Universal Interface

Online Authorisation

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1 Introduction

> *This document replaces the "REST API Authorization Interface *.*.*" document.*
> *The asterisk (*) stands for the version identification.*

This document specifies the API for the *Online Authorization* interface to connect 3rd party systems to the S&B *entervo* system.

This documentation is valid for the Interface versions from 1.2.0 to 1.2.3.

Use cases and scenarios covered by this API are the following:
- ☐ Payment with a 3rd party terminal
- ☐ Identification at a 3rd party system
- ☐ Create a ticket for a 3rd party system
- ☐ Create a credit voucher from a 3rd party system which can be used in the *entervo* system

These scenarios make a client and a server necessary on the 3rd system as well as on the S&B system.

This document contains the following main parts:
- ☐ Chapter 2 "REST Interface" describes the general idea and workflow between the two systems. It also includes some definitions and the security requirements.
- ☐ Chapter 3 "Resources 3rd Party Web Service" specifies the Restful web service interface the 3rd party system has to offer.
- ☐ Chapter 4 "Resources S&B Web Service" specifies the Restful web service interface the S&B *entervo* system will provide.

1.1 Interface Overview

The *Online Authorisation* interface provides the following features:

Entry unit
- ☐ Reading of the identification media (License Plate, Mifare and UHF Tags) from motorists, not registered in the S&B system.
- ☐ Informing the 3rd party system of the "foreign" media (id).
- ☐ Receiving back from the 3rd party system the information, if the motorist is allowed to enter the car park with this media. In addition the foreign system could inform us to grant a discount (money, time) for this media or even to switch the tariff (send another card class).
- ☐ In case of a positive response we will open the barrier at the entry.
- ☐ Informing the 3rd party system that the car has entered the car park.

Exit unit
- ☐ Reading of the "foreign" media and checking if corresponding entry movement record is available in our system.

- ☐ Calculating the tariff in taking the information into consideration received during the communication to the 3rd party system at the entry, but no payment is required in entervo.
- ☐ Open the barrier (without a new authorization from the 3rd party system).
- ☐ Informing the other system that the car has left the car park including the information about the calculated tariff.
- ☐ The customer needs to be invoiced from 3rd party system.

1.2   Protocol

The following port is used in the entervo system for communication via net-work.

Protocol	Source Port	Destination Port	
TCP	any	8443	https://

For detailed scheme see chapter 2.4 "Schematic of the 3rd Party and S&B System Interface".

1.3   Authentication and Authorisation

The application communicating with our web service requires the client authentication when sending a request. Based on the authentication information, the service will authorize (allow) or deny the request.

The authentication procedure will follow the http Basic Authentication Standard which is described in RFC 2617 (http://www.ietf.org/rfc/rfc2617.txt).

The authentication credentials (username and password) will be provided by Scheidt & Bachmann.

2 REST Interface

2.1 Used Definitions

Host-IP 3rd Party: IP of the machine which hosts the 3rd party web service

Host-IP S&B: IP of the machine which hosts the S&B web service

Base URI 3rd Party:

https://Host-IP 3rd Party:Port/AuthorizationService3rdParty/

Base URI S&B:

https:// Host-IP S&B:Port/AuthorizationServiceSB/

All other URIs described in this document will be appended to these two URIs.

Job: A job is started by the *entervo* system and is well-defined by a facility, device and jobId. A job describes one of the mentioned use cases from begin to its end from the interface point of view. The values for facility, device and jobId are given by the S&B system. Facility and device are of type Integer and jobId of type long.

2.2 Communication Parameters

The communication between S&B *entervo* system and the 3rd party system uses the https protocol.

For authorization http basic is used.

The http payload is formatted in xml. For better human readability xml examples will be used in this documentation.

2.3 Principle Functionality and Program Flow

The interface allows using a device from any manufacturer to the S&B *entervo* system via a Restful web interface for the use cases mentioned in chapter 3.

Good case program flow

Version and configuration information will be exchanged periodically between the S&B system and the 3rd party system. In normal operation this exchange will be initiated by the S&B system. If required the 3rd system can initiate this request itself.

Each use case from chapter 3 is initialized by the S&B system with an http POST request to the 3rd party service. This POST request starts a new job. The 3rd party system processes the request. A job can be updated with new media data. It will probably be necessary that the 3rd party side stores the created job and all received media data until it receives a finalmsgsb message.

