HQ AETC/A3BD
Digital Badging Handbook

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1. GENERAL

1.1. What Started the Push for Digital Badges? (Background)

During the 2018 CORONA, the Secretary of the Air Force and Chief of Staff of the Air Force established a Force Development (FD) Commander (FD/CC) who is charged with providing agility, advocacy, and accountability of Air Force FD efforts. The FD/CC is also charged with executing the long-range strategic development of Total Force Airmen (Guard, Reserve, Regular Air Force and civilian, as applicable) through a deliberate process that combines education, training, and experiences to produce the right competencies to meet the Air Force's operational needs.

To facilitate this, Headquarters Air Education and Training Command (HQ AETC) established the AETC Mission, Vision, and Priorities (Nov 2020) that focused on developing the Airmen we need and refining the systems that support them, and on valuing and prioritizing force generators. Focus Area 1.2.4. charged the command to document what Airmen know and can do in a digital portfolio of validated learning accomplishments, achievements, and skills.

To meet key FD/CC responsibilities (outlined in AETC Programming Plan (PPlan) LN17-30 and HAF Policy Guidance Letter (PGL) 17-30) and Focus Area 1.2.4., HQ AETC/A3BD used a commercial digital badging platform provider to develop and deploy digital badges that verify and validate learning and experiential accomplishments, achievements, and skills, and represent (micro-) credentials and certificates by partnering with career fields/specialties/organizations to develop and issue digital badges across all Air and Space Force MAJCOMs to include all components of the Total Force.

1.2. Why Use Digital Badges?

At present, the Department of the Air Force (DAF) lacks the capability to consolidate and document individual's credentials and knowledge, skills, abilities, and observable behaviors (KSAO) in a manner that is useful for leadership to make data-driven decisions from a talent management and development standpoint. Additionally, the DAF cannot immediately validate credentials for authenticity. Individuals lack the ability to transfer their credentials into and out of DAF systems. Finally, individuals / organizations / career fields are unable to create sharable, open-source credentials. Digital badges provide solutions to these DAF concerns and shortfalls.

To illustrate, Airmen and Guardians earn credentials throughout their careers from a variety of agencies / organizations both inside and outside the DAF (e.g., academia, industry, commercial, governmental, etc.). These credentials are crafted by various organizations with standards and expectations optimized for a specific purpose. As the DAF incorporates these credentials into its systems of record, the legitimacy / validity of the credential is based on the reputation of the organization. For the DAF to rely upon these credentials for operational decision-making, Senior Leaders require data that allows them to assess the quality of the achievement; furthermore, this data must be normalized so that similar credentials can be adequately compared. Without normalized credentialing, meaningful metadata, and optional supporting evidence, Senior Leaders do not have an accurate picture of what Airmen and Guardians know and can do.

Digital badges provide Earners and Consumers with a validated record of achievement. They are built on an open badge standard that enables data normalization for decision making and data transferability between systems. Further, digital badges contain supporting metadata and substantiating evidence that

enhances the legitimacy of the earning criteria. They can also link to skill libraries that connect associated KSAOs with earning outcomes.

1.3. What Is a Digital Badge?

Digital badges are portable, transferable, validated representations of training, education, experiences, credentials, licenses, certifications, competencies, observable behaviors, KSAOs, awards, and any other achievement attained by an Earner. In short, badges recognize what Airmen and Guardians know and can do. They are built on an open badge standard (see section 1.3.1.) that provides valuable information about the earning process and enables badges to be shared electronically.

Digital badges provide communities with data to optimize talent management, talent development, and transition management.

- Talent management – digital badges provide leaders with information to assist in making data-driven decisions while managing the overall capabilities of the force. They provide leaders the ability to evaluate the credentials and KSAOs of their personnel to provide them with equitable opportunities for advancement and to adequately fill career field requirements.
- Talent development – digital badges enable leaders to determine priorities for personnel development to include dedicating man-hours and funding for development activities. Leaders can use digital badges along with other information to evaluate the development of their personnel and identify KSAO gaps. Digital badges also allow Earners to own and control their progression through curated pathways. Individuals can evaluate their own developmental gaps and then identify a pathway toward achievement for individual or organizational success.
- Transition management – digital badges can benefit leaders, Earners, and the DAF in three ways:
  o Transition in – recognition of competencies and KSAOs achieved prior to entry into the DAF.
  o Transition out – transition of recognized skills into industry and academia through life-long representations of competencies and KSAOs.
  o Transition throughout – sharing of competencies and KSAOs with leadership / supervisors / co-workers across multiple assignments throughout their career.

Digital badges should be categorized using the following taxonomy:

- Recognition – digital badges that recognize existing achievements, competencies, and KSAOs in line with existing training and/or experiences and identified in existing DAF systems.
- Aggregation – digital badges that aggregate existing training requirements, accomplishments, and lower-level (micro-credential) badges to recognize higher-level accomplishments (combination of recognition badges).
- Creation – digital badges that recognize new accomplishments that are not otherwise identified in existing DAF systems but are mission enabling / enhancing (combination of recognition, aggregation, and/or external badges and option for personnel to archive and store accompanying evidence).

Digital badges can be combined into learning and development pathways that lead to a desired outcome for the organization and/or the individual. Pathways can be prescriptive or descriptive:

- Prescriptive pathways seek to declare one homogenized, standard, or recommended badge earning path. Typically, these approaches rely on a form, structure and recommended path laid by

institutions, governments, private companies, or other formalized education plans. This badge pathway will likely be linear.

- Descriptive pathways seek to acknowledge the ways people consciously and willfully choose to earn badges. A descriptive pathway is a more natural approach for a badge recipient since they define their own path. When there's no prescribed pathway, people find the way that makes sense to them, choose to follow other people's paths, or strike out in very different directions.

Digital badge pathways can be structured to best meet the needs of the desired outcome (Figure 1).
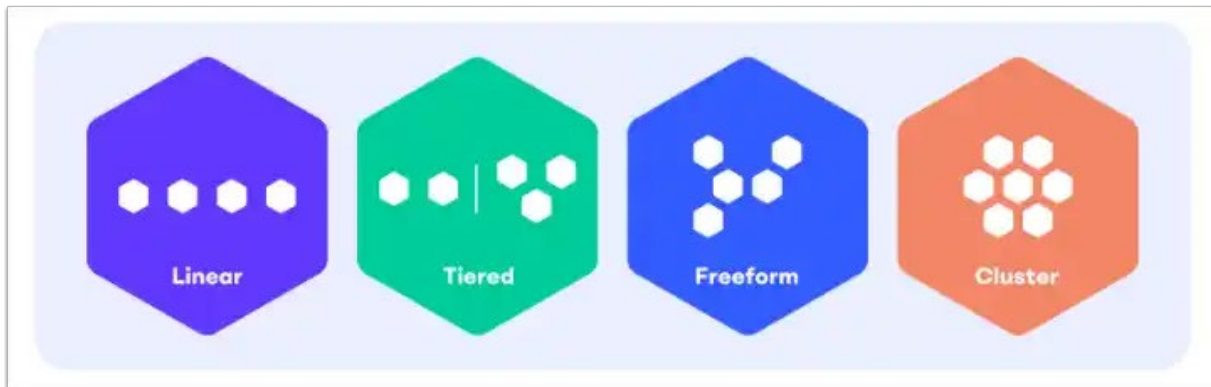
Figure 1 Digital Badge Structures (https://community.canvaslms.com/)

- A Linear structure involves earning one badge after another in a prescribed order.
- A Tiered structure includes badges that build on each other – basic to expert.
- A Freeform structure contains non-linearly connected badges that cross categories and don't follow linear pathways.
- A Cluster structure includes digital badges that are not necessarily connected to each other, can be earned in any order, but still result in an end goal.

