DIGITAL CREDENTIAL PILOT

LEGISLATIVE REPORT
FISCAL YEAR 2024-25

Programs & Student Services Division
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Digital Credential Pilot Final Report

Background

In 2024, the North Carolina General Assembly appropriated $1,000,000 in non-recurring funds through Session Law 2024-57, Section 3J.21 to support a Digital Credential Pilot Program. The intent was to test how digital credentials can improve how students receive, control, and share their verified learning records. These credentials include certificates, diplomas, transcripts, and other official documents that show a student's progress or completion in education and training.

Randolph Community College and Cape Fear Community College were selected as lead institutions for the pilot. Each college partnered with a digital credential provider, Certree for Randolph and DigiCred for Cape Fear. Both colleges enrolled students in digital credential programs during the 2024–2025 academic year and worked with their credential provider to issue, test, and report on digital credential delivery.

The goals of the Digital Credential Pilot Program were to:
- Improve student ownership and access to their verified credentials
- Support secure, real-time sharing of credentials with employers and colleges
- Streamline how credentials are issued and verified
- Assess the scalability and long-term potential of credential platforms for broader use across the state

Financial Allocations
Cape Fear Community College: $750,000
Randolph Community College: $250,000

The following sections include a summary from each college that outlines the credential provider's background, product features, implementation strategies applied, and current outcomes.

Cape Fear Community College (Credential Provider: DigiCred) Summary

Project Summary
Cape Fear Community College partnered with DigiCred as part of the Digital Credential Pilot Program to implement and test a verifiable digital credentialing platform. The project, titled *Apply Wilmington*, aimed to demonstrate the feasibility of issuing and transferring secure, student-controlled digital transcripts and student IDs across multiple educational levels. The pilot included collaboration with University North Carolina at Wilmington, Pender County Schools, and New Hanover County Schools.

Company Overview
DigiCred is a technology company that offers a Credential Management System (CrMS) designed to issue and manage verifiable digital credentials using decentralized infrastructure. Its model follows a holder-issuer-verifier framework, enabling students to control access to their records through a mobile wallet application. The platform emphasizes privacy, selective disclosure, and data security, using cryptographic standards and decentralized storage.

Product Overview

DigiCred's solution includes two key components:

- The **Credential Management System (CrMS)**, installed within each institution's cloud environment, used to issue and manage credentials
- The **DigiCred Wallet**, a mobile app that allows students to receive, store, and share digital transcripts, student IDs, and other credentials

Key product features include:

- Decentralized system architecture with no personally identifiable information stored on blockchains
- Selective disclosure of credential data by the student
- Integration capabilities with Student Information Systems (e.g., Ellucian SIS)
- Biometric authentication and encryption for credential access
- Configurable workflows for credential request and sharing

Implementation Approach

The pilot was implemented in four phases:

1. Coordination with institutional stakeholders
2. System installation and configuration across participating institutions
3. Student onboarding via campus events and digital outreach
4. Credential delivery and student-led transfers across partner schools

DigiCred worked with college and district IT staff to install CrMS in each institution's cloud environment. Students downloaded the DigiCred Wallet app and completed identity verification during onboarding. Customized messaging campaigns and student ambassador support were used to encourage adoption.

Credential Types Issued

By the end of the pilot, the following credentials were issued to students through the DigiCred platform:

- Digital student ID
- Digital transcript

Outcomes and Next Steps
- 2,014 students were verifiably onboarded across Cape Fear Community College, Pender Early College, and SEA-Tech High School
- Over 2,500 transcripts and 2,150 student IDs were issued
- Participation rates: 85% at CFCC, 86% at New Hanover County Schools, and 91% at Pender County Schools. This was based on a subset of students. See tables below for details:

Table 1: Cape Fear Community College

Statistic	Meaning	Value
Total onboarded	Total students who have verifiably participated in system	1,488
Targeted	Number of students targeted from the population	1,750
% Onboarded	Percentage of students onboarded from the targeted number	85.0%
Student IDs issued	Number of student IDs issued and provably accessed by students	1,620
Student Transcripts Issued	Number of student transcripts issued and provably accessed by students	1,873

Table 2: New Hanover County Schools

Statistic	Meaning	Value
Total onboarded	Total students who have verifiably participated in system	389
Targeted	Number of students targeted from the population	450
% Onboarded	Percentage of students onboarded from the targeted number	86.4%
Student IDs issued	Number of student IDs issued and provably accessed by students	392
Student Transcripts Issued	Number of student transcripts issued and provably accessed by students	404

Table 3: Pender County Schools

Statistic	Meaning	Value
Total onboarded	Total students who have verifiably participated in system	137
Targeted	Number of students targeted from the population	150
% Onboarded	Percentage of students onboarded from the targeted number	91.3%
Student IDs issued	Number of student IDs issued and provably accessed by students	140
Student Transcripts Issued	Number of student transcripts issued and provably accessed by students	171

DigiCred also launched a credential analysis tool that allowed students to explore potential career pathways based on their earned credentials. Cape Fear Community College and its partners will continue monitoring the platform and student feedback. Information from this pilot will inform the System Office's broader evaluation of digital credentialing strategies and future implementation options.

Randolph Community College (Credential Provider: Certree) Summary

Project Summary
Randolph Community College partnered with Certree as part of the Digital Credential Pilot Program to implement and test a platform for issuing digital academic and workforce credentials. The project focused on providing students and continuing education participants with secure, digital access to transcripts, diplomas, certificates, and student ID records. The pilot was used to assess integration, delivery, and the potential for systemwide scalability. The pilot included collaboration with Asheboro City Schools.

Company Overview
Certree is a digital credentialing company founded in 2018 that supports credential issuance, verification, and storage. The platform is designed to allow individuals to own and control their personal records. Certree uses a zero-trust architecture to enable issuing institutions to deliver tamper-evident, cryptographically signed credentials directly to users through a secure personal vault.
Certree reports that it supports over 50,000 issuing organizations and is accepted by a range of employers, educational institutions, and public agencies, including several based in North Carolina.

