TRANSFORMING PAYMENT PROCESSING

The imperative for automated EMV terminal certification

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Context

The payment landscape is evolving more rapidly than we can imagine. In order to stay ahead, you will have to adopt innovative technologies while ensuring that these technologies meet stringent industry standards.

One of the critical aspects of payment processing is terminal certification, a mandatory procedure that validates payment terminals' compliance with security and functionality requirements.

The processors need to manage the certification process while the merchants manage the testing and validation.

01 EMV Terminal Certification

Certification Volumes

- Globally, 2 to 3 million terminals are certified annually. This includes new certifications and recertification due to updates.
- 300 to 600K terminals go for new certifications annually in the US region.
- Many US merchants still replace MSD (magnetic-stripe only) terminals with EMV-capable ones.
- 40 to 50% of new certifications in the US now include NFC functionality.

EMV Level 3 certification involves validating the payment terminal's processing of chip transactions and its integration with backend host systems to ensure compliance with EMVCo specifications and the standards of various payment networks, including Visa, Mastercard, Discover, Amex, JCB, UPI, and others.

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EMV Level 3 certification challenges for processors in the US

EMV Level 3 certification involves validating the payment terminal's processing of chip transactions and its integration with backend host systems to ensure compliance with EMVCo specifications and the standards of various payment networks, including Visa, Mastercard, Discover, Amex, JCB, UPI, and others.

Technical and Integration challenges

- Different card networks (Visa, Discover, Mastercard, Amex) have slightly varying EMV L3 requirements, leading to complex multi-network certifications.
- Every firmware and software update (even minor patches) may require recertification, delaying time-to-market.
- Terminals must meet both PCI PIN Transaction Security (PCI-PTS) and EMVCo standards, increasing testing complexity.
- Supporting EMV Contactless (Tap-to-Pay) and mobile wallets (Apple Pay, Google Pay) adds layers of testing.

Operational and Logistical challenges

- Certification can take three to six months per terminal model, with costs ranging from 50 K to 200 K, depending on the complexity.
- Processors must ensure their authorization, clearing, and settlement systems comply with various payment network standards.
- Ensuring terminals work across different card types, issuers, and geographies is resource-intensive.

Regulatory and regional issues

- US processors must support both chip-and-PIN and chip-and-signature, unlike other regions, which are mostly PIN-based.
- Some legacy terminals still struggle with advanced fraud prevention methods.
- Limited accredited labs cause delays during peak certification cycles.

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The US is a processor-driven market

How do processors in the US work?

Most processors allow their merchants to self-test and certify their terminals, which covers all stages of testing, including Magnetic Stripe Readers (MSR), Brand L3, and Card Not Present (CNP).

Some of the biggest challenges the processors face include:

- No unified platform to track and monitor certification activities across regions and divisions.
- Does not automate the entire testing and certification flow like onboarding, testing, analysis & validation, tracking & monitoring, reporting, dashboard, and audit trail.
- Lack of automation in data analysis and validation; it is a manual process.
- MSR testing is done manually
- Inability to reach out to individuals or groups of merchants.
- History and decisions are scattered across emails, chats, and phone calls with no centralization of knowledge and intelligence.
- Letter of Approval (LoA) and report generation is a time-consuming process.
- No centralized system for managing and tracking waivers.

How do merchants in the US work?

Merchants rely heavily on payment processors to handle card transactions made through payment acceptance terminals. When a merchant wants to deploy a new terminal or update an existing one, they will have to go through a certification process to ensure the terminal meets the requirements set by the card networks and is compatible with the processor's platform.

How does the process work?

1. The certification process is defined by the processor that takes into account the needs of the card networks. Merchants are told which test tool to use for their testing and validation.

2. Using the defined test tool, the merchant runs a predefined set of test cases on their terminal. This includes functional, transactional, and edge-case scenarios. Once the tests are executed, the merchant analyses the logs manually and ensures compliance with the card network and processor needs.

