



# PETROLEUM AFD CERTIFICATION ROADMAP

## EMV KERNELS, PCI PTS POI AND THE PATH FORWARD

### *An Executive Summary*

The petroleum industry is quickly facing EMV Contactless and Payment Card Industry PIN Transaction Security Point of Interaction (PCI PTS POI) certification end dates. The deadlines could likely put a petroleum merchant at risk of not being able to meet the new requirements, upgrading their payment application software, implementing a new payment architecture, changing acquirers, processors or fuel brands, and/or updating site systems such as point-of-sale (POS), and/or electronic payment system (EPS) devices.

To comply with the requirements introduced in the EMV® Level 1 Specification for Payment Systems: EMV Contactless Interface Specification, specifically the Level 1 (L1) version 3.0 certification, hereinafter referred to as “EMV L1 Contactless Interface Specification,” and the automated fuel dispenser (AFD) PCI PTS POI v6 hardware standard, petroleum merchants may be obligated to write off a substantial financial depreciation amount for existing AFD hardware and make another significant investment in AFD hardware. Additionally, with the limited number of AFD manufacturers and certified technicians, a significant share of the industry could not logically upgrade within the timeframe required. Each petroleum merchant must decide for itself how to address these issues. While some may choose to absorb these costs and potential delays, others may choose to reduce customer functionality by disabling contactless payments at the AFD.

The U.S. Payments Forum Petroleum Working Committee developed this brief to outline the industry impact for outdoor AFDs,<sup>1</sup> discuss the technical changes and implementation steps required, and offer perspectives on possible solutions and next steps for petroleum merchants

### **Industry Impact and Technical Changes Required**

The U.S. outdoor AFD counterfeit liability shift was effective April 2021 and necessitated the installation of a new generation of EMV-compliant AFDs. Installation of these AFDs began in 2018 and continues even today. According to Conexxus, this upgrade comes with an estimated cost of \$8.9 billion for petroleum merchants.<sup>2</sup>

The significant share of the 1.9 million U.S. petroleum AFD payment devices support the EMV L1 Contactless Interface Specification version 2.6, with certifications that begin to expire at the end of December 2025, and PTS POI v5 certifications which will now meet the certification and end-of-sale periods in April 2027.

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<sup>1</sup> Indoor payment terminals are out of scope for this brief.

<sup>2</sup> “EMV: \$8.9 Billion Cost, 30-Year Payback,” CSP, Sept. 16, 2015, <https://www.cspdailynews.com/technologyservices/emv-89-billion-cost-30-year-payback#:~:text=SOUTHLAKE%2CTexas%20Numerous,to%20issuers%20and%20card%20bands.>

AFD PTS POI v5 devices are certified with EMV L1 Contactless Interface specification v2.6 and are capable of accepting mobile phone payments as well as contactless payment cards today. However, because they were certified prior to the introduction of low-energy Bluetooth devices (which have small antennae), their silicon chips do not possess the technical capability to comply with the EMV L1 Contactless Interface Specification v3.0 requirements.

The EMV L1 Contactless Interface Specification v3.0 requires hardware devices to support low-energy, small-antennae Bluetooth devices so that they can support other form factors, such as an earring or clothing/apparel. The specification also requires support for the Consumer Device Cardholder Verification Method (CDCVM) as an authentication method.

The EMV L1 Contactless Interface Specification v3.0 contains no significant security features that are not already in the EMV L1 Contactless Interface Specification v2.6.

### **Challenges and Costs for the Petroleum Industry**

The cost for upgrading outdoor AFD equipment is significant, and implementation is impacted by availability of equipment and personnel resources. Example costs and challenges include the following:

- The average financial depreciation schedule for a new AFD is 10-15 years. Most (if not all) of the installed AFDs have not yet completed their financial depreciation schedules.
- The average life cycle of a new AFD is 10-20 years.
- The average cost per dispenser ranges from \$13,000 to \$25,000, plus the cost of installation.
- Manufacturing capacity is limited due to the limited number of AFD manufacturers.
- Installing/upgrading fuel dispensers requires a certified technician (e.g., electrical wiring, flammable/hazardous liquid). Certified technician availability is limited in the industry.
- Dependencies in certification and correlation between EMV and PCI PTS POI certifications impact implementation timelines.

#### **Important!**

**The correlation between EMV and PCI PTS POI certifications is important to understand.**

**Meeting all new EMV and PTS POI requirements is required to meet new EMV and PTS POI certifications, upgrade payment application software, implement a new payment architecture, change acquirers, processors or fuel brands, and update site systems such as POS and/or EPS devices.**

Dependencies in the certifications must be understood and an implementation sequence followed in order for a payment device to be valid in the field, with steps as follows:

- Building a payment device which is certified to a valid PCI PTS POI Standard is the foundation for the certification.
- Once a supplier obtains the PCI PTS POI certification, it can submit the device and its payment software to EMVCo to obtain an EMV L1 certification, which validates interoperability between the payment device hardware and chip/contactless cards.