Figure 2 Examples of Badge Pathways (https://bryanmathers.com/pathways)

Examples of digital badge pathways include (Figure 2):

- Stepping stones are sequential (linear) and prescriptive pathways.
- Collections are non-linear and prescriptive pathways.
- Constellations are non-linear and descriptive pathways.

The current DAF collection of digital badges and pathways can be viewed at https://daf.badgr.com.

1.3.1. The Open Badge Standard

Digital badges are constructed using a unique graphic with embedded metadata in accordance with the IMS Global Open Badges Standard (OBS) (https://openbadges.org/). OBS is the world's leading format for digital badges. OBS is not a specific product or platform, but a type of digital badge that is verifiable, portable, and packed with information about the KSAOs associated with the credential (Figure 3).

Figure 3 Data & Information Inside Open Badges (https://openbadges.org/)

- Alignment – a list of identified names, Uniform Resource Locator (URL) links, and descriptions of standards that are directly applicable to a digital badge or provide explanatory material concerning the digital badge.
- Badge criteria – present-tense descriptive earning criteria statements that detail requirements for Earners to achieve / earn the digital badges and be awarded a digital badge assertion.
- Badge description – a past-tense narrative description of the achievement.
- Badge name – a succinct, yet descriptive, name for a digital badge that generally describes what a digital badge represents.
- Digital signature – a cryptographical signature for assertions that verifies the authenticity of an awarded digital badge.
- Evidence – a direct URL link to evidence / artifacts (documents, graphics, audio files, video files, etc.) that expressly demonstrate how an Earner has met earning criteria.
- Expiration date – an optional field for assigning expiration dates to a digital badge assertion for digital badges that are no longer valid or need to be re-accomplished on a set schedule.
- Issued date – the date a digital badge assertion was issued / awarded to an Earner.
- Issuer – the individual, entity, or organization that issued the digital badge.
- Recipient – data that identifies the individual that completed the earning criteria and was asserted (also referred to as earned / awarded) a digital badge.
- Verification – a collection of information that allows Consumers to verify the authenticity of the data that makes up an Assertion (Figure 4).

Figure 4 Digital Badge Assertion Data & Information (in Badgr)

All the above data is programmed according to JavaScript Object Notation for Linked Data (JSON-LD) which is an implementation format for structuring data through a method of encoding linked, structured data consisting of multi-dimensional arrays (Figure 5).

```
{
  "@context": "https://w3id.org/openbadges/v2",
  "id": "https://example.org/assertions/123",
  "type": "Assertion",
  "recipient": {
    "type": "email",
    "identity": "alice@example.org"
  },
  "issuedOn": "2016-12-31T23:59:59+00:00",
  "verification": {
    "type": "hosted"
  },
  "badge": {
    "type": "BadgeClass",
    "id": "https://example.org/badges/5",
    "name": "3-D Printmaster",
    "description": "This badge is awarded for passing the 3-D printing knowledge and safety test.",
    "image": "https://example.org/badges/5/image",
    "criteria": {
      "narrative": "Students are tested on knowledge and safety, both through a paper test and a sup
    },
    "issuer": {
      "id": "https://example.org/issuer",
      "type": "Profile",
      "name": "Example Maker Society",
      "url": "https://example.org",
      "email": "contact@example.org",
      "verification": {
        "allowedOrigins": "example.org"
      }
    }
  }
}
```

Figure 5 JSON-LD Formatted Open Badge Assertion
(http://www.imsglobal.org/sites/default/files/Badges/OBv2p0Final/index.html)

1.3.2. The Badging Construct / Ecosystem

The badging ecosystem consists of participants both internal and external to an organization. From senior leaders to consumers, each participant plays a role in developing a thriving ecosystem.

Senior Leadership sets the direction for digital badges to include the vision and intent of how digital badges will be used to benefit the organization. The vision should be the long-term focus of how digital badges will be utilized in the organization. The intent is a specific direction on how digital badges will be used, i.e., talent management, talent development, and/or transition management.
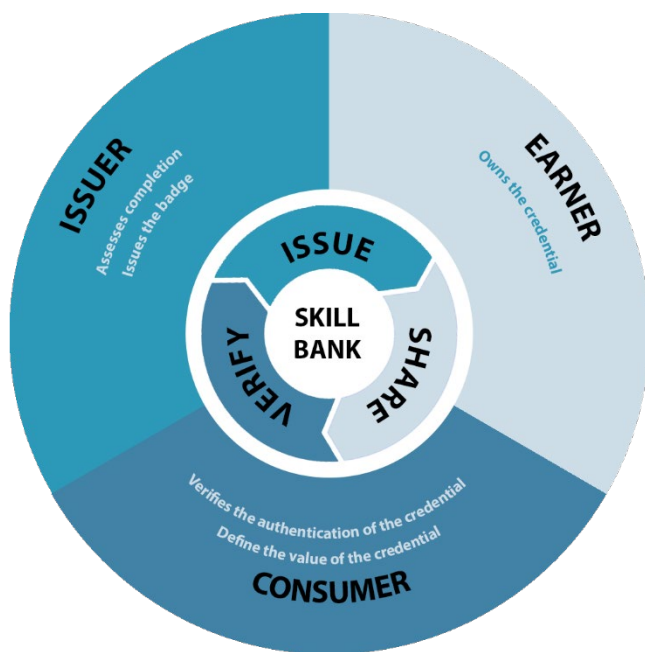
Figure 6 Digital Badge Ecosystem

Developers are assigned by an organization's senior leadership to develop digital badges that best meet organizational needs by providing valuable talent management, talent development, and/or transition management decision points that align with Senior Leader priorities and intent.

Issuers include the DAF, as an overarching organization, individual suborganizations, and leadership-designated individuals that evaluate an Earner's digital badge submission and determine if they have successfully met the digital badge's earning criteria. Once the Earner's submission is assessed and verified, the Issuer issues / awards the digital badge to the Earner (Figure 6).

Earners are Total Force DAF Members who have met the requirements to earn a digital badge.

Once earned, Earners can share their digital badges with Consumers (Figure 6).

Consumers include any audience, individuals, or organizations, with whom Earners share their earned digital badges. Consumers can include anyone from within or outside DAF organizations that view digital badges and define the value of those digital badges for their individual purposes. Consumers verify the authenticity of the viewed badges through the digital badging platform controlled by the Issuer (Figure 6).

1.4. Initial Digital Badging Efforts

1.4.1. Cooperative Research and Development Agreement

In Feb 2020, HQ AETC/A3BD entered into a Cooperative Research and Development Agreement (CRADA) with Credly, Inc. to collaborate in a research project to explore how digital badges can verify and validate mastery of skills, knowledge, experience, and competencies. As part of the CRADA, digital badges were created for USAF Learning and Development Professionals, First Sergeants, Cyberspace Support, and the Air Force Institute of Technology (AFIT).

- The Learning and Development Professionals (primarily comprised of Office of Personnel Management (OPM) occupational series 1750 personnel) were the initial organization to develop digital badges. They were interested in talent development and created digital badges that recognized unique KSAOs that were not otherwise being identified.
- The First Sergeants were interested in not only developing First Sergeants, but also maintaining and increasing their leadership skills as senior non-commissioned officers (NCO) in preparation for returning to their primary career fields. To support these goals, the First Sergeants authored two developmental pathways that each culminated in macro badges. One track is focused on professional development for First Sergeants while the other track provides professional development that is expected for senior NCOs. In addition to the professional development benefits, these badges could also be used to recognize First Sergeants having specific experience to mentor new First Sergeants through difficult situations.
- The Cyberspace Support community utilized digital badges for talent management and talent development. For talent management, the career field manager (CFM) wanted the ability to place the right person, with the right knowledge / experience, at the right time to fill positions. From a talent development perspective, the developmental pathways outlined criteria personnel could use to develop themselves to be competitive for specific jobs or assignments.
- AFIT opted to create a single digital badge to recognize knowledge gained in one module of an in-person graduate-level course. This digital badge was also used by Cyberspace Support to recognize the same knowledge gained through other means.

