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Adoption of CERIF in Higher Education Institutions in the UK: A Landscape Study

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Author:	Rosemary Russell, UKOLN ISC, University of Bath
Date:	22 March 2012
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Contact :	r.russell@ukoln.ac.uk
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Adoption of CERIF in UK HEIs: A landscape study

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1 Executive summary

CERIF, the Common European Research Information Format provides a standardised way of managing and exchanging information about research. It offers a range of potential efficiency benefits for Higher Education institutions and related research organisations. 51 institutions in the UK are using CERIF Current Research Information Systems (CRIS), indicating a 30.7% adoption of CERIF. All institutions are using commercial CERIF CRIS with one exception - the University of Huddersfield which is developing an in-house CERIF-compliant system. Since 2010, UK institutions procuring CRIS have demonstrated a clear trend to purchase Pure from Atira (based in Denmark), which now has 19 UK installations. Other systems being used are CONVERIS and Symplectic Elements. The number of CRIS procurements increased particularly rapidly during 2011, with 10 institutions acquiring Pure between May and October.

Many HEI departments are involved in research information management (RIM) with the result that the CRIS implementation process can be politically challenging; project managers require diplomacy when negotiating access to data and managing CERIF mapping. High-level support within the institution is vital both for the CRIS and for CERIF as the underlying standard; the Pro Vice Chancellor for Research in particular plays a key role.

Institutional use confirms that CERIF does model the real-world environment of research information management in the UK. As vendors have become increasingly familiar with UK institutional data requirements, mapping processes are becoming more straightforward and implementation less time consuming. A two-year implementation period has been typical across institutions.

However despite the widespread use of CERIF as an underlying standard, many institutions are not engaging with CERIF directly. Staff find CERIF complex and rely on external expertise from CRIS vendors and UK user groups; only institutions involved in JISC projects are properly engaging with CERIF. However many staff would like to engage more, citing lack of time as the main factor. There is increasing recognition that local understanding of RIM processes and how local data maps to CERIF allows more efficient and cost-effective CRIS implementation and ongoing development.

2 Introduction

2.1 RIM background: the need for a standard

Awareness of the need for better research information management (RIM) in the UK has been growing for some years. Within institutions information about research is often fragmented across departments in systems which do not interoperate and there is considerable duplication of effort in rekeying the same data for different services. Externally, it is difficult to exchange information between institutions and with other research organisations such as funding agencies. CERIF, the Common European Research Information Format provides a standardised way of managing and exchanging research information. Its data model allows collection of information about researchers, organisations, projects, funding and research outputs, together with management of relationships (e.g. between research inputs and outputs) and vocabularies. CERIF therefore offers a range of potential efficiency benefits for institutions and related research bodies, such as improved reporting and analysis leading to opportunities for strategic planning.

The requirement for improved ongoing reporting (i.e. not just for exercises such as the Research Excellence Framework) has been one of the factors prompting many UK institutions to procure Current Research Information Systems (CRIS), particularly during 2010 and 2011. All commercially available CRIS are now described as CERIF-compliant (albeit to varying degrees); it cannot be claimed that any currently available CRIS is fully *based* on CERIF. Therefore it can

be argued that any organisation using a commercial CRIS is an adopter of CERIF. However, as this study seeks to explore, use of CERIF and engagement with CERIF are two different things.

2.2   JISC RIM

The JISC RIM programme grew out of work commissioned in 2009. The EXRI-UK (Exchanging Research Information in the UK)[1] report recommended that CERIF should be the basis for the exchange of research information in the UK. One of JISC's aims was therefore to expand the community of HE institutions and organisations using CERIF. Three sets of RIM projects have been funded during 2010 and 2011, and a fourth set is due to start in early 2012. UKOLN has produced technical syntheses for the programme[2].

2.3   euroCRIS

euroCRIS[3] is the official custodian of CERIF. The standard is developed by the euroCRIS CERIF Task Group. A range of documentation is provided including the standard itself and tutorials. There is now a large and growing number of UK euroCRIS members (the UK in fact has by far the largest number of national members in euroCRIS). UK requirements resulting from projects such as CRISPool, R4R and MICE have effected modifications and extensions to the standard.

2.4   UK RIM context

The diagram below shows a very basic representation of some of the key organisations and/or organisational groups currently involved in UK research information management (though not necessarily UK-based). There are many others which cannot be represented on such a simple level. In addition, all bodies are represented at the same level, and institutional repositories (IRs) are included (because of their outward-facing research outputs role) but not the other institutional systems which are integrated with the CRIS e.g. human resources, finance, student systems.
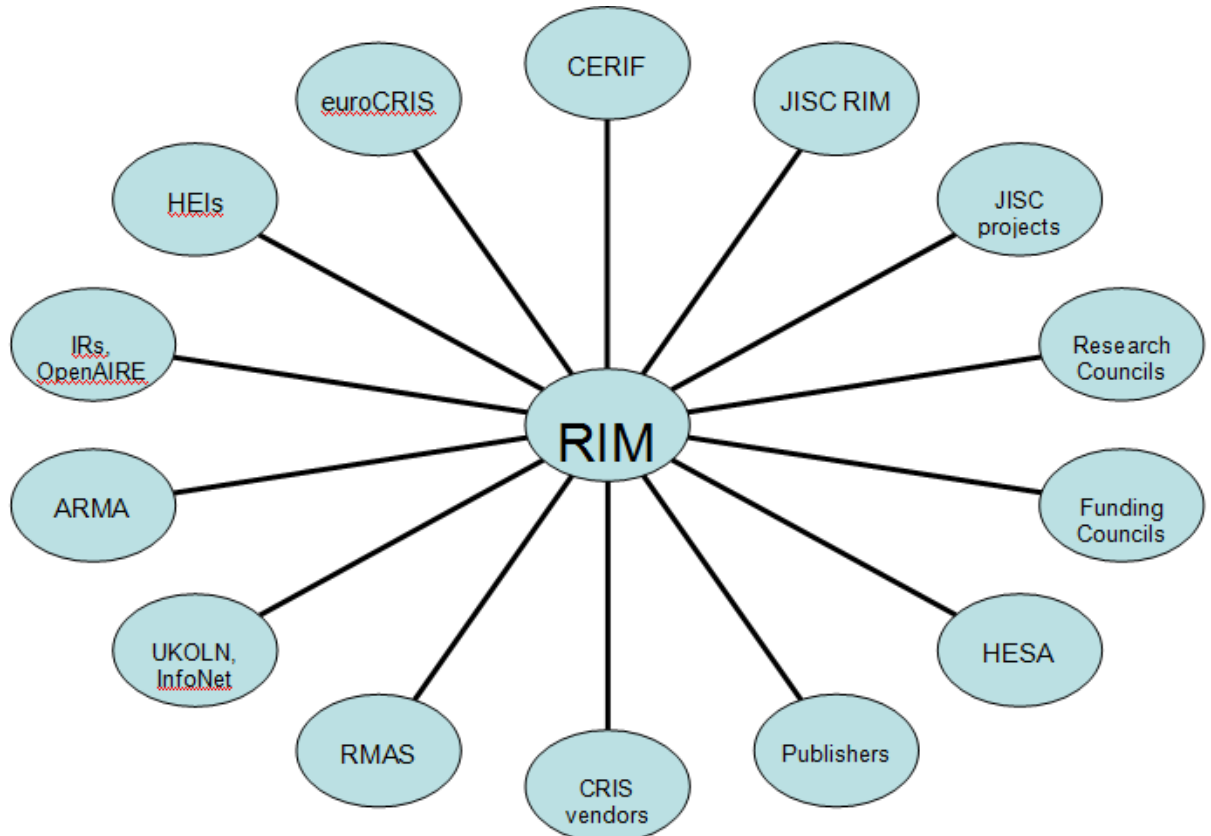
Figure 1: Organisations involved in UK research information management

2.5 Study scope

The current study documents the extent of adoption and engagement with CERIF in UK Higher Education institutions (HEIs) in late 2011/early 2012. While there exists documentation on the use of CERIF within JISC projects, there is little information on the use of CERIF at the many other institutions, partly since CRIS implementation is still work in progress and often at an early stage.

