

## Ecosystem Leadership

- We are an active participant on the EMVCo Working Group, helping to shape the future of authentication - we work with merchants to validate EMV® 3DS use cases and provide feedback for the overall ecosystem.
- We are a Visa Solution, benefiting from their longstanding relationships. We have a direct connection to the Visa Directory Server, providing quick DS transaction times.
- We are network agnostic by design - partnering with each major card network to track and resolve outstanding EMV 3DS challenges.
- We work directly with networks and partners to identify and resolve pain points, issues, and inconsistencies throughout the ecosystem.
- We are working on active pilots of the EMV 3DS SDK enhancement (Virtual SDK).

## Use Case

*One payment network has launched an update to their Stand-In BINs, which categorizes a 16 digit PAN as a 19-digit BIN. While we are focused on providing a long-term, beneficial solution, we are able to use our Rules Engine to ensure these BINs are routed properly when they arrive on a transaction.*

## Use Case

*We have been able to work with a new prospect to develop a pilot program surrounding a new use case for 3-D Secure authentication. Using our relationship with EMVCo, we are establishing a proposal to address new markets, in new ways.*

## Key Differentiators

- Full end-to-end testing from consumer to merchant to issuer and back, using our ACS platform
- Truly data-driven decisioning
  - We have the data you need for informed decisions that can help increase your authorization rates, based on our 20+ years of authentication experience and our unique insights on both sides of the transaction (merchants & issuers)
- Ability to write rules against 100s of data points
  - Micro-level protocol routing
  - Immediate optimization for ecosystem faults
  - Pre-lookup and authentication rules
  - Write rules at the merchant or processor level
- A range of integration methods, to implement whether you're new to the marketplace, or a Fortune 500 enterprise.
  - An API only solution
  - A full solution that is quick and easy to implement
  - A flexible solution that benefits from your existing integration
  - A solution that will cover any device your consumers may have ... even their refrigerator
- Solve for inconsistencies in scenarios where 3-D Secure 1.0 implementations are still in use.
  - For example, with a challenge window experience that expands beyond the recommended user interface guidelines, we will scale, per the device, to ensure the consumer can interact with their issuer

## Use Case

*Testing with regions outside of the traditional 3DS landscape, we uncovered various ACS inconsistencies with challenge screens. Our product will scale the challenge window accordingly to allow your consumer full control over their authentication experience.*

## Technology Advancement

- Our platforms have been developed by security-minded professionals and exceed industry standard security requirements.
- We have implemented specific logic and algorithms on each step of the authentication flow, to reduce latency and increase conversions.
- Our downstream optimizations solve problems before they become an issue.
  - Strict AReq Validation - we analyze the data sent on the authentication request and provide feedback when we detect that an error would occur downstream; this provides early information so you can decide how to proceed.
  - CardholderName special characters - the EMVCo specification does not allow special characters on this field, however you may be collecting this information from the Billing Address. We cleanse the value for you to allow authentication processing to occur successfully.
  - TransType - while this is an Optionally Required field, Visa Secure has mandated that it must always be provided. We fill this gap for you when not provided, in a backwards compatible manner.
- We ensure backwards compatibility
  - As new versions of the specification are released, we provide mappings you can leverage (automatically) to continue processing, even in a fallback scenario.

## Global 3DS experts

- True global reach - with partners in every region and customers in over 200 countries, we're staffed globally. We are your team for authentication no matter where you are.
- Dedicated staff working on authentication year-round. CNP authentication is what we do - we are constantly working on improvements in our platforms that you can take advantage of.
- Dedicated Success Teams that are available to you 24/7/365. Their service starts from your first meeting and continues even after you are on-boarded. Our team is a resource for you throughout the use of our product.
- Low staff turnover - many of the team members that helped establish Cardinal are still here today. They are true industry experts that are accessible to you.
- With Cardinal, we'll help you increase approvals, reduce false declines, and decrease fraud.

## Use Case

*In regions that are not under strict regulation, we have partnered with merchants on data only pilots to increase their authorization rates.*