Product Overview
Certree provides a privacy-first platform designed to integrate with systems such as Colleague, Banner, and PeopleSoft. The platform supports multiple credential formats and allows users to access and share their verified records with employers, schools, and licensing boards. Key product features include:
- Issuance of transcripts, diplomas, certificates, and proof of enrollment
- Student-controlled credential vaults for secure access and sharing
- Built-in verification through QR codes and digital signatures
- Multi-format compatibility (PDF, JSON, XML, EDI)
- Administrative dashboards for tracking credential activity and support

Implementation Approach
Randolph Community College completed the project in five phases:
1. Planning and alignment with stakeholders
2. Data mapping and integration with student systems
3. User acceptance testing of credential issuance
4. Full rollout to students and alumni
5. Ongoing monitoring and evaluation of usage and feedback

Credential Types Issued
As of spring 2025, Randolph Community College has issued the following credentials through the Certree platform (user requests indicate volume thus far as of 6/2):
- Academic transcripts (59 user requests)
- Curriculum and continuing education certificates of achievement (6 user requests)
- Digital diplomas (9 user requests)
- Proof of enrollment (10 user requests)
- Proof of degree (10 user requests)
- Student ID (14 user requests)

Outcomes and Next Steps
Randolph Community College has fully implemented the identified credential types and integrated the platform into its systems. The college continues to monitor usage and student engagement. Insights from Randolph's participation will help inform future discussions around the broader use of digital credentials across the North Carolina Community College System.

DigiCred

Trust and Verify

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DigiCred CrMS

Apply Wilmington,
a Verifiable Credential Pilot Project
Final Report

Prepared for:

**North Carolina State Board of
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DigiCred

Executive Summary

DigiCred Holdings, Inc. (DigiCred) has developed a groundbreaking approach to the digital credential experience. It is a student-centric solution revolutionizing how students access and control their education credentials.

DigiCred launched **Apply Wilmington**, a Verifiable Credential Pilot Project designed to demonstrate the successful implementation of an End-to-End decentralized technology infrastructure to efficiently move cryptographically-secure student transcripts across the North Carolina educational ecosystem in February 2025.

DigiCred provides a Credential Management System (CrMS) that offers multiple verifiable credential standards using an issuer/holder/verifier model with the credentials having standardized schemas and the ability to be revoked. The CrMS has been developed to be installed and operated by each issuer or group of issuers (school district, hospital, State Agency, local parking authority) in their own cloud environment. This differs from the typical SaaS models that software vendors are typically using which requires that all records or other user data to be hosted in a central database controlled by the SaaS vendor.

To access the CrMS, a mobile wallet application (the Wallet) is downloaded by the student. The Wallet allows for direct access to education credentials. Either their high school or Community College was their entry point into the DigiCred CrMS – their first channel connection. Immediately a configurable workflow was presented with the school's channel, which provided clear instructions as to requesting their Student ID and Transcripts.

The Pilot project was fully deployed at four institutions: Cape Fear Community College (CFCC), Pender Early College, Wilmington Early College (WEC) and Southeast Technical High School (SEA-TECH). UNCW also participated to gain a better understanding of how verifiable credentials could help the enrollment process. **The pilot project was wildly successful. Both student and administrator support for the new technology was overwhelmingly positive.** For IT departments the software was easy to install and required little to no maintenance. For students, access to the Wallet was identical to any other App that they may choose to have on their phones. Students asked for all schools in North Carolina to have DigiCred!

Student participation was high at each school. Over the course of the four-month pilot program over 2,000 college and high school students verifiably participated, 2,152 student IDs were issued, and nearly 2,500 transcripts were accessed by the completion of the pilot in June 2025.

The pilot demonstrated DigiCred's differentiating factors:

- Students (parents/guardians) have custody of their credentials
- Students directly send educational credentials within the application processes
- Official copies issued by Institutions faster and more securely than traditional methods
- Students able to easily follow process of attaining and sharing credentials between institutions

Pilot Project Videos:

CFCC Student Onboarding   Student / Parent Focus Groups   Student Wallets and Credentials
Student Feedback   Student Perspectives

The pilot successfully demonstrated that a geographic regionally focused network technology that puts educational records in the hands of students has a demand in the market. It also showed that collaboration across all educational stakeholders is essential and inspirational when technology and student growth objectives are aligned. The success of the pilot in an abbreviated timeline shows that scale is very possible and the feedback from students confirm that students would like to see more functionality.

The future application of DigiCred's technology across the education system may include but certainly is not limited to holding student parking passes, student bus passes or applying for jobs. Outside of education systems, whether in health care or motor licensing and beyond, the opportunities are equally limitless.

Project

Apply Wilmington, a Verifiable Credential Pilot Project was designed to demonstrate the successful implementation of an End-to-End decentralized technology infrastructure to efficiently move cryptographically- secure student transcripts across the North Carolina educational ecosystem. While other EdTech companies focus on technology being used at 4-year colleges or within the community college systems or specialize in K12 Student Information Systems (SIS) or Learning Management System (LMS) technology, DigiCred Holdings, Inc. (DigiCred) technology is interoperable across the educational ecosystem revolutionizing how students access and control their education credentials. The results of Apply Wilmington, the Pilot Project, demonstrate not only the technological success – seamlessly moving transcripts from one institution to another - but also and, more importantly, student and administrator feedback that the DigiCred system removes existing barriers.

The DigiCred Credential Management System (CrMS) brings all credential stakeholders together vertically within a geographic region allowing students to move any educational credential. The CrMS is accessed via the wallet application (the Wallet). An analogy for the Wallet is a Universal Adapter. Just as a traveler no longer needs to pack multiple adapters for each country on their international itinerary, with the Wallet, a student is no longer required to request information from multiple systems to obtain their transcripts, to remember their student ID number, or to hang a parking pass from their windshield.

The pilot project began in February 2025 and over the next four months, the system was deployed at four institutions and accessed by over 2,000 students. There were three primary stakeholder groups: students, Information Technology (IT) departments, and administrators - particularly Registrars and Counselors.
University of North Carolina Wilmington (UNCW), Cape Fear Community College (CFCC), New Hanover County Schools (NHCS) and Pender County Schools (PCS) agreed to support the pilot with personnel and IT department resources. The CrMS system was deployed at each school (UNCW opted to have DigiCred host the system for them) enabling the creation and/or receipt of credentials directly into their respective systems electronically and securely. Since students are the primary user of the Wallet, their role was critical to implementation success.
Students learned about the technology and its capability, downloaded the Wallet (including giving their consent) and then used the Wallet to obtain their transcripts and student ID.

At the end of the pilot, participating Apply Wilmington students, for the first time, were able to request and receive their official transcripts from their school's SIS into their mobile digital wallet and then send those credentials directly to another educational institution's system. DigiCred served as both technology implementer and project manager throughout the entire Pilot Project.

Project Phases – goals and milestones

Apply Wilmington had four phases as outlined in the Contract with Cape Fear Community College. All four phases were completed successfully, and all deliverables were provided. The final phase is the creation of this final report. Weekly progress reports were shared with school stakeholders. An example is in Appendix A.

- Phase 1 – Work with Stakeholders and Launch Pilot Project, including kickoff meetings coordinated via DigiCred Project Manager with coordination of resource allocation, timeline development, planning workshops and documentation.
- Phase 2 – work with participating schools IT teams to install the DigiCred CrMS solution in each cloud environment and have it tested and validated.
- Phase 3 – Systematic onboarding of select students for the delivery of Student IDs into students' digital wallets for secure access to institutional services and credentials.

