



---

## **Secure WebServices for Associations v1.6**

Matthieu Verbert – March 16, 2018

# Contents

<b>1</b>	<b>Introduction</b>	<b>4</b>
<b>2</b>	<b>Services description</b>	<b>4</b>
2.1	Carnet Event: Issuance, Cancellation, Return, Invalidation, Archive . . . . .	4
2.1.1	issueCarnets . . . . .	5
2.1.2	cancelCarnetIssuances . . . . .	7
2.1.3	returnCarnets . . . . .	9
2.1.4	requestCarnetInvalidations . . . . .	11
2.1.5	getPeriodCarnetArchives . . . . .	13
2.1.6	getCarnetEvents . . . . .	15
2.2	Termination: SafeTIR data . . . . .	17
2.2.1	getPeriodTerminations . . . . .	18
2.2.2	getCarnetTerminations . . . . .	20
2.3	Reconciliation . . . . .	21
2.3.1	sendRequest . . . . .	22
2.3.2	sendRequests . . . . .	24
2.3.3	getRequest . . . . .	25
2.3.4	getRequests . . . . .	26
2.3.5	getRequestNewTerminations . . . . .	27
<b>3</b>	<b>Security</b>	<b>29</b>
3.1	Network . . . . .	29
3.1.1	HTTPS . . . . .	29
3.2	WS-Security . . . . .	29
3.3	Authentication . . . . .	29
<b>4</b>	<b>WebService Definitions</b>	<b>30</b>
4.1	Issue and Return Event . . . . .	30
4.2	Termination . . . . .	34
4.3	Reconciliation . . . . .	36
<b>5</b>	<b>Schemas</b>	<b>40</b>

---

5.1	Webservices specific schemas . . . . .	40
5.1.1	Issue and Return Event . . . . .	40
5.1.2	Reconciliation . . . . .	42
5.2	IRU schemas . . . . .	43
5.2.1	TIR Actor . . . . .	43
5.2.2	ISO 3166 1 - Country . . . . .	43
5.2.3	Guarantee . . . . .	45
5.2.4	TIR Carnet . . . . .	48
5.2.5	TIR+ Voucher . . . . .	49
5.2.6	SafeTIR Termination . . . . .	49
5.2.7	SafeTIR Carnet data . . . . .	51

## 1 Introduction

The goal of the Secure WebServices for Associations is to allow the IRU Associations to replace the current data file exchanges with web-services. The services are designed to be fully interoperable by the use of standards only:

- the description of methods and parameters relies on WSDL (<http://www.w3.org/TR/wsdl>) files, found in section 4 on page 30, as well as XSD (<http://www.w3.org/XML/Schema>) found in section 5 on page 40.
- the security (further developed in section 3 on page 29) is based on HTTPS and WS-Security.

It should be noted that all file exchanges have replacements using web-services (IIF, RIF, C51, BIF and CXF), and that more services will be developed to improve the web-services scope.

## 2 Services description

In this section the various services and methods will be described.

### 2.1 Carnet Event: Issuance, Cancellation, Return, Invalidation, Archive

The service (of namespace <http://association.iru.org/services/CarnetEventService-1>) will replace the use of IIF, RIF and C51 files. It also allows to cancel issuances, which is not possible with files exchange, and replaces the use of invalidation request forms. Finally, it is possible for an association to get the list of events for a given carnet. Unless noted otherwise, the elements or attributes are defined in section 4.1 on page 30.

### 2.1.1 issueCarnets

The `issueCarnets` method allow the association to inform IRU that new carnets have been issued to a holder. It has the following arguments:

- `Association` (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU, that issued the carnets.
- `sentTime`: the date and time, with timezone information, on the association system when the call is being made.
- `comment`: an optional comment by the association, which has no impact on the processing.
- `carnetIssuances`: a list of `CarnetIssuance` (defined in namespace `http://association.iru.org/model/association-carnet-event-1` in section 5.1.1 on page 40), which is composed of:
  - `TIRCarnetNumber`: the TIR Carnet Number, including the 2 control characters.
  - `EventDate`: the date and time, with timezone information, when the carnet was issued.
  - `Holder` (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43).
  - `ExpiryDate`: the last day of validity when the carnet can be presented to the Customs Office of departure.
  - `CarnetEventAdditionalProperties`: an optional set of `CarnetEventAdditionalProperty`, for future expansion. Currently no properties should be passed and the argument should not be present.

In below example, the association `10` has issued 3 carnets to its holder `XAK/010/3034`. As this association wants its holder to be able to use its carnets immediately, it sends the data right away.

```
<issueCarnets xmlns="http://association.iru.org/services/CarnetEventService-1"
  xmlns:e="http://association.iru.org/model/association-carnet-event-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <a:Association id="10"/>
  <sentTime>2015-08-11T09:42:21.000+03:00</sentTime>
  <carnetIssuances>
    <CarnetIssuance>
      <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
      <e:EventDate>2015-08-25T09:42:07.077+03:00</e:EventDate>
      <a:Holder id="XAK/010/3034"/>
      <e:ExpiryDate>2015-10-15T00:00:00</e:ExpiryDate>
    </CarnetIssuance>
    <CarnetIssuance>
      <e:TIRCarnetNumber>XF99999997</e:TIRCarnetNumber>
      <e:EventDate>2015-08-25T09:42:07.077+03:00</e:EventDate>
      <a:Holder id="XAK/010/3034"/>
      <e:ExpiryDate>2015-08-15T00:00:00</e:ExpiryDate>
    </CarnetIssuance>
    <CarnetIssuance>
      <e:TIRCarnetNumber>UX99999999</e:TIRCarnetNumber>
      <e:EventDate>2015-08-25T09:42:07.077+03:00</e:EventDate>
      <a:Holder id="XAK/010/3034"/>
      <e:ExpiryDate>2015-10-15T00:00:00</e:ExpiryDate>
    </CarnetIssuance>
  </carnetIssuances>
</issueCarnets>
```

The response will contain a list of `CarnetIssuanceStatus`, which has the following parts:

- `tirCarnetNumber`: the TIR Carnet Number, including the 2 control characters.
- `success`: a boolean indicating whether the carnet was successfully issued or not.
- `errorReason`: the reason why the issuance was not successful, as code. It is optional, and will be filled if and only if `success` is false.

The response to our example request is shown below:

```
<issueCarnetsResponse xmlns="http://association.iru.org/services/CarnetEventService-1">
  <carnetIssuanceStatuses>
    <CarnetIssuanceStatus tirCarnetNumber="XN99999991" success="true"/>
    <CarnetIssuanceStatus tirCarnetNumber="XF99999997" success="false" errorReason="CARNET_NOT_ISSUABLE"/>
    <CarnetIssuanceStatus tirCarnetNumber="UX99999999" success="false" errorReason="CARNET_NOT_ISSUED_TO_ASSOCIATION"/>
  </carnetIssuanceStatuses>
</issueCarnetsResponse>
```

We can see that only 1 carnet was successfully issued, but the two others were not. The `errorReason` can have the following values:

- `CARNET_NOT_ISSUED_TO_ASSOCIATION`: the carnet was not invoiced to the association.
- `CARNET_ALREADY_ISSUED`: the carnet has already been issued, it is probably a duplicate request.
- `CARNET_NOT_ISSUABLE`: for all the other cases (wrong Holder id, ExpiryDate before the EventDate, etc.).

## 2.1.2 cancelCarnetIssuances

The cancelCarnetIssuances method allow the association to inform IRU that some previous carnet issuances are not correct, and must be cancelled. It has the following arguments:

- Association (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU, that cancelled the issuance.
- `sentTime`: the date and time, with timezone information, on the association system when the call is being made.
- `comment`: an optional comment by the association, which has no impact on the processing.
- `carnetIssuanceCancellations`: a list of `CarnetIssuanceCancellation` (defined in namespace `http://association.iru.org/model/association-carnet-event-1` in section 5.1.1 on page 40), which is composed of:
  - `TIRCarnetNumber`: the TIR Carnet Number, including the 2 control characters.
  - `EventDate`: the date and time, with timezone information, when the carnet was issued.
  - `CancellationReason`: the reason of the cancellation, as a code. It can have the following values:
    - \* `INCORRECT_HOLDER_ID`: the `Holder id` in the previous issuance was wrong and doesn't match the information on the paper carnet.
    - \* `INCORRECT_ISSUANCE_DATE`: the `EventDate` in the previous issuance was wrong and doesn't match the information on the paper carnet.
    - \* `INCORRECT_EXPIRY_DATE`: the `ExpiryDate` in the previous issuance was wrong and doesn't match the information on the paper carnet.
    - \* `INCORRECT_TIR_CARNET_NUMBER`: `TIRCarnetNumber` in the previous issuance was wrong.
    - \* `INCORRECT_TIR_CARNET_TYPE`: `TIRCarnetNumber` type in the previous issuance was wrong and doesn't match the holder's order.

If more than one error was made, select the most significant one.

In below example, the association *10* wants to cancel 3 issuances as soon as it noticed the errors.

```
<cancelCarnetIssuances xmlns="http://association.iru.org/services/CarnetEventService-1"
  xmlns:e="http://association.iru.org/model/association-carnet-event-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <a:Association id="10"/>
  <sentTime>2015-08-11T10:25:00.010+03:00</sentTime>
  <carnetIssuanceCancellations>
  <CarnetIssuanceCancellation>
  <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
  <e:EventDate>2015-08-11T10:24:12.042+03:00</e:EventDate>
  <e:CancellationReason>INCORRECT_HOLDER_ID</e:CancellationReason>
  </CarnetIssuanceCancellation>
  <CarnetIssuanceCancellation>
  <e:TIRCarnetNumber>XF99999997</e:TIRCarnetNumber>
```

```
<e:EventDate>2015-08-11T10:24:12.042+03:00</e:EventDate>
<e:CancellationReason>INCORRECT_EXPIRY_DATE</e:CancellationReason>
</CarnetIssuanceCancellation>
</carnetIssuanceCancellations>
</cancelCarnetIssuances>
```

The response will contain a list of `CarnetIssuanceCancellationStatus`, which has the following parts:

- `tirCarnetNumber`: the TIR Carnet Number, including the 2 control characters.
- `success`: a boolean indicating whether the cancellation was successful or not. If the cancellation is successful, the carnet is issuable again.
- `errorReason`: the reason why the cancellation was not successful, as code. It is optional, and will be filled if and only if `success` is false.

The response to our example request is shown below:

```
<cancelCarnetIssuancesResponse xmlns="http://association.iru.org/services/CarnetEventService-1">
  <carnetIssuanceCancellationStatuses>
    <CarnetIssuanceCancellation tirCarnetNumber="XN99999991" success="true"/>
    <CarnetIssuanceCancellation tirCarnetNumber="XF99999997" success="false" errorReason="CARNET_NOT_ISSUED"/>
  </carnetIssuanceCancellationStatuses>
</cancelCarnetIssuancesResponse>
```

We can see that only 1 carnet issuance was successful (as the other carnet had not been issued properly, the issuance cannot be cancelled). The `errorReason` can have the following values:

- `CARNET_NOT_ISSUED_TO_ASSOCIATION`: the carnet was not invoiced to the association.
- `CARNET_NOT_ISSUED`: the carnet was not previously issued.
- `ISSUANCE_NOT_CANCELLEABLE`: for all the other cases.



### 2.1.3 returnCarnets

The `returnCarnets` method allow the association to inform IRU that carnets have been returned to the association by the holder. It has the following arguments:

- **Association** (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU, that to whom the carnets were returned.
- **sentTime**: the date and time, with timezone information, on the association system when the call is being made.
- **comment**: an optional comment by the association, which has no impact on the processing.
- **carnetReturns**: a list of `CarnetReturn` (defined in namespace `http://association.iru.org/model/association-carnet-event-1` in section 5.1.1 on page 40), which is composed of:
  - **TIRCarnetNumber**: the TIR Carnet Number, including the 2 control characters.
  - **EventDate**: the date and time, with timezone information, when the carnet was returned.
  - **Holder** (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43).
  - **CarnetEventAdditionalProperties**: an optional set of `CarnetEventAdditionalProperty`. Currently only one property name is supported (`USED`), and the `booleanValue` attribute indicates whether the carnet was used or not.

In below example, the association `10` has received 1 carnets from its holder `XAK/010/3034`.

```
<returnCarnets xmlns="http://association.iru.org/services/CarnetEventService-1"
  xmlns:e="http://association.iru.org/model/association-carnet-event-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <a:Association id="10"/>
  <sentTime>2015-08-15T15:38:07.077+03:00</sentTime>
  <carnetReturns>
  <CarnetReturn>
  <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
  <e:EventDate>2015-08-15T15:37:26.042+03:00</e:EventDate>
  <a:Holder id="XAK/010/3034"/>
  <e:CarnetEventAdditionalProperties>
  <e:CarnetEventAdditionalProperty name="USED" booleanValue="true"/>
  </e:CarnetEventAdditionalProperties>
  </CarnetReturn>
  </carnetReturns>
</returnCarnets>
```

The response will contain a list of `CarnetReturnStatus`, which has the following parts:

- **tirCarnetNumber**: the TIR Carnet Number, including the 2 control characters.
- **success**: a boolean indicating whether the carnet was successfully returned or not.
- **errorReason**: the reason why the return was not successful, as code. It is optional, and will be filled if and only if `success` is false.

The response to our example request is shown below:

```
<returnCarnetsResponse xmlns="http://association.iru.org/services/CarnetEventService-1">
  <carnetReturnStatuses>
    <CarnetReturnStatus tirCarnetNumber="XN99999991" success="true"/>
  </carnetReturnStatuses>
</returnCarnetsResponse>
```

The errorReason can have the following values:

- CARNET\_NOT\_ISSUED\_TO\_ASSOCIATION: the carnet was not invoiced to the association.
- CARNET\_ALREADY\_RETURNED: the carnet has already been returned, it is probably a duplicate request.
- CARNET\_NOT\_RETURNABLE: for all the other cases (carnet not issued, etc.).

### 2.1.4 requestCarnetInvalidations

The requestCarnetInvalidations method allow the association to request IRU to invalidate carnets. It has the following arguments:

- Association (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU, that issued the carnets.
- `sentTime`: the date and time, with timezone information, on the association system when the call is being made.
- `comment`: an optional comment by the association, which has no impact on the processing.
- `carnetInvalidationRequests`: a list of `CarnetInvalidationRequest` (defined in namespace `http://association.iru.org/model/association-carnet-event-1` in section 5.1.1 on page 40), which is composed of:
  - `TIRCarnetNumber`: the TIR Carnet Number, including the 2 control characters.
  - `EventDate`: the date and time, with timezone information, when the root cause event occurred (loss/theft/destruction or retention).
  - `InvalidationRequestReason`: the reason of the cancellation, as a code. It can have the following values:
    - \* `RETENTION`: the carnet is retained by Customs Authorities.
    - \* `DESTRUCTION`: the carnet is destroyed.
    - \* `LOSS`: the carnet is lost.
    - \* `THEFT`: the carnet is stolen.
    - \* `PERMANENT_SUSPENSION`: the carnet holder is permanently suspended.
    - \* `OTHER`: none of the above reason.
  - `CarnetEventAdditionalProperties`: an optional set of `CarnetEventAdditionalProperty`. Currently the following properties are supported:
    - \* `USED`: use the `booleanValue` attribute to indicate whether the carnet is in use.
    - \* `EVENT_COUNTRY_CODE`: the country where the root cause event occurred.
    - \* `EVENT_LOCATION`: the location in the country where the root cause event occurred.
    - \* `WITH_GOODS`: use the `booleanValue` attribute to indicate whether the carnet is lost/stolen/destroyed/retained with or without goods.

In below example, the association *10* requested 1 carnet to be invalidated because it was stolen with goods.

```
<requestCarnetInvalidations xmlns="http://association.iru.org/services/CarnetEventService-1"
  xmlns:e="http://association.iru.org/model/association-carnet-event-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <a:Association id="10"/>
  <sentTime>2017-07-19T09:32:21.000+03:00</sentTime>
  <carnetInvalidationRequests>
  <CarnetInvalidationRequest>
  <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
  <e:EventDate>2017-07-14T07:34:18.000+02:00</e:EventDate>
  <e:InvalidationRequestReason>THEFT</e:InvalidationRequestReason>
  <e:CarnetEventAdditionalProperties>
  <e:CarnetEventAdditionalProperty name="USED" booleanValue="true"/>
  <e:CarnetEventAdditionalProperty name="WITH_GOODS" booleanValue="true"/>
  </e:CarnetEventAdditionalProperties>
  </CarnetInvalidationRequest>
  </carnetInvalidationRequests>
</requestCarnetInvalidations>
```

The response will contain a list of `CarnetInvalidationRequestStatus` , which has the following parts:

- `tirCarnetNumber`: the TIR Carnet Number, including the 2 control characters.
- `success`: a boolean indicating whether the request was successfully sent.
- `errorReason`: the reason why the request was not successful, as code. It is optional, and will be filled if and only if `success` is false.