3. Merchants can either go for self-certification or go through the processor for certification per the process defined by the processors.

Though the process is standardized, it is not always merchant-friendly, as they don't have the choice of the test tool, and most analysis and validation are done manually, which takes enormous time and effort.

U.S. Vs. Global EMV certification trends

Factor	The U.S.	Global
Certification volume	300K to 600k per year	2M+ per year
Terminal types	Chip-and-signature still common; chip-and-PIN present	Chip-and-PIN dominant
Contactless adoption	~50% of new certs involve NFC (tap-to-pay growing)	80%+ (Tap-to-pay is standard)
Legacy systems	Many MSD-only (magstripe-only) terminals are still in use	Mostly phased out

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## The emergence of the automation of the entire testing and certification flow

Context

Automated terminal certification leverages TECTO Cloud, an automated testing and certification tool to streamline the testing and certification process for payment terminals.
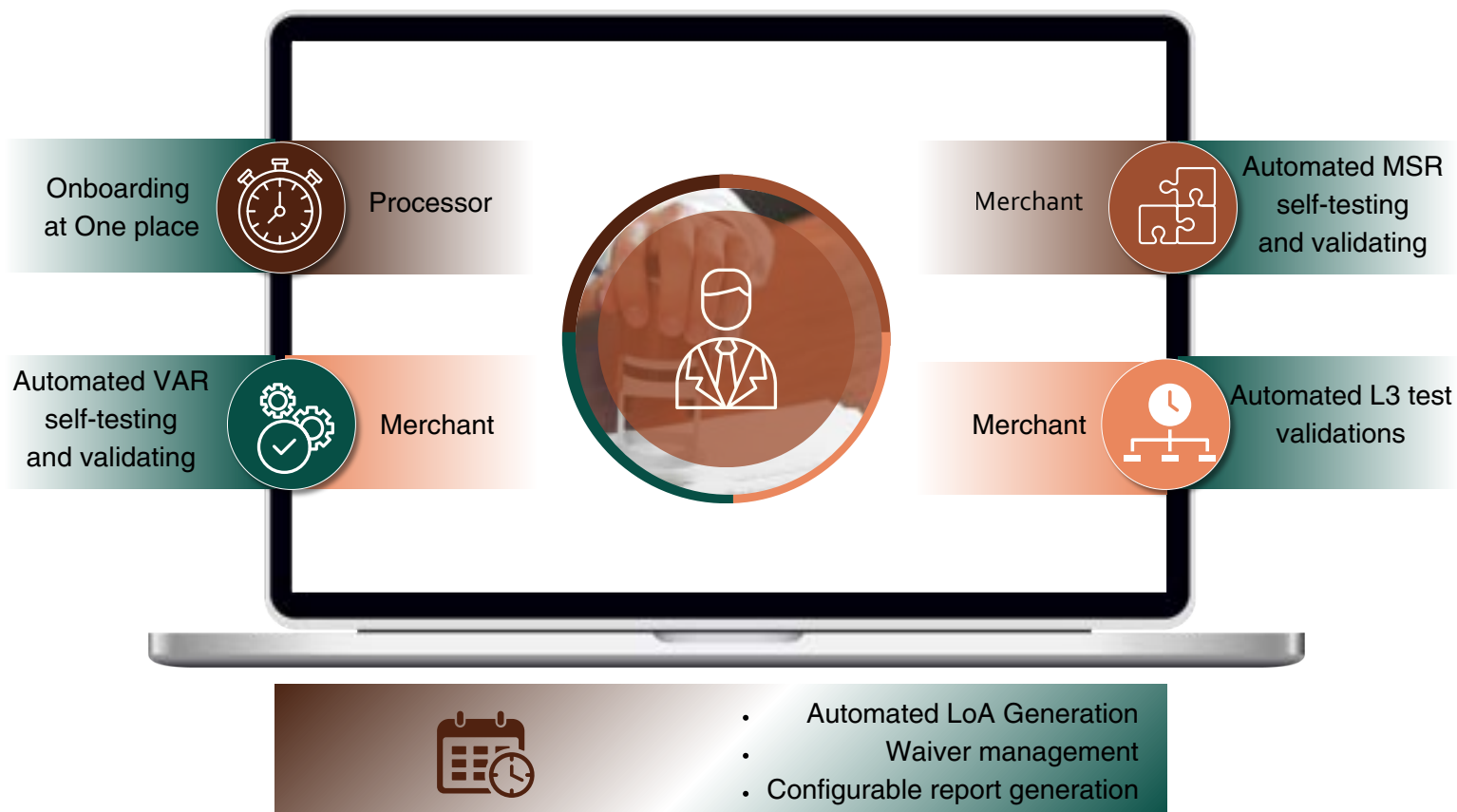
By automating analysis and validation, this approach addresses many of the inefficiencies inherent in traditional methods. Besides, you can automate the testing itself with API-calls supported by TECTO Cloud.

