Pilot Space Utilization FAQs – 1/2024 Update

1. ## What is the pilot space utilization project?

The pilot space utilization project gathers information about campus activity to provide a more accurate understanding of space usage on our campuses. This information will inform university leadership and campus space planners on space usage decisions to optimize Mason's utilization of physical spaces.

This project will allow Mason, in an automated and completely anonymous way, to identify, measure, and visualize utilization. This will help ensure spaces are being used for their highest and best use while increasing visibility for health and life safety. The project supports strategic planning and decision making with data and space analytics which will allow us to prioritize capital and deferred maintenance dollars.

Led by the office of Capital Strategy & Planning (CSP) in collaboration with the Provost's office and Information Technology Services (ITS), the pilot began in Fall 2023 with parts of eight buildings on our three primary campuses, encompassing 500,000 SF.

2. ## How will this project benefit Mason?

The information collected and analysis generated by the project will help the University adjust assignments of space or resources to optimize utilization and improve support service levels. Potential applications include matching student support resources with actual student activity, improved classroom and lab scheduling, and optimizing building systems and services, among other assignments of university resources.

This pilot project will help provide space utilization information to meet the State Council on Higher Education of Virginia (SCHEV) utilization guidelines. SCHEV requires the reporting of space utilization data on a biennial basis, including an up-to-date inventory of all rooms/spaces on the campus in conjunction with the academic class schedule to generate classroom and class lab utilization data. SCHEV utilizes this data in reviewing and approving requests for capital outlay appropriations. The enhanced accuracy of the data gathered from this project will both help fulfil Mason's commitment to meeting SCHEV utilization guidelines as well as supporting its capital program requests.

The project aligns and supports the strategic priorities in Mason's Strategic Direction:

- o Student Experience: leveraging the Mason master plan to expand existing facilities and establish new facilities on all campuses to enhance the student engagement experience within the Mason community.
- o Expand Research: improving internal and external funding models and incentives to support and encourage research, scholarship.
- o Partnerships: developing the appropriate infrastructure to expand and manage our growing global presence.
- o Diversity, Equity, and Inclusion: fostering equitable experiences among the communities most in need (e.g., marginalized, students with disabilities, veterans, students of color, etc.).
- o Faculty and Staff Success: improving reliability, validity, and accessibility of data used for decision-making to better address current and future needs.

3. What information is collected?

As standard protocol for network management, Mason collects the MAC (Machine Address) from the endpoint. The MAC address is a hexadecimal number associated with the network interface. An IP (Internet Protocol) address on the network is associated with the MAC address to provide network access. MAC addresses are broadcast on the network to acquire an IP address and captured in WiFi access logs. As a MAC address is associated with an endpoint (PC, Laptop, Smartphone) and not a person, it is not PII (Personal Identifiable Information). The WiFi access logs are shared with our partner, Lambent, however the MAC addresses are anonymized before they are shared.

The study documents activity in designated campus zones, covering one or more spaces. It visualizes the utilization of the space (see example below). Innovative technology from Lambent distinguishes between multiple individuals' activity and an individual using multiple devices. The technology is not able to view or document the specifics of any user activity.

Not actual Mason data

4. How is this data used?

The data collected will show general usage in a zone or zones, as well as usage patterns over time. Analysis of this information will help inform decision-making by university leadership for resource planning, by providing actual usage data. Examples of where this analysis could be applied include assignment of student support resources, improved classroom and lab scheduling, and optimizing building systems and services, among other space planning needs. An example of how the data is visualized can be [viewed here](#).

5. Is this data truly anonymous?

The data anonymization process is designed to protect the privacy of students and staff under all circumstances and employs cryptographic techniques that make reidentification infeasible by Lambent—or even if the data were to be compromised. This is facilitated by the Lambent Spaces Collector, which is a small software component operated by Mason that integrates with Mason network management tools' and anonymizes all data before it ever leaves the Mason network.

