INTENT

Arizona State University (ASU) is seeking assistance in the development, deployment and integration for Identity Access Management (IAM) services. This includes identification, non-repudiation, authentication, authorization, attestation and accountability systems. We are seeking respondents in the marketplace with various business models, including (1) those with existing IAM assets or products that may be adapted, modified and white labeled for specific project needs, (2) those with experience integrating IAM products and services, and (3) those with a combination of both. Respondents should have subject matter experts on staff or a network of experts so that the assets can be quickly on boarded and/or integrated. Respondents should also be able to provide assets for various knowledge domains, but organizations with limited or specialized knowledge and expertise will be considered.

The University may choose to enter into multiple contracts under this solicitation. During the course of the Agreement(s) resulting from this solicitation, the University, at its sole discretion, may add additional individuals or firms, provided that they meet the stated requirements of this Request for Proposal.

After awarding, the University does not guarantee a certain amount of hours of work or projects per year.
BACKGROUND INFORMATION

Innovation is at the heart of Arizona State University’s plans to extend, expand and reimagine its identity management services for students, faculty, researchers, and staff, as well as to the surrounding community.

“For the fourth year in a row, Arizona State University tops the list of most innovative schools in the nation, recognizing the university’s groundbreaking initiatives, partnerships, programs and research.” [US News and World Report, 2018]

As a national leader and collaborator with Arizona’s other public universities, ASU invites participation in this Identity and Access Management Modernization (IAMM) Request for Proposal (RFP) to design and build its next generation identity and access management (IAM) system. Our vision is to advance our authentication, authorization, and attestation technologies to enhance the learning experience for students, faculty, staff, researchers and other affiliates at ASU.

This IAMM RFP offers service providers an unprecedented opportunity to align with the nation’s largest and most innovative university, its athletic programs, its local and regional commercial associates, global online leadership, and public sector constituents.

ASU’s IAMM RFP solicits the vendor community to work with us to plan, collaborate, and deliver technology and services that will enable and empower our Universal Learner, Smart Campus and Cloud First initiatives. To ensure we find the right solutions for ASU, we intend to first pilot solutions we believe will drive ASU’s mission forward. This IAMM RFP needs to help accelerate ASU’s Universal Learning (see Attachment 6) and fundamental research programs for the next 5 years.

We have included ASU’s 50 Big Innovations to help frame our future vision. ASU’s overall objective is to improve safety, visibility, sustainability, and the quality of life for our students, faculty, and staff, as well as for the surrounding municipalities, state agencies, tribal communities, and constituents throughout the state of Arizona and beyond.
## 50 BIG INNOVATIONS

<table>
<thead>
<tr>
<th>Timeframe</th>
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<tr>
<td><strong>Within 1 Year</strong></td>
<td>Data Fluency and Innovation Program</td>
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<td>Digital Fluency Benchmarking</td>
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<td>Digital Fluency Micro-credentials</td>
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<td>Core Facility for Adaptive Learning Data Analytics</td>
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<td>Community for Scaling Adaptive Learning Across Disciplines</td>
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<td>Strategic Partnerships with Adaptive Courseware Providers</td>
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<td>AI-Adaptive Learning Research Program</td>
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<td>Automated Assessment for Creative Activities</td>
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<td>Assessing Workforce Preparedness</td>
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<td>Enhancing Digital Portfolio for Career Success</td>
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<td>Formally Recognizing Informal Learning</td>
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<td>Ubiquitous Access to Distributed Technologies</td>
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<td>Embedded Academic Incubation of IoT Solutions</td>
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<td>AI-Enabled Cognitive Content Discovery for Learners</td>
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<td>Increasingly Sophisticated AI Advising</td>
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<td>AI-Powered Tutors and Chatbots</td>
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<td>Towards Actionable Data: A Machine Learning Program</td>
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<td></td>
<td>Virtual Reality ASU Tours</td>
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<td>Enterprise-Wide VR Adoption</td>
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<td>Faculty/Designer Playground for Emerging LMS Tools</td>
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<tr>
<td></td>
<td>Cross-Disciplinary Virtual Assistant Solution Incubation</td>
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<tr>
<td></td>
<td>Blockchain Infrastructure for Lifelong Learning</td>
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<tr>
<td></td>
<td>Recognizing Community-Based Learning</td>
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<td></td>
<td>Removing the Constraints of LMS</td>
</tr>
<tr>
<td></td>
<td>Solution Suite for Ubiquitous Student Interaction</td>
</tr>
<tr>
<td></td>
<td>Virtual Assistant Lending Program and 1:1 Pilots</td>
</tr>
</tbody>
</table>

