Functional Specification

WAY4 Real-Time System Interface. Functional Specification

03.51.30

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Contents

This document is the specification for the WAY4 Real-Time System Interface solution based on the WAY4 Dispute Assistant R2 module. The document describes solution functionality.

The following notation is used in the document:

- Field labels in screen forms are shown in *italics.*
- Key combinations are shown in angular brackets, for example, <Ctrl>+<F3>.
- Names of screen form buttons and tabs are shown in square brackets, for example, [Approve].
- Sequences for selecting user menu items or context menu items are shown using arrows as follows: "Issuing → Contracts Input & Update".
- Sequences for selecting system menu items are shown using arrows as follows: Database => Change password.
- Variables that differ for each local instance, such as directory and file names, as well as file paths are shown in angular brackets, as in <OWS_HOME>.

Warnings and information are marked as follows:

Warnings about potentially hazardous situations or actions.

Messages with information about important features, additional options, or the best use of certain system functions.

1. Purpose

In April 2018, Visa went live with a new global dispute process called Visa Claims Resolution, or VCR.

Pursuant to VCR, a bank employee initiates a dispute cycle by contacting the Visa Resolve Online (VROL) site through an interactive interface.

The Visa Real-Time System Interface (Visa RTSI) replaces the interactive interface with a software one. Visa RTSI allows sending and receiving dispute documents and attachments, retrieving information about disputed transactions, and interacting with Visa officials.

The WAY4 Real-Time System Interface (WAY4 RTSI) solution expands the standard functionality for dispute documents processing with the WAY4 Dispute Assistant R2 module (hereinafter "Dispute Assistant" or the "Dispute Assistant module").

The WAY4 RTSI solution for the VROL server is supported for issuing and acquiring. A dedicated Real-Time System Interface (RTSI) module on the WAY4 Transaction Switch platform provides two-way interaction between the Dispute Assistant module and VROL with minimum latency. All information exchange: inward and outward questionnaires, explanations, and details is available in the Dispute Assistant interface.

WAY4 RTSI functionality is available in WAY4 Manager and WAY4 Web.

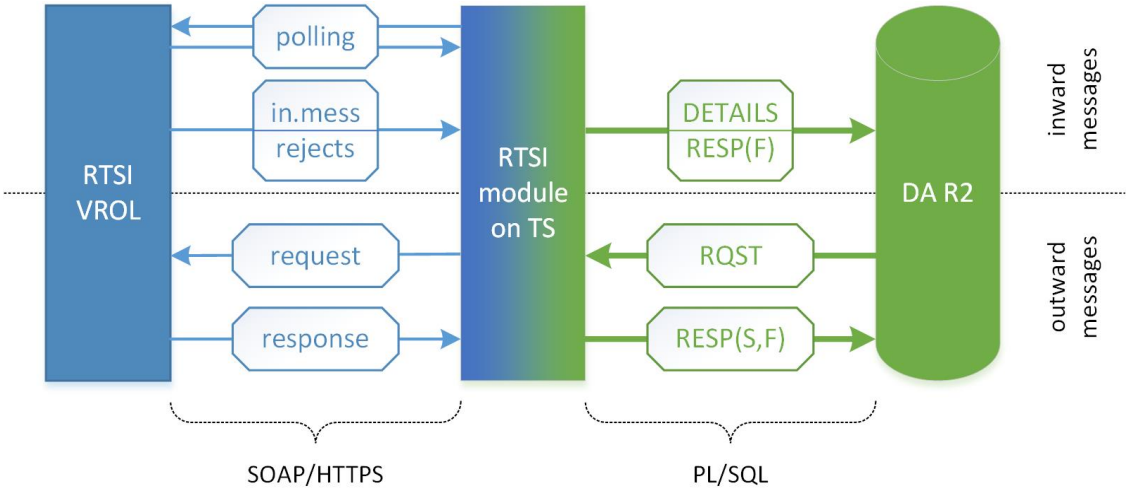
WAY4 RTSI requires a separate license. For information about purchasing this solution, contact OpenWay.

2. Solution architecture

This section describes WAY4 RTSI dataflow and data storage.

2.1 Dataflow

The WAY4 RTSI solution consists of the following main components and data streams shown in the figure.



WAY4 RTSI dataflow

Main components are the following:

- RTSI VROL – the online API to the VROL server.
- RTSI module on TS – the RTSI module on the WAY4 Transaction Switch platform (Transaction Switch RTSI module).
- DA R2 – the Dispute Assistant module. This module can automate some dispute cycle operations o n both the issuing and acquiring side. The Dispute Assistant module allows a dispute cycle to be opened manually based on a client's claim and automatically based on the results of processing a t ransaction document or incoming dispute document. The module can determine the rules for each step (stage) of a dispute cycle according to preset parameters. However, at any step of a dispute cycle, a user may change the parameters manually.