1.4.2. Contract

At the conclusion of the CRADA, HQ AETC/A3BD began a one-year digital badging contract with Credly, Inc. This allowed continued work with the Learning and Development Professionals, First Sergeants, Cyberspace Support, and AFIT. Additional organizations were added to include Air University's Teaching and Learning Center (TLC), US Air Force Academy (USAFA), and USAF Paralegals.

- TLC developed a single digital badge to recognize completion of the Teaching Essentials Course (TEC).

- The USAFA utilized digital badges to recognize their faculty achievements to include professional development seminars and faculty awards.
- The Paralegal community initially developed digital badges to recognize developmental pathways for their enlisted community but pivoted their direction to focus on recognition of Continued Legal Education (CLE) for their career field.

In 2022 the digital badging contract changed from Credly to Canvas Credentials (formerly Badgr and an Instructure, Inc. badging service) (https://daf.badgr.com). This move added the capability to develop pathways to better plan learning and developmental sequences for Earners to follow. Additional organizations and career fields are continually being added to expand the digital badging program.

1.5. Future Plans for Digital Badges

Through work with Credly and Badgr, HQ AETC/A3BD identified several limitations of commercial off the shelf (COTS) solutions. To overcome the inherent limitations of a COTS digital badging platform, HQ AETC/A3BD is working toward a DAF Enterprise Digital Credentialing Service (EDCS). The EDCS will provide an integrative service to incorporate, develop, catalog, earn, and share digital credentials for internal data-driven decisions and external representation of Airmen and Guardian competencies and KSAOs.

2. USE CASES

2.1. How is Industry Using Digital Badges?

2.1.1. What do they use them for?

Civilian businesses utilize digital badges for a variety of purposes:

- Skills / experience identification – recognizing employees' skills and experience to better utilize them for the benefit of the organization.
  - Job placement – identifying required skills or experience for a specific position and the employees who have those skills.
  - Team construction – identifying employees' complimentary skills or experiences to create a diverse and effective team that best supports mission and team goals.
- Skills development – developing employees to meet the needs of the company and/or the needs of the employees.
  - Upskilling – identifying new skills employees can acquire for advancement.
  - Reskilling – identifying skills that employees can develop in line with their interests or when changing their career direction. Reskilling allows employees to become qualified for positions outside of their current positions, or when technology changes and their current skills become obsolete.

While all businesses are not incorporating all these capabilities, many organizations are utilizing digital badges to take advantage of these capabilities to benefit their employees.

2.1.2. What digital badging platform are they using?

Civilian industry is using either a commercial digital badging platform to issue their badges or a combination of a commercial digital badging platform and an internal badge management system. For

example, PricewaterhouseCooopers (PwC), LLC, an international company, has built an internal badge management system that receives input from their internal learning management system (LMS) and human resources (HR) systems to issue and display digital badges through Credly, Inc.

2.2. How is Academia Using Digital Badges?

2.2.1. What do they use them for?

Educational organizations primarily focus their digital badges on students; however, they also create them for faculty recognition. From a student perspective, digital badges mostly concentrate on recognition of foundational skills since most students do not possess occupational experience. Badges can be created for academic achievements, student leadership awards, volunteer work, etc. From a faculty and student perspective, digital badges can be used for recognition of outstanding students, academic achievement, or faculty members. From a purely faculty perspective, digital badges can also be used to recognize foundational and occupational competencies as well as skills achieved through execution of their positions.

2.2.2. What digital badging platform are they using?

One example of an academic digital badging platform is the University of Central Oklahoma's Student Transformative Learning Record (STLR) (https://www.uco.edu/academic-affairs/stlr/).The STLR is like a second transcript that helps students track growth in core areas that resonate with employers and graduate schools. Students can view and share a skills-driven transcript that represents six tenets: discipline knowledge; global and cultural competencies; health and wellness; leadership; research, creative, and scholarly activities; service learning and civic engagement.

2.3. How is the Military Using Digital Badges?

2.3.1. What do we use them for?

Military organizations are in the initial stages of using digital badges. HQ AETC's plan for the DAF is to utilize digital badges to recognize competencies, KSAOs, credentials, and achievements as a tool for talent management, talent development, and/or transition management. HQ AETC/A3BD is working with several organizations and career fields to develop digital badges that meet their needs (see Section 1.4), and to gather requirements for an enterprise-wide application.

2.3.2. What digital badging platform are we using?

HQ AETC/A3BD is offering a COTS digital badging solution through a government contract (https://daf.badgr.com). However, this system does not integrate with other DAF systems, so HQ AETC/A3BD is working to develop the EDCS as an enterprise solution to digital badges and credentials for the DAF.

3. CREATE DIGITAL BADGES

Developing digital badges takes coordination between HQ AETC/A3BD and the senior leadership for the organization desiring digital badges (Figure 6). There are a couple options depending on the needs of the organization and the size of the digital badging project.

The standard development process (section 3.2) entails HQ AETC/A3BD working with an organization's subject matter experts (SME) to build digital badges in line with senior leader vision and intent. This work can be conducted via a face-to-face or virtual format using video conferencing tools. Both face-to-face and virtual formats require participation of a SME group that includes a wide depth and breadth of experience in the organization / career field. The face-to-face format will include three to five 8-hour days (depending on the number of badges developed) while the virtual format will include weekly meetings (2 hours twice a week for 3-4 months depending on the number of badges developed). The standard development process is the preferred method for large organizations that plan on developing many digital badges.

The non-standard development process (section 3.3) is for simple use cases and organizations that can develop their own badges with minimal help. In this instance, HQ AETC/A3BD will provide training, direction, support, and review draft digital badge(s) for the organization's SME team.
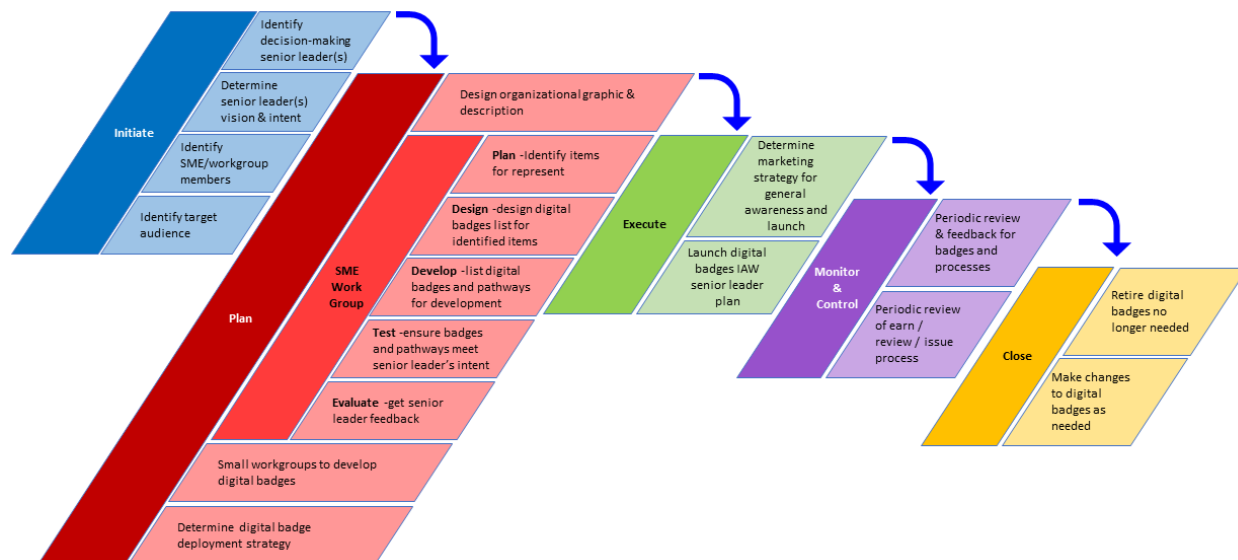
Figure 7 Digital Badge Development Process

3.1. Initiate with Leadership

The first step to creating digital badges is to work with senior leadership (CFM, Occupational Director, or equivalent organizational decision-makers) to determine the vision and intent of digital badges, and to select the best digital badge development process.