**UTO ENABLES + CATALYZES ASU'S UNIVERSAL LEARNING FRAMEWORK**
ASU UTO provides centrally managed Identity and Access Management (IAM) systems for the entire university. These systems were developed in-house and are geared toward affiliated populations that are "known" to ASU via their data entry into the enterprise human resource management, or human capital management (HR/HCM), and student information systems (SIS).

Currently there is no unified service that ASU offers to customers account management outside of HR, student, and affiliate accounts. This leaves various outreach and application accounts without proper management and handling.

In addition, the current systems do not provide the full spectrum of Identity Access Management (IAM) services needed for the enterprise services that ASU operates.

The current systems are highly integrated with the university’s HCM and SIS provider (PeopleSoft) such that current identity flow starts in PeopleSoft through its Campus Community module. ASU is seeking a system, or systems, that can enhance the overall ASU IAM infrastructure by decreasing the time to provision a digital identity, organizing the namespace and subsequent account profiles, reducing reliance on PeopleSoft Campus Community as the identity validation authority and immutable identity source, and provide a mechanism to allow authorized access to services without existing in the PeopleSoft environment.

Arizona State University is a new model for American higher education, an unprecedented combination of academic excellence, entrepreneurial energy and broad access. This New American University is a single, unified institution comprising four differentiated campuses positively impacting the economic, social, cultural and environmental health of the communities it serves. Its research is inspired by real world application blurring the boundaries that traditionally separate academic disciplines. ASU serves more than 91,000 students in metropolitan Phoenix, Arizona, the nation's fifth largest city. ASU champions intellectual and cultural diversity, and welcomes students from all fifty states and more than one hundred nations across the globe.

If you would like more information about ASU, please visit us via the World Wide Web. Our home page address is http://www.asu.edu
TERM OF CONTRACT

The initial pilot contract term will be for no more than one (1) year with the possibility of four (4) successive one (1) year renewals, for a total term not to exceed five (5) years. The contract will be available for use by other University departments during this term.
ATTACHMENT 1

ASU Identity / Access / Directory / Provisioning Overview

Diagram showing various components and connections related to ASU Identity / Access / Directory / Provisioning Overview.
Attachment 2 - Identity Creation Process Part

 IV. Matched ID

The attribute update process source is either the student, or employment, application system. It can also be added directly into PeopleSoft in the case of Courtesy Affiliates. Integrations are called out on the Integration Exhibit C.
ATTACHMENT 3

The ASU technology environment is diverse and contains some decentralized systems. These decentralized systems are used mainly for outreach and are designed to engage with the ASU community at large. As such, these engagement systems may or may not use the main “affiliated” identity management system. Currently there is not a single, unified identify and access management service supporting these applications, which are used by our “unaffiliated” populations. This leaves outreach application accounts without proper identity management and handling.

ASU’s concerns include:
- Security issues related to storing multiple passwords
- Limited capabilities to track marketing efforts across different department silos
- The impact to the user experience - setting up different accounts for different services
- Decentralized department account maintenance and support
- Inability to provide a unified convention for mobile application authentication
- Inability to provide a unified method for social media ID or other federated ID providers
- Creation of a host of single-use non-enterprise identities

8,000,000+ total digital personas in ASU’s realm of engagement.

