Revision history

Date	Author	Notes
18/11/20	Colin MacDonald	Added revision history for change tracking
18/11/20	Johan Ekberg	Added ExtAuth element to receipt data to indicate that an external (i.e. outside of the terminal) payment process was used
18/2/21	Per Erik Stendahl	Added the MarkUpDescription field in the DCC information
1/6/21	Per Erik Stendahl	Added the ExtraPOIID element to the LoginRequest message
16/2/22	Markus Jägerskogh	Added the attributes Method and ReferenceNumber to the PaymentData element and AlternativePaymentMethod to ReceiptData

Introduction

This document describes the EPAS protocol implementation in the West payment application.

The EPAS protocol is one method of controlling a payment terminal from an Electronic Cash Register (ECR). The EPAS protocol attempts to be very comprehensive and so there is a lot of the EPAS protocol that is unnecessary for these purposes. Despite this, there are a number of gaps in the EPAS protocol that mean some customisation has been required. The aim of this document is to specify which EPAS messages are used, which parts of the messages are relevant, and which messages have been customised to fit the requirements of the payment application.

This document will refer to two specifications:

1. EPAS Org, Sale to POI Protocol Specifications Version 1.0, Date 10th October 2010
2. BABS and CEKAB Cardholder and Operator InterfaceVersion 4.02, Date 25th August 2009

The first of these is the full EPAS specification, and is the primary source for all aspects of the EPAS protocol. The second of these describes standardised screen layouts and messages.

Protocol overview

The interface between the payment application and the ECR provides a range of functionality including:

- ECR login
- Starting a transaction
- Handling message display on the ECR
- Printing receipts on the ECR
- Performing administrative functions

In an EPAS environment the ECR device is the retailer's interface to the complete sales system, while the payment terminal is the customer's interface. During a customer transaction, therefore, the retailer must be able to control and instruct the payment terminal via the ECR's display and keyboard.

Message transport and encoding

All EPAS messages are encoded in XML. XML schema files are available and are used by the payment application to validate inbound messages in real time. The schema files are based on those supplied by EPAS but are amended to include the new messages and fields described in this document. Received messages that fail XML schema validation shall not be processed.

TCP/IP network connection

When operating over a TCP/IP network connection all messages are preceded by a four byte length field as described in section 3.3.1 of the EPAS specification.

You can find the terminal IP by pressing the buttons: **1 4 7 3 6 9** from the "**terminals closed**" screen and then select the **Status** menu and browse next until you find the terminals IP.

Default communication port

The default communication port for EPAS implementations is 3000.

Keepalive

Once connected the ECR must send something to the terminal at regular intervals, otherwise the terminal will assume that the ECR has gone offline or lost connection and will terminate any ongoing service.

If the ECR has no data to send then it can send an empty packet, which is a sequence of four bytes with value zero. Since the first four bytes of a message indicate the message size, this is simply an empty message.

The ECR should aim to send something every two seconds.

The normal approach here is to have a timer that will expire in two seconds. Whenever something is sent to the terminal the timer can be reset. Whenever the timer fires an empty message header can be sent, and the timer is reset to fire two seconds later.

Serial connection (ONLY available for the Classic terminal family)

The payment application can operate EPAS over a serial connection and there is a separate specification that details the low-level protocol involved there.

Message header

The EPAS specification defines a header for each of the message types. The header may contain the following fields:

Data Element	Definition
ProtocolVersion	Version of the EPAS Sale to POI protocol specification. The field is mandatory for a Login request, absent for other messages. See section 3.4.3 of the EPAS specification.
MessageClass	Message class. See section 3.4.2 of the EPAS specification.
MessageCategory	Category of message. See section 3.4.1.3 of the EPAS specification.
MessageType	Message type. See section 3.4.1.3 of the EPAS specification.
ServiceID	The service ID, used to identify a request / response dialogue.
DeviceID	The ID of a device class message, used to match a request and response message pair.
WorkstationID	Identifies the terminal in respect of the EPAS protocol. Once the workstation ID is established, any messages with a different workstation ID will be ignored.
POIID	Identifies the terminal in respect of the wider payment processing system. The terminal ID here is used in PPL configuration and SPDH authorisation requests.

For compactness the message header is not included in the details of the messages below.

Message contents

This section describes the EPAS messages that are supported. Each message is described using the following conventions:

Field Repetitions

The column marked "Mult" describes the minimum and maximum occurrences of that particular element / field, e.g.
[1..1] the element must occur at least once and only once i.e. Mandatory.
[0..1] the element is Optional but may occur once.
[0..n] the element is Optional and may occur n times.

Field rule

The column marked "Rule" indicates any special conditions that apply to the field

Field usage

The column marked "Usage" is used as follows:
On messages originating from the ECR:

- Yes indicates that the element / attribute will, if present, be used by the payment application.
- No indicates that the element / attribute may occur but will be ignored. These fields are marked in pink.

On messages originating from the terminal:

- Yes indicates that the element / attribute will be populated by the payment application.
- No indicates that the element / attribute will either not be included by the payment application, or it will be included but will not contain valid data. These fields are also be marked in pink.

By definition if an element is marked as Yes then all attributes / children of that element will also be 'Yes' unless otherwise indicated, and vice versa.

Mandatory elements

Messages from the ECR to the terminal are validated against the EPAS XML message schema. That means that data elements that are mandatory in the message must be included, even if this document says that they are not used, i.e. marked in red.

Where a data element is not used then the contents of that element are ignored, and all that is needed is to ensure that it meets the schema requirements.

Variations from the EPAS Specification

New message fields have been highlighted with a yellow background. These are not part of the EPAS specification. Fields that are not supported are marked with a pink background. This is the case even if the EPAS specification indicates that those fields are mandatory.

Login message

The Login request is sent by the ECR to enable the payment application on the terminal to process transactions. It contains the three elements required for transaction processing, specifically:

1. The terminal's TSP ID (the POIID data element in the message header);
2. The PPL server that the payment application should go to for configuration data (ConfigHostAddress);
3. The SPDH server that the payment application should use for transaction authorisation (TxnHostAddress).

If the terminal supports multiple concurrent TSP IDs ("Multi-TID") then the alternative TSP IDs can be specified in the ExtraPOIID element. These are in addition to the main TSP ID which still has to be put in the POIID element in the message header.

Login request message

Component	Mult.	Rule	Usage
LoginRequest	[1..1]		
DateTime	[1..1]		Yes

SalesSoftware	[1..1]		No
ManufacturerID	[1..1]		
ApplicationName	[1..1]		
SoftwareVersion	[1..1]		
CertificationCode	[1..1]		
SaleTerminalData	[0..1]	Present if the login involves a Sale Terminal	No
TerminalEnvironment	[1..1]		
SaleCapabilities	[1..1]		
SaleProfile	[0..1]	If at least one element is present	
GenericProfile	[0..1]	default Standard	
ServiceProfiles	[0..1]	If a service profile could be requested	
TotalsGroupID	[0..1]	If present, default value for all transactions.	
TrainingModeFlag	[0..1]	default False	No
OperatorLanguage	[1..1]	Default value for Device type displays.	Yes
OperatorID	[0..1]	Four conditions to send it: a) the Sale System wants the POI log it in the transaction log b) because of reconciliation with total on OperatorID c) because the POI needs it d) acquirer or issuer need it	Yes
ShiftNumber	[0..1]	Same as OperatorID	No
POISerialNumber	[0..1]	If the login involves a POI Terminal and not the first Login to the POI System	No
ConfigData	[0..1]		Yes
TxnHostAddress	[1..1]	This may be supplied as a name or a dotted format IP address. The address may optionally include a port number.	
ConfigHostAddress	[1..1]	This may be supplied as a name or a dotted format IP address. The address may optionally include a port number.	
ConfigFile	[1..1]	Not currently used	
StorePay	[0..1]	Used to define credentials for Svea StorePay / WebPay access	Yes
ID	[1..1]	Svea web API login ID	
Password	[1..1]	Svea web API password	
ExtraPOIID	[0..1]	Alternative TSP IDs, separated by spaces	Yes

Login request example

```
<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Service"
MessageCategory="Login" MessageType="Request" ServiceID="2251"
WorkstationID="" POIID="52400004" />
    <LoginRequest OperatorLanguage="en" OperatorID="Cashier16"
ShiftNumber="2" POISerialNumber="78910AA46010005">
        <DateTime>2015-11-18T16:21:07.1480037+00:00</DateTime>
<ExtraPOIID>52400005 52400006 52400007 52400008</ExtraPOIID>
        <SaleSoftware ManufacturerID="PointOfSaleCo"
ApplicationName="SaleSys" SoftwareVersion="01.98.01"
CertificationCode="ECTS2PS001" />
        <ConfigData>
            <TxnHostAddress>192,168.0.10:45002</TxnHostAddress>
            <ConfigHostAddress>192.168.0.10:21</ConfigHostAddress>
            <ConfigFile />
        </ConfigData>
        <StorePay ID="OSAIKTest" Password="684479" />
    </LoginRequest>
</SaleToPOIRequest>
```

Login response message

Component	Mult.	Rule	Usage
LoginResponse	[1..1]		
Response	[1..1]		Yes
Result	[1..1]	"Success" or "Failure".	
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse	[0..1]	Description of the problem in the failure case.	
POISystemData	[0..1]	if Response.Result is Success	Yes
DateTime	[1..1]	The current date and time on the terminal.	Yes
POISoftware	[1..1]		Yes
ManufacturerID	[1..1]	Empty	
ApplicationName	[1..1]	Empty	
SoftwareVersion	[1..1]	Payment application version.	
CertificationCode	[1..1]	Empty	
POITerminalData	[0..1]	Present if the login involves a POI Terminal.	Yes
TerminalEnvironment	[1..1]	"Attended"	
POICapabilities	[1..1]	"CustomerDisplay CustomerError CustomerInput MagStripe ICC"	
POIProfile	[0..1]	If at least one element is present. The Sale System decides if it can continue or not.	No
GenericProfile	[0..1]	default Standard	
ServiceProfiles	[0..1]	If a service profile could be requested	
POISerialNumber	[1..1]	Terminal serial number	
POIStatus	[0..1]	if Response.Result is Success	No
GlobalStatus	[1..1]		
SecurityOKFlag	[0..1]	If security module present	
PEDOKFlag	[0..1]	If PED present	
CardReaderOKFlag	[0..1]	If card reader device present	
PrinterOKFlag	[0..1]	If printer device present	
CommunicationOKFlag	[0..1]	If communication infrastructure present	
FraudPreventionFlag	[0..1]	Default False	

Login response example

```
<SaleToPOIResponse>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Service"
MessageCategory="Login" MessageType="Response" ServiceID="2251"
WorkstationID="" POIID="52400004" />
    <LoginResponse>
        <Response Result="Success" />
        <POISystemData>
            <DateTime>2015-11-18T16:21:07.0+00:00</DateTime>
            <POISoftware ManufacturerID="" ApplicationName=""
SoftwareVersion="0.0.0" CertificationCode="" />
            <POITerminalData TerminalEnvironment="Attended"
POISerialNumber="D0029">
                <POICapabilities>CustomerDisplay CustomerError
CustomerInput MagStripe ICC</POICapabilities>
            </POITerminalData>
        </POISystemData>
    </LoginResponse>
</SaleToPOIResponse>
```

Logout message

The Logout request is the reverse of the Login request. It may be sent by the ECR when one of the Login request parameters changes, e.g. the cashier ID, or it may be sent at close of business as a way to place the terminal in an idle mode.

Logout request message

The logout request message contain only the message header and a single LogoutRequest element. It has no children or attributes.

Logout request example

```
<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Service"
MessageCategory="Logout" MessageType="Request" ServiceID="4783"
WorkstationID="" POIID="52400004" />
    <LogoutRequest />
</SaleToPOIRequest>
```

Logout response message

Component	Mult.	Rule	Usage
LogoutResponse	[1..1]		
Response	[1..1]		Yes
Result	[1..1]	"Success" or "Failure".	
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse	[0..1]	Description of the problem in the failure case.	

Logout response example

```
<SaleToPOIResponse>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Service"
MessageCategory="Logout" MessageType="Response" ServiceID="2252"
WorkstationID="" POIID="52400004" />
    <LogoutResponse>
        <Response Result="Success" />
    </LogoutResponse>
</SaleToPOIResponse>
```

Admin message

The Admin message allows the ECR to request specific administrative tasks from the payment

application on the terminal. These are not related to an ongoing transaction.

Admin request

Admin request message

AdminRequest	Mult.	Profile	Rule	Usage
AdminRequest	[1..1]		AdminRequest.	
ServiceIdentification	[0..1]		Required Service (see below).	Yes
OperatorID	[0..1]	Operator / cashier ID.	Used in message HostLogin when multiple merchants use the same terminal but with different terminal id:s	Yes

ServiceIdentification field

Possible Values:

ServiceIdentification	Function
ResetMerchantPassword	Resets the Merchant Password.
PrintLastEMVTransaction	Prints the EMV data from the last transaction (using a Print request message).
PrintTerminalConfig	Print details about the terminal's configuration (using a Print request message).
ExtractLogFiles	Sends the current trace log to the ECR via an FTP connection on port 21.
LogLevel_0	Log Error and Status level items.
LogLevel_1	Log Error and Status level items (same as LogLevel_0).
LogLevel_2	Log Warning, Error and Status level items.
LogLevel_3	Log Normal Debug, Warning, Error and Status level items.
LogLevel_4	Log High-volume Debug, Normal Debug, Warning, Error and Status level items
UpdateParameters	Instructs the payment application to check for updated parameters on the PPL server, downloading and installing them if required.
HostLogin	Instructs the payment application to perform a SPDH login transaction to the current SPDH host.
ExtractTransactions	Requests the payment application to report a summary of recent transactions. See the associated additional documentation page for details.

Admin request example

```
<SaleToPOIRequest>
    <MessageHeader MessageClass="Service" MessageCategory="Admin"
MessageType="Request" ServiceID="2254" WorkstationID=""
POIID="52400004" />
    <AdminRequest>
        <ServiceIdentification>HostLogin</ServiceIdentification>
    </AdminRequest>
</SaleToPOIRequest>
```

Admin response message

AdminResponse	Mult.	Rule	Usage
AdminResponse	[1..1]	AdminResponse.	
Response	[1..1]		

Result	[1..1]	"Success" or "Failure".		Yes
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.		Yes
AdditionalResponse	[0..1]	Description of the problem in the failure case.		Yes
AdditionalData	[0..1]	Additional data, depending on the nature of the request		Yes

Admin response example

```
<SaleToPOIResponse>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Service"
MessageCategory="Admin" MessageType="Response" ServiceID="2254"
WorkstationID="" POIID="52400004" />
    <AdminResponse>
        <Response Result="Success" />
    </AdminResponse>
</SaleToPOIResponse>
```

Enable Service message

The Enable Service message provides support to enable / disable the card readers outside of a transaction. This allows the terminal to collect card details and perform initial checks and data acquisition ahead of the actual transaction, saving time for the customer since they can have the card ready to go while the cashier is busy.