Since the focus is on use of CERIF in institutions, this means that *most use will be via a commercial CRIS software platform*. The only known exceptions are JISC project developments and the University of Huddersfield in-house CRIS which is currently under development (see below); there are no other in-house CERIF CRIS currently being used in the UK. It is worth highlighting that use and experience of CERIF is therefore mediated by the software. This means that many users are unable to talk about CERIF separately to the software. (This is of course normal for standards use.) For this reason, many of the interview questions were based on the CRIS, in addition to CERIF itself.

A complementary UKOLN document covers the wider context, describing RIM initiatives and activities in the UK using the CERIF standard, including JISC projects[4].

2.6 Approach/methodology

A range of background desk research was carried out including consulting websites and emailing vendors to compile lists of institutions using each CERIF CRIS software platform. A euroCRIS members meeting held in Lille in November 2011 provided a useful opportunity to consult software vendors and other CERIF experts directly. An interim report was presented at this meeting[5], and likewise at the JISC RIM Group meeting[6] in November 2011, both of which provided useful feedback.

Semi-structured telephone interviews were considered to be the best approach to elicit the information required from institutions. Discussion around the basic questions was needed, partly because the institutions are all at different stages of implementation and staff consulted have varying levels of understanding of CERIF. A set of questions was compiled to be used as a basis for the interviews; these were slightly edited as the study progressed. The questions are listed at Appendix A. During the telephone discussions it was particularly useful to have the opportunity to explore specific issues for institutions, or their priority areas.

The numbers involved were also manageable. It was possible to interview staff at the majority of institutions which are implementing 'full' CERIF CRIS. However, since there were several CRIS procurements during the lifetime of the study, the percentage changed. Towards the end of the planned interviews some repetition in responses started to emerge; this validated the sample size.

It was thought that a survey conducted on the Web would not provide the information required given the variations between institutions; the potential lack of response to such a survey was also a contributing factor.

Identifying appropriate institutional staff to interview was straightforward in some cases but more complicated in others, given that so many departments and members of staff are involved in managing research information. In most institutions there is a 'CRIS project manager'. Where UKOLN did not already have contacts based on previous work, web research was carried out and/or the head of the research office was contacted. Avedas, a supplier of CRIS software, was also helpful in making contact with one institution which had just procured CONVERIS.

The study will be repeated in one year to reveal if and how far things have moved on. This will help to assess the impact of the JISC RIM programme and also influence future programme planning.

3 Areas of CERIF use

CERIF use in the UK can be grouped into five main categories:

1. CRIS software platforms in Higher Education institutions
2. JISC projects
3. Institutional repositories (IR), and CRIS-IR interaction
4. Funding organisations
5. Publishing (international)

As indicated, existing UKOLN documentation covers the complete landscape. Activity in the last two categories is relatively small, although growing. The first category has the largest activity, in terms of organisations involved.

The third category is closely aligned with the first. Given some of the issues involved in CRIS-IR interaction and the interesting work being undertaken, it is worth highlighting separately. Work in this area includes the Readiness for REF (R4R)[7] Project, which developed plugins to support repository software to generate CERIF4REF. EPrints, Fedora and DSpace plugins were made available, enabling repository managers to import data from different systems in a common XML format, and also supporting generation of CERIF data in a form suitable for submission to REF. EPrints is also a partner in the CERIF in Action Project which will produce plugins for import/export of CERIF-XML. In parallel the University of Southampton has been expanding EPrints to include elements of CRIS functionality. A REF2014 plugin was released in February 2012.

It should be noted that the first three categories are of course all closely interrelated. A number of JISC projects base their development on the existing institutional CRIS. The Research Management and Administration System (RMAS)[8] initiative could be included in either category one or two above.

The table at Appendix C lists some of the key CERIF initiatives in the UK and places the current document in context. It is based on existing UKOLN RIM synthesis work[9].

4 CRIS: off-the-shelf or in-house?

For the purposes of this study, it is useful to adopt a broad definition of a CRIS, e.g. a system which supports the collection and management of a range of research information derived from various sources, together with reporting and analysis functions.

While more institutions previously used to develop in-house CRIS, or at least partial CRIS, to manage priority areas of research information or to provide a specific reporting function (e.g. REF), the clear trend now is to purchase systems to manage the entire process (while incorporating existing specialist systems). However there are some exceptions, e.g. Brunel University (a Symplectic Elements user for publications management) is planning to develop software in-house to manage research grants. Other examples outside this study include the Universities of Glasgow and Liverpool which have developed in-house CRIS not based on CERIF.

However the interviews highlighted that most universities are not building their own systems any more – there is pressure to buy commercial packages instead. Institutions such as St Andrews and King's College London (KCL) previously had fully functional in-house developed research management systems, but have now moved to commercial software. The development and ongoing maintenance of systems, especially for larger institutions, is not seen to be cost-effective. There are also benefits to be gained from a collaborative approach where a number of institutions work with a commercial supplier to develop and improve a product collectively.

Therefore bucking the trend, the only UK institution known to be developing its own CRIS using CERIF is the University of Huddersfield. RIMS (Research Information Management System) at

Huddersfield is using the CERIF structure 'as far as practicable'. However it has found the need to depart from the CERIF model in several areas e.g. where staff feel it does not yet model features relevant to UK institutional needs (such as REF data). RIMS is already being used as a REF planning tool and also for reporting on staff and outputs:

> *It is becoming a crucial tool for providing management and strategic data and reporting.*[10]

It is planned that the bulk of the RIMS development work will be completed by the end of 2012. This includes pulling in research student data and supervisors details, research projects, pre-award and post-award data.

Huddersfield had a number of reasons for deciding to carry out the development in-house. Firstly staff there wanted a system tailored specifically to the needs of University managers and the systems already used to hold research data. It would also allow them to develop the CRIS further as and when required. In addition it was perceived that off-the-shelf systems do not normally work 'off-the-shelf', and still need substantial institutional effort to function according to requirements; further payment is often necessary for customisation and long waiting periods may be required for future releases to solve problems. The final reason is interesting, and relates to the issue of developing CERIF expertise in the UK (discussed further below):

> *I also saw the opportunity to provide a staff development opportunity for members of the Research & Enterprise team, which would not have been available if we had bought an off the shelf system.*[11]

5 Commercial CRIS software platforms used in the UK

There are currently three commercial CERIF CRIS platforms being used in the UK: Pure (from Atira, based in Denmark), CONVERIS (from Avedas, based in Germany) and Symplectic Elements (UK-based). It should be noted that Pure and CONVERIS have many other installations throughout Europe; Symplectic have two outside the UK. Many institutions are at the early stages of deploying these systems.