2.1.1 Inward messages

The Transaction Switch RTSI module continuously polls special entities (called "queues") on the VROL server to get information notifications about inward dispute documents: inward retrieval requests (RRs), chargebacks (CBKs), representments (2PRSs), pre-arbitrations (Pre-Arbs), and so on, and inward information notifications (e.g. the other side recalled its dispute document, or response time expired). When the module receives such an information notification, it tries to get all the details about this inward message and then initiates creation of a new inward document in the Dispute Assistant module.

Documents created in this flow have a SOURCE_CODE with the "_DTLS" suffix (e.g. VROL_CHBK_QNR_DTLS). To match the document with a case, the "EXT_CASE_ID" field from the document is compared with the "EXT_CASE_IDT" field of existing cases.

2.1.2 Outward messages

The Transaction Switch RTSI module continuously polls the Dispute Assistant API to get information about outward messages to be sent to VROL. Outward documents are created in the Dispute Assistant module and have a TARGET_CODE with the "_RQST" suffix (e.g. VROL_CHBK_ACPT_RQST). They have TARGET_CHANNEL="I" ("VISA VROL") and OUTWARD_STATUS="N" ("To be sent").

When the Transaction Switch RTSI module finds such a document, it tries to initiate a corresponding RTSI request. On receiving an RTSI response, the Transaction Switch RTSI module initiates creation of an inward document in the Dispute Assistant module. Documents created in this flow have a SOURCE_CODE with the "_RESP" suffix (e.g. VROL_CHBK_ACPT_RESP).

When **synchronous** request processing is successful:

- request (RQST) document receives:
  - OUTWARD_STATUS="Y" ("Sent").
  - SOURCE_REG_NUM=ID assigned by VROL.
- response (RESP) document receives:
  - REASON_CODE="S" ("Success").

When **synchronous** request processing fails:

- request (RQST) document receives:
  - OUTWARD_STATUS="J" ("Rejected").
- response (RESP) document receives:
  - REASON_CODE="F" ("Failure").
  - linked XML ADDENDUM with type "V0" ("RTSI ERROR Status") (for more information, see the section "Data storage").

2.1.3 Deferred Rejects

The RTSI VROL provides deferred (asynchronous) rejects functionality. A deferred reject can be sent by VROL to a member some time after the previous (synchronous) successful result. The Transaction Switch RTSI module continuously polls a special queue "ALL_REJECTS" on the VROL server to get notifications about deferred rejects. When it receives such a notification, it initiates creation of a (new) inward document in the Dispute Assistant module. To match the inward document with the request document, the "SOURCE_REG_NUM" field of the request document is compared. All fields of the initial request and the response that was created are set as described above for failed synchronous request processing. There will be two response documents of the same type for a case for a document with deferred rejects: the first with REASON_CODE="S" ("Success") and the second with REASON_CODE="F" ("Failure").

2.2 Data storage

2.2.1 Message documents (Object Role="MSG_DOC")

The WAY4 RTSI solution introduces a new role for case documents – "MSG_DOC". These documents reflect (and sometimes contain as XML addenda) original RTSI messages sent to and received from Visa RTSI. Documents with Object Role="MSG_DOC" are stored in the DOC table but have the following specific characteristics:

- message documents are **not** processed by the posting procedure.
- the "TRANS_TYPE" field is filled in with specific Transaction Types for message documents.
- the "TRANS_DETAILS" field indicates the type of RTSI message without specifying the direction (e.g. MSG_CHBK_ACPT).
- their "TARGET_CHANNEL" (for outward) or "SOURCE_CHANNEL" (for inward) field is filled in with the value “I” (VISA VROL).
- their "TARGET_CODE" (for outward) or "SOURCE_CODE" (for inward) field is filled in with the code of the inward or outward message (e.g. VROL_CHBK_QNR_DTLS or VROL_CHBK_ACPT_RQST).
- they may have one or more linked XML addenda (see below).

Some (not all) fields of message documents may be filled in according to the specifics of the particular RTSI message type, but in general most of the information is stored in linked XML addenda.

2.2.2 XML addenda

Since all interaction with Visa RTSI is via XML messages, in many cases the WAY4 RTSI solution stores original XML objects starting with a meaningful root element (e.g. “RequestData” or “ResponseData”). These XML objects are placed in ADDENDUM_DATA, a dedicated table in the WAY4 database. All attachments (PDFs, scanned docs, etc.) sent via RTSI are also stored as binary objects in this table.