- Phase 4 – Enable end-to-end digital transcript delivery within student wallets, allowing participating students to explore and apply for further education opportunities at CFCC and other participating educational institutions.

Product

The most advanced class of digital credentials is the verifiable credential. A verifiable credential is a digital certificate that provides a secure way to prove information. DigiCred provides a Credential Management System (CrMS) that offers multiple verifiable credential standards using an issuer/holder/verifier model with the credentials having standardized schemas and the ability to be revoked. Additionally, verifiable credentials allow for selective disclosure. With selective disclosure, the holder of the credential can opt to share only some of the information in their credential.

Examples of our use of blockchain and cryptography technologies include:

- Private, and public keys for digital signatures
- Decentralized Identifiers (DIDs) for identifying issuers
- Zero Knowledge Proofs (ZKPs) for predicates

Personally Identifiable Information (PII) is NEVER stored on or transferred by the blockchain in plain text, binary, or encrypted. DigiCred NEVER has access and thus NEVER stores any student data. The DigiCred CrMS Appliance can be installed in a client cloud environment, on-premises, or on hosted services. The Wallet has additional biometric security protections to further protect the holder's credentials. The CrMS has an extensible network to support user experiences. Our first-to-market configurable workflows allow for institutional business process differences with minimal investment in existing IT infrastructure and by IT personnel.

To access the CrMS, a mobile wallet application (the Wallet) is downloaded by the holder. The Wallet allows for advanced student / parent messaging, and direct access to education and employment opportunities.

Student Experience

The DigiCred Wallet app (the Wallet) is a mobile application that allows students to access the CrMS system deployed by their institution and connect to their educational institutions to receive e.g. student ID card and transcript. It also allows them to share verifiable credentials with other institutions that have deployed the CrMS system. The wallet app has several features that make it straightforward for students to use.

- **No signup** - Students are not required to register with DigiCred, in fact there is no way to do that at all, nor is it required for the system to function. Avoiding a signup, reduces barriers for getting students started with the application.
- **Simplified navigation** - The app has three sections, the credentials, the channels, and the app settings. This is done to reflect what the student needs to use the wallet for - holding their credentials and receiving and sharing them with organizations.

- **Contextual workflows** - Each organization has different uses for the credentials they issue or verify, the onus should not be on the student to just know what the organization's process. The workflows are configured by each organization, and they are used to provide context to the student on what they can do with the organization and their credentials. The goal with the workflows is to let the students be able to identify what tasks they can accomplish, why they need to follow steps, and what the steps are. The workflows are delivered as chat-bots, a technology familiar to mobile-obsessed youth.

There was enthusiastic adoption of this application by the students who participated in the pilot. More details in Narrative Section below.

School Experience

The DigiCred CrMS is the system that is deployed to a school's IT infrastructure. The time invested and effort by IT department personnel is designed to be minimal. As an example, the Cape Fear Community College IT system was running DigiCred for ten months without any need for interaction or maintenance by CFCC or DigiCred staff. To design the system effectively for each institution, Registrars have been called on for their subject matter expertise. Their input into the business processes used for generating and creating transcripts is essential for success. The goal is to automate enough of the processes so that it becomes a self-serve system for the students. School counselors also support the process and provide integral insights into workflow creation.

Once the school onboards the student, all the interactions after that take place through the workflows. For the school, once the onboarding happens, it provides a secure and authenticated access to each student to their education records. The school does not have to be part of the process.
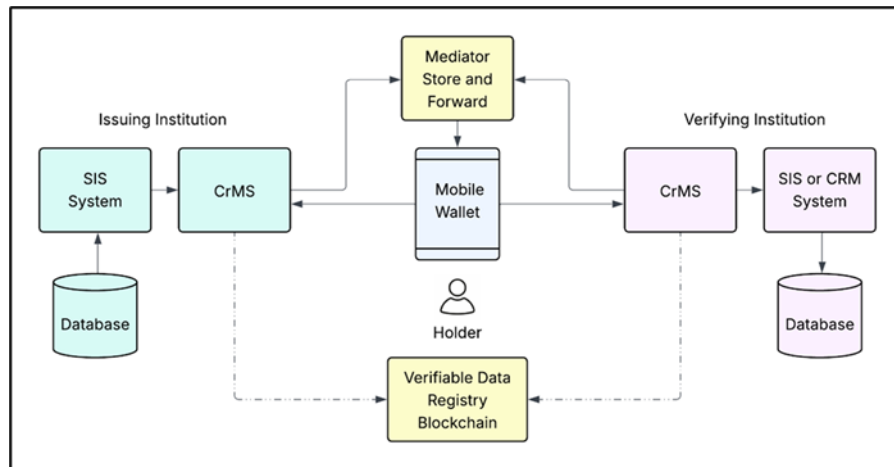

Figure 1: Conceptual Architecture

Configurations & Customizations

The CrMS system is configured for each school depending on their system for creating transcripts and student IDs. The configuration phase is done in coordination with institution personnel.

Minimal customizations were required as part of this pilot and will be converted to configurations for future deployment.

Installation

The DigiCred CrMS has been developed to be installed and operated by each issuer or group of issuers (school district, hospital, State Agency, local parking authority) in their own cloud environment. This is very different from the typical SaaS models that software vendors are typically using which requires that all student records or other user data to be hosted in a central database controlled by the SaaS vendor.

It is installed in the user group's cloud environment for several reasons:

1. The CrMS holds private keys that are used to represent cryptographic signatures that demonstrate that credentials are from the issuing organization. These should not be accessed by external parties, or they could be used for impersonation and fraud. These should be under the exclusive control of the issuing organization's IT and security department, not by a SaaS vendor who has no legal obligation under the Family Education Rights and Privacy Act (FERPA)
2. The credentials issued by the DigiCred CrMS are part of a decentralized system. That makes this a privacy preserving system. If DigiCred were to host all the issuer and verifier applications, they would be able to correlate all an individual's activity and to even watch all an issuer's activity. This would defeat it being a decentralized system and no longer support user privacy. Only the issuing school and the student the credential was issued to have knowledge of the contents of the credential, or even that it was issued to begin with.
3. Educational institutions need to integrate their CrMS to their Student Information Systems (SIS) systems. This involves providing API keys to the CrMS software. Each institution should protect their Application Programing Interface (API) keys for privacy purposes and for FERPA compliance. When each institution hosts their own CrMS system, they can do that.
4. Having each organization host their own system avoids a central database. A central database would be a place where a hacker could access all the student information for all the schools. By distributing the system across all the issuers using the systems, it makes attacking individual school's SIS systems less attractive, thus disincentivizing a PowerSchool-type data breach.
5. The CrMS is hosted in a cloud environment. Having the system in the cloud allows for fast internet access for students and staff using the system, as well as strong security services offered by the cloud providers.