Symplectic Elements was originally developed by academics based at Imperial College London for managing their own research publications. It subsequently became a commercial system although continues to have strong links with Imperial. The perception amongst current users is that it provides publications management only and is not a CRIS. This was also revealed at the pre-qualification questionnaire stage at several institutions which have recently procured systems. However, while it does not have the full range of functionality of other systems, Symplectic has been adding further functions, e.g. modules to gather information on projects, equipment, events, professional activities, grants and organisational structures. Imperial College is using the professional activities module and Plymouth University may in the future use professional activities, projects, equipment, grants; however it is not clear how many other institutions are using the additional modules. Nonetheless given the broad CRIS definition adopted, plus Symplectic's development of CERIF compliance, it is useful to include it in this study.

A further system is also now available - Research in View - recently launched by Thomson Reuters. euroCRIS has been working with Thomson Reuters to ensure CERIF compatibility. There are no UK users to date. It is a hosted solution, developed in the US, so has some differences to a European CRIS. The system is integrated with Web of Science and InCites.

5.1 Pure

19 UK universities are currently using Pure; they are listed in order of procurement (those institutions marked in italics were interviewed for this study):

University of St Andrews, University of Aberdeen, *Royal Holloway, University of York, University of Strathclyde, University of Hertfordshire, University of Lancaster, University of Aston*, Institute of Education, London, University of Dundee, Heriot-Watt University, Glasgow Caledonian University, *King's College London, University of Edinburgh*, University of the Highlands and Islands, *University of Bath*, Queen's University Belfast, University of Bristol, University of Birmingham.

The Universities of St Andrews and Aberdeen were the first users of Pure in the UK (and therefore the first CERIF CRIS), under a joint procurement. Together with Royal Holloway they were the only UK universities to have a fully deployed CRIS at the time of interviewing (although the launch of the Lancaster portal was imminent). The latest institution to sign was the University of Birmingham in January 2012. In total, Pure has 75 users, the vast majority in Europe.

5.2 CONVERIS

Six UK universities are currently using CONVERIS, listed in order of procurement (institutions marked in italics were interviewed for this study):

Cranfield University, University of Hull, University of Stirling, University of Brighton, University of Sunderland, London School of Economics.

A further user is the Medical Research Council Oxfordshire Regional Centre, where CONVERIS is used to manage information about research contracts, people and contract-related tasks. In total over 50 universities and other research organisations use CONVERIS in 11 countries, mainly in Europe.

5.3 Symplectic Elements

24 UK universities are currently using Symplectic Elements. They do not publish a full client list, but users include the following institutions (those marked in italics were consulted for this study):

Brunel University, Imperial College London, Queen Mary, University of London, *University of Leeds*, *University of Surrey*, University of Sheffield, University of Keele, University of Exeter, *Plymouth University*, University of Leicester, Leeds Metropolitan University, University of Cambridge, Bournemouth University, City University, University of Oxford, University College London.

5.4 Selection of institutions to interview based on software used

A cross-section of institutions using each software platform was selected. A full list with names of staff interviewed and/or consulted is provided at Appendix A. Generally, institutions which had very recently procured the software were not selected, since they would have limited experience to relate. A mix of old and newer universities was selected, as well as large and smaller institutions (which, unsurprisingly, showed some interesting differences), including those that are 'research-intensive' institutions.

A total of 20 institutions were consulted. 16 were interviewed by telephone/skype/in person; four were consulted via emailed questions. This comprised 10 institutions using Pure, four using CONVERIS, five using Symplectic Elements, and one in-house. It was originally planned to interview all universities using CONVERIS; this was achieved until Sunderland procured the system after the study interview phase had been completed. (The most recent CONVERIS procurement, by the London School of Economics, was announced just before this report was published.)

A smaller percentage of Symplectic users was contacted because it does not cover the functionality required by most institutions currently procuring CRIS (as discussed above); this was reiterated during many interviews. However it does have a substantial existing user base.

Two of the interviewees can be considered as experts in CERIF; they have been involved with CERIF and euroCRIS for a number of years, and have led several CERIF-based projects, as well as managing CRIS in their own institutions; one other interviewee had reasonable experience of CERIF.

6 The rapid growth of CERIF CRIS procurement in the UK: some figures

Since the vast majority of CERIF users have implemented the standard as part of their commercial CRIS implementation, it is relatively easy to discover the basic figures for CERIF adoption (an exception is the University of Huddersfield as discussed above).

CRIS procurement has increased rapidly since 2009. The number of instances of Pure in particular has grown at an exponential rate. The first UK Pure system was jointly procured by the Universities of Aberdeen and St Andrews in May 2009; between May and October 2011 UK Pure users grew from 7 to 17. At the time of writing, in early 2012, the total is 19.

At the time of writing 51 Higher Education institutions in the UK are using CERIF CRIS (it is valid to include Symplectic since the data model is CERIF-compliant). Taking the Higher Education Statistics Agency (HESA)[12] total of 166 HEIs in the UK[a], this indicates a 30.7% adoption of CERIF. The percentage is growing steadily; in January 2012, it stood at 29.5%.

7 Institutional findings

7.1 Management of CRIS implementation within institutions: roles

As indicated, the majority of institutions consulted have a 'CRIS project manager', or similar. although there were some exceptions. Given that all the institutions (except two) are in the process of implementing their CRIS, the role is usually labelled as project management. Therefore it usually has a limited lifespan - the duration of the implementation, although it may vary depending on ongoing funding allocations which have yet to be decided. In one case it was fixed term to cover CRIS implementation and REF submission.

Many people have been seconded from an existing post to project management. In some cases, the CRIS role has been added to an existing workload. One Research Support Office head had project-managed half the implementation until a project manager could be appointed. Another project manager has ended up doing technical development work for the CRIS, given the limited technical resources available, as well as having a technical background.

The University of Stirling has invested a significant amount of staff effort in its implementation: the team of seven includes three full-time staff (project manager and two Research Office staff), as well as stakeholders from the library, IT and e-learning. This is very different to most other implementations.

Given the nature of the work, and the many departments holding research information, CRIS responsibilities are often spread across departments, with a significant degree of team-working. Various stakeholders may join the team only for relevant periods. It was suggested by some institutions that, ideally, several people could have been interviewed for this study in order to

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[a] *It is notable that the number of UK HEIs provided by Universities UK (165) does not match the HESA number, particularly since UUK states that federal institutions such as the University of London are counted as one.*

obtain a fuller picture; however given the short timescale, it was only possible to consult one person per institution.

In addition to an implementation team, it is usual for institutions to set up a form of 'reference group' to represent stakeholders, receive early training and provide feedback. This is likely to include a combination of researchers, academics and departmental administrative staff.

It is notable that despite their heavy workloads, difficulties with institutional coordination and tight implementation schedules, all the people contacted were not only keen to take part in the study but were supportive of its aims. It is possible that given their institutional investment in a CERIF CRIS, they are keen for CERIF to be successful. Comments during the review period also indicated that managers found the UK landscape view useful.

7.2 Location of CRIS managers within institutions

It is interesting to note the different departments in which interviewees were located, and surprising that the majority are within Information Services – one might have assumed that most CRIS would be managed within the Research Office. It should be noted that given the varied setups for managing CRIS, as discussed, several interviewees were part of a CRIS team and did not have a specific project management role.

Department	Number of interviewees
Library/Information Services	9
Research Office	5
IT Department	4
Planning Office	2

Furthermore, the above figures may not indicate the eventual 'home' of the CRIS e.g. at the University of Lancaster, the project management has been based within the IT department for two years, but responsibility was about to be handed over to the Research Office.

