JOINT NETWORK MANAGEMENT COMMITTEE (JNMC)
Minutes for meeting held 19th Jan 2023, via Teams

Present:
Chair – Robin Walker (RW)
Secretary – Robert Franklin (RF)
College representative - Andrew Bainbridge (AB), Rob Beardwell (RB) & Jennifer Philips (JP)
School Representative - John Sinclair (JS)
Observers – Espen Koht (EK), Gordon Ross (GR), Ritchie Carter (RC), Alexander Cox (AC), Jon Holgate (JH), Katie Edwards (KE), Caroline Gerrard (CG), Magdalena Charytoniuk (MC)

Apologies – Steve Riley

1) **Minutes**

Minutes from last meeting were confirmed.

2) **Matters arising**

Action points from previous meeting:

GR volunteered to provide some statistic of the take up of the guest Wi-Fi network. **AC** provided stats during meeting.

JP - ISC approved the transition to the JIG. Meeting with Richard Hey about how the JIG comes into existence.

CG circulated JIG terms of reference

No further matters arising.

3) **Service Review**

Networks

DDI Replacement

RF – Finished a draft specification for the new system. Over 100 questions of the tender to be assessed as part of the RFP. Speaking to the colleges through the CITC and the CITMG at management level and also speaking to University departments through the relationship managers and discussing internally within the UIS as there is a lot of internal use of the system where things like the IAS system link to the DNS system. Will also be holding a tech link next week to explain the project. Current system is very old fashioned and has limitations.

A paper will be submitted to the UIS TDA to confirm that we are going about this in the right way from a technical perspective, and engage the procurement team to start the process of creating a tender. Expected to complete procurement of the system in the first half of this year and will aim to migrate over to the new system in the latter half of this year. Usually wouldn't happen during term time.

Plan to maintain a legacy API so that systems that talk to the old API can continue to use that before a period of 12 months before migrating over to the new API and then the old one will be turned off. An RFI was done

on this about a year ago and a concern was raised that none of the commercial solutions understood the federated University environment and the challenges that presented with IP registration. If the RFP results come back and we don't think the commercial solutions are suitable, we'll either have to use part of them and build a layer on top to handle the University federation, or do the whole thing in house, which we are trying to avoid.

EK - Knows of open-source solutions that understand federation a lot better than commercial solutions which might be worth a look.

RW – Some institutions run a delegated DNS server for their own IP ranges, that approach has the benefit that if they lose their UDN connection they can stay in business locally for printing and so on. Is there a basic idea of how that will work in the future of DDI? Will Institutions be able to run delegated named servers?

RF – Nothing changes there. Not generally possible to run something reliably without an internet connection. We won't be stopping people from running their own service, but there are some constraints around the way the systems work. E.g., one of the systems we looked at in the RFI, required that every time you delegated control over a domain, you had to create a new zone.
At the moment, we have about 4 zones, if the University were to adopt that model, we would need thousands of zones. Would not be feasible for people to copy that information down. You probably wouldn't be able to secondary that information from the university servers, you would have to forward all your requests to us to resolve things outside the University as you wouldn't be able to take copies of that and work independently. We think it's probably a good thing to do anyway because anyone running a completely independent DNS server is probably going to have issues going forward due to RPZ security and DNS sec validations.

RW – Would the new DDI system present itself with the possibility of delegated bits of it, rather than running a third party delegated DNS server

RF – Nothing stopping you from having that right now and has been possible for many years. Can be complications around things like private IP addresses and how you handle DNS sec, but it is possible. Maths handles their own DNS, for example.

RW – Could this become a UIS managed service provider

RF – Possibly. The way the products handle the delegation is quite complicated. Happy to delegate so institutions can run it themselves.

EK – Mentions defragmentation – If you solved the problem of the federation, then it would be helpful if you don't assume that everybody therefore then wants to do it themselves, but make it easier for people to bring other things into the 'eco-system' so people don't end up plugging their own systems into various parts.

RF – We are likely to integrate the DDI system into network commission control. E.g., You need to have access to your current systems to register the IP addresses and DHCP for the client, whereas, if you were to take those services from us and we integrated them, we wouldn't need to ever register clients because that would be handled for you, and you wouldn't need to register a server. That's the sort of integration we're thinking is possible.
We have to inherit the University as it is and maintain all those interfaces the way they are to continue functioning. It may become simpler in the future.

EK – Thinks there's a scenario where the federated control is a management issue about delegating the efforts more than an ownership.

RF – Agrees.

RW – Network access control issue is important for some colleges. Will the new DDI system cope with network access control? Or will it only let it's own members on to the network?

RF – Yes you would still be able to support that. We can go much further once this piece of work is complete to try and bring it all together.

RW – The crucial issue is whether anyone can supply such product. What would be the burden of rolling your own solution?

RF – Would be many months of work. We want to consume an off the shelf product which can be supported and patched.

JH – The issue would be committing resource to develop it. There's no guarantee that we could find the technical resource. We would be exposing ourselves to many risks.

RW – May be able to commercialise it if you make a good job of it.