XML addenda are linked to documents with the "MSG_DOC" role. More than one addendum can be linked to a single message document. A single message document may have XML addenda of different types; for example, a Dispute Initiation response on the issuer side has one addendum containing the ResponseData element of the response itself and may have one or more addenda with information about associated transactions found by VROL for a disputed operation. All response message documents have an XML addendum with the “V0” type (“RTSI ERROR Status”) for unsuccessful results.

2.2.3 Binary addenda

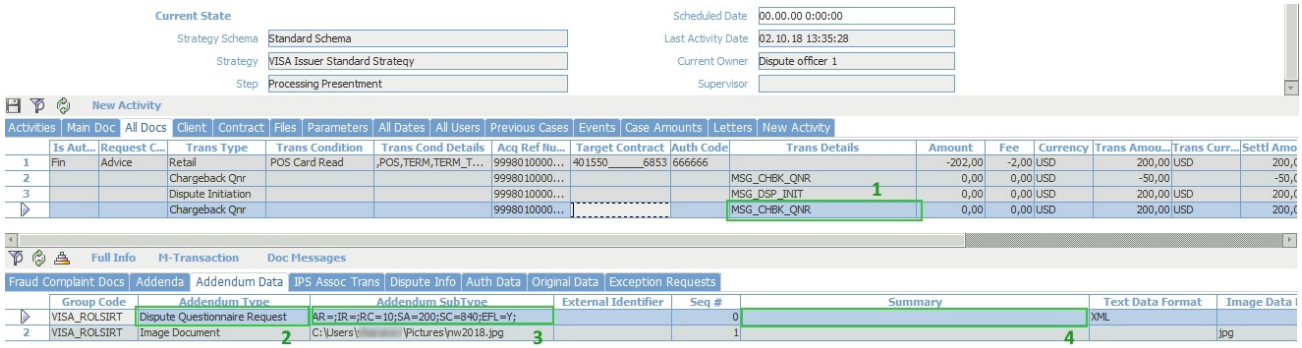
All attachments (PDFs, JPEGs, TIFFs, etc.) sent and received when interacting with Visa RTSI are stored as binary objects in the "IMGLOB" field of the ADDENDUM_DATA table (BLOB). For binary addenda, ADDENDUM_TYPE="VZ" is set.

2.2.4 User interface form to view addendum data

The "ADDENDUM_TYPE" field has a unique code (e.g. "V6" or "WJ") indicating the XML datatype of a stored XML object. This field is used for choosing the correct form to view or edit (if allowed) the XML object.

The list of addenda and their content can be viewed in the user interface form:

- **in WAY4 Manager:** the "Case Details" window → the "All docs" tab → the "Addendum Data" tab.



WAY4 Manager user interface form to view addendum data

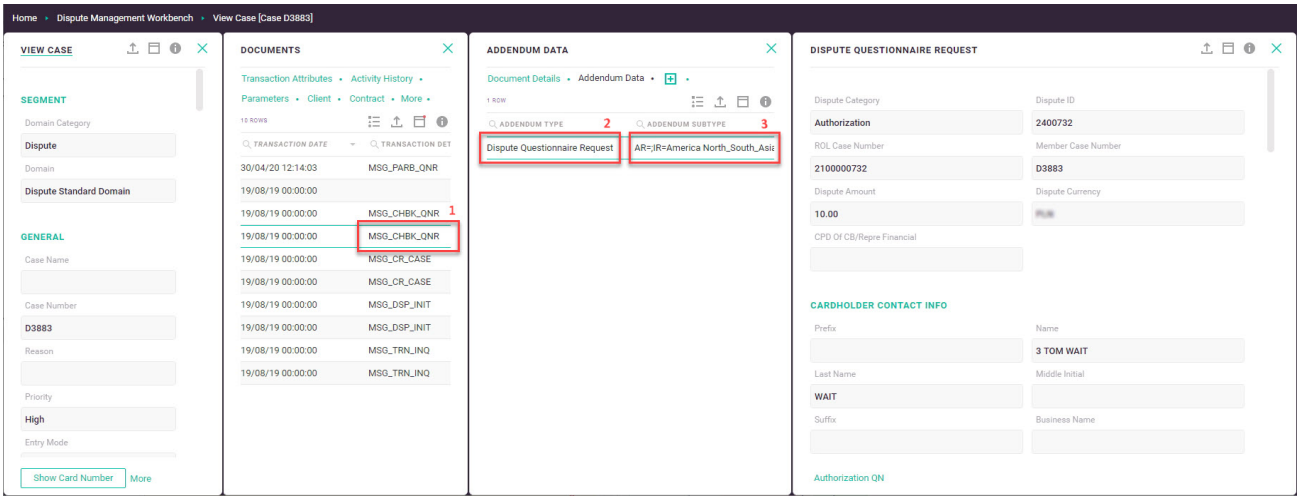
The fields indicated in green rectangles in the screenshot above contain the following information:

1. Type of the message document without information about direction (RQST, RESP, DTLS).
2. Human-readable name (e.g. "Dispute Questionnaire Request") of the addendum type (e.g. "V6" or "WJ"); contains information about the direction (i.e. "Request", "Response" or "Details").
3. Extra parameters required for editing the form but absent in XML. The values are calculated by the Dispute Assistant module.
4. "Summary" field calculated by the custom procedure cust_vrol_get_adm_sum.sql. Currently the field is filled in for "V4" only (vsi:AssociatedTransactionType) addenda as they can be numerous.