Installation process – schools

For each school we used a four-step process to onboard the college, university or school district.

1. Initial Meeting: We had an initial meeting with the IT staff where we explained what our approach to the installation would be, the prerequisites for the installation, and what the process looks like.
2. Cloud Configuration: We guided the NHCS, PCS, and CFCC IT staff on setting up the correct cloud services for hosting the CrMS.
3. Software Installation: We guided the NHCS, PCS, and CFCC IT staff on installing the CrMS software and configuring the environment variables.
4. CrMS Configuration: We worked with the IT teams to configure the logos, workflows, and software settings.

We found that the IT teams were very positive about the installation process and were extremely capable in setting up the system.

Installation process – students

For students, the installation process is the simple and common practice of downloading the wallet application from the online app stores. The app is available for installation on iPhone, iPad, Android, and Android Tablet

devices. We ran events at each school to guide the students through the process of downloading the app, and then scanning the QR code.

In the Onboarding section, there are details related to support provided to ensure successful student installation.

Integrations

For this pilot project, we used two different approaches to integration with Student Information Systems (SIS).

- CFCC - For CFCC we directly connected with their Ellucian SIS system. For every request that a student made for their student card and transcript, the system was able to directly call the SIS for the information.
- PCS and NHCS - Due to time constraints and NHCS undergoing a conversion from PowerSchool to Infinite Campus, we opted to import into the CrMS system data exports from the SIS systems.

Security

The DigiCred CrMS uses a decentralized defense in depth approach. The CrMS and the wallet app have several layers of security including the data at rest and in transit.

The wallet app uses these layers:

- Biometric authentication with PIN fallback
- User consent for data going in and out
- Data encrypted at rest in the isolated database with a private key
- Pair-wise keys for every communication channel
- Encrypted tamper-evident signatures in each credential

The CrMS uses these layers:

- Virtual Private Cloud (VPC) with Network Address Translation (NAT) to a private subnet
- Cloud firewall that only allows TCP traffic over ports 443 (HTTPS) and 22 (SSH)
- TLS encryption over HTTPS
- Caddy reverse proxy
- Content-security-policy and CORS for web app protection
- API Key and Bearer token for calls to the SSI agent
- Data encrypted at rest in the isolated database with a private key
- Pair-wise keys for every communication channel
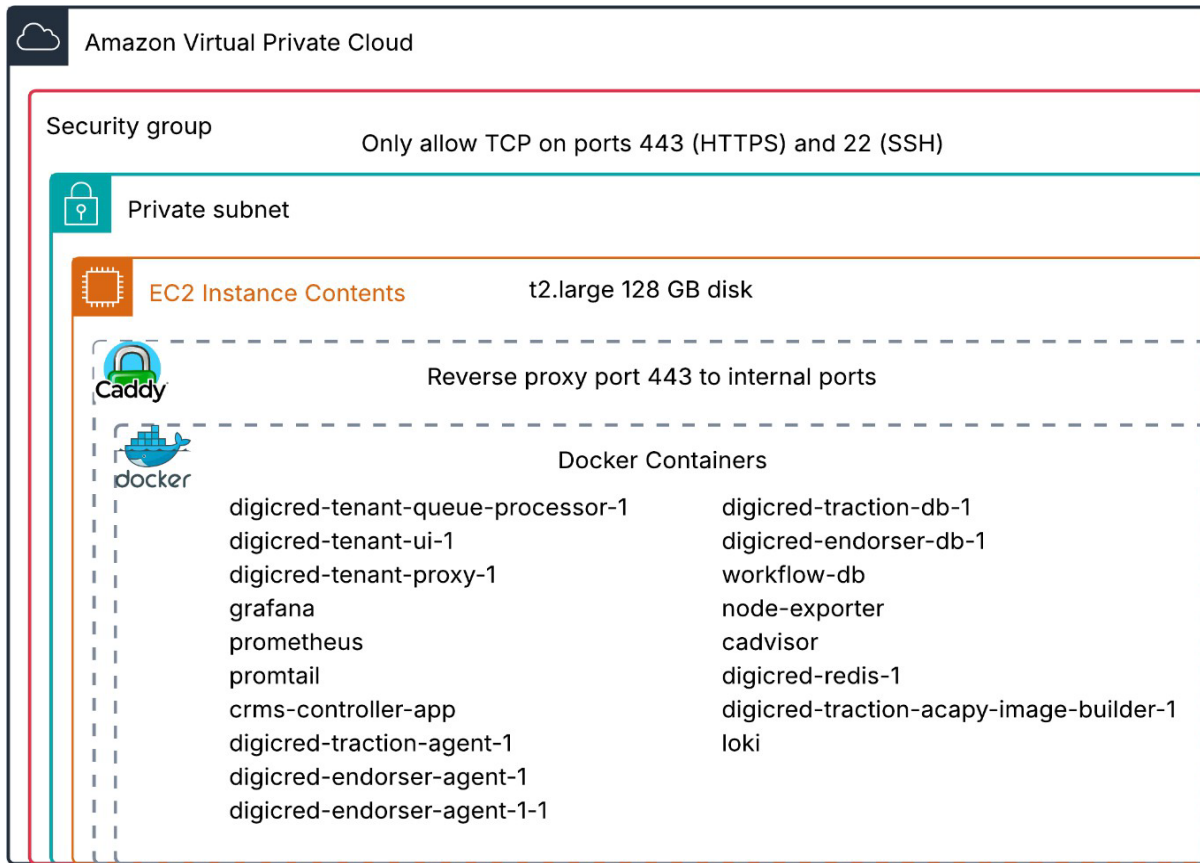- Encrypted temper-evident signatures in each credential

Figure 2: Cloud Security Architecture

Onboarding

For each student population, onboarding was developed to best align with existing student requirements or behaviors. For example, at Cape Fear Community College, the Wallet app was downloaded as part of student orientation.

DigiCred created local infrastructure in/around Wilmington:

- DigiCred hired one project manager and three onboarding specialists.
- Onboarding Tablets were purchased specifically to be assigned to CFCC and the two School District
- This team of Student Onboarding Specialists was hired to assist in planning and conducting pre-meetings with school teams, purchasing materials, onsite prep and setting up / breaking down – but most importantly, conducting event logistics.
- These Onboarding Specialists were trained on the DigiCred CrMS and the complete student onboarding process. The students felt comfortable interacting with these recent college graduates. We were striving for "relatability' and compatibility with every interaction with students, whether in college or high school)

In addition, we hired a local Wilmington production studio (Robert Cummins Film Co.) with a 3-person film crew and interns to capture the student onboarding experiences along with some students feeling compelled to share their thoughts, feelings and specific feedback on camera.