This is the potential population needing "unaffiliated" authentication.

2,000,000 affiliated IDs; These are the current students, faculty, staff, alumni and courtesy affiliates with formal ASU credentials.
The unaffiliated ASU customers cannot use ASU single-sign-on (SSO) as they don’t have an ASU identity in the ASU system of record. They are left to authenticate to individual applications with individual identity provider (IdP) databases. There are different authentication credentials to remember for each siloed IdP.

The ASU Affiliate identities can use SSO as shown below and access any ASU SSO enabled web application. Most ASU applications are SSO enabled for those personas that exist within ASU master identity store - currently this is PeopleSoft.
For Affiliated ASU personas, they only need to remember one ID & password: jdoe@asu.edu.
### Attachment 4 - EDNA Stats

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<th>Month</th>
<th>Activate</th>
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<th>Delete</th>
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ATTACHMENT 5

Please reference RFP-671292-19ANT Excel file.
ATTACHMENT 6

This report maps the University’s Strategic Plan, ASU President Michael Crow’s vision of an adaptable, scalable, and technology-enabled higher education experience, to future-focused technology megatrends in service of Universal Learning. ASU’s technology strategy, programs, and investments will be aligned with a 1/3/5-year vision of the most impactful technologies informing the portfolio of programs and services of the University Technology Office (UTO). The aim of the project is to help an initial shaping and framing of ASU’s technology strategy in the context of teaching, learning, research, and community service. UTO is committed to ensuring that innovation is infused in academic programs in meaningful ways that nurture the economic, social, and cultural growth and wellbeing of the community it serves. This draft plan reflects the culmination of several research, interview, and analysis activities to generate a technology-enabled five-year vision for manifesting universal learning at the New American University.

The Velocity of Change

In March 2018, Dr. Crow held a community conversation around the “Velocity of Change” and its impact on the trajectory of ASU. He asserted that human beings have never experienced change at the rate they do now. How people communicate, create, work, and learn is in constant evolution due to the ubiquity of technology and internet connectivity. Coupled with the affordances of technologies, these changes in how people operate have enabled significant progress within the ASU community in terms of the flexibility and convenience of learning opportunities. Now considered the most innovative university in the country, ASU is not just graduating more students, but also cultivating mindsets that continuously re-imagine and re-shape a better global community.

A Community of Individuals

It is important to have a sense of the individuals who comprise this increasingly global community. Today’s student profile looks drastically different than it did in the past 30 years, with an increasing number of working students from diverse socioeconomic backgrounds. Many are first-generation students from low-income families who are financially supporting themselves and even their loved ones. Without major efforts like that of ASU to expand access to affordable education, these individuals may never have had the opportunity to fully realize their career and life goals.

“The university has tremendously transformed in 30 years, but with technology only dramatically affecting us for about the last five or six years.”

- Dr. Michael Crow, ASU President
An interview with a student from India highlighted ASU’s ability to reach across the world to guide a young woman pursuing a Master’s in Computer Science towards her goal to work for Google or Facebook while she is gaining valuable work experience at UTO. She lamented that in India she would not be allowed to work and study simultaneously. Another conversation with an ASU Online undergraduate student helping his family business stay afloat further demonstrated how ASU enables its students to strike a balance between working and learning. A third interview example revealed how an entrepreneurial graduate student who just launched his own business could have the flexibility to learn and integrate new knowledge of global sustainability practices into his LGBTQ+ tourism startup. Factoring in learners’ unique goals, ASU is paving the way for seamless lifelong learning — as close to debt-free as possible — to help students make a lasting mark on the community.