Currently, the above form is the only place where all Read-Only XML forms can be opened (by clicking on the required addendum).

Edit-enabled XML forms can be opened in the "Case Details" window (the "New activity" tab).

- **in WAY4 Web:** the "Case Details" window → the "Documents" tab → the "Addendum Data" tab.



WAY4 Web user interface form to view addendum data

The fields indicated in red rectangles in the screenshot above contain the following information:

1. Type of the message document without information about direction (RQST, RESP, DTLS).
2. Human-readable name (e.g. "Dispute Questionnaire Request") of the addendum type (e.g. "V6" or "WJ"); contains information about the direction (i.e. "Request", "Response" or "Details").
3. Extra parameters required for editing the form but absent in XML. The values are calculated by the Dispute Assistant module.

2.2.5 Legacy documents processing

Some types of documents (namely RR, FRS and FC) that are not reflected as message documents are stored in the WAY4 database using legacy rules for storage:

- the RTSI strategy uses activities with the same value in the *Program Code* field but with an additional parameter "OC=l;" (Outward_Channel="VISA_VROL") in the *Parm List* field.
- outward documents initiated by the aforementioned activity are identical to legacy documents except they have a tag in the "ADD_INFO" tagged field "OC=l;" that is used to filter these documents from legacy outward pipe processing.
- the Transaction Switch RTSI module continuously polls the Dispute Assistant API to get information about this type of outward document to be sent to VROL.
- no RQST or RESP document is created (there is no dedicated document about the successful sending of a request for the case).
- for synchronous and asynchronous rejects, a legacy reject document (Rejected Item) is created.
- when reject items are posted, a legacy system activity (e.g. "Accepted FRS Reject") is initiated.
- since there are no message documents linked to the case for these legacy documents, it is technically impossible to link an XML addendum with type "V0" ("RTSI ERROR Status") to them, and error status (if any) is put in the appropriate fields of the request document.

3. Functionality

This section describes activities on the issuer's and acquirer's sides, as well as general activities on both sides. It also provides an overview of the process for sending notifications by Visa to payment system members.

3.1 Workflows

3.1.1 Issuer's side

Workflow on the issuer's side.

Process	Step	Activities
Case creation	Case creation	Create Transaction Inquiry Request (Iss) Accepted Transaction Inquiry Response (Iss) Create Ext Case Request (Iss) Accepted Create Ext Case Response (Iss)
Retrieval Requests	Retrieval Request sending	Create RTSI Retrieval Request (Iss) Accepted Retrieval Request Reject (Iss)
Fulfillment receiving	Fulfillment receiving	Accepted Fulfillment Details (Iss)
Dispute Initiation	Dispute Initiation	Create Ext Dispute Initiation Request (Iss) Accepted Ext Dispute Initiation Response (Iss)
Fraud Reporting	Fraud Reporting/ Repairing sending	Create RTSI Fraud Complaint (Iss)
Chargebacks	Chargeback Questionnaire sending	Create Chargeback Questionnaire Draft Request (Iss) Create Chargeback Questionnaire Request (Iss) Accepted Chargeback Questionnaire Response (Iss) Fix and Resend Rejected Chargeback Questionnaire

Process	Step	Activities
	Chargeback Questionnaire Reversal sending	Cancel Chargeback Questionnaire & Continue (Iss) Cancel Chargeback Questionnaire & Return (Iss) Accepted Chargeback Questionnaire Reversal Response (Iss) Restore Chargeback Questionnaire & Return (Iss)
Representments	Representment Questionnaire receiving	Accepted Representment Questionnaire Details (Iss)
	Representment Questionnaire Reversal receiving	Accepted Ext Change Case Status Details
Representment Acceptance	Representment Acceptance sending	Create Representment Acceptance Request (Iss) Accepted Representment Acceptance Response (Iss)

3.1.2 Acquirer's side

Workflow on the acquirer's side.