The response to our example request is shown below:

```
<requestCarnetInvalidationsResponse xmlns="http://association.iru.org/services/CarnetEventService-1">
  <carnetInvalidationRequestStatuses>
  <CarnetInvalidationRequestStatus tirCarnetNumber="XN99999991" success="true"/>
  </carnetInvalidationRequestStatuses>
</requestCarnetInvalidationsResponse>
```

We can see that the request was successful.

The `errorReason` can have the following values:

- `CARNET_NOT_ISSUED_TO_ASSOCIATION`: the carnet was not invoiced to the association.
- `CARNET_ALREADY_INVALIDATED`: the carnet has already been invalidated, it is probably a duplicate request.
- `CARNET_INVALIDATION_ALREADY_REQUESTED`: the request has already been sent, it is a duplicate one.

### 2.1.5 getPeriodCarnetArchives

The `getPeriodCarnetArchives` method allows the association to know which carnets were archived at IRU during a particular period. The arguments are:

- **Association:** the association to which the carnets were issued (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU).
- **from:** since when the carnets were accounted in an archive advice note.
- **to:** up to when the carnets were accounted in an archive advice note (optional).
- **offset:** the number results to discard (optional).
- **maxCount:** the maximum number of results returned (optional, defaults to 1000).

In below example, the association *10* wants to receive the next 2 carnets received on Sep. 30<sup>th</sup>, 2015:

```
<?xml version="1.0"?>
<getPeriodCarnetArchives xmlns="http://association.iru.org/services/CarnetEventService-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <a:Association id="10"/>
  <from>2015-09-30T00:00:00.000+02:00</from>
  <to>2015-10-01T00:00:00.000+02:00</to>
  <offset>10</offset>
  <maxCount>2</maxCount>
</getPeriodCarnetArchives>
```

The response contains the following parts:

- **total:** the total count of archived carnets without taking into account `offset` and `maxCount`. The element not only contains count, but also `from` and `to` that were used to count.
- **carnetArchives:** a container for a list of `CarnetArchive` (of type `CarnetArchiveEventType` defined in namespace `http://association.iru.org/model/association-carnet-event-1` in section 5.1.1 on page 40), with the `offset` used, the count of returned data and whether there are more data to fetch (by doing a subsequent call with a different `offset`). Each `CarnetArchive` contains the following elements:
  - **TIRCarnetNumber:** the TIR Carnet Number, including the 2 control characters
  - **EventDate:** the date and time, with timezone information, when the carnet was archived.
  - **ReceiptDate:** the date and time, with timezone information, when the carnet was received at IRU. If time is not known, it is set to midnight.
  - **CarnetEventAdditionalProperties:** an optional set of `CarnetEventAdditionalProperty`. Currently four property names are supported: `USED`, `FOR_CONTROL` (both using the `booleanValue` attribute), `INCENTIVE_CODE` and `INCENTIVE` (using the `value` attribute).

In the response we can see that there are 2512 archived carnets, out of which 2 are returned by the service:

```
<?xml version="1.0"?>
<getPeriodCarnetArchivesResponse xmlns="http://association.iru.org/services/CarnetEventService-1"
  xmlns:e="http://association.iru.org/model/association-carnet-event-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <total>
    <from>2015-09-30T00:00:00.000+02:00</from>
    <to>2015-10-01T00:00:00.000+02:00</to>
    <count>2512</count>
  </total>
  <carnetArchives offset="10" count="2" endReached="false">
    <CarnetArchive>
      <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
      <e:EventDate>2015-09-30T10:17:26.042+02:00</e:EventDate>
      <e:ReceiptDate>2015-09-27T00:00:00.000+02:00</e:ReceiptDate>
      <e:CarnetEventAdditionalProperties>
        <e:CarnetEventAdditionalProperty name="USED" booleanValue="true"/>
        <e:CarnetEventAdditionalProperty name="FOR_CONTROL" booleanValue="false"/>
        <e:CarnetEventAdditionalProperty name="INCENTIVE_CODE" value="u"/>
        <e:CarnetEventAdditionalProperty name="INCENTIVE" value="CREDIT_WITHOUT_EPD"/>
      </e:CarnetEventAdditionalProperties>
    </CarnetArchive>
    <CarnetArchive>
      <e:TIRCarnetNumber>XQ99999992</e:TIRCarnetNumber>
      <e:EventDate>2015-09-30T10:17:38.042+02:00</e:EventDate>
      <e:ReceiptDate>2015-09-27T00:00:00.000+02:00</e:ReceiptDate>
      <e:CarnetEventAdditionalProperties>
        <e:CarnetEventAdditionalProperty name="USED" booleanValue="true"/>
        <e:CarnetEventAdditionalProperty name="FOR_CONTROL" booleanValue="false"/>
        <e:CarnetEventAdditionalProperty name="INCENTIVE_CODE" value="i"/>
        <e:CarnetEventAdditionalProperty name="INCENTIVE" value="CREDIT_WITH_EPD"/>
      </e:CarnetEventAdditionalProperties>
    </CarnetArchive>
  </carnetArchives>
</getPeriodCarnetArchivesResponse>
```

## 2.1.6 getCarnetEvents

The `getCarnetEvents` method allows the association to fetch the events for a particular carnet.

It has a two arguments, which are the `Association` requesting the information and the `TIRCarnetNumber`.

In below example, the association will get all the events for the carnet numbered XN99999991.

```
<?xml version="1.0"?>
<getCarnetEvents xmlns="http://association.iru.org/services/CarnetEventService-1"
  xmlns:e="http://association.iru.org/model/association-carnet-event-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <a:Association id="10"/>
  <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
</getCarnetEvents>
```

The response contains a two elements:

- `CarnetEventStatus`, which has the following parts:
  - `tirCarnetNumber`: the TIR Carnet Number, including the 2 control characters.
  - `success`: a boolean indicating whether the carnet was found or not.
  - `errorReason`: the reason why the carnet was not found, as code. It is optional, and will be filled if and only if `success` is false.
- `CarnetEvents`: a container for a list of `CarnetEvent` of type `CarnetEventType`, which can be one of `CarnetIssuance`, `CarnetIssuanceCancellation`, `CarnetReturn`, `CarnetArchive` or `CarnetInvalidationRequest`.

In the response we can see that there are five events:

```
<?xml version="1.0"?>
<getCarnetEventsResponse xmlns="http://association.iru.org/services/CarnetEventService-1"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:e="http://association.iru.org/model/association-carnet-event-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <CarnetEventStatus tirCarnetNumber="XN99999991" success="true">
  <CarnetEvents>
  <CarnetEvent xsi:type="e:CarnetIssuanceCancellationType">
    <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
    <e:EventDate>2015-08-11T08:55:12.042+03:00</e:EventDate>
    <e:CancellationReason>INCORRECT_HOLDER_ID</e:CancellationReason>
    <e:CarnetEventAdditionalProperties>
      <e:CarnetEventAdditionalProperty name="CANCELLED_ISSUANCE_EVENT_DATE" value="2015-08-10T10:24:12.042+03:00"/>
      <e:CarnetEventAdditionalProperty name="CANCELLED_ISSUANCE_HOLDER_ID" value="XAK/010/3033"/>
      <e:CarnetEventAdditionalProperty name="CANCELLED_ISSUANCE_EXPIRY_DATE" value="2015-10-15T00:00:00"/>
    </e:CarnetEventAdditionalProperties>
  </CarnetIssuanceCancellation>
  <CarnetEvent xsi:type="e:CarnetIssuanceEventType">
    <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
    <e:EventDate>2015-08-11T09:42:07.077+03:00</e:EventDate>
    <a:Holder id="XAK/010/3034"/>
    <e:ExpiryDate>2015-10-15T00:00:00</e:ExpiryDate>
  </CarnetEvent>
  <CarnetInvalidationRequest>
    <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
    <e:EventDate>2017-08-14T07:34:18.000+02:00</e:EventDate>
    <e:InvalidationRequestReason>LOSS</e:InvalidationRequestReason>
    <e:CarnetEventAdditionalProperties>
      <e:CarnetEventAdditionalProperty name="USED" booleanValue="true"/>
      <e:CarnetEventAdditionalProperty name="WITH_GOODS" booleanValue="true"/>
      <e:CarnetEventAdditionalProperty name="STATUS" value="ACCEPTED"/>
      <e:CarnetEventAdditionalProperty name="PROCESSING_DATE" value="2017-08-14T08:34:18.000+02:00"/>
    </e:CarnetEventAdditionalProperties>
  </CarnetInvalidationRequest>
  <CarnetEvent xsi:type="e:CarnetReturnEventType">
    <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
    <e:EventDate>2015-08-30T15:37:26.042+03:00</e:EventDate>
    <a:Holder id="XAK/010/3034"/>
    <e:CarnetEventAdditionalProperties>
      <e:CarnetEventAdditionalProperty name="USED" booleanValue="true"/>
    </e:CarnetEventAdditionalProperties>
```

```
</CarnetReturn>
<CarnetEvent xsi:type="e:CarnetArchiveEventType">
  <e:TIRCarnetNumber>XN99999991</e:TIRCarnetNumber>
  <e:EventDate>2015-09-30T10:17:26.042+02:00</e:EventDate>
  <e:ReceiptDate>2015-09-27T00:00:00.000+02:00</e:ReceiptDate>
  <e:CarnetEventAdditionalProperties>
    <e:CarnetEventAdditionalProperty name="USED" booleanValue="true"/>
    <e:CarnetEventAdditionalProperty name="FOR_CONTROL" booleanValue="false"/>
    <e:CarnetEventAdditionalProperty name="INCENTIVE_CODE" value="u"/>
    <e:CarnetEventAdditionalProperty name="INCENTIVE" value="CREDIT_WITHOUT_EPD"/>
  </e:CarnetEventAdditionalProperties>
</CarnetArchive>
</getCarnetEventsResponse>
```



## 2.2 Termination: SafeTIR data

The service (of namespace `http://association.iru.org/services/TerminationService-1`) will replace the use of CXF files. Unless noted otherwise, the elements or attributes are defined in section 4.1 on page 30.

## 2.2.1 getPeriodTerminations

The `getPeriodTerminations` method allows the association to know which SafeTIR data were processed by IRU systems during a particular period. The arguments are:

- **Association:** the association to which the carnets were issued (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU).
- **from:** since when the termination data were processed.
- **to:** up to when the termination data were processed (optional).
- **offset:** the number results to discard (optional).
- **maxCount:** the maximum number of results returned (optional).

In below example, the association *10* wants to receive the next 2 SafeTIR data received on Aug. 31<sup>th</sup>, 2015:

```
<?xml version="1.0"?>
<getPeriodTerminations xmlns="http://association.iru.org/services/TerminationService-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <a:Association id="10"/>
  <from>2015-08-31T00:00:00.000+02:00</from>
  <to>2015-09-01T00:00:00.000+02:00</to>
  <offset>10</offset>
  <maxCount>2</maxCount>
</getPeriodTerminations>
```

The response contains the following parts:

- **total:** the total count of terminations with taking into account offset and max-Count. The element not only contains count, but also `from` and `to` that were used to count.
- **tirOperationTerminations:** a container for a list of `TIROperationTermination` (of type `ReceivedTIROperationTerminationType`), with the offset used and the count of returned SafeTIR data and whether there are more data to fetch (by doing a subsequent call with a different offset). Each `TIROperationTermination` contains the following elements:
  - **receivedDate:** the date when the new SafeTIR data was received at IRU.
  - **uniqueIndex:** the unique identifier of the SafeTIR data, for reconciliation purposes.
  - **TIRCarnetNumber:** the TIR Carnet Number, including the 2 control characters.
  - **VoletPageNumber :** the page number for the termination (even number).
  - **Customs :** the customs authorities, identified by its `CountryCode` , that should reply to this request.
  - **CustomsOffice :** the office where the termination took place.

- CustomsLedgerEntryReference : the reference of entry in the customs ledger (optional).
- CustomsLedgerEntryDate : the date of entry in the customs ledger (optional).
- CertificateOfTerminationReference : the reference of the certificate of termination (optional).
- CertificateOfTerminationDate : the date of the certification of termination (optional).
- IsBeforeLoad : whether the operation is before reloading goods.
- IsExit : whether the operation is at an exit customs office.
- IsFinal : whether the operation is the last one or not in the TIR transport.
- SequenceNumber : the sequence number for the operation (optional).
- IsWithReservation : whether there were reservation or not.
- CustomsComment : a comment by customs (optional).
- PackageCount : the number of unloaded packages (if any).

In the response we can see that there are 230 SafeTIR data, out of which 2 are returned by the service:

```
<?xml version="1.0"?>
<getPeriodTerminationsResponse xmlns="http://association.iru.org/services/TerminationService-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1"
  xmlns:c="http://rts.iru.org/model/carnet-1"
  xmlns:t="http://rts.iru.org/model/termination-1">
  <total>
    <from>2015-08-31T00:00:00.000+02:00</from>
    <to>2015-09-01T00:00:00.000+02:00</to>
    <count>230</count>
  </total>
  <tirOperationTerminations offset="10" count="2" endReached="false">
    <TIROperationTermination receivedDate="2015-08-31T08:57:50.250+02:00">
      <c:TIRCarnetNumber>XN99999991</c:TIRCarnetNumber>
      <c:VoletPageNumber>6</c:VoletPageNumber>
      <a:Customs>
        <a:CountryCode>XAK</a:CountryCode>
      </a:Customs>
      <t:CustomsOffice>C00001</t:CustomsOffice>
      <t:CustomsLedgerEntryReference>152</t:CustomsLedgerEntryReference>
      <t:CustomsLedgerEntryDate>2015-08-26T00:00:00.000</t:CustomsLedgerEntryDate>
      <t:IsExit>false</t:IsExit>
      <t:IsFinal>true</t:IsFinal>
      <t:IsWithReservation>false</t:IsWithReservation>
      <t:PackageCount>764</t:PackageCount>
    </TIROperationTermination>
    <TIROperationTermination receivedDate="2015-08-31T08:46:07.283+02:00">
      <c:TIRCarnetNumber>XQ99999992</c:TIRCarnetNumber>
      <c:VoletPageNumber>4</c:VoletPageNumber>
      <a:Customs>
        <a:CountryCode>XAK</a:CountryCode>
      </a:Customs>
      <t:CustomsOffice>C00002</t:CustomsOffice>
      <t:CustomsLedgerEntryReference>152</t:CustomsLedgerEntryReference>
      <t:CustomsLedgerEntryDate>2015-08-27T00:00:00.000</t:CustomsLedgerEntryDate>
      <t:IsExit>false</t:IsExit>
      <t:IsFinal>true</t:IsFinal>
      <t:IsWithReservation>false</t:IsWithReservation>
      <t:PackageCount>825</t:PackageCount>
    </TIROperationTermination>
  </tirOperationTerminations>
</getPeriodTerminationsResponse>
```

## 2.2.2 getCarnetTerminations

The getPeriodTerminations method allows the association to fetch the SafeTIR data for a particular carnet.

It has a single argument, which is the TIRCarnetNumber. In below example, the association will get all the terminations for the carnet numbered XN99999991.

```
<?xml version="1.0"?>
<getCarnetTerminations xmlns="http://association.iru.org/services/TerminationService-1"
  xmlns:c="http://rts.iru.org/model/carnet-1">
  <c:TIRCarnetNumber>XN99999991</c:TIRCarnetNumber>
</getCarnetTerminations>
```

The response contains a single element tirOperationTerminations: a container for a list of TIROperationTermination (of type ReceivedTIROperationTerminationType). Each TIROperationTermination contains the following elements: TIRCarnetNumber, VoletPageNumber, Customs, CustomsOffice, CustomsLedgerEntryReference, CustomsLedgerEntryDate, CertificateOfTerminationReference, CertificateOfTerminationDate, IsBeforeLoad, IsExit, IsFinal, SequenceNumber, IsWithReservation, CustomsComment and PackageCount : as described in section 2.2.1 on page 18.

