September 24, 2018

ARIZONA STATE UNIVERSITY

ADDENDUM 11
RFP 341901 Integrated Technologies Collaborative

Please note the following answers to questions that were asked prior to the deadline for inquiries date of 10/09/18 at 3:00 P.M., MST.

Q1: Is there any existing Public cloud infrastructure for ASU. If so, should the selected vendor be using the same cloud provider?
A1: ASU develops Strategic Collaborators with Cloud Providers on an as-needed basis, but remains vendor neutral.

Q2: Where is ASU primary and secondary Data Center located?
A2: The information requested is considered by ASU to be sensitive or proprietary. At ASU's discretion, additional information may be provided after the initial evaluation of proposal(s).

Q3: Please provide Primary Data Center & Data Recovery rack layout diagram of ASU.
A3: The information requested is considered by ASU to be sensitive or proprietary. At ASU's discretion, additional information may be provided after the initial evaluation of proposal(s).

Q4: Please provide ASU's building wise access and distribution switch network.
A4: A typical building access and aggregation topology was provided in the RFP.

Q5: The network topology does not include the Server Farm Architecture. Please provide the Server Farm Topology and Network Infrastructure design.
A5: Servers are virtualized or sit in AWS/Azure. They are highly segmented into different network segments based off of their application, roles, and environment.

Q6: Please provide the WAN topology, current WAN bandwidth and Internet link bandwidth
A6: Sun Corridor with blended services. 100GE Internet2 link to Border GW, with extension to Research Computing network. 40GE Border-FW and CORE Distro to Enterprise. Multiple 10GE, 1GE, and lower speed circuits to remote sites.

Q7: Is there any IPv6 service running in ASU's environment? Please provide input towards the current design
A7: ASU has reserved IPv6 space. Implementation has not yet begun.

Q8: Is there any solution currently deployed in ASU for location aware services as part of Wireless infrastructure? Are WIFI tags used for this?
A8: Cisco CMX has been implemented for the Sun Devil Stadium. Licensing has been procured and Servers being ordered for Enterprise CMX within Phoenix area campuses. Limited Cloud CMX licenses have been procured for a POC.

Q9: Please provide information on ASU's data center network inventory including Access / Distribution and core switch information.
A9: Cisco 6500 VSS pair connect L3 to enterprise network. Nexus 7k connect DC fabric stretched between ISTB1 and IO. Nexus 9300 and legacy fexes as top of rack in each DC cabinet. Counts: 4x7010 on network
2 x7010 in CPCOM from ECA
24 x nexus 9Ks
4 x Nexus 5548UP
50 x Fexs

Q10: Does ASU maintain a private Fiber backbone network such as redundant ring / MAN network to interconnect its buildings?
A10: On premises network fiber plant is installed and maintained by ASU and Network Managed Services. Most fiber connect to buildings originates from campus Distro locations. One Distro each at Poly, West, DownTown, and Havasu campuses. Five Distro locations on Tempe campus. New Fiber installed on Tempe is dual homed from each CORE Router location, one in Lattie COOR and the other in ISTB1.

Q11: Is there any plan to increase outdoor Wifi services such as coverage towards Gates/parking lots and other outer door spaces. What is ASU's vision towards Campus WiFi coverage; Is the focus towards IoT end devices using LPWAN?
A11: Planning is in process to extend 802.11 WiFi for client BYOD outdoors along pedestrian walkways. 5G cellular may become longer term strategy for outdoors, as client adoption becomes significant. Separately, LPWAN solutions are being evaluated for IOT with some POC's in planning & progress. Low BW long distance IOT will probably require separate infrastructure from client WiFi services, with different RF technologies and hardware required for each.

Q12: Is there any service Provider network being used for WAN?
A12: Multi-vendor; CLINK, Zayo, Level3, Cox, SuddenLink, Frontier, RCN Telecomm Services.

Q13: Is there any service or technology running in ASU campus which requires L2 adjacency between network end points? Applications which are not capable of traversing L3 IP network?
A13: The design should not preclude the possibility of services and/or technologies requiring end-to-end L2 connections, as well as those that do not support L3 communications.

Q14: Is there any load balancers used in ASU's DC and DR network. Please provide the details
A14: Netscaler Load Balancers managed by ASU private cloud team in ASU's DC and DR networks. F5 load balancer managed by managed service is frontend for sysloggers feeding SPLUNK environment.

Q15: Does the Scope of work include MDM solution; If so, how many end devices/users are to be considered. Additionally, Is there any MDM such as Airwatch or Mobile Iron currently deployed.
A15: The scope does not preclude the deployment of an MDM solution for mobile devices. Currently there is no MDM solution for mobile devices. ASU owned endpoints are typically managed through SCCM or JAMF. Mobile devices are typically BYOD so we don't have a count for that.

Q16: Please provide the details of network users such as staff, student count, peak season count.
A16: Providers can assume a user base of 100,000+ students (11,000 on-campus residents) and 12,000+ faculty & staff, with seasonal peaks during school semesters.

Q17: Please provider categorized ticket dumps for incident problem and change request with open and close timing. This is required for a period of at least 6 months - 1 year.
A17: Sample reports and other metric data may be provided after the initial evaluation of proposal(s) at ASU's discretion.

Q18: Is there any Multicast service running in ASU's Campus network? Please provider the details.
A18: Yes, mostly for AV equipment.