Payhuddle's Solution: Cloud-based Level 3 terminal testing and certification platform, Tecto Cloud.
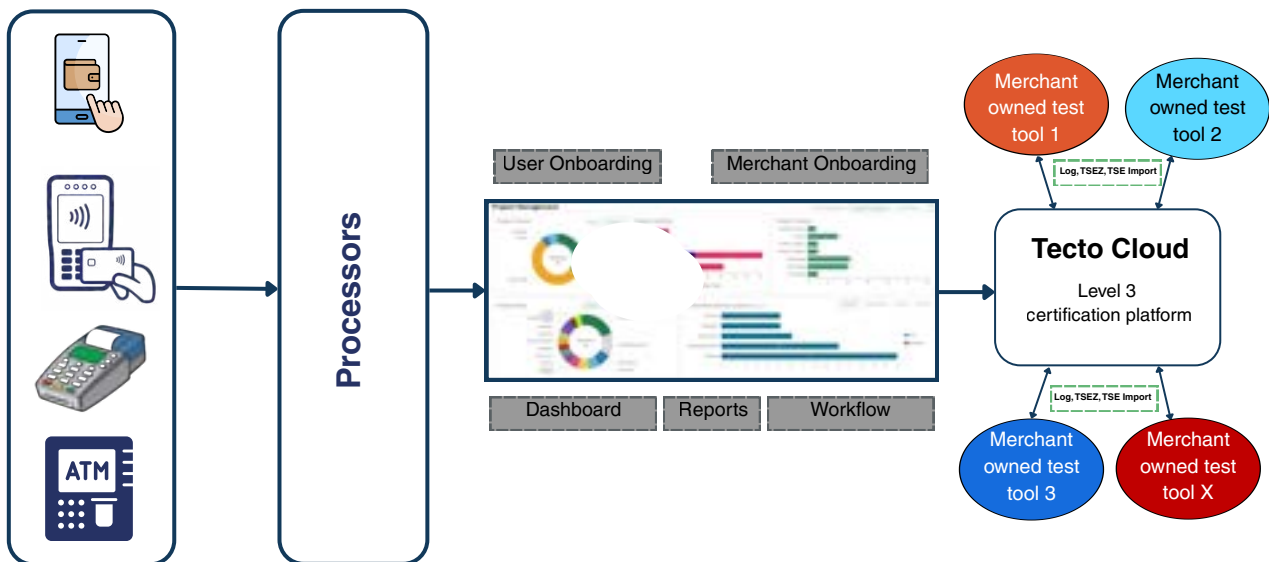
Tecto Cloud can work independently or with any EMVCo L3-qualified test tools. Besides, you can customize the entire certification workflow based on the processor's needs.

While the merchants continue to use their existing Level 3 test tools or procure any EMVCo Level 3 tool, the Tecto Cloud will automate analysis & validation and expedite the certification process.