In the response we can see that there is a single piece of SafeTIR data:

```
<?xml version="1.0"?>
<getCarnetTerminationsResponse xmlns="http://association.iru.org/services/TerminationService-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1"
  xmlns:c="http://rts.iru.org/model/carnet-1"
  xmlns:t="http://rts.iru.org/model/termination-1">
  <tirOperationTerminations>
    <TIROperationTermination receivedDate="2015-08-31T08:57:50.250+02:00">
      <c:TIRCarnetNumber>XN99999991</c:TIRCarnetNumber>
      <c:VoletPageNumber>6</c:VoletPageNumber>
      <a:Customs>
        <a:CountryCode>XAK</a:CountryCode>
      </a:Customs>
      <t:CustomsOffice>C00001</t:CustomsOffice>
      <t:CustomsLedgerEntryReference>152</t:CustomsLedgerEntryReference>
      <t:CustomsLedgerEntryDate>2015-08-26T00:00:00.000</t:CustomsLedgerEntryDate>
      <t:IsExit>false</t:IsExit>
      <t:IsFinal>true</t:IsFinal>
      <t:IsWithReservation>false</t:IsWithReservation>
      <t:PackageCount>764</t:PackageCount>
    </TIROperationTermination>
  </tirOperationTerminations>
</getCarnetTerminationsResponse>
```

## 2.3 Reconciliation

The service (of namespace `http://association.iru.org/services/ReconciliationService-1`) will replace the use of BIF files. It also allows to query the status of reconciliation requests. Unless noted otherwise, the elements or attributes are defined in section 4.3 on page 36.

### 2.3.1 sendRequest

The sendRequest method allows the association to request the addition or modification of data for a single termination of TIR operation. It has one mandatory request argument of type ReconciliationRequestType defined in section 5.1.2 on page 42, which contains the following parts:

- **Id**: the unique identifier of the request in the association's system.
- **ReminderCount**: how many times the request was re-sent.
- **Originator**: the originating Association for this request (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU.
- **Reason**: the reason for this request, as a code (as defined in section 5.2.6 on page 49). It can be either `MISSING` (if no SafeTIR data exists), `DISCREPANCY` (if the existing SafeTIR data don't match the information on the carnet), or `CONFIRMATION` (to get a paper-based confirmation by Customs Authorities of existing SafeTIR data).
- **Comment** : an optional comment by the originating association.
- either `TIROperationTerminationToValidate` or `MissingTIROperationTermination` , depending on the Reason. For a `TIROperationTerminationToValidate` , use 0 as `uniqueIndex` when it is not known. For a `MissingTIROperationTermination` , all elements but `TIRCarnetNumber` and `Customs` are optional. This element contains: `TIRCarnetNumber`, `VoletPageNumber` , `Customs` , `CustomsOffice` , `CustomsLedgerEntryReference` , `CustomsLedgerEntryDate` , `CertificateOfTerminationReference` , `CertificateOfTerminationDate` , `IsBeforeLoad` , `IsExit` , `IsFinal` , `SequenceNumber` , `IsWithReservation` , `CustomsComment` and `PackageCount` : as described in section 2.2.1 on page 18.

A second, optional, argument is `sentTime`: the date and time, with timezone information, on the association system when the call is being made.

In below example, the association 10 sent a request for missing SafeTIR data:

```
<sendRequest xmlns="http://association.iru.org/services/ReconciliationService-1"
  xmlns:r="http://association.iru.org/model/reconciliation-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1"
  xmlns:c="http://rts.iru.org/model/carnet-1"
  xmlns:t="http://rts.iru.org/model/termination-1">
  <request>
    <r:Id>6275633</r:Id>
    <r:ReminderCount>0</r:ReminderCount>
    <r:Originator>
      <a:Association id="10"/>
    </r:Originator>
    <r:Reason>MISSING</r:Reason>
    <t:MissingTIROperationTermination>
      <c:TIRCarnetNumber>XN99999991</c:TIRCarnetNumber>
      <c:VoletPageNumber>4</c:VoletPageNumber>
      <a:Customs>
        <a:CountryCode>XAK</a:CountryCode>
      </a:Customs>
      <t:CustomsOffice>C00001</t:CustomsOffice>
      <t:CustomsLedgerEntryReference>132</t:CustomsLedgerEntryReference>
      <t:CustomsLedgerEntryDate>2015-09-03T00:00:00.000</t:CustomsLedgerEntryDate>
      <t:IsExit>false</t:IsExit>
      <t:IsFinal>true</t:IsFinal>
      <t:IsWithReservation>false</t:IsWithReservation>
  </t:MissingTIROperationTermination>
  </request>
</sendRequest>
```

```
</t:MissingTIROperationTermination>  
</request>  
</sendRequest>
```

The response will contain:

- **success**: a boolean indicating that the request can be further processed by IRU.
- **errorType**: the reason why the request can not be processed. It can either be **BAD\_REQUEST** (if the client sent wrong data), or **INTERNAL\_ERROR** (for all other cases).

The response to our example request is shown below:

```
<sendRequestResponse xmlns="http://association.iru.org/services/ReconciliationService-1">  
  <success>true</success>  
</sendRequestResponse>
```

### 2.3.2 sendRequests

The sendRequests method allows the association to request the addition or modification of data for terminations of multiple TIR operations at once. The arguments are:

- **requests**: a list of ReconciliationRequestType as described in section 2.3.1 on page 22, with a count attribute representing the number of requests.
- **sentTime**: the date and time, with timezone information, on the association system when the call is being made.

The same example as in section 2.3.1 on page 22 can be achieved using the following request:

```
<sendRequests xmlns="http://association.iru.org/services/ReconciliationService-1"
  xmlns:r="http://association.iru.org/model/reconciliation-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1"
  xmlns:c="http://rts.iru.org/model/carnet-1"
  xmlns:t="http://rts.iru.org/model/termination-1">
  <requests count="1">
    <r:ReconciliationRequest>
      <r:Id>6275633</r:Id>
      <r:ReminderCount>0</r:ReminderCount>
      <r:Originator>
        <a:Association id="10"/>
      </r:Originator>
      <r:Reason>MISSING</r:Reason>
      <t:MissingTIROperationTermination>
        <c:TIRCarnetNumber>XN99999991</c:TIRCarnetNumber>
        <c:VoletPageNumber>4</c:VoletPageNumber>
        <a:Customs>
          <a:CountryCode>XAK</a:CountryCode>
        </a:Customs>
        <t:CustomsOffice>C00001</t:CustomsOffice>
        <t:CustomsLedgerEntryReference>132</t:CustomsLedgerEntryReference>
        <t:CustomsLedgerEntryDate>2015-09-03T00:00:00.000</t:CustomsLedgerEntryDate>
        <t:IsExit>>false</t:IsExit>
        <t:IsFinal>>true</t:IsFinal>
        <t:IsWithReservation>>false</t:IsWithReservation>
      </t:MissingTIROperationTermination>
    </r:ReconciliationRequest>
  </requests>
</sendRequests>
```

The response will contain a list of RequestResponse (one for each ReconciliationRequest), composed of:

- **Id**: the unique identifier of the request in the association's system.
- **Success**: a boolean indicating that the request can be further processed by IRU.
- **ErrorType**: the reason why the request can not be processed. It can either be BAD\_REQUEST (if the client sent wrong data), or INTERNAL\_ERROR (for all other cases).

The response for our example is shown below:

```
<sendRequestsResponse xmlns="http://association.iru.org/services/ReconciliationService-1">
  <RequestResponse>
    <Id>6275633</Id>
    <Success>true</Success>
  </RequestResponse>
</sendRequestsResponse>
```



### 2.3.3 getRequest

The `getRequest` method allows the association to get the details of a reconciliation request. It has two mandatory arguments:

- `id`: the unique identifier of the request in the association's system.
- `originator`: the originating Association for this request (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU.

In below example, the association `10` will get the details of a request:

```
<getRequest xmlns="http://association.iru.org/services/ReconciliationService-1"
  xmlns:r="http://association.iru.org/model/reconciliation-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1"
  xmlns:c="http://rts.iru.org/model/carnet-1"
  xmlns:t="http://rts.iru.org/model/termination-1">
  <id>6275633</id>
  <originator>
    <a:Association id="10"/>
  </originator>
</getRequest>
```

The response will contain a `RequestWithStatus` which is composed of either the request and its status, or only the identifier of the request which indicates it was not found:

- `Request`: it is of type `ReconciliationRequestType` (whose description can be found in section 2.3.1 on 22); it may have been modified by IRU since it was sent by the originator.
- `Status`: it contains the latest value for the status (which can be one of the following values: `NOT_SENT_TO_CUSTOMS`, `SENT_TO_CUSTOMS`, `REPLIED_BY_CUSTOMS`, `CANCELLED` or `EXPIRED`) and the date it was updated.
- `NotFoundId`: the unique identifier of the request that was not found.

The response to our example request is shown below:

```
<getRequestResponse xmlns="http://association.iru.org/services/ReconciliationService-1"
  xmlns:r="http://association.iru.org/model/reconciliation-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1"
  xmlns:c="http://rts.iru.org/model/carnet-1"
  xmlns:t="http://rts.iru.org/model/termination-1">
  <requestWithStatus>
    <Request>
      <r:Id>6275633</r:Id>
      <r:ReminderCount>0</r:ReminderCount>
      <r:Originator>
        <a:Association id="10"/>
      </r:Originator>
      <r:Reason>MISSING</r:Reason>
      <t:MissingTIROperationTermination>
        <c:TIRCarnetNumber>XN99999991</c:TIRCarnetNumber>
        <c:VoletPageNumber>4</c:VoletPageNumber>
        <a:Customs>
          <a:CountryCode>XAK</a:CountryCode>
        </a:Customs>
        <t:CustomsOffice>C00001</t:CustomsOffice>
        <t:CustomsLedgerEntryReference>132</t:CustomsLedgerEntryReference>
        <t:CustomsLedgerEntryDate>2015-09-03T00:00:00.000</t:CustomsLedgerEntryDate>
        <t:IsExit>>false</t:IsExit>
        <t:IsFinal>>true</t:IsFinal>
        <t:IsWithReservation>>false</t:IsWithReservation>
      </t:MissingTIROperationTermination>
    </Request>
    <Status value="SENT_TO_CUSTOMS" date="2016-01-06T00:00:00.000+0200" />
  </requestWithStatus>
</getRequestResponse>
```

### 2.3.4 getRequests

The `getRequests` method allows the association to request to get the details of multiple reconciliation requests. The arguments are:

- `ids`: a list of unique identifiers of the requests in the association's system, with a `count` attribute representing the number of request identifiers.
- `originator`: the originating Association for these requests (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU.

The same example as in section 2.3.3 on page 25 can be achieved using the following request; note that a non existing unique identifier was also added to demonstrate the case when a reconciliation request can not be found.

```
<getRequest xmlns="http://association.iru.org/services/ReconciliationService-1"
  xmlns:r="http://association.iru.org/model/reconciliation-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1"
  xmlns:c="http://its.iru.org/model/carnet-1"
  xmlns:t="http://rts.iru.org/model/termination-1">
  <ids count="2">
    <Id>6275633</Id>
    <Id>1531389</Id>
  </ids>
  <originator>
    <a:Association id="10"/>
  </originator>
</getRequest>
```

The response will contain a list of `RequestWithStatus` (one for each `Id`), whose description can be found in section 2.3.3 on page 25.

The response for our example is shown below:

```
<getRequestResponse xmlns="http://association.iru.org/services/ReconciliationService-1"
  xmlns:r="http://association.iru.org/model/reconciliation-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1"
  xmlns:c="http://its.iru.org/model/carnet-1"
  xmlns:t="http://rts.iru.org/model/termination-1">
  <requestsWithStatus>
    <RequestWithStatus>
      <Request>
        <r:Id>6275633</r:Id>
        <r:ReminderCount>0</r:ReminderCount>
        <r:Originator>
          <a:Association id="10"/>
        </r:Originator>
        <r:Reason>MISSING</r:Reason>
        <t:MissingTIROperationTermination>
          <c:TIRCarnetNumber>XN99999991</c:TIRCarnetNumber>
          <c:VoletPageNumber>4</c:VoletPageNumber>
          <a:Customs>
            <a:CountryCode>XAK</a:CountryCode>
          </a:Customs>
          <t:CustomsOffice>C00001</t:CustomsOffice>
          <t:CustomsLedgerEntryReference>132</t:CustomsLedgerEntryReference>
          <t:CustomsLedgerEntryDate>2015-09-03T00:00:00.000</t:CustomsLedgerEntryDate>
          <t:IsExit>false</t:IsExit>
          <t:IsFinal>true</t:IsFinal>
          <t:IsWithReservation>false</t:IsWithReservation>
        </t:MissingTIROperationTermination>
      </Request>
      <Status value="SENT_TO_CUSTOMS" date="2016-01-06T00:00:00.000+0200" />
    </RequestWithStatus>
    <RequestWithStatus>
      <NotFoundId>1531389</NotFoundId>
    </RequestWithStatus>
  </requestsWithStatus>
</getRequestResponse>
```

### 2.3.5 getRequestNewTerminations

The `getRequestNewTerminations` method allows the association to know that new SafeTIR data exist since a reconciliation request was made. As not all customs authorities use the automated reconciliation process, it is not always possible to know that a new SafeTIR data is correlated to the request, but it will be part of the results nonetheless.

It has the following arguments:

- `originator`: the originating Association for this request (as defined in namespace `http://www.iru.org/model/tir-actor-1` in section 5.2.1 on page 43): only `id` attribute is mandatory and must contain the unique identifier of the association, as assigned by IRU.
- `requestFrom`: since when request for reconciliation was sent.
- `requestTo`: up to when the request for reconciliation was sent (optional).
- `answerFrom`: since when the customs authorities sent new SafeTIR data.
- `answerTo`: up to when the customs authorities sent new SafeTIR data (optional).
- `offset`: the number results to discard (optional).
- `maxCount`: the maximum number of results returned (optional).

In below example, the association *10* wants to receive the first 2 new SafeTIR data received for the requests sent after Aug. 25<sup>th</sup>, 2015:

```
<?xml version="1.0"?>
<getRequestNewTerminations xmlns="http://association.iru.org/services/ReconciliationService-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1">
  <originator>
    <a:Association id="10"/>
  </originator>
  <requestFrom>2015-08-25T00:00:00.000+03:00</requestFrom>
  <answerFrom>2015-08-25T00:00:00.000+03:00</answerFrom>
  <offset>0</offset>
  <maxCount>2</maxCount>
</getRequestNewTerminations>
```

The response contains the following parts:

- `total`: the total count of new terminations without taking into account `offset` and `maxCount`. The element not only contains count, but also `requestFrom`, `requestTo`, `answerFrom` and `answerTo` that were used to count.
- `tirOperationTerminations`: a container for a list of `TIROperationTermination` (of type `ReconciliationRequestNewTerminationType`), with the `offset` used and the count of returned SafeTIR data and whether there are more data to fetch (by doing a subsequent call with a different `offset`). Each `TIROperationTermination` contains the following elements:
  - `replyIndicator`: a boolean indicating that the new termination is indeed a reply to the original request.
  - `requestId`: the unique identifier of the request in the association's system.
  - `requestDate`: the date when the request was received at IRU.

- receivedDate: the date when the new SafeTIR data was received at IRU.
- TIRCarnetNumber, VoletPageNumber, Customs, CustomsOffice, CustomsLedgerEntryReference, CustomsLedgerEntryDate, CertificateOfTerminationReference, CertificateOfTerminationDate, IsBeforeLoad, IsExit, IsFinal, SequenceNumber, IsWithReservation, CustomsComment and PackageCount : as described in section 2.2.1 on page 18.