Anonymization is done using a SHA-512 hashing function with a customer-controlled key applied to every MAC address. The SHA-512 hash is provably resistant to collisions (which preserves much of the uniqueness and shape of input data) but also resistant to pre-image reversibility. The use of a customer-controlled secret key of arbitrary length and content

prevents re-identification attacks due to the small search space presented by MAC addresses. This approach is widely recognized as an effective way to ensure data privacy.

Lambent ensures that information security best practices, systems and controls are in place and, as a SOC 2 certified company, that policy adherence is verified through formal audits. These protect against unauthorized access, disclosure, or damage that might compromise customer data or system operation. Customer data is logically separated and encrypted in transit and at rest.

Below is a sample of raw data that is sent to Lambent consisting of timestamps, access point names and the base 64 encoding of the SHA-512 hash.

2024-01-22T21:53:37Z	HRZN-A-OUTDR-08	9oaz3TbVGlPUc+URleQ87YqmHCg79cQwJiyQ1qVmBYD6e485JMJWYgTbir2tEArgv2EFqiVfLmX9Y9la7wYSBA==
2024-01-22T21:53:37Z	HRZN-A-3001X-01	W+MS2AeDWRu1CEckfdk9VXnp5ZLiESrE18DL8N9CbYBScWbW1Hd0N1CkGWhuGijHVKtMRzQwqvFOXOGm3NV53Q==
2024-01-22T21:53:37Z	HRZN-A-OUTDR-06	nAO+m+c1KVw947wRdUhXM7lkyUpESjxfMfnuIQ15eC2OdI7iKh1CveWNex5WQdZuBSiLVHN6yyP+ijlfQT3iSw==
2024-01-22T21:53:37Z	HRZN-A-OUTDR-01	sMm11xXCLK23U0g4QeB5zWr/vsXfoHAUUoGbvrk6SKhXjAc1zRbf1HDw/pEEIf2Ev9zxxiudstmH6zNC32TU2A==
2024-01-22T21:53:37Z	HRZN-A-2007X-H1	hkYfhi881PBgeznKSlOAFYRZXQ9uEb/VMifcy399lidnO5LitZMsV1RJ50nGnrlrHu0W1QNDVCYahQ/2YPkBFw==
2024-01-22T21:53:37Z	VERN-A-1312X-01	eBy/cjPzzqkYxWMMn4CxtX8AuFqAkfdERkVkJWv9jlbUgwcLs9oCyTkVCZTZFkD3SMTpt7ipRs8HJxFooqHqgw==
2024-01-22T21:53:37Z	HRZN-A-6205X-H1	W0nX9HjfzSgKOTE2zcL8vXlTlbpqs33Jtfu0kYbtJZm0iwHuIU39L21psM5GBAkgirLDoFMAIVNwPrHN4zyJhA==
2024-01-22T21:53:37Z	HRZN-A-5014X-H1	gqKzbzWWt9ivXibDwZ4GCWl6JX/MZ8w3zk6rqdBxCET3UYmkYxsYWu+Dg/jCV3TRyW0/oR7Wgyy06gW6ES9hnw==
2024-01-22T21:53:37Z	HRZN-A-6007X-H1	Joxwq+xXs8jtjKIP9wEv4Zhd1lvreg4avLKQrlftIJrsyHAr8CZdPCv+SGP3XNurSI0H4xc7kLHy7PGzRYQufw==
2024-01-22T21:53:37Z	HRZN-A-5014X-01	gqKzbzWWt9ivXibDwZ4GCWl6JX/MZ8w3zk6rqdBxCET3UYmkYxsYWu+Dg/jCV3TRyW0/oR7Wgyy06gW6ES9hnw==
2024-01-22T21:53:37Z	HRZN-A-1008X-H1	JK2XIsZcAX87ber6W6nV4JfJ82mCO5w1gaAtFBsW1t/krsAv53o2sle08O9sg60azfm3pF8SrzeBmcSx3bcopw==
2024-01-22T21:53:32Z	HRZN-A-OUTDR-06	9EbzHZwqO/I//qqCZu4Uq3OkR5XaLGRhN3AuIERmBIZJZYKHrKO8D3pnhP2mh7p8rH4pLLQZWExmNIEfSVig3w==
2024-01-22T21:53:32Z	HRZN-A-3001X-01	GYVioqnhOmZDis7qcXDaztiD7r52qZsw80G0vFeMMknlyCiBjMMblgKHmw0mmoi1JslokJYVceOc8+Epr/yG1Q==

Anonymized Mason Data

6. What spaces are being studied?

The pilot study will initiate with the spaces identified below in eight buildings on three campuses. As the three-year study progresses, it will likely evolve to consider other floors or and buildings based on campus priorities and space needs.