One IT-based project manager believed that the lack of involvement of technology strategists in driving CRIS implementation is a significant issue for development; in many institutions IT staff are not involved at a strategic level. Another believes that the CRIS team will have more influence within the new IT department created when the library and IT were recently separated (after previous converging).

The University of St Andrews has a central administrator for Pure who is based in the Research Policy Office - this role is considered highly essential to the running of their deployed CRIS. The University of Strathclyde echoed this view regarding an administrator role, albeit at an earlier stage.

7.3 Implementation timescales

Prior to implementation, the University of Edinburgh and King's College London saved considerable procurement time and resources by using a 'Voluntary Ex-Ante Transparency Notice', which allowed them to reuse University of York procedures and shortcut the usual process.

Most institutions interviewed were in the early stages of implementation. Only two CRIS were fully deployed, ie with a publicly available portal. It was notable that one project manager seemed to have no clear implementation plan – but would work it out as they went along, together with reliance on the vendor.

A two-year implementation period seems to be typical. However, the size of an institution is clearly a significant factor. Royal Holloway's nine-month implementation was unusually fast. Also for Pure, the UK data model development means that time is saved, compared to early UK implementations.

Royal Holloway was the third institution to procure Pure in the UK (after the joint St Andrews and Aberdeen procurement). Its deployment was aligned with the relaunch of the college website so it took a very different course to other implementations. From initial data model definition in January/February 2010, the external portal went live in September 2010 (even before the St Andrews portal in early 2011). This was very rapid progress compared to other universities; although being small in size made it more achievable. There is ongoing work on institutional data quality e.g. HR and student systems are being updated. Also the finance system has not been able to provide some of the required data, so grant information has to be entered and maintained directly in Pure, which is not the preferred approach. Despite these problems, the fixed go-live date with the risk of exposing patchy data was seen as a good way of getting data cleaned very quickly. A lack of administrative resources has pushed the burden of publications maintenance onto academics; despite this being a necessity it was suggested that this was where responsibility should lie in any case.

York, another early Pure user, pointed out that its implementation timeframe was now atypical for Pure, since the development of the UK data model has significantly altered the initial effort required. Implementation at York started in March 2010 and went live internally in December 2010. Training of staff in all departments started at the beginning of 2011. The University of St Andrews agreed that the work required to implement Pure back in 2009 is very different to that required now: 'the basic model can now be taken out of the box'.

Edinburgh highlighted the fact that building relationships with research stakeholders in a large institution takes time. It is critical that schools/departments roll it out themselves to their academic staff.

7.4 Institutional system integration with the CRIS

All the institutions interviewed have aimed to integrate data from the following systems with the CRIS: human resources, finance, student, repository. Updates typically take place as a batch process on a nightly basis. Institutions were not specifically asked to name the other software packages being used but almost everyone mentioned Agresso (finance and awards management), SITS and pFACT by name. One institution was aiming to focus on integration with just three systems in the first year (HR, repository and authentication). Another has been forced to delay integration with further systems because of the necessity of focusing on REF requirements.

The CRIS is seen by institutions as middleware, acting as an intermediary between institutional systems. Some institutions (e.g. St Andrews, Edinburgh) also create a data warehouse which acts as a broker between the source systems (e.g. human resources, finance etc) and the CRIS. If a change is made in the source system, the 'views' in the data warehouse can be reconfigured without needing to make changes within the CRIS.

Some institutions seem to have found the initial data integration to be less complicated than anticipated, e.g. the University of Edinburgh:

> *Technically it has been fairly straightforward for us, although not completely without setbacks and problems. The process has basically been to create an intermediary data warehouse which we then map across to the Pure data model. Some data is synchronised between internal systems and some has been imported on a one off basis and the management of that data moved into Pure.*

It is also easier for institutions which are replacing an existing in-house CRIS, since they have done it all before.

Since it is desirable for data maintenance within the CRIS to be kept to a minimum, initial negotiations with owners of institutional systems feeding into the CRIS are crucial and can take considerable time and diplomacy. In some cases departments are asked to change the way they use certain fields.

As is typical with new systems involving data from multiple sources, it is often not the software implementation itself which is difficult, but the exposure (and subsequent management) of data quality and inconsistency issues and/or systems which are outdated and unstable. Frustration was expressed about 'flaky systems'. Some project managers were highly critical of certain institutional systems, e.g. 'the HR data was a mess, which we didn't discover until we needed to import it, and this then caused a delay.' One institution highlighted the difficulty of initial one-off (or 'legacy') imports: You only get one chance at mapping, then you're stuck with it!'

At the University of Strathclyde, a reconciliation exercise was needed across pFACT, the in-house Oracle-based award management system and the finance system, before any mapping could take place. These had all been standalone systems, requiring rekeying of data when data sharing was needed.

A frequently recurring problem is the lack of a commonly accepted view of institutional structures. This has various nuances: in some institutions there is no shared and validated infrastructure documentation, which means that different departments have different views of granular structures; in others the key issue is the use of different terms for naming the same units in departmental systems. This is clearly a significant issue when mapping since there is no common understanding as a basis. At another level, where coding is used, there may be no alignment: at the University of Bath, the HR and finance systems use different two letter codes for the same departments. The University of Aston mentioned that mapping HR data took significant effort just because the structure was very complex. At Cranfield University, two schools restructured just after HR integration with the CRIS, which caused problems; HR data did not properly reflect the University structure, which needed to be corrected first. For many universities, organisational structures are ongoing work.

Matching personal names across systems was another major issue for many institutions, together with the lack of person identifiers. Multiple versions of names *within* systems was also a big problem, primarily in repositories with no unique person identifier. Some degree of compromise was often necessary as a result.

One institution highlighted specific problems with mapping financial information to Pure. Staff there suggested that financial management in Pure may be functionally less mature than other parts of the system (although they admit that they may be using, e.g. pFACT, in a different way to other universities). Another mentioned that mapping funding applications is tricky.

One institution usefully stressed the need to be pragmatic when dealing with many different departments: 'focus on what we can do rather than what we did in the past…'

7.4.1 Institutional Repositories

Most institutions interviewed have integrated their repository, or are planning to integrate. The University of Edinburgh decided against integration because of the large mapping overhead involved; the repository will still be kept (mostly theses). Other institutions outside the study are also taking this route. EPrints was the most common software mentioned, but others were using DSpace and one (Royal Holloway) EQUELLA.

After considering using EPrints, KCL has now decided to use Pure to provide repository functionality as well; staff there believe that the Advance portal will do a similar job. Lancaster and St Andrews have discussed switching from their existing repositories to Pure, but have decided to continue with the current setup for the short/medium term. Reasons cited for retaining the repository included:

- additional repository functionality

- the need to keep materials other than those which sit within a CRIS e.g. open access publishing

- desire to use open source software
- maintenance of a variety of platforms instead of using just one supplier to avoid commercial lock-in.

For many institutions continuing to use a CRIS together with an existing repository, the CRIS will be used to populate the repository, for example, at York, research publications are pushed out from Pure to the EPrints repository. Mapping between Pure and ePrints has not been a problem; it was suggested this was perhaps because York's version of EPrints had not been customised. At Aston some changes to the EPrints system were necessary because it had not been set up in a standard way. At St Andrews the DSpace system is fed from Pure. As part of the initial legacy load, some institutions (e.g. Lancaster, Hertfordshire) have uploaded items from the repository to the CRIS; new items are then added directly to the CRIS and fed into the repository.

