Can I therefore include the depreciation?

Until further guidance is received from RCUK this should be excluded for work funded in this way. Please see other funders Terms and Conditions.

8. Can I include Indirect Cost?

No. Indirect costs are not allowed as part of costing a research facility under the TRAC model. The same principle should be adopted and they should not be added here.

9. Should I charge these costs as DI or DA?

The Research Councils have not issued any specific guidance on this as part of this process. TRAC guidance allows for access charges to equipment to be charged on either basis. Both approaches have advantages and different policies have built up over time in Universities.

There may be a requirement to charge as DI to comply with HMRC requirements on reimbursement of actual costs where these are routed through a Cost Sharing Group (CSG) to avoid the need to charge VAT. Guidance will be updated as soon as this is fully known.

10. My HEI is providing access to the equipment but with no charge since we have staff also working on the project and attracting overhead. How do I ensure that I have enough costs included in my grant proposal to cover this equipment access?

The only scenario where access charges for equipment should not be levied is where there are staff at the HEI providing access to the equipment who are also attracting overhead as active researchers on the grant. In this scenario, the resource estimate for their role on the project should also reflect the access required.

11. How do I record the Income?

Income should be recorded as per the Charging Pathways Flowchart.
Where the institution is simply "selling" the use of a piece of equipment or facility these should be treated as "Other" income in the books of the Institution providing the access.

Where an institution is participating in the actual research this would constitute "Research" income. Treatment should also comply with the Frascati definition for research.

12. How do Subcontracts work?

Subcontracts arise where an award is made to a lead organisation who then subcontracts a defined piece of work or service to a third party. Terms and Conditions of the contract would flow down through any subcontract arrangement. The third party is not necessarily named on the award and the subcontractor could be appointed after the award is made.

VAT would be chargeable on access to equipment provided in this way unless routed through a CSG.

13. How do Collaborations work?

Collaborations arise where other organisations (collaborators) are named as part of the award. A lead organisation is appointed to co-ordinate the project and potentially the financing. Income on Collaborative projects can be routed in two ways, either via the lead or direct to all parties.

To avoid the need to charge VAT on access to equipment Universities should be named on collaborations wherever possible.

14. Is it possible to have a Subcontract or Collaborative arrangement where there are no researchers involved at the subcontracting or second University?

Yes it is. There are known examples of Universities being part of a Collaborative agreement and simply

providing access to facilities or even just consumables. These include studentships where the student is based at another HEI and provision of data archive services. In these cases there is no mechanism for overhead recovery other than an access charge.

See Charging Pathways Flowchart.

15. Should I charge VAT?

VAT should be charged except there are specific reasons not to such as where there is a collaborative arrangement as detailed above or where the access is being routed through a Cost Sharing Group (CSG).

16. What is a CSG?

Cost Sharing Groups are defined in the VAT Section of this report.

VAT and Cost Sharing Exemption (CSE)

For VAT purposes it is essential to understand what is actually being supplied and that to some degree words used such as 'contract', 'agreement'. 'grant', 'collaboration', etc., will be viewed by HMRC on their merit, i.e., they will look at the reality rather than simply words. If you are in any doubt, you are strongly advised to seek advice from your local VAT expert.

Background

- Generally, charging another party for use of an asset is a 'supply' for VAT purposes and subject to VAT except in limited circumstances
- In Autumn 2012 HMRC enacted legislation which now allows VAT exemption on the above, subject to certain conditions
- N8's Asset Sharing project envisages charges for use of assets between N8 universities, therefore unless HMRC's criteria are met a 20% VAT cost is introduced, reducing or removing the efficacy of sharing assets
- A structure has been developed by the University of Sheffield's VAT Manager which has been peer reviewed and also validated by professional advisors & HMRC Policy. The structure is purely required to remove potential VAT charges, it does not produce any additional savings.

Guidance providing full detail is available to all N8 Members.

1. **What is the Cost Sharing Exemption? -** This is a VAT exemption, implemented into the UK VAT legislation in Autumn 2012 by HMRC despite it being contained in EU VAT law since 1978. It allows, under certain circumstances, supplies of services undertaken by an organisation, owned by members, made to its members to be VAT exempt, rather than subject to standard rate VAT.

2. **Why is a structure necessary?** - Without the structure we are required to add VAT to recharges between N8 universities which will be an additional cost.

3. **What is the basic structure?** - An 'independent entity' must be formed which is a membership organisation. Members are exempt from paying VAT on the services provided to them from the 'independent entity'.

4. **Can any party control the entity? -** Yes. The most VAT efficient structure is for each N8 university to form its own Cost Sharing Group (CSG) Company where the 'host' has control, but invites each N8 university to join as a member. This 'control' allows the CSG company to be included within the host's VAT group registration, removing potential VAT charges between the host and the CSG company.

5. **Why can't N8 have one CSG company?** - One company would be VAT inefficient as it will be charged VAT which it then can't claim back by N8 universities for the use of their assets (and staff) as it can't be included in a VAT group registration.