Q19: Please provide details regarding in-flight projects which the Vendor needs to consider while providing solution.
A19: Numerous projects are always underway, often lasting from weeks to several months. For example, ASU currently has in-flight projects in which we are implementing High Density WiFi to ~1200 Classrooms, up to 586 Blue Light Emergency Call box refresh with fiber/ethernet/mmWave backhaul for Security camera and sensor connections, and SM fiber upgrades for ~40 buildings as part of 3yr Bond fund proposal. This should not be considered an exhaustive list.

Q20: Is there any digital signage / Viedo wall / IPTV / University Cable Channel service running inside ASU's campus. Please provide the details of its current design, as an understanding of the existing solution will help us to derive complementry solutions.
A20: ASU maintains Fourwinds Interactive enterprise digital signage on all campuses and many satellite locations (260+ units) and Cisco Stadiumvision digital signage within the stadium athletics proper (300+ units). ASU supports both traditional audiovisual and data-driven videowalls. ASU owns and maintains a hybrid Fiber and Coax TV distribution system which utilizes a Digital Clear QAM content encoding scheme distributed via 3 headend systems. Day to day operation of the system is provided by a managed service partner. There are currently 138 channels being broadcast via the hybrid system. IP network transport of content is currently limited to “headend to headend” transport for a small number of content streams and is also limited to within the Stadium Vision system. ASU expects to have full content IPTV service available to residential Students by early 2019.

Q21: Please provide the details regarding third party VPN and extranet connectivity such as links to other universities, Remote access for guest professors, NSF etc
A21: We have multiple devices used for point-to-point VPN tunneling.

Q22: Please mention the current network monitoring tools used for Monitoring, NetFlow collection, Inventory and configuration backup
A22: Solar Winds, Cisco Prime for WiFi, Nysansa Voyance for WiFi analytics, Gigamon and Plixer for Netflow collection/analytics across CORE. NetDisco for MAC-IP-Switch port tracking. SPLUNK for syslog and condensed netflow data.

Q23: For adapting SDN network in DC & DR it might require a forklift upgrade of existing hardware even though the same is not End of Life. Are we allowed to develop a design to cater an application centric, Data center network over a new set of hardware equipment (justified by the features it can provide).
A23: Yes, ASU will consider proposals that might include replacement of current hardware as a part of an overall strategic plan.

Q24: Whether all application running in ASU supports IPv6 or this should be part of discovery during project execution?
A24: The process of validating application support for IPv6 will extend into the project execution period.

Q25: It is mentioned to design a wired network to support 5G wireless solution. We understand that the requirement is to design and deploy the backbone network to support the required bandwidth requirement for 5G backhaul. Whether the vendor should provide a 5G wireless solution as well?
A25: The current multicarrier DAS/oDAS offering is owned and operated by Crown Castle and is constantly expanding services within the ASU Tempe campus. ASU highly recommends aligning with ASU’s current provider, Crown Castle with respect to further 5G wireless development within a multi-carrier solution. Individual cellular carrier offerings pose challenges with respect to aesthetics and physical placement of individual systems.
Q26: Whether IoT end devices will be connected physically to ASU network or are there any remote IoT end devices which needs to be connected over VPN or overlay networks?
A26: IoT end devices will be connected both directly and indirectly to the ASU network. In exploring the implementation of next-gen Smart Devices, ASU is interested to see responses that describe all types of network connectivity requirements.

Q27: For providing advanced Wireless services such as 802.11ac wave 2 or beyond, we have to revisit the underlying access network. Please provide the list of (% of) access points in high density areas.
A27: ASU continues to expand the ASU Wi-Fi network coverage and density for both internal and outside service coverage. All new construction projects completed within the past 5 years include a high density 802.11AC model with continual expansion on-going. Wave 2 began deployment within last year as classroom refresh projects allowed for implementation.

Q28: Please provide current inventory details of DAS solution for cellular.
A28: The current oDAS and DAS is a fiber based Andrew solution, installed throughout the ASU Tempe campus. Crown Castle is the owner-operator of the multi-carrier system.

Q29: Please share the current Public and Private cloud architecture for ASU
A29: The University Technology Office leverages a hybrid architecture across on-premises data centers, 3rd-party colocation facilities, and public cloud providers to deliver services to the business and external customers, and positions itself as a private cloud provider to internal customers.

Q30: What is the WAN connectivity between existing cloud provider and ASU DC & DR.
A30: Dual 1g connections to AWS and Azure (Direct Connect and Express Route respectively). One connection from the Tempe Campus and one from the Phoenix-area Colocation facility for both clouds.

Q31: Provide the list of smart campus use cases selected for implementation e.g. lighting, HVAC, air quality monitoring, security & surveillance, access control, parking, EV charging monitoring, etc.
A31: We anticipate working with the providers developing smart campus monitoring throughout the ASU facilities. Responses to the RFP should include suggestions regarding sensor types.

Q32: How should monitoring and control be implemented for different building elements, any existing Building Management Solution already being used? Please provide the as-is condition for smart use cases.
A32: Currently, ASU utilizes BACnet, Modbuss and Other traditional controls protocols within a proprietary network segment.

Q33: Is ASU planning to implement smart campus use cases by revamping/upgrading existing Building Management Solution or intend towards new use cases to be implemented from scratch?
A33: ASU is open to working with vendors to propose POC initiatives (e.g. regarding Building Management solutions) as we pursue our smart campus efforts.

Q34: What is expected no. of sensor nodes to be monitored/controlled for each use case, please provide the I/O list based on sensor nodes to be monitored? Are there any existing Public cloud infrastructure for ASU. If so, should the selected vendor be using the same cloud provider?
A34: We anticipate working with the providers developing smart campus monitoring throughout the ASU facilities. Responses to the RFP should include suggestions regarding sensor types.