The Symplectic Elements system at Brunel University is integrated with the DSpace repository, but no other systems currently; it is planned to integrate the Brunel grants system, when it has been developed. At the University of Leeds all deposits to White Rose Research Online (EPrints) are made via Symplectic; the in-house REF submission software will also be integrated. The University of Surrey also uses the Symplectic repository tools module to allow academics to add full text of research outputs to Symplectic and have the metadata and full text pushed through into the back end of the EPrints repository.

Cranfield feels that its DSpace repository has benefited from integration with the CRIS. Staff there view the CRIS as an internal management tool, with the repository as a shop window for the CRIS. Another DSpace user interested in recording impact information was not impressed with the DSpace CERIF plugin, believing it looked difficult to implement.

7.5 Support for CRIS within institutions: achieving buy-in

Since research information is by its nature spread right across institutions, many staff are involved in its collection and management. A large number of staff at different levels of seniority therefore need to interact with the CRIS, either directly or indirectly. Briefing and training are of key importance and require considerable time, staffing and resources, thereby building trust and support for the CRIS.

The potential for collecting more extensive research information has resourcing implications across many departments, with some schools at the University of Edinburgh recruiting new staff:

> *The research administration staff we have been speaking with have all come into the process considering Pure a replacement to either the existing publications repository at Edinburgh, or as a replacement to their local bibliographic management systems - ie bibtex, Endnote, Reference Manager. The need to expand the management to include other content types has been a bit of a shock to them. We need to continue negotiations with the schools to find out how this will all be resourced and managed.*

The CRIS implementation process has been politically challenging for many project managers. Among a large number of stakeholders there will be some who are more protective of their data and less keen to contribute to a standardisation initiative: 'Bringing together data from individual fiefdoms is tricky'.

Given the need for negotiation and compromise with research information system owners, it is particularly important that there is high-level support for the CRIS, and for CERIF as the underlying standard. Many project managers mentioned the Pro Vice Chancellor for Research in particular as playing a vital role. 'There is a lot of top-down support in the University – we would have struggled otherwise.'

While one implementation enjoyed strong support within Administration, academics' reactions have been mixed – some are supportive, whereas others are actively hostile. However this was found to be atypical across the board. Another project manager mentioned that across his whole institution only one member of staff had voiced criticism. St Andrews has experienced relatively little resistance partly because staff already had experience of the in-house system and the message of collecting data once and reusing it had already been at least made, and, to a fair degree, accepted. However it was acknowledged that it was also very important to import as much legacy data as possible into the new system and ensure, where possible, these data were of good quality, for example with no duplicate publications.

The management of expectations was stressed, alongside dealing with rumours and misinformation. One institution admitted it had been very difficult at times, but was now tipping over into support after seven months of implementation.

There is huge variation across institutions in the amount of checking and editing carried out of publications records. At some, responsibility is devolved to academic departments, and/or individual researchers; at others there is a strict workflow system, with checking at several levels.

In some cases it has been necessary to stress that the CRIS is not being developed just for the REF; in the past many systems were created specifically for RAE reporting and then discarded. In contrast to this, another institution said that the system has been sold internally specifically as a system to support REF.

As indicated, the building of relationships with schools and departments is critical to the success of the CRIS. However it is acknowledged that the level of buy-in is often based on varying factors within different disciplines: 'Pure for example services the sciences very well, but is less useful in the Humanities' (University of Edinburgh).

In general, institutions have found reactions to be very positive. Some have been surprised by this. People are often won over by seeing all research-related data in one place – 'you get a better picture of what's going on'.

7.6 Institutional experience of CERIF

7.6.1 Reasons for CERIF specification

All institutions procuring systems within the last two to three years have specified CERIF compliance as a requirement in their Invitations to Tender, although many without fully understanding the reasons for its importance: 'just because it's a standard'. They mainly knew it was a standard for CRIS and had heard enough within the community to know it was important to be capable of exporting CERIF-compliant data. However, many people (including those who stated they only had a basic understanding of CERIF) knew that it would be particularly important as a standard for future interoperability. It was usually those with a more detailed understanding of CERIF and the UK RIM environment who could foresee likely scenarios for exchanging research information which would be highly beneficial for institutions, although one 'CERIF novice' had a clear vision of CERIF's potential to support automated exchange with funders such as HEFCE and the Research Councils, as well as the ability to track researchers across institutions.

One clearcut reason cited for using CERIF was:

> *It's a model that mirrors the landscape – so why not use it – a no brainer! (University of St Andrews)*

The University of St Andrews originally developed an in-house Research Expertise Database. In 2006, when theUniversity first became involved with euroCRIS, the similarities between the CERIF model and that of the existing in-house system were immediately apparent. This was echoed by King's College London, finding the CERIF model very similar to its Research

Gateway which it developed in-house. These comments validate the argument that CERIF models the real-life research information environment, with all its complexities. Other universities without an existing defined model have also claimed that CERIF has helped them to develop a view of their organisational structures and research activities, apart from systems implementation.

CERIF was viewed by one project manager as an insurance policy, so that if it was necessary to switch to another system, the data could be reused. On this basis, it did not matter what the standard was. He also considered CERIF as a quality-assurance proxy, stressing again that it was not the CERIF standard per se that mattered. However the same project manager also acknowledged that if he had more time, it would be useful to engage more with CERIF, having examined it in some detail at the specification stage.

Symplectic Elements was not originally CERIF-compliant but it has developed compliance more recently. Many Symplectic users (e.g. the University of Leeds) procured the software before compliance and therefore did not specify CERIF. Some showed less awareness of the importance of CERIF. Only one Symplectic user (Brunel University) is a member of euroCRIS. Another user was not aware that the software is currently CERIF-compliant.

7.6.2 Extent of CERIF understanding

Most staff interviewed had at least a basic understanding of CERIF, and some considerably more. They often cited a colleague who was more involved (although it is likely they did not know the extent of involvement). Managers considered it important to have someone in the team with an understanding. One did not think it was necessary as a manager. Another suggestion was that middle managers only need to know about CERIF concepts but not the detail, which is more usefully managed by staff with technical expertise. There was no marked difference across the departments, although the two CERIF experts interviewed are both based within IT departments.

Many people interviewed find CERIF complex and difficult to understand. In one case, it was regarded as considerably more complex than institutional requirements demanded. In contrast to this, both of the CERIF experts agreed that for people who understand databases, CERIF is straightforward and easy to grasp. They both cited examples of new programmers in their teams who have managed to use CERIF very quickly. What is complicated, however, is CERIF semantics, since this requires an understanding of business processes.

Many interviewees expressed a keenness to engage more with CERIF as an institution – speaking either for themselves or on the part of colleagues. Unsurprisingly, most cited the lack of time as the reason for not getting more involved, together with the immediate pressures of keeping to a timescale for CRIS implementation.

> *It's been so full on that it's difficult to know when I'd have had time to engage with CERIF.*

There is a declared need for pragmatism, and if a minimal level of CERIF understanding within the institution seems adequate for getting the job done, together with expert external advice, then they see no other practical option.

However at the same time there were a number of concerns:

> *I'm worried that lack of expertise in CERIF will hinder us.*

There was less awareness of CERIF amongst some Symplectic Elements users; this may be partly explained by the fact that many had acquired the software before it became CERIF-compliant, and therefore had not specified compliance. The University of Leeds commented that increased awareness of CERIF (e.g. via the RePosit Project[13]) has started relevant

conversations. Plymouth University, another partner in Reposit, said that the project had increased their engagement in CERIF, albeit at a high level by e.g. highlighting gaps in knowledge, raising issues and importance. There is now a perceived need to translate this back into what it means for Plymouth.