Enable Service request message

Component	Mult.	Rule	Usage
EnableService	[1..1]		
TransactionAction	[1..1]	"StartTransaction" or "AbortTransaction"	Yes
ServicesEnabled	[0..1]		No
DisplayOutput	[0..1]	To display an abort message to the Customer.	No
Device	[1..1]	CustomerDisplay.	
InfoQualify	[1..1]	Error.	
OutputContent	[1..1]		
OutputFormat	[1..1]		
PredefinedContent	[0..1]	*Same as Display.*	
ReferenceID	[1..1]		
Language	[0..1]	*Same as Display.*	
OutputText	[0..n]	*Same as Display.*	
Text	[1..1]		
CharacterSet	[0..1]	*Same as Display.*	
Font	[0..1]	*Same as Display.*	
StartRow	[0..1]	*Same as Display.*	
StartColumn	[0..1]	*Same as Display.*	
Color	[0..1]	*Same as Display.*	
CharacterWidth	[0..1]	*Same as Display.*	
CharacterHeight	[0..1]	*Same as Display.*	
CharacterStyle	[0..1]	*Same as Display.*	
Alignment	[0..1]	*Same as Display.*	
OutputXHTML	[0..1]	*Same as Display.*	

OutputSignature	[0..1]	If protection has to be provided to the vendor on the text to display.	

TransactionAction field

When TransactionAction is set to "StartTransaction" then this request instructs the terminal to open the card readers and process any presented card data prior to the start of a transaction. This request does not itself indicate the start of a transaction, and a Payment request is still required (see below).

When TransactionAction is set to "AbortTransaction" then the card readers are closed and cards are not processed.

Enable Service request example

```
<SaleToPOIRequest>
    <MessageHeader MessageClass="Service"
MessageCategory="EnableService" MessageType="Request" ServiceID="2255"
WorkstationID="" POIID="52400004" />
    <EnableServiceRequest TransactionAction="StartTransaction" />
</SaleToPOIRequest>
```

Enable Service response message

Component	Mult.	Rule	Usage
EnableService	[1..1]		Yes
Response	[1..1]		
Result	[1..1]	"Success" or "Failure".	
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse	[0..1]	Description of the problem in the failure case.	

Enable Service response example

```
<SaleToPOIResponse>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Service"
MessageCategory="EnableService" MessageType="Response"
ServiceID="2255" WorkstationID="" POIID="52400004" />
    <EnableServiceResponse>
        <Response Result="Success" />
    </EnableServiceResponse>
</SaleToPOIResponse>
```

Payment message

A Payment request sent by the ECR indicates the start of a transaction. It may include amount data, in which case the transaction can proceed normally, or it may exclude amount data in which case the amount data is provided later when known (the 'swipe-ahead' scenario.)

Payment request message

Component	Mult.	Rule	Usage
PaymentRequest	[1..1]		
SaleData	[1..1]		Yes
OperatorID	[0..1]	If different from the Login.	No
OperatorLanguage	[0..1]	If different from the Login.	No
ShiftNumber	[0..1]	If different from the Login.	No
SaleTransactionID	[1..1]		Yes
TransactionID	[1..1]		

TimeStamp	[1..1]		
SaleReferenceID	[0..1]	If payment reservation.	No
SaleTerminalData	[0..1]	If content is not empty.	No
TerminalEnvironment	[0..1]	If modified since the login.	
SaleCapabilities	[0..1]	If modified since the login (devices failures).	
TotalsGroupID	[0..1]	If modified since, or not in the login and used by the Sale System.	
SaleToPOIData	[0..1]	Stored with the transaction.	No
SaleToAcquirerData	[0..1]	Send to the Acquirer if present.	No
SaleToIssuerData	[0..1]	Send to the Acquirer if present.	No
StatementReference	[0..1]	Information to print on the bank statement.	No
PaymentTransaction	[1..1]		
AmountsReq	[1..1]		
Currency	[1..1]		Yes
RequestedAmount	[0..1]		Yes
CashBackAmount	[0..1]	If payment with cash back requested by the Sale System.	Yes
TipAmount	[0..1]	If this attribute is present with value 0 then tipping is disabled for the transaction. Otherwise it is ignored. Note that this attribute does not specify the amount of tip to be applied.	No
PaidAmount	[0..1]	If SplitPaymentFlag is True.	No
MinimumAmountToDeliver	[0..1]	If unknown maximum amount for a OneTimeReservation or minimum amount requested by the Sale System.	No
MaximumCashBackAmount	[0..1]	Maximum amount which could be requested for cash-back to the Sale System.	No
MinimumSplitAmount	[0..1]	Minimum amount of a split, which could be requested.	No
OriginalTransaction	[0..1]	If UpdateReservation, Completion or Refund.	No
POITransactionID	[0..1]	If SaleReferenceID is insufficient to identify the transaction.	
TransactionID	[1..1]		
TimeStamp	[1..1]		
POIID	[0..1]	If original transaction is coming from another POI.	No
ReuseCardDataFlag	[0..1]	Default True.	No
ApprovalCode	[0..1]	If referral.	No
TransactionConditions	[0..1]	If one data element is present.	Yes
AllowedPaymentBrand	[0..n]	Restrict brand if present.	No
AllowedLoyaltyBrand	[0..n]	Restrict brand if present.	No
LoyaltyHandling	[0..1]	Default Allowed.	No
CustomerLanguage	[0..1]	If the language is selected by the Customer on the Sale System before the request to the POI.	No
ForceOnlineFlag	[0..1]	Default False. Go online if data sent.	No
ForceEntryMethod	[0..n]	Restrict entry mode if sent and no PaymentData or LoyaltyData.CardAcquisitionReference	No
MerchantCategoryCode	[0..1]	The payment implies a specific MCC.	No

AllowChipXpress		[0..1]	Default true. Set false to disable the ChipXpress feature.	Yes
WaitCardRemoval		[0..1]	Default true. Set to false to complete the transaction, i.e. to send the PaymentResponse message, without waiting for the card to be removed.	Yes
DisableTip		[0..1]	Default false. Set to true to disable tip entry for the transaction.	Yes
DisableBankAxept		[0..1]	Default false. Set to true to disable the special handling rules that apply to BankAxept cards.	Yes
SaleItem		[0..n]	If purchased products are required for the payment or loyalty.	Yes
ItemID		[1..1]	Ignored, but required by the message schema when the SaleItem element is present.	Yes
ProductCode		[1..1]	Produce group / code value. This is not directly used by the payment application but can be relevant to the authorisation system	Yes
EanUpc		[0..1]	If data sent, POI has to store it and send it if the host protocol allows it.	No
UnitOfMeasure		[0..1]		No
Quantity		[0..1]	If data sent, POI has to store it and send it if the host protocol allows it.	No
UnitPrice		[0..1]		No
ItemAmount		[1..1]	Ignored, but required by the message schema when the SaleItem element is present.	Yes
TaxCode		[0..1]	If data sent, POI has to store it and send it if the host protocol allows it.	No
SaleChannel		[0..1]	If data sent, POI has to store it and send it if the host protocol allows it.	No
AdditionalProductInfo		[0..1]	If data sent, POI has to store it and send it if the host protocol allows it.	No
PaymentData		[0..1]	If one data element is present.	Yes
PaymentType		[0..1]	Default "Normal", indicating a purchase. Other options are "Refund" and "CashAdvance".	Yes
Method		[0..1]	If the ECR wants/needs to require the PA to use a specific Alternative Payment Method, the name of that method is supplied here. Currently we support one of these vaues: "Swish", "Vipps", "Klarna".	Yes
ReferenceNumber		[0..1]	If this is a reversal of a purchase made using an Alternative Payment Method, the reversal requires the reference number of the original transaction here.	Yes
SplitPaymentFlag		[0..1]	Default False. If split of the amount with possible fleet cards.	No
RequestedReservationTimePeriod		[0..1]	If time period of the OneTimeReservation, FirstReservation or UpdateReservation is requested.	No
CardAcquisitionReference		[0..1]	If the card data comes from a previous CardAcquisition.	No
TransactionID		[1..1]		No
TimeStamp		[1..1]		No
PaymentInstrumentData		[0..1]	If payment instrument data are read by the Sale System.	Yes
PaymentInstrumentType		[1..1]	Only "Card" is accepted.	Yes

CardData		[0..1]	If PaymentInstrumentType is "Card". Note: PCI payment card data will not be accepted by this method.	Yes
EntryMethod		[1..1]	Entry mode of the payment instrument, i.e. Magstripe or Manual	Yes
SensitiveCardData		[0..1]	If structure non empty (could be CMS protected EnvelopedData).	Yes
PAN		[0..1]	If EntryMethod is File, Keyed or Manual.	Yes
CardSeqNumb		[0..1]	If EntryMethod is File, Keyed or Manual and data available on the card.	No
ExpirationDate		[0..1]	If EntryMethod is File, Keyed or Manual and data available on the card.	Yes
TrackData		[0..3]	If EntryMethod is MagStripe or RFID.	Yes
TrackNumb		[0..1]	Default 2.	No
TrackFormat		[0..1]	Default ISO.	No
TrackValue		[1..1]		Yes
CheckData		[0..1]	If PaymentInstrumentType is "Check".	No
BankID		[0..1]	Mandatory if TrackData absent.	
AccountNumber		[0..1]	Mandatory if TrackData absent.	
CheckNumber		[0..1]	Mandatory if TrackData absent.	
TrackData		[0..1]	Mandatory if CheckNumber absent.	
TrackNumb		[0..1]	Default 2.	
TrackFormat		[1..1]	"E-13B" or "CMC-7".	
TrackValue		[1..1]		
CheckCardNumber		[0..1]	If provided by the customer.	
TypeCode		[0..1]	Default Personal.	
Country		[0..1]	Absent if country of the Sale system.	
MobileData		[0..1]	If PaymentInstrumentType is "Mobile".	No
MobileCountryCode		[0..1]	If data available.	
MobileNetworkCode		[0..1]	If data available.	
MaskedMSISDN		[0..1]	If data available.	
Geolocation		[0..1]	If data available.	
ProtectedMobileData		[0..1]	*SensitiveMobileData* protected by CMS EnvelopedData.	
SensitiveMobileData		[0..1]	If unprotected mobile data.	
IMSI		[1..1]		
IMSI		[0..1]	If data available.	
IMEI		[0..1]	If data available.	
LoyaltyData		[0..n]	Loyalty cards used with the payment transaction and read by the Sale System.	No
CardAcquisitionReference		[0..1]	See Loyalty request.	
TransactionID		[1..1]		
TimeStamp		[1..1]		
LoyaltyAccountID		[0..1]	See Loyalty request.	
EntryMethod		[1..1]		
IdentificationType		[1..1]		
LoyaltyID		[1..1]		

LoyaltyAmount	[0..1]	When the Sale System want to make an additional award the Loyalty account.	
LoyaltyUnit	[0..1]	See Loyalty request.	
Currency	[0..1]	See Loyalty request.	
AmountValue	[1..1]		

Payment request example

```
<SaleToPOIRequest>
    <MessageHeader MessageClass="Service" MessageCategory="Payment"
MessageType="Request" ServiceID="4779" WorkstationID=""
POIID="52400004" />
    <PaymentRequest>
        <SaleData>
            <SaleTransactionID TransactionID="2587"
TimeStamp="2017-07-05T17:04:50.0539062+01:00" />
        </SaleData>
        <PaymentTransaction>
            <AmountsReq Currency="SEK" RequestedAmount="1000"
CashBackAmount="0" TipAmount="0.00" />
            <TransactionConditions LoyaltyHandling="Forbidden" />
        </PaymentTransaction>
        <PaymentData PaymentType="Normal">
            <PaymentInstrumentData PaymentInstrumentType="Card">
                <CardData EntryMethod="Manual">
                    <SensitiveCardData PAN="5301250070000050"
CardSeqNumb="01" ExpirationDate="0415" />
                </CardData>
            </PaymentInstrumentData>
        </PaymentData>
    </PaymentRequest>
</SaleToPOIRequest>
```

Payment request example (specifying Alternative Payment Method to use)

```
<SaleToPOIRequest>
    <MessageHeader MessageClass="Service" MessageCategory="Payment"
MessageType="Request" ServiceID="4779" WorkstationID=""
POIID="52400004" />
    <PaymentRequest>
        <SaleData>
            <SaleTransactionID TransactionID="2587"
TimeStamp="2017-07-05T17:04:50.0539062+01:00" />
        </SaleData>
        <PaymentTransaction>
            <AmountsReq Currency="SEK" RequestedAmount="1000"
CashBackAmount="0" TipAmount="0.00" />
            <TransactionConditions LoyaltyHandling="Forbidden" />
        </PaymentTransaction>
        <PaymentData PaymentType="Normal" Method="Swish" />
    </PaymentRequest>
</SaleToPOIRequest>
```

Payment response message

PaymentResponse	Mult.	Rule	Usage
PaymentResponse	[1..1]		
Response	[1..1]		
Result	[1..1]	"Success" or "Failure".	Yes
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	Yes

AdditionalResponse		[0..1]	Description of the problem in the failure case.	Yes
POIData		[1..1]		
POITransactionID		[1..1]		
TransactionID		[1..1]		Yes
TimeStamp		[1..1]		Yes
BatchID		[0..1]	If Result is Success or Partial.	No
PaymentResult		[0..1]	If one data element is present.	Yes
PaymentType		[0..1]	Copy, default Normal.	Yes
PaymentInstrumentData		[0..1]	If a payment instrument is analysed by the POI.	No
PaymentInstrumentType		[1..1]		
CardData		[0..1]	If PaymentInstrumentType is "Card".	
PaymentBrand		[0..1]	If card PAN is readable.	
MaskedPAN		[0..1]	If required for the card, instead of clear PAN.	
EntryMethod		[1..1]	Copy if present in the request.	
CardCountryCode		[0..1]	If available in the card.	
ProtectedCardData		[0..1]	SensitiveCardData protected by CMS EnvelopedData.	
SensitiveCardData		[0..1]	If structure non empty (unprotected).	
PAN		[0..1]	If card PAN is readable.	
CardSeqNumb		[0..1]	If data available on the card.	
ExpirationDate		[0..1]	If data available on the card.	
TrackData		[0..4]	If configured to be sent, and EntryMethod is MagStripe or RFID.	
TrackNumb		[0..1]	Default 2.	
TrackFormat		[0..1]	Default ISO.	
TrackValue		[1..1]		
CheckData		[0..1]	If PaymentInstrumentType is "Check".	No
BankID		[0..1]	Mandatory if TrackData absent.	
AccountNumber		[0..1]	Mandatory if TrackData absent.	
CheckNumber		[0..1]	Mandatory if TrackData absent.	
TrackData		[0..1]	Mandatory if CheckNumber absent.	
TrackNumb		[0..1]	Default 2.	
TrackFormat		[1..1]	"E-13B" or "CMC-7".	
TrackValue		[1..1]		
CheckCardNumber		[0..1]	If provided by the customer.	
TypeCode		[0..1]	Default Personal.	