Process	Step	Activities
Retrieval Requests	Retrieval Request receiving	Accepted Retrieval Request (Acq) (legacy operation)
Fulfillment/Non-Fulfillment	Fulfillment/Non-Fulfillment sending	Create Fulfillment Request (Acq) Accepted Fulfillment Response (Acq)
Chargebacks	Chargeback receiving	Accepted Chargeback Questionnaire Details (Acq)
Chargeback Acceptance	Chargeback Acceptance sending	Create Chargeback Acceptance Request (Acq) Accepted Chargeback Acceptance Response (Acq)
Representments	Representment sending	Create Representment Questionnaire Request (Acq) Accepted Representment Questionnaire Response (Acq)
	Representment Reversal sending	Cancel Representment Questionnaire & Continue (Acq) Cancel Representment Questionnaire & Return (Acq) Accepted Representment Questionnaire Reversal Response (Acq) Restore Representment Questionnaire & Return (Acq)

3.1.3 Both sides

3.1.3.1 Originator

Process	Step	Activities
Pre-Arbitration (PARB) / Pre-Compliance (PCPL)	PARB / PCPL sending	Create PARB / PCPL Request Accepted PARB / PCPL Response Fix and Resend Rejected PARB / PCPL Request
	PARB / PCPL Reversal sending	Cancel PARB / PCPL & Continue Cancel PARB / PCPL & Return Accepted PARB / PCPL Reversal Response Restore PARB / PCPL & Return
	PARB / PCPL Response receiving	Accepted PARB / PCPL Response Details
	PARB / PCPL Respon se Reversal receiving	Accepted Ext Case Case Status Change Details
Dispute Acceptance	Dispute Acceptance sending	Create PARB / PCPL Response Acceptance Request Accepted PARB / PCPL Response Acceptance Response
Outward Filings	Filings sending	Create ARB / CPL Request Accepted ARB / CPL Response

3.1.3.2 Recipient

Process	Step	Activity
Pre-Arbitration (PARB) / Pre-Compliance (PCPL)	PARB / PCPL receiving	Accepted PARB / PCPL Details
	PARB / PCPL Reversal receiving	Accepted Ext Change Case Status Change Details
	PARB / PCPL Response sending	Create PARB / PCPL Response Request Accepted PARB / PCPL Response Response Fix and Resend Rejected PARB / PCPL Response Request

Process	Step	Activity
	PARB / PCPL Response Reversal sending	Cancel PARB / PCPL Response & Continue Cancel PARB / PCPL Response & Return Accepted PARB / PCPL Response Reversal Response Restore PARB / PCPL Response & Return
Dispute Acceptance	Dispute Acceptance sending	Create PARB / PCPL Acceptance Request Accepted PARB / PCPL Acceptance Response
Inward Filings	Arbitration (ARB) / Compliance (CPL) receiving	Accepted ARB / CPL Details
	ARB / CPL Reversal receiving	Accepted Ext Change Case Status Change Details

3.1.3.3 General activities for originator and recipient

Process	Step	Activity
Inward Filings	Other inward Filings receiving	Accepted Acknowledgement Letter Details Accepted Rejection Letter Details Accepted Filing Response Details Accepted Decision Letter Details
Outward Filings	Filings sending	Create Filing Response Request Accepted Filing Response Response
Contact Messages	Contact Message receiving	Accepted Contact Message Details
	Contact Message Response sending	Create Contact Message Response Request Fix and Resend Rejected Contact Message Response Request Accepted Contact Message Response Response
Misc Fees	Misc Fees sending	Create RTSI Fee Collection Accepted Fee Collection Reject
Postponed rejects	Postponed rejects receiving	Accepted <Doc name> Response (with RESP_CODE="F") Reject Accepted <Doc name> Reject (for legacy documents)

3.2 Working with dispute financials

According to VCR, the bank initiates the next step of a dispute cycle by using an interactive (Web) or software (Visa RTSI) interface. After the bank's employee has contacted the VROL website and Visa has approved the validity of the next step, a financial document can be created in two ways:

- automatic creation of a document by the VROL server with an extra notification to the initiator's clearing subsystem (the "VROL-financials" mode).
- manual creation of a document from the bank clearing system within 24 hours from Visa's approval ("client-financials" mode).

It is recommended to use the "VROL-financials" mode in the WAY4 RTSI solution.

When a notification is received about a dispute financial sent by VROL on behalf of the bank, the clearing subsystem creates a financial document that is not sent to the payment system but is used for accounting. Also at this time, the clearing subsystem initiates a system activity for the Dispute Assistant module: "Accepted CBK/CBK Rev/2PRS/2PRS Rev Notification". This activity can be used in the customer's RTSI strategy to synchronize RTSI requests with financial confirmations generated by Visa, if required.