Items that exist in workforce development plans (items already recognized by the career field) can be readily converted to digital badges at the recognition / aggregation level and will follow the AETC digital badge development process (see Section 3.2.). Items that do not exist in workforce development plans (items not previously recognized by the career field but recognized as valuable data points for the career field) will follow the AETC digital badge development process (see Section 3.2.). Items identified by the career field that could be developed independently of a formal design process will follow the non-standard development process (see Section 3.3.).

Senior leadership will identify SMEs, other working group members, and other partners, if required, to develop new digital badges for the respective community.

Senior leadership will determine the target audience, the force development needs, and the digital badges' priority objective of talent management, talent development, and/or transition management.

3.2. Digital Badge Development Process

3.2.1. Plan
- Occupational / Organizational Senior Leader (CFM, Occupational Director, or equivalent organizational decision-makers)
  - Design a graphic and description that professionally represents the organization.
  - Provide a leadership vector throughout the digital badge plan, design, development, test, and evaluation processes.
- SME Workgroup (WG) – the focus of the SME WG is to identify a list of items to capture as a badge(s), develop an initial badge prototype, and solicit feedback / guidance from the CFM (or equivalent).
  - Plan
    - HQ AETC/A3BD will train SME WG members on the digital badge platform and the specifications and requirements of a digital badge template.
    - Identify preexisting items such as competencies or supporting KSAOs, individual achievements, and experiences that can benefit the organization, in line with the CFM's (or equivalent) vision and intent, and be readily represented as a digital badge.
    - Identify meaningful data-points that are not otherwise recognized and can be represented as a digital badge.
  - Design Prototype Digital Badge Templates from the SME WG list identified during WG Plan phase
    - Finalize the list of digital badge templates to be developed.
    - HQ AETC/A3BD will demonstrate digital badge construction through facilitated development of a prototype digital badge template.
      - Construct an initial badge description that emphasizes what the earner can do upon award of the digital badge.
      - Identify proposed earning criteria and align / group like items that can be represented as a single digital badge.
      - Determine an instrument to provide objective assessment of the earning criteria (rubric, checklist, etc.).
  - Develop digital badge templates
    - Design a digital badge graphic template to be used for organizational digital badge templates.
    - Based on the proposed digital badge template list, develop draft descriptions, earning criteria, and additional information for each item.
    - Develop initial earning pathways that align digital badge templates and culminate in the desired outcome.
  - Test
    - Earning Criteria – ensure earning criteria aligns with the badge description.
    - Earning Pathways – ensure digital badge templates contained within a pathway align and culminate in a desired outcome.
  - Evaluate

- - - Solicit CFM (or equivalent) and community feedback to evaluate the functionality of the digital badge templates and earning pathways, to receive additional guidance.
- Divide SME WG into smaller WGs for rapid development. Predesignate test / evaluation schedule with CFM and larger WG to ensure all parties are on track for final deployment.
  - Divide the list of digital badge templates between each small WG to finalize development of digital badge templates and earning pathways in line with CFM (or equivalent) vision and intent.
  - Finalize assessment instruments for each digital badge template.
- Determine optimal digital badge template deployment strategy.
  - CFM (or equivalent) will determine the earn / review / issue process for the respective community.
    - Digital badge templates have earning criteria that will be reviewed by a career field reviewer before issue. In some instances, the reviewer will be the Earner's supervisor.
    - After review of the earning criteria, the reviewer will send the final badge submission to a career field Issuer for award of the badge.
  - CFM (or equivalent) will determine the launch plan and target audience for the digital badge templates.
    - Full deployment – make all digital badge templates available to all members of the community (recommended).
    - Partial deployment – make all (or some) digital badge templates available to specifically identified members of the community.
  - CFM (or equivalent) will determine career field communication method to inform target audience for optimal execution strategy.

3.2.2. Execute
- Marketing (recommended).
  - General Awareness (2-3 weeks prior to launch): CFM (or equivalent) will coordinate with MAJCOM functional managers (MFM) (or equivalent) to inform members of the respective community about available digital badges and to encourage participation in the earning process.
  - Pre-launch Preparation (1-2 weeks prior to launch): MFM (or equivalent) will designate select members of the respective community to serve as reviewers / issuers for the digital badges.
  - Pre-launch Awareness: (1-2 days prior to launch): Execute CFM determined communication strategy (blanket email, social media, podcast, etc.).
- Digital badges will be launched according to the approved CFM (or equivalent) launch plan.

3.2.3. Monitor and Control
- Periodic Reviews / Feedback (career field and Earners).
  - Evaluation is an on-going process throughout each step but also requires cumulative evaluations.
  - As part of a continuous improvement process, the designated issuers will provide feedback to the digital badge SME WG for modifications and/or adjustments to the digital badge templates (see Section 3.2.4.2 for retiring / versioning) or for continued development of additional digital badges to fill gaps.
- Earn / Review / Issue Process
  - HQ AETC/A3BD will coordinate with CFM (or equivalent) to ensure the determined processes are working as planned.

o   As part of a continuous improvement process, the designated issuers will provide feedback to HQ AETC/A3BD for modifications and/or adjustments to the designated issuer list (HQ AETC/A3BD will coordinate with CFM (or equivalent) prior to finalizing changes).

3.2.4. Close

- Once a digital badge template is issued to an Earner, the resulting digital badge assertion is a permanent part of the Earner's records.
- Digital badge templates that are no longer needed can be retired.
- Digital badge templates that require changes to their earning criteria (or other metadata) can be versioned to represent up-to-date information.

3.3. Non-Standard Digital Badge Development Process

- Items identified by the career field that could be developed independently of an HQ AETC/A3BD-led SME WG will follow a non-standard development process.
  - The non-standard development process produces the same outcomes as the standard process; however, the career field will only require periodic progress reviews with HQ AETC/A3BD to ensure the output is consistent with the AETC digital badging model.
  - The non-standard development process is ideal for organizations that are familiar with the design / development of digital badges and/or organizations that already have digital badges and need to make updates to their existing digital badging model(s).
- The CFM (or equivalent) will work with HQ AETC/A3BD to determine the optimal development process.

4. GLOSSARY

4.1. Definitions

Assertion, Digital Badge: A representation of an awarded badge template used to share information about a badge belonging to one recipient. An assertion represents a single badge awarded to a single earner.

Backpack: A service that provides importing, aggregation, and hosting features for recipients to collect, share, and display earned badges.

BadgeClass: A specific data object defined by the Open Badges Standard that contains information about the accomplishment. Many assertions may be issued corresponding to one BadgeClass.

Badge Issuer: A service that allows for the creation of BadgeClasses and the subsequent issuing of assertions to recipients that conform to the Open Badges specification.