The Onboarding Guide is included in Appendix B. This is an example of over a dozen guides provided to school IT, Admissions and Registrar teams.

Onboarding Process:

Students were introduced to the Wallet app by an Onboarding Specialist.

To comply with Identity Assurance Level 3: NIST IAL3 the DigiCred team was trained in conducting in-person identity proofing of students and their ID, alongside school officials at the time of on-boarding students to the DigiCred CrMS system with the first channel and their first credential.

NOTE" according to NIST guidelines, there are three levels of assurance - Identity Assurance Level 1 (IAL1), IAL2, and IAL3. IAL1 is the lowest, with minimal identity verification. IAL2 requires remote or in-person evidence, like a passport or driver's license. IAL3 is the highest, requiring in-person or supervised-remote proofing with biometric verification, like a photo or fingerprint)

Either their high school or CFCC was their entry point into the DigiCred CrMS – their first channel connection. Immediately a configurable workflow was presented to each student by their school with the school's channel, which provided clear instructions as to the simple steps to requesting their Student ID and Transcripts.

Messaging

DigiCred designed, developed and executed a comprehensive outreach program for student education about The DigiCred Solution and their role in getting onboarded into our system. It included the following:

- Invitation Flyers were created and printed for each event
- Invitation emails outbound from New Hanover and Pender County School via their LMS systems
- Social media postings with event details (School Facebook page listings, etc.)
- CFCC "'influencers" posting social media videos explaining the DigiCred App and its functionality
- Emails outbound from Superintendents and Principals
- Outreach to school staff:
  - Principals, Counselors, Data Managers and Teachers
- DigiCred created customer Signage / Banners on display in CFCC lobbies, outside of the Registrar and Business Offices
- DigiCred customer Signage / Banners displayed at Student Onboarding Events
- Tabletop materials
- Donuts (morning sessions), Pizza and Italian Food (lunch and dinner sessions) plus snacks & drinks at each Onboarding Event for Students and Staff (one being an ice cream social at SEA-Tech high school). All food and snack options were warmly appreciated.
- At each event, we identified and assigned "student ambassadors" who volunteered from the student population attending – to help guide and help their fellow students. They were provided a T-shirt or coffee cup for their support efforts.

Our long-term plan is to have teams of student "ambassadors" on every campus and at every high school we work with across the state.

DigiCred

These are relatable fellow students who have the interpersonal skills to help promote this student-centric solution.
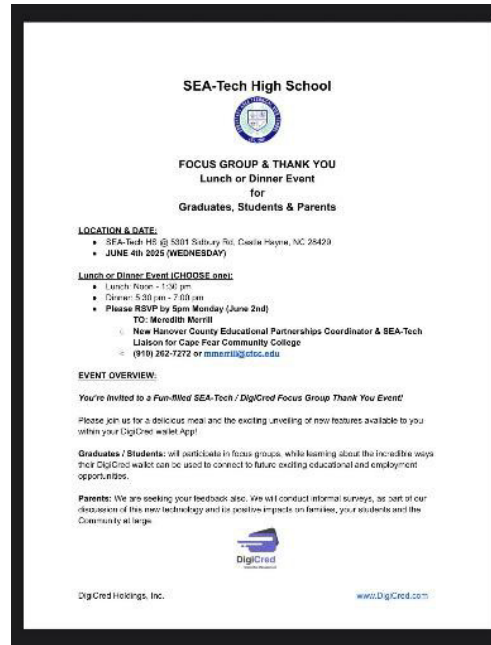

Figure 3: Sample Invitation for Students

Events

Extensive event planning was required to coordinate all the DigiCred events – to coincide with other events already on the schedule (i.e. CFCC's Summer Career Fair: March 19, 2025, and Pender Early College Volunteer Fair: April 24, 2025) or work in/around testing schedules, Spring breaks and other school events already scheduled.

Figure 4: One of Cape Fear CC Onboarding Events

Experience

Overall, the experience of the students, parents, school counselors was extremely positive. Each group expressed an ease with using the App and repeatedly shared their excitement about using the Wallet in its

current form and about possible future uses. Firsthand accounts of the user experience can be seen in the video linked below.

VIDEO LINK: Student, Parent, Counselor Experiences

Statistics per school

Great experience and smooth deployment of a new system is great in theory and simple to support but it is the user data that demonstrates the true effectiveness and adoption of a new technology.

The Pilot project was fully deployed at four institutions: Cape Fear Community College, Pender Early College and two high schools in New Hanover County School District: Wilmington Early College (WEC) and Southeast Technical High School (SEA-Tech).

As shown in the tables below, student participation and adoption was high at each school. Over the course of the pilot program over 2,000 college and high school students verifiably participated.

These student cohorts were selected by school administrators and counselors with communications and invitations. The cohort represented a subset of the general student population at each institution. In some cases, the high school Principals knew a cross section of their juniors and seniors would best represent most high schools across the state. Thus, these groups were chosen and invited by all schools, with DigiCred onboarding teams welcoming all these participating students universally.

In some cases, students enthusiastically requested and downloaded multiple copies of their IDs and transcripts. Thus, our CrMS issued over 2,100 student IDs and nearly 2,500 transcripts. We found that some students were showing other students how the Wallet App works and therefore accessed their Student ID more than once.

The highest percentage participation level occurred in the Pender County School District (91.3 percent), with participation at Cape Fear Community College at 85 percent of the targeted/selected general student population. The New Hanover County total participation was 86 percent and represents 2 of their Early College high schools.

In addition to the Student IDs and transcript capabilities, DigiCred launched a Credential Analysis tool. This tool uses Artificial Intelligence (AI) to identify which career pathways may be a best fit for a student based on their earned credentials.

Table 1: Cape Fear Community College

Statistic	Meaning	Value
Total onboarded	Total students who have **verifiably** participated in system	1,488
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Narrative

"Every school in North Carolina should have DigiCred!" student New Hanover County Schools.

The sentiment above sums up the impact of Apply Wilmington, the Verifiable Credential Pilot Project demonstrating successful implementation of an End-to-End decentralized technology infrastructure to efficiently move cryptographically-secure student transcripts across the North Carolina educational ecosystem. The pilot program was a smashing success for students, schools and for DigiCred. There was nearly complete adoption by students and full endorsement from schools. Over the course of the pilot project, we successfully turned "doubters" into "believers" and DigiCred enthusiasts!

Not only did the pilot project demonstrate that the DigiCred technology could easily be used in the education arena, but it also opened students' and administrators' minds to additional applications of the technology. Furthermore, the experience provided additional learnings for the DigiCred development and implementation teams on many aspects of the CrMS system, and the techniques best suited for Messaging, Onboarding and gaining feedback from stakeholders on the CrMS and the Wallet.