Q35: Does ASU have any preference for any specific Low Power Wireless Network to be deployed for IoT applications, e.g. LoRa, SigFox, NB-IoT, etc.? 
A35: ASU will consider and review all proposed options. Current initiatives include a POC of LoRa.
Q36: Will ASU take care of the procurement for all the required sensors, communication modules, gateways, etc. required for smart campus use cases?
A36: We anticipate working with the providers developing smart campus monitoring through the ASU Facilities. Responses to the RFP should include suggestions regarding sensor types and necessary equipment. We understand that not all the sensor acquisition will be available at the beginning of the RFP and will be fluid over time.

Q37: Does the scope of work include managing a remote operation monitoring & control center for smart campus?
A37: We anticipate working with the providers developing smart campus monitoring throughout the ASU facilities. Responses to the RFP should include suggestions regarding sensor monitoring.

Q38: Please provide more details on current IoT sensor integration with Data Network. Is there any existing Public cloud infrastructure for ASU. If so, should the selected vendor be using the same cloud provider?
A38: Currently, ASU utilizes both proprietary and IP based protocols for IoT devices implemented across the wired and wireless ASU network.

Q39: Is there a preference from ASU for the deployment model – on-prem, cloud, hybrid, etc.?
A39: As stated in the RFP, " . . . evaluations and architectural decisions will be made based on user and system requirements and capabilities to support ASU’s “Cloud First” strategy while ensuring the UTO's ability to deliver effective, secure, scalable, and stable infrastructure, platform, and software services. For the RFP, providers are asked to describe their expertise, capacity, and innovative strategy for the architecture, engineering, deployment and management of comprehensive Cloud Services to enable the ITC to deliver value to our constituents.”

Q40: Which LMS does ASU currently use for Student and Faculty?
A40: Blackboard & Canvas.

Q41: Which SIS (Student Information System) is currently being used by ASU?
A41: PeopleSoft Campus Solutions.

Q42: Which CRM (Customer Relationship Management) is currently being used by ASU?
A42: ASU uses Salesforce and ServiceNow.

Q43: Please provide details of any other ERP (Enterprise Resource Planning) apart from the above if applicable.
A43: ASU uses a combination of PeopleSoft HCM & Workday Financials.

Q44: What are the services expected from the Managed Security Service Provider (MSSP)?
A44: ASU is open to recommendations to be fully described in respondents' proposals. ASU has not stipulated specific requirements in this area.

Q45: Would ASU prefer the service provider to deliver a Fully Managed Security Service (which includes asset pricings) or would ASU like to own the security assets?
A45: Currently ASU has a hybrid approach, some subscription based and some ownership. ASU is open to recommendations to be fully described in respondents' proposals.

Q46: Please share ASU's current state of Incident Response (IR)/management: The capabilities of the current IR Team; Is the service provider expected to build a new IR capability (in terms of IR plans, procedures, tools, etc.) from the ground-up?
A46: ASU currently has an established IR plan. There are opportunities for augmentation, for example in the area of forensics and service restoration. Responses to the RFP should include suggestions regarding best practice and innovation in terms of Incident Response.
Q47: What are the security services that will be retained by ASU's internal security teams?
A47: Currently ASU has a footprint in vulnerability management, security operations, security architecture, risk management, and network security. These areas are augmented with 3rd parties. Responses to the RFP may include suggestions regarding best practice for management of a secure network architecture.

Q48: Could you please explain ASU's current Identity & Access Management solution, processes, tools, architecture, etc.
A48: Identity Management is out of scope for this RFP. Network Access Control is currently Cisco ISE radius against ASUAD. Additional information may be provided after the initial evaluation of proposal(s).

Q49: Please summarize the organization's risk management frameworks and approach to managing risk.
A49: ASU Aligns to the NIST Cyber Security Framework.

Q50: Please share the various audit and independent review processes in place? Describe ASU's Audit management process.
A50: ASU completes internal Audits which are performed by a separate audit department in ASU. An annual financial audit is completed by the Arizona Auditor's General Office and a Performance Audit is also conducted every 10 years by the Arizona Auditor's General Office. In addition ASU has a 24 X 7 Strategic Operating Center that monitors logging and other audit feeds.

Q51: Can you share the existing technology landscape for data and analytics platform at ASU? Is it on premise or cloud?
A51: ASU's analytic platform is currently located in a private cloud provider, but is in the process of moving to public cloud provider AWS (Amazon).

Q52: Are there any challenges / limitations with the existing data and analytics platform?
A52: There are challenges and limitations, which is why ASU is moving to the public cloud. But the move is also being prompted by opportunities and features available in the new platform.

Q53: ASU is looking to improve campus operational and policy decision-making through data and analytics. Please share some of the use cases, ASU intend to build as part of this RFP.
A53: Use cases may include such areas as student retention through 360-degree view of customers; marketing performance; fraud prevention and security intelligence; data warehouse offload; analysis of social media; recommendation engines and AI; preventive maintenance and support. ASU does not expect all such use cases to be implemented at the outset of the RFP, but considers the potential for unlimited use cases over time.

Q54: Please share more details around the requirements for Video analytics, real time analytics, AI driven chat bots and cognitive content discovery, adaptive learning and data analytics.
A54: As stated in the RFP, ASU is “actively investigating, designing, and deploying solutions based on real-time sensor data, telemetry information, video analytics, and network information for the purposes of developing an increased number of actionable insights, improved processes, and increased efficiency”. As such, we anticipate the need for more real-time engagement and analytics within areas such as AI, cognitive content discovery and adaptive learning. In these areas, we anticipate respondents will assist ASU in collaborating, architecting, and designing solutions to achieve the ASU mission.

