

IT Strategy Committee, Department of Computer Science and Technology
28th April 2025 at 14:00
SW00, William Gates Building

AGENDA

Membership

Richard Mortier, Chair [RM]	Thomas Sauerwald, Deputy HoD [TS]
Mark Cresham, Secretary [MC]	Daniel Porter, IT Support Manager [DP]
Tim Jones, UTO Rep [TJ]	Sam Nallaperuma, Research Staff Rep [SN]
Rob Harle, Director UG Teaching [RH]	Abraham Martin Campillo, UIS Rep [AM]
Helen Francis, PSS Rep [HF]	Malcolm Scott, IT Infrastructure Specialist [MS]
Nic Lane, GPU resourcing strategy lead [NL]	

1. Welcome & apologies [RM]

2. Approval of the Minutes of the previous meeting [RM]

Unconfirmed Minutes of the meeting held on 21st January 2025 are attached for approval.

3. Matters arising [RM]

4. Actions from the previous meeting [RM]

- (i) GPU Upgrades [NL]
 - NL will decide whether to implement a trial for a full course or limit it to select projects.
- (ii) Network Upgrades [MS]
 - MS will place a firewall order and update SB on expected timelines. A key discussion point is the 'VyOS for Good' programme (outlined in the Infrastructure Report, appended to this agenda) – a stable, open-source router operating system provided to academic institutions. Particular attention should be given to the programme's terms, which may not be suitable for the University.
- (iii) Separation of Department Websites [RM]

- RM to review the alternative proposal from mgk25 and present the findings to the committee for evaluation.
- (iv) Website Migration [MS]
 - MS will start compiling a list of websites within the Department that are not maintained by IT Services. Further to this, a link to this list will be shared with the committee only, along with this agenda.

5. Standing items

- (i) * UIS update [AM]
 - AM to provide a verbal or written update on any relevant developments from UIS, including updates on the door locking system.
- (ii) IT Services updates [DP, MS]
 - DP and MS have provided written updates on recent developments from the CST IT Services Support Team and the Infrastructure Team, respectively. These reports are appended to this agenda. Additional discussion points from the Support Report, not covered under other items include:
 - Changes to the management of web and development services following a recent staff departure.
 - The ongoing transition away from certain legacy platforms, services, and processes.
- (iii) Decommissioning of Legacy Services [DP, MS]
 - DP and MS to highlight notable discussion points from the Services to Decommission report, appended to this agenda.

6. Main business

- (i) Software Licensing (MatLab and others) [RM]
 - RM to lead a discussion on the informal adoption of software tools, focusing on potentially monitoring usage to determine when departmental involvement and funding may be required.
- (ii) Tanium Rollout [DP]
 - DP to provide an update on the rollout strategy of Tanium for endpoint management.
- (iii) Review of ITSC Terms of Reference [RM]
 - RM will lead a discussion on reviewing the CST IT Strategy Committee's Terms of Reference (draft appended to the agenda), ensuring alignment with the SoT IT Strategy Committee. Notably, there is a proposal to increase meeting frequency from once per term to twice per term. The discussion will also seek committee approval for the CST ITSC chair to serve as the CST representative on the SoT IT Strategy Committee.
- (iv) Email Retention Policy [MS]
 - MS will seek the Committee's input on the Email Address Allocation and Retention Policy. Although previously understood to be in draft form, the policy is now due to come into effect shortly. A key point for discussion is that the policy

does not appear to allow the Department to continue its existing '@cl email for life' provision.

7. Any Other Business [RM]

8. Date of next meeting(s) [RM]

- (i) Confirmation of the date, time and location of the next meeting(s).

~~Date: 17th June 2025~~ TBD

~~Time: 14:00 – 15:30~~

~~Location: SW00~~

IT SUPPORT REPORT FOR ITSC

Daniel Porter
28/04/2025

- SharePoint
 - Rollout has continued to Building Services
 - Reception & Research Strategy being worked on next
 - Planning to ensure all existing PSS content on filer is migrated
- Staff changes
 - Stewart Carswell (IT Specialist Web & Moodle) has left the Department as of 17th April
 - We'll be undertaking recruitment to replace his position
 - Seeing it as an opportunity to bring web & development slightly more "under control"
 - Hope it can also help us move away from some legacy services/platforms/processes
- DS-Print
 - Testing on Department Managed Linux has been successful
 - E-mail sent to Department to recruit further people to use it and to warn of impending decommissioning
 - 3 new devices (GS10, FC09, SC corridor) will replace remaining legacy printers
- PSS device provision
 - Audit of existing devices undertaken to help us plan for replacements and prioritise ahead of Windows 10 EoL
 - Domain joined laptops
 - Relevant Group Policies have been put in place to allow for laptops to be Domain joined and for Folder redirection to OneDrive
 - Successfully implemented on three new laptops so far
 - Plans to retrofit to some existing PSS laptops and to use as standard going forwards
 - Service could be extended to cover non-PSS users if desired

ITSC report: Infrastructure

April 2025

Malcolm Scott

Proposed services to decommission

See separate document.