The primary stakeholders at each institution backed the pilot project efforts. This high-level support included the two Superintendents of the New Hanover and Pender School Districts, the President and VP of Student Services at Cape Fear Community College and the Provost and the Vice Chancellor for Business Affairs at UNCW. They not only expressed their backing of this project but also see the technology and its various capabilities and qualities as providing significant improvements to their internal processes and most importantly, benefiting their students (and families). When needed, they each in turn stepped in or made calls to help facilitate the success of this project across the Wilmington ecosystem.

Phase 1: Work with Stakeholders and Launch Pilot Project, including kickoff meetings coordinated via DigiCred Project Manager with coordination of resource allocation, timeline development, planning workshops and documentation

During the kickoff meetings at the schools in New Hanover and Pender Counties, the three Principals and their teams offered suggestions and methodologies to best onboard the targeted students. The DigiCred team learned about current challenges that students face on a daily basis. Some of those challenges include but are

not limited to students missing scholarship opportunities due to transcripts not arriving in time for deadlines, students having to pay every time to obtain their transcripts. CFCC officials offered ways to improve the inbound channels that students use to reach their Admissions team. The CrMS configurable workflows were able to address each suggested improvement. All the comments and suggested received from the primary stakeholders were deeply appreciated and offered significant learning for the DigiCred team.

Our development and implementation teams also conducted their technology discovery and quickly set plans for IT meetings to get our system installed in each cloud environment.

Phase 2: Work with participating schools IT teams to install the DigiCred CrMS solution in each cloud environment and have it tested and validated

Our first technology iterations and proof of concepts when shared with participants were met with a variety of skepticism and enthusiasm. Overtime, more and more participants began to understand the DigiCred vision and then with continuous closed-loop feedback from our school partners/clients, saw the DigiCred team prove that feedback was being integrated with each iteration demonstrating innovative and practical technology deployments. The interactions with the schools' personnel that are necessary to develop workflows for integrating the CrMS within the existing IT infrastructure were all positive.

Phase 3: Systematic onboarding of select students for the delivery of Student IDs into students' digital wallets for secure access to institutional services and credentials

Each participating school offered a variety of outreach approaches to inform and invite their students to get involved in the pilot project and download the Wallet. Onboarding communications included: emailed flyers, direct messaging to students via the school's LMS platform, social media posts, and on-site signage. Plus, there were reminders leading up to each event.

Onboarding events were planned and executed with the newly hired DigiCred Onboard Specialists. The new DigiCred team members are locals of the Wilmington area. Event coordination included district and CFCC staff members for some of the following: Wi-Fi access and on-site IT support, counselors helping students look up their student ID numbers when they could not remember them (or forgot their physical IDs at home or in their car). The four DigiCred Onboarding Specialists also recruited a few "student ambassadors" at each event to help welcome and direct students to the signup tables, download the app from the App Stores and help explain the value aspects to students who had not fully read their invitation emails. The student ambassadors received T- shirts for their extra efforts.

Food and beverages were supplied by DigiCred at each event.

Many students arrived early, due to their excitement to have the DigiCred app with their credentials on their phones. Exit interviews were conducted on a voluntary basis and most students readily agreed to share their enthusiastic feedback about the Wallet app.

Phase 4: Enable end-to-end digital transcript delivery within student wallets, allowing participating students to explore and apply for further education opportunities at CFCC and other participating educational institutions

Once the CrMS was up and running and the student downloaded the Wallet, the steps to download a transcript and/or student ID into a Wallet were intuitive for students. This final phase also included staff training sessions, training manuals and a variety of CrMS system documentation for each school.

Each of the IT teams were provided extensive security training sessions also. Each of the IT teams expressed their delight and further articulated intrigue and appreciation for learning new and relevant skills within the world of decentralized technology, new methods of software deployment in the cloud and general cryptography overviews.

Learnings

This section highlights the most poignant learnings from the pilot project. Overall, the outcomes and learnings from the project were overwhelmingly positive. There were no negative outcomes from this pilot.

Positive Outcomes

Aside from the high levels of active stakeholder participation, student adoption and enthusiasm across the board, our seamless integrations into existing district and school IT cloud infrastructures was another aspect of positive learnings. Our DevOp and integration teams took advantage of all interactions, training sessions and deployments to understand existing and longstanding IT practices within the education ecosystem. In addition, Stakeholder IT teams, who almost across the board had very little, if any exposure to decentralized technologies ended up becoming intrigued and then fans of the way we used modern automation toolsets to upload our code onto virtual machines in the secure cloud infrastructure.

Our continuous student interactions and focus groups that we conducted, afforded us the direct learnings that added to our future product roadmap in terms of features and ease of use functionality within our wallet app. Even parents and a few grandparents - who showed up to our focus groups with their students – enthusiastically provided their candid feedback and suggestions. When we presented our vision / product overviews and provided current industry trends, we really got everyone's attention. The future direction of our technology solution received optimistic confirmations by these adults who have been burdened by the antiquated status quo processes of receiving transcripts for their students. They freely offered a wide range of suggested relevant use-cases for our wallet technology in the daily lives of their students, other parents, school staff and general user profiles.

In the end, everyone involved in the pilot project who we received feedback from expressed their optimism that when the State of North Caroling enacts a student-centric, decentralized solution like DigiCred has all stakeholders will have the plethora of positive outcomes and benefits they experienced in this pilot project.

Innovation Using AI

An innovative wallet "service" feature was deployed in the final phase for students in addition to the project deliverable committed to for the pilot project.

DigiCred believes that students not only should have full agency to own and maintain their education credentials but be offered services to better understand their current skills that they have attained, leading to constructive potential educational and career pathways for each student. These are services and/or analyses are individualized based on the most current transcripts. This first iteration proved very successful, and we look forward to rolling out additional versions in the upcoming months.

A way to continue to empower students to make decisions about their future education aspirations is to provide them with tools that help them make smart decisions. The students who accessed one of our new tools, found it useful. In fact, within the first 24-hour period, the tool was accessed and used 44 times.

Innovative Crisis Prevention

We learned that new Wallet capabilities can be developed and deployed rapidly to meet North Carolina System goals. During the pilot, we learned that there is a goal for a suicide prevention hotline phone number to be available on all future student IDs.

DigiCred was able to incorporate and demonstrate to project stakeholders how this service to students works within the DigiCred wallet. Instead of a printed 800# on physical ID cards, our solution for this suicide and crisis hotline was integrated to the base operating system of each student's phone. When pressed this feature automatically dialed the Crisis Center Hotline with direct phone activation. Our service allows for any pre-

programmed phone numbers that a jurisdictional might dictate or these calls could be directed to any district level call centers locally.