Badge Displayer: An application that displays verified badges to viewers. Beginning with Open Badges 2.0, the candidate platform must display a minimum set of badge metadata and support viewer-initiated verification of a badge.

Badge Ecosystem: Refers to the broader ecosystem (also called ecosphere or badgeosphere) of supervisors, commanders, and leadership who are the audience for badges and enables digital badges to function as currency in the community.

Badge Host: An application that can import, aggregate, and publicly host assertions for recipients. It also supports exporting badges at users' request. Beginning with Open Badges 2.0, the candidate platform must be able to import all formats of Open Badges, as well as prove that badge metadata is not lost upon export of the badge.

Badging (Digital Badging): The process of awarding someone a badge denoting a particular experience, skills, or competencies they have obtained for professional or personal development.

Badging Platform: The online tool that allows badges to be created, issued, and earned. Examples include Credly, Badgr, Accredible, etc.

Blockchain: A data structure that holds transactional records while ensuring security, transparency, and decentralization. It is a chain of records stored in the form of blocks which are controlled by no single authority. It is a distributed ledger that is completely open to anyone and everyone on the network. Once information is stored on a blockchain, it is extremely difficult to alter.

Certificate: Credentials awarded by an education institution or other organization based on completion of all requirements for a program of study, including coursework and tests. They are not time limited and typically do not need to be renewed.

Certification: Credentials awarded by certification bodies—typically nonprofit organizations, professional associations, industry / trade organizations, or businesses—based on an individual demonstrating, through an examination process, that she or he has acquired the knowledge, skills, and abilities required to perform a specific occupation or job. Depending on the certification body, they may be called industry or professional certifications. Although training may be provided, certifications are not tied to completion of a program of study as certificates are. They are time limited and may be renewed through a recertification process. In addition, some certifications can be revoked for a violation of a code of ethics (if applicable) or proven incompetence after due process.

Competency: The combination of knowledge, skills, abilities, and other characteristics that manifest in an observable, measurable pattern of behaviors.

Competency Model: A collection of competencies that together define successful performance in a particular work setting.

Consumer: A person or group who is the intended audience / viewer of an Earner's badges. Someone viewing a badge awarded to an earner. Examples include supervisors, commanders, instructors, and potential employers.

Credential: A piece of any record that details qualification, competence, or authority issued to an individual by a third party with a relevant or de facto authority or assumed competence to do so. Examples of credentials include, but are not limited to, certifications, licenses, degrees, and certificates.

Criteria: Detailed information about what must be done to be recognized with an assertion of a particular BadgeClass. Potential recipients may use criteria to understand what they must do; consumers may use criteria to understand what recipients did to earn the badge.

Degrees: Associate, baccalaureate, and graduate—are awarded by public and private colleges and universities after completing all requirements for a program of study. Programs of study vary in level, prerequisites, and length. Applied degrees provide enhanced career preparation through programs of study that combine theoretical and practical learning. Degrees are not time limited and do not require renewal.

Developer: Groups or organizations that create programs where badges can be designed and issued.

Digital Badge: A portable, transferable, validated, graphical representation of learning and/or experiential knowledge attainment with embedded metadata. They are built on an open standard that provides a user with valuable information about the earning process. The badges can be shared electronically and visually recognize what Airmen know and can do.

Digital Credential: A digital record that details a qualification, competence, or authority issued to an individual by a third party with a relevant or de facto authority or assumed competence to do so.

Earner / Recipient: Someone who receives an Open Badge by meeting the criteria for earning the badge, often after submitting evidence of learning or acquiring a skill(s). A person who met the necessary requirements to earn a badge or micro-credential. Earners can apply for badges through issuing organizations or individuals (also referred to as Issuers). Someone who earned or is seeking to earn a digital badge.

Endorsement: Detailed information about third-party claims of support that can be associated with any Open Badges profile, badge class, or assertion.

Enterprise Digital Credentialing Service (EDCS): An enterprise-wide DAF information technology service to create, catalog, issue, display, and share digital badges, digital credentials, and their related developmental pathways that integrates with other DAF HR and learning management systems.

Evidence: Submitted proof that an earner meets the criteria for a badge they are applying for. Can be links, text, images, and other media. Links to and descriptions of evidence related to the issuance of an assertion, such as portfolio items or narratives that describe a badge recipient's work.

Extensions: A means for Issuers to add additional functionality using metadata on Badge Objects beyond what the Open Badges standard specifies.

Issuer: An entity (educational institution, government agency, private organization, individual person, etc.) who creates, manages, and awards Open Badges often on behalf of a program, once evidence is provided demonstrating the criteria has been met. In some cases, the issuer also serves as the validator.

License: Credentials that permit the holder to practice in a specified field or perform a specific function. An occupational license is awarded by a government licensing agency based on pre-determined criteria. The criteria may include some combination of degree attainment, certifications, certificates, assessment, apprenticeship programs, and/or work experience. Licenses are time limited and must be renewed periodically. Like a certification, a license can be revoked for a violation of a code of ethics (if applicable) or proven incompetence after due process.

Metadata: Information contained within a badge that defines it. It includes name, description, and links to other important details like the badge's criteria, evidence, and issuer information. Metadata provides information about what the badge represents, and the evidence used to support it. Metadata is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource. Metadata is often called data about data or information about information.

Open Badge: A specific type of digital badge that conforms to the Open Badges Standard. Open Badges are verifiable and contain detailed information about the achievement and what the recipient did to earn the badge.

Open Badges Standard: The technical specification that defines how Open Badges are constructed and transmitted.

Template, Digital Badge: A representation of a competency, knowledge, skill, ability, or other observable behavior that has not been awarded to an individual. Digital badge templates become assertions when they are awarded to a single earner.

Validation and Verification (of badge assertions): Data validation is a procedure that ensures a cluster of data objects that form an Open Badge are appropriately formatted, published, and linked, and that each data object conforms to requirements for its class. Validation of all data class instances used in an Open Badge is a part of badge verification. Verification is the process of ensuring the data that makes up an Open Badge is correct. It includes several data validation checks, as well as procedures to ensure the badge is trustworthy. Verification is distinct from compliance certification for applications and services that implement the specification, though verification is typically a component of certification programs. See Verification in the current specification. A technical process defined in the Open Badges Standard that enables consumers to determine an Open Badge's authenticity.

4.2. Acronyms

AETC – Air Education and Training Command
AFIT – Air Force Institute of Technology
CFM – Career Field Manager
CLE – Continued Legal Education
COTS – Commercial Off the Shelf
CRADA – Cooperative Research and Development Agreement
DAF – Department of the Air Force
DAF-CP – DAF Credentialing Program
EDCS – Enterprise Digital Credentialing Service
FD – Force Development
FD/CC – Force Development Commander
HR – Human Resources
HQ AETC – Headquarters, Air Education and Training Command
JSON-LD – JavaScript Object Notation for Linked Data
KSAO – Knowledge, Skills, Abilities, and Observable Behaviors
LMS – Learning Management System
MAJCOM – Major Command
MFM – MAJCOM Functional Manager
NCO – Non-commissioned Officer
NDS – National Defense Strategy
OBS – Open Badges Standard
OPM – Office of Personnel Management
OSMT – Open Skills Management Tool
OSN – Open Skills Network
PGL – Programming Guidance Letter
SME – Subject Matter Expert

STLR – Student Transformative Learning Record
TLC – Air University's Teaching and Learning Center
TEC – Teaching Essentials Course
USAFA – U.S. Air Force Academy
URL – Uniform Resource Locator
WG – Workgroup

4.3. References

DAF Digital Badge Catalog – daf.badgr.com
IMS Global – imsglobal.org
Open Badges – openbadges.org

ANNEX 1, SUPPORTING STRATEGIC DOCUMENTATION

A1.1. 2022 National Defense Strategy (NDS)
III. Defense Priorities
> Priority 4: Building a resilient Joint Force and defense ecosystem (p. 7).