- Once the EMV L1 certification is complete, the supplier can then obtain an EMV Level 2 (L2) certification (i.e., for the kernel), which tests the interoperability of the data on the chip/contactless card and the payment device.
- PCI PTS POI, EMV L1, and EMV L2 device specifications expire on a regular basis and device manufacturers are required to certify devices to the updated specifications. Retailers can continue to use devices with the old certifications until the expiration dates and may request waivers to continue to certify and use these devices after these expirations.
- Payment devices and corresponding processor certifications are constantly being updated to reflect the current state of valid certifications which do not always reflect the life cycle of an AFD.

### **Petroleum Merchant Perspective**

Merchants have additional steps that they must complete for AFD equipment updates, including the following:

- Valid EMV L1 and L2 certifications are likely required to obtain a Level 3 (L3) certification, which is associated with the payment application software due to end-to-end testing with the processor.
  - Refer to the payment networks for the specific L1 and L2 certifications and schedules that are required to obtain an L3 certification, as there may be exceptions to the schedules.
  - A valid PCI PTS POI certification is also required for an L3 certification.
- Payment application software is associated with and has a documented dependency on currently valid PCI PTS POI certified devices.
- The certification periods do not coincide with the life cycle of an AFD.
- Managing multiple certification ending periods with payment networks and acquirers is labor-intensive and time-consuming and takes extensive project management.

### **Merchant Options to Obtain More Information**

To plan an upgrade for these new requirements and certifications, merchants may wish to consult with industry partners and start an internal assessment. Possible options include:

- Consulting with their payment acquirer/processor to understand impacts to onboarding locations that are new to their portfolios.
- Conducting a current inventory of EMV L1 Contactless Interface Specification v2.6 and PTS POI v5 AFDs, calculating their remaining depreciation, and estimating replacement costs.
- Consulting with industry stakeholders such as AFD vendors, payment acquirers, and/or fuel brands to explore options, solutions and end of sale dates.
- Reaching out to EMVCo, who defines the EMV specifications, and PCI Security Standards Council, who establishes the payment security requirements, to obtain more information.
- Participating in payment organization discussions such as the U.S. Payments Forum, Conexxus and Merchant Advisory Group.

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## Petroleum Merchant Options

Petroleum merchants have a few options to manage the transition. Most, unfortunately, are not ideal, customer friendly, or affordable. Options include:

- Turning off contactless payments at the outdoor AFD.
- Implementing PCI Data Security Standard (DSS) compensating controls, which may be required for use of end-of-life solutions that include expired components where their use is conditional and temporary.
- Managing custom implementations.
- Replacing fully functional terminals.
- Contacting payment networks for certification grace periods.

Petroleum merchants that are already planning to purchase or otherwise acquire new equipment can avoid these issues by choosing equipment certified under the latest versions of PCI PTS POI and EMV L1 Contactless Interface Specification v3.0.

## Conclusion

Achieving compliance with EMV and PCI PTS POI certifications is optimal for merchants. The expiration of the certification periods for EMV L1 Contactless Interface Specification v2.6 starting from December 31, 2025, and PTS POI v5 on April 30, 2027, will have far-reaching implications for the petroleum industry and consumers due to the length of AFD financial depreciation and life cycle. It is essential for stakeholders to proactively plan and collaborate as discussed above to mitigate risks and ensure a smooth transition.

## Resources

- U.S. Payments Forum, [www.uspaymentsforum.org](http://www.uspaymentsforum.org)
- EMV Requirements, [www.emvco.com](http://www.emvco.com)
- Payment Card Industry (PCI) Security Standards Council, [www.pcisecuritystandards.org](http://www.pcisecuritystandards.org)
- Conexxus, [www.conexxus.org](http://www.conexxus.org)
- Merchant Advisory Group, [www.merchantadvisorygroup.org](http://www.merchantadvisorygroup.org)

## Legal Disclaimer

The information in this document is intended to identify and describe challenges arising from the nearing expiration of EMV and PCI PTS POI certifications applicable to AFDs, and potential solutions to those challenges, as a convenience to interested stakeholder. It is not intended to and does not constitute legal or technical advice, and should not be relied on for any such purpose. All warranties of any kind, whether express or implied, are hereby disclaimed, including but not limited to the implied warranty of fitness for a particular purpose. Any person that uses or otherwise relies on the information set forth herein does so at his or her sole risk.

This document is not intended to be exhaustive. AFD implementations and circumstances may differ, applicable rules, processing, liabilities, obligations and/or results may impact or be impacted by specific facts or circumstances, and each payment network determines its own rules, requirements, policies and procedures, all of which are subject to change. Similarly, this document does not recommend or suggest any agreement among competing market participants on how to address the identified challenges. Accordingly, AFD owners and operators, and others implementing EMV chip technology in the U.S., are strongly encouraged to consult with the relevant payment networks, acquirers, processors, vendors and other stakeholders prior to implementation.