Country	[0..1]	Absent if country of the Sale system.	
MobileData	[0..1]	If PaymentInstrumentType is "Mobile".	No
MobileCountryCode	[0..1]	If data available.	
MobileNetworkCode	[0..1]	If data available.	
MaskedMSISDN	[0..1]	If data available.	
Geolocation	[0..1]	If data available.	
ProtectedMobileData	[0..1]	*SensitiveMobileData* protected by CMS EnvelopedData.	
SensitiveMobileData	[0..1]	If unprotected mobile data.	
MSISDN	[1..1]		
IMSI	[0..1]	If data available.	
IMEI	[0..1]	If data available.	
AmountsResp	[0..1]	If Result is Success or Partial.	
AuthorizedAmount	[1..1]		Yes
TotalRebatesAmount	[0..1]	If rebate on the total amount or rebate on individual products.	No
TotalFeesAmount	[0..1]	If fees to be charged from a financial service.	No
CashBackAmount	[0..1]	If cashback service was performed with the payment.	No
TipAmount	[0..1]	If payment with tip requested by the Sale System.	No
CurrencyConversion	[0..n]	If currency conversion the Sale needs to know.	No
ConvertedAmount	[1..1]		
AmountValue	[1..1]		
Currency	[1..1]		
ForeignAmount	[0..1]	If the amount before conversion is required.	
Declaration	[0..1]	If a declaration has to be presented to the customer.	
MerchantOverrideFlag	[0..1]	Default "False". If payment forced by the Cashier.	No
AllowedReservationTimePeriod	[0..1]	If OneTimeReservation, FirstReservation or UpdateReservation and Result is Success.	No
AllowedProduct	[0..n]	If ErrorCondition is "PaymentRestriction" (some products are not payable by the payment card).	No
PaymentAcquirerData	[0..1]	If card PAN is readable.	No
AcquirerID	[0..1]	If several Acquirers.	
AcquirerPOIID	[1..1]		
AcquirerTransactionID	[0..1]	If provided by the Acquirer.	
TransactionID	[1..1]		

TimeStamp		[1..1]		
ApprovalCode		[0..1]	If available.	
ReconciliationID		[0..1]	If provided by the Acquirer.	
LoyaltyResult		[0..n]	Loyalty cards used with the payment transaction. First the loyalty account present in the request in the same order if any.	No
LoyaltyAccount		[1..1]		
LoyaltyAccountID		[1..1]		
EntryMethod		[1..1]		
IdentificationType		[1..1]		
IdentificationSupport		[1..1]		
LoyaltyID		[1..1]		
LoyaltyBrand		[0..1]		
CurrentBalance		[0..1]		
LoyaltyAmount		[0..1]		
LoyaltyUnit		[0..1]		
Currency		[0..1]		
AmountValue		[1..1]		
LoyaltyAcquirerData		[0..1]		
LoyaltyAcquirerID		[0..1]		
ApprovalCode		[0..1]		
LoyaltyTransactionID		[0..1]		
TransactionID		[1..1]		
TimeStamp		[1..1]		
ReconciliationID		[0..1]		
Rebates		[0..1]		
TotalRebate		[0..1]		
RebateLabel		[0..1]		
SaleItemRebate		[0..n]		
ItemID		[1..1]		
ProductCode		[1..1]		
UnitOfMeasure		[0..1]		
Quantity		[0..1]		
ItemAmount		[0..1]		
RebateLabel		[0..1]		

Payment response example

```
<SaleToPOIResponse>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Service"
MessageCategory="Payment" MessageType="Response" ServiceID="4778"
WorkstationID="" POIID="52400004" />
    <PaymentResponse>
        <Response Result="Success" />
        <POIData>
            <POITransactionID TransactionID="000000402768"
TimeStamp="2017-07-05T14:42:14.0+00:00" />
        </POIData>
        <PaymentResult PaymentType="Normal">
            <AmountsResp AuthorizedAmount="1000.00" />
        </PaymentResult>
    </PaymentResponse>
</SaleToPOIResponse>
```

Loyalty Message

A Loyalty request message is sent from the terminal to the ECR when a card is read and the card is confirmed as a loyalty card. Note that PCI rules prohibit sending payment card details to the ECR without encryption, therefore combined payment / loyalty cards are treated only as payment cards when the payment application is running EPAS.

Loyalty request message

LoyaltyRequest Component	Mult.	Rule	Usage
LoyaltyRequest	[1..1]		
SaleData	[1..1]	Same as PaymentRequest.SaleData.	
OperatorID	[0..1]		No
OperatorLanguage	[0..1]		No
ShiftNumber	[0..1]		No
SaleTransactionID	[1..1]		Yes
TransactionID	[1..1]	Included in the request, but the transaction ID is not set	
TimeStamp	[1..1]	Included in the request, but the timestamp is not set	
SaleTerminalData	[0..1]		No
TerminalEnvironment	[0..1]		
SaleCapabilities	[0..1]		
TotalsGroupID	[0..1]		
SaleToPOIData	[0..1]	Stored with the transaction.	No
SaleToAcquirerData	[0..1]	Sent to the Acquirer if present.	No
SaleToIssuerData	[0..1]	Sent to the Issuer if present and content is not empty (add an additional container).	No
StatementReference	[0..1]		
LoyaltyTransaction	[1..1]		
LoyaltyTransactionType	[1..1]	Uses the same transaction types as a payment request.	Yes
Currency	[0..1]	If TotalAmount is present, and different from default currency.	Yes
TotalAmount	[0..1]	If the loyalty transaction is linked to a payment transaction.	Yes
OriginalTransaction	[0..1]	If LoyaltyTransactionType is "AwardRefund", "RebateRefund" or "RedemptionRefund".	No
POITransactionID	[1..1]		
TransactionID	[1..1]		

TimeStamp	[1..1]		
ReuseCardDataFlag	[0..1]	Default True.	
TransactionConditions	[0..1]	If one data element is present.	No
AllowedLoyaltyBrand	[0..n]	Restrict brand if data sent and no LoyaltyData.CardAcquisitionReference.	
CustomerLanguage	[0..1]	*See Payment request.*	
ForceOnlineFlag	[0..1]	Default False. Go online if data sent.	
ForceEntryMethod	[0..n]	Restrict entry mode if sent and no LoyaltyData.CardAcquisitionReference.	
SaleItem	[0..n]	If relevant for the loyalty transaction (*see PaymentRequest.transactionData*).	No
ItemID	[1..1]		
ProductCode	[1..1]		
EanUpc	[0..1]		
UnitOfMeasure	[0..1]	If Quantity present.	
Quantity	[0..1]		
UnitPrice	[0..1]	If Quantity present.	
ItemAmount	[1..1]		
TaxCode	[0..1]		
SaleChannel	[0..1]		
AdditionalProductInfo	[0..1]		
LoyaltyData	[0..n]	If content is not empty.	Yes
CardAcquisitionReference	[0..1]	If the loyalty account ID comes from a previous. CardAcquisition	No
TransactionID	[1..1]		
TimeStamp	[1..1]		
LoyaltyAccountID	[0..1]	If loyalty identification of the loyalty account is realised by the Sale System.	Yes
EntryMethod	[1..1]		
IdentificationType	[1..1]	Always "PAN"	
LoyaltyID	[1..1]	Loyalty card number / ID	
LoyaltyAmount	[0..1]	If loyalty amount is not computed on TotalAmount.	No
LoyaltyUnit	[0..1]	Default Point.	
Currency	[0..1]	If LoyaltyUnit is Monetary.	
AmountValue	[1..1]		

Loyalty request example

```
<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Device"
MessageCategory="Loyalty" MessageType="Request" ServiceID="0"
DeviceID="21" WorkstationID="" POIID="52400004" />
    <LoyaltyRequest>
        <SaleData>
            <SaleTransactionID TransactionID=""
TimeStamp="0001-01-01T00:00:00.0+00:00" />
        </SaleData>
        <LoyaltyTransaction LoyaltyTransactionType="Award"
Currency="SEK" TotalAmount="0.00" />
        <LoyaltyData>
            <LoyaltyAccountID EntryMethod="MagStripe"
IdentificationType="PAN">
                <LoyaltyID>4581980303310132</LoyaltyID>
            </LoyaltyAccountID>
        </LoyaltyData>
    </LoyaltyRequest>
</SaleToPOIRequest>
```

Loyalty response message

LoyaltyResponse Component	Mult.	Rule	Usage
LoyaltyResponse	[1..1]		
Response	[1..1]		Yes
Result	[1..1]	"Success" or "Failure".	
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse	[0..1]	Description of the problem in the failure case.	
POIData	[1..1]		No
POITransactionID	[1..1]		
TransactionID	[1..1]		
TimeStamp	[1..1]		
BatchID	[1..1]		
LoyaltyResult	[0..n]	*See PaymentResponse.*	No
LoyaltyAccount	[1..1]		
LoyaltyAccountID	[1..1]		
EntryMethod	[1..1]		
IdentificationType	[1..1]		
IdentificationSupport	[1..1]		
LoyaltyID	[1..1]		
LoyaltyBrand	[0..1]	If a card is analysed.	
CurrentBalance	[0..1]	If known (provided by the card or an external host).	
LoyaltyAmount	[0..1]	Mandatory if transaction success and no rebate.	
LoyaltyUnit	[0..1]	Default Point.	
Currency	[0..1]	If LoyaltyUnit is Monetary.	
AmountValue	[1..1]		
LoyaltyAcquirerData	[0..1]	If acquirer contacted.	
LoyaltyAcquirerID	[0..1]	If available.	
ApprovalCode	[0..1]	If provided by the Acquirer.	
LoyaltyTransactionIDLoyalty	[0..1]	If provided by the Loyalty Acquirer.	
TransactionID	[1..1]		

TimeStamp	[1..1]		
ReconciliationID	[0..1]	If provided by the Acquirer.	
Rebates	[0..1]	if rebates awarded.	
TotalRebate	[0..1]	If rebate on the total amount for this loyalty program.	
RebateLabel	[0..1]	If provided by the Acquirer.	
SaleItemRebate	[0..n]	Only item with rebate (identified by ItemID).	
ItemID	[1..1]		
ProductCode	[1..1]		
UnitOfMeasure	[0..1]	If Quantity present.	
Quantity	[0..1]	If rebate is additional units.	
ItemAmount	[0..1]	If rebate on the line item amount.	
RebateLabel	[0..1]	If provided by the Acquirer.	

Loyalty response example

```
<SaleToPOIResponse>
    <MessageHeader MessageClass="Service" MessageCategory="Loyalty"
MessageType="Response" DeviceID="21" ServiceID="0" WorkstationID=""
POIID="52400004" />
    <LoyaltyResponse>
        <Response Result="Success" />
        <POIData BatchID="">
            <POITransactionID TransactionID=""
TimeStamp="2012-05-04T10:45:35.6+01:00" />
        </POIData>
    </LoyaltyResponse>
</SaleToPOIResponse>
```

Reversal Message

The Reversal request informs the terminal that the previous transaction must be reversed. Only the most recent transaction can be reversed, and when a new transaction is started then the previous transaction can no longer be reversed.

Reversal request message

ReversalRequest	Mult.	Rule	Usage
ReversalRequest	[1..1]		
SaleReferenceID	[0..1]	If payment reservation reversal.	No
OriginalTransaction	[1..1]		Yes
WorkstationID	[0..1]	Default MessageHeader.WorkstationID.	No
POIID	[0..1]	Default MessageHeader.POIID.	No
POITransactionID	[1..1]	Identification of the Loyalty/Payment to reverse.	Yes
TransactionID	[1..1]	ID of the transaction to reverse	
TimeStamp	[1..1]	Not used, but required by the schema	No
StorePay	[0..1]	Used if reversing a Svea transaction	Yes
ContactID	[1..1]	The Svea contract ID	Yes

OperatorID	[0..1]	Operator / cashier ID.	Used when multiple merchants use the same terminal but with different terminal id:s. If used, it must match the OperatorId on the transaction to be reversed.
ReversedAmount	[0..1]		No
ReversalReason	[1..1]	One of the reversal reasons defined in the EPAS specification	Yes

Reversal request example

```
<SaleToPOIRequest>
    <MessageHeader MessageClass="Service" MessageCategory="Reversal"
MessageType="Request" ServiceID="74" WorkstationID="" POIID="52400004"
/>
    <ReversalRequest ReversalReason="CustCancel">
        <OriginalTransaction WorkstationID="" POIID="52400004">
            <POITransactionID TransactionID="524000040436"
TimeStamp="2012-05-04T16:05:21.0+00:00" />
        </OriginalTransaction>
    </ReversalRequest>
</SaleToPOIRequest>
```

Reversal response message

Component	Mult.	Rule	Usage
ReversalResponse	[1..1]		
Response	[1..1]		Yes
Result	[1..1]	"Success" or "Failure".	
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse	[0..1]	Description of the problem in the failure case.	
POIData	[0..1]	If Result is Success.	Yes
POITransactionID	[1..1]		
TransactionID	[1..1]		
TimeStamp	[1..1]		
BatchID	[0..1]	If Result is Success.	No
ReversedAmount	[0..1]	Copy.	No

Reversal response example

```
<SaleToPOIResponse>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Service"
MessageCategory="Reversal" MessageType="Response" ServiceID="77"
WorkstationID="" POIID="52400004" />
    <ReversalResponse>
        <Response Result="Success" />
        <POIData>
            <POITransactionID TransactionID=""
TimeStamp="0001-01-01T00:00:00.0+00:00" />
        </POIData>
    </ReversalResponse>
</SaleToPOIResponse>
```

Display Message

The EPAS specification defines the display processing as symmetrical, i.e. the ECR and the payment terminal can each send requests to the other to request that something is displayed on

screen. In practice there is limited support for this arrangement:

- Display request from the terminal: The West payment application will sending display requests to the ECR to inform the cashier of the transaction progress and also to get input from the cashier.
- Display request from the ECR: This is only supported in one specific case, which is to display a QR code on the screen of the payment application in order to support alternative payment methods. The payment application will not handle requests to display text on the terminal's screen.