Identifying skills through digital credentials allows DAF to meet the following sections of the NDS:
VI. Anchoring Our Strategy in Allies and Partners and Advancing Regional Goals
> To strengthen and sustain deterrence, the Department will prioritize interoperability and enable coalitions with enhanced capabilities, new operating concepts, and combined, collaborative force planning (p. 14).

VII. Force Planning
> Sustaining and strengthening deterrence requires that the Department design, develop, and manage a combat-credible U.S. military fit for advancing our highest defense priorities (p. 17).
> The Department will explore force employment concepts and capabilities that degrade adversary power projection while weighing crisis stability and escalation risk; integrate new technologies; experiment with creative applications of existing capabilities; and selectively share the most effective asymmetric capabilities with threatened Allies and partners (p. 17).
> The Department's force development and design program will integrate new operational concepts with the force attributes required to strengthen and sustain deterrence, and to prevail in conflict if necessary (p. 18).
> The Department is establishing a new framework for strategic readiness, enabling a more comprehensive, data-driven assessment and reporting of readiness to ensure greater alignment with NDS priorities (p. 18).

VIII. Building Enduring Advantages
> Cultivate the Workforce We Need: The Department will attract, train, and promote a workforce with the skills and abilities we need to creatively solve national security challenges in a complex global environment (p. 20).

A1.2. DAFI 36-2670, Total Force Development, 25 Jun 2020
1.2.2. Deputy Chief of Staff, Manpower, Personnel and Services (AF/A1). Develops and ensures implementation of force development policy. Specifically, AF/A1 develops and ensures implementation of force development policy to:
1.2.2.10: Partner with the Force Development Command (AETC) in determining applicability and categorization of special experience identifiers (SEI), special duty identifiers (SDI), career broadening opportunities, fellowships, and other prospects as DSE opportunities. (p. 9)

A1.3. DoDI1322.33_DAFI 36-2683, Department of the Air Force Voluntary Credentialing Programs, 31 Oct 2022
2.3. Secretaries of the military departments and command of the Coast Guard
2.3.b.(1) The Department of the Air Force (DAF) establishes its certification and licensing program under the heading, Department of the Air Force Credentialing Program (DAF-CP). (p. 8)
2.3.b.(2) The DAF-CP provides a vehicle for the award of civilian, industry and academic credentials, whether they were gained before or after entering DAF service. The intent is to expand the professionalism and diversity of skillsets of military personnel while serving in the DAF and prepare them for entry into civilian jobs upon separation or retirement from the Service. (p. 8)
2.3.b.(3) DAF-CP credentials are either professional or personal categories where professional credentials are aligned with DAF Air Force Specialty Code (AFSC) or career series or USSF Career Field. (p. 8)
2.3.b.(3)(a) Professional credentials include those that enhance a member's ability to perform their DAF duties (e.g., Project Management Professional, Commercial Driver's License). (p. 8)
2.3.b.(3)(b) Personally acquired credentials are those that were acquired by the member for their own individual growth or interest. (p. 8)

2.3.c.(1) DAF-CP requires credentials be identified by the particular significance they entitle the bearer. Examples include, but are not limited to badges, digital badges, licenses, certifications, certificates, degrees or diplomas. (p. 8)

2.3.c.(2) The award of a DAF AFSC or career series or USSF career field is also a credential, as is the attainment of an individual's grade or skill level in their respective career field. Special Experience Identifiers (SEIs) and Special Duty Identifiers (SDIs) are also types of credentials. DAF policies for award of AFSCs, SEIs and SDIs are contained in AFMAN 36-2100, Military Utilization and Classification. (p. 9)

2.3.e.(2) AETC/A3 oversees the DAF-CP and tracks credentials earned by personnel before entering and during their DAF service in a centrally-managed credential system or service. AETC/A3 requires the creation or modification of a capability to consolidate credentials in a system or service to include personally-acquired credentials that were earned using DAF funding such as AFCOOL. (p. 9)

g. Standardize databases or information systems on MOCs to conform to civilian credentialing opportunities in open-source data standards and protocols. Coordinate with the DASD(FE&T) on the release of any data, excluding personally identifiable information and conform to operation security standards, to organizations external to the DoD.

2.5.b. Supervisor responsibilities include:

2.5.b.(1) Advise members on the significance of professional credentials to job performance, career enhancement, and post-service employment opportunities via individual feedback and mentoring and encourage members to pursue professional credentials. (p. 11)

A1.4. DAFPD 36-26, Total Force Development and Management, 15 Apr 2022

The Department of the Air Force will:

1.1. Design and maintain a comprehensive retention and force development program that is agile and adaptive in responding to feedback and produces members prepared to accomplish the mission in a rapidly evolving global environment, while meeting personal and professional needs. (p. 2)

1.1.2. Synchronize components of force development to develop and deliver the right members at the right time with the right competencies through ancillary, expeditionary, combative and experiential training. (p. 2)

1.2. Establish developmental programs that satisfy tactical, operational, and strategic needs; use the most efficient methods possible; and integrate the array of training methodologies and cutting-edge technologies to achieve a Total Force with agile and adaptive capabilities. (p. 3)

1.2.2. Provide necessary resources (i.e., people, funding, and infrastructure to include physical, technical, and organizational) to successfully develop, deploy, and sustain operationally proficient members to rapidly respond to worldwide contingencies. (p. 3)

1.2.3. Share information and training resources to the maximum extent possible except where limited by law, policy, or security classification. Develop a shared architecture and common standards for training technology. (p. 3)

1.4. Enable a consistent and creative approach to personnel development based on foundational and occupational competencies. Provide the Department of the Air Force, major and field command commanders, functional managers, career field managers, and others with: (p. 3)

1.4.1. The ability to develop strategies to shape the Total Force. (p. 3)

1.4.2. A workforce-planning tool to capture information-matching competencies with mission requirements. (p. 3)

1.4.3. Access to clearly defined career paths, associated training, and developmental assignments. (p. 3)

1.4.4. A process and tool to assess and document a member's competencies. (p. 3)

2.3.6. Designing processes to support coaching, mentors and mentees in building development plans. (p. 6)

3. Force Development and Retention Goals:

3.1. Produce workforce capabilities needed to accomplish the needs of their specific components. (p. 8)

3.2. Create Force Development strategies and guidance and secure resources necessary to continuously assess the ability of Force Development programs and opportunities to meet joint and combatant command needs, close significant workforce capability gaps, and deliberately develop Airmen and Guardians. (p. 8)

3.5. Establish effective training, mentoring, coaching, and professional development that provide tools for personnel to navigate career progression. (p. 8)

A1.5. 2018 HAF FD PGL 17-30 (no date)

4.1.3. The Force Development Commander will develop, in coordination with Assistant Secretary of the Air Force, Manpower and Reserve, the Director of Personnel, Office of the Air Force Reserve and Director, Manpower, Personnel and Services, Air National Guard, the process, systems, and learning opportunities through the Continuum of Learning to meet these requirements.

4.1. 7. The Force Development Commander will implement new approaches to learning that are learner-focused, modular, accessible, competency-based, and captured in the Airman's Learning Record.

4.2. The Force Development Commander concept establishes a new Air Force process and model for executing force development; the new paradigm leverages contemporary innovations and results in a more agile system, described below:

4.2.1. Airman's Learning Record: Captures Airmen's knowledge and skills gained throughout the continuum of learning (training, education, and experiences), documents progress and achievements, and identifies gaps and opportunities for growth tied to mission accomplishment from an enterprise and individual level.

