



ARTS XML
Payments Charter
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Working Draft

Status of this Document

This document is an ARTS XML “Working Draft Charter”, for review by ARTS XML Technical Committee members and the members of the current Payments Work Team.

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TABLE OF CONTENTS

1. INTRODUCTION3

2. VERSION CHANGE DOCUMENTATION3

3. TEAM NAME3

4. TEAM MISSION3

5. MEMBERSHIP ROSTER.....4

6. BUSINESS JUSTIFICATION5

7. ARCHITECTURAL MODEL6

8. PAYMENTS WORK TEAM MISSION SCOPE.....7
 Out of Scope for Version 1.0 8

9. BUSINESS VALUE PROPOSITION9

10. USE CASE SURVEY9

USE Case: XXXX..... 11
 Overview:..... 11
 Scenario: YYYYYY 11
 Scenario: ZZZZZZ..... 11

USE Case: AAAAAA..... 11
 Overview:..... 11
 Scenario: BBBBB 11
 Scenario: CCCCCC..... 11

11. REFERENCES..... 12

12. PLANNED DELIVERABLES 13

1. Introduction

This document serves as the ARTS XML Payments Work Team (PWT) Charter and executive overview document. It has been developed following the, ARTS XML Development Process.

2. Version Change Documentation

Event	Changes	Date
Version 1.0	Initial Release	09/03/31

Please see the IXRetail Technical Report: Best Practices -- Schema Extensibility available on www.nrf-arts.org for the approved method to extend this and all ARTS XML schemas. It is required that this method be followed to pass conformance testing.

3. Team Name

The proposed name change for this ARTS XML Work Team is the Payments Work Team.

4. Team Mission

Define XML standards to enable retailers to integrate payments subsystems into transaction processing systems such as POS. These XML standards will include support for the basic message payload, traditional ARTS XML Schemas, and support for Service Oriented Architectures, service schemas and WSDLs, as defined in the ARTS SOA Best Practices document.

As much as practical, this work team will align the ARTSXML work product with completed initiatives from other associations and collectives, such as EPAS and OPI ISO8583 (and others as may be uncovered during the development period). The team would also seek to obtain input and harmonize with specific commercial solutions that have very broad adoption, such as EFTPOS which is prevalent in Australia and New Zealand.

This alignment will be subject to the ARTS IP policy as well as respecting the copywrite and other forms of Intellectual Property of these external entities.

6. Business Justification

Payments are a dynamic aspect of the customer facing element of the retail IT landscape. New payment types such as contactless devices, gift cards, government benefits programs continue to be introduced and evolve. The promise of payments via mobile devices (ie cell phones) looms on the horizon for much of the world, but is already an established method in some markets such as Japan. Meanwhile, PCI-DSS, Chip and Pin, and EMV regulations have been introduced in many countries emphasizing the need for increased security in the software dealing with payments. Finally, there is a huge variation in payment processes, technologies, protocols and practices among the different regions of the globe.

All of these factors lead to the desire to separate payments from the other aspects of retail transaction processing systems such as POS. An ARTSXML standard defining the interaction of POS and similar systems with payment subsystems will provide significant benefits to retailers. By isolating payments business logic and technologies into separate and more focused subsystems, retailers can minimize the 'system envelope' that requires extremely high levels of security and therefore minimize the impact of supporting regulations like PCI-DSS, while at the same time providing much greater flexibility to adapt to the constantly evolving payments technologies and regulations. This model is already prevalent in most regions of the world and is becoming more common in the United States.

An ARTSXML specification for payments will be the **first truly global standard** covering integration of payments systems into the retail IT landscape.