Email

At the time of writing, we are preparing to imminently declare a restrictive DMARC policy for our email domains. This will enable recipients of mail claiming to be from one of our addresses to verify whether the sender address was spoofed. Also, major email services are starting to require that high-volume senders have a restrictive DMARC policy.

Historically we (in common with most other email domains in the early days of the internet) used to allow mail from departmental addresses to be sent directly by users' systems or third party services which could be located anywhere on the internet, but this is no longer the case; mail from @cl/@cst addresses must now be sent through a departmental SMTP server, generally msa.cl.cam.ac.uk, so that it gains correct DKIM signatures etc.. (UIS have made similar changes; anyone sending from an @cam.ac.uk address must likewise send through a departmental or University mail server.)

We have twice communicated this change to the department in recent months but there is a chance that some users with old configurations have not updated them accordingly, and whose mail will increasingly be flagged as spam or blocked outright.

We are currently relying on UIS's smtp.cam.ac.uk service to actually sign mail, but nevertheless we recommend that users send via a departmental server rather than by directly using smtp.cam.ac.uk so that we can change our mail routing or signing setup in future, should that become necessary.

Network upgrade

The firewall purchase has been delayed a little due to a lack of time, and due to discussions on software licensing. We propose to buy a commercial licence and a support contract for VyOS, an open-source router operating system, to run on the new firewalls. Although the VyOS software is available for free, the public free version is an untested development snapshot, and the access to tested images for academic institutions under their "VyOS for Good" programme has terms that are unlikely to be acceptable to the University. In any case, we would benefit from the additional peace of mind provided by a support contract from the company that maintains VyOS.

The support contract will cost approximately £3600 per year. As the hardware costs are likely to be lower than anticipated, the first few years can be funded within the already allocated budget.

Services to Decommission

Daniel Porter & Malcolm Scott
01/2025

Background

Highlighting services which we would aim to decommission or migrate from their existing platforms to allow removal of old hardware/services

Printing (Summer 2025)

DS-Print should be fully operational across all supported OSes by Summer 2025, with additional machines to replace the remaining legacy printers

- Removal of all legacy printers
 - With the exception of poster printer
- Removal of local CUPS server
- Overall reduction from 34 standalone printers (2022) to 16 managed printers (2025)
 - 10 in public areas, 6 in PSS offices

Display Screens (Summer 2025)

Switching from existing, unreliable system on dedicated hardware to new virtualised platform

- Existing Raspberry Pis will be replaced with new, up to date hardware/OS
- New back-end system already being built
- Needs configuration & documentation for end users

WSUS (by April 2026)

Switching to Tanium for Compliance Monitoring would make WSUS redundant

- Virtual server can be shut down/removed
 - Service potentially not functioning optimally anyway

Verex (ASAP!)

Legacy access control system, not running in optimal conditions

- “AD” Domain made up of 2x servers can be fully decommissioned
- Verex server & verex DB server can be switched off & removed
- Custom front end component running on dbwebserver can be removed
 - Fits into bigger plan for slimming down/replacing dbwebserver

Replacing Verex will also require us to cease supporting keyfobs and white cards (which are already not supported on one of our locks). All users will need a centrally-issued University card (blue permanent card or purple temporary card).

Remote desktop (desktop.cl.cam)

Need for such a service has lowered – no longer hosts Adobe software, password change portal planned,

- **Would first need to undertake audit of existing usage/use cases**
- Virtual servers can be shut down/removed

Legacy e-mail - filer

~10 users still having e-mail delivered to filer

- Removing this facility would reduce complexity of existing e-mail setup
- May involve some effort in helping existing users transition to new setups
 - Many are long since retired and may not have access to alternate e-mail

Wikis

The software platform which provides www.wiki.cl.cam.ac.uk is obsolete and unmaintainable, and only runs on operating systems which are themselves obsolete. There is no viable upgrade path. This service is used by multiple research groups as well as IT staff.

UIS's managed wiki service wiki.cam.ac.uk is also being withdrawn.

We do not currently plan to provide a replacement for either service, other than collaboratively-editable Word / OneNote documents on SharePoint.

Subversion; Trac

We currently provide Subversion source code repository hosting, and Trac as a front-end for browsing repositories and extra functionality such as documentation and issue tracking. Both run on obsolete and insecure software platforms. They have been used by several research groups, though many have moved away to other platforms such as UIS GitLab, as Subversion is now rarely the preferred option for managing repositories.