4.2.5. Air Force Learning Information Technology Ecosystem: A combination of information technology infrastructure, technologies, services, and support resources available to help Airmen learn anytime and anywhere. This ecosystem provides the on-demand / on-command backbone of teaching, learning, cataloging, and assessing which enables content / faculty management, planning, and design to create the next generation of Airmen.

The Force Development Commander will:

5.4.17. Establish a Force Development Commander programming plan that addresses: governance structure, force development execution, continuum of learning, learning eco-system, competency model, credentialing and certification, and developmental special experience.

5.4.19. Track Airmen learning and force development and provide commanders, functional authorities and individual Airmen insight into force development status (competencies), specific to their areas of interest / need.

5.4.25. Develop, coordinate and implement a resourcing strategy for force-development that is both proactive and incentivizes progress towards enhanced effectiveness and efficiency in force-development initiatives.

5.4.28. Create, discover, and manage new developmental opportunities.

5.4.30. Establish, review, and validate the measures to evaluate competencies.

5.4.33. Assess and grant credit for Airmen's competencies.

5.4.35. Centralize credentialing of learning through the Airman's Learning Record.

A1.6. 2023 AETC Operational Approach

LOE 3 Incorporate Digital-age Technology Across the Command

Desired Outcome: Redesign AETC IT to support force development & talent management, supports learning, advanced learning applications & data analytics so Airmen can obtain & exchange information on their device of choice.

Desired State: Provide digital-age training, education, and development to produce the most competitive Airmen possible for the Warfighter.

A1.7. 2018 AETC Strategic Plan

Page 7, Strategic Goal 1: Implement a competency-based construct that quantifies and captures learning from education, training and experience, and is the force development foundation.

A1.8. AETC Strategy for AETC Force Development 2028, 8 Sep 2021
Page 1, Commander's Intent, para 3: In line with AO-A, AETC must empower Airmen to identify development opportunities that suit their learning needs and abilities and best support the Airman's preparation to execute AO-C.
Page 3, Mission, para 3: The FD/CC works with other agencies to create special development experiences for deliberate competency development opportunities to support Secretary of the Air Force and Chief of Staff priorities to counter near-peer threats, especially that of the Chinese military.
Page 3, Mission, para 4: The FD/CC leads, synchronizes, and operationalizes deliberate development with a comprehensive process of collecting, assessing, integrating, advocating, and tracking requirements, resources, and Airmen competencies to ensure forces presented to the Joint Force remain lethal and ready.
Page 5, Enhance Lethality and Readiness, para 3: AETC must develop learning, student, and institutional management systems and enterprise solutions that help the Air Force develop, deliver, and track each Airman's growing and developing competencies while linking the learning enterprise with the personnel systems used to place leaders in key roles and assignments to meet future competition-driven challenges.
Page 6, Transform the Way We Learn, para 1: To achieve many of these transformations, AETC must seek out new and innovative partnerships with industry and academia.

A1.9. AETC OPORD 19-001, Force Development Implementation
Page 4, Command and Control, para 5g: AETC/A3/6 is the supported directorate for competencies, credentialing, Developmental Special Experiences (DSE) and FD policy execution.
Page 8, para 1.11.3: Draft and submit guidance on the development, assessment, implementation, and credentialing of institutional and occupational competencies.

A1.10. AETC Programming Plan (PPlan), AETC LN17-30, Force Development Commander, 19 Jun 2018
The Force Development (FD) Commander will (pg. 83):
1. Establish, oversee, direct, determine resourcing source, maintain, execute, and assess programs designed to award and document required competencies of the force.
2. Direct Air Education and Training Command in the development and execution of training and education programs that lead to credentials, badges, and certificates.
3. Ensure the Learning Ecosystem supporting training and education programs integrates with Registrar and military and civilian personnel systems to provide a reliable and accurate record of competency development for all Airmen.
4. Create and oversee the processes for creating and maintaining transcripts through the Airman's Learning Record documenting the completion of training, education, and experiential learning programs and events.
5. Execute integrated Registrar activities across the training and education enterprise to ensure Airmen receive accurate and timely credit for course and program completion.
6. Explore options for synchronizing and expanding the Air Force Credentialing Opportunities On-Line (AF COOL) program with the continuum of learning for all Airmen.
7. Coordinate with AF/A1 and Air Force functional authorities to create and deploy a competency-based process for documenting evidence of progressive learning accomplishments including but not limited to micro-credentialing, badges, and certificates. For example, AF/A2 is responsible for and must translate Department of National Intelligence, Undersecretary of Defense for Intelligence, and Defense Intelligence Agency intelligence certification requirements for the Air Force and the Force Development Commander.
8. Ensure all Airmen have access to permanent, accurate, and transferrable records that document competency development.

9. Establish requirements, resource, and integrate degree programs for the Total Force (Guard, Reserve, Regular Air Force and civilian, as applicable) that contribute to Air Force missions and Air Force force development strategies, concepts, and operations.

10. Establish processes to award developmental credit and credentials for Airmen who complete programs with joint, international, interagency, and intra-service (Air to Space, Space to Cyber, etc.) partners.

11. Establish a process for supervisors to capture competencies earned at all levels.

12. Coordinate with joint, international, and interagency, industry and academia partners to identify opportunities for providing Airmen equivalency credit for programs that Airmen complete outside the Air Force training and education system.

13. Maintain compliance with established higher education standards and best practices for admitting, enrolling, matriculating, and awarding credit for degree and non-degree education, training, and experiential programs.

A1.11. CSAF Brown Action Orders, To Accelerate Change Across the Air Force, 7 Feb 2022
Action Order A: Airmen
…we must continue to ensure Airmen have the attributes required to compete, deter, and win in a high-end fight. Sub-tasks are in the works to establish enduring processes and paths to adapt talent management and build the force we need for emerging missions. (p. 2)
3.A. CAF INTENT. Headquarters U.S. Air Force (HAF) must evaluate and update, as required, personnel and talent management systems to ensure the USAF has the Airmen we need for the high-end fight. (p. 4)
3.A.3.B. Assess ability of current personnel and talent management systems to produce and support the Airmen We Need, from recruitment through separation or retirement. Propose updates based on public and private sector best practices to 1) ensure a quality future force that meets USAF needs, and 2) makes the USAF an attractive career choice for Airmen and families, and 3) leverages modern IT approaches to enhance and deliver talent management solutions to leaders and Airmen. (p. 5)

A1.12. Enlisted Force Development, Action Plan 2022-2023 (CMSAF Bass)
Front-Line Leader Development: Supporting Action Orders – Airmen, Competition, & Design
　　　　Objective B: Increase the value placed on experience through promotion system calculations and balancing unit grade structures. (p. 2)
Force Development Ecosystem: Supporting Action Orders – Airmen, Competition, & Design
　　　　Objective E: Develop a method to measure and assess competency-based progression and Airmen Leadership Qualities effectiveness towards performance. (p. 5)
Systems to Match Values: Supporting Action Orders – Bureaucracy & Design
　　　　Objective A: Integrate with Enlisted Evaluation System reform to transform feedback methods to focus on development, coaching, and mentoring to perform, as well as ensuring accountability for all Airmen in the process. Infuse competency-based learning and Airman Leadership Qualities into development and evaluation practices, respectively. (p. 6)

A1.13. 2018 DoD Digital Engineering Strategy, Jun 2018
"The DoD will plan, resource, and deploy digital engineering hardware and software solutions to meet the needs of the workforce and associated digital engineering activities." (p. 16)
"The DoD will evaluate and identify digital engineering tools for stakeholders… The tools should be a mix of scalable, enterprise-ready solutions that meet the requirements of stakeholders across disciplines and domains." (p. 16)

ANNEX 2, DIGITAL BADGE TEMPLATE BEST PRACTICES

The majority of the below information was taken from the Credly, Inc. Badge Development Best Practices document.