In case that the 3rd party system needs to send data to the S&B during the job processing (e.g. display messages etc.) these statusinfo messages can be send to the S&B web service. The 3rd party system is responsible to ensure that the order in which the S&B receives the messages is correct.

When the 3rd party has finished the job it sends a PUT request with a finalmsgcustomer element. Also the finish of processing new media data has to be confirmed with a finalmsgcustomer element.

The S&B system confirms a job finished with sending a PUT request with a finalmsgsb element.

After finalmsgsb message the job is not available anymore on the S&B system.

Cancel a job

In case of a cancel job initiated from a user, a PUT request with a reason element is send to the 3rd party system which responses with confirmation element to it.

Also after a cancel further statusinfo messages might be send by the 3rd party system.

But at least a finalmsgcustomer and finalmsgsb are mandatory to quit the job properly.

Timeout for a job

To detect and handle connection problems the S&B system expects at least every 20 seconds a message from the 3rd party system.

The 3rd party system can expect at least every 30 seconds a message from the S&B system.

In both cases a message means an http request or http response.

Each job started by the S&B system starts new timeouts for both systems.

In case of connection problems the customer system will send all missing messages periodically until those messages have been received successfully by the S&B system.

This allows that in an event of connection problem the customer in front of the device can be informed properly.

2.4   Schematic of the 3rd Party and S&B System Interface
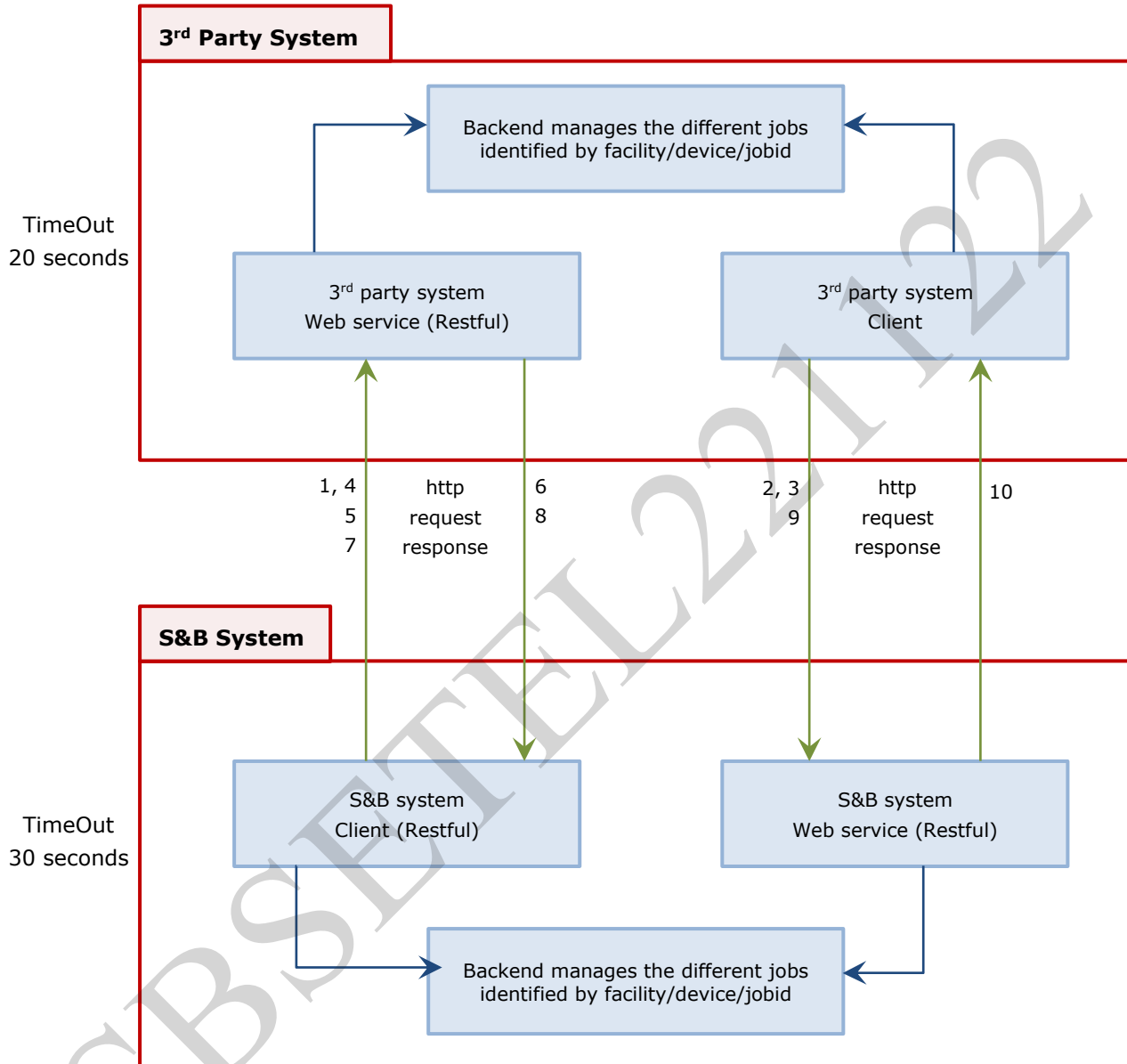
Fig. 1: Scheme of the 3rd party and S&B system interface