Honoring ASU’s Charter
While each of these stories are unique, together they are part of a rich tapestry of transformative student experiences that embody ASU’s inclusive charter. After all, the ASU community can only be as successful as its key stakeholders. This report therefore does not begin at ground zero; it acknowledges the university’s tremendous track record in becoming a highly ranked research university that exemplifies innovation around every physical and digital corner. ASU has already set a new standard for supporting the contemporary learner and anticipating future ones, increasing access to high-quality learning with a lens toward massive scale. Rather, this report will explore and address questions about vital focus areas for achieving Universal Learning, and the technologies in varying states of maturity that UTO should consider for enabling and accelerating progress.

Towards Universal Learning
The idea behind this report is that five programmatic focus areas, enabled by a combination of technologies, can help realize Dr. Crow’s dream of Universal Learning — an evolving model of higher education that Dr. Crow describes as “capable of being of service to all learners, at all stages of work and learning, from all socioeconomic backgrounds, through educational, training, and skill-building opportunities.” Dr. Crow further elaborated on the components that comprise Universal Learning (Figure 1).

Figure 1: Dr. Crow’s Components of Universal Learning
The Universal Learning elements are inherent in the goals and approaches for UTO to leverage nine featured technologies. For example, the concept of a Next-Generation LMS encompasses greater flexibility and ubiquity in how students discover, experience, and interact with learning content — and each other. In another case, the application of the Internet of Things for building a Smart Campus reflects the idea of transparent, crowd-verified information and accountability as ASU community members are seamlessly connected to every object, resource, and person when they step foot anywhere on ASU's campuses.

Universal Learning requires a major shift in how the higher education lifecycle is viewed. Traditionally, an individual’s learning trajectory can be broken down into distinct, disparate stages. In contrast to this historic approach, Universal Learning means that learning is a lifelong journey, and institutions must have a continuous and connected presence in individuals’ every life stage. In pursuit of Universal Learning, ASU is undergoing a cultural shift to foster new organizational models that breed collaborative innovation. UTO’s leadership in this effort is critical; technology strategy plays a significant role in the vision to build inclusive community infrastructure, enable authentic and ubiquitous learning, personalize the learning journey for each student, and eradicate barriers that stand in the way of access and global collaboration.
Guiding Questions and Focus Areas

UTO is well-positioned to leverage Figure 2: UTO Programmatic Focus Areas its business intelligence to support innovative teaching and learning practices by strategizing around five questions that can be addressed in the form of programmatic focus areas (Figure 2). Each programmatic focus area will be defined and detailed in the next section of this report. By clearly addressing these questions within the overall strategic planning effort, UTO can propel ASU towards Universal Learning over the next five years. What follows in this report is a framework for both pragmatic and progressive opportunities to keep ASU at the lead of the innovation curve in support of the Universal Learning vision.

Further, an adapted version of McKinsey’s Three Horizons Framework will help organize discussions and actionable analysis around the programmatic focus areas in terms of 1) enhancing existing experiences; 2) expanding emergent opportunities; and 3) exploring progressive ideas. This approach will be discussed in more detail in the Framework section.

Enabling Technologies

UTO can directly tie enterprise-level strategies and applications of emerging technologies to promoting the programmatic focus areas at ASU as defined above. Nine such technologies will be explored in a 1/3/5-year outlook for their potential to, true to Dr. Crow’s notion of the “Velocity of Change,” accelerate positive cultural outcomes that are felt across the community, towards Universal Learning. The nine enabling technologies are represented in Figure 3, along with the programmatic focus areas and Universal Learning elements each one has potential to advance.

Figure 3: A 1/3/5-Year Vision of Nine Technologies to Enable Universal Learning
1 YEAR: ENHANCING EXISTING EXPERIENCES

ADAPTIVE LEARNING TECHNOLOGIES
Transparent, crowd-verdicted information + accountability
Freedom to personalize interactions, experiences + environments
Unlimited access to crowdsourced expertise + AI that provides personal guidance

ASSESSMENT TECHNOLOGIES
Transparent, crowd-verdicted information + accountability
Unlimited access to crowdsourced expertise + AI that provides personal guidance

MICRO-CREDENTIALS + DIGITAL BADGES
Transparent, crowd-verdicted information + accountability
Freedom to personalize interactions, experiences + environments