Display request message, when sent by the payment application

The ECR can use the display requests to track the progress of a transaction by checking the prompt ID. This allows the ECR / cashier to be aware of what stage the transaction has reached. The prompt IDs are included in a table below.

The Display Request message shall be sent for every time the payment terminal prompts for new information, e.g. insert card, enter PIN, pin invalid – try again. The Display Request message is defined in section 4.5.2.3 of the EPAS specification. The payment terminal does not expect a response to this message. Display Response messages will be ignored.

The display output text will be provided in the chosen operator language, which may be different to the cardholder language being used on the terminal. To make it easier for the ECR device to know exactly which step the payment processing has reached, an enumerated type is added to the message. This will be constant regardless of the display language and uniquely identify each step.

DisplayRequest	Mult.	Rule	Usage
DisplayRequest	[1..1]		
DisplayOutput	[1..n]	Complete display content for output devices. At most one DisplayOutput per Device/InfoQualify pair.	Yes
ResponseRequiredFlag	[0..1]	False The POI will not expect a response from the ECR for this message. If a response is received it will be ignored..	Yes
MinimumDisplayTime	[0..1]	Default 0	No
Device	[1..1]	CashierDisplay.	Yes
InfoQualify	[1..1]	POIReplication.	Yes
OutputContent	[1..1]		Yes
OutputFormat	[1..1]	Only ever set to "Text".	Yes
PredefinedContent	[0..1]	Mandatory, if OutputFormat is MessageRef. Otherwise not allowed.	No
ReferenceID	[1..1]		
Language	[0..1]	Default language if absent.	
OutputText	[0..n]	Mandatory, if OutputFormat is Text. Since this is the only supported display request, the output text should always be present. There is one instance of the OutputText element per line of text to display. Instead of using the various attributes from the EPAS specification the payment application will include the text to display as the OutputText's data.	Yes
Text	[1..1]		No
CharacterSet	[0..1]	If not present, the settings of the target system or device are used.	
Font	[0..1]	If not present, the settings of the target system or device are used.	
StartRow	[0..1]	If not present, the settings of the target system or device are used (e.g. current row position).	

StartColumn		[0..1]	If not present, the settings of the target system or device are used (e.g. current column position).	
Color		[0..1]	If not present, default colour used.	
CharacterWidth		[0..1]	If not present, default width used.	
CharacterHeight		[0..1]	If not present, default height used.	
CharacterStyle		[0..1]	If not present, default style used.	
Alignment		[0..1]	If not present, default alignment used.	
EndOfLineFlag		[0..1]	Default True.	
OutputXHTML		[0..1]	Mandatory, if OutputFormat is XHTML Not allowed, otherwise.	No
OutputBarcode		[0..1]	Mandatory, if OutputFormat is BarCode Not allowed, otherwise.	No
BarcodeType		[0..1]	Default EAN13 EAN8, EAN13, UPCA, Code25, Code128, PDF417.	
BarcodeValue		[1..1]		
OutputSignature		[0..1]	If protection has to be provided to the vendor on the text to display.	No
PromptID		[1..1]	Numeric prompt ID referring to CHAOI.	Yes
Input		[0..1]	If this element is present then it indicates that the ECR should prompt for cashier input. The input may be optional, e.g. the selection of the customer language, or it can be mandatory, e.g. a voice referral authorisation number is needed. Responses are sent as a separate Input Response message. This is discussed later in this document.	Yes
Type		[1..1]	TextString, DecimalString, DigitString, Password or OptionList The first four of these indicate the type of data that is required: • TextString: Any text can be entered. • DecimalString: Any decimal number can be entered, using a '.' as a decimal separator. • DigitString: Any sequence of digits can be entered, without a decimal separator. • Password: Any text can be entered, and normal password entry procedures should be followed to hide the entered password from view. If the Type is OptionList then the ECR should present a list of options, detailed below, to the cashier for selection.	
Required		[0..1]	Yes or No. If the input is required then the payment application will expect a response and will wait for the response to arrive. If No then the payment application will not wait for a response, but a response can be sent asynchronously. If this attribute is missing then No should be assumed.	
Option		[0..n]	At least one is required if Type = OptionList	

Prompt ID

Where appropriate, the PromptID element contains the number of the screen being displayed as defined in the Carholder and Operator Interface specification (CHAOI). For example, CHAOI screen reference 611 indicates that the terminal is waiting for a new customer, while 662 indicates an approved signature transaction.

CHAOI does not cover all the displays that are needed to operate the payment application. The list below shows the custom prompts that have been implemented by the application but that are not covered in the CHAOI.

Custom Prompt IDs

Prompt ID	Display detail
100	Shows the idle screen, essentially a 'welcome' screen, prior to a transaction being initiated by the ECR. This includes the merchant name taken from configuration data.
101	Shows a 'please wait' screen. Note that this prompt ID should never be sent to the ECR, because this display is intended to be shown to the customer while another message (e.g. a Loyalty Request message) is being sent to the ECR. This is only listed here for completeness.
102	Shows 'Refund above maximum'. Where a refund request includes an amount above the limit configured for the card then this prompt is shown prior to the transaction ending.
103	Not used in this application.Contradicts the text at the beginning of the section.
104	Shows 'Card cannot be read, transaction not possible' when a magnetic stripe card read has failed three times and the terminal is configured such that manual entry is not allowed.
105	Shows the gratuity entry screen, allowing the customer to adjust the amount upwards if they want to. The ECR can instruct the terminal to skip this process.
106	Confirms the adjusted amount following gratuity entry, where the gratuity is more than 30% above the original amount.
107	Informs the customer that the adjusted amount is too low. The customer can press Enter to return to the gratuity entry screen (105).
108	Not used in this application.See previous comment.
109	Informs the user that, after choosing not to enter a PIN, a signature is not a valid authorisation mechanism for the card, and so the transaction can not continue.
110	Start-up screen, shown while waiting for an ECR event to initiate a transaction.
111	Not used in this application.
112	Shows the same text as screen 6221 (see ref [4]) but does not offer the 'Force' option to the ECR because the parameters do not allow that option.
113	'Network service error', shown to the cardholder when the terminal is unable to open a listening network connection for the ECR to connect to. By definition, therefore, this text cannot be shown on the ECR.
114	Shows a 'terminal not operational' prompt in the event that the EMV card profiles failed to load.
115	Shown when a loyalty card is rejected by the ECR
116	Asks the cardholder to confirm whether or not use the presented combination card as a payment card
117	Tells the cardholder that their loyalty card has been accepted and that they should now insert a payment card
118	Tells the cardholder that their card has been inserted early and that they should remove it.
119	Informs the cardholder that the terminal is about to restart.

120	Indicates an approved reversal.
121	Indicates that cashier input is needed.
122	The adjusted amount (tip entry) is too high.
123	A loyalty card should be inserted / swiped.
124	A payment card should be inserted / swiped. This is used when a loyalty card has already been read.
125	A loyalty card was required but the card that was presented was not a loyalty card.
126	A payment card was required but the card that was presented was not a payment card.
127	A loyalty card has been read in the context of a loyalty card transaction so the card can be taken.
128	A chip failure has occurred, where the data received from the chip has not been correct.
129	The payment application is loading parameters
130	The pament application is being updated
131	Not used
132	A combined payment / loyalty card has been accepted. Note that this is not currently possible in an EPAS environment.
133	A payment card has been accepted.
134	A refund is being requested and DCC is enabled for the card being used. The cashier must check on the original receipt to see if DCC was used in the original transaction.
135	In a DCC transaction the cardholder is being asked to select between their home currency or the local currency.
136	A refund is being requested and DCC is enabled for the card being used. The cardholder is being asked if DCC was used in the original transaction.
137	Svea transaction: the payment application is waiting for the transaction amount.
138	Svea transaction: the list of payment plans is being retrieved.
139	Svea transaction: the customer is being prompted to select a payment plan.
140	Svea transaction: the type of customer ID is being requested.
141	Svea transaction: the customer ID is being requested.
142	Svea transaction: the customer is being asked to confirm the contract.
143	Svea transaction: the customer has cancelled the contract.
144	Svea transaction: a failure has occurred during the Svea transaction.
145	Svea transaction: the Svea credit check has been declined.
160	Contactless transaction: the customer is using a phone or other external device, and the payment application is waiting for something to be completed on the device.
161	Contactless transaction: the contactless transaction has been denied and the customer should use the chip instead.
162	Contactless transaction: the contactless transaction has been denied and the customer should use a different card, or the chip on the same card.
163	Contactless transaction: A card collision has occurred, where multiple cards have been presented.
200	IPOS environment only: The wrong data protection level has been selected.
201	IPOS environment only: The cashier should enter the card number on the ECR.

202	IPOS environment only: The cahier should enter the card's expiry date on the ECR.
203	IPOS environment only: The cashier should re-enter the card's expiry date on the ECR.
300	Unattended terminal: the terminal is out of service.
653	CHAOI extension: the standard meaning of this prompt is to say that a signature override is not possible. This prompt will be used in the same way as 652 but where 652 allows a signature override, prompt 653 does not.
800 - 899	Reserved for internal use, these should not be reported to the ECR.
900	The terminal is restarting due to a technical or system error.

ECR Input

The Display request has an optional Input component, discussed above. This indicates to the ECR that a response may be sent back to the terminal. Some of those responses are optional while some are required. Responses are always in text form, but the response may need to be formatted in a certain way. Some responses are items selected from a list of possibilities. Table 2 shows which responses are possible for each of the prompts that include an Input component. Prompts are sent back to the terminal as an Input response message.

Responses to Input components in Display requests

Prompt ID	Purpose	Optional or Required	Response type	Response contents
105	Gratuity amount required	Optional	Option selection	"skip": continue the transaction without any gratuity If no response is sent then the terminal will continue processing once the user has entered the gratuity amount.
6221	Override the terminal so that a magnetic stripe swipe is enabled even though the card prefers that the chip be used	Optional	Option selection	"force": enable the magnetic stripe fallback If no response is sent then the terminal will wait for the customer to insert the card into the chip reader.
641	Selection between credit / debit card	Optional	Option selection	"credit": use credit card function of the presented card "debit": use debit card function of the presented card
642	Payment code required	Required	Text string	The payment code should be supplied. Note that the payment code length is determined by the card parameters, and an incorrect payment code length will cause this prompt to be sent again.
645	VAT amount incorrect, re-enter	Required	Decimal string	The VAT amount supplied is too high (effective rate is > 100%) and must be re-entered
646	CV2 required	Required	Digit string	The CV2 / security code should be supplied. (This functionality is currently disabled due to PA/DSS requirements and local agreements.)
649	Imprint of embossed card should be taken	Required	Option selection	"continue": indicates that the card imprint has been taken. If this is impossible, the transaction should be aborted.

6410	VAT amount confirmation required	Required	Decimal string	The VAT amount of the transaction is required. The terminal will include a proposed amount in the display request and the ECR may choose to display this amount as a default value. The amount sent back to the terminal will, however, be the definitive VAT amount for the transaction.
652	PIN Entry	Optional	Option	"sign": permit signature authentication rather than PIN entry If no response is sent then the terminal will proceed with PIN entry.
653	PIN Entry	None	-	This screen does not follow the meaning in ref [4]. Instead it is identical to 652 except that no signature override is offered.
662	Signature verification	Required	Option	The customer should sign the receipt and the cashier should check the signature matches the one on the card. "yes": signature is verified as correct. "no": signature is not correct.
664	Voice referral	Required	Text string	The authorisation code for the transaction should be entered following a voice referral. Alternatively the transaction should be aborted if approval is not given.
6619	Voice referral	Required	Text string	The same as 664, but used where an invalid authorisation code was supplied.
676	Parameter download reminder	Required	Option	When the SPDH host sends a 13x trigger then the operator needs to be asked about a parameter download between each transaction. "yes": download and apply the parameters now "no": do not download the parameters yet.

Display request examples

```
<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Device"
MessageCategory="Display" MessageType="Request" ServiceID="4784"
DeviceID="5" WorkstationID="" POIID="52400004" />
    <DisplayRequest>
      <DisplayOutput ResponseRequiredFlag="false"
Device="CashierDisplay" InfoQualify="POIReplication">
        <OutputContent OutputFormat="Text">
            <OutputText>Invalid logon</OutputText>
            <OutputText>Call helpdesk Support</OutputText>
        </OutputContent>
     </DisplayOutput>
     <PromptId>682</PromptId>
   </DisplayRequest>
</SaleToPOIRequest>
```

```
<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Device"
MessageCategory="Display" MessageType="Request" ServiceID="4788"
DeviceID="12" WorkstationID="" POIID="52400004" />
    <DisplayRequest>
        <DisplayOutput ResponseRequiredFlag="false"
Device="CashierDisplay" InfoQualify="POIReplication">
            <OutputContent OutputFormat="Text">
                <OutputText>New customer</OutputText>
                <OutputText>Waiting for card</OutputText>
            </OutputContent>
        </DisplayOutput>
        <PromptId>612</PromptId>
        <Input Type="OptionList">
            <Option>Swedish</Option>
            <Option>English</Option>
            <Option>Norwegian</Option>
        </Input>
    </DisplayRequest>
</SaleToPOIRequest>

<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Device"
MessageCategory="Display" MessageType="Request" ServiceID="4791"
DeviceID="19" WorkstationID="" POIID="52400004" />
    <DisplayRequest>
        <DisplayOutput ResponseRequiredFlag="false"
Device="CashierDisplay" InfoQualify="POIReplication">
            <OutputContent OutputFormat="Text">
                <OutputText>1 000,00 SEK</OutputText>
                <OutputText>VISA</OutputText>
                <OutputText>Verify signature</OutputText>
            </OutputContent>
        </DisplayOutput>
        <PromptId>662</PromptId>
        <Input Type="OptionList" Required="Yes">
          <Option>yes</Option>
          <Option>no</Option>
        </Input>
    </DisplayRequest>
</SaleToPOIRequest>
```

Display request message, when sent by the ECR

There is only one situation where the ECR can send a display request to the payment application, and that is to display a QR code on the terminal screen. The payment application will only display the QR code if that feature is enabled in configuration, and also it will only display the QR code at specific times. So this display request can be interpreted as supplying a QR code value to be displayed when appropriate, rather than to be displayed at the time the message is sent.