Q55: Can you elaborate on ASU's GDPR requirements?
A55: ASU does have GDPR data and requires that our vendor comply with GDPR requirements as outlined here: https://uto.asu.edu/european-union-eu-general-data-protection-regulation.

Q56: As part of this RFP, We understand that ASU intend to build a new data and analytics platform on cloud. Please provide details on the same.
A56: ASU’s new data lake environment is part of the AWS eco-system including primarily services of Redshift, Aurora, EMR, S3, and workspaces, but other AWS services are part of this solution as well.

Q57: Is there a preferred cloud vendor for setting up the data and analytics platform?
A57: ASU’s analytic platform is currently located in a private cloud provider, but is currently in the process of moving to public cloud provider AWS (Amazon).

Q58: We understand that We need to provider IPAM service for ASU. This should support IPv4 as well IPv6 support. Please confirm.
A58: ASU develops Strategic Collaborators with Cloud Providers on an as-needed basis, but remains vendor neutral.

Q59: The questions ask for narrative responses, but the fields they created are only configured for Yes/No and Pricing answers. Where do we put the narrative response?
A59: Exhibit B is provided for respondents to provide their complete answers in narrative form to the requirements in Exhibit A, the scope of work. This document allows space to add any additional graphics and/or other attachments desired to be submitted for marketing purposes. Exhibit C contains the same questions as Exhibit B but only requires major highlights/summary responses for comparison purposes. Exhibit D does not ask for narrative responses but rather, yes/no responses to the service management inclusions. It also asks if the fees proposed are included and if they are in what manner. Exhibit E contains the pricing schedule for actual pricing submissions. As stated on the bid board, providers need to request Excel and/or Word versions of the documents from the ASU Procurement buyer, Lorenzo Espinoza Lorenzo.Espinoza@asu.edu.

Q60: Do we need to fill [Exhibit D - Questions 3.1, 3.2, 3.3, 3.4] out for all types of services provided?
A60: Where applicable, yes.

Q61: Are you able to tell us the specific brand and model of HVAC system ASU uses? As well as any other add ons or capabilities you may have around automation of the HVAC system.
A61: ASU has many generations of multiple manufacturers of active HVAC systems. At ASU’s discretion, additional information may be provided after preliminary evaluation to identify viable proposal(s).

Q62: Can ASU provide the Avaya Sold-to numbers and access to the Avaya records? Will need POC name and email that will approve access.
A62: The information requested is considered by ASU to be sensitive or proprietary. At ASU’s discretion, additional information may be provided after the initial evaluation of proposal(s).

Q63: What level of monitoring of the Avaya platform is required since the majority of the sets are Digital or analog with some IP? The options would be just the CM system alarms or complete IP level monitoring.
A63: Avaya System Administrator monitoring is performed as well as INADS alarming from Avaya.

Q64: Can ASU provide the average monthly volume of MACD requests?
A64: A typical month may have 1,000 MACD requests. Sample reports and other metric data may be provided after the initial evaluation of proposal(s).

Q65: Can a break-down of the type of MACD requests be provided?
A65: With respect to voice services, the majority of MACD requests are for phone moves and new installs, which require a field technician to complete. Many of the other requests are remotely administrable, including voicemail password resets and phone programming changes. Additional metric data may be provided after the initial evaluation of proposal(s).
Q66: Is set replacement included as part of the support services?
A66: Yes.

Q67: Are onsite spares for the Avaya system required or already in existence?
A67: ASU has an inventory of onsite spares for desk sets and some gateways. Other core components are covered under maintenance agreements.

Q68: Is ASU its own PSAP?
A68: Yes, on the Tempe Campus. Other campuses (Phoenix, Mesa, and Glendale) and remote sites (e.g., Havasu, Santa Monica, and Washington DC) route 911 calls to their local PSAPs.

Q69: Do you have any super computers today or just getting into? Looking at Lustre, High GPU, size and how many clusters.
A69: Research Computing at ASU represents an emerging academic supercomputing facility providing high-performance computing environments, a high-end data intensive ecosystem, highly available connectivity to the Internet2 research and education network, large-scale data storage with elastic capacity to the public cloud supporting access to multiple public providers. The number and architecture of specific compute clusters is always expanding. More information is available on ASU's Research Computing website.

Q70: Are you doing research with any other facilities; on their own dark fiber ring, Using ESNET, etc.
A70: Yes. At ASU's discretion, additional information may be provided after the initial evaluation of proposal(s).

Q71: How many students are housed in the residence halls and how many dining halls
A71: ASU has seven dining facilities and approximately 11k students are housed within campus housing.

Q72: Are you annexed into the city or are they their own entity
A72: The majority of the ASU housing resides on ASU-State land not privately owned property.

Q73: Any EUC being used today? (if so heavy GPU usage?) What application sets
A73: Yes, ASU incorporates EUC on a departmental level, GPU is local to the workstation, application sets are not available.

Q74: Any weekend Grad courses
A74: Providers should assume that ASU services need to be available 24/7/365.

Q75: Distance learning programs
A75: ASUOnline is worldwide.

Q76: What access control are you using
A76: Network Access Control is Cisco ISE radius against ASUAD. Physical Access Controls are not in scope for RFP.

Q77: What video surveillance (video sensors)? Linell, Milestone etc. Any behavior tools being integrated?
A77: Lenel. Behavior tools are being evaluated. Both will be supported by different ASU contract. Network involvement will be with transport and network segmentation of endpoints.