6. **What happens if we don't meet the conditions of the CSE?** - If the terms of the CSE are not met then organisations are required to add 20% VAT to the value of the services in all but a few specific cases.

7. **Does the CSE remove VAT from equipment purchases?** - No – VAT will still be payable and represent a cost on both purchasing and running costs. There is no additional VAT relief as a result of the CSE.

8. **Can we make money out of equipment sharing?** - The Cost Sharing Group (CSG) cannot make a profit from services supplied to members. It could make a profit on services provided to non-members as these would not be covered by the terms of the CSE and would be subject to VAT.

9. **Does the CSE cover all services between the N8 Universities?** - No – only supplies of services which are 'directly necessary' for 'qualifying research' to be carried out will benefit from the exemption. Qualifying research is research which is 'non-business' research (funded by way of a grant, e.g. from

9. **Continued -** RCUK, etc). Also qualifying is collaborative research which is grant funded. Non-qualifying research is where it is supplied under a contract to any customer and VAT is chargeable on the supply.

   Supplying a right of access to / or a lease of equipment is a supply of 'services' for VAT purposes. Therefore the services of staff or equipment used in qualifying research will gain the exemption.

   Non-qualifying research would generally include services to a University spin-out or where one N8 University (the Receiving University) is obtaining services from another N8 University (the Supplying University) as part of a commercial (non-grant funded) contract held by the Receiving University.

10. **How does the CSG company enter into a VAT group & how does this remove VAT charges?** - In order for a CSG company to be included in a university VAT group the university must have 'control' of the CSG company. For VAT purposes this means the university must have >50% of the voting shares of the CSG company. Once a company is in a VAT group supplies between members of the VAT group are disregarded for VAT purposes. This means any supply of staff or loan of equipment, etc, by the university to the CSG company does not carry a VAT charge.

11. **How does a CSG company make VAT exempt supplies to other universities?** - The other universities would need to become members of the CSG. In order to do so the most practical solution is for each university to have an interest in the CSG company. Once this is established the CSG company can make VAT exempt supplies to its members.

12. **Will the CSG need to own the equipment to enable it to supply it to Members?** No. The CSG must have some form of access right to the host University's equipment in order to be able to supply it to the members. The CSG will supply resource management services to the host University to ensure it supplies qualifying services to all members.

13. **This seems incredibly bureaucratic and cumbersome?** - The EU legislation is drafted in such a way to restrictive the exemption only to specific scenarios. Many Member States have enacted the CSE into their domestic VAT legislation in different ways. The EU has taken infraction proceedings against some Member States leading the UK to be cautious in its approach.

14. **Can we make it work?** - Yes, we can provide the structure and guidance to follow in order for supplies between the N8 universities to benefit from VAT exemption.

15. **Any other points?** - The supply of research services between universities is already no longer VAT exempt (from 1 August 2013) and therefore the CSG could potentially be used to remove this new VAT cost.

    Certain qualifying equipment purchased for use in medical research, teaching, treatment or diagnosis is already eligible for VAT relief on the purchase. Therefore sharing such equipment is already VAT free, however, it may be simpler to share all equipment through the CSG structure.

16. **Cost of implementation?** - An off the shelf company can be purchased at very little cost. Addition of the CSG company to a VAT group can be done by finance staff within a university. However, the company will incur the usual fees, such as audit, etc. It will also need to set up requisite legal documents for the use of equipment by CSG company members, which may be carried out in house or by professional advisors. One would hope that the benefits of creating a CSG and enabling VAT free supplies between N8 members will outweigh the other costs.

Contracts and Legal

1. Why do we need to establish a CSG?

There is no direct benefit to the host university; however, establishing a CSG will allow others to access your assets without incurring a VAT charge.

2. Do we have to be members of each N8 CSG?

There is no requirement to be a member of every CSG, however, until your university is a member it will be unable to use assets from the host university without incurring a VAT cost.

3. My asset has special requirements which aren't in the access agreement, what can I do?

The access agreements contain a special conditions section to allow it to be to tailored the requirement of each asset.

4 How will the agreements be used at my university?

Each university has their own internal procedures and you should therefore contact your internal contracts team to identify the procedure at your university. An example of how the agreements might be used is shown in figure 5.3, part II of the N8 EST.

5. Another university, not in the N8 would like to access an asset at my university, which agreement should I use?

Any university, whether in the N8 or not, may become a member of a CSG which will enable them to access your assets exempt of VAT costs. In this scenario the university will need to become a member of a CSG and access your asset via agreement 3, N8 CSG Member Access Agreement. If the university does not wish to become a CSG member they can access your asset via agreement 4, Third Party Access Agreement, this will incur VAT.

6. Another institution has accessed an asset at my university, who should we send our invoice to?

If the other institution is a member of your CSG, you should invoice your CSG; your CSG will then invoice the member university.

Produced by The N8 Research Capital Operational Infrastructure Group. February 2014