3 YEARS: EXPANDING EMERGENT OPPORTUNITIES

ARTIFICIAL INTELLIGENCE
Transparent, crowd-verdicted information + accountability
Freedom to personalize interactions, experiences + environments
Unlimited access to crowdsourced expertise + AI that provides personal guidance
Instantaneous + convenient access

THE INTERNET OF THINGS
Seamless, uninterrupted access to resources + experiences
Freedom to personalize interactions, experiences + environments
Unlimited access to crowdsourced expertise + AI that provides personal guidance
Instantaneous + convenient access

VIRTUAL + MIXED REALITY
Seamless, uninterrupted access to resources + experiences
Freedom to personalize interactions, experiences + environments
Instantaneous + convenient access
Immersive virtual environments that facilitate socialization, collaboration + entertainment

5 YEARS: EXPLORING PROGRESSIVE IDEAS

BLOCKCHAIN
Transparent, crowd-verdicted information + accountability
Freedom to personalize interactions, experiences + environments

NEXT-GENERATION LMS
Seamless, uninterrupted access to resources + experiences
Freedom to personalize interactions, experiences + environments
Unlimited access to crowdsourced expertise + AI that provides personal guidance
Instantaneous + convenient access

VIRTUAL ASSISTANTS
Seamless, uninterrupted access to resources + experiences
Freedom to personalize interactions, experiences + environments
Unlimited access to crowdsourced expertise + AI that provides personal guidance
Instantaneous + convenient access

PROGRAMMATIC FOCUS AREAS
DIGITAL FLUENCY
STUDENT SUCCESS
NEXT-GENERATION LEARNING ENVIRONMENTS
SMART CAMPUSES
CROSS-INSTITUTION COLLABORATION
Each programmatic focus area will require the strategic deployment and management of a set of the enabling technologies, in the near-, mid-, and short-term. Figures 3 and 4 depict the alignment of those technologies to develop those program areas within a 1/3/5-year framework. Later in this report, the featured technologies are discussed in context of how they will advance the programmatic focus areas in detail. This alignment activity concretely connects the UTO’s growing portfolio of technologies with tangible, ideal outcomes for the ASU community.

Additionally, specific hypotheses will be posited to 1) articulate actionable steps for UTO and 2) provide entry points for UTO to measure the success of their technology investments and support. For example, the discussion of adaptive learning technologies in the context of supporting the programmatic focus area of Student Success delves into the imperative to scale high-quality offerings as ASU Online grows enrollment from 30,000 to 100,000 students. An adaptive-active model, helmed by EdPlus, has already proven successful in immersion courses. Thus, the hypothesis is made: If UTO supports the scaling of adaptive learning to ASU’s online offerings, it will bolster retention and persistence for online learners. By allocating sufficient resources to supporting EdPlus in this endeavor, UTO is helping to keep more students engaged while promoting personalized learning and real-time intervention.
These discussions and more lay the groundwork for UTO to actively moving the needle towards Universal Learning over the next five years. The report concludes with a set of concrete recommendations for expanding UTOs portfolio of community-changing innovations.
The Identity and Access Management (IAM) system should streamline creation of identities and profiles, support access to learner records, eliminate identity duplication, grant or revoke access based on defined attributes or events, serve as the authoritative source for identities, and provide mechanisms to increase centralization of authentication and authorization efforts across the university. Our modernized IAM system is critical to support the pathway for a Universal Learning framework within the next few years (see Attachment 6).

IDENTIFICATION AND AUTHENTICATION

ASU has a diverse population that entails a wide range of affiliations and relationships. Affiliations can be formally defined in our enterprise systems such as, student applicants, students, alumni, faculty, and staff. Informal relationships are those not well defined in our systems and can be thought of as “unaffiliated” populations such as, parent, athletics ticket buyer, donor, research collaborator, etc.... We are looking for a solution that can help us quickly create digital identities that properly identify and authenticate individuals who are unaffiliated.