Q78: Any real-time applications and analytics being used with students in the classroom.
A78: ASU currently has no real-time application or analytics being used in the classroom, but Proofs of concept are underway for real-time analytics to advisors, faculty and coaches. These may include students as consumer of real-time analytic content.
Q79: Any Alumni organizations and VC’s being used to produce goods and services through student, faculty, and staff?
A79: The question is too ambiguous for ASU to provide a response. Please revise and resubmit.

Q80: Is ASU using many SaaS applications today (List)?
A80: ASU uses a large number of SaaS applications throughout the university. These include a broad range of enterprise as well as spot solutions that are too numerous to list. Workday, Salesforce, Gmail, Office365, are all representative solutions in use within ASU. Further, more specific details may be provided after the RFP pre-selection process.

Q81: How many lines are left on the Avaya? Are they POTS, Special circuits, ETS, Elevators,
A81: There are approximately 15,830 stations currently on the Avaya system.
Digital: 6,200
Analog: 7,730
VoIP: 1,900
The analog stations are comprised of:
Call boxes: 550
Elevators & Fire Panels: 940
Fax: 800
General (non-life safety): 5,440
The "General" category includes endpoints such as conference phones, bells, courtesy phones, modems, etc.

Q82: General - What is the expected response for the field Service Provided Via (column E) within Exhibit C?
A82: As instructed in the RFP, please contact Lorenzo Espinoza Lorenzo.Espinoza@asu.edu in ASU Procurement to obtain the Excel spreadsheet of Exhibit C, in which you will see the dropdown options for Column E.

Q83: Billing - Can ASU provide the fields and format they require for invoices?
A83: The information requested is considered by ASU to be sensitive or proprietary. At ASU's discretion, additional information may be provided after the initial evaluation of proposal(s).

Q84: Billing - Does EDI accept the EDI 811 format and if not, which format is acceptable?
A84: Jaggaer specs are available at https://www.jaggaer.com/service-support/supplier-support/supplier-reference-materials (look for cXML Integration Spec).

Q85: Billing - Can ASU provide the requirements to build an interface to the SunRISE application?

Q86: Facilities/Network - What additional locations (in the Phoenix metro) currently have connectivity that are not part of one of the 4 main campuses?
A86: ASU has approximately 20 locations accommodated by leased facilities in the greater metro area. More details can be provided after the RFP pre-selection process.

Q87: https://fdm-apps.asu.edu/ufrm/cds/default.aspx For Downtown Phoenix campus – there are 20 facilities listed. How many of these facilities currently have wired/fiber connectivity? How many do not, yet do require?
A87: The majority of the facilities listed are accommodated via leased facilities.

Q88: For Polytechnic campus - there are 666 facilities listed. How many of these facilities currently have wired/fiber connectivity? How many do not, yet do require?
A88: The majority of the facilities listed are accommodated via ASU fiber and copper facilities.
Q89: For Tempe campus – there are 281 facilities listed. How many of these facilities currently have wired/fiber connectivity? How many do not, yet do require?
A89: The majority of the facilities listed are accommodated via ASU fiber and copper facilities.

Q90: For West campus – there are 30 facilities listed. How many of these facilities currently have wired/fiber connectivity? How many do not, yet do require?
A90: The majority of the facilities listed are accommodated via ASU fiber and copper facilities.

Q91: For each campus, is existing fiber available for use? How many buildings will require additional fiber overbuild?
A91: ASU fiber and copper services are available both feeding and within the majority of ASU occupied space. ASU continues to upgrade fiber services as new standards dictate higher bandwidth.

Q92: For each campus, is the fiber interconnecting buildings Single-mode or Multi-mode fiber?
A92: ASU fiber includes a mix of 62.5, 50-micron laser enhanced and single mode fiber offerings.

Q93: For each campus, which building(s) are considered the MPOE or main demarcation point for interconnection?
A93: Individual ASU campus and or satellite locations house a single MPOE per site. Specific MPOE building details will be provided after the initial evaluation of proposal(s).

Q94: For each campus, can you provide a description (or fiber maps/drawings) as to how each building within the campus is interconnected? Can you provide additional clarity on the ASU tunnels?
A94: All ASU on premise fiber plant is installed in a traditional star/hub configuration. ASU fiber plant details and tunnel maps will be provided after the initial evaluation of proposal(s).

Q95: Is the infrastructure which is currently interconnecting all campuses, owned by ASU (equipment & fiber), and is this infrastructure available to the company awarded the rfp? If not, can you please specify?
A95: Hardware and services interconnecting ASU campus and satellite locations are leased facilities. Yes, leased facilities are available for continuance of existing services.

Q96: Can you provide address for each of the locations listed below?
- ISTB1 Data Center (Data Center)
- Old Main (Primary MDF)
- Lattie Coor (Primary MDF)
- Central Plant West Campus (Primary MDF)
- Communications Building Poly Campus (Primary MDF)
- SkySong (VoIP and Monitoring Services)
- Fulton Center (Executive Staff)
- ASU Police Department
A96: The information requested is considered by ASU to be sensitive or proprietary. At ASU's discretion, additional information may be provided after the initial evaluation of proposal(s).

Q97: Who does the software validation/stability testing on the new release of code for existing hardware, before deploying?
A97: ASU's Cloud Engineering and Development Teams perform code validations for software, as appropriate, following established guidelines and Best Practices. Other software/configuration validation, such as network hardware configuration validation would be a responsibility of an assigned party (ASU and/or Vendor.)

Q98: Does ASU own and operate the security equipment in Attachment 2? It was answered that SmartNet agreements cover the core, however no mention of firewalls, etc… Is the management of this hardware supported by a 3rd party contract today or will this support be part of the RFP?
A98: Yes, ASU owns the equipment. The equipment is currently managed by a third party. ASU is open to proposals that include management/support of this hardware.

