



Canadian Card Technical Acceptance

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U.S. Payments Forum

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The U.S. Payments Forum, formerly the EMV Migration Forum, is a cross-industry body focused on supporting the introduction and implementation of EMV chip and other new and emerging technologies that protect the security of, and enhance opportunities for payment transactions within the United States. The Forum is the only non-profit organization whose membership includes the entire payments ecosystem, ensuring that all stakeholders have the opportunity to coordinate, cooperate on, and have a voice in the future of the U.S. payments industry. Additional information can be found at <http://www.uspaymentsforum.org>.

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1. Introduction

This document provides guidance and clarification to merchants, acquirers, point-of-sale (POS) terminal vendors and POS solution integrators on application selection logic used by U.S. POS terminals to avoid certain interoperability issues when processing Canadian cards. It also proposes optional use of “Preferred AID Logic” for debit co-badged cards on U.S. POS terminals, where guidance for a preferred AID has been provided by all applicable payment networks. The solution outlined in this document is payment network agnostic and includes possible adjustments to the Preferred AID selection intended to accommodate the possibility of changes in issuer business arrangements.

The Forum is providing this guidance to help prevent transaction processing issues due to incorrect AID selection for Canadian cards resulting in failed transactions. U.S. acquirers that implement an incorrect iteration of the application selection logic for Canadian cards may experience interoperability issues when processing Canadian issued cards resulting in a poor cardholder experience at U.S. EMV POS terminals.

The guidance covers the processing of Canadian contact EMV cards only at a U.S. POS terminal. It does not address and is not intended to address U.S. contactless POS and contact/contactless ATM terminals. Accordingly, U.S. contactless and ATM terminals should not implement the optional Preferred AID logic described in this document. INTERAC contactless POS and INTERAC ATM processing is not supported in the U.S. at the time of publishing this white paper and therefore is currently out of scope.

Background

INTERAC is the national payments network of Canada that offers debit, ATM, eCommerce and money-movement services to its Canadian financial institutions (FIs) and acquiring clients. The INTERAC card is distributed through all Canadian financial institutions and credit unions and is accepted at merchant POS terminals and ATMs all across Canada. The Interac AID is present on all Canadian-issued debit cards and many Canadian-issued credit cards as well.

INTERAC also facilitates debit payments acceptance in the United States through the NYCE Payments Network. This allows cards from participating Canadian FIs to be accepted at U.S. POS merchants anywhere NYCE PIN debit is accepted nationwide. INTERAC notes that U.S. POS merchants that support INTERAC transaction processing and are migrating to chip acceptance should follow INTERAC’s U.S. chip requirements and complete the required certification by INTERAC prior to deployment of the INTERAC AID at their respective POS solutions. INTERAC chip processing requirements and certification processes should be obtained from INTERAC via the NYCE Payments Network.

The INTERAC specifications require the use of the ASF Tag (DF62) to determine the application to be selected at a POS terminal. In Canada, this logic was implemented to remove cardholder confusion and to adhere to regulatory rules in Canada for POS processing.

For the U.S., INTERAC has released specifications published via INTERAC’s U.S. Bulletin to accommodate the specific regional needs for U.S. merchants and acquirers. The INTERAC bulletin is distributed through the NYCE Payments Network and includes the “U.S. ASF logic” which is further described in this white paper. This white paper describes the application selection flow (specified in the bulletin) for U.S. POS merchants and proposes the optional use of Preferred AID Logic where applicable.

INTERAC partners with the NYCE Payments Network for processing of Interac magnetic stripe and chip transactions at U.S. POS terminals. At the time of publication, merchants in the U.S. accepting PIN debit

POS transactions through NYCE can accept INTERAC transactions. INTERAC's U.S. specifications, bulletins and certification guides are published on NYCE's InfoManager site (login required).¹

Application Selection Flag (ASF)

The ASF data (Tag DF62) element is personalized by Canadian issuers to identify whether an AID on the card is to be used for ATM processing or POS processing. By setting bits of this Tag (ASF Flag), the issuer identifies which AIDs are to be considered by the terminal for which type of transactions. These settings also include the priority information of the AID for that transaction type, by identifying if an application is to be used as primary or secondary for ATM and/or POS transactions.