Onboarding at One place — Processor	Merchant — Automated MSR self-testing and validating
Automated VAR self-testing and validating — Merchant	Merchant — Automated L3 test validations

- Automated LoA Generation
- Waiver management
- Configurable report generation

Advantages of the Tecto Cloud platform

- Integrated solution that functions as a Level 3 Testing and Certification platform.
- Centralized monitoring and tracking of the certification process.
- Automated data analysis and validation with host simulation.
- Automated report generation and customized dashboard view.
- Consolidated and automated testing for MSR and CNP in a single platform, along with brand L3 certification.
- Merchants can continue to use their existing L3 test tool or procure any EMVCo L3 tool of their choice.
- In the future, you can bring in intelligence on the possible reasons for the failure of test scenarios and waiver management for merchants and processors.

Impact of Payhuddle's Tecto Cloud

Increased efficiency

- Automated processes will reduce administrative overhead and manual effort.
- Streamlined workflows will improve the speed and accuracy of the certification process.

Enhanced Compliance and Monitoring

- Centralized tracking and monitoring will ensure adherence to industry standards.
- Improved visibility and oversight will enable quicker identification and resolution of issues.

Greater Flexibility and Scalability

- Support for multiple testing tools will provide merchants with flexibility.
- Scalable architecture will handle increasing volumes of testing and certification activities.

Improved User Experience

- User-centric design ensures ease of use and accessibility.
- Customizable workflows and reports meet specific stakeholder needs.

Cost Savings

- Reduced administrative overhead lowers operational costs.
- Automated processes minimize the risk of errors and inconsistencies.

05 Success Stories

Case Study: Accelerating certification timelines

A leading payment processor collaborated with Payhuddle to develop a debugging facility aimed at reducing terminal certification timelines and administrative overheads.

This resulted in faster issue resolution during testing and certification, enabling the processor to achieve terminal certification in the first iteration.

Case Study 2: Streamlined EMV Level 3 Testing

A leading global payment processor partnered with Payhuddle to streamline its EMV Level 3 testing and certification.

By utilizing Payhuddle's automation-driven testing framework, the processor reduced certification efforts considerably, ensuring faster go-to-market for merchants. The solution provided comprehensive test coverage, automated analysis, and validation, which significantly improved efficiency and compliance.
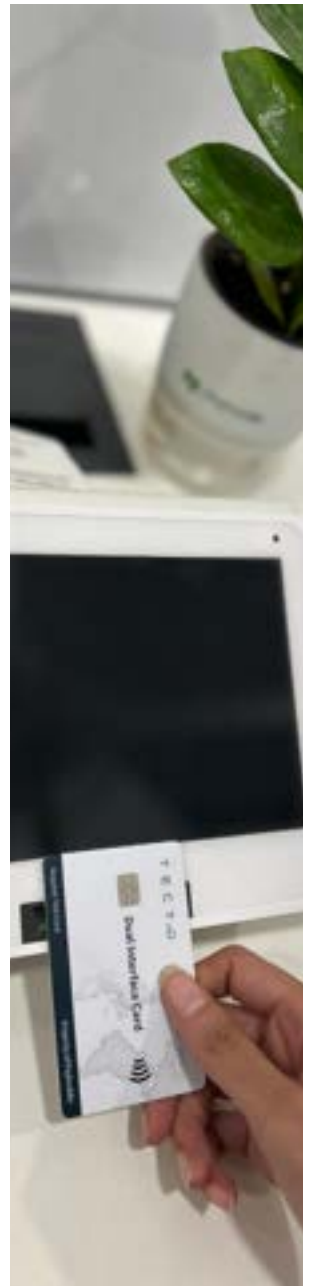
06 Conclusion

Automated terminal certification represents a pivotal advancement in the payment processing industry.

With automation, processors can overcome the challenge of traditional certification methods by being in control of the certification process while reducing administrative overloads. This would lead to faster time-to-market, reduced costs, and enhanced compliance.

Adopting automated certification solutions will be instrumental in maintaining a competitive edge and meeting the dynamic needs of merchants and consumers alike for processors in the North American market.

For more information, please visit **www.payhuddle.com** or email **sales@payhuddle.com**

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