RF – We'll make the decision once we have the RFP's back.

GBN

RC – Item 8, potentially working with City Fibre for providing fibre connections to college hostel accommodations in areas that are uneconomically viable to extent the GBN to. E.G. St Catherine's hostel on Mill Road which would cost hundreds of thousands to get to. We are looking at how we can implement that with City Fibre where we can interconnect in with the and what the costs of that would be.

RW – Is this essentially the City Fibre equivalent of PIA with BT?

RC – It wouldn't be us putting our cables in their network, it would be them (City Fibre) providing a part City Fibre connection, which would interconnect into the GBN somewhere, and then go back to the institution on the GBN. This is certainly something bespoke and we will assess how it would be implemented operationally and how much they would charge us.

EK – In terms of the finances, would it help us with things that are not necessarily expensive to get to, but locations that are still on Virgin media broadband and so on?

RC – Generally speaking, if it's within 100m or 200m of the GBN, it would be better to run the GBN there in the long term. Need to go through the numbers if we were to use City Fibre. It may suit some special circumstances. Will present certain scenarios to the JIG and to the colleges.

EK – We have a small collection that we would like to migrate off Virgin Media when the contract ends in the summer.

RW – Is there any update on the University residences and the accommodation office?

RC – A high level strategy decision needs to be made.

RW – It needs to be part of the overall University strategy for how it provides accommodation to it's staff and members.

RC – For visitors that go to the accommodation office, it's not a great experience trying to get connectivity.

RW – Mentions light blue fibre.

RC – Signed up Stephen Perse and AstraZeneca.

JH – Small amount ahead of our projected business plan.

Wireless

AC – At the moment on UniofCamGuest there are 1100 devices. Peak usage over the last year has been just shy of 2000 devices at any one time. UniofCam is anywhere between 2000 and 5000 devices at any one time. We are about to change the way people authenticate to UniofCamGuest, so we will supplement social media authentication to augment self-registration for email. We didn't do this at the time of launch due to technical errors and we have also had to write new terms and conditions and an update privacy policy. Should be launching in the next few weeks.

RW – When you started this, you held back from doing email registration due to data handling and privacy concerns.

AC – Correct. It was easier for us to use social media because they handle everything which is why we have had to draw up terms and conditions and a privacy policy. Just about there. Should make getting onto the guest system easier for people. We'll check it's performance once it's up and running, then we'll perform a review of UniofCam and thing about what we are doing with that. The infrastructure that makes UniofCam work is a bit dated and some underlying technology which is being removed by DevOps.

EK - Do we have any sense of who is using UniofCam?

AC – There is a lot of people who use it daily rather than using Eduroam. Mainly staff members and people who don't want to use social media authentication.

EK – Do we have an unresolved issue with support for people wanting to get on Eduroam?

AC – A few years ago we made a big change to the website to make it easier for people to follow the instructions. Comms have contacted me in the last week to go through and review as the Eduroam page is one of the most visited pages on the website. Longer term will be working with RF's team on ETLS and certificates which should ease people's journey.

RF – ETLS is something we hope to crack this year which involves getting things like machine certificates. Haven't worked out how to do that yet, but one of those methods might involve using a machine certificate database that's present in Blue so it may be that we support blue authentication but that means the machine must be in the blue domain. The main benefit of this is the authentication credentials can be provided as part of provisioning the machine rather than the user.
The Raven authentication to UniofCam is gradually moving to the cloud so it may not be possible to continue supporting the Raven log in box in the next year or two.

RW – If you are trying to get your phone onto Eduroam you need to access the token server and to access that you need to be on UniofCam.

RF – You can be on UniofCamGuest

RW – Bringing your own device, as many do, is not a trivial operation.

AC – This is something we are aware of and we want to remedy

RF – Some universities use clear pass and we have looked into that and other commercial products that would make the process of connecting easier.

JP – As a staff member who uses UniofCam, I went there because of ease of use. There is a communications battle more than anything else. Shortening the steps to get onto Eduroam first would be a wise user relationship move.

EK – Maybe you should pre-issue tokens to people to eliminate the token creation step?

AC – The tokens are encrypted, and you can only see them once otherwise you have to re-create it.

RF – The password used in the token is encrypted using MD4 and that is one of the reasons we don't link this to things like Blue. We are very much focused on streamlining this.

AC – It's a problem of bringing your BYOD devices to what is essentially an enterprise network and it's on our list of priorities to get sorted.

RF – We have a lot of research to do on this issue.

AC – We are about to reach the hard limit on the current wireless system, which is 10,000 access points so we are having to split this up into two parts, so we are currently building a second system. That will mean moving various parts of the University to this second system. We are hoping to move isolated areas such as West Cambridge or the Hospital to this site. This is a short-term measure, because when we are able to move to AOS10, which is the next Aruba operating system, where the management moves into the cloud, there is no 10k limit. We have been working with Aruba on this product for a while and have been testing it for over 18 months and we fed improvements back to Aruba which have now made it into the product. We won't be able to move to it for a few years while the improvements are being made.

Telecoms

No updates.

Discussion Topics