The ASF Tag DF62, Byte 1 is used to indicate if the AID is to be used for ATM processing and Byte 2 is used to indicate if the AID is to be used for POS processing.

The usage of the ASF data tag differs for Canadian POS terminals compared to U.S. POS terminals. This white paper clarifies these differences and the applicability of the ASF data tag for the U.S. POS.

Further details are described in Section 4.

¹ NYCE InfoManager (login required), <http://www.nyceinfomanager.com/>. Login and from the home page, navigate as follows -- Operating Rules, Manuals, Forms & Marketing Supplies > Chip Card Documentation > INTERAC > INTERAC Chip Card Specifications & Information – and select the appropriate documents.

2. Scope of Cards

Four card types are issued in Canada.

1. Non-Co-badged INTERAC-Only Debit Cards

This is a debit card that contains the INTERAC AID for U.S. POS acceptance and a respective payment network's ATM AID for ATM acceptance only.

Proposed Processing Flow:

- Since these cards will only have the INTERAC AID known to a U.S. POS terminal, at U.S. chip-certified INTERAC POS terminals, the INTERAC AID will always be selected as a result of the standard EMV application selection process and the transaction will be processed with respect to the rules of the selected INTERAC AID.
- If the merchant accepts NYCE PIN debit but is not certified for chip processing using the INTERAC AID, the transaction should be processed as a magnetic stripe transaction as no matching AIDs will be found (empty candidate list).

2. Canadian Co-badged Debit Cards

This is a card that contains the INTERAC AID along with a global payment network's POS AID.

Proposed Processing Flow:

- These cards will have both a global payment network POS AID and the INTERAC AID known to a U.S. chip-certified INTERAC POS terminal. U.S. terminals may apply one of the application selection methods as follows:
 - o Where a specific AID is to be selected consistently based on guidance from the respective payment networks, and such preference is known to the acquirer:
 - The Preferred AID Logic (see Section 4.1) may be added to the terminal and used to automatically select the preferred AID, or
 - Alternate logic² for meeting the network guidance may be used.
 - o If the Preferred AID Logic or alternate logic has not been implemented at the terminal or cannot be applied because there is no specific payment network guidance, standard EMV cardholder selection may be prompted by the POS terminal. If the cardholder selects an AID that is not supported by network routing agreements, then the transaction may result in a decline.

3. Canadian Co-badged Credit Cards

This is a card that contains a global payment network's credit AID and also the Interac AID for Canadian domestic ATM use only.

² Alternate logic is intended to mean that acquirers and merchants may develop their own solution for AID selection that meets network requirements.

Proposed Processing Flow:

- At U.S. chip-certified INTERAC POS terminals, the global payment network's AID should automatically be selected.
- This may be accomplished by following INTERAC's U.S. ASF Logic and is also documented in this white paper in Section 4.
- If the terminal is not certified for INTERAC's chip requirements, the INTERAC AID should not be loaded to the terminal. The global payment network's AID should automatically be selected as the result of standard EMV application selection, as it will be the only AID available in the candidate list. No special processing is necessary at the terminal to accommodate these transactions.

4. Canadian Credit Cards with No INTERAC AID

This type of card is out of scope for this document, since no special processing is necessary to process such cards at U.S. EMV POS terminals.

The Canadian ASF logic should always be turned off for U.S. devices to ensure full interoperability of Canadian-issued cards.

U.S. EMV terminals that support INTERAC EMV processing should support INTERAC U.S. ASF logic.