Q99: Would you please identify your hardware sparing model (i.e. amount kept on hand vs. RMA agreements)?
A99: ASU expects that providers will propose models and processes for inventory/sparing/RMA for an enterprise of ASU's size and scope.

Q100: Can you provide an example of how you respond to DDOS attack activity?
A100: ASU employs multiple DDOS mitigation strategies. At ASU's discretion, more information may be provided after the initial evaluation of proposal(s).

Q101: What is your Cisco life cycle on your core infrastructure?
A101: Cisco life cycle as related to core is 3 to 5 yrs.

Q102: Would you please provide an org chart that includes both ASU & supporting venders that currently supports ASU's communications network and services?
A102: The information requested is considered by ASU to be sensitive or proprietary. At ASU's discretion, additional information may be provided after the initial evaluation of proposal(s).

Q103: How many students/faculty per these locations?
A103: Tempe Campus: approx. 80k, ASU West Campus: approx. 50k, ASU Poly Campus: approx. 12k, ASU DPC campus: approx. 6k.

Q104: How many service tickets do they get now? Can we get a sample report? Can we get historical service call/ticket information?
A104: Students and faculty/staff report issues either through University Housing (if residents) or through the ASU Experience Center (Help Desk). The Experience Center coordinates with the appropriate units/resources to bring issues to resolution. Sample reports and other metric data may be provided after the initial evaluation of proposal(s).

Q105: Can we get historical usage of network bandwidth? Number of users?
A105: Historically, usage averages about 14-15Gig throughout any given day. Providers can assume a magnitude of 100,000 students and 12,000+ staff and faculty.

Q106: Describe the current STUDENT escalation process?
A106: Students report issues either through University Housing (if residents) or through the ASU Experience Center (Help Desk). The Experience Center coordinates with the appropriate units/resources to bring issues to resolution.

Q107: Describe the current INSTRUCTOR escalation/ticket creation process?
A107: Staff and faculty report issues through the ASU Experience Center (Help Desk).

Q108: IT Operations Management: Current Support Model? ASU NOC after hours model? What happens when an outage occurs after hours? Where does the alert go today? Is there an ASU NOC IVR in place today?
A108: ASU NOC services are 24x7. In addition, ASU has a Situational Awareness Center (SAC) that operates 24x7, monitoring Solarwinds and other tools/sources. ASU does not have a NOC IVR.

Q109: Does ASU deploy any type of internal communication system to reflect network performance or outages? If yes, can you please describe?
A109: ASU uses email and Slack to report outages and communicate the troubleshooting and resolution. Additionally, collaboration tools such as audio bridges and web conferencing tools may be utilized.
Q110: What are the primary NOC Care tools in place at ASU today?
A110: Cisco Prime, SolarWinds, Nyansa, Splunk.

Q111: What are the triage troubleshooting tools outside of SolarWinds and Cisco Prime?
A111: Splunk and Gigamon.

Q112: How do you currently notify customers externally? Are there tools leveraged for this?
A112: The question is too ambiguous for ASU to provide a response. Please revise and resubmit.

Q113: Which tool does your Ethernet Performance Monitoring Reporting?
A113: Solar Winds.

Q114: How many alerts from their devices do you get a day?
A114: Current NOC monitors over 15,000 network devices for up/down status, latency, memory, CPU, uplink interface utilization, and utilization thresholds to name a few. Some days the NOC receives thousands of alerts. More information can be provided after initial evaluation of proposals.

Q115: SNMP3? Support? What protocol does ASU want to use?
A115: SNMP3 preferred. See response to Event Management question.

Q116: What is the Alarm response for today? How is information being processed and collected? How do we validate and drive performance level monitoring?
A116: Service Now is presently used to measure customer ticket SLA’s. Currently customer reported network service “incidents” are measured for a 24hr SLA to resolution or agreed upon workaround. Critical CORE or Border network service outages have a 4hr SLA to resolution or workaround, with scheduled Executive status updates required. At ASU’s discretion, more information may be provided after initial evaluation of proposals.

Q117: How does ASU define an outage?
A117: In operational practice, ASU uses the term Incident to as the unplanned disruption in the normal operation of a service and/or the degradation of the quality of a service. An outage is either a synonymous reference to an Incident, or is used as a category of incident that refers to system availability.

Q118: For user authentication/app issues, is there an internal help desk or third-party support? (For online students?)
A118: ASU's Experience Center (Help Desk) provides this type of Tier 1 support.

Q119: Do you utilize a ‘Maintenance Window’ for network upgrades or planned maintenance? What are those days/hours?
A119: Low impact scheduled maintenance is outside of business hours, before 7am or after 9pm. Building wide impact is after 12am and before 7am. Enterprise impact such as border or core are Saturday or Sunday mornings 12am-6am.

Q120: How do you handle special events? (College Football, Graduations, other major collegiate events). Is the IT staffing model impacted by major events?
A120: Network and other IT Support personnel attend events at the request of ASU event sponsors. At ASU's discretion, additional information may be provided after the initial evaluation of proposal(s).

Q121: Define IT? Is this inclusive based on switch down? Are the people onsite doing NOC Support and Help Desk?
A121: The scope of IT services extend far beyond switch-down network support. NOC services are included in the scope of this RFP. ASU has an Experience Center (Help desk) that is not in scope
for this RFP, but providers will be expected to interface with ASU’s Experience Center and ticketing system(s).