3.3 Use cases

3.3.1 Use case for inward message – incoming 2PRS (issuer-side)

- The Transaction Switch RTSI module polls (among others) the "ALL_AWAITING_ACTION_DISPUTE" RTSI queue, reading all its content every 30 minutes. Usually the queue contains from tens to several hundreds of records depending on the intensity of a member's dispute activity. For every record in the queue:
  - The Transaction Switch RTSI module calculates a unique key based on *Case Number*, *Current Case Status* and *Date of Last Status Change*.
  - The key is checked against duplicates using COMS_LOG standard functionality (usually, no more than 5 new records are discovered).
- For every new record, the Transaction Switch RTSI module calls the dsp_sys.PUT_MSG_DOC() Dispute Assistant API procedure to create a new message document (Object Role="MSG_DOC") with Message Code="VROL_2PRS_QNR_DTLS". The main addendum "V8" (vsi:GetDisputeResponseDetailsResponseType) is sent by the Transaction Switch RTSI module to the Dispute Assistant module directly within the parameters of the dsp_sys.PUT_MSG_DOC() call; all other addenda (for supporting documents – "VZ"), if they exist, are attached to the created message document via separate call(s) of dsp_sys.ADD_MSG_ADDENDUM().
- The Dispute Assistant module searches for a case using "VROL Case Number" (this value is stored in the "CM_CASE.EXT_CASE_IDT" field for every VCR case) and attaches the created document to the case that was found.

- The Dispute Assistant module initiates the system activity "Accepted Representment Questionnaire Details (Iss)", thereby transferring the case to the next step according to the strategy (the "Accepted Representment" step in the standard strategy).
- The Dispute Assistant module user gets a case in a step requiring its manual processing and can review incoming documents on the "Addendum Data" tab of the "Case Details" → "All docs" form and then the "Dispute Response Details" link to "V8" addendum or "View Image" link to "VZ" addendum (addenda), if they exist.

3.3.2 Use case for outward message – outgoing Pre-Arbitration in Collaboration flow (issuer-side)

- The Dispute Assistant module user initiates a manual "Create PreArbitration Request" activity in the Dispute Assistant module.
- By clicking the "Complete" link on the "New Activity" screen, the new message document gets Outward Status="To be sent". At this moment, the document becomes available in the dsp_sys.GET_MSG_DOC_TO_SEND() pipelined procedure.
- The case is automatically transferred to the next step according to the strategy (the "Waiting for PreArbitration Response" step in the standard strategy. The document that is the opposite side's response is called PreArbitration Response Details, and not a technical message called PreArbitration Response, that will be received after processing the SOAP response from the VROL server in several minutes).
- The Transaction Switch RTSI module calls (among others) the dsp_sys.GET_MSG_DOC_TO_SEND() pipelined procedure. For every new record, the Transaction Switch RTSI module detects the required logic for processing based on outward Message Code (VROL_PARB_QNR_RQST in this scenario). If a document type allows supporting documents to be attached (this is true for PreArbitration Request), the Transaction Switch RTSI module retrieves all "VZ" addenda for the document via the dsp_sys.GET_IMG_ADM_TOSEND() pipelined procedure.
- The Transaction Switch RTSI module compiles an XML request and waits for a synchronous answer from the RTSI server.
- When the response is received, the Transaction Switch RTSI module calls the dsp_sys.SET_MSG_DOC_RESP() Dispute Assistant API procedure to create a new message document (Object Role="MSG_DOC") for the response with Message Code="VROL_PARB_QNR_RESP". The status of the response is put into one of the parameters and is placed in a separate "V0" addendum automatically by the Dispute Assistant module. The status of the response is also put into REASON_CODE of the VROL_PARB_QNR_RESP document (values are "S" for Success, or "F" for Failure).
- The Dispute Assistant module initiates the system activity "Accepted PreArbitration Response" (this is a technical response) transferring the Response document's REASON_CODE as an Activity Result. In the standard strategy, the case is not transferred to another step if the result is Success, but is transferred to "Processing PreArbitration Exception", if the result is Failure (to fix and resend, or ignore reject).
- Many outward RTSI requests allows a deferred reject to be received several minutes or hours after a successful synchronous request. For handling these scenarios, the Transaction Switch RTSI

module polls (among others) the "ALL_REJECTS" RTSI queue and on receiving a new record, informs the Dispute Assistant module by calling the dsp_sys.SET_MSG_DOC_RESP() procedure.

- If a deferred reject is received, the Dispute Assistant module creates a new message document (Object Role="MSG_DOC") for the response with Message Code="VROL_PARB_QNR_RESP" and REASON_CODE="F" and initiates the system activity "Accepted PreArbitration Response" (this is a technical response) with Activity Result="Failure". Accordingly, the outward Request message can have two Response messages attached to the same case: the first is synchronous and successful and the second is deferred and rejected. In the standard strategy, when a deferred reject is accepted the case is transferred to the "Processing PreArbitration Exception" step.