7.6.3 Shielding from CERIF

The majority of interviewees agreed that they were shielded from CERIF by the CRIS software ('we don't really see the standard'), and by the vendors' CERIF expertise. They were open about their heavy reliance and trust in the vendor to 'do' CERIF correctly:

> *We licenced the software so we don't have to worry about CERIF ourselves – someone else does it for us.*

Another institution commented that the vendor is very clear about what needs to be done (having done it many times before). Vendors have also reassured institutions that they will warn them if any implementation request would mean diverging from CERIF. Everyone without exception has found the vendors involved to be very helpful in the face of heavy demands on their time and resources. The shielding is not seen as negative.

Atira makes it clear that Pure uses a data model built on CERIF, but very much customised for the product. For example, there are limitations in the vanilla CERIF model in how research outputs are described, but this is catered for by the Pure data model.

Reliance on CERIF expertise in the CRIS user group was also mentioned many times. This also helps to shield staff at some institutions from further engagement in CERIF.

One project manager said that she did not expect to see much of CERIF until her institution was involved in a CERIF-based project.

7.6.4 How has institutional understanding of CERIF helped?

> *I think it helps to have a broad understanding of the CERIF model so you understand how the content types relate to each other, and to understand some of the concepts introduced by the system.*

The project manager at the University of Lancaster spent some time initially looking at the CERIF data model – this gave an idea of the data that would be needed and the systems that required integration. Since that period he has had little time to look at CERIF.

The University of York expressed the view that understanding why CERIF does things in a certain way is helpful when working through local implementation issues.

Clearly academic researcher end-users will not need to know anything about CERIF. However it is interesting that one or two project managers mentioned that they found their own basic understanding of CERIF to be very useful when conducting CRIS briefings at a more general level: 'Having a concept of CERIF helps when explaining to other people e.g. academics why things work in a certain way'. It also provides a case for asking departments to make changes to existing systems.

One CONVERIS user suggested that because there is no demand for CERIF in the UK at the moment (they are not being asked to provide CERIF-compatible data to other organisations), there is little incentive to spend time understanding it. They are also unsure of their system's CERIF capability, because they have not tested it.

It is useful to be familiar with the euroCRIS CERIF documentation structures; sometimes it is helpful to be able to check the vendor's interpretations, while recognising the need to be practical with the data model at times.

The University of Lancaster's requirement for managing equipment (along with other universities) in Pure led to the extension of the Pure UK data model. A group of institutions modelled the equipment requirement in CERIF and then put in a joint request to Atira.

Involvement in the RePosit Project at the University of Leeds increased awareness of the opportunities offered by CERIF. Project interaction with research office staff from various institutions flagged up shared areas of interest across research support, the library and IT, including the need to bring together data from disparate sources to satisfy funder requirements and make the best use/reuse of data gathered into the Symplectic system.

7.6.5 How might further engagement with CERIF help?

This question presented a chicken-and-egg scenario: it was difficult for many institutions to discuss how further engagement with CERIF might help, since they could not comment on what they did not know. However those with CERIF expertise were very clear that their understanding of CERIF has been extremely beneficial both in the CRIS implementation process, and in enabling better exploitation. One big advantage is being able to challenge the systems provider if necessary when an implementation problem comes up. Rather than requesting customisation from the supplier, it is possible to raise the issue with the CERIF TG and request extension of CERIF instead if it is a generic issue.

Illustrating the opposite situation, one project manager (with a basic understanding of CERIF only), felt that on the occasions when his vendors said that they could not make local changes because the data model would then diverge from the CERIF data model, it would be good to fully understand the reasons and challenge the vendor if appropriate. While he had no reason to doubt the vendor's position, he did wonder sometimes if there were additional factors, and he would feel more in control of the situation if he were more engaged with CERIF.

Several universities thought that after they get through the intensive CRIS deployment stage it would be useful to find out more about CERIF. In particular, after the REF, there are plans to examine other ways of using CRIS data – CERIF knowledge is likely to be useful at that stage. Cranfield University said that, once staff there were on top of the REF, they plan to explore exchange of information with the Research Councils. Cranfield is also looking towards better management of research data in future. Staff also want to integrate business and community engagement (with links to expertise) which is currently in Sharepoint.

Brunel University suggested that the work on reporting using CERIF carried out during the BRUCE Project[14] revealed lots of opportunities e.g. exploiting data in the HR system such as monitoring women in STEM subjects. Integration of research data adds value.

Interestingly, two institutions (one using Pure and the other CONVERIS) have a requirement to include creative arts outputs in their CRIS. This is likely to require further institutional engagement with CERIF, although there are a number of existing examples in Europe where arts outputs have been successfully managed within CERIF CRIS.

The University of Leeds sees a number of areas where CERIF could enable more efficient research information management and/or further services that would benefit the institution in future (some of which may require further institutional engagement with CERIF):

- *Grouping outputs by project and grant for reporting/ dissemination*
- *Efficiency gains in meeting funder requirements*
- *Data exchange with other systems – internal and external (e.g. import/export researcher data as they move institutions)*

- *Extension to dataset to enable linkage with research papers and facilitate research data sharing (internally/externally).*

The final area of research data management using CERIF is being explored in a number of initiatives including the JISC Managing Research Data programme.

Finally it is worth adding some interesting insights on the benefits of CERIF engagement, developed by the CERIFy[15] Project (as a result of its business process-mapping work with four UK universities):

We would argue that the process of CERIF mapping has some additional benefits apart from facilitating data exchange… Having a local understanding of how to engage one's own institutional RIM processes with the CERIF model is important in facilitating efficient and cost-effective modifications to the institution's own systems and helping those who manage the installation and maintenance of CERIF-compliant CRIS systems to make the necessary modifications to their systems in an efficient and cost-effective way.

7.7 Role of user groups

UK user groups have been established for CONVERIS and Pure. All institutions participate, although some are very new users, so have not yet taken part in a meeting. Symplectic have an annual user community conference. Users often communicate outside the regular meetings as well, linking up with institutions which are working on the same issues and avoiding duplication of effort.

All interviewees, with one exception, find the user groups extremely helpful, and of key importance for their implementations. It is an opportunity to discover what peers are doing, and learn from their work. Solutions to problems can be sought in a supportive environment. They are also important for discussing modifications and taking forward development of the product. The UK Pure user group is responsible for joint development of the Pure UK data model. Both CONVERIS and Pure users find that sharing the development workload is very useful. The University of Aston mentioned that York has been very helpful in advising on a CRIS communications strategy for institutions.

The University of Edinburgh has had some minor alterations made to its Pure system; however Atira have been careful to ensure that nothing is changed that affects the core of the UK data model. Any changes of significance are referred to the UK user group for discussion before going ahead.

As indicated, the user groups provide a CERIF support role. A number of institutions referred to relying on CERIF expertise within the user group, both for advice on implementation, and for guidance on taking appropriate decisions on development of the systems on a national basis.

There are lots of big players in the UK user group now, with lots of technical expertise – this is reassuring because it's unlikely that CERIF issues will be missed.

In contrast to other views, just one university has found the relevant user group unhelpful, with meetings diverted by lengthy discussion of specific local issues which are not relevant to others.