In the response we can see that there are 6 new SafeTIR data, out of which 2 are returned by the service:

```
<getRequestNewTerminationsResponse xmlns="http://association.iru.org/services/ReconciliationService-1"
  xmlns:a="http://www.iru.org/model/tir-actor-1"
  xmlns:c="http://rts.iru.org/model/carnet-1"
  xmlns:t="http://rts.iru.org/model/termination-1">
  <total requestFrom="2015-08-25T00:00:00.000+03:00" answerFrom="2015-08-25T00:00:00.000+03:00" count="6"/>
  <tirOperationTerminations offset="0" count="2" endReached="false">
    <TIROperationTermination replyIndicator="false" requestId="6275633" requestDate="2015-08-25T07:20:00.000+02:00"
      receivedDate="2015-08-31T08:57:50.250+02:00">
      <c:TIRCarnetNumber>XN99999991</c:TIRCarnetNumber>
      <c:VoletPageNumber>6</c:VoletPageNumber>
      <a:Customs>
        <a:CountryCode>XAK</a:CountryCode>
      </a:Customs>
      <t:CustomsOffice>C00001</t:CustomsOffice>
      <t:CustomsLedgerEntryReference>152</t:CustomsLedgerEntryReference>
      <t:CustomsLedgerEntryDate>2015-08-26T00:00:00.000</t:CustomsLedgerEntryDate>
      <t:IsExit>false</t:IsExit>
      <t:IsFinal>true</t:IsFinal>
      <t:IsWithReservation>false</t:IsWithReservation>
      <t:PackageCount>764</t:PackageCount>
    </TIROperationTermination>
    <TIROperationTermination replyIndicator="false" requestId="6275636" requestDate="2015-08-25T07:13:00.000+02:00"
      receivedDate="2015-08-31T08:46:07.283+02:00">
      <c:TIRCarnetNumber>XQ99999992</c:TIRCarnetNumber>
      <c:VoletPageNumber>4</c:VoletPageNumber>
      <a:Customs>
        <a:CountryCode>XAK</a:CountryCode>
      </a:Customs>
      <t:CustomsOffice>C00002</t:CustomsOffice>
      <t:CustomsLedgerEntryReference>152</t:CustomsLedgerEntryReference>
      <t:CustomsLedgerEntryDate>2015-08-27T00:00:00.000</t:CustomsLedgerEntryDate>
      <t:IsExit>false</t:IsExit>
      <t:IsFinal>true</t:IsFinal>
      <t:IsWithReservation>false</t:IsWithReservation>
      <t:PackageCount>825</t:PackageCount>
    </TIROperationTermination>
  </tirOperationTerminations>
</getRequestNewTerminationsResponse>
```

## 3 Security

### 3.1 Network

The webservices are deployed within the IRU network, and are accessible over any Internet connection.

#### 3.1.1 HTTPS

It is important that no other party can inspect the traffic between IRU servers and the associations' systems. Therefore all the webservices traffic will be sent over HTTPS instead of HTTP.

### 3.2 WS-Security

WS-Security is a set of interoperable standards defined by OASIS Web Services Security (WSS) Technical Committee ([https://www.oasis-open.org/committees/tc\\_home.php?wg\\_abbrev=wss](https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wss)). The following documentation explains thoroughly the various concepts regarding authentication in WS-Security, and should be consulted before any implementation:

- Core Specification (version 1.1): <http://docs.oasis-open.org/wss/v1.1/wss-v1.1-spec-os-SOAPMessageSecurity.pdf>
- X.509 Certificate Token Profile (version 1.1): <http://docs.oasis-open.org/wss/v1.1/wss-v1.1-spec-os-x509TokenProfile.pdf>
- Username Token Profile (version 1.1): <http://docs.oasis-open.org/wss/v1.1/wss-v1.1-spec-os-UsernameTokenProfile.pdf>

### 3.3 Authentication

The associations' systems can be authenticated using either X.509 Certificate or Username scheme. Although the Username authentication is enough to ensure that the caller is indeed the associations' system, it is not possible to ensure that the message was not altered (although it would be technically difficult due the encryption in place thanks to HTTPS).

Therefore IRU encourages the associations to apply to the usage the X.509 Certificate Token Profile, that will open the possibility to use digital signatures on the messages. It should be noted that most modern development platforms support both schemes.

## 4 WebService Definitions

### 4.1 Issue and Return Event

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<definitions targetNamespace="http://association.iru.org/services/CarnetEventService-1"
  xmlns:tns="http://association.iru.org/services/CarnetEventService-1"
  xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
  xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"
  xmlns:wsa10="http://www.w3.org/2005/08/addressing"
  xmlns:wssu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">

  <wsp:Policy wsu:Id="CarnetEventUsingAddressingPolicy">
    <wsp:ExactlyOne>
      <wsp:All>
        <wsaw:UsingAddressing />
      </wsp:All>
    </wsp:ExactlyOne>
  </wsp:Policy>

  <types>
    <xs:schema targetNamespace="http://association.iru.org/services/CarnetEventService-1"
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
      xmlns:icc="http://www.iru.org/model/iso-3166-1-alpha-3"
      xmlns:act="http://www.iru.org/model/tir-actor-1"
      xmlns:tca="http://www.iru.org/model/tir-carnet-1"
      xmlns:car="http://association.iru.org/model/association-carnet-event-1"
      elementFormDefault="qualified">

    <xs:import namespace="http://www.iru.org/model/iso-3166-1-alpha-3" schemaLocation="iso-3166-1-alpha-3.xsd"/>
    <xs:import namespace="http://www.iru.org/model/tir-actor-1" schemaLocation="tir-actor-1.xsd"/>
    <xs:import namespace="http://www.iru.org/model/tir-carnet-1" schemaLocation="tir-carnet-1.xsd" />
    <xs:import namespace="http://association.iru.org/model/association-carnet-event-1" schemaLocation="association-carnet-event-1.xsd" />

    <xs:group name="CarnetBaseEventParameterGroup">
      <xs:sequence>
        <xs:element ref="act:Association"/>
        <xs:element name="sentTime" type="xs:dateTime" minOccurs="0"/>
        <xs:element name="comment" minOccurs="0">
          <xs:simpleType>
            <xs:restriction base="xs:string">
              <xs:maxLength value="255"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
      </xs:sequence>
    </xs:group>

    <xs:attributeGroup name="CarnetEventStatusGroup">
      <xs:attribute name="tirCarnetNumber" type="tca:TIRCarnetNumberType" />
      <xs:attribute name="success" type="xs:boolean"/>
    </xs:attributeGroup>

    <xs:complexType name="CarnetIssuancesType">
      <xs:sequence>
        <xs:element name="CarnetIssuance" maxOccurs="unbounded" type="car:CarnetIssuanceEventType"/>
      </xs:sequence>
    </xs:complexType>

    <xs:element name="issueCarnets">
      <xs:complexType>
        <xs:sequence>
          <xs:group ref="tns:CarnetBaseEventParameterGroup"/>
          <xs:element name="carnetIssuances" type="tns:CarnetIssuancesType"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>

    <xs:simpleType name="CarnetIssuanceErrorReasonType">
      <xs:restriction base="xs:token">
        <xs:enumeration value="CARNET_NOT_ISSUED_TO_ASSOCIATION"/>
        <xs:enumeration value="CARNET_ALREADY_ISSUED"/>
        <xs:enumeration value="CARNET_NOT_ISSUABLE"/>
      </xs:restriction>
    </xs:simpleType>

    <xs:complexType name="CarnetIssuanceStatusType">
      <xs:attributeGroup ref="tns:CarnetEventStatusGroup"/>
      <xs:attribute name="errorReason" type="tns:CarnetIssuanceErrorReasonType" use="optional"/>
    </xs:complexType>

    <xs:complexType name="CarnetIssuanceStatusesType">
      <xs:sequence>
        <xs:element name="CarnetIssuanceStatus" maxOccurs="unbounded" type="tns:CarnetIssuanceStatusType"/>
      </xs:sequence>
    </xs:complexType>

    <xs:element name="issueCarnetsResponse">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="carnetIssuanceStatuses" type="tns:CarnetIssuanceStatusesType"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </types>

```

```

</xs:sequence>
</xs:complexType>
</xs:element>

<xs:complexType name="CarnetIssuanceCancellationsType">
  <xs:sequence>
    <xs:element name="CarnetIssuanceCancellation" type="car:CarnetIssuanceCancellationEventType" maxOccurs="unbounded" />
  </xs:sequence>
</xs:complexType>

<xs:element name="cancelCarnetIssuances">
  <xs:complexType>
    <xs:sequence>
      <xs:group ref="tns:CarnetBaseEventParameterGroup"/>
      <xs:element name="carnetIssuanceCancellations" type="tns:CarnetIssuanceCancellationsType" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:simpleType name="IssuanceCancellationErrorReasonType">
  <xs:restriction base="xs:token">
    <xs:enumeration value="CARNET_NOT_ISSUED_TO_ASSOCIATION" />
    <xs:enumeration value="CARNET_NOT_ISSUED" />
    <xs:enumeration value="ISSUANCE_NOT_CANCELABLE" />
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="CarnetIssuanceCancellationStatusType">
  <xs:attributeGroup ref="tns:CarnetEventStatusGroup"/>
  <xs:attribute name="errorReason" type="tns:IssuanceCancellationErrorReasonType" use="optional" />
</xs:complexType>

<xs:complexType name="CarnetIssuanceCancellationStatusesType">
  <xs:sequence>
    <xs:element name="CarnetIssuanceCancellation" maxOccurs="unbounded" type="tns:CarnetIssuanceCancellationStatusType" />
  </xs:sequence>
</xs:complexType>

<xs:element name="cancelCarnetIssuancesResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="carnetIssuanceCancellationStatuses" type="tns:CarnetIssuanceCancellationStatusesType" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:complexType name="CarnetReturnsType">
  <xs:sequence>
    <xs:element name="CarnetReturn" maxOccurs="unbounded" type="car:CarnetReturnEventType" />
  </xs:sequence>
</xs:complexType>

<xs:element name="returnCarnets">
  <xs:complexType>
    <xs:sequence>
      <xs:group ref="tns:CarnetBaseEventParameterGroup"/>
      <xs:element name="carnetReturns" type="tns:CarnetReturnsType" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:simpleType name="CarnetReturnErrorReasonType">
  <xs:restriction base="xs:token">
    <xs:enumeration value="CARNET_NOT_ISSUED_TO_ASSOCIATION" />
    <xs:enumeration value="CARNET_ALREADY_RETURNED" />
    <xs:enumeration value="CARNET_NOT_RETURNABLE" />
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="CarnetReturnStatusType">
  <xs:attributeGroup ref="tns:CarnetEventStatusGroup"/>
  <xs:attribute name="errorReason" type="tns:CarnetReturnErrorReasonType" use="optional" />
</xs:complexType>

<xs:complexType name="CarnetReturnStatusesType">
  <xs:sequence>
    <xs:element name="CarnetReturnStatus" maxOccurs="unbounded" type="tns:CarnetReturnStatusType" />
  </xs:sequence>
</xs:complexType>

<xs:element name="returnCarnetsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="carnetReturnStatuses" type="tns:CarnetReturnStatusesType" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="getPeriodCarnetArchives">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="act:Association" />
      <xs:element name="from" type="xs:dateTime" />
      <xs:element minOccurs="0" name="to" nillable="true" type="xs:dateTime" />
      <xs:element minOccurs="0" name="offset" nillable="true" type="xs:int" />
      <xs:element minOccurs="0" name="maxCount" nillable="true" type="xs:unsignedInt" />
    </xs:sequence>
  </xs:complexType>

```

```

</xs:element>
<xs:complexType name="PeriodTotalType">
  <xs:attribute name="from" type="xs:dateTime" use="optional" />
  <xs:attribute name="to" type="xs:dateTime" use="optional" />
  <xs:attribute name="count" type="xs:int" use="required" />
</xs:complexType>
<xs:complexType name="PeriodCarnetArchivesType">
  <xs:sequence>
    <xs:element name="CarnetArchive" type="car:CarnetArchiveEventType" minOccurs="0" maxOccurs="unbounded" />
  </xs:sequence>
  <xs:attribute name="offset" type="xs:int" use="required" />
  <xs:attribute name="count" type="xs:int" use="required" />
  <xs:attribute name="endReached" type="xs:boolean" use="required" />
</xs:complexType>
<xs:element name="getPeriodCarnetArchivesResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="total" type="tns:PeriodTotalType" />
      <xs:element name="carnetArchives" type="tns:PeriodCarnetArchivesType" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:complexType name="CarnetInvalidationRequestsType">
  <xs:sequence>
    <xs:element name="CarnetInvalidationRequest" maxOccurs="unbounded" type="car:CarnetInvalidationRequestEventType"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="requestCarnetInvalidations">
  <xs:complexType>
    <xs:sequence>
      <xs:group ref="tns:CarnetBaseEventParameterGroup"/>
      <xs:element name="carnetInvalidationRequests" type="tns:CarnetInvalidationRequestsType"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:simpleType name="CarnetInvalidationRequestErrorReasonType">
  <xs:restriction base="xs:token">
    <xs:enumeration value="CARNET_NOT_ISSUED_TO_ASSOCIATION"/>
    <xs:enumeration value="CARNET_ALREADY_INVALIDATED"/>
    <xs:enumeration value="CARNET_INVALIDATIION_ALREADY_REQUESTED"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="CarnetInvalidationRequestStatusType">
  <xs:attributeGroup ref="tns:CarnetEventStatusGroup"/>
  <xs:attribute name="errorReason" type="tns:CarnetInvalidationRequestErrorReasonType" use="optional"/>
</xs:complexType>
<xs:complexType name="CarnetInvalidationRequestStatusesType">
  <xs:sequence>
    <xs:element name="CarnetInvalidationRequestStatus" maxOccurs="unbounded" type="tns:CarnetInvalidationRequestStatusType"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="requestCarnetInvalidationsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="carnetInvalidationRequestStatuses" type="tns:CarnetInvalidationRequestStatusesType"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="getCarnetEvents">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="act:Association" />
      <xs:element ref="car:TIRCarnetNumber" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:simpleType name="CarnetEventErrorReasonType">
  <xs:restriction base="xs:token">
    <xs:enumeration value="CARNET_NOT_INVOICED" />
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="CarnetEventStatusType">
  <xs:attributeGroup ref="tns:CarnetEventStatusGroup"/>
  <xs:attribute name="errorReason" type="tns:CarnetEventErrorReasonType" use="optional"/>
</xs:complexType>
<xs:complexType name="CarnetEventsType">
  <xs:sequence>
    <xs:element name="CarnetEvent" type="car:CarnetEventType" minOccurs="0" maxOccurs="unbounded" />
  </xs:sequence>
</xs:complexType>
<xs:element name="getCarnetEventsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="CarnetEventStatus" type="tns:CarnetEventStatusType" />
      <xs:element name="CarnetEvents" type="tns:CarnetEventsType" minOccurs="0" />
    </xs:sequence>
  </xs:complexType>

```



```

    </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>

</types>

<message name="issueCarnets">
  <part name="parameters" element="tns:issueCarnets" />
</message>
<message name="issueCarnetsResponse">
  <part name="parameters" element="tns:issueCarnetsResponse" />
</message>
<message name="cancelCarnetIssuances">
  <part name="parameters" element="tns:cancelCarnetIssuances" />
</message>
<message name="cancelCarnetIssuancesResponse">
  <part name="parameters" element="tns:cancelCarnetIssuancesResponse" />
</message>
<message name="returnCarnets">
  <part name="parameters" element="tns:returnCarnets" />
</message>
<message name="returnCarnetsResponse">
  <part name="parameters" element="tns:returnCarnetsResponse" />
</message>
<message name="getPeriodCarnetArchives">
  <part name="parameters" element="tns:getPeriodCarnetArchives" />
</message>
<message name="getPeriodCarnetArchivesResponse">
  <part name="parameters" element="tns:getPeriodCarnetArchivesResponse" />
</message>
<message name="requestCarnetInvalidations">
  <part name="parameters" element="tns:requestCarnetInvalidations" />
</message>
<message name="requestCarnetInvalidationsResponse">
  <part name="parameters" element="tns:requestCarnetInvalidationsResponse" />
</message>
<message name="getCarnetEvents">
  <part name="parameters" element="tns:getCarnetEvents" />
</message>
<message name="getCarnetEventsResponse">
  <part name="parameters" element="tns:getCarnetEventsResponse" />
</message>