If the QR code is no longer required then a new request can be sent where the QR code value is empty.

DisplayRequest	Mult.	Rule	Usage
DisplayRequest	[1..1]		
DisplayOutput	[1..n]	Complete display content for output devices. At most one DisplayOutput per Device/InfoQualify pair.	Yes
ResponseRequiredFlag	[0..1]	The payment application will send a response if required. The response indicates if QR codes are enabled in configuration, and does not indicate that the QR code has actually been displayed.	Yes
MinimumDisplayTime	[0..1]	Default 0	No
Device	[1..1]	Ignored	Yes
InfoQualify	[1..1]	Ignored	Yes
OutputContent	[1..1]		Yes

	OutputFormat	[1..1]	"BarCode"		Yes
	PredefinedContent	[0..1]	Mandatory, if OutputFormat is MessageRef. Otherwise not allowed.		No
	ReferenceID	[1..1]			
	Language	[0..1]	Default language if absent.		
	OutputText	[0..n]	Not supported		No
	Text	[1..1]			
	CharacterSet	[0..1]	If not present, the settings of the target system or device are used.		
	Font	[0..1]	If not present, the settings of the target system or device are used.		
	StartRow	[0..1]	If not present, the settings of the target system or device are used (e.g. current row position).		
	StartColumn	[0..1]	If not present, the settings of the target system or device are used (e.g. current column position).		
	Color	[0..1]	If not present, default colour used.		
	CharacterWidth	[0..1]	If not present, default width used.		
	CharacterHeight	[0..1]	If not present, default height used.		
	CharacterStyle	[0..1]	If not present, default style used.		
	Alignment	[0..1]	If not present, default alignment used.		
	EndOfLineFlag	[0..1]	Default True.		
	OutputXHTML	[0..1]	Mandatory, if OutputFormat is XHTML Not allowed, otherwise.		No
	OutputBarcode	[0..1]	Mandatory, if OutputFormat is BarCode Not allowed, otherwise.		Yes
	BarcodeType	[0..1]	Ignored, only QR codes are supported.		No
	BarcodeValue	[1..1]	The value to be encoded as a QR code image		
	OutputSignature	[0..1]	If protection has to be provided to the vendor on the text to display.		No

Display request example

```
<SaleToPOIRequest>
    <MessageHeader MessageClass="Device" MessageCategory="Display"
MessageType="Request" WorkstationID="" POIID="52400004" />
    <DisplayRequest>
        <DisplayOutput Device="CustomerDisplay" InfoQualify="Display"
ResponseRequiredFlag="true">
            <OutputContent OutputFormat="BarCode">
                <OutputBarcode
BarcodeValue="http://www.westint.se/produkter-och-tjanster/#korttermin
aler" />
            </OutputContent>
        </DisplayOutput>
    </DisplayRequest>
</SaleToPOIRequest>
```

Input response

The terminal application does not support the Input request message. Instead, if a response is required from the ECR then the information will be included in the optional Input element of the Display request that prompts for the information (see above).

Cashier responses are sent to the payment terminal using the Input response message.

The Input response message is also used to inform that application of the transaction amounts in cases where the Payment request was sent with no amount information.

Note that the Input response may be sent to the payment terminal without a previous Input request having been issued (since Input request is not supported).

Input response message

Component	Mult.	Rule	Usage
InputResponse	[1..1]		Yes
OutputResult	[0..1]	If *DisplayOutput* present in the request.	No
Device	[1..1]	Copy.	
InfoQualify	[1..1]	Copy.	
Response	[1..1]		
Result	[1..1]	"Success" or "Failure".	
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse	[0..1]	Description of the problem in the failure case.	
InputResult	[1..1]		
Device	[1..1]	CashierInput , CustomerInput. Only "CashierInput" is supported.	Yes
InfoQualify	[1..1]	Input, CustomerAssistance.	Yes
Response	[1..1]		Yes
Result	[1..1]	"Success" or "Failure".	
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse	[0..1]	Description of the problem in the failure case.	
Input	[0..1]	If Response.Result is Success and AmountsReq is not used.	Yes
InputCommand	[1..1]	• "TransactionAmount", or • "NonPciCardData", or • the Prompt ID echoed from the associated Display request.	Yes
ConfirmedFlag	[0..1]	Mandatory, if InputCommand is GetConfirmation or SiteManager. Not allowed, otherwise.	No
FunctionKey	[0..1]	Mandatory, if InputCommand is GetFunctionKey. Not allowed, otherwise.	No
TextInput	[0..1]	Mandatory, if InputCommand is a prompt ID	Yes
DigitInput	[0..1]	Mandatory, if InputCommand is DigitString. Not allowed, otherwise.	No
Password	[0..1]	Mandatory, if InputCommand is Password. Not allowed, otherwise.	No
MenuEntryNumber	[0..1]	Mandatory, if InputCommand is GetMenuEntry. Not allowed, otherwise.	No
AmountsReq	[0..1]	Required if InputCommand = TransactionAmount	Yes
RequestedAmount	[0..1]	Must be non-zero.	

	CashBackAmount	[0..1]	If payment with cash back requested by the Sale System. Only required if non-zero.	
	TipAmount	[0..1]	If this attribute is present with value 0 then tipping is disabled for the transaction. Otherwise it is ignored. Note that this attribute does not specify the amount of tip to be applied.	
	VatAmount	[0..1]	VAT amount	
	NonPciCardData	[0..1]	Required if InputCommand = NonPciCardData	
	Number	[1..1]	Card number	
	Expiry	[1..1]	Card expiry date, formatted as MMYY	

InputCommand Field

There are three forms of the Input response message, and these are controlled by the InputCommand attribute. The three options for InputCommand are:

"TransactionAmount"

This is used to supply the amount details for a swipe-ahead transaction has that already begun. A swipe-ahead transaction is one that is launched with zero amounts, in which case the payment application will wait for the amount data to be supplied via this input response mechanism.

In this case the AmountsReq element must be provided.

"NonPciCardData"

The ECR can supply card data for a non-PCI card via an Input response message. This is done instead of the cardholder presenting the card on the terminal.

In this case the card number is given in the "Number" attribute and the expiry data in the "Expiry" attribute.

Prompt ID

If the InputCommand attribute contains the numeric prompt ID of a previous display request then the content of the TextInput attribute is interpreted as the ECR's response.

Input response examples

Example response to choose signature verification

Here the cashier has requested signature verification at the PIN entry stage (prompt 652)

```
<SaleToPOIResponse>
   <MessageHeader MessageClass="Device" MessageCategory="Input"
MessageType="Response" ServiceID="4792" DeviceID="1" WorkstationID=""
POIID="52400004" />
   <InputResponse>
      <InputResult Device="CashierInput" InfoQualify="Input">
         <Response Result="Success" />
         <Input InputCommand="652">
         <TextInput>sign</TextInput>
         </Input>
      </InputResult>
   </InputResponse>
</SaleToPOIResponse>
```

Example response to signature verification

Here the cashier has confirmed that the signature is correct (prompt 662)

```
<SaleToPOIResponse>
    <MessageHeader MessageClass="Device" MessageCategory="Input"
MessageType="Response" ServiceID="4793" DeviceID="2" WorkstationID=""
POIID="52400004" />
    <InputResponse>
        <InputResult Device="CashierInput" InfoQualify="Input">
            <Response Result="Success" />
            <Input InputCommand="662">
            <TextInput>yes</TextInput>
            </Input>
        </InputResult>
    </InputResponse>
</SaleToPOIResponse>
```

Example swipe-ahead amount supply

Here the ECR is providing the transaction amounts in a swipe-ahead transaction. Note that the transaction value in this example will be 950.00.

```
<SaleToPOIResponse>
    <MessageHeader MessageClass="Device" MessageCategory="Input"
MessageType="Response" ServiceID="4797" DeviceID="4" WorkstationID=""
POIID="52400004" />
    <InputResponse>
        <InputResult Device="CashierInput" InfoQualify="Input">
            <Response Result="Success" />
            <Input InputCommand="TransactionAmount">
            <AmountsReq Currency="SEK" RequestedAmount="850"
CashBackAmount="100" VatAmount="0.00" />
            </Input>
        </InputResult>
    </InputResponse>
</SaleToPOIResponse>
```

Example non-PCI card presentation

Here the ECR is providing the details of a non-PCI card.

```
<SaleToPOIResponse>
    <MessageHeader MessageClass="Device" MessageCategory="Input"
MessageType="Response" ServiceID="4799" DeviceID="4" WorkstationID=""
POIID="52400004" />
    <InputResponse>
        <InputResult Device="CashierInput" InfoQualify="Input">
            <Response Result="Success" />
            <Input InputCommand="NonPciCardData">
                <NonPciCardData Number="9752276400000003" Expiry="0821" />
            </Input>
        </InputResult>
    </InputResponse>
</SaleToPOIResponse>
```

Print request - terminal to ECR

The Print request message is sent by the terminal to request the ECR to print, normally, a card receipt, but it is also used for error message and reports.

The EPAS specification defines the printed content as a series of text elements, each with a set of attributes, but even though this seems like a flexible approach it means that the exact layout of the receipt becomes the responsibility of the payment application, even though it does not know what type of printer is in use, or the paper size, etc. The payment application uses a substantially altered print request message where each data element is provided separately and then it is up to the ECR to decide how the receipt should be formatted.

When sending receipt data the print request message includes a pre-formatted receipt, but this is intended for debug / test purposes and may not be supported in the future. It is strongly recommended that integrators should use the individual data elements provided and construct the receipt according to the applicable layout rules.

Note that the terminal does not expect to receive, and will not wait for, a Print response message.

Print request message

Component	Mult.	Rule	Usage
PrintRequest	[1..1]		Yes
PrintOutput	[1..1]		Yes
DocumentQualifier	[1..1]		Yes
ResponseMode	[1..1]	Set to 'NotRequired'. Print Response is not required but will be accepted.	Yes
IntegratedPrintFlag	[0..1]	default False. Not allowed if DocumentQualifier is not "CashierReceipt" or "CustomerReceipt".	No
RequiredSignatureFlag	[0..1]	Only included if signature is required. If not included then assume no signature is needed.	Yes
OutputContent	[1..1]		Yes
OutputFormat	[1..1]	MessageRef, Text, BarCode, XHTML. Only "Text" is used here.	Yes
PredefindContent	[0..1]	*Same as Display.*	No
ReferenceID	[1..1]	*Same as Display.*	
Language	[0..1]	*Same as Display.*	
OutputText	[0..n]		Yes
Text	[1..1]	Contains the pre-formatted debug / test receipt. May not be supported in future revisions.	Yes
CharacterSet	[0..1]	*Same as Display.*	No
Font	[0..1]	*Same as Display.*	No
StartColumn	[0..1]	*Same as Display.*	No
Color	[0..1]	*Same as Display.*	No
CharacterWidth	[0..1]	*Same as Display.*	No
CharacterHeight	[0..1]	*Same as Display.*	No
CharacterStyle	[0..1]	*Same as Display.*	No
Alignment	[0..1]	*Same as Display.*	No
EndOfLineFlag	[0..1]	*Same as Display.*	No
OutputXHTML	[0..1]	*Same as Display.*	No
OutputBarcode	[0..1]	*Same as Display.*	No
BarcodeType	[0..1]	*Same as Display.*	
BarcodeValue	[1..1]	*Same as Display.*	
ReceiptData	[1..1]		Yes
Message	[0..1]	Provided if the receipt is a plain text error message or report, rather than a transaction.	
Transaction	[0..1]	Provided if the receipt data is for a transaction, rather than an error message or report.	

Status		[0..1]	This field provides the overall status of the transaction (e.g. AUTHORISED, DECLINED, CANCELLED etc).	
DenialReason		[0..1]	If the transaction was denied then this indicates the reason for the transaction being declined.	
Message		[0..1]	A plain text message typically used for diagnostic purposes or ad-hoc printed reports rather than for a financial transaction.	
AlternativePaymentMethod		[0..1]	If the transaction was made using an Alternative Payment Method, the name of the method is provided here.	
MerchantData		[1..1]	Merchant data.	
Name		[0..1]	Merchant name.	
Address		[0..1]	Merchant address.	
City		[0..1]	Merchant city.	
ZipCode		[0..1]	Merchant postal code.	
PhoneNumber		[0..1]	Merchant phone number.	
OrganisationNumber		[0..1]	Merchant's organisation number.	
HelplineNumber		[0..1]	Helpline phone number.	
BankAgentName		[0..1]	Bank agent.	
AcquirerReference		[0..1]	Acquirer reference used in clearing.	
TerminalId		[0..1]	Terminal ID.	
OperatorId		[0..1]	Operator / cashier ID.	
StorePay		[0..1]	Present only for Svea transactions. For a full interpretation of these data elements the reader should consult Svea documentation to become familiar with the concepts involved.	
Contract		[1..1]		
ContractId		[1..1]	The Svea contract ID.	
Confirmed		[1..1]	Indicates if the contract has been confirmed or not.	
Approved		[1..1]	Indicates if the contrat has been approved or not.	
ApprovedAmount		[1..1]	Indicates the value of the contract.	

ReferenceNumber		[1..1]	Contract reference number, used in reversals.	
ContractResponseInformation		[1..1]	Used only where the contract has been declined. Contains a response that should give information on the reason for the decline.	
LegalContractName		[1..1]	The contract name.	
Customer		[0..1]	Present if customer information has been acquired.	
Name		[1..1]	Customer name.	
SecurityNumber		[1..1]	Customer's security / ID number.	
Address		[1..1]	Customer's address.	
PostalCode		[1..1]	Customer's postal code.	
PostArea		[1..1]	Customer's postal area.	
PhoneNumber		[1..1]	Customer's phone number.	
Email		[1..1]	Customer's email address.	
PaymentPlan		[0..1]	Present if a Svea payment plan has been selected.	
Id		[1..1]	Payment plan ID.	
Description		[1..1]	Payment plan text description.	
StartFee		[1..1]	Initial fee for the payment plan.	
MonthlyFee		[1..1]	Recurring monthly fee for the payment plan.	
DurationInMonths		[1..1]	Length of the payment plan in months.	
MonthlyCost		[1..1]	The monthly cost of the payment plan.	
InterestRate		[1..1]	The interest rate that applies.	
InterestRateEffective		[1..1]	The effective interest rate that applies.	
NumberOfPaymentFreeMonths		[1..1]	Number of payment-free months in the payment plan.	
TransactionData		[0..1]	Present if amount data is known in the terminal and if the Message component is not used.	
Type		[1..1]	There shall be a defined mapping between this transaction type and the SPDH 'Transaction Code'.	