On the administrative side, one result of the very rapid growth of Pure use in the UK is that the user group has grown extremely large since 2011, with some institutions sending several

representatives to meetings. There are lots of different views and different priorities amongst the newer participants. An alternative decision-making process is needed. Some frustrations were expressed about lengthy discussions to work out a shared model for development costs.

There was a suggestion that it would be useful if JISC or the funding councils were able to offer support to solve shared national problems.

Another suggestion was for a UK CRIS user group, which would allow shared experience across system platforms. It was felt by others that another layer would mean too many meetings of a similar type, therefore they might not be well supported.

7.8 Role of euroCRIS

The chart below shows the five countries with the largest number of euroCRIS institutional members. (Total membership is spread across a large number of European countries, but there is also a growing number in other parts of the world). It reveals that the UK has the largest number by a long lead: 24, followed by Germany with 10 members and the Netherlands with seven. However these numbers do not reflect current active engagement in euroCRIS, although the president of euroCRIS is UK-based and there are several other active UK members. Although there was an impressively large number of UK participants at the CERIF tutorial and data surgery held in Bath in February 2012[16], UK participation in the euroCRIS task groups on the following day was not as large as might have been expected, given the UK location of the venue.
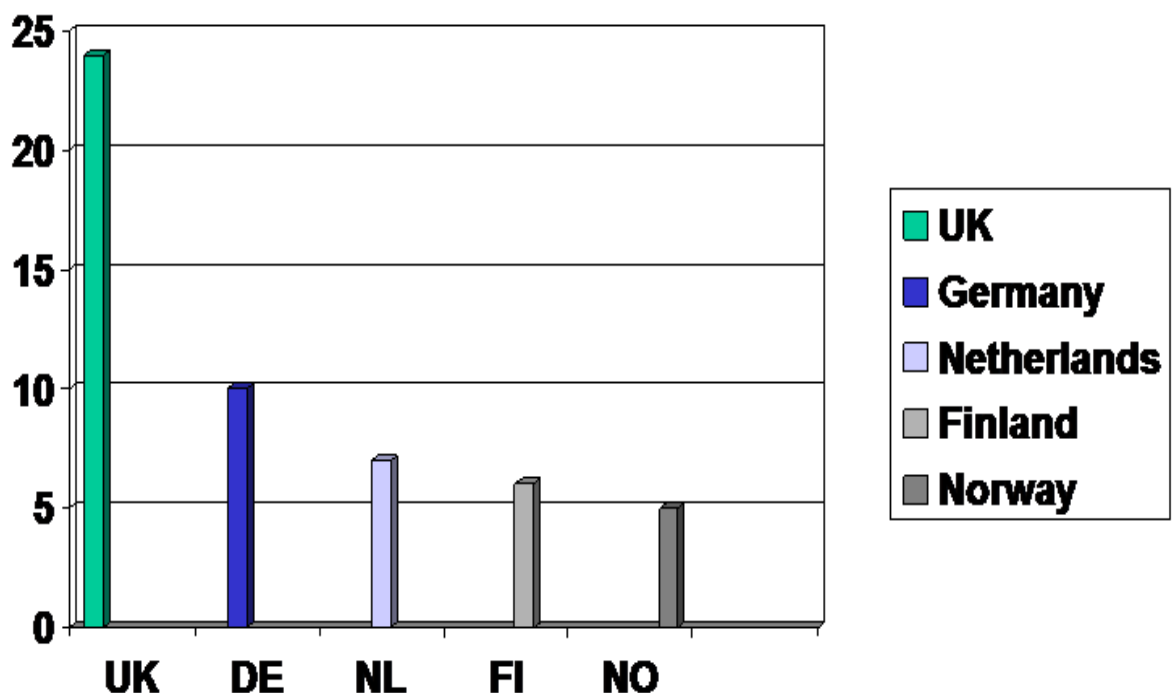
Figure 2: Countries with the largest number of euroCRIS institutional members

Nine of the 19 institutions consulted are members of euroCRIS. The two CERIF experts are closely involved in euroCRIS activities. They have directly contributed to the development of CERIF itself (by proposing UK modifications and extensions), they participate in CERIF task group discussion, as well as membership meetings and euroCRIS conferences. The remaining interviewees who are already members have little or no involvement in euroCRIS. The main reason cited was lack of time. Several non-members did not think it likely their institution would join. Membership fees are low so this is unlikely to be a disincentive.

The institutions which have been involved in JISC RIM projects have worked very closely with euroCRIS. Those involved in projects within other programme areas have also interacted with euroCRIS e.g. RePosit at the University of Leeds and Plymouth University.

There were some suggestions that it would be useful for euroCRIS to provide further supporting documentation on CERIF, e.g. use cases, evidence of benefits of using CERIF, compliance (euroCRIS is working on CERIF compatibility certification), more dynamic visualisation of the standard (e.g. ability to select different CERIF views, with relationships).

The University of Edinburgh (as well as Plymouth University) suggested in particular:

> *It would be very useful to define the differences in scope for management of a CRIS system over and above that of a publications repository. There are many different roles and requirements that need to be considered, such as management of activity data (esteem indicators), events data, master data sources for journals, publishers etc and impact.*

Unfortunately despite frequent expressions of the need to understand more about CERIF, only four of the institutions interviewed were able to take part in the CERIF and euroCRIS meetings in February 2012.

7.9 Reasons for CRIS selection

Having covered core functionality requirements, a certain amount of subjectivity is inevitable in discussion of software selection. There was also a suggestion that some institutions find safety in numbers, and this may influence decision making.

Institutions which have chosen the CONVERIS platform have mentioned its increased flexibility as the main reason for their decision. Conversely, a Pure user said that having decided to buy a solution rather than develop in-house, it was logical to get as much as possible straight out of the box.

Avedas was thought by one institution to have a very good understanding of the research lifecycle – they understand how universities operate.

One of the main reasons for the KCL choice of CRIS was that Pure was as near as possible to its previous in-house Research Gateway, which was being replaced. It was more cost-effective to purchase a replacement than employ the sizeable number of programmers required to develop a CERIF-based system.

At the time that Symplectic Elements was chosen at the University of Leeds in 2008, competitor products were less well known and there was a strong drive to get ahead with a new system to help with the REF. The options were either Symplectic or an in-house system with similar functionality. For other Symplectic Elements users, the automated harvesting of bibliographic data from Web of Science and Scopus was a deciding factor at the time.

EPrints and Digital Commons were discounted in one case because it was considered that they lacked the functionality that would maximise efficiency for academic staff, in particular an automated harvesting service.

The Research Management and Administration System (RMAS) was mentioned, but it was felt that the framework was too far in the future for procurement decisions at many institutions (which were selecting systems in 2009/2010).