A2.1. Digital Badge Graphics

A2.1.1. What is a badge visual?

A badge visual is the graphic representation of your badge and the associated metadata. Badge visuals provide brand recognition, establish credibility, and represent your designation. The badges you create will be broadcast across the web at a variety of scales and in a variety of contexts. Simple, clear visual design is key to creating an effective badge.

Overall badge visual goals:

- To establish credibility of the issuing organization
- To be recognizable as an extension of the organization's brand
- To have visual impact and balance

A2.1.2. Basic elements of badge design.

The base of the badge is essential to the design as it allows the badge to pop off the page no matter the background.

Badge Shape and Size: The badge shape should complement the organizations' brand and not detract from the information it contains. Because these badges will be shared online, in a variety of sizes and locations, simple shapes scale the best. Complex shapes are not scalable and may not complement the brand. The badge should be made up of one contained shape. Multiple layers increase the complexity and cause legibility issues (Figure 7). The badge must be square and pixel resolution requirements change per platform, but at least 600 x 600 pixels in PNG format is recommended.

Figure 8 Badge Shape and Size

Design Elements & Color Usage: Digital badges should include flat, two-dimensional design principles. This creates a clean design that is easy to read and understand, even at small sizes. Simple, bold graphic designs are the most memorable and recognizable. Avoid gradients, bevels, shadows, and excessive ornamentation as these become difficult to distinguish at smaller sizes (Figure 8). Preview the badge at small sizes to ensure the text and graphics remain legible.

Figure 9 Design Elements

Avoid light base colors for more contrast when shared to social media sites. A subtle drop shadow on the base provides visual depth and ensures it stands out from the page, regardless of the background color (Figure 9). Don't be afraid to use bold inner colors for more contrast and impact.
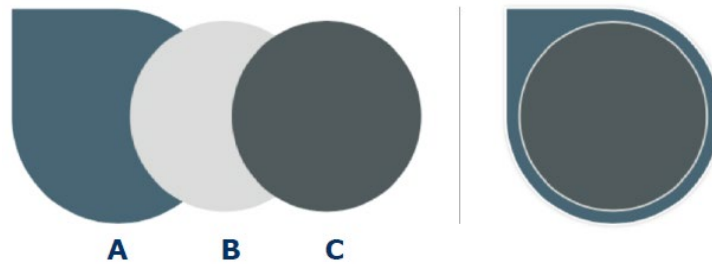
Figure 10 Background Colors

Color, Iconography, and Differentiation: There are several ways to visually communicate the differences between types or levels of badges in a program without using too much text. Colors and iconography are good ways to differentiate badges and make it easier to distinguish an achievement type. Vary colors by designation, achievement type / level, or program. Use contrast to distinguish between elements, text, or program (Figure 10). Avoid white-on-white and light-on-light. Use iconography to describe the type of activity. Iconography should be simple (Figure 11). When iconography is too complex, it is difficult to derive the meaning.

Figure 11 Color, Iconography, and Differentiation

Educational Experience: Representing a diverse or significant educational experiences or event.

Assessment: Taking and passing a formal assessment or exam.

Portfolio: Preparing and maintaining a current portfolio of professional submissions.
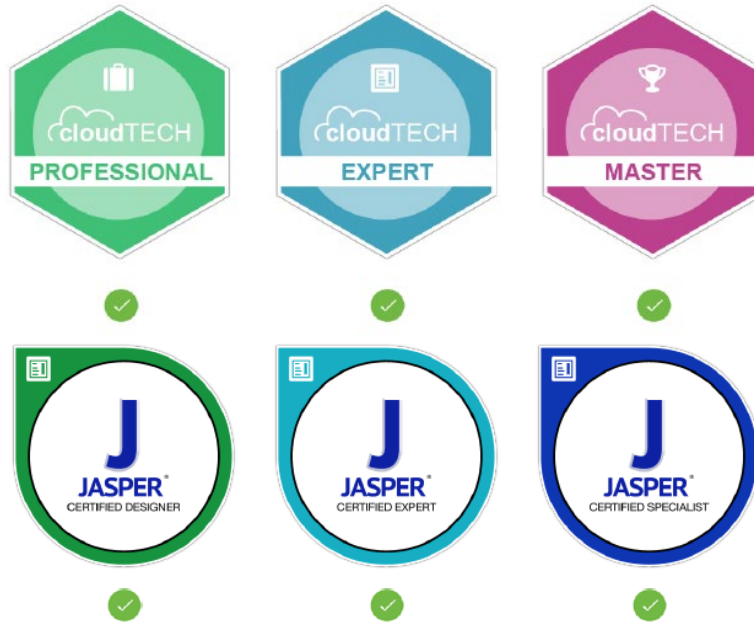
Professional Experience: Representing a duration of or types of professional experience.

Award: Receiving a professional or organizational award or recognition

Participant: Participating in various events, conferences, summits, and more.

Course: Completing relevant coursework in a formal or alternative educational environment.

Presenter: Presenting at a professional conference, webinar or other key event.

Volunteer: Participating in volunteer events.

Credential: Earning a recognized professional or industry credential.

Member: Obtaining or maintaining membership with a professional organization.

Leadership: Obtaining or maintaining a leadership position within an organization...

Figure 12 Meta Icons

Text and Scale: Badges need to be able to scale well and text should be legible, even at small sizes. The badge visual is a representation of the badge, but all critical and detailed information should be reserved for the metadata. Excessive and small font text is not recommended. Preview your badge at small sizes to ensure the text and graphics remain legible (Figure 12). Use vector-based design to be sure your badge visuals can scale to any size in the future.

Figure 13 Text and Scale

A2.2. Digital Badge Metadata

The badge metadata is the content created to represent the badge, credential, certification, course, or designation. This information should describe what the Earners can do after earning this badge, what they had to do to earn it, and why employers should care about it.

Badge metadata tells an outsider:

- What the earner did
- Who said they did it
- What the earner can do as a result

Badge Name: This is the name of the badge, course, credential, or certification. Names should be a simple nomenclature of what the badge represents. Establish a consistent naming convention for all badges being developed. This will ensure the badge program and credentials are recognizable. Determine whether the name of the organization should be in the title of each badge.

Badge Description: This is a description that articulates what the individual is capable of or competent in doing. It should describe the outcomes of this achievement. It should be written in the past tense and be focused toward the Consumer (viewer) of the badge. Do not use this space to give lengthy course descriptions or requirements for achieving the credential. The badge description should contain an organizing principle of the syntax of the badge description for each badge you design (for example, "The Earner of this badge completed / demonstrated / applied / etc.).

Skills: These are concise (1-3 word) keyword phrases that describe skills represented in this credential. Skill tags allow viewers to quickly understand skills the person has either acquired or demonstrated. Determine roughly 6-10 primary skills earned or represented by this credential. Inside Badgr, the skill

tags search feature can either be linked to the EMSI/Lightcast skills library (https://lightcast.io/open-skills) or an instance of the Open Skills Network's (OSN) Open Skills Management Tool (OSMT).

Badge Criteria: A brief description and visual representation of what the badge Earner should do to earn this badge. The list of criteria describes steps required for an individual wanting to pursue this credential. The criteria should be written in the present tense and utilize action verbs to denote the items needed for the Earner to achieve this badge. Earning criteria may be linked to a relevant external URL for additional information. Overall, you should keep in mind how outsiders will read this credential when defining the earning criteria. Keep the language clear and simple. Avoid business jargon or too many details. A hyperlink to a longer explanation might serve better than additional details.