DateTime		[1..1]	Transaction date and time. Note that the timezone offset may not be valid in this field, depending on the terminal being used. Westpay Classic terminals do not support timezone changes.	
CurrencyCode		[1..1]	Currency code supplied as per ISO 4217.	
CurrencyNum		[1..1]	Currency number as per ISO 4217.	
Amount		[1..1]	Amount of purchase / refund.	
CashBack		[0..1]	Cash back amount.	
Gratuity		[0..1]	Gratuity amount.	
Vat		[0..1]	VAT amount, included in the Amount value.	
CashAdvanceCharge		[0..1]	Surcharge for a cash advance transaction.	
Total		[0..1]	Combined total.	
ReferenceNumber		[1..1]	Transaction reference number.	
AuthorisationData		[0..1]	Present if the Message component is not used.	
PosEntryMode		[1..1]	See 8.1.2 of CHAOI.	
IdMethod		[1..1]	See 8.1.3 of CHAOI.	
Channel		[1..1]	See 8.1.4 of CHAOI.	
Responder		[1..1]	See 8.1.5 of CHAOI.	
ResponseCode		[1..1]	See 8.1.6 of CHAOI.	
FinancialInstitution		[1..1]	See 8.1.7 of CHAOI. Concerning alternative payment transactions, i.e. element ExtAuth is present, the value for FinancialInstitution is a three letter abbreviation of the name of the alternative payment method.	
BatchNumber		[1..1]	The batch number for the transaction.	
ApprovalCode		[1..1]	Transaction approval code, if appropriate. Locally-generated approval codes begin with "L".	
VerifiedByDevice		[0..1]	Present and set to "true" if the cardholder was verified by a consumer device. According to VISA requirements the receipt must include the text "Verified by device" if this is the case.	
CardData		[0..1]	Present if a card number has been established.	

MaskedPan		[1..1]	Masked card number.	
Name		[1..1]	Card name / type.	
CreditDebit		[1..1]	If the cardholder was asked to choose between a credit or debit account then this will be set to CREDIT or DEBIT. If this attribute is not included then the cardholder was not asked to choose the account type.	
PaymentCode		[1..1]	Payment code, may be empty.	
EmvData		[0..1]	Included for EMV transactions.	
ApplicationId		[1..1]	The application ID, or AID, is given here.	
Tvr		[1..1]	Terminal Verification Results.	
Tsi		[1..1]	Transaction Status Indicator.	
ResponseCode		[0..1]	EMV response code, if available.	
PanSequenceNumber		[1..1]	PAN sequence number.	
DCC		[0..1]	Included for Dynamic Currency Conversion transactions.	
Provider		[1..1]	The DCC service provider.	
Rate		[1..1]	Currency conversion rate in decimal.	
Source		[1..1]	Source of the conversion rate.	
DateTime		[1..1]	Timestamp of the currency conversion.	
Amount		[1..1]	Converted transaction amount.	
CurrencyNum		[1..1]	ISO 4217 currency number of the converted currency.	
CurrencyCode		[1..1]	ISO 4217 currency code of the converted currency.	
Exponent		[1..1]	Number of digits following the decimal point in this currency.	
MarkUp		[1..1]	The conversion charge / mark up as a percentage. This is included in the total.	
MarkUpDescription		[0..1]	Extra information about the markup that should be printed next to the markup (on the next line), if provided.	
Gratuity		[1..1]	The value of any gratuity in the converted currency.	
Scheme		[1..1]	"V" = Visa, "M" = Mastercard.	

Disclaimer	[1..1]	Disclaimer text that must be included in the receipt.	
ExtAuth	[0..1]	Available when a alternative payment transaction has been performed, that is a non card transaction. E.g. Swish payment.	
Name	[1..1]	Name of the alternative payment method.	

Print request examples

Normal purchase approval example

```
<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Device"
MessageCategory="Print" MessageType="Request" ServiceID="4791"
DeviceID="20" WorkstationID="" POIID="52400004" />
    <PrintRequest>
        <PrintOutput DocumentQualifier="CustomerReceipt"
ResponseMode="NotRequired" RequiredSignatureFlag="true">
            <OutputContent OutputFormat="Text">
                <OutputText>            HN-28

Test Shop
1 The High Street
IV51 9LP Somewhere
08-12 34 56
Org. nr: 123456-1234

Test Bank
Butiksnr: 2337335
Termid: 52400004
Kassörsnr: Cashier16
Thu 27 Jul 2017      17:06


KÖP
SEK               1000.00
TOTALT:           1000.00



************3825

VISA
C@1 3 001 SWE 170 968081

Ref. nr: 000000402771

AID: A0000000031010
TVR: 0000080000
TSI: F800
</OutputText>
            </OutputContent>
        </PrintOutput>
        <ReceiptData>
            <Transaction Status="AUTHORISED" />
            <MerchantData Name="Test Shop" Address="1 The High Street"
City="Somewhere" ZipCode="IV51 9LP" PhoneNumber="08-12 34 56"
OrganisationNumber="123456-1234" HelplineNumber="Support" />
            <BankAgentName>Test Bank</BankAgentName>
            <AcquirerReference>2337335</AcquirerReference>
            <TerminalId>52400004</TerminalId>
            <OperatorId>Cashier16</OperatorId>
            <TransactionData Type="Debit"
DateTime="2017-07-27T17:06:13.0+00:00" CurrencyCode="SEK"
CurrencyNum="SEK" Amount="1000.00" CashBack="0.00" Gratuity="0.00"
Vat="0.00" CashAdvanceCharge="0.00" Total="1000.00"
ReferenceNumber="000000402771" />
            <AuthorisationData PosEntryMode="C" IdMethod="@" Channel="1"
Responder="3" ResponseCode="001" FinancialInstitution="SWE"
BatchNumber="170" ApprovalCode="968081" />
            <CardData MaskedPan="************3825" Name="VISA"
PaymentCode="" />
            <EmvData ApplicationId="A0000000031010" Tvr="0000080000"
Tsi="F800" ResponseCode="00" PanSequenceNumber="0" />
        </ReceiptData>
    </PrintRequest>
</SaleToPOIRequest>
```

Signature authorisation example

```xml
<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Device"
MessageCategory="Print" MessageType="Request" ServiceID="4791"
DeviceID="16" WorkstationID="" POIID="52400004" />
    <PrintRequest>
        <PrintOutput DocumentQualifier="CashierReceipt"
ResponseMode="NotRequired" RequiredSignatureFlag="true">
            <OutputContent OutputFormat="Text">
                <OutputText>          HN-28

Test Shop
1 The High Street
IV51 9LP Somewhere
08-12 34 56
Org. nr: 123456-1234

Test Bank
Acq Ref: 2337335
Termid: 52400004
Cashier No: Cashier16
Thu 27 Jul 2017      17:06


PURCHASE
SEK              1000.00
TOTAL:           1000.00


458109******3825

VISA

    AUTHORISATION FOR
 DEBITING ABOVE ACCOUNT


........................
LEG


........................
SIGN

C@1 3 001 SWE 170 968081

Ref. nr: 000000402771

AID: A0000000031010
TVR: 0000080000
TSI: F800
</OutputText>
            </OutputContent>
        </PrintOutput>
        <ReceiptData>
            <Transaction Status="AUTHORISED" />
            <MerchantData Name="Test Shop" Address="1 The High Street"
City="Somewhere" ZipCode="IV51 9LP" PhoneNumber="08-12 34 56"
OrganisationNumber="123456-1234" HelplineNumber="Support" />
            <BankAgentName>Test Bank</BankAgentName>
            <AcquirerReference>2337335</AcquirerReference>
            <TerminalId>52400004</TerminalId>
            <OperatorId>Cashier16</OperatorId>
            <TransactionData Type="Debit"
DateTime="2017-07-27T17:06:13.0+00:00" CurrencyCode="SEK"
CurrencyNum="SEK" Amount="1000.00" CashBack="0.00" Gratuity="0.00"
Vat="0.00" CashAdvanceCharge="0.00" Total="1000.00"
ReferenceNumber="000000402771" />
            <AuthorisationData PosEntryMode="C" IdMethod="@" Channel="1"
Responder="3" ResponseCode="001" FinancialInstitution="SWE"
BatchNumber="170" ApprovalCode="968081" />
            <CardData MaskedPan="458109******3825" Name="VISA"
PaymentCode="" />
            <EmvData ApplicationId="A0000000031010" Tvr="0000080000"
Tsi="F800" ResponseCode="00" PanSequenceNumber="0" />
        </ReceiptData>
    </PrintRequest>
</SaleToPOIRequest>
```

Alternative Payment purchase approval example

```
<SaleToPOIRequest>
   <MessageHeader ProtocolVersion="1.0" MessageClass="Device"
MessageCategory="Print" MessageType="Request" ServiceID="4791"
DeviceID="20" WorkstationID="" POIID="52400004" />
   <PrintRequest>
      <PrintOutput DocumentQualifier="CustomerReceipt"
ResponseMode="NotRequired" RequiredSignatureFlag="true">
         <OutputContent OutputFormat="Text">
            <OutputText>          HN-28

Test Shop
1 The High Street
IV51 9LP Somewhere
08-12 34 56
Org. nr: 123456-1234

Test Bank
Butiksnr: 2337335
Termid: 52400004
Kassörsnr: Cashier16
Thu 27 Jul 2017      17:06

KÖP
SEK             1000.00
TOTALT:         1000.00


************3825

Swish

Ref. nr: 000000402771

</OutputText>
         </OutputContent>
      </PrintOutput>
      <ReceiptData>
         <Transaction Status="AUTHORISED"
AlternativePaymentMethod="Swish" />
         <MerchantData Name="Test Shop" Address="1 The High Street"
City="Somewhere" ZipCode="IV51 9LP" PhoneNumber="08-12 34 56"
OrganisationNumber="123456-1234" HelplineNumber="Support" />
         <BankAgentName>Test Bank</BankAgentName>
         <AcquirerReference>2337335</AcquirerReference>
         <TerminalId>52400004</TerminalId>
         <OperatorId>Cashier16</OperatorId>
         <TransactionData Type="Debit"
DateTime="2017-07-27T17:06:13.0+00:00" CurrencyCode="SEK"
CurrencyNum="SEK" Amount="1000.00" CashBack="0.00" Gratuity="0.00"
Vat="0.00" CashAdvanceCharge="0.00" Total="1000.00"
ReferenceNumber="000000402771" />
         <AuthorisationData PosEntryMode="A" IdMethod="-" Channel="1"
Responder="0" ResponseCode="000" FinancialInstitution="SWI"
BatchNumber="" ApprovalCode="900164" />
      </ReceiptData>
   </PrintRequest>
</SaleToPOIRequest>
```

DCC example

Note: this example uses test data that has been hard-coded. The calculations regarding the
rate conversion are not correct.

```
<SaleToPOIRequest>
   <MessageHeader ProtocolVersion="1.0" MessageClass="Device"
MessageCategory="Print" MessageType="Request" ServiceID="4803"
DeviceID="21" WorkstationID="" POIID="52400004" />
   <PrintRequest>
      <PrintOutput DocumentQualifier="CustomerReceipt"
ResponseMode="NotRequired">
         <OutputContent OutputFormat="Text">
```

```
            <OutputText>          HN-28
Test Shop
1 The High Street
IV51 9LP Somewhere
08-12 34 56
Org. nr: 123456-1234

Test Bank
Butiksnr: 2337335
Termid: 52400004
Kassörsnr: Cashier16
Tue 1 Aug 2017        17:36

KÖP
SEK              600.00
Txn currency EUR    120.39
Exchange rate       0.8246
MarkUp           3.25%
MarkUp Above European
Central Bank
Source: Fake DCC bank

************3825

VISA
MEDGES EJ
NEKAT
Ca1 0 898 BAM 171 000000

Ref. nr: 000000402773

AID: A0000000031010
TVR: 0000000000
TSI: E800
</OutputText>
        </OutputContent>
      </PrintOutput>
      <ReceiptData>
        <Transaction Status="DECLINED" DenialReason="NEKAT" />
        <MerchantData Name="Test Shop" Address="1 The High Street"
City="Somewhere" ZipCode="IV51 9LP" PhoneNumber="08-12 34 56"
OrganisationNumber="123456-1234" HelplineNumber="Support" />
        <BankAgentName>Test Bank</BankAgentName>
        <AcquirerReference>2337335</AcquirerReference>
        <TerminalId>52400004</TerminalId>
        <OperatorId>Cashier16</OperatorId>
        <TransactionData Type="Debit"
DateTime="2017-08-01T17:36:41.0+00:00" CurrencyCode="SEK"
CurrencyNum="SEK" Amount="600.00" CashBack="0.00" Gratuity="0.00"
Vat="0.00"
CashAdvanceCharge="0.00" Total="600.00" ReferenceNumber="000000402773"
/>
        <AuthorisationData PosEntryMode="C" IdMethod="a" Channel="1"
Responder="0" ResponseCode="898" FinancialInstitution="BAM"
BatchNumber="171" ApprovalCode="000000" />
        <CardData MaskedPan="************3825" Name="VISA"
PaymentCode="" />
        <EmvData ApplicationId="A0000000031010" Tvr="0000000000"
Tsi="E800" ResponseCode="05" PanSequenceNumber="0" />
        <DCC Provider="Fake DCC responder" Rate="0.8246" Source="Fake
DCC bank" DateTime="2017-08-01T17:36" Amount="120.39"
CurrencyNum="978"
CurrencyCode="EUR" Exponent="2" MarkUp="3.25"
MarkUpDescription="MarkUp above European Central Bank" Gratuity="0.00"
Scheme="V"
Disclaimer="Cardholder has chosen to pay in EUR. This transaction is
based on Fake DCC bank exchange rate of 01 Aug 2017 incl. 3.25 percent
international
conversion margin.\nThis is not an additional fee and replaces
Currency Conversion charges normally applied. My choice is final.
Transactions can also be
conducted in SEK. This Dynamic currency conversion service is provided
by Fake DCC responder." />
```

```
</ReceiptData>
</PrintRequest>
</SaleToPOIRequest>
```

Print request - ECR to terminal

The ECR can send a print request to the terminal, but this is a very specific and limited implementation. Support for this is a specific configuration option that must be enabled in the terminal. The print request can only contain a monochrome Windows bitmap (.BMP) image and it must be no wider than 384 pixels.