We can assist any remaining users to migrate to Git if needed, though that is disruptive as every user of the repository needs to change their workflow. We can provide virtual servers and storage space if groups want to continue to have Subversion repositories and/or Trac, but these must be managed within the group, noting that these are complex services to run.

Model Datacentre

The model datacentre, a cluster of 80 servers originally intended to support experiments in distributed systems and networks, is now over a decade old. The hardware is obsolete and increasingly unsupportable (and is in any case no longer representative of a modern datacentre so is not such an attractive evaluation platform for datacentre research). We are open to the idea of modernizing this facility but that would be an expensive project for which funding would have to be sought. Without such funding, we will in due course have to close the facility. Its main use at present is to support teaching and undergraduate/Masters projects which require dedicated hardware, though there is still some remaining research use. These use cases will need to move onto alternate facilities, such as virtual machines or dedicated hardware bought by the relevant project.

Closing down the model datacentre would free up a substantial amount of space in GN09 for other low-power servers, though it would not free up much power or cooling capacity.

Licence servers (Imserv)

A small number of groups have multi-user software licences which need to be managed by an instance of the FlexLM licence management software. We have historically operated dedicated managed VMs for each licence, named "Imserv". However FlexLM is particularly sensitive to the configuration of the operating system, and each licence generally uses a slightly different version of FlexLM with different requirements. We often have little or no visibility into the exact requirements for each Imserv VM. Consequently we have little option but to leave them exactly as they are, lest we break anything by upgrading the system. Most of these VMs are now running long-obsolete, insecure and unmanageable operating systems (e.g. CentOS). In many cases we don't even know what the licences are for, who they belong to or who is using them.

We propose to involve the licence owner in the maintenance of their licence servers. We would provide a standard managed Linux VM to each licence owner, and the licence owner would be expected to take joint responsibility for the maintenance of their VM as they would any other VM or Linux system issued to them; for example they would need to arrange with IT to update the operating system before it goes end-of-life, and expect to spend some time to get FlexLM working on the

updated system afterwards. The licence owner would be responsible for the (usually annual) installation of a new licence file.

Almost all existing lmserv VMs need to be replaced urgently and we would switch to the new responsibility model when we do so.

Management of ACS HPC access

Increasingly – and particularly with the rise in popularity of machine learning – Masters and Part III projects require a substantial amount of GPU resource. We direct students towards the University's High Performance Compute cluster to meet this need, because we do not have and cannot possibly accommodate enough GPUs within the department. However, gaining access to HPC requires several manual steps, e.g.:

- Discuss with the student to ensure that their requirements and expectations are reasonable and affordable within the ACS budget
- Direct the student on how to fill out a HPC application form; the form requires a nominal PI to be listed who will be responsible for usage and who will approve the application – that PI is currently Malcolm Scott
- Interact with the HPC support team as they process the application to ensure that the request is correct and approve it
- In some cases, arrange access to extra storage space
- Monitor students' usage in case they exceed their agreed level of usage
- Ensure that the shared ACS HPC credit balance does not run out, and raise Pos as needed to top it up
- Ensure that the extra storage space is paid for (annually) and has the needed capacity
- Liaise with HPC to remove the year's students' access to the ACS credit balance at the end of each year

Most of these are not technical steps and are solely administrative, but they take up a lot of IT time (particularly Malcolm's) whilst projects are ongoing. The budgeting aspect, ensuring that expenditure is reasonable, would best be done by someone with visibility into the available funds for the ACS and the other demands on these funds.

We would like the department to consider moving this responsibility into the student administration team (with suitable staffing support).

Weather station

The departmental weather station, a former DTG project, has fallen by default to the IT team to maintain. It requires a substantial degree of modernisation (a project that was left half-completed by its various former maintainers) and we are aware of several problems, some of which are serious security flaws. We do not have the capacity to undertake this work.

We are aware that the weather station is a high-profile service that is very widely used across the University and the city. Its demise could damage our reputation. Nevertheless the current situation is

unsustainable and someone will need to take responsibility for its upkeep and in particular for the urgent reengineering that is needed to address the known security issues. A security incident with the weather station could reflect even more poorly on the department than its withdrawal.

We would like a small team of technically-minded interested volunteers (probably PhD students or RAs) to adopt the weather station. If such a responsible group cannot be found, we may have no other option than to withdraw the service.

For consideration: home directories on filer

This is not necessarily a proposal to withdraw a service, but is more an attempt to reconsider whether the current way that we use the departmental filer is still useful or is counterproductive. We are aware of feedback that filer performs too slowly to be used for home directories, and also of technical limitations that prevent the use of certain types of software package (e.g. Snap) on systems that use filer home directories. Meanwhile there is a trend towards cloud storage; for example PSS data is moving off filer and onto SharePoint, and increasingly software development takes place in distributed repositories such as Git and Mercurial which naturally lead to replication of data when used correctly, so one's local code repository no longer needs resilient network storage. There has also been a significant shift away from desktops in offices and towards laptops, for which NFS file storage is much less appropriate.