3. Stakeholder Requirements

In order to help ensure that the guidance proposed in this white paper addresses stakeholder concerns, representatives from issuers and merchants were surveyed as part of the development process. Specific needs identified by issuers and merchants are as follows:

3.1 Issuers

- Solution should have the ability to select the payment application based on business arrangements made by the issuer and the respective payment networks.
- Cards should not fall back to magnetic stripe at a POS terminal where the applicable AID(s) are certified and supported and the chip is functional, to prevent potential fraud.

3.2 U.S. Merchants

Merchant requirements will vary somewhat depending on whether the merchant accepts INTERAC chip transactions. In either case, to avoid interoperability issues, terminals configured for the U.S. should have the Canadian ASF logic removed if it is present on the terminal. Identified merchant needs are as follows:

- Once the Canadian ASF logic is removed, merchants not accepting INTERAC transactions should not have to make any other EMV-related changes to the terminal or POS application.
- Solution should have the ability to select the payment option that best meets the needs of the merchant in line with payment network guidance.
- Solution should not restrict the merchant's ability to route transactions.
- Solution should minimize impact on the certification process.
 - Recertification should not be required to implement the solution outlined in this white paper.
 - Recertification should not be required for removing Canadian ASF logic.
- Solution should minimize the impact on the customer experience at the POS.
- No additional prompting of the customer should be required.

4. Proposed Generic Model and Flows for Canadian Cards

4.1 Proposed U.S. EMV Terminal Solution for Interoperability with Canadian-issued Cards

The following is intended to clarify processing guidance to help ensure that U.S. EMV terminals can properly originate transactions from Canadian-issued cards including non-co-badged INTERAC cards and co-badged debit and credit cards. The solutions defined in this white paper are intended to help ensure interoperability.

The application of this solution is intended to not affect the EMV kernel or to require the merchant or processor to recertify their implementation. Notwithstanding the foregoing, merchants, acquirers and POS solution providers should consult with payment network requirements to confirm that the implementation does not require recertification.

Proposed Solution

Operators of U.S. POS terminals should remove the Canadian ASF Logic from U.S.-based EMV terminals. The U.S. ASF logic, which requires a check on the proprietary ASF Tag DF62, should only be implemented when certifying for INTERAC or where INTERAC is accepted. INTERAC chip-certified POS terminals in the U.S. support checking this tag.

Pre-Decision for Use of the Preferred AID Logic

If there is no specific guidance provided by the relevant payment networks regarding which AID is to be selected, standard EMV cardholder selection may be prompted by the POS terminal.

When a combination of available AIDs does not always result in the same preferred AID, or if there is a lack of clarity in the preferred AID guidance provided by the relevant payment networks, acquirers need to work with the payment networks for a resolution prior to deploying a solution for the relevant AIDs.

Preferred AID Logic

The following describes proposed use of Preferred AID logic for Canadian card processing together with U.S. ASF logic for INTERAC chip-certified POS terminals. The optional Preferred AID logic may be used for INTERAC co-badged debit cards. The Preferred AID logic should follow acquirer and payment network guidance. The Preferred AID logic relating to INTERAC AIDs for co-badged cards should not be altered without renewed guidance from the relevant payment networks.

Respective payment networks are responsible for keeping the Preferred AID guidance up to date for distribution to U.S. acquirers and merchants based on business arrangements in market, which are out of scope for this paper. Unlike BIN routing which is managed at the acquirer, the Preferred AID logic is configured at the terminal according to acquirer guidance. The usage of the solution described in this section is as follows:

- Solution is used only when the INTERAC AID is present on a card along with another global payment network's POS AID (co-badged card).
- Determination of whether the product is credit or debit. This can be done by interrogating the INTERAC AID's ASF Tag DF62 setting as described below.

- Since this is an AID level solution, global payment networks along with INTERAC will determine the applicability of AID preference for their AIDs (with respect to their business arrangements) and provide Preferred AID guidance to acquirers through their communication channels.
- Where an AID preference is not available for a given AID, the Preferred AID logic cannot be applied for these co-badged card products, and the POS terminal will follow standard EMV processing for cardholder selection.