4. Case processing logic

General rules for creating, classifying, and processing dispute cases are configured according to WAY4 Case Management (see the section "Support of case processing infrastructure" of the "WAY4 Case Management" functional specification).

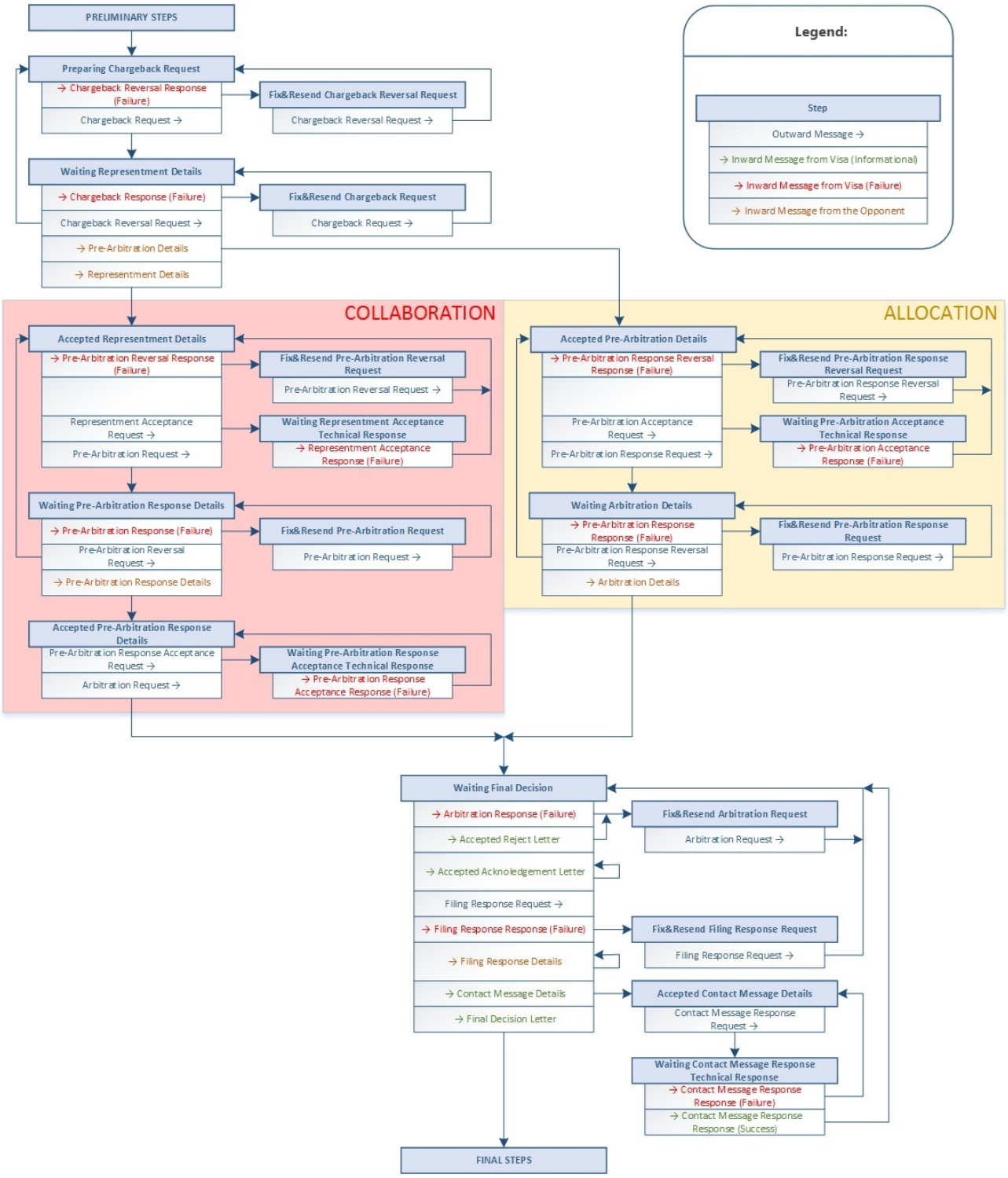
In addition, users can make their own custom settings for dispute case workflow.

Some RTSI-specific activity results and system and non-system (manual) activities make it possible to expand the standard settings of the Case Management platform to allow additional functionality.

An additional case object role with the "MSG_DOC" code is used to configure activities within the framework of the WAY4 RTSI solution. It is used for message documents, such as Transaction Inquiry, Case Initiation request, etc.