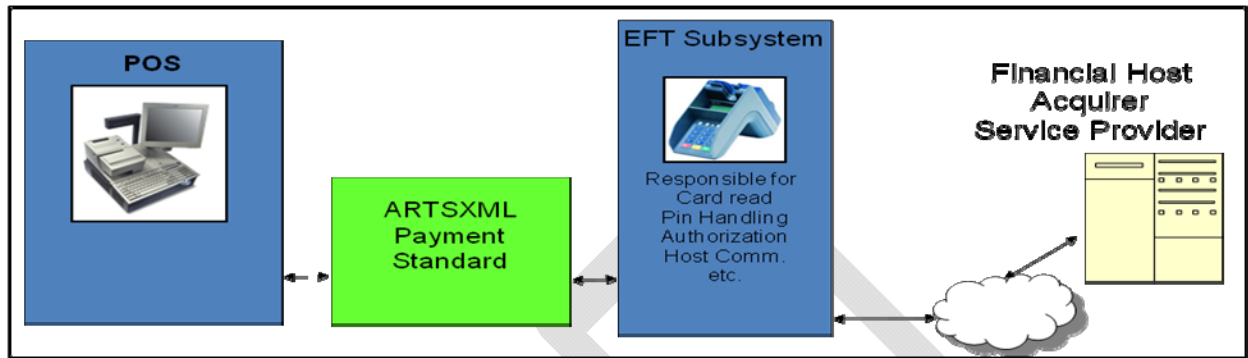
There have been several attempts to create a European standard, but none of these has been endorsed and/or adopted by a recognized standards body such as NRF-ARTS. OPI (Open Payments Initiative) is an example of a vendor sponsored attempt to create a standard. OPI has been reasonably well adopted in Germany and a few other member countries of the European Community, but is virtually unknown in other parts of the globe. EPAS is a newer consortium which is looking to extend OPI as well as standardize other aspects of the payments infrastructure (beyond POS integration, EPAS is looking to standardize an acquirer protocol and a terminal management protocol which will likely be out of scope for the ARTSXML payments specification). The IFSF (International Forecourt Standards Forum) is a UK based organization which has also recently added a payments aspect to their standards. IFSF is a regional organization and also is only focused on a specific retail vertical (Gas/petrol station infrastructure). ARTS has previously cooperated with IFSF on other areas of standardization.

There are also vendor specifications that may be leveraged to create the ARTSXML payments standards. EFTPOS is the dominant market player (and therefore the defacto local standard) for payment subsystems in Australia and New Zealand. SAP has created specifications for integrating payment subsystems into POS that have been leveraged on all continents. ARTS is planning to solicit interface specifications from these and other willing organizations, subject to the ARTS IP policy.

The ARTSXML Payments team will strive to align the ARTSXML specification with other initiatives in this area. This will ensure that ARTS capitalizes on the research and real world

learning of these previous efforts as well as providing a simplified path towards a single global standard for payments integration based on the ARTSXML specification.

7. Architectural Model



The ARTSXML Payment specification will provide the means to integrate POS and similar POI (Points of Interaction) with payment/EFT subsystems, isolating the payment functionality and technology in the subsystem. The POS actor could also be filled by a Self Check Out system or other customer facing point of interaction in a retail store that requires the services of a payment subsystem.

8. Payments Work Team Mission Scope

The Payments Work Team will define and/or adopt XML standards and best practices that enable the use cases defined below and in following sections of this document:

The specification will support all commonly authorized tender types:

- Credit (signature and PIN, Chip & Mag stripe)
- Debit
- Cheque
- Stored Value/Gift cards
- Phone Cards
- 'Smart Cards'

The specification will support all the common actions and transaction types at the POS:

- Sale
- Return
- Pre-Authorization/Authorization
- Paid In
- Paid Out
- Activation/Top-Up/De-activation (gift card/phone card)
- Line Void
- Post Void

The specification will support Authorization requests from the POS:

- With all card/instrument data (ie POS manages the card/instrument reader)
- Without any card/instrument data (ie payment system manages the card/instrument reader)

The specification will support Authorization responses from the payment system:

- With all card/instrument data
- With tokenized/encrypted/masked card/instrument data
- Without any card/instrument data

Payment terminals regularly need to leverage peripherals of the POS. Specifically; there are often receipt blocks that are generated by the payment subsystem. In other cases, the payment subsystems generate information to show on customer or operator displays. Due to the fundamental 'device claim' paradigm of UPOS, it is challenging for different systems to share the same peripheral at a POS. This specification will not attempt to define a choreography for releasing/claiming devices via UPOS but rather assume that the POS maintains control of the displays and printer and the specification will support the communication of 'output requests' from the payment subsystem to the POS. This would not preclude scenarios where the payment device includes and uses a dedicated printer or customer display

Out of Scope for Version 1.0

The Payments work team effort is not intended to cover the messaging between the payment subsystem and the acquirer/service provider and/or bank. The focus of the work team is consistent with the ARTSXML mandate: Application to Application integration within the Retail enterprise.

System management/terminal maintenance messaging will likely be out of scope for this version, however this will be determined as part of the initial work team discussions

Sample Maintenance functions

- Get new keys for EFT Device
- Initiate an EFT Reprint of the last receipt
- Get / Set Date & Time
- Diagnosis request

9. Business Value Proposition

Problem: Do you need to quickly and easily support to new payment types in your stores

Solution: ARTS has developed the Payments standard to allow you to separate payments functionality from POS and therefore dramatically reduce the cost to implement new payments capabilities. Using the ARTS standard to integrate the POS with the payments standard enables you to upgrade the payment system without touching the POS.

Problem: Do you need to deploy a common POS system into multiple countries?