<portType name="CarnetEventSEI">
  <documentation>
    Carnet Event Service allows associations to inform IRU about events related to carnets: issuance, cancellation of
    issuance, return and invalidation request.
  </documentation>
  <operation name="issueCarnets">
    <documentation><![CDATA[Issue carnets.]]></documentation>
    <input message="tns:issueCarnets" wsaw:Action="http://association.iru.org/services/CarnetEventService-1/CarnetEventSEI/
    issueCarnets" />
    <output message="tns:issueCarnetsResponse" wsaw:Action="http://association.iru.org/services/CarnetEventService-1/
    CarnetEventSEI/issueCarnetsResponse" />
  </operation>
  <operation name="cancelCarnetIssuances">
    <documentation><![CDATA[Cancel carnet issuances.]]></documentation>
    <input message="tns:cancelCarnetIssuances" wsaw:Action="http://association.iru.org/services/CarnetEventService-1/
    CarnetEventSEI/cancelCarnetIssuances" />
    <output message="tns:cancelCarnetIssuancesResponse" wsaw:Action="http://association.iru.org/services/CarnetEventService
    -1/CarnetEventSEI/cancelCarnetIssuancesResponse" />
  </operation>
  <operation name="returnCarnets">
    <documentation><![CDATA[Return carnets.]]></documentation>
    <input message="tns:returnCarnets" wsaw:Action="http://association.iru.org/services/CarnetEventService-1/CarnetEventSEI/
    returnCarnets" />
    <output message="tns:returnCarnetsResponse" wsaw:Action="http://association.iru.org/services/CarnetEventService-1/
    CarnetEventSEI/returnCarnetsResponse" />
  </operation>
  <operation name="getPeriodCarnetArchives">
    <documentation><![CDATA[Get archived carnets during a period.]]></documentation>
    <input message="tns:getPeriodCarnetArchives" wsaw:Action="http://association.iru.org/services/CarnetEventService-1/
    CarnetEventSEI/getPeriodCarnetArchives" />
    <output message="tns:getPeriodCarnetArchivesResponse" wsaw:Action="http://association.iru.org/services/CarnetEventService
    -1/CarnetEventSEI/getPeriodCarnetArchivesResponse" />
  </operation>
  <operation name="requestCarnetInvalidations">
    <documentation><![CDATA[Request carnets' invalidation.]]></documentation>
    <input message="tns:requestCarnetInvalidations" wsaw:Action="http://association.iru.org/services/CarnetEventService-1/
    CarnetEventSEI/requestCarnetInvalidations" />
    <output message="tns:requestCarnetInvalidationsResponse" wsaw:Action="http://association.iru.org/services/
    CarnetEventService-1/CarnetEventSEI/requestCarnetInvalidationsResponse" />
  </operation>
  <operation name="getCarnetEvents">
    <documentation><![CDATA[Get the list of events for a carnet.]]></documentation>
    <input message="tns:getCarnetEvents" wsaw:Action="http://association.iru.org/services/CarnetEventService-1/CarnetEventSEI
    /getCarnetEvents" />
    <output message="tns:getCarnetEventsResponse" wsaw:Action="http://association.iru.org/services/CarnetEventService-1/
    CarnetEventSEI/getCarnetEventsResponse" />
  </operation>
</portType>

<binding name="CarnetEventServicePortBinding" type="tns:CarnetEventSEI">
  <wsp:PolicyReference URI="#CarnetEventUsingAddressingPolicy" />
  <wsaw:UsingAddressing required="true"/>
  <soap12:binding transport="http://schemas.xmlsoap.org/soap/http" />
  <operation name="issueCarnets">

```

```

<soap12:operation soapAction="http://association.iru.org/services/CarnetEventService-1/CarnetEventSEI/issueCarnets" style
="document" />
<input>
  <soap12:body use="literal" />
</input>
<output>
  <soap12:body use="literal" />
</output>
</operation>
<operation name="cancelCarnetIssuances">
<soap12:operation soapAction="http://association.iru.org/services/CarnetEventService-1/CarnetEventSEI/
cancelCarnetIssuances" style="document" />
<input>
  <soap12:body use="literal" />
</input>
<output>
  <soap12:body use="literal" />
</output>
</operation>
<operation name="returnCarnets">
<soap12:operation soapAction="http://association.iru.org/services/CarnetEventService-1/CarnetEventSEI/returnCarnets"
style="document" />
<input>
  <soap12:body use="literal" />
</input>
<output>
  <soap12:body use="literal" />
</output>
</operation>
<operation name="getPeriodCarnetArchives">
<soap12:operation soapAction="http://association.iru.org/services/CarnetEventService-1/CarnetEventSEI/
getPeriodCarnetArchives" style="document" />
<input>
  <soap12:body use="literal" />
</input>
<output>
  <soap12:body use="literal" />
</output>
</operation>
<operation name="requestCarnetInvalidations">
<soap12:operation soapAction="http://association.iru.org/services/CarnetEventService-1/CarnetEventSEI/
requestCarnetInvalidations" style="document" />
<input>
  <soap12:body use="literal" />
</input>
<output>
  <soap12:body use="literal" />
</output>
</operation>
<operation name="getCarnetEvents">
<soap12:operation soapAction="http://association.iru.org/services/CarnetEventService-1/CarnetEventSEI/getCarnetEvents"
style="document" />
<input>
  <soap12:body use="literal" />
</input>
<output>
  <soap12:body use="literal" />
</output>
</operation>
</binding>

<service name="CarnetEventService">
<documentation>
  Carnet Service allows associations to issue, cancel issuance, return and request invalidation (of) carnets.
</documentation>
<port name="CarnetEventServicePort" binding="tns:CarnetEventServicePortBinding">
<documentation>CarnetIssuanceServicePort SOAP 1.2 port</documentation>
<soap12:address location="http://association.iru.org/services/CarnetEventService-1" />
<wsa10:EndpointReference>
  <wsa10:Address>http://association.iru.org/services/CarnetEventService-1</wsa10:Address>
  <Identity xmlns="http://schemas.xmlsoap.org/ws/2006/02/addressingidentity">
    <Dns>localhost</Dns>
  </Identity>
</wsa10:EndpointReference>
</port>
</service>
</definitions>

```

## 4.2 Termination

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<definitions targetNamespace="http://association.iru.org/services/TerminationService-1"
xmlns:tns="http://association.iru.org/services/TerminationService-1"
xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/" xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy"
xmlns:wswsaw="http://www.w3.org/2006/05/addressing/wsdl" xmlns:wsa10="http://www.w3.org/2005/08/addressing"
xmlns:wssu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">

<wsp:Policy wsu:Id="TerminationUsingAddressingPolicy">
  <wsp:ExactlyOne>
    <wsp:All>
      <wsaw:UsingAddressing />
    </wsp:All>
  </wsp:ExactlyOne>
</wsp:Policy>

```

```

<types>
  <xs:schema targetNamespace="http://association.iru.org/services/TerminationService-1"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:a="http://www.iru.org/model/tir-actor-1"
    xmlns:c="http://rts.iru.org/model/carnet-1"
    xmlns:t="http://rts.iru.org/model/termination-1"
    elementFormDefault="qualified">

    <xs:import namespace="http://www.iru.org/model/tir-actor-1" schemaLocation="tir-actor-1.xsd" />
    <xs:import namespace="http://rts.iru.org/model/carnet-1" schemaLocation="rts-carnet-1.xsd" />
    <xs:import namespace="http://rts.iru.org/model/termination-1" schemaLocation="rts-termination-1.xsd" />

    <xs:element name="getPeriodTerminations">
      <xs:complexType>
        <xs:sequence>
          <xs:element ref="a:Association" />
          <xs:element name="from" type="xs:dateTime" />
          <xs:element minOccurs="0" name="to" nillable="true" type="xs:dateTime" />
          <xs:element minOccurs="0" name="offset" nillable="true" type="xs:int" />
          <xs:element minOccurs="0" name="maxCount" nillable="true" type="xs:unsignedInt" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>

    <xs:complexType name="PeriodTotalType">
      <xs:attribute name="from" type="xs:dateTime" use="optional" />
      <xs:attribute name="to" type="xs:dateTime" use="optional" />
      <xs:attribute name="count" type="xs:int" use="required" />
    </xs:complexType>

    <xs:complexType name="ReceivedTIROperationTerminationType">
      <xs:complexContent>
        <xs:extension base="t:ReceivedTIROperationTerminationType">
          <xs:attribute name="uniqueIndex" type="xs:unsignedLong" use="optional" />
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>

    <xs:complexType name="PeriodTerminationsType">
      <xs:sequence>
        <xs:element name="TIROperationTermination" type="tns:ReceivedTIROperationTerminationType" minOccurs="0" maxOccurs="unbounded" />
      </xs:sequence>
      <xs:attribute name="offset" type="xs:int" use="required" />
      <xs:attribute name="count" type="xs:int" use="required" />
      <xs:attribute name="endReached" type="xs:boolean" use="required" />
    </xs:complexType>

    <xs:element name="getPeriodTerminationsResponse">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="total" type="tns:PeriodTotalType" />
          <xs:element name="tirOperationTerminations" type="tns:PeriodTerminationsType" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>

    <xs:element name="getCarnetTerminations">
      <xs:complexType>
        <xs:sequence>
          <xs:element ref="c:TIRCarnetNumber" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>

    <xs:complexType name="CarnetTerminationsType">
      <xs:sequence>
        <xs:element name="TIROperationTermination" type="tns:ReceivedTIROperationTerminationType" minOccurs="0" maxOccurs="unbounded" />
      </xs:sequence>
    </xs:complexType>

    <xs:element name="getCarnetTerminationsResponse">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="tirOperationTerminations" type="tns:CarnetTerminationsType" />
        </xs:sequence>
      </xs:complexType>
    </xs:element>

  </xs:schema>
</types>

<message name="getPeriodTerminations">
  <part name="parameters" element="tns:getPeriodTerminations" />
</message>
<message name="getPeriodTerminationsResponse">
  <part name="parameters" element="tns:getPeriodTerminationsResponse" />
</message>

<message name="getCarnetTerminations">
  <part name="parameters" element="tns:getCarnetTerminations" />
</message>
<message name="getCarnetTerminationsResponse">
  <part name="parameters" element="tns:getCarnetTerminationsResponse" />
</message>

```

```

<portType name="TerminationSEI">
  <documentation>
    Termination Service allows associations to fetch SafeTIR data related to their carnets.
  </documentation>
  <operation name="getPeriodTerminations">
    <documentation><![CDATA[Fetch SafeTIR data.]]></documentation>
    <input message="tns:getPeriodTerminations" wsaw:Action="http://association.iru.org/services/TerminationService-1/TerminationSEI/getPeriodTerminations" />
    <output message="tns:getPeriodTerminationsResponse" wsaw:Action="http://association.iru.org/services/TerminationService-1/TerminationSEI/getPeriodTerminationsResponse" />
  </operation>
  <operation name="getCarnetTerminations">
    <documentation><![CDATA[Fetch SafeTIR data.]]></documentation>
    <input message="tns:getCarnetTerminations" wsaw:Action="http://association.iru.org/services/TerminationService-1/TerminationSEI/getCarnetTerminations" />
    <output message="tns:getCarnetTerminationsResponse" wsaw:Action="http://association.iru.org/services/TerminationService-1/TerminationSEI/getCarnetTerminationsResponse" />
  </operation>
</portType>

<binding name="TerminationServicePortBinding" type="tns:TerminationSEI">
  <wsp:PolicyReference URI="#TerminationUsingAddressingPolicy" />
  <wsaw:UsingAddressing required="true" />
  <soap12:binding transport="http://schemas.xmlsoap.org/soap/http" />
  <operation name="getPeriodTerminations">
    <soap12:operation
      soapAction="http://association.iru.org/services/TerminationService-1/TerminationSEI/getPeriodTerminations"
      style="document" />
    <input>
      <soap12:body use="literal" />
    </input>
    <output>
      <soap12:body use="literal" />
    </output>
  </operation>
  <operation name="getCarnetTerminations">
    <soap12:operation
      soapAction="http://association.iru.org/services/TerminationService-1/TerminationSEI/getCarnetTerminations"
      style="document" />
    <input>
      <soap12:body use="literal" />
    </input>
    <output>
      <soap12:body use="literal" />
    </output>
  </operation>
</binding>

<service name="TerminationService">
  <documentation>
    Termination Service allows associations to fetch SafeTIR data related to their carnets.
  </documentation>
  <port name="TerminationServicePort" binding="tns:TerminationServicePortBinding">
    <documentation>TerminationServicePort SOAP 1.2 port</documentation>
    <soap12:address
      location="http://association.iru.org/services/TerminationService-1" />
    <wsa10:EndpointReference>
      <wsa10:Address>http://association.iru.org/services/TerminationService-1</wsa10:Address>
      <Identity xmlns="http://schemas.xmlsoap.org/ws/2006/02/addressingidentity">
        <Dns>localhost</Dns>
      </Identity>
    </wsa10:EndpointReference>
  </port>
</service>
</definitions>

```

### 4.3 Reconciliation

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<definitions targetNamespace="http://association.iru.org/services/ReconciliationService-1"
  xmlns:tns="http://association.iru.org/services/ReconciliationService-1"
  xmlns:mdl="http://association.iru.org/model/reconciliation-1"
  xmlns:act="http://www.iru.org/model/tir-actor-1"
  xmlns:rts="http://rts.iru.org/model/termination-1"
  xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
  xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy"
  xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"
  xmlns:wsa10="http://www.w3.org/2005/08/addressing"
  xmlns:wssu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd">

  <wsp:Policy wsu:Id="ReconciliationUsingAddressingPolicy">
    <wsp:ExactlyOne>
      <wsp:All>
        <wsaw:UsingAddressing />
      </wsp:All>
    </wsp:ExactlyOne>
  </wsp:Policy>

  <types>
    <xs:schema targetNamespace="http://association.iru.org/services/ReconciliationService-1" elementFormDefault="qualified">
      <xs:import schemaLocation="tir-actor-1.xsd" namespace="http://www.iru.org/model/tir-actor-1" />
      <xs:import schemaLocation="rts-termination-1.xsd" namespace="http://rts.iru.org/model/termination-1" />
      <xs:import schemaLocation="association-reconciliation-1.xsd" namespace="http://association.iru.org/model/reconciliation-1" />
    </xs:schema>
  </types>

```

```

<xs:element name="sendRequest">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="request" type="mdl:ReconciliationRequestType"/>
      <xs:element name="sentTime" type="xs:dateTime" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:simpleType name="RequestErrorTypeType">
  <xs:restriction base="xs:token">
    <xs:enumeration value="BAD_REQUEST"/>
    <xs:enumeration value="INTERNAL_ERROR"/>
  </xs:restriction>
</xs:simpleType>

<xs:element name="sendRequestResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="success" type="xs:boolean"/>
      <xs:element name="errorType" type="tns:RequestErrorTypeType" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="sendRequests">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="requests" type="mdl:ReconciliationRequestsType" />
      <xs:element name="sentTime" type="xs:dateTime" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:complexType name="SendRequestResponseType">
  <xs:sequence>
    <xs:element name="Id" type="mdl:IdType"/>
    <xs:element name="Success" type="xs:boolean"/>
    <xs:element name="ErrorType" type="tns:RequestErrorTypeType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="SendRequestsResponseType">
  <xs:sequence>
    <xs:element name="RequestResponse" type="tns:SendRequestResponseType" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>

<xs:element name="sendRequestsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="requestResponses" type="tns:SendRequestsResponseType"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="getRequest">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="id" type="mdl:IdType" />
      <xs:element name="originator">
        <xs:complexType>
          <xs:sequence>
            <xs:element ref="act:Association"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:complexType name="RequestWithStatusType">
  <xs:choice>
    <xs:sequence>
      <xs:element name="Details" type="mdl:ReconciliationRequestType" />
      <xs:element name="Status" type="mdl:ReconciliationRequestStatusType" />
    </xs:sequence>
    <xs:element name="NotFoundId" type="mdl:IdType" />
  </xs:choice>
</xs:complexType>

<xs:element name="getRequestResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="requestWithStatus" type="tns:RequestWithStatusType" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:complexType name="IdsType">
  <xs:sequence>
    <xs:element name="Id" type="mdl:IdType" maxOccurs="unbounded" />
  </xs:sequence>

```

```

<xs:attribute name="count" type="xs:unsignedInt" />
</xs:complexType>

<xs:element name="getRequests">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="ids" type="tns:IdsType" />
      <xs:element name="originator">
        <xs:complexType>
          <xs:sequence>
            <xs:element ref="act:Association"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:complexType name="RequestsWithStatusType">
  <xs:sequence>
    <xs:element name="RequestWithStatus" type="tns:RequestWithStatusType" maxOccurs="unbounded" />
  </xs:sequence>
</xs:complexType>

<xs:element name="getRequestsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="requestsWithStatus" type="tns:RequestsWithStatusType" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="getRequestNewTerminations">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="originator">
        <xs:complexType>
          <xs:sequence>
            <xs:element ref="act:Association"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="requestFrom" type="xs:dateTime" />
      <xs:element minOccurs="0" name="requestTo" nillable="true" type="xs:dateTime" />
      <xs:element name="answerFrom" type="xs:dateTime" />
      <xs:element minOccurs="0" name="answerTo" nillable="true" type="xs:dateTime" />
      <xs:element minOccurs="0" name="offset" nillable="true" type="xs:int" />
      <xs:element minOccurs="0" name="maxCount" nillable="true" type="xs:unsignedInt" />
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:complexType name="ReconciliationRequestNewTerminationType">
  <xs:complexContent>
    <xs:extension base="rts:ReceivedTIROperationTerminationType">
      <xs:attribute name="replyIndicator" type="xs:boolean" />
      <xs:attribute name="requestId" type="mdl:IdType" />
      <xs:attribute name="requestDate" type="xs:dateTime" />
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