Q122: Updating knowledge management system with standard operating procedures and new knowledge obtained from ASU. Is this in reference to internal provider procedures or ASU procedures?
A122: This refers to procedures that are employed in the support and management of ASU as it pertains to the scope of this RFP. Such procedures and documentation may include providers’ internal procedures as part of the overall workflow.

Q123: Service Transition: Is this around transitions from the existing provider to the new provider?
A123: ASU anticipates the need to define our transition approach from our current methods and providers to the providers selected from responses to this RFP. This transition will include all parties currently engaged, including ASU ourselves.

Q124: Release Management: Scripted deployments provided by ASU build team. Is there a development team on site? What are the tasks carried out by the ASU build team?
A124: There is a Development team organized within the University Technology Office, consisting of multiple groups aligned by both functional areas and technology stack. There are multiple platforms onto which deployments are made, each with purpose-built tool sets and custom release processes, used and managed by multiple teams across development and operational units. Other software/configuration validation, such as network hardware configuration validation would be a responsibility of an assigned party (ASU and/or Vendor.)

Q125: Rollback procedures as provided by ASU build team. What would T3 be responsible for in this scenario vs everyone else?
A125: Network implementation rollbacks involving cabling and L2 switches generally are resolved at T2. Routing and Security implementation rollbacks normally require T3 and sometimes T4 manufacturer support. Implementations which cross organizational support boundaries, Network, Server, Facilities often require a swarm or WAR Room coordinated rollback. More information can be provided after initial evaluation of proposals, at which time proposer can offer alternative models to integrate their support with the rest of ASU.

Q126: Early life support. Is this based on third party or internal development?
A126: Both, depending on products or services being delivered.

Q127: Event Management: Automated discovery of network devices on a user-defined schedule. SNMP3? Support? What protocol does ASU currently use? Can we get a sample of the tickets created?
A127: Preference is SNMP3. Some legacy client equipment not managed by Network are also monitored thru our SNMP pullers, but only support SNMP2. Discovery is currently performed by Solar Winds NMS. NOC team monitors for sev1,2 alerts 24x7, and follows standard escalation processes depending systems or services affected. At ASU’s discretion, additional information may be provided after the initial evaluation of proposal(s).

Q128: Can you provide a list of buildings for each campus that are currently connected via a wireless or microwave type solution?
A128: The majority of the buildings at ASU are interconnected via fiber. Wireless bridge and microwave locations are very few. At ASU’s discretion, additional information may be provided after the initial evaluation of proposal(s).

Q129: Can you provide a list for buildings for each campus that require high speed bandwidth, but are not connected via fiber today and may require a wireless/microwave solution?
A129: Currently, ASU has no facilities requiring high speed bandwidth that are not already interconnected.
Q130: Regulatory: 91.6 Can ASU provide clarity on a “cable pathway”? Are cable pathway’s referring to use of outside plant conduit on the campus that may contain fiber optic, copper, or coaxial cable and not use of the actual cable itself? Does the cable pathway also include inside plant cable trays that a provider may need to install cabling on inside a campus facility? Would cable pathway also include the use of actual coaxial or ethernet cabling within a building?
A130: The cable pathway is in reference to outside plant communication conduits owned by a 3rd party.

Q131: Telephony: What is the current inventory of voice stations?
A131: See response to next question – A132.

Q132: In Exhibit A, the following statement is made: “The current voice systems are a hybrid, interconnected, model consisting of Cisco and Avaya platforms and adjuncts, serving 20,000 stations made up of VoIP (60%), TDM Digital (30%), and Analog (10%) endpoints.”

i. VoIP = 12,000 (60%)
ii. Digital = 6,000 (30%)
iii. Analog = 2,000 (10%)
iv. Total = 20,000 (100%)

In Addendum 7, the following statements are made: “That said, vendors should keep in mind that the ASU voice environment is less than half VoIP. The current mix of voice technologies at ASU is roughly VoIP: 9,400 (43%), Digital: 5,900 (27%), Analog: 6,700 (30%). The large majority of analog endpoints are not desktop devices; rather, they are call boxes, elevator phones, fax machines, and the like.”

i. VoIP = 9,400 (43%)
ii. Digital = 5,900 (30%)
iii. Analog = 6,700 (10%)
iv. Total = 22,000 (100%)

What is the quantity of voice endpoints (e.g., elevators, call boxes, fire alarms, etc) requiring analog line capabilities (explicitly referenced as 75+ Vrma in the questionnaire) across the ASU premises?
A132: Most current count as of the time of this posting totals approximately 23,330 stations.
AVAYA: 15,830 stations, made up of:
- VoIP: 1,900
- Digital: 6,200
- Analog: 7,730
The analog stations are comprised of:
- Call boxes: 550
- Elevators & Fire Panels: 940
- Fax: 800
- General (non-life safety): 5,440
The “General” category includes endpoints such as conference phones, bells, courtesy phones, modems, etc.
CISCO: 7,500 VoIP
Endpoints requiring 75+ vrma include the life-safety endpoints - call boxes, elevator phones, fire panels - totaling about 1,490 devices.
Endpoints are constantly being added, removed, and changed, so the exact counts will vary from time to time.

Q133: What is the 1-year average monthly minutes of use for outbound calls itemized by local, domestic long distance, and international long distance?
A133: Domestic LD averages 342k minutes per month. One-year averages for local and international usage are not available at the time of this posting.
Q134: Does ASU have any requirements for long distance service providers? (i.e., MUST the PSTN service provider utilize a specific company for long distance service?)
A134: ASU remains provider agnostic.