The image data is prepared by taking the contents of a bitmap file and compressing it using the gzip compression algorithm. It is then encoded using base64. An example of this preparation is as follows:

```
byte[] compressed = null;
string base64String = null;
using (Stream fs = File.OpenRead(filename))
{
    using (MemoryStream ms = new
MemoryStream())
    {
        // Read the file into a GZip
compressor
        using (GZipStream gz = new
GZipStream(ms, CompressionMode.Compress))
        {
            int bytesRead;
            byte[] buffer = new byte[1000];
            while ((bytesRead =
fs.Read(buffer, 0, buffer.Length)) > 0)
            {
                gz.Write(buffer, 0,
bytesRead);
            }
            compressed = ms.ToArray();
            base64String =
Convert.ToBase64String(compressed, 0,
compressed.Length);
        }
    }
}
```

Print request message

Component	Mult.	Rule	Usage
PrintRequest	[1..1]		Yes
PrintOutput	[1..1]		Yes
DocumentQualifier	[1..1]	Not used.	Yes
ResponseMode	[1..1]	"NotRequired" - no response is sent. "Immediate" - response is sent when the request is received. "PrintEnd" - response is sent when printing is complete.	Yes
IntegratedPrintFlag	[0..1]	default False. Not allowed if DocumentQualifier is not "CashierReceipt" or "CustomerReceipt".	No

	RequiredSignatureFlag	[0..1]	Only included if signature is required. If not included then assume no signature is needed.	No
OutputContent		[1..1]		Yes
OutputFormat		[1..1]	"Bitmap" should be used here.	Yes
PredefindContent		[0..1]	*Same as Display.*	No
	ReferenceID	[1..1]	*Same as Display.*	
	Language	[0..1]	*Same as Display.*	
OutputText		[0..n]		No
	Text	[1..1]	Contains the pre-formatted debug / test receipt. May not be supported in future revisions.	
	CharacterSet	[0..1]	*Same as Display.*	
	Font	[0..1]	*Same as Display.*	
	StartColumn	[0..1]	*Same as Display.*	
	Color	[0..1]	*Same as Display.*	
	CharacterWidth	[0..1]	*Same as Display.*	
	CharacterHeight	[0..1]	*Same as Display.*	
	CharacterStyle	[0..1]	*Same as Display.*	
	Alignment	[0..1]	*Same as Display.*	
	EndOfLineFlag	[0..1]	*Same as Display.*	
OutputXHTML		[0..1]	*Same as Display.*	
OutputBarcode		[0..1]	*Same as Display.*	
	BarcodeType	[0..1]	*Same as Display.*	
	BarcodeValue	[1..1]	*Same as Display.*	
Bitmap		[0..1]		Yes
	ImageData	[1..1]	Base64 encoded monochrome Windows bitmap data, compressed using the gzip algorithm.	

Print request example

```
<SaleToPOIRequest>
<MessageHeader MessageClass="Device" MessageCategory="Print"
MessageType="Request" DeviceID="4" WorkstationID=""
POIID="10.0.1.156:8002" />
<PrintRe<SaleToPOIRequest>
<MessageHeader MessageClass="Device" MessageCategory="Print"
MessageType="Request" DeviceID="4" WorkstationID=""
POIID="10.0.1.156:8002" />
<PrintRequest>
<PrintOutput DocumentQualifier="CustomerReceipt"
ResponseMode="PrintEnd">
<OutputContent OutputFormat="Bitmap">
<Bitmap ImageData="H4sIAAAAAAAEAO29B2AcSZYlJi9tynt/SvV ......." />
</OutputContent>
</PrintOutput>
</PrintRequest>
</SaleToPOIRequest>
```

Print response message

Component	Multi.	Rule	Usage
ReconciliationResponse	[1..1]		Yes
DocumentQualifier	[1..1]	"CustomerReceipt"	
Response	[1..1]	The result of the Print request.	
Result	[1..1]	"Success" or "Failure"	

ErrorCondition		[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse		[0..1]	Description of the problem in the failure case.	

Abort message

The Abort request message instructs the terminal to cancel the ongoing service request. If there is no ongoing service request then the abort request will be ignored.

Note that there is no abort response; nstead, the normal service response will be sent. For example, if a payment request is aborted then the payment response will be sent with the appropriate values in place.

If the abort request is received but the ongoing service request cannot be aborted then an event notification with a Reject status (see below) will be sent to indicate this.

Note that the terminal will regard the request as applying to the service that is active at the time when the request is received, and will not use the ServiceID component. The MessageCategory value is only used in an error response, and is otherwise ignored.

Abort request message

Component	Mult.	Rule	Usage
AbortRequest	[1..1]		
MessageReference	[1..1]		
MessageCategory	[1..1]	Input, Loyalty, Payment, Reconciliation, Reversal.	Yes
ServiceID	[0..1]		No
DeviceID	[0..1]		No
WorkstationID	[1..1]	Default MessageHeader.WorkstationID.	No
POIID	[1..1]	Default MessageHeader.POIID.	No
AbortReason	[1..1]	Text indicating the reason for the abort request. If provided, this is used only for logging purposes.	Yes
DisplayOutput	[0..1]	To display an abort message to the Customer.	No
Device	[1..1]	CustomerDisplay.	
InfoQualify	[1..1]	Error.	
OutputContent	[1..1]		
OutputFormat	[1..1]		
PredefinedContent	[0..1]	Same as Display.	
ReferenceID	[1..1]		
Language	[0..1]	Same as Display.	
OutputText	[0..n]	Same as Display.	
Text	[1..1]		
CharacterSet	[0..1]	Same as Display.	
Font	[0..1]	Same as Display.	
StartRow	[0..1]	Same as Display.	
StartColumn	[0..1]	Same as Display.	
Color	[0..1]	Same as Display.	
CharacterWidth	[0..1]	Same as Display.	
CharacterHeight	[0..1]	Same as Display.	
CharacterStyle	[0..1]	Same as Display.	
Alignment	[0..1]	Same as Display.	

OutputXHTML	[0..1]	*Same as Display.*	
OutputSignature	[0..1]	If protection has to be provided to the vendor on the text to display.	

Abort Request Example

```
<SaleToPOIRequest>
<MessageHeader MessageClass ="Service" MessageCategory ="Abort"
MessageType ="Request" ServiceID ="106" WorkstationID ="" POIID
="52400004" />
<AbortRequest>
<MessageReference MessageCategory ="Payment" ServiceID ="105" />
<AbortReason>Abort button clicked</AbortReason>
</AbortRequest>
</SaleToPOIRequest>
```

Event Notification

The Event Notification message is essentially as defined in the EPAS specification, but extends the list of events that can be notified.
The following values are used in the Event Notification message's EventToNotify element.

- BeginMaintenance
- EndMaintenance
- Shutdown
- CardInserted
- CardRemoved
- CardAccepted (extension to EPAS specification)
- Completed
- EventLog (extension to EPAS specification)
- Reject

CardAccepted

This event notification is sent when a card is recognised as a valid payment card, i.e. it has a BIN row and is considered as acceptable by the application. In a Swipe Ahead scenario there may be multiple CardAccepted notifications if the cardholder inserts multiple cards.

EventLog

This event notification carries the section of event log that has built up since the last time that this notification was sent, i.e. it sends incremental event log additions to the ECR.
This event notification is sent immediately after a Login response, Reversal response and a Payment response.

Event notification message

EventNotification	Mult.	Profile	Rule	Usage
EventNotification	[1..1]			
TimeStamp	[1..1]			Yes
EventToNotify	[1..1]			Yes
EventDetails	[0..1]		Details of the event, useful for logging purposes.	Yes
RejectedMessage	[0..1]		Mandatory if EventToNotify is "Reject", absent in other cases.	Yes
MaintenanceRequiredFlag	[0..1]		Default False.	No
DisplayOutput	[0..n]		To display an event message.	No
Device	[1..1]		CashierDisplay	
InfoQualify	[1..1]		Error.	

OutputContent	[1..1]			
OutputFormat	[1..1]		Text, XHTML.	
OutputText	[0..n]		*Same as Display.*	
Text	[1..1]		*Same as Display.*	
CharacterSet	[0..1]		*Same as Display.*	
Font	[0..1]		*Same as Display.*	
StartRow	[0..1]		*Same as Display.*	
StartColumn	[0..1]		*Same as Display.*	
Color	[0..1]		*Same as Display.*	
CharacterWidth	[0..1]		*Same as Display.*	
CharacterHeight	[0..1]		*Same as Display*	
CharacterStyle	[0..1]		*Same as Display.*	
Alignment	[0..1]		*Same as Display.*	
OutputXHTML	[0..1]		*Same as Display.*	
OutputSignature	[0..1]		If protection has to be provided to the vendor on the text to display.	

Event notification example

```
<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Event"
MessageCategory="Event" MessageType="Notification" DeviceID="3"
WorkstationID="" POIID="52400004" />
    <EventNotification TimeStamp="2017-07-25T10:15:22.0+00:00"
EventToNotify="BeginMaintenance">
        <EventDetails>POI Maintenance: Updating and loading
parameters</EventDetails>
    </EventNotification>
</SaleToPOIRequest>
```

Event notification with log extract

```
<SaleToPOIRequest>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Event"
MessageCategory="Event" MessageType="Notification" DeviceID="21"
WorkstationID="" POIID="52400004" />
    <EventNotification TimeStamp="2017-07-25T12:40:49.0+00:00"
EventToNotify="EventLog">
        <EventDetails>[2017-07-25T12:39:15 52400004 D0029 Status]
Request denied:  Close batch is overdue
[2017-07-25T12:39:20 52400004 D0029 Status] Commencing Close Batch
[2017-07-25T12:39:34 52400004 D0029 Status] New transaction: Payment
Request 4788: Payment Request: Amount 1000.00 Cashback: 0.00 ID: 2589,
Time: 7/25/2017 10:39:33 AM, Type: Normal
[2017-07-25T12:40:47 52400004 D0029 Warning] Abandoning transaction:
-- User cancellation
[2017-07-25T12:40:47 52400004 D0029 Status] Transaction:
Type=PurchaseRequest Ref=000000402769 Status=0x105  ////  Amounts:
Main=1 000,00 SEK  Cashback=0,00 SEK  Extra=0,00 SEK  CA Charge=0,00
SEK  ////  EMV: TVR=0000000000 TSI=0000 AID=A000000003-1010  ////
Card: Name=VISA Type=Debit card Issuer=Swedbank Product=Visa  ////
[2017-07-25T12:40:47 52400004 D0029 Status] Abandoning PurchaseRequest
[2017-07-25T12:40:47 52400004 D0029 Status]  Ret. Ref. No:
000000402769
</EventDetails>
    </EventNotification>
</SaleToPOIRequest>
```

Reconciliation message

Note:

The Reconciliation message is obsolete from v1.22.3, hence the response message will only return Success as Result.

Reconciliation request message

Component	Multi.	Rule	Usage
ReconciliationRequest	[1..1]		
ReconciliationType	[1..1]	The type of reconciliation which is requested. Only SaleReconciliation is supported.	Yes

Reconciliation request message example

```
<SaleToPOIRequest>
    <MessageHeader MessageClass="Service"
MessageCategory="Reconciliation" MessageType="Request"
ServiceID="4787" WorkstationID="" POIID="52400004" />
    <ReconciliationRequest ReconciliationType="SaleReconciliation" />
</SaleToPOIRequest>
```

Reconciliation response message

Component	Multi.	Rule	Usage
ReconciliationResponse	[1..1]		
ReconciliationType	[1..1]	The copy of the requested type of reconciliation.	
BatchIDType	[0..1]	The identification of the reconciliation period related to the provided totals.	
Response	[1..1]	The result of the Reconciliation.	
Result	[1..1]	"Success" or "Failure".	
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse	[0..1]	Description of the problem in the failure case.	
TransactionTotals	[0..n]	A sequence data structure containing totals of transactions for each totals group.	
PaymentCurrency	[0..1]	Currency code	
TotalsGroupID	[0..1]	ID of the totals group	
PaymentTotals	[0..10]	The totals of the payment transactions per type of transaction.	
TransactionType	[1..1]	"Debit" (payment) or "Credit" (refund)	
TransactionCount	[1..1]	Number of transactions	
TransactionAmount	[1..1]	Total value of this type of transaction	

Reconciliation response message example

```
<SaleToPOIResponse>
    <MessageHeader ProtocolVersion="1.0" MessageClass="Service"
MessageCategory="Reconciliation" MessageType="Response"
ServiceID="4384" WorkstationID="" POIID="52400004" />
    <ReconciliationResponse BatchID="163"
ReconciliationType="SaleReconciliation">
        <Response Result="Success" />
        <TransactionTotals PaymentCurrency="SEK" TotalsGroupID="SWE">
            <PaymentTotals TransactionType="Debit" TransactionCount="5"
TransactionAmount="1110.00" />
            <PaymentTotals TransactionType="Credit" TransactionCount="0"
TransactionAmount="0.00" />
            <TransactionTotals PaymentCurrency="SEK"
TotalsGroupID="SVEA">
                <PaymentTotals TransactionType="Debit"
TransactionCount="0" TransactionAmount="0.00" />
                <PaymentTotals TransactionType="Credit"
TransactionCount="0" TransactionAmount="0.00" />
            </TransactionTotals>
        </TransactionTotals>
    </ReconciliationResponse>
</SaleToPOIResponse>
```

GetTotals message

The Get totals message is used to create the same kind of reports as Reconciliation did, but without closing the batch.

Get totals request message

Component	Multi.	Rule	Usage
GetTotalsRequest	[1..1]		
TotalDetails	[0..1]		No
TotalFilter	[0..1]		No

GetTotals request message example

```
<SaleToPOIRequest>
    <MessageHeader MessageClass="Service" MessageCategory="GetTotals"
MessageType="Request" ServiceID="4787" WorkstationID=""
POIID="52400004" />
    <GetTotalsRequest />
</SaleToPOIRequest>
```

GetTotals response message

Component	Multi.	Rule	Usage
GetTotalsResponse	[1..1]		
BatchIDType	[0..1]	The identification of the period related to the provided totals.	
GratuityAmount	[1..1]	Total amount of gratuity for the transactions	
Gratuity	[1..1]	Total gratuity amount	
Response	[1..1]	The result of the GetTotals.	
Result	[1..1]	"Success" or "Failure".	
ErrorCondition	[0..1]	Error classification in the failure case. See 2.7.5.3 in the EPAS specification.	
AdditionalResponse	[0..1]	Description of the problem in the failure case.	