However, for formally affiliated populations the solution should integrate with our current authentication solutions, ASU Kerberos and ADFS environments. The identity solution should also provide new, faster mechanisms to create new identities and authenticate formally affiliated individuals.

The solution should allow for identity federation or provide its own identification and authentication services, including the secure creation, management and storage of digital identity credentials. The product must support SAML and should support standards such as OpenID and OAuth. The authentication and credentialing system should support the following business objectives.

1. ASU would like to quickly identify prospective students coming in from various mediums and platforms (web, social, mobile), in order to authenticate them and then authorize access to ASU's pre-student and student services. Many prospects attempt to engage with the University through ASU's mobile and web-based tools. These mobile and web tools require prospective students to remember several accounts and passwords - one for each system because there is no unified identity solution. Instead, we would like the ability to quickly create a digital identity and profile that prospects can use to access all ASU services designed for prospective learners. As the prospective learners transition to students, an easy method to convert, or transfer, the digital identity to a more secure system is highly desirable.

2. ASU’s alumni, research, corporate and community partners need access to ASU services in order to support ASU’s mission, charter and objectives. We would like a method to quickly create digital identities for these partners so we can easily provide access to certain ASU services that are designed to increase community embeddedness and engagement. These identities should be able to transition as needed throughout the ASU identity ecosystem to provide increased levels of
assurance. We need the ability to provide identity attributes captured within the system to ASU's CRM, or other tools, to help increase engagement.

3. ASU customers need to be able to create and maintain profile information in a way that allows us to properly identify and engage with ASU prospective students, alumni, partners, affiliates and others in the ASU community. Profile management should be available through mobile and web platforms, and store social media identity attributes. Profile management integration with ASU's CRM is also needed in order to allow ASU to engage with its community as identity records are established.

4. Identity reporting tools are needed so ASU can easily view, segment, and curate populations based on mobile devices (phone number or device ID) or social media identification (Facebook, LinkedIn, Twitter, etc…). We should be able to gather and store identity attributes from individuals who use Social IDs as their authentication credential.

DIRECTORY AND AUTHORIZATION

ASU has a diverse and complex set of attributes and formal affiliations that describe a particular identity. For instance, an individual can be a faculty member who is also an alumnus, or a student who is also an employee; there are many combinations of these affiliations and attributes. Therefore, the system should be able to ingest identity attributes from multiple integrated systems, most notably, but not limited to, PeopleSoft Campus Solutions version 9.2 (PS CS) and PeopleSoft Human Capital Management version 9.2 (PS HCM), store that information, and then use it to provide authorization to various services.

Service provisioning integrations and provisioning and revocation should be as instantaneous as possible - customers should not need to wait on service provisioning. Conversely, revocations should also be performed in near real-time and they should occur as identity attributes changes trigger revocation events as defined by the business. In addition, the system should integrate with the identity and authorization solution (noted above) such that it can provision and revoke access to services to individuals when they authenticate with unaffiliated or affiliated identities.

1. ASU requires mechanisms that can evolve with and manage ASU’s complex organizational structure. The University seeks to define directory structures and hierarchies based on its highly matrixed, distributed, and adaptive nature.

2. The IAM solution must facilitate identity profile management for Universal Learners within its own directories and/or integrate with current ASU directories. It should provide attribute based access control mechanisms that allow quick and easy access to one’s own learner records.

3. ASU has a complex and vibrant organizational structure that advanced analysis tools could help to organize as it pertains to service and system access. Due to the complex and fluid nature, as well as the multi-faceted affiliations an ASU identity may have, we desire an IAM solution that uses attributes rather than roles
to provision authorization grants. In addition, ASU would like to explore machine learning (ML), artificial intelligence (AI), or other analysis capabilities with the potential to help manage access to services based on student lifecycle (prospective student, applicants, student, alumni, etc.) or affiliation with the university, job function, role, department and/or title. The capability to dynamically assign and remove services based on advanced analysis techniques is highly desirable.