<xs:element name="getRequestNewTerminationsResponse">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="total">
        <xs:complexType>
          <xs:attribute name="requestFrom" type="xs:dateTime" use="optional" />
          <xs:attribute name="requestTo" type="xs:dateTime" use="optional" />
          <xs:attribute name="answerFrom" type="xs:dateTime" use="optional" />
          <xs:attribute name="answerTo" type="xs:dateTime" use="optional" />
          <xs:attribute name="count" type="xs:int" use="required" />
        </xs:complexType>
      </xs:element>
      <xs:element name="tirOperationTerminations">
        <xs:complexType>
          <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="unbounded" name="TIROperationTermination" type="tns:ReconciliationRequestNewTerminationType" />
          </xs:sequence>
          <xs:attribute name="offset" type="xs:int" use="required" />
          <xs:attribute name="count" type="xs:int" use="required" />
          <xs:attribute name="endReached" type="xs:boolean" use="required" />
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:schema>
</types>

<message name="sendRequest">
  <part name="parameters" element="tns:sendRequest" />
</message>
<message name="sendRequestResponse">
  <part name="parameters" element="tns:sendRequestResponse" />
</message>

```

```

<message name="sendRequests">
  <part name="parameters" element="tns:sendRequests" />
</message>
<message name="sendRequestsResponse">
  <part name="parameters" element="tns:sendRequestsResponse" />
</message>

<message name="getRequest">
  <part name="parameters" element="tns:getRequest" />
</message>
<message name="getRequestResponse">
  <part name="parameters" element="tns:getRequestResponse" />
</message>

<message name="getRequests">
  <part name="parameters" element="tns:getRequests" />
</message>
<message name="getRequestsResponse">
  <part name="parameters" element="tns:getRequestsResponse" />
</message>

<message name="getRequestNewTerminations">
  <part name="parameters" element="tns:getRequestNewTerminations" />
</message>
<message name="getRequestNewTerminationsResponse">
  <part name="parameters" element="tns:getRequestNewTerminationsResponse" />
</message>

<portType name="ReconciliationSEI">
  <documentation>
    Reconciliation Service allows associations to send reconciliation request automatically.
  </documentation>
  <operation name="sendRequest">
    <documentation><![CDATA[Send Reconciliation request.]]></documentation>
    <input message="tns:sendRequest" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/sendRequest" />
    <output message="tns:sendRequestResponse" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/sendRequestResponse" />
  </operation>

  <operation name="sendRequests">
    <documentation><![CDATA[Send Reconciliation requests.]]></documentation>
    <input message="tns:sendRequests" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/sendRequests" />
    <output message="tns:sendRequestsResponse" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/sendRequestsResponse" />
  </operation>

  <operation name="getRequest">
    <documentation><![CDATA[Get Reconciliation request details.]]></documentation>
    <input message="tns:getRequest" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/getRequest" />
    <output message="tns:getRequestResponse" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/getRequestResponse" />
  </operation>

  <operation name="getRequests">
    <documentation><![CDATA[Get Reconciliation requests details.]]></documentation>
    <input message="tns:getRequests" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/getRequests" />
    <output message="tns:getRequestsResponse" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/getRequestsResponse" />
  </operation>

  <operation name="getRequestNewTerminations">
    <documentation><![CDATA[Get new SafeTIR data that for Guarantees for which there are Reconciliation requests.]]></documentation>
    <input message="tns:getRequestNewTerminations" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/getRequestNewTerminations" />
    <output message="tns:getRequestNewTerminationsResponse" wsaw:Action="http://association.iru.org/services/ReconciliationService-1/getRequestNewTerminationsResponse" />
  </operation>
</portType>

<binding name="ReconciliationServicePortBinding" type="tns:ReconciliationSEI">
  <wsp:PolicyReference URI="#ReconciliationUsingAddressingPolicy" />
  <wsaw:UsingAddressing required="true"/>
  <soap12:binding transport="http://schemas.xmlsoap.org/soap/http" />
  <operation name="sendRequest">
    <soap12:operation soapAction="http://association.iru.org/services/ReconciliationService-1/sendRequest" style="document" />
  >
  <input>
    <soap12:body use="literal" />
  </input>
  <output>
    <soap12:body use="literal" />
  </output>
</operation>

  <operation name="sendRequests">
    <soap12:operation soapAction="http://association.iru.org/services/ReconciliationService-1/sendRequests" style="document" />
  >
  <input>
    <soap12:body use="literal" />
  </input>
  <output>
    <soap12:body use="literal" />
  </output>
</operation>

```



```

<operation name="getRequest">
  <soap12:operation soapAction="http://association.iru.org/services/ReconciliationService-1/getRequest" style="document" />
  <input>
    <soap12:body use="literal" />
  </input>
  <output>
    <soap12:body use="literal" />
  </output>
</operation>

<operation name="getRequests">
  <soap12:operation soapAction="http://association.iru.org/services/ReconciliationService-1/getRequests" style="document" />
  <input>
    <soap12:body use="literal" />
  </input>
  <output>
    <soap12:body use="literal" />
  </output>
</operation>

<operation name="getRequestNewTerminations">
  <soap12:operation soapAction="http://association.iru.org/services/ReconciliationService-1/getRequestNewTerminations" style="document" />
  <input>
    <soap12:body use="literal" />
  </input>
  <output>
    <soap12:body use="literal" />
  </output>
</operation>
</binding>

<service name="ReconciliationService">
  <documentation>
    Reconciliation Service allows associations to send reconciliation request automatically.
  </documentation>
  <port name="ReconciliationServicePort" binding="tns:ReconciliationServicePortBinding">
    <documentation>ReconciliationServicePort SOAP 1.2 port</documentation>
    <soap12:address location="http://association.iru.org/services/ReconciliationService-1" />
    <wsa10:EndpointReference>
      <wsa10:Address>http://association.iru.org/services/ReconciliationService-1</wsa10:Address>
      <Identity xmlns="http://schemas.xmlsoap.org/ws/2006/02/addressingidentity">
        <Dns>Localhost</Dns>
      </Identity>
    </wsa10:EndpointReference>
  </port>
</service>
</definitions>

```

## 5 Schemas

### 5.1 Webservices specific schemas

#### 5.1.1 Issue and Return Event

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema targetNamespace="http://association.iru.org/model/association-carnet-event-1"
  xmlns="http://association.iru.org/model/association-carnet-event-1"
  xmlns:act="http://www.iru.org/model/tir-actor-1"
  xmlns:car="http://www.iru.org/model/tir-carnet-1"
  xmlns:gar="http://www.iru.org/model/guarantee-1"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">

  <xs:import schemaLocation="tir-actor-1.xsd" namespace="http://www.iru.org/model/tir-actor-1" />
  <xs:import schemaLocation="tir-carnet-1.xsd" namespace="http://www.iru.org/model/tir-carnet-1" />
  <xs:import schemaLocation="iru-guarantee-1.xsd" namespace="http://www.iru.org/model/guarantee-1" />

  <xs:element name="TIRCarnetNumber" type="car:TIRCarnetNumberType"/>

  <xs:simpleType name="CarnetEventAdditionalPropertyNameType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="USED"/>
      <xs:enumeration value="HVG" />
      <xs:enumeration value="FOR_CONTROL"/>
      <xs:enumeration value="WITH_GOODS"/>
      <xs:enumeration value="EVENT_LOCATION"/>
      <xs:enumeration value="EVENT_COUNTRY_CODE"/>
      <xs:enumeration value="CANCELLED_ISSUANCE_EVENT_DATE"/>
      <xs:enumeration value="CANCELLED_ISSUANCE_HOLDER_ID"/>
      <xs:enumeration value="CANCELLED_ISSUANCE_EXPIRY_DATE"/>
      <xs:enumeration value="CANCELLED_ISSUANCE_HVG"/>
      <xs:enumeration value="STATUS" />
      <xs:enumeration value="PROCESSING_DATE" />
    </xs:restriction>
  </xs:simpleType>

  <xs:complexType name="CarnetEventAdditionalPropertyType">

```



```

    <xs:attribute name="name" type="xs:string" use="required"/>
    <xs:attribute name="value" type="xs:string" use="optional"/>
    <xs:attribute name="booleanValue" type="xs:boolean" use="optional"/>
  </xs:complexType>

  <xs:complexType name="CarnetEventAdditionalPropertiesType">
    <xs:sequence>
      <xs:element name="CarnetEventAdditionalProperty" type="CarnetEventAdditionalPropertyType" maxOccurs="unbounded"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="CarnetEventType" abstract="true">
    <xs:sequence>
      <xs:element ref="TIRCarnetNumber" />
      <xs:element name="EventDate" type="xs:dateTime" />
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="CarnetDespatchEventType">
    <xs:complexContent>
      <xs:extension base="CarnetEventType">
        <xs:sequence>
          <xs:element ref="act:Association" />
          <xs:element name="Item" type="gar:ItemType" />
          <xs:element name="InvoiceDate" type="xs:dateTime" />
          <xs:element name="CarnetEventAdditionalProperties" type="CarnetEventAdditionalPropertiesType" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

  <xs:complexType name="CarnetHolderEventType" abstract="true">
    <xs:complexContent>
      <xs:extension base="CarnetEventType">
        <xs:sequence>
          <xs:element ref="act:Holder" />
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

  <xs:complexType name="CarnetIssuanceEventType">
    <xs:complexContent>
      <xs:extension base="CarnetHolderEventType">
        <xs:sequence>
          <xs:element name="ExpiryDate" type="xs:dateTime" />
          <xs:element name="CarnetEventAdditionalProperties" type="CarnetEventAdditionalPropertiesType" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

  <xs:simpleType name="CancellationReasonType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="INCORRECT_TIR_CARNET_NUMBER" />
      <xs:enumeration value="INCORRECT_HOLDER_ID" />
      <xs:enumeration value="INCORRECT_ISSUANCE_DATE" />
      <xs:enumeration value="INCORRECT_EXPIRY_DATE" />
      <xs:enumeration value="INCORRECT_TIR_CARNET_TYPE" />
    </xs:restriction>
  </xs:simpleType>

  <xs:complexType name="CarnetIssuanceCancellationEventType">
    <xs:complexContent>
      <xs:extension base="CarnetEventType">
        <xs:sequence>
          <xs:element name="CancellationReason" type="CancellationReasonType" />
          <xs:element name="CarnetEventAdditionalProperties" type="CarnetEventAdditionalPropertiesType" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

  <xs:complexType name="CarnetReturnEventType">
    <xs:complexContent>
      <xs:extension base="CarnetHolderEventType">
        <xs:sequence>
          <xs:element name="CarnetEventAdditionalProperties" type="CarnetEventAdditionalPropertiesType" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

  <xs:complexType name="CarnetArchiveEventType">
    <xs:complexContent>
      <xs:extension base="CarnetEventType">
        <xs:sequence>
          <xs:element name="ReceiptDate" type="xs:dateTime" />
          <xs:element name="CarnetEventAdditionalProperties" type="CarnetEventAdditionalPropertiesType" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

  <xs:simpleType name="InvalidationRequestReasonType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="RETENTION" />
      <xs:enumeration value="DESTRUCTION" />
      <xs:enumeration value="LOSS" />
    </xs:restriction>
  </xs:simpleType>

```

```

    <xs:enumeration value="THEFT" />
    <xs:enumeration value="PERMANENT_SUSPENSION" />
    <xs:enumeration value="OTHER" />
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="CarnetInvalidationRequestEventType">
  <xs:complexContent>
    <xs:extension base="CarnetEventType">
      <xs:sequence>
        <xs:element name="InvalidationRequestReason" type="InvalidationRequestReasonType" />
        <xs:element name="CarnetEventAdditionalProperties" type="CarnetEventAdditionalPropertiesType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

</xs:schema>

```

## 5.1.2 Reconciliation

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema targetNamespace="http://association.iru.org/model/reconciliation-1"
  xmlns="http://association.iru.org/model/reconciliation-1"
  xmlns:rts="http://rts.iru.org/model/termination-1"
  xmlns:act="http://www.iru.org/model/tir-actor-1"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">

  <xs:import schemaLocation="rts-termination-1.xsd" namespace="http://rts.iru.org/model/termination-1" />
  <xs:import schemaLocation="tir-actor-1.xsd" namespace="http://www.iru.org/model/tir-actor-1" />

  <xs:complexType name="ReconciliableTIROperationTerminationType">
    <xs:sequence>
      <xs:element name="UniqueIndex" type="xs:unsignedLong"/>
      <xs:element name="TIROperationTermination" type="rts:ReceivedTIROperationTerminationType" />
    </xs:sequence>
  </xs:complexType>

  <xs:element name="ReconciliableTIROperationTermination" type="ReconciliableTIROperationTerminationType"/>

  <xs:complexType name="ReconciliableTIROperationTerminationsType">
    <xs:sequence maxOccurs="unbounded">
      <xs:element ref="ReconciliableTIROperationTermination"/>
    </xs:sequence>
    <xs:attribute name="count" type="xs:unsignedInt" />
  </xs:complexType>

  <xs:element name="ReconciliableTIROperationTerminations" type="ReconciliableTIROperationTerminationsType"/>

  <xs:simpleType name="IdType">
    <xs:restriction base="xs:unsignedInt"/>
  </xs:simpleType>

  <xs:simpleType name="ReconciliationRequestReasonType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="DISCREPANCY"/>
      <xs:enumeration value="MISSING"/>
      <xs:enumeration value="CONFIRMATION"/>
    </xs:restriction>
  </xs:simpleType>

  <xs:complexType name="ReconciliationRequestType">
    <xs:sequence>
      <xs:element name="Id" type="IdType"/>
      <xs:element name="ReminderCount" type="xs:unsignedInt"/>
      <xs:element name="Originator">
        <xs:complexType>
          <xs:sequence>
            <xs:element ref="act:Association"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="Reason" type="ReconciliationRequestReasonType" />
      <xs:element name="Comment" minOccurs="0">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:maxLength value="255"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:choice>
        <xs:element name="TIROperationTerminationToValidate" type="ReconciliableTIROperationTerminationType"/>
        <xs:element ref="rts:MissingTIROperationTermination"/>
      </xs:choice>
    </xs:sequence>
  </xs:complexType>

  <xs:simpleType name="ReconciliationRequestStatusValueType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="NOT_SENT_TO_CUSTOMS" />
      <xs:enumeration value="SENT_TO_CUSTOMS" />
      <xs:enumeration value="REPLIED_BY_CUSTOMS" />
      <xs:enumeration value="CANCELLED" />
      <xs:enumeration value="EXPIRED" />
    </xs:restriction>
  </xs:simpleType>

```

```

</xs:restriction>
</xs:simpleType>

<xs:complexType name="ReconciliationRequestStatusType">
  <xs:attribute name="value" type="ReconciliationRequestStatusValueType"/>
  <xs:attribute name="date" type="xs:dateTime"/>
</xs:complexType>

<xs:complexType name="ReconciliationRequestsType">
  <xs:sequence>
    <xs:element name="ReconciliationRequest" type="ReconciliationRequestType" maxOccurs="unbounded"/>
  </xs:sequence>
  <xs:attribute name="count" type="xs:unsignedInt" />
</xs:complexType>