Q135: What Avaya applications/features are licensed for ASU? Does ASU own the Avaya platforms and licensed applications/features?
A135: Specific to voice services, the Avaya applications/features for which ASU is licensed are: Call Center Elite, Avaya CMS, Avaya System Manager, Avaya Session Manager, Avaya IP Softphone, Avaya SoftConsole, Avaya Mobility, Avaya LSP, Avaya ESS. ASU owns the platforms and licenses.

Q136: What Cisco applications/features are licensed for ASU? Does ASU own the Cisco platforms and licensed applications/features?
A136: Specific to voice services, the Cisco applications/features for which ASU is licensed are: Cisco UCCX, Cisco Emergency Responder, Cisco Attendant Console, Cisco Call Manager Cluster, Cisco SRST, Cisco CUBE, Cisco Paging Server. ASU owns the platforms and licenses.

Q137: How many Direct Inward Dialing (“DIDs”) are ‘owned’ by ASU?
A137: ASU owns approximately 54,000 DIDs.

Q138: Can ASU Clarify if ASU is expecting bidders to respond with Joint bids with other partners, A prime/sub relationship or just identify the other bidders it plans on collaborating with
A138: As stated in the RFP, "...it is essential that respondents consider teaming strategies that advance their core area(s) of expertise as well as how they might align with other providers in synchronous delivery to ensure success at every level and across the ASU enterprise." ASU has asked respondents to provide resourceful proposals that represent what will be a collaborative and dynamic working relationship with ASU and other successful bidders. We have not pre-defined specific working relationships between respondents who elect to prepare joint bids. Joint responses to the RFP should outline how joint bidders will work together in order to provide ASU the products or services categories on which they are bidding.

Q139: What is the SB/SDB participation goal?
A139: There is not a specific goal for this RFP. The applicable policy, ABOR 3-810, applies.

Q140: If you award to multiple bidders, will you award by category?
A140: As stated in the RFP, "...ASU intends to award one or more contracts to providers under this RFP, but reserves the right to not award any given section if responses do not meet ASU's needs." Keeping in mind, "This RFP is organized into functional areas, some of which have natural synergies, integrations, and business opportunities to drive cost effective solutions and high quality operations. Respondents may propose solutions for any portion of this RFP, up to the entire scope of work." ASU is open to recommendations to be fully described in respondents' proposals. ASU retains the right to award in any manner perceived most beneficial and sustainable for both ASU and the provider(s).

Q141: Can new partners / collaborators with new technologies be added after the award date(s) have been posted? (Ex: 30 days put, 6 mos. out, 1 year out, etc.)
A141: The RFP will be kept open after the initial selection in order to accommodate future submissions. Submissions for new technologies or collaboration will be reviewed on an annual basis.

Q142: If so, what are the specific steps and requirements that have to be taken?
A142: The RFP annual review cycle will require that new submissions follow the same criteria as the original RFP. New collaborators or team members will submit their response and these will be reviewed against ASU's criteria for possible selection.
Q143: In ASU’s estimation, when a vendor is not responding to a section, is it better to leave that section blank, mark it “no-bid” or “N/A”, or something else altogether?  
A143: Please Respond N/A

Q144: When a vendor has more than 1 partner with the same service or technology, does ASU want to see multiple answers per response (from different partners) or one blended answer from the vendor?  
A144: As specified in Exhibit A - Specifications/Scope of Work, ASU is looking for collaborative teams to describe how they propose to provide their products and services in support of the RFP requirements. When a vendor has more than one partner they use to provide these services and is proposing to bring these multiple partnerships for consideration by ASU, the blended solution should be fully described in the RFP response.

Q145: Supplier Sustainability Questionnaire Question: When filling out the Supplier Sustainability Questionnaire, does this need to be filled out by the primary vendor / solutions integrator alone or do all [company] partners/collaborators that are referenced as part of the RFP response need to fill this out as well?  
A145: All collaborators must fill out the Supplier Sustainability Questionnaire. For further clarification, whether ASU would be receiving services directly or indirectly from a vendor, ASU needs to see the required RFP documentation for each entity (whether bidding alone or as part of a team). The information from each such vendor can be submitted collectively or independently. If submitted independently, we require that each vendor mention whether its submittal is part of a team or is being submitted individually, or both.

Q146: If as a result of an ASU technology need, a new partner / collaborator is added after the award date(s), will they need to fill this form out as well? If so, does [company] need to re-fill in this form again?  
A146: As specified in previous answers, the RFP will remain open after the initial selection period and submissions will be reviewed on an annual basis. Subsequent proposal responses must meet the full requirements of the original RFP in terms of forms and questionnaire completion. The orchestrator/lead collaborator does not fill out the form on behalf of each individual company.

Q147: Is university looking for some new solution for Ambassador Program/LMS/internship/Recruitment and for our support services/Education domain expertise to enhance their overall experience in these areas.  
A147: Please see the section titled, "Corporate and Social Responsibility, and Value Added Services" in Exhibit A to see ASU's requirements in this area. ASU is open to recommendations to be fully described in respondents' proposals.

Q148: Can we get building drawings showing AP placement?  
A148: The majority of the ASU facilities contain active ASU Wi-Fi, available heat maps will be provided after the initial evaluation of proposal(s).

Please remember that Proposals are to be mailed or delivered to Arizona State University Purchasing and Business Services 1551 S. Rural Rd. Tempe, AZ 85281, no later than 3:00 P.M., MST, 10/23/18.

If you have any questions regarding this notice, please contact me at 480-965-3849 or Lorenzo.Espinoza@asu.edu. You may also find RFP 341901 and any updates at http://www.asu.edu/purchasing/bids/index.html