Solution: By implementing a POS that supports the ARTS Payment standard, you can implement a single POS in all countries and integrate it with local payments systems that support the local requirements and regulations. Even better, many of these local subsystems are pre-certified with the local acquirers and banks dramatically lowering your cost of implementation as compared to certifying a complete POS.

10. Use Case Survey

As a preliminary document, the complete use case survey is not available at this time.

However to provide a sense of direction the following use cases are proposed for the work team

- Tender of Sale transaction
- Tender of Return transaction
- EFT Line Void
- Pre authorization and Completion of Pre authorization
- Post Void of previous payment transaction
- Abort/Stop EFT processing

- Activate prepaid instrument (eg Gift Card, phone card) with Amount
- Void Activation of prepaid instrument
- Reload prepaid instrument with amount
- Cash Out gift prepaid instrument and de-activate

- Paid In
- Paid Out

Some or all of these use cases will include scenarios or alternate scenarios encompassing the following requirements:

- Authorization request from POS to payment system including Card/instrument data
- Authorization request from POS to payment system with NO card/instrument data
- Authorization with Operator Display and/or response required (eg 'Check signature')
- Authorization with specific receipt block returned from Payment system to POS (eg Canadian Debit, Australian Debit)
- Authorization response from payment system to POS including NO card/instrument data but with authorization code/information
- Authorization response from payment system to POS including Card/instrument data as well as authorization code/information
- Authorization response from payment system to POS including tokenized card/instrument data as well as authorization code/information

Potential

- Read card – Track 1/2 or 2/ 3 Mag stripe info or Smartcard info or RFID info
- Device Initialization
- Operator Logon / Logoff
- Initiate an EFT Reprint of the last receipt
- Get / Set Date & Time
- POS validation of Card number via 'black list'
- Card read error causes manual entry of Card data at POS, passed for authorization
- Payment system offline from Acquirer, Manual Authorization code entered via POS and passed to payment system
- POS to initiate settlement processes
- System re-alignment after unexpected system downtime/failure

Unlikely to be included in v1

- Diagnosis request
- Get new keys for EFT Device

USE Case: XXXX

Overview:

Xxxxxx

Scenario: YYYYYY

yyyyyyy

Scenario: ZZZZZZ

zzzzzz

USE Case: AAAAA

Overview:

aaaaaaa

Scenario: BBBBB

bbbbbb

Scenario: CCCCCC

cccccc

- **Alternate Scenario: cccc**
- **Alternate Scenario: dddd**

11. References

OPI: Open Payment Initiative

The Open Payment Initiative, or O.P.I. for short, was launched to standardize the application interface between the EPOS application and any cashless payments solution installed on the EFT/PoS terminal. This initiative was driven largely by Wincor-Nixdorf and has not been endorsed/adopted by a recognized standards body.

- http://en.wikipedia.org/wiki/Open_Payment_Initiative
- http://www.wincor-nixdorf.com/internet/site_EN/EN/Products/Software/Retail/StandardsSystemSoftware/OPI/node.html

SEPA: Single European Payment Area

The Single Euro Payments Area (SEPA) initiative for the European financial infrastructure involves the creation of a zone for the euro in which all electronic payments are considered domestic, and where a difference between national and intra-European cross border payments does not exist. The project aims to improve the efficiency of cross border payments and turn the fragmented national markets for euro payments into a single domestic one: SEPA will enable customers to make cashless euro payments to anyone located anywhere in the area using only a single bank account and a single set of payment instruments.[1] The project includes the development of common financial instruments, standards, procedures, and infrastructure to enable economies of scale.

- http://en.wikipedia.org/wiki/Single_Euro_Payments_Area

EPAS: Electronic Protocol Application Software

EPAS is a consortium of key European stakeholders actively involved in the card payment value chain. This initiative aims at defining and promoting a framework of standards to deliver universal interoperability between three types of actors in card payment systems: a Retailer, an Acquirer and a Terminal Management System. The retailer protocol is intended to be based on OPI in order to maintain some level of backwards compatibility.

- <http://en.wikipedia.org/wiki/EPAS>

ISFS: International Forecourt Standards Forum

ISFS is a UK-based European organisation which designs standards for connecting devices on a service station forecourt, such as dispensers, Tank Level Gauges and Outdoor Payment Terminals. In recent years additional standards have been added for Electronic Funds Transfer.

- <http://www.ifsf.org/home.asp>

ISO 8583:

12. Planned Deliverables

Deliverable	Estimated Date	Actual Date
Payments Work Team Charter for TC Approval	2009-05-01	
Payments LCWD Technical Specification DRAFT	2010-12-01	
Payments LCWD to Technical Committee for Approval	tbd	

Once the work team is formed a more concrete schedule will be agreed.

DRAFT