TransactionTotals	[0..n]	A sequence data structure containing totals of transactions for each totals group.	
CardBrand	[1..1]	Card brand used for the transaction	
PaymentCurrency	[0..1]	Currency code	
TotalsGroupID	[0..1]	ID of the totals group	
PaymentTotals	[0..10]	The totals of the payment transactions per type of transaction.	
TransactionType	[1..1]	"Debit" (payment) or "Credit" (refund)	
TransactionCount	[1..1]	Number of transactions	
TransactionAmount	[1..1]	Total value of this type of transaction	

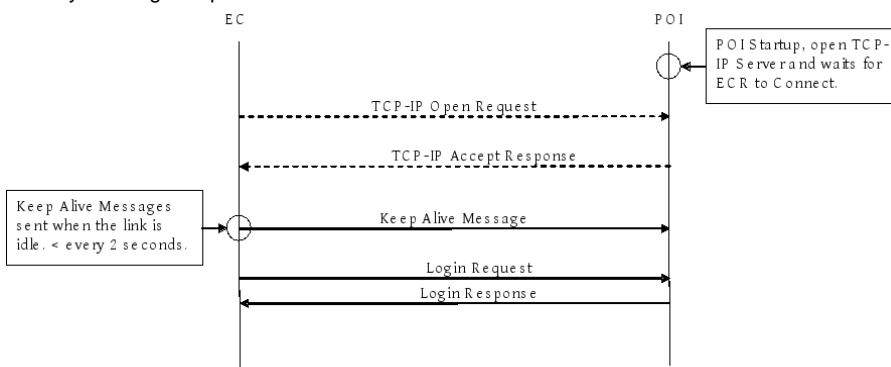## GetTotals response message example

```
<SaleToPOIResponse
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="EpasSaleToPOIMessages.xsd">
    <MessageHeader  MessageClass="Service"
                    MessageCategory="GetTotals"
                    MessageType="Response"
                    ServiceID="619"
                    WorkstationID="SaleServer"
                    POIID="POIServer"/>
      <GetTotalsResponse BatchID="8927">
          <Response Result="Success"/>
          <GratuityAmount Gratuity="20.00"/>
          <TransactionTotals  CardBrand="CardPlus"
                              AcquirerID="876355543"
                              ReconciliationID="98535"
                              WorkstationID="SaleTermA"
                              OperatorID="213"
                              ShiftNumber="1"
                              PaymentCurrency="EUR">
              <PaymentTotals TransactionType="Debit"
TransactionCount="61" TransactionAmount="4253.19"/>
              <PaymentTotals TransactionType="Credit"
TransactionCount="1" TransactionAmount="27.01"/>
          </TransactionTotals>
      </GetTotalsResponse>
</SaleToPOIResponse>
```

Transaction Flows

This section provides some example message flow diagrams. The earlier sections define the contents of the messages, this section shows how multiple messages are used to perform a complete function.
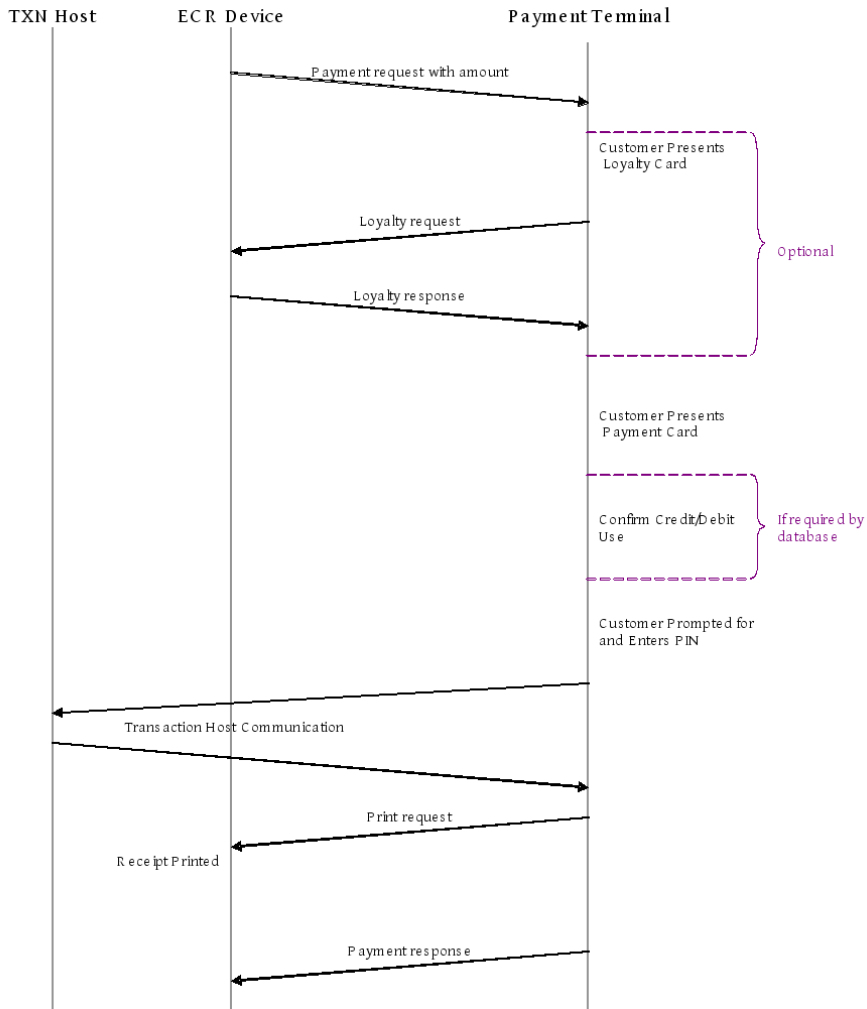
Start-up and Login

This diagram shows the start-up steps and sending the first message exchange. This will normally be a login request.
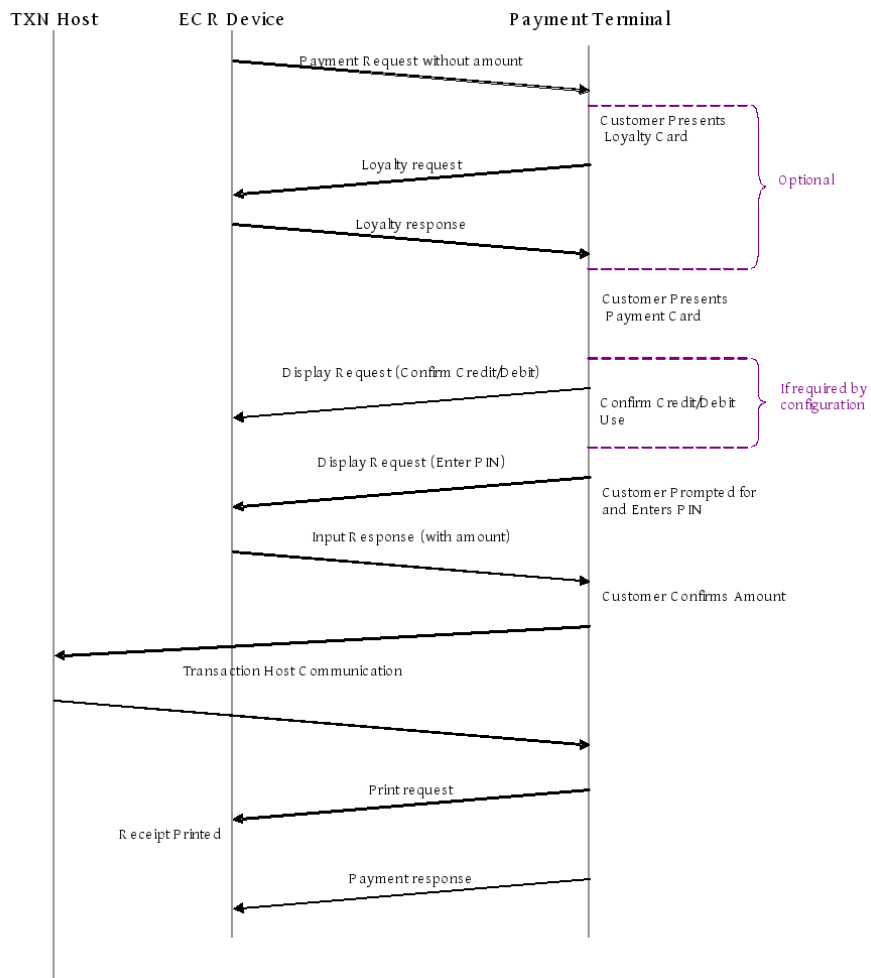
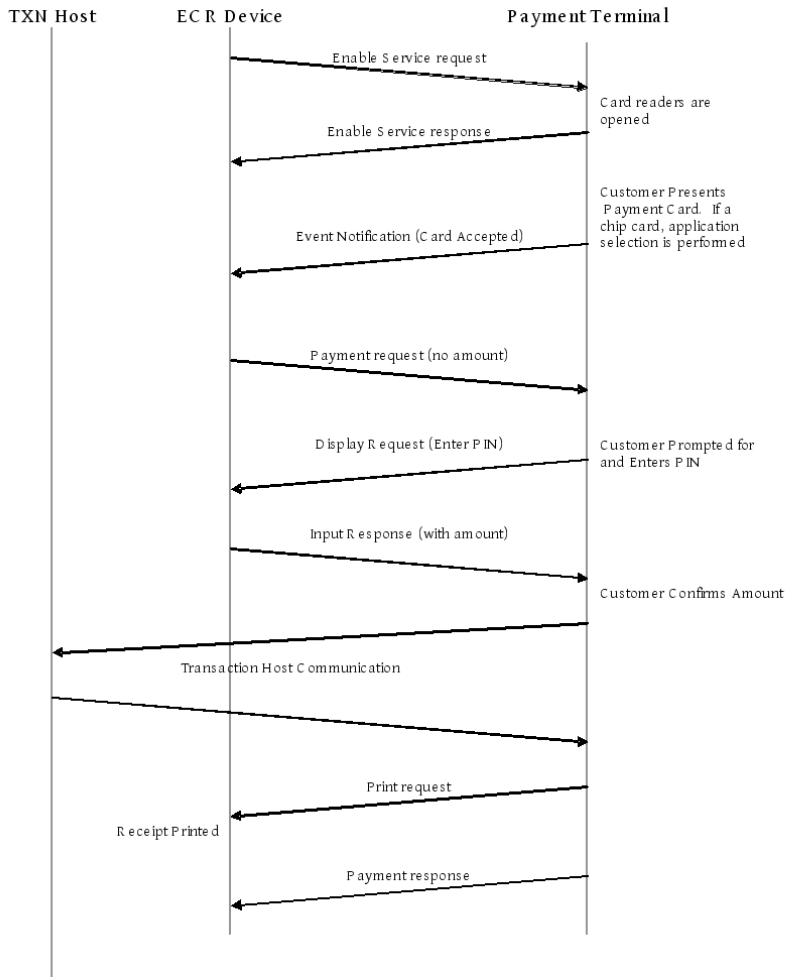The dotted lines represent TCP-IP events and the solid lines are EPAS messages.

Payment Transaction (Example)

Payment Without Amount, Early PIN Entry (Example)

Payment With Swipe Ahead (Example)

```
                   TXN Host        ECR Device              Payment Terminal

                                   Enable Service request
                                                           Card readers are
                                   Enable Service response opened

                                                           Customer Presents
                                                           Payment Card.  If a
                                   Event Notification (Card Accepted)  chip card, application
                                                           selection is performed


                                   Payment request (no amount)


                                   Display Request (Enter PIN)  Customer Prompted for
                                                           and Enters PIN


                                   Input Response (with amount)
                                                           Customer Confirms Amount


                                   Transaction Host Communication


                                   Print request
                   Receipt Printed
                                   Payment response
```

```xml
<SaleToPOIResponse xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation=
<MessageHeader MessageClass="Service"
MessageCategory="GetTotals"
MessageType="Response"
ServiceID="619"
WorkstationID="SaleServer"
POIID="POIServer"/>
<GetTotalsResponse BatchID="8927">
<Response Result="Success"/>
<TransactionTotals CardBrand="CardPlus"
AcquirerID="876355543"
ReconciliationID="98535"
WorkstationID="SaleTermA"
OperatorID="213"
ShiftNumber="1"
PaymentCurrency="EUR">
<PaymentTotals TransactionType="Debit" TransactionCount="61" TransactionAmount="4253.19"/>
<PaymentTotals TransactionType="Credit" TransactionCount="1" TransactionAmount="27.01"/>
</TransactionTotals>
<TransactionTotals CardBrand="CardPlus"
AcquirerID="876355543"
ReconciliationID="98535"
WorkstationID="SaleTermD"
OperatorID="213"
ShiftNumber="2"
```

```xml
PaymentCurrency="EUR">
<PaymentTotals TransactionType="Debit" TransactionCount="45" TransactionAmount="744.79"/>
</TransactionTotals>
<TransactionTotals CardBrand="ExpressCard"
AcquirerID="876355543"
ReconciliationID="98535"
WorkstationID="SaleTermD"
OperatorID="29"
ShiftNumber="1"
PaymentCurrency="EUR">
<PaymentTotals TransactionType="Debit" TransactionCount="17" TransactionAmount="353.61"/>
</TransactionTotals>
<TransactionTotals CardBrand="ExpressCard"
AcquirerID="876355543"
ReconciliationID="98535"
WorkstationID="SaleTermD"
OperatorID="213"
ShiftNumber="2"
PaymentCurrency="EUR">
<PaymentTotals TransactionType="Debit" TransactionCount="18" TransactionAmount="711.48"/>
<PaymentTotals TransactionType="ReverseDebit" TransactionCount="1" TransactionAmount="37.99"/>
</TransactionTotals>
<TransactionTotals CardBrand="SuperBonus"
AcquirerID="93582"
WorkstationID="SaleTermD"
OperatorID="213"
ShiftNumber="1">
<LoyaltyTotals TransactionType="Award" TransactionCount="25" TransactionAmount="278"/>
</TransactionTotals>
<TransactionTotals CardBrand="SuperBonus"
AcquirerID="93582"
WorkstationID="SaleTermD"
OperatorID="213"
ShiftNumber="2">
<LoyaltyTotals TransactionType="Award" TransactionCount="23" TransactionAmount="182"/>
</TransactionTotals>
</GetTotalsResponse>
</SaleToPOIResponse>
```