</xs:schema>

```

## 5.2 IRU schemas

### 5.2.1 TIR Actor

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified"
  targetNamespace="http://www.iru.org/model/tir-actor-1"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns="http://www.iru.org/model/tir-actor-1"
  xmlns:icc="http://www.iru.org/model/iso-3166-1-alpha-3">

  <xs:import namespace="http://www.iru.org/model/iso-3166-1-alpha-3" schemaLocation="iso-3166-1-alpha-3.xsd"/>

  <xs:element name="IRU">
    <xs:complexType/>
  </xs:element>

  <xs:element name="Association">
    <xs:complexType>
      <xs:attribute name="id" type="xs:unsignedInt" use="required"/>
      <xs:attribute name="name" type="xs:string" use="optional"/>
    </xs:complexType>
  </xs:element>

  <xs:simpleType name="HaulierIdType">
    <xs:restriction base="xs:string">
      <xs:pattern value="[A-Z]{3}/[0-9]+/[0-9]+"/>
    </xs:restriction>
  </xs:simpleType>

  <xs:complexType name="HaulierType">
    <xs:attribute name="id" type="HaulierIdType" use="required"/>
    <xs:attribute name="name" type="xs:string" use="optional"/>
  </xs:complexType>

  <xs:element name="Haulier" type="HaulierType"/>
  <xs:element name="Holder" type="HaulierType"/>

  <xs:complexType name="GuaranteeChainPartyType">
    <xs:choice>
      <xs:element ref="IRU"/>
      <xs:element ref="Association"/>
      <xs:element ref="Haulier"/>
    </xs:choice>
  </xs:complexType>

  <xs:element name="Customs">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="CountryCode" type="icc:CountryCodeType"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

</xs:schema>

```

### 5.2.2 ISO 3166 1 - Country

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified"
  targetNamespace="http://www.iru.org/model/iso-3166-1-alpha-3"
  xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns="http://www.iru.org/model/iso-3166-1-alpha-3">

  <xs:simpleType name="CountryCodeType">
    <xs:restriction base="xs:string">
      <!-- No enumeration restriction is made here to take into account
        not only current, but also old and new country codes -->
      <xs:pattern value="[A-Z]{3}"/>
    </xs:restriction>
  </xs:simpleType>

  <!-- http://www.unece.org/tir/system/tir-system-countries.html -->

```

```
<xs:simpleType name="ContractingPartyCountryCodeType">
  <xs:restriction base="CountryCodeType">
    <xs:enumeration value="AFG" />
    <xs:enumeration value="ALB" />
    <xs:enumeration value="DZA" />
    <xs:enumeration value="ARM" />
    <xs:enumeration value="AUT" />
    <xs:enumeration value="AZE" />
    <xs:enumeration value="BLR" />
    <xs:enumeration value="BEL" />
    <xs:enumeration value="BIH" />
    <xs:enumeration value="BGR" />
    <xs:enumeration value="CAN" />
    <xs:enumeration value="CHL" />
    <xs:enumeration value="HRV" />
    <xs:enumeration value="CYP" />
    <xs:enumeration value="CZE" />
    <xs:enumeration value="DNK" />
    <xs:enumeration value="EST" />
    <xs:enumeration value="FIN" />
    <xs:enumeration value="FRA" />
    <xs:enumeration value="GEO" />
    <xs:enumeration value="DEU" />
    <xs:enumeration value="GRC" />
    <xs:enumeration value="HUN" />
    <xs:enumeration value="IDN" />
    <xs:enumeration value="IRN" />
    <xs:enumeration value="IRL" />
    <xs:enumeration value="ISR" />
    <xs:enumeration value="ITA" />
    <xs:enumeration value="JOR" />
    <xs:enumeration value="KAZ" />
    <xs:enumeration value="KWT" />
    <xs:enumeration value="KGZ" />
    <xs:enumeration value="LVA" />
    <xs:enumeration value="LBN" />
    <xs:enumeration value="LBR" />
    <xs:enumeration value="LTU" />
    <xs:enumeration value="LUX" />
    <xs:enumeration value="MLT" />
    <xs:enumeration value="MDA" />
    <xs:enumeration value="MNG" />
    <xs:enumeration value="MNE" />
    <xs:enumeration value="MAR" />
    <xs:enumeration value="NLD" />
    <xs:enumeration value="NOR" />
    <xs:enumeration value="POL" />
    <xs:enumeration value="PRT" />
    <xs:enumeration value="KOR" />
    <xs:enumeration value="ROU" />
    <xs:enumeration value="RUS" />
    <xs:enumeration value="SRB" />
    <xs:enumeration value="SVK" />
    <xs:enumeration value="SVN" />
    <xs:enumeration value="ESP" />
    <xs:enumeration value="SWE" />
    <xs:enumeration value="CHE" />
    <xs:enumeration value="SYR" />
    <xs:enumeration value="TJK" />
    <xs:enumeration value="MKD" />
    <xs:enumeration value="TUN" />
    <xs:enumeration value="TUR" />
    <xs:enumeration value="TKM" />
    <xs:enumeration value="UKR" />
    <xs:enumeration value="ARE" />
    <xs:enumeration value="GBR" />
    <xs:enumeration value="USA" />
    <xs:enumeration value="URY" />
    <xs:enumeration value="UZB" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="TIROperationalCountryCodeType">
  <xs:restriction base="ContractingPartyCountryCodeType">
    <xs:enumeration value="AFG" />
    <xs:enumeration value="ALB" />
    <xs:enumeration value="ARM" />
    <xs:enumeration value="AUT" />
    <xs:enumeration value="AZE" />
    <xs:enumeration value="BLR" />
    <xs:enumeration value="BEL" />
    <xs:enumeration value="BIH" />
    <xs:enumeration value="BGR" />
    <xs:enumeration value="HRV" />
    <xs:enumeration value="CYP" />
    <xs:enumeration value="CZE" />
    <xs:enumeration value="DNK" />
    <xs:enumeration value="EST" />
    <xs:enumeration value="FIN" />
    <xs:enumeration value="FRA" />
    <xs:enumeration value="GEO" />
    <xs:enumeration value="DEU" />
    <xs:enumeration value="GRC" />
    <xs:enumeration value="HUN" />
    <xs:enumeration value="IRN" />
    <xs:enumeration value="IRL" />
    <xs:enumeration value="ISR" />
    <xs:enumeration value="ITA" />
    <xs:enumeration value="JOR" />
  </xs:restriction>
</xs:simpleType>
```

```

<xs:enumeration value="KAZ" />
<xs:enumeration value="KWT" />
<xs:enumeration value="KGZ" />
<xs:enumeration value="LVA" />
<xs:enumeration value="LBN" />
<xs:enumeration value="LTU" />
<xs:enumeration value="LUX" />
<xs:enumeration value="MLT" />
<xs:enumeration value="MDA" />
<xs:enumeration value="MNG" />
<xs:enumeration value="MNE" />
<xs:enumeration value="MAR" />
<xs:enumeration value="NLD" />
<xs:enumeration value="NOR" />
<xs:enumeration value="POL" />
<xs:enumeration value="PRT" />
<xs:enumeration value="ROU" />
<xs:enumeration value="RUS" />
<xs:enumeration value="SRB" />
<xs:enumeration value="SVK" />
<xs:enumeration value="SVN" />
<xs:enumeration value="ESP" />
<xs:enumeration value="SWE" />
<xs:enumeration value="CHE" />
<xs:enumeration value="SYR" />
<xs:enumeration value="TJK" />
<xs:enumeration value="MKD" />
<xs:enumeration value="TUN" />
<xs:enumeration value="TUR" />
<xs:enumeration value="TKM" />
<xs:enumeration value="UKR" />
<xs:enumeration value="GBR" />
<xs:enumeration value="UZB" />
</xs:restriction>
</xs:simpleType>

```

```
</xs:schema>
```

### 5.2.3 Guarantee

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified"
  targetNamespace="http://www.iru.org/model/guarantee-1"
  xmlns="http://www.iru.org/model/guarantee-1"
  xmlns:cts="urn:un:unece:uncefact:documentation:2"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">

  <xs:simpleType name="GuaranteeNumberType">
    <xs:restriction base="xs:token">
      <xs:pattern value="[A-Z]{0,2}[0-9]+" />
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="LegalFrameworkType">
    <xs:restriction base="xs:anyURI"/>
  </xs:simpleType>

  <xs:simpleType name="LegalFrameworkTypeType">
    <xs:restriction base="LegalFrameworkType">
      <xs:enumeration value="http://www.unece.org/tir/tirconv/conv75.html"/>
      <xs:enumeration value="http://www.iru.org/trade-facilitation/icarnet"/>
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="UsageRuleType">
    <xs:restriction base="xs:anyURI"/>
  </xs:simpleType>

  <xs:simpleType name="UsageRuleTypeType">
    <xs:restriction base="UsageRuleType">
      <xs:enumeration value="http://www.iru.org/model/guarantee-1/volet#4"/>
      <xs:enumeration value="http://www.iru.org/model/guarantee-1/volet#6"/>
      <xs:enumeration value="http://www.iru.org/model/guarantee-1/volet#14"/>
      <xs:enumeration value="http://www.iru.org/model/guarantee-1/volet#20"/>
      <xs:enumeration value="http://www.iru.org/model/association/deed-of-engagement#pilot-addendum"/>
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="UsageRuleSetType">
    <xs:restriction base="xs:anyURI"/>
  </xs:simpleType>

  <xs:simpleType name="UsageRuleSetTypeType">
    <xs:restriction base="UsageRuleSetType">
      <xs:enumeration value="http://www.iru.org/model/guarantee-1/usage-rule-set#4"/>
      <xs:enumeration value="http://www.iru.org/model/guarantee-1/usage-rule-set#6"/>
      <xs:enumeration value="http://www.iru.org/model/guarantee-1/usage-rule-set#6-pilot"/>
      <xs:enumeration value="http://www.iru.org/model/guarantee-1/usage-rule-set#14"/>
      <xs:enumeration value="http://www.iru.org/model/guarantee-1/usage-rule-set#20"/>
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="GuaranteeFormatType">
    <xs:restriction base="xs:anyURI"/>
  </xs:simpleType>

```

```

<xs:simpleType name="GuaranteeFormatTypeType">
  <xs:restriction base="GuaranteeFormatType">
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/format#paper"/>
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/format#electronic"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="GuaranteeValidityPeriodType">
  <xs:restriction base="xs:anyURI"/>
</xs:simpleType>

<xs:simpleType name="GuaranteeValidityPeriodTypeType">
  <xs:restriction base="GuaranteeValidityPeriodType">
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/validity-period?duration="/>
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/validity-period?final-date="/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="GuaranteeMonetaryLimitType">
  <xs:restriction base="xs:anyURI"/>
</xs:simpleType>

<xs:simpleType name="GuaranteeMonetaryLimitTypeType">
  <xs:restriction base="GuaranteeMonetaryLimitType">
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/monetary-limit?value=&currency="/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="ItemPropertyCodeType">
  <xs:restriction base="xs:anyURI"/>
</xs:simpleType>

<xs:simpleType name="ItemPropertyCodeTypeType">
  <xs:restriction base="ItemPropertyCodeType">
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/legal-framework"/>
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/usage-rule-set"/>
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/format"/>
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/validity-period"/>
    <xs:enumeration value="http://www.iru.org/model/guarantee-1/monetary-limit"/>
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="ItemType">
  <xs:annotation>
    <xs:documentation>
      <ccts:Component>
        <ccts:ComponentType>ABIE</ccts:ComponentType>
        <ccts:DictionaryEntryName>Item. Details</ccts:DictionaryEntryName>
        <ccts:Definition>Information directly relating to an item.</ccts:Definition>
        <ccts:ObjectClass>Item</ccts:ObjectClass>
        <ccts:AlternativeBusinessTerms>article, product, goods item</ccts:AlternativeBusinessTerms>
      </ccts:Component>
    </xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="SellersItemIdentification" type="ItemIdentificationType" minOccurs="0" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>
          <ccts:Component>
            <ccts:ComponentType>ASBIE</ccts:ComponentType>
            <ccts:DictionaryEntryName>Item. Sellers Item Identification. Item Identification</ccts:DictionaryEntryName>
            <ccts:Definition>Associates the item with its identification according to the IRU accounting system.</ccts:Definition>
            <ccts:Cardinality>0..1</ccts:Cardinality>
            <ccts:ObjectClass>Item</ccts:ObjectClass>
            <ccts:PropertyTermQualifier>Sellers</ccts:PropertyTermQualifier>
            <ccts:PropertyTerm>Item Identification</ccts:PropertyTerm>
            <ccts:AssociatedObjectClass>Item Identification</ccts:AssociatedObjectClass>
          </ccts:Component>
        </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="StandardItemIdentification" type="ItemIdentificationType" minOccurs="0" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>
          <ccts:Component>
            <ccts:ComponentType>ASBIE</ccts:ComponentType>
            <ccts:DictionaryEntryName>Item. Standard Item Identification. Item Identification</ccts:DictionaryEntryName>
            <ccts:Definition>Associates the item with its identification according to a standard system (based on the properties).</ccts:Definition>
            <ccts:Cardinality>0..1</ccts:Cardinality>
            <ccts:ObjectClass>Item</ccts:ObjectClass>
            <ccts:PropertyTermQualifier>Standard</ccts:PropertyTermQualifier>
            <ccts:PropertyTerm>Item Identification</ccts:PropertyTerm>
            <ccts:AssociatedObjectClass>Item Identification</ccts:AssociatedObjectClass>
          </ccts:Component>
        </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="AdditionalItemProperty" type="ItemPropertyType" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>
          <ccts:Component>
            <ccts:ComponentType>ASBIE</ccts:ComponentType>

```

```

    <cts:DictionaryEntryName>Item. Additional_ Item Property. Item Property</cts:DictionaryEntryName>
    <cts:Definition>Associates the item with a set of additional properties.</cts:Definition>
    <cts:Cardinality>0..n</cts:Cardinality>
    <cts:ObjectClass>Item</cts:ObjectClass>
    <cts:PropertyTermQualifier>Additional</cts:PropertyTermQualifier>
    <cts:PropertyTerm>Item Property</cts:PropertyTerm>
    <cts:AssociatedObjectClass>Item Property</cts:AssociatedObjectClass>
  </cts:Component>
</xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>
<xs:complexType name="ItemInstance" type="ItemInstanceType" minOccurs="0" maxOccurs="unbounded">
  <xs:annotation>
    <xs:documentation>
      <cts:Component>
        <cts:ComponentType>ASBIE</cts:ComponentType>
        <cts:DictionaryEntryName>Item. Item Instance</cts:DictionaryEntryName>
        <cts:Definition>An association to Item Instance.</cts:Definition>
        <cts:Cardinality>0..n</cts:Cardinality>
        <cts:ObjectClass>Item</cts:ObjectClass>
        <cts:PropertyTerm>Item Instance</cts:PropertyTerm>
        <cts:AssociatedObjectClass>Item Instance</cts:AssociatedObjectClass>
      </cts:Component>
    </xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>
<xs:complexType name="ItemIdentificationType">
  <xs:annotation>
    <xs:documentation>
      <cts:Component>
        <cts:ComponentType>ABIE</cts:ComponentType>
        <cts:DictionaryEntryName>Item Identification. Details</cts:DictionaryEntryName>
        <cts:Definition>Information about item identification.</cts:Definition>
        <cts:ObjectClass>Item Identification</cts:ObjectClass>
      </cts:Component>
    </xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="ID" type="xs:string" minOccurs="1" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>
          <cts:Component>
            <cts:ComponentType>BBIE</cts:ComponentType>
            <cts:DictionaryEntryName>Item Identification. Identifier</cts:DictionaryEntryName>
            <cts:Definition>An identifier for an item.</cts:Definition>
            <cts:Cardinality>1</cts:Cardinality>
            <cts:ObjectClass>Item Identification</cts:ObjectClass>
            <cts:PropertyTerm>Identifier</cts:PropertyTerm>
            <cts:RepresentationTerm>Identifier</cts:RepresentationTerm>
            <cts:DataType>Identifier. Type</cts:DataType>
            <cts:Examples>CUST001 3333-44-123</cts:Examples>
          </cts:Component>
        </xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ItemPropertyType">
  <xs:annotation>
    <xs:documentation>
      <cts:Component>
        <cts:ComponentType>ABIE</cts:ComponentType>
        <cts:DictionaryEntryName>Item Property. Details</cts:DictionaryEntryName>
        <cts:Definition>Information about specific Item Properties.</cts:Definition>
        <cts:ObjectClass>Item Property</cts:ObjectClass>
      </cts:Component>
    </xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="NameCode" type="ItemPropertyCodeType" minOccurs="0" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>
          <cts:Component>
            <cts:ComponentType>BBIE</cts:ComponentType>
            <cts:DictionaryEntryName>Item Property. Name Code. Code</cts:DictionaryEntryName>
            <cts:Definition>The name of the Item Property expressed as code.</cts:Definition>
            <cts:Cardinality>0..1</cts:Cardinality>
            <cts:ObjectClass>Item Property</cts:ObjectClass>
            <cts:PropertyTerm>Name Code</cts:PropertyTerm>
            <cts:RepresentationTerm>Code</cts:RepresentationTerm>
            <cts:DataType>Code. Type</cts:DataType>
          </cts:Component>
        </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="Value" type="xs:anyURI" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>
          <cts:Component>
            <cts:ComponentType>BBIE</cts:ComponentType>
            <cts:DictionaryEntryName>Item Property. Value. Text</cts:DictionaryEntryName>
            <cts:Definition>The Item Property value expressed as a text.</cts:Definition>
            <cts:Cardinality>0..n</cts:Cardinality>
            <cts:ObjectClass>Item Property</cts:ObjectClass>
            <cts:PropertyTerm>Value</cts:PropertyTerm>
          </cts:Component>
        </xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```