4. ASU's identity and access management systems must easily facilitate name changes, preferred names and flexibility to accommodate gender identity and pronoun assignments across ASU websites, email and other directories. Directory systems must be synced easily and directory logic must be easily adjusted and maintained.

5. The solution should support IoT and Smart Campus initiatives. We assert that we would like to manage every IoT device as an "identity", so an identity could be associated with any device with a MAC address. These devices can be given permission to read or write data to essential systems, access the network environment, and provide services as needed or designed.

6. Physical access to ASU sites, buildings and rooms needs to be provided in an increasingly safe, more predictable and simpler way for students and affiliates. The IAM system should provide an identity that can be used for digital object access as well as access to physical space.

7. ASU needs to increase visibility and reduce risks with privileged account access, including root and administrative account access. The solution should include the ability to track activity and report on these accounts for review and audit purposes, ensuring that accounts are removed and access is revoked in accordance with ASU policies. We would like to provide these capabilities for privileged accounts that reside on-premise, in distributed IT departments, or in the ASU cloud environments including but not necessarily limited to Amazon Web Services, Microsoft Azure, or Google Cloud.

ACCOUNTABILITY AND ATTESTATION
ASU needs to ensure that authentication and authorization information is tracked and logged in order to meet the needs of its current and future regulatory environment. The solution should have high integrity and provide transaction log information necessary to fulfill audit requests. Currently, the attestation review process is largely manual. ASU needs workflow processes and mechanisms to automate data trustee access reviews process. The solution should also analyze roles and user attributes to help us determine if there are segregation of duty breakdowns or problems with access creep. These automated attestation processes should be logged and auditable. The following items are key business objectives within the accountability and attestation realm.
1. The IAM solution should provide audit logs that comply with regulatory requirements such as FERPA, GDPR, GLBA, HIPAA and other regulations as necessary. The IAM solution should track authorization grants based on a given regulation and provide reporting that can be easily used to satisfy audits requirements.

2. ASU needs to ensure that effective security measures are in place to protect sensitive information, including personally identifiable information, in all its systems and seeks to provide more exhaustive personal information protection for ASU databases including but not limited to Oracle, Sybase, MySQL, MS SQL, AWS Redshift, S3, Aurora, and flat file storage including but not limited to CIFS, AFS, and NFS.

   a. We desire a system that can search and track PII that has GDPR, GLBA, FERPA, and other compliance requirements. The solution should have the capability to hide or remove data as needed in test and development databases, or flat file systems, to prevent loss of data.

3. ASU would like to provide our constituents an attestation workflow process for data trustee approval workflows. It is necessary for ASU to automate the tracking, provisioning and revocation of access as the output of attestation or integration to other systems that provide attestation or provisioning/revocation.

4. ASU desires the ability to analyze user authentication and access behaviors, including time and geolocation, to determine potential threat activity, provide assurance for academic integrity, and allow for accounting metadata to be associated with people and device identities.

5. The solution needs to support ASU’s ever evolving networking environment. The focus of this RFP, in the context of network, is authentication and authorization.

**CURRENT IAM STATE**

ASU has methods developed to serve populations that are affiliated with ASU as Student Applicants, Students, Alumni, Employees (Staff/Faculty) and Courtesy Affiliates. The Courtesy Affiliate population is further segmented into sub-affiliation types. These populations are provided with authentication credentials and authorization grants through our current IAM system, which consists of PeopleSoft and a proprietary system – Enterprise Dynamic Network Authorization (EDNA). [See Attachment 1]