Campus	Building	Floors
Fairfax	Horizon Hall	3, 4, 5
Fairfax	Fenwick Library	1, 2
Fairfax	Johnson Center	2, 3
Fairfax	Research Hall	2, 3, 4
Fairfax	Engineering Building	1, 2, 3, 4, 5
Fairfax	Exploratory Hall	2, 4
Mason Square	Van Metre Hall	2, 4, 7
SciTech	Discovery Hall	1

7. How will people in those buildings be impacted?

The project uses our existing wireless access points to capture campus activity. There is no additional physical presence for the study (e.g., no sensors). There is no direct impact on people in the spaces being studied.

8. Will this study change my space?

The space utilization study will only provide information to help the university make more informed decisions about space utilization and assignments on-campus in order to optimize utilization of Mason's campus resources. The study itself is not determinative, it only provides data analyses that will help inform leadership decision making. One of the goals of this project is to identify under-resourced departments for which this data will help build a case for more resources as well as working with the state to demonstrate resource constraints to be prioritized in capital allocations.

9. Can I opt-out of this study?

No. The anonymized data from existing wireless access points does not differentiate between faculty, students, staff, and guests, and the study only uses anonymized data that Mason already has the right to collect, and is actively collecting, consistent with standard network management (see FAQ 11).

The technology does not identify the location of an individual within a survey zone, which is approximately the size of a classroom or large office suite, which is anonymized before being provided to Lambent for analysis (see FAQ 5). As a result, there is no mechanism to enable specific individuals to opt-out.

10. How does this study ensure student and faculty privacy? Will this view or collect my internet activity?

Privacy is ensured through data anonymization (see FAQ 5 above). All identifying information is removed at the source and is not transmitted to Lambent for analysis. This does not include any actual data sent over the wireless network, only the network management information about devices and their connectivity. Lambent's proprietary technology uses statistical analyses to aggregate devices used by an individual into a single data point, but this analysis does not use personally identifying information.

11. Does this study violate Federal or State privacy laws?

No. Lambent uses only data that Mason already has the right to collect, and is actively collecting, specifically MAC addresses from wireless devices connected to the Mason network. Virginia Department of Human Resource Management (DHRM) Policy 1.75 and Mason Policy

[1301](#) govern the right to collect this data. DHRM policy defines *Agency Responsibilities* to *Monitor Usage* as:

- *Agencies have a right to monitor all aspects of electronic communications and social media usage.*
- *No user shall have any expectation of privacy in any message, file, image, or data created, sent, retrieved, received, or posted in the use of the Commonwealth's equipment and/or access.*
- *Monitoring may occur at any time, without notice and without the user's permission.*

Both Mason and Lambent will maintain the confidentiality of this data by protections instituted to safeguard faculty, staff and student privacy and ensure the data is used only to provide the service and capabilities contracted. Further, this is not surveillance software, as a MAC address is associated with an endpoint (PC, Laptop, Smartphone) and not a person; it is not Personal Identifiable Information (PII).

12. How will the Space Utilization Project engage the Mason community?

As preparation for the project began, broader community outreach started with updates in the [Provost's newsletter](#), University Information Network, and Executive Council in September 2023. The sample data gathering phase runs through December 2023 with stakeholder engagement beginning in Spring 2024 to include the Space Administration Committee, [Executive Council](#) and [President's Council](#) to ensure broad representation from across the academic administrative components of the University. Additional engagement and updates will be determined in collaboration with these advisory groups.