8 Summary and Conclusions

8.1 CRIS

- There is a very clear trend to purchase CRIS systems in UK HEIs rather than develop in-house. This looks set to continue for the foreseeable future

- All UK CERIF CRIS are commercial systems, with just one exception

- Since 2010, UK institutions procuring CRIS have demonstrated a clear trend to purchase Pure from Atira (based in Denmark)

- The first CERIF CRIS procurement in the UK was in May 2009; there are now 51 systems in use (some of these are Symplectic Elements systems procured before the product became CERIF compliant)

- All institutions now specify CERIF when procuring CRIS, some without fully understanding the reasons

- The CRIS is seen as middleware – an intermediary between institutional systems

- Many HEI departments are involved in RIM; diplomacy is required when negotiating data exchange and mapping – which can be politically challenging

- There is ongoing discussion about whether institutional repository functionality can be replaced by CRIS

    o most institutions with existing IRs have integrated them with the CRIS

    o one is using the CRIS only, with no IR

- There is generally support for the CRIS within institutions once deployment starts

    o top-down support is essential

    o academics need a lot of reminding, but some quickly become reliant on the CRIS

- Understanding CERIF may not be as difficult as the process of understanding institutional data, cleaning it and improving consistency. The latter tasks are significant, but are likely to improve data quality across institutional systems and thereby improve performance for a number of services, not just the CRIS

    o Areas of particular difficulty include lack of agreed organisational structures within institutions, and lack of person identifiers

8.2 CERIF

- Institutions confirm that CERIF does model the real-world environment of RIM

- There is widespread use of CERIF (30.7% of HEIs), but many institutions are not engaging directly

    o CERIF is only experienced in a limited way – shielding of staff occurs

    o experience of CERIF is mediated by the CRIS software used

    o staff without database backgrounds find CERIF complex

- general agreement that semantics are complex

- only staff involved in JISC projects are properly engaging with CERIF

- institutions rely on CERIF expertise of vendor and UK user groups

- lack of time, REF and implementation demands are cited as reasons for lack of further engagement

- however many institutions are keen to engage more – some are worried that lack of understanding will hinder their CRIS use

- others believe CERIF should be left to the expertise of the vendor

- Local understanding of RIM processes and how local data maps to CERIF allows more efficient and cost-effective CRIS implementation and ongoing development

- Often people who describe their understanding of CERIF as basic are still very aware of the benefits offered by CERIF e.g. efficiency gains, data exchange with external organisations

- Managers may not need to have a detailed understanding of CERIF, if there is a colleague in the RIM/CRIS team who is engaged; however managers do need to be aware of its benefits and of the opportunities they could exploit

- A critical mass of CERIF use is forming in the UK – once mature it is likely to demonstrate multiple cost benefits for UK HE in future (interoperability, data exchange etc)

- Despite half of the institutions consulted being members of euroCRIS, most have little involvement

  - suggestions for useful additional supporting documentation included case studies, evidence of benefits of using CERIF, compliance etc.

9 Acknowledgements

10 Appendix A: People interviewed or consulted by email or in person

Names are listed in alphabetical order by institution

- Sally Puzey, Head of Research Support Office, University of Aston

- Katy McKen, Research Information Manager, Research Development & Support Office, University of Bath

- Betsy Brewer, Implementation Project Manager, Information Services, University of Brighton

- Rosa Scoble, Deputy Director Planning (Research & Resources), Brunel University

- John Harrington, Head of Information Services, Cranfield University

- James Toon, Research Publications Service Manager, University of Edinburgh (and publications lead for the Edinburgh Pure Project)

- Gill Hall, Pure Project Manager, University of Hertfordshire

- Kirsty Taylor, Business Intelligence and Marketing Manager, University of Huddersfield

- Chris Awre, Head of Information Management, Library and Learning Innovation, University of Hull

- Josie Lewis-Gibbs, Strategic Planning, Imperial College London

- Mark Cox, Research and Learning Development Manager, IT, King's College London

- David Harrison, Project Manager for the Pure implementation, Corporate Information Systems, University of Lancaster

- Rachel Proudfoot, Project Manager, RoaDMaP: Leeds Research Data Management Pilot, The Library, University of Leeds

- Nicola Cockarill, Senior Subject Librarian, Plymouth University

- Adrian Joyce, Business Development, Royal Holloway, University of London

- Anna Clements, Enterprise Architect, University of St Andrews

- Lynn McDonald, Project Manager, Business Systems Development & Support, University of Stirling

- Emer McDougall, Operations Manager, Research and Knowledge Exchange Services, University of Strathclyde

- Kate Price, Head of E-Strategy & Resources, Library & Learning Support Services, University of Surrey

- Rachel Curwen, Research Strategy and Policy Officer, Research and Enterprise, University of York

11 Appendix B: Questions used as basis for 'semi-structured interviews'

The following questions were used as a basis for discussion, with adaptation depending on the stage/type of implementation. Questions were emailed to interviewees in advance.

- What is your role in connection with [Pure/CONVERIS/Symplectic Elements]?

- When did you procure x?

- Which other systems did you consider?

- What were some of your reasons for choosing x?

- Was CERIF compliance a University requirement?

    o If so, what were some of the reasons for requiring CERIF?

- Which parts of x did you procure?

- Which parts have you prioritised/how far has implementation progressed?

- Integration with existing systems… working?

    o HR, finance, institutional repository etc?

- Which parts have already gone live?

- How difficult has it been? eg technically, politically...

- Experience of CERIF eg

    o did any members of university staff have prior experience/expertise in CERIF?

    o do you feel you are shielded from CERIF by x?

    o how much do you think you need to understand about CERIF as a x project manager?

    o have Atira/Avedas/Symplectic been able to help with your understanding of CERIF?

    o does the CERIF data model/system provider data model cover your data requirements?

    o any UK-specific issues? (eg Pure UK data model?)

    o did you need to make any additions/customise the data model?

    o how much mapping did you need to do?

    o CERIF mapping issues?

- Are you a member of euroCRIS?

    o liaison/help from euroCRIS?

- What would help/would have helped the CRIS/CERIF implementation process? eg supporting documentation

- UK user group helpful?

- CERIF engagement via projects (JISC/other)?

- What, if anything, has CERIF compliance enabled at [institution] [via x]?

- What do you envisage that CERIF compliance might enable in future?

12 Appendix C: Some key projects and initiatives in the UK using CERIF

Current JISC projects	
UK-RISS (UK Research Information Shared Service)	New project starting March 2012
DESCRIBE (Defining Systems to Capture Research Impact and Benefits)	New project starting March 2012
CERIF in Action	http://cerifinaction.wordpress.com/
IRIOS-2 (Integrated Research Input and Output System)	http://irios2.wordpress.com/
CERIF for Datasets (C4D)	http://cerif4datasets.wordpress.com/
Research360	http://blogs.bath.ac.uk/research360/
Oxford DMP*online*	http://datamanagementplanning.wordpress.com/
Research Management and Administration System (RMAS)	http://www.exeter.ac.uk/research/rmas/

Completed JISC projects	
CERIFy	http://cerify.ukoln.ac.uk/
BRUCE Brunel Research Under a CERIF Environment	http://bruceatbrunel.wordpress.com/
MICE: Measuring Impact under CERIF (completed)	http://mice.cerch.kcl.ac.uk/
IRIOS-1	http://www.irios.sunderland.ac.uk/
Readiness for REF (R4R)	http://r4r.cerch.kcl.ac.uk/
CRISPool	http://www.st-andrews.ac.uk/crispool/
BRIM	http://www.jisc.ac.uk/whatwedo/projects/rimsystems.aspx
Research Councils UK	
Research Outputs System (ROS)	http://www.rcuk.ac.uk/research/Pages/ResearchOutcomes Project.aspx
CRIS and repositories	
OpenAIRE (EU)	http://www.openaire.eu/
RePosit (completed JISC project)	http://jiscreposit.blogspot.com/
RSP guide to embedding research repositories	http://www.rsp.ac.uk/embeddingguide/
Publishers (international)	
Thomson Reuters	http://researchanalytics.thomsonreuters.com/incites/
Elsevier	http://www.elsevier.com/

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