The filer hardware will need to be replaced within a few years and we should start thinking now how we want to use filer in future.

We currently think that filer home directories on desktops (and laptops) do more harm than good, and will probably move away from this configuration – but would welcome feedback. Home directories would be on the machine's local disk, and would not be resilient nor backed up in any way by us. Users would still have space on filer and would be advised to use it for their important data that needs to be backed up.

We have also been instructed by the Head of Department to substantially reduce the length of time that we keep backups, leading to less space requirement for these.

Perhaps this is just a first step towards a significant reduction in the requirement for the department to have a filer at all. A future replacement filer could, for example, offer substantially less capacity but higher performance (e.g. flash storage in place of the current mechanical hard drives). Or we may decide that one central filer is no longer a useful concept, and we should instead have separate systems for separate functions, tuned to the requirements of that function – for example, storage on the departmental GPU cluster and of VM disks already moved off filer and onto dedicated servers tuned for performance rather than reliability some years ago.

CST Departmental IT Strategy Committee Terms of Reference

1. Purpose

The CST IT Committee serves as a decision-making body for determining, and prioritising IT needs and delivery across the department.

It is responsible for setting local IT strategies and policies, addressing cross-departmental issues, managing IT risks, agreeing funding plans for IT and ensuring these are represented to the School IT Strategy Committee (ITSC) and other departmental committees.

2. Committee Responsibilities

- **Consider Departmental IT Priorities:** Collect input from key stakeholders (academic staff, administrative teams, IT managers, and other user groups) via committee representatives, working groups etc to form a consolidated view of departmental IT requirements and priorities.
- **Manage Technical and Cyber Risk:** Oversee the monitoring and management of technical and cybersecurity risks at the departmental level. Escalate critical risks and incidents to the HoD, UIS or the School ITSC when necessary. This includes responding to changes in IT service provision from the UIS and other external suppliers.
- **Set Delivery and Operational Priorities:** Using information gathered, plus risk information, make decisions on local IT delivery priorities. Escalating priorities that cannot be resourced or resolved locally to the School IT Strategy Committee and/or local Departmental resourcing committees.
- **Project and Service governance:** Provide oversight of delivery of IT projects and services provided within the department.
- **Develop Spending Plans:** Formulate departmental IT spending plans, ensuring alignment with available resources. Make funding recommendations to appropriate decision-making bodies. Propose cross-departmental initiatives to be escalated to the School ITSC for consideration / resourcing.

- **Establish IT Strategy and Policy:** Define local strategies and policies for IT use within the department, ensuring consistency with the broader School and University.
- **Selection of Representatives for School IT Strategy Committee:** Provide a mechanism to represent cross-departmental issues, concerns, and initiatives to the School IT Strategy Committee, ensuring a stronger customer voice outside the School.

3. Membership & Individual Responsibilities

The committee will consist of:

1. **The Chair** – Senior Academic to convene the committee and lead meetings.
2. **Committee Secretary** - Supporting the chair in preparing for and running meetings.
3. **x2 Departmental IT Managers** - Provide input into prioritisation decisions including representing technical risks and discussions on the feasibility of proposed projects.
4. **UTO Representative** – Representing the Academic community's interests, priorities and risks.
5. **Research Staff Representative** – Representing the Research communities interests, priorities and risks.
6. **Director UG Teaching** – Representing the teaching / education community's interests (including students), priorities, and risks.
7. **Professional Services Staff Representative** – Representing the needs of Professional Services Staff in the department.
8. **Head of IT and Digital Transformation for the School** – As an observer, to support cross school opportunity spotting, risk management and provide technical advice.
9. **Any persons coopted** for specialist skills or experience e.g. specialist knowledge of hardware or software.

4. Reporting and Communication

The committee will report to CST Faculty Board with a dotted line to the School IT Strategy Committee. A summary of significant departmental IT priorities, risks, and spending proposals will be presented at the School ITSC meeting.

5. Meeting Schedule

The Committee will **meet twice per term** with additional meetings convened as needed. Agendas will be circulated at least one week prior to meetings, and minutes will be distributed within two weeks following each meeting.

6. Decision-Making

Decisions will be made by consensus where possible. Where consensus cannot be reached, decisions will be made by a majority vote of members present. In the event of a tie, the Chair has the casting vote.

The quorum for decision making is half of the members rounded up to the nearest whole number.

7. Review of Terms of Reference

The Terms of Reference will be reviewed annually to ensure alignment with the Department and the wider School's strategic objectives and evolving IT needs.