The PeopleSoft Campus Solutions system, which is synchronized with PeopleSoft HCM, is the main authoritative source for an identity. In order for an identity to be granted authorization to ASU IT services by EDNA they need a PeopleSoft “EMPLID” assigned. [See attachment 2] The affiliated population has identities with high level of assurance since we collect many pertinent and sensitive identifiers. The system for authorization grants in EDNA uses attribute based access control (ABAC) with attributes that are defined in PeopleSoft and synced to the EDNA database. [See attachment 5]
Affiliated populations have credentials that allow single-sign-on (SSO) to almost all enterprise university services. The main SSO protocol is a customized version of Central Authentication Service (CAS), although it is sometimes used in conjunction with Shibboleth for web-based service providers external to ASU (e.g. Salesforce, Servicenow, etc…). Kerberos is used as the authentication protocol for the CAS service. Active Directory and Active Directory Federation Services (ADFS) accounts are provisioned and used for specific Microsoft services. Unix/Linux LDAP services are also used for group management and access to web-based and other non-Microsoft systems. Multi-Factor Authentication (MFA) is used for all employees authenticating with CAS or ADFS. Some services also require students to use MFA.

Once an affiliated person has credentials, the credentials remain intact provided individuals follow ASU’s account and password policies. However, the type of affiliation may change (e.g. student to alumnus, employee to retired employee, faculty to emeritus, or other combinations of affiliation).

Certain populations, such as student prospects who have not yet applied, and thus are not Student Applicants, are not provisioned an EMPLID and not in our enterprise IAM system. These populations create identities and are assigned credentials and authorizations directly on individual systems. It is a one-to-one siloed environment for these “unaffiliated” individuals whereby they need to remember credentials for each system they use. [See attachment 3]

Minimal identifying information is collected from this population since little is required to provide a basic set of simple services as they begin their journey with ASU. In some cases these identities go dormant and return later, or even go stale.

ASU also uses a master data management (MDM) system for bio-demographical data that matches identities across several ASU engagement systems. These source systems contain both “unaffiliated” and affiliated populations and the MDM combines identities across these sources to create a composite profile record that is used within ASU’s CRM and other engagement systems.

**CURRENT ASU POPULATIONS AND STATISTICS**
- Over 2 million users with active authentication credentials
- 400,000 CAS unique user logins per month (1 unique user over 1 month timespan)
- Up to 30 million logins total per month; 2000 per minute
- 17,900 number of total IT service transactions per day
- 11,400 IT service provisioning transactions per day
- 4,100 IT service access revocation transactions per day
- 2,500 self-service password change requests per day or 2 per minute
- Syncing with external directory systems 48 times per day
- The annual IT services account and transaction growth rate is about 10%
- Average monthly statics [See attachment 4]

**SERVICE LEVEL AGREEMENTS**

The Service Level Agreements (SLAs) that are negotiated with provider(s) should incent and reward continuous improvement and excellent performance, and not be solely punitive in nature. ASU is interested in receiving SLA models that demonstrate expertise in specific identity management technologies through objective measurement
of rigorous standards, delivered via dashboards, reports, mobile applications, notifications, workflows, etc., that are readily available, quantifiable, and universally understood.

**CLOSING**
Please provide as much information about how your solution will help ASU fulfill its charter as it relates to the IAM objectives above. We are hopeful to find solutions that will accommodate all of our business objectives and while we are interested in supporting our full set of requirements with as few integrations between identity systems as possible, we realize more than one solution may be necessary. As such, we desire a cooperative and collaborative working relationship with, and between, all our future IAM partners.

**PILOT PROGRAM**
Before implementation of a new Identity Access Management (IAM) service, ASU is requiring a Pilot program that allows for testing of functionality, data collection, and overall benefits to the University. Your process for a Pilot should be included as a standard component of the development and implementation of an IAM solution under this RFP. RFP Proposers must detail their planned approach, recommended timeline (less than 1 year), and resources required for the Pilot. The Pilot program shall be a genuine effort to test the validity of a proposed solution. A Pilot is required prior to full implementation and award of a long-term contract resulting from this RFP. The selected Proposer(s) may be compensated for participation in this Pilot process. All costs must be outlined in the Pricing Schedule provided.