Once the students experience the ease of download, the relief of not having to remember their student ID number and/or saw a revision to their transcript, then they began to ask if the Wallet could do more. Students provided dozens of ideas on how the Wallet would further be useful to them. The following are a few of most impactful and are features that may be deployed next:

- Advancing workflow processes Innovations on direct student communications
- Configurable workflows that match and extend existing traditional internal processes
- Easy "drag-n-drop" workflows for current and future workflow configuration

The CrMS configurable workflows were able to address each suggested improvement. With an expanded pilot, the CrMS would be able to address more of the existing challenges.

From the school IT infrastructure point of view, the pilot project showed that a high level of engagement from key school personnel provides the smoothest and most efficient process for integrating to a school's SIS and/or LMS System. The base configurations were deployed for this project; however, with a longer set up timeframe, more capabilities could be built in or be configured more specifically. In the case of Cape Fear Community College which deployed the CrMS Systems months prior to official kick off, we learned that the CrMS system functioned with no maintenance required. It was a very stable installation.

From the student point of view, the capabilities that were launched: Student ID and Transcript, eased their burden of remembering their student ID number – which is needed many times a week – and their effort in obtaining their credentials. Furthermore, students were able to easily review their transcript and request corrections. This empowered the students to mind the accuracy of their credentials. DigiCred believes that students should have agency to own and maintain their education credentials.

Negative Outcomes

None to report.

Future Direction

Scaling

Based on student, teacher, administrator and most importantly, Information Technology (IT) department support, the pilot program demonstrates that the DigiCred technology is very scalable. The pilot project brought to light the optimal resource allocation that would be necessary by both the school and DigiCred to bring more schools and more participants onto the DigiCred System.

The long-term plan is to have teams of student "ambassadors" on every campus and at every high school we work with across the state. These are relatable fellow students who have the interpersonal skills to help promote this student-centric solution.

System-wide adoption for a school district or another system would allow for additional economies of scale and allow more students to benefit from DigiCred.

Platform and Mobile App Extensions (Outside Education Use Cases):

In the last 3 years alone, DigiCred has conducted over 2,100 hours of dedicated research to political and legislative issues at the local, state and federal level across the United States. Mostly concentrating on the southeastern U.S. States along with the pursuit of opportunities in 3 strategic western states. This due diligence in deep research has allowed DigiCred to identify strategic components and features within our platform and

student wallet solution – that are "stackable" features to the popular Apply Wilmington pilot project capabilities.

For example, from within the wallet, our configurable workflows can connect students to educational opportunities and employers. This unique capability is within a service called "the opportunity broker". This is a curated marketplace where students opt-in to making these types of connections. It is the foundation of the expanded pilot that is under discussion. Students will have the ability to leverage their digital credentials to explore educational and career pathways and apply for employment opportunities through the digital wallet platform.

DigiCred could also have the capability for students to opt-in to peer groups, based on their credentials matching other student's credentials (i.e. engineering students seeking study group partners or art students needing to collaborate on a project, etc.). This service as part of the Opportunity Broker would be 100% opt-in.

Having a search feature within these peer groups, allows peer group members (again opt-in) allowing their credentials to be searched by others. Specific use case examples include for emergency situations with EMS life- saving skills could be notified through direct channel connections and cryptographically-secure communication or 1-to-many communication sent by the school. This scenario is like when the overhead speaker system calls out; "Is there a doctor in the house? If so, please report to XZY location immediately to assist in an emergency!" In addition, students seem to always have last-minute personal crises before exams and/or when projects are due and this search feature within their peer groups could be quite helpful.

One last application of the existing functionality of DigiCred is to prove residency in a state. This may aid college tuition calculations or scholarship preferences or requirements.

Moving beyond traditional students

DigiCred worked with the Director of the CFCC Veterans Center for onboarding Veterans students on campus. These veterans provided enthusiastic, positive feedback when realizing they now had a free copy of their official CFCC transcripts in the DigiCred App on their phones.

From these meetings, we not only made a connection with the Veterans Center @ UNCW (one of the oldest and most prestigious veterans learning centers in the State of NC), but they together introduced us to the Program Manager for Military and Veterans Education at UNC System Office and his team of other executives at the SO. The goal and intention is to develop strategies of extending our system to include military transcripts, that are quite extensive, even within a 4-year service period. These are specific skills and accumulated credentials and certifications all represented in the one document: the Joint Services Transcripts (JSTs). The ultimate goal is to provide our valued service members / veterans with an expanded list of applicable employment opportunities via DigiCred's opportunity broker service – that tie in Workforce Development Initiatives across the state of NC, including Apprenticeships at local employers.

Additional credentials

The DigiCred wallet can also connect users to other state services and federal agencies, organizations and businesses. Other examples of verifiable credentials that our wallet can HOLD and then use as needed include:

- Military transcripts and a plethora of military service certifications & credentials
- The state digital driver's license (mDL)
- Birth certificates, death certificates and other government credentials
- Industry certifications and licenses (OSHA, Professional Engineering licenses, State Nursing licenses, etc.)
- Local building permits and other County level certifications
- Encrypted and cryptographically-secure patient medical records as verifiable credentials
- State licenses, surgery privileges and hospital authorizations & certifications for doctors

- Vehicle ownership, license plate registration, insurance policies
- Pet vaccination and other records, including expiration dates with scheduling appointments

The DigiCred Opportunity Broker has countless possibilities to add opportunities and thus create specific marketplaces for holders of credentials and any entity that wishes to connect with that holder.

Conclusion

The pilot demonstrated DigiCred's differentiating factors:

- Students (parents/guardians) have custody of their credentials
- Students directly send educational credentials within the application processes
- Official copies issued by Institutions faster and more securely than traditional methods
- Students easily send their credentials to other educational institutions

The first deployment anywhere in the U.S. the "Apply Wilmington" Pilot Project was the first full implementation in this comprehensive capacity vertically integrated across three educational levels. It demonstrated that a geographic regionally-focused network technology that puts information in the hands of students has a demand in the market. It also showed that collaboration across all educational stakeholders is essential and inspirational when technology and student growth objectives are aligned. The success of the pilot in an abbreviated timeline shows that scale is very possible and the feedback from students confirm that students would like to see more functionality.

Verifiable Credentials Pilot

Randolph Community College and Certree Report Out
June 2, 2025

Certree Company Overview

Certree is an anti-fraud and data security company founded in 2018. Certree's mission is to empower individuals to own and control their personal credentials—eliminating the need for organizations to send sensitive data to third-party data brokers or middlemen for credential verification.