```

        <ccts:RepresentationTerm>Text</ccts:RepresentationTerm>
        <ccts:DataType>Text. Type</ccts:DataType>
        <ccts:Examples>100 watts , 15 European , 20% +/- 5%</ccts:Examples>
      </ccts:Component>
    </xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>

<xs:complexType name="ItemInstanceType">
  <xs:annotation>
    <xs:documentation>
      <ccts:Component>
        <ccts:ComponentType>ABIE</ccts:ComponentType>
        <ccts:DictionaryEntryName>Item Instance. Details</ccts:DictionaryEntryName>
        <ccts:Definition>Information about a specific instance of an item.</ccts:Definition>
        <ccts:ObjectClass>Item Instance</ccts:ObjectClass>
      </ccts:Component>
    </xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="ProductTraceID" type="GuaranteeNumberType" minOccurs="0" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>
          <ccts:Component>
            <ccts:ComponentType>BBIE</ccts:ComponentType>
            <ccts:DictionaryEntryName>Item Instance. Product Trace_ Identifier. Identifier</ccts:DictionaryEntryName>
            <ccts:Definition>An identifier used for tracing the item, such as the EPC number used in RFID.</ccts:
              Definition>
            <ccts:Cardinality>0..1</ccts:Cardinality>
            <ccts:ObjectClass>Item Instance</ccts:ObjectClass>
            <ccts:PropertyTermQualifier>Product Trace</ccts:PropertyTermQualifier>
            <ccts:PropertyTerm>Identifier</ccts:PropertyTerm>
            <ccts:RepresentationTerm>Identifier</ccts:RepresentationTerm>
            <ccts:DataType>Identifier. Type</ccts:DataType>
          </ccts:Component>
        </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="ManufactureDateTime" type="xs:dateTime" minOccurs="0" maxOccurs="1">
      <xs:annotation>
        <xs:documentation>
          <ccts:Component>
            <ccts:ComponentType>BBIE</ccts:ComponentType>
            <ccts:DictionaryEntryName>Item Instance. Manufacture Date Time. Date Time</ccts:DictionaryEntryName>
            <ccts:Definition>The date and time of manufacture of the Item Instance.</ccts:Definition>
            <ccts:Cardinality>0..1</ccts:Cardinality>
            <ccts:ObjectClass>Item Instance</ccts:ObjectClass>
            <ccts:PropertyTerm>Manufacture Date Time</ccts:PropertyTerm>
            <ccts:RepresentationTerm>Date Time</ccts:RepresentationTerm>
            <ccts:DataType>Date Time. Type</ccts:DataType>
          </ccts:Component>
        </xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="AdditionalItemProperty" type="ItemPropertyType" minOccurs="0" maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>
          <ccts:Component>
            <ccts:ComponentType>ASBIE</ccts:ComponentType>
            <ccts:DictionaryEntryName>Item. Additional_ Item Property. Item Property</ccts:DictionaryEntryName>
            <ccts:Definition>Associates the item with a set of additional properties.</ccts:Definition>
            <ccts:Cardinality>0..n</ccts:Cardinality>
            <ccts:ObjectClass>Item</ccts:ObjectClass>
            <ccts:PropertyTermQualifier>Additional</ccts:PropertyTermQualifier>
            <ccts:PropertyTerm>Item Property</ccts:PropertyTerm>
            <ccts:AssociatedObjectClass>Item Property</ccts:AssociatedObjectClass>
          </ccts:Component>
        </xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

</xs:schema>

```

## 5.2.4 TIR Carnet

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified"
  targetNamespace="http://www.iru.org/model/tir-carnet-1"
  xmlns="http://www.iru.org/model/tir-carnet-1"
  xmlns:g="http://www.iru.org/model/guarantee-1"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">

  <xs:import namespace="http://www.iru.org/model/guarantee-1" schemaLocation="iru-guarantee-1.xsd"/>

  <xs:simpleType name="TIRCarnetNumberType">
    <xs:restriction base="g:GuaranteeNumberType"/>
  </xs:simpleType>

  <xs:simpleType name="VoletPageNumberType">
    <xs:restriction base="xs:unsignedByte">
      <xs:minInclusive value="1"/>
      <xs:maxInclusive value="20"/>
    </xs:restriction>
  </xs:simpleType>

```



```

</xs:restriction>
</xs:simpleType>

<xs:simpleType name="VoletCountType">
  <xs:restriction base="xs:unsignedByte">
    <xs:enumeration value="4"/>
    <xs:enumeration value="6"/>
    <xs:enumeration value="14"/>
    <xs:enumeration value="20"/>
  </xs:restriction>
</xs:simpleType>
</xs:schema>

```

## 5.2.5 TIR+ Voucher

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified"
  targetNamespace="http://www.tirplus.net/model/voucher-1"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns="http://www.tirplus.net/model/voucher-1">

  <xs:simpleType name="VoucherNumberType">
    <xs:restriction base="xs:string">
      <xs:pattern value="[0-9]{4}-[0-9]{4}-[0-9]{4}" />
    </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="RegistrationStatusType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="NOT_REGISTERED" />
      <xs:enumeration value="NOT_REGISTERABLE" />
      <xs:enumeration value="REGISTERED" />
    </xs:restriction>
  </xs:simpleType>
</xs:schema>

```

## 5.2.6 SafeTIR Termination

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified"
  targetNamespace="http://rts.iru.org/model/termination-1"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns="http://rts.iru.org/model/termination-1"
  xmlns:act="http://www.iru.org/model/tir-actor-1"
  xmlns:car="http://rts.iru.org/model/carnet-1">

  <xs:import schemaLocation="rts-carnet-1.xsd" namespace="http://rts.iru.org/model/carnet-1" />
  <xs:import schemaLocation="tir-actor-1.xsd" namespace="http://www.iru.org/model/tir-actor-1" />

  <xs:group name="CustomsLedgerEntryGroup">
    <xs:sequence>
      <xs:element name="CustomsLedgerEntryReference">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:minLength value="1" />
            <xs:maxLength value="255" />
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="CustomsLedgerEntryDate" type="xs:dateTime" />
    </xs:sequence>
  </xs:group>

  <xs:group name="CertificateOfTerminationGroup">
    <xs:sequence>
      <xs:element name="CertificateOfTerminationReference">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:minLength value="1" />
            <xs:maxLength value="255" />
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
      <xs:element name="CertificateOfTerminationDate" type="xs:dateTime" />
    </xs:sequence>
  </xs:group>

  <xs:complexType name="TIROperationTerminationType">
    <xs:sequence>
      <xs:element ref="car:TIRCarnetNumber" />
      <xs:element ref="car:VoletPageNumber" minOccurs="0" />

      <xs:element ref="act:Customs" />
      <xs:element name="CustomsOffice">
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:minLength value="1" />
            <xs:maxLength value="255" />
          </xs:restriction>
        </xs:simpleType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>

```

```

    </xs:simpleType>
  </xs:element>

  <xs:group ref="CustomsLedgerEntryGroup" minOccurs="0"/>
  <xs:group ref="CertificateOfTerminationGroup" minOccurs="0"/>

  <xs:choice>
    <xs:element name="IsBeforeLoad" type="xs:boolean" fixed="true"/>
    <xs:element name="IsExit" type="xs:boolean" fixed="true"/>
    <xs:element name="IsFinal" type="xs:boolean" />
  </xs:choice>
  <xs:element name="SequenceNumber" type="xs:unsignedByte" minOccurs="0"/>
  <xs:element name="IsWithReservation" type="xs:boolean" />
  <xs:element name="CustomsComment" minOccurs="0">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:maxLength value="126" />
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="PackageCount" type="xs:unsignedInt" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

<xs:element name="NewTIROperationTermination" type="TIROperationTerminationType"/>
<xs:element name="CancelledTIROperationTermination" type="TIROperationTerminationType"/>

<xs:complexType name="UpdatedTIROperationTerminationType">
  <xs:sequence>
    <xs:element ref="CancelledTIROperationTermination"/>
    <xs:element ref="NewTIROperationTermination"/>
  </xs:sequence>
</xs:complexType>

<xs:element name="UpdatedTIROperationTermination" type="UpdatedTIROperationTerminationType" />

<xs:complexType name="TIROperationTerminationsType">
  <xs:sequence maxOccurs="unbounded">
    <xs:choice>
      <xs:element ref="NewTIROperationTermination" />
      <xs:element ref="CancelledTIROperationTermination" />
      <xs:element ref="UpdatedTIROperationTermination" />
    </xs:choice>
  </xs:sequence>
  <xs:attribute name="count" type="xs:unsignedInt" />
</xs:complexType>

<xs:element name="TIROperationTerminations" type="TIROperationTerminationsType"/>

<xs:complexType name="MissingTIROperationTerminationType">
  <xs:sequence>
    <xs:element ref="car:TIRCarnetNumber" />
    <xs:element ref="car:VoletPageNumber" minOccurs="0"/>
    <xs:element ref="act:Customs" />

    <xs:element name="CustomsOffice" minOccurs="0">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:minLength value="1" />
          <xs:maxLength value="255" />
        </xs:restriction>
      </xs:simpleType>
    </xs:element>

    <xs:group ref="CustomsLedgerEntryGroup" minOccurs="0"/>
    <xs:group ref="CertificateOfTerminationGroup" minOccurs="0"/>

    <xs:choice minOccurs="0">
      <xs:element name="IsBeforeLoad" type="xs:boolean" fixed="true"/>
      <xs:element name="IsExit" type="xs:boolean" fixed="true"/>
      <xs:element name="IsFinal" type="xs:boolean" />
    </xs:choice>
    <xs:element name="SequenceNumber" type="xs:unsignedByte" minOccurs="0"/>
    <xs:element name="IsWithReservation" type="xs:boolean" minOccurs="0"/>
    <xs:element name="CustomsComment" minOccurs="0">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="126" />
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="PackageCount" type="xs:unsignedInt" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

<xs:element name="MissingTIROperationTermination" type="MissingTIROperationTerminationType"/>

<!-- describe TIR operation termination data received at IRU -->
<xs:complexType name="ReceivedTIROperationTerminationType">
  <xs:complexContent>
    <xs:extension base="TIROperationTerminationType">
      <xs:attribute name="receivedDate" type="xs:dateTime" />
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

<xs:simpleType name="ReconciliationRequestReasonType">
  <xs:restriction base="xs:string">

```

```

    <xs:enumeration value="DISCREPANCY" />
    <xs:enumeration value="MISSING" />
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="ReconciliationRequestIdType">
  <xs:restriction base="xs:string">
    <xs:maxLength value="14" />
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="ReconciliationRequestType">
  <xs:sequence>
    <xs:element name="Id" type="ReconciliationRequestIdType" />
    <xs:element name="Date" type="xs:dateTime" />
    <xs:element name="ReminderCount" type="xs:unsignedInt" />
    <xs:element name="Originator">
      <xs:complexType>
        <xs:choice>
          <xs:element ref="act:IRU" />
          <xs:element ref="act:Association" />
        </xs:choice>
      </xs:complexType>
    </xs:element>
    <xs:element name="Remark" minOccurs="0">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:maxLength value="126" />
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="Reason" type="ReconciliationRequestReasonType" />
    <xs:choice>
      <xs:element name="TIROperationTerminationToValidate" type="TIROperationTerminationType" />
      <xs:element ref="MissingTIROperationTermination" />
    </xs:choice>
  </xs:sequence>
</xs:complexType>

<xs:element name="ReconciliationRequest" type="ReconciliationRequestType" />

<xs:complexType name="ReconciliationRequestReplyType">
  <xs:sequence>
    <xs:element name="Id" type="ReconciliationRequestIdType" />
    <xs:element name="ReplyType">
      <xs:simpleType>
        <xs:restriction base="xs:string">
          <xs:enumeration value="CONFIRMED" />
          <xs:enumeration value="CORRECTED" />
          <xs:enumeration value="NOT_FOUND" />
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element name="CorrectedTIROperationTermination" type="TIROperationTerminationType" minOccurs="0" />
  </xs:sequence>
</xs:complexType>

<xs:complexType name="ReconciliationRequestRepliesType">
  <xs:sequence maxOccurs="unbounded">
    <xs:element name="ReconciliationRequestReply" type="ReconciliationRequestReplyType" />
  </xs:sequence>
  <xs:attribute name="count" type="xs:unsignedInt" />
</xs:complexType>

<xs:element name="ReconciliationRequestReplies" type="ReconciliationRequestRepliesType" />
</xs:schema>

```

## 5.2.7 SafeTIR Carnet data

```

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema elementFormDefault="qualified"
  targetNamespace="http://rts.iru.org/model/carnet-1" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:act="http://www.iru.org/model/tir-actor-1"
  xmlns:car="http://www.iru.org/model/tir-carnet-1"
  xmlns:vou="http://www.tirplus.net/model/voucher-1"
  xmlns="http://rts.iru.org/model/carnet-1">

  <xs:import schemaLocation="tir-actor-1.xsd" namespace="http://www.iru.org/model/tir-actor-1" />
  <xs:import schemaLocation="tir-carnet-1.xsd" namespace="http://www.iru.org/model/tir-carnet-1" />

  <xs:import schemaLocation="tirplus-voucher-1.xsd" namespace="http://www.tirplus.net/model/voucher-1" />

  <xs:element name="TIRCarnetNumber" type="car:TIRCarnetNumberType" />

  <xs:simpleType name="VoletPageNumberType">
    <xs:restriction base="car:VoletPageNumberType">
      <xs:enumeration value="2" />
      <xs:enumeration value="4" />
      <xs:enumeration value="6" />
      <xs:enumeration value="8" />
      <xs:enumeration value="10" />
      <xs:enumeration value="12" />
      <xs:enumeration value="14" />
      <xs:enumeration value="16" />
      <xs:enumeration value="18" />
      <xs:enumeration value="20" />
    </xs:restriction>
  </xs:simpleType>

```

```
</xs:restriction>
</xs:simpleType>

<xs:element name="VoletPageNumber" type="VoletPageNumberType" />

<xs:complexType name="CarnetBaseType">
  <xs:sequence>
    <xs:element ref="TIRCarnetNumber" />
    <xs:element name="ExpiryDate" type="xs:date" />
    <xs:element minOccurs="0" ref="act:Association" />
    <xs:element minOccurs="0" ref="act:Holder" />
  </xs:sequence>
</xs:complexType>

<xs:simpleType name="CarnetStatusType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="ISSUED_TO_ASSOCIATION" />
    <xs:enumeration value="ISSUED_TO_HAULIER" />
    <xs:enumeration value="RETURNED_TO_ASSOCIATION" />
    <xs:enumeration value="RETURNED_TO_IRU" />
    <xs:enumeration value="STOPPED" />
    <xs:enumeration value="INCORRECT_NUMBER" />
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="CarnetType">
  <xs:complexContent>
    <xs:extension base="CarnetBaseType">
      <xs:sequence>
        <xs:element name="Status" type="CarnetStatusType" />
        <xs:element name="TIROperationTerminations">
          <xs:complexType>
            <xs:attribute name="count" type="xs:unsignedInt" use="required" />
            <xs:attribute name="hasFinal" type="xs:boolean" use="required" />
          </xs:complexType>
        </xs:element>
        <xs:element name="VoucherNumber" type="vou:VoucherNumberType" minOccurs="0" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

<xs:simpleType name="InvalidationStatusType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="DESTROYED" />
    <xs:enumeration value="LOST" />
    <xs:enumeration value="STOLEN" />
    <xs:enumeration value="RETAINED" />
    <xs:enumeration value="EXCLUDED" />
    <xs:enumeration value="INVALIDATED" />
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="StoppedCarnetType">
  <xs:complexContent>
    <xs:extension base="CarnetBaseType">
      <xs:sequence>
        <xs:element name="DeclarationDate" type="xs:date" />
        <xs:element name="InvalidationDate" type="xs:dateTime" />
        <xs:element name="InvalidationStatus" type="InvalidationStatusType" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

</xs:schema>
```