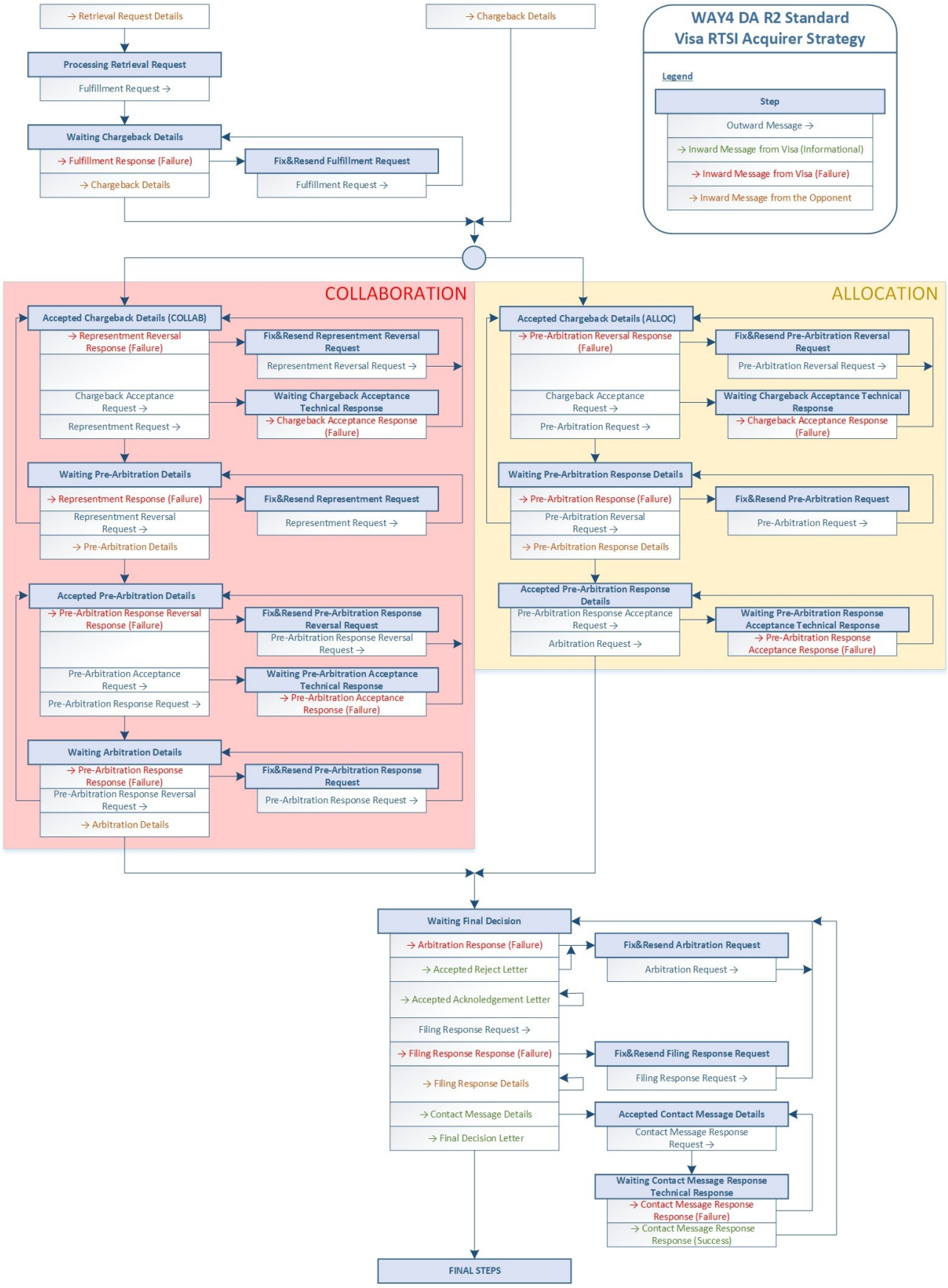
4.1 RTSI strategy examples

The figure below shows an example of a high-level issuer RTSI strategy. A strategy is configured according to the issuer's rules and regulations.



An example of a high-level issuer RTSI strategy

The figure below shows an example of a high-level acquirer RTSI strategy. A strategy is configured according to the acquirer's rules and regulations.



An example of a high-level acquirer RTSI strategy

5. Interaction with external systems

The RTSI module on the WAY4 Transaction Switch platform acts as an HTTP (namely, HTTPS) client while connecting to the VROL server. The system interface part of the VROL server is located on the internet; its address is https://mutualservicesgateway.visa.com/. All data sent to or received from the VROL server is organized as XML objects transferred over the SOAP protocol. Data confidentiality and integrity is provided by the TLS security layer. The WAY4 RTSI solution meets all the requirements of the VROL RTSI specification. All mandatory Release updates are provided to customers on a regular basis.