Built on zero-trust architecture, Certree enables educational institutions, government agencies, employers, and healthcare providers to issue tamper-proof credentials directly to individuals through a secure personal Certree Vault. From there, individuals have exclusive control over their records and can choose to share them securely with trusted third parties. This eliminates the risk of mass data breaches, unauthorized sharing, and identity fraud.

Today, over 50,000 organizations issue credentials through Certree, and tens of thousands of organizations access and trust credentials shared via the platform, including employers, education institutions, and government entities. These include federal agencies such as the FBI, USCIS, and Department of Defense, as well as numerous state, county, and municipal bodies.

In North Carolina, over 40 educational institutions (e.g., UNC Chapel Hill, Duke) and more than 40 government and quasi-governmental entities (e.g., NC Department of Health and Human Services, Department of Commerce) rely on Certree to verify credentials for essential functions—including delivering public benefits, hiring employees, admitting new students, and issuing professional licenses.

Certree is proud to lead a national movement toward secure, citizen-owned credentials—building a more fraud-resistant, privacy-respecting future.

Certree Product Overview

Certree is a zero-trust, privacy-first platform that enables the secure issuance, storage, and verification of digital credentials. Designed for individuals, institutions, employers, and

government agencies, Certree replaces outdated verification models that rely on paper documents or third-party data brokers with a modern, secure, and user-controlled system.

Core Capabilities

⚷ Digital Credential Issuance

- Certree enables the issuance of tamper-proof, cryptographically signed documents—including transcripts, diplomas, employment and income verifications, and more.

- Our platform integrates seamlessly with leading Student Information Systems (SIS) such as Ellucian Banner, Colleague, and PeopleSoft, enabling automated credential issuance directly from institutional systems.

- For employers, Certree also supports integration with over 50 different Human Resource Management Systems (HRMS), allowing HR teams to issue verified employment-related documents efficiently and securely to their workforce.

🗁 Personal Vault for Individuals

- Each user receives a lifetime personal Certree Vault, where they can receive and store verified credentials.

- Individuals retain exclusive control—only they can access or share their data.

- Vaults support multiple document types: academic records, certifications, health records, proof of work, ID documents, and more.

🔄 Credential Sharing and Verification

- Users can securely share documents with employers, schools, licensing boards, or government agencies.

- Verifiers receive authentic, tamper-evident documents with built-in verification (QR code and cryptographic proof).

🌐 Interoperability & Scalability

- Supports a wide range of use cases: education, employment, workforce development, licensing, healthcare, and social services.

- API-first architecture enables easy integration with external systems, apps, and portals.

- Multiple document formats supported, including PDF, JSON, XML, and EDI for easy consumption.

💡 Insights and Support

- Dashboards for issuers to track document status, access metrics, and monitor usage.

- Live customer support via email, phone, and chat—6 days a week, 14 hours a day.

💡 Higher ROI for the State of North Carolina

- Certree has a mature product and does not require funding for product development.

- With robust API integration capabilities, Certree enables organizations and businesses—large and small—to go live quickly with minimal IT resources required.

- Rapid implementation ranges from hours to weeks, depending on the complexity of the credential being issued.

Certree delivers authenticity, privacy, and user empowerment—redefining how credentials are issued, controlled, and trusted in the digital era.

High-Level Implementation Plan

Phase 1: Planning and Alignment

Goals: Stakeholder alignment, scope definition, and readiness assessment

- Kickoff meeting with RCC leadership, IT, Registrar, Career Services, and Workforce Development teams

- Identify credential types to be issued via Certree:

  For Students and Alumni

○ Proof of Enrollment

○ Academic Transcripts

○ Proof of Degree

○ Digital Diploma

○ Certificates

○ Student ID (digital)

For Continuing Education

○ Certificates (21 different types)

○ Transcript

○ Proof of Enrollment

○ Student ID

- Define use cases: student authentication, employer/employment verification, student transfer, etc.

- Assess current systems (SIS, LMS, ID services, etc.) for integration planning

- Confirm privacy, FERPA, and security alignment

Phase 2: Integration & Credential Mapping

Goals: Data mapping, integration development, and credential formatting

- Map credential data from RCC's SIS to Certree credential templates

- Design issuer-branded, digitally signed credential formats for credentials within scope

- Begin technical integration with Certree API

- Implement secure credential issuance workflows with role-based access control

Phase 3: Credential Issuance – User Acceptance Testing (UAT)

Goal: Test credential issuance in a live environment and gather actionable feedback to ensure readiness for full deployment.

Phase 4: Full Rollout

Goals: Launch full credential suite across all student populations

- Expand credential issuance to all enrolled students and alumni

- Launch outbound communication campaign (email, website, info sessions)

- Provide support to students on vault activation and sharing credentials with verifiers

- Begin issuing proof of employment for qualifying student workers or alumni employed by RCC

Phase 5: Maintenance & Expansion

Goals: Support, monitoring, and expansion to other departments or use cases

- Monitor system performance, credential delivery, and usage analytics

- Address ongoing student or verifier support needs

- Explore additional features

- Engage in annual review to assess new credential types and regulatory updates

Implementation Status

Credential Type	Live/ In Progress	URL to Guide Students to Obtain Credentials (if Live)	Number of User Requests
For Student and Continuing Education (CE)			
Transcript	Live	● https://www.randolph.edu/admissions/certree.aspx	59
Proof of Enrollment	Live	● https://www.randolph.edu/admissions/certree.aspx	10
Proof of Degree	Live	● https://www.randolph.edu/admissions/certree.aspx	10
Digital Diploma	Live	● https://www.randolph.edu/admissions/certree.aspx	9
Certificate of Achievement	Live	● https://www.randolph.edu/admissions/certree.aspx	6
Student ID	Live	● https://www.randolph.edu/admissions/certree.aspx	14
Certificate **(21 types)**	Live	● https://www.randolph.edu/admissions/certree.aspx	3

Supporting Ecosystem

- **# of issuing organizations:** 50,000+

- **# of organizations accepting credentials shared by users:** Tens of thousands

- **Feeder high school live on Certree:** Asheboro High School – Transcript Link

Security Certification

- SOC 2 Type 2

Reputation

User Satisfaction Ratings (1–5) on Social Media for Major Transcript Providers:

- Parchment: **1.2**
- NSC: **1.1**
- Certree: **4.8**

Future Plan

Building on the successful pilot at Randolph Community College, Certree plans to scale its solution statewide by partnering with the North Carolina Community College System to enable all 58 colleges to issue secure, tamper-proof digital credentials to students, staff, and workforce trainees.

Our platform supports seamless integration with existing SIS and HR systems, ensuring minimal lift for colleges while maximizing impact for learners. By providing low-cost, lifetime access to transcripts, diplomas, and workforce certificates, we aim to standardize digital credentialing across North Carolina, empower data ownership, enhance credential authenticity, and streamline pathways from education to employment.

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