Transaction Processing Flow

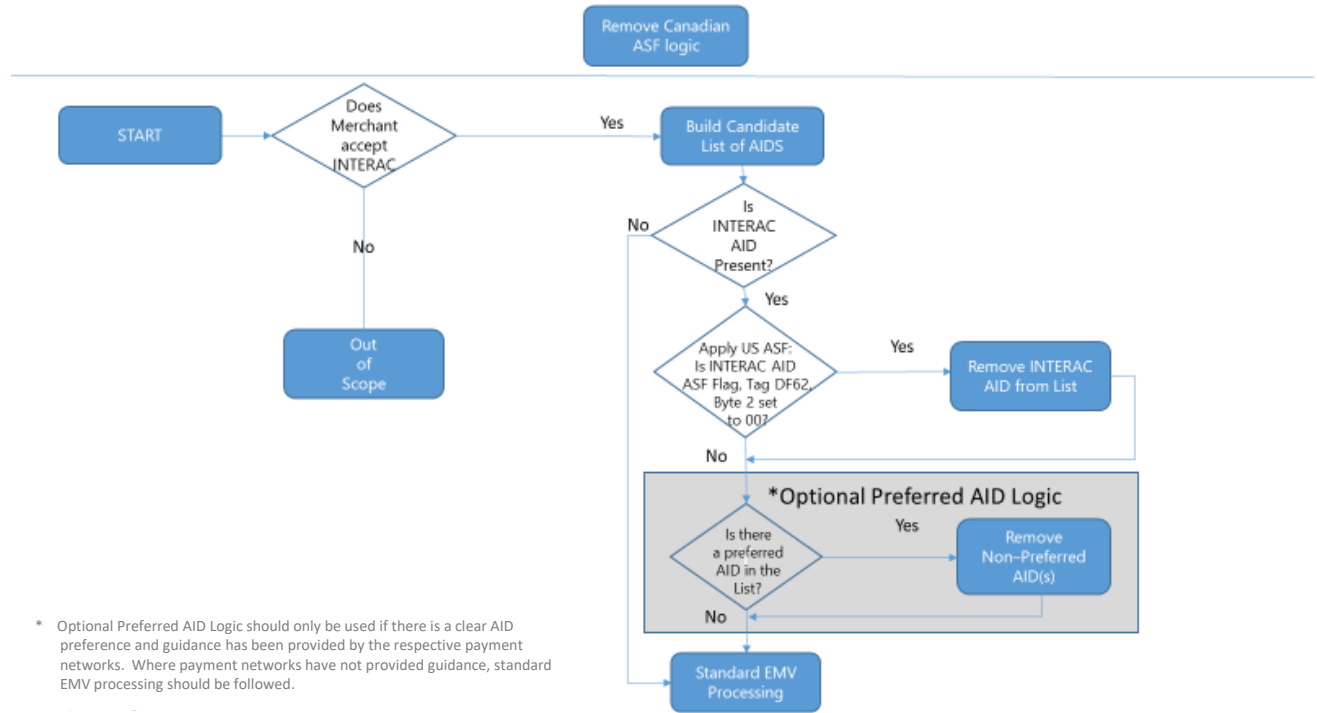
The following steps should be followed on a U.S. EMV POS terminal where the INTERAC AID is enabled:

- Generate the Candidate List using the list of AIDs (explicit selection) or the Payment Systems Environment (PSE).
- Check to see if the INTERAC AID is present on the card.
- If INTERAC is present, check if the card is a credit card. This may be done by interrogating Byte 2 of the ASF Tag DF62 which is returned in the select response when the INTERAC AID is selected. The ASF Tag DF62, Byte 1 is used to indicate if the AID is to be used for ATM processing and Byte 2 is used to indicate if the AID is to be used for POS processing.
- If Byte 2 of the ASF Tag DF62 is set to 00, meaning the AID is not used for POS processing (i.e., card is determined to be a credit card), then remove the INTERAC AID from the list of AIDs supported and continue with standard EMV processing.
- If Byte 2 of the ASF Tag DF62 is NOT set to 00, indicating a co-badged debit card to be used for POS processing, then the terminal may continue with use of the optional Preferred AID processing. Refer to each respective payment network's requirements for Preferred AID processing guidance.
 - Preferred AID logic will prioritize AID preferences with respect to other AIDs.
 - If the candidate list does not contain a Preferred AID with that combination of applications, skip the Preferred AID Logic and proceed with standard EMV cardholder selection.
 - As an example of how Preferred AID processing works is as follows: If Brand A, B and C AIDs are present on the same card, perform the selection logic as follows:
 - If entries exist in the Preferred AID configuration to indicate AID A can be preferred above AID B and AID C, then the terminal may drop AIDs B and C from the candidate list in favor of AID A and continue with the application selection process having AID A in the candidate list.
 - If an entry exists in the Preferred AID configuration to indicate AID A can be preferred above AID B, but no entry exists with respect to AID A and C relationship, AID C cannot be dropped from the candidate list. The terminal should proceed with EMV application selection having AIDs A and C in the candidate list.
 - Ensure the logic above is configurable and, once coded, does not require a software update should business requirements change.

The flow chart below illustrates the logic described above.

For all U.S. terminals, Canadian ASF logic must be removed.

For U.S. POS terminals that support the INTERAC AID and have been certified by INTERAC for the U.S., the U.S. ASF logic must be supported (see flow diagram below).



Note: Optional Preferred AID Logic check can be accomplished before or after the INTERAC AID ASF Flag check as long as all of the network requirements are met.

5. Stakeholder Impacts and Implementation Considerations

Stakeholders should continue to implement acceptance guidance for each supported payment network. U.S. POS terminals supporting INTERAC should have INTERAC's U.S. ASF logic implemented as discussed earlier in this white paper. The optional Preferred AID Logic should only be used as advised by the respective payment networks, where a Preferred AID is known.

Terminals that don't have the proposed solution implemented should follow the standard EMV application selection process. However, merchants should be aware that when an inapplicable AID is selected by the cardholder, the transaction may result in a decline and the transaction may be attempted again using the other AID available for processing.

Individual POS terminal vendors and solution integrators must determine the development work effort to implement the optional Preferred AID Logic. Although the Preferred AID Logic has similarities to the U.S. Common AID logic, terminal vendors and solution integrators should be aware of the technical differences in card profiles that trigger the use of the Common AID logic. Specifically, the IIN Tag 42 is not present in the FCI Discretionary Data and is not returned in the Select command for most Canadian-issued co-badged debit cards, and therefore cannot be used as a trigger for the optional Preferred AID Logic documented in this white paper.

Additionally, stakeholders should be aware that the Preferred AID guidance may be changed by the payment networks as issuer business arrangements change. Since the Preferred AID configuration and logic reside on the POS terminal, it is important that the configuration can be revised in a timely manner. Merchants and acquirers should not adjust the Preferred AID logic based on their own preferences. If the Preferred AID configuration and/or logic is incorrect, interoperability issues may result in declined transactions.

6. Conclusions

Due to differences in the processing requirements of chip cards in the U.S. and Canada, transaction processing issues can arise from incorrect AID selection for Canadian cards at U.S. POS terminals. This white paper defined a proposed solution to address the interoperability of Canadian cards at U.S. point-of-sale terminals. The proposed solution substantially meets the stakeholder requirements outlined in Section 3 and is network agnostic and includes possible adjustments intended to accommodate future changes in issuer business arrangements. In addition to the solution presented in this paper, there may be other solutions that can be implemented to achieve this goal.

Regardless of the approach chosen, the solution must meet the requirements of the respective payment networks. Each stakeholder should also consider the available options and corresponding implications in light of their own business and customer experience goals. The U.S. Payments Forum encourages ongoing conversation between stakeholders and their partners to ensure the details of each potential solution is considered and understood.