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Description to the scheme

Normal job execution
1. Create job
2. Send StatusInfo (0..n)
3. Send job finished 3rd party
4. Send job finished S&B

Enhanced job execution
1. Create job
2. Send StatusInfo (0..n)
3. Send job finished 3rd party

Repeat (1-n times)
{
1b. Create media data
2. Send StatusInfo (0..n)
3. Send job finished 3rd party
}

4. Send job finished S&B

Cancel job execution
5. Cancel job
6. Confirmation

Ordinary version exchange
7. Version
8. Version

Extraordinary version exchange
9. Version
10. Version

2.5 Resources Overview for the 3rd Party Web Service

Resource	Method	Http body request data	Http body response data	Description
version	PUT	\<version\> element	\<version\> element	Version and system configuration are sent by S&B to 3rd party. In the response, 3rd party system sends its own version.
facility/device/jobid	POST	\<job\> element	\<confirmation\> element	S&B creates a new job. A new URI will be created.
facility/device/jobid/medialist	POST	\<mediaData\> element	\<confirmation\> element	S&B creates new media data for an existing job.
facility/device/jobid/cancel	PUT	\<cancel\> element	\<confirmation\> element	S&B cancels the job with a reason. 3rd party confirms the cancel.
facility/device/jobid/finalmessage	PUT	\<finalmessagesb\> element	\<confirmation\> element	S&B sends finalmsgsb for the jobid.

2.6 Resources Overview for the S&B Web Service

Resource	Method	Http body request data	Http body response data	Description
version	PUT	<version> element	<version> element	Version and system configuration are send by the 3rd party to S&B. In the response, S&B sends its own version.
facility/device/jobid/statusinfo	PUT	<statusinfo> element	<confirmation> element	3rd party transmits statusinfo to the jobid.
facility/device/jobid/finalmessage	PUT	<finalmessagecustomer> element	<confirmation> element	3rd party sends finalmsgcustomer to the jobid.

2.7 Confirmation Codes and Error Handling

To ensure a high reliability of the whole system environment each http request is answered with a confirmation element in the http request body. The confirmation element has a status, a detail status and a text field. The status value (OK, ERROR) is mandatory. The detail status is optional when the status is ok, but mandatory for status ERROR. The text field is optional.

Defined confirmation codes
☐ MESSAGE_UNKNOWN
☐ UNKNOWN_ERROR
☐ CANCEL_ACCEPTED
☐ CANCEL_NOT_POSSIBLE
☐ JOB_ALREADY_FINISHED
☐ JOB_CREATED
☐ JOB_NOT_CREATED
☐ JOB_UNKNOWN
☐ JOB_TIME_OUT
☐ MEDIA_DATA_RECEIVED
☐ STATUSINFO_RECEIVED
☐ FINALMESSAGESB_RECEIVED
☐ FINALMESSAGE3RDPARTY_RECEIVED
☐ WRONG_SB_VERSION
☐ WRONG_CUSTOMER_VERSION
☐ SB_BACKENDSYSTEM_NOT_AVAILABLE
☐ CUSTOMER_BACKENDSYSTEM_NOT_AVAILABLE
☐ SYSTEM_MAINTENANCE

3 Resources 3ʳᵈ Party Web Service

It is essential that for all resources, except version, the full resource consists of "*https://Host-IP 3rd Party:Port/AuthorizationService3rdParty/facility/device/jobid*".

This resource has to be created for each job on the 3rd party web service.

The values for facility, device and jobid are given by the S&B system. Facility and device are of type Integer and jobid of type long.

3.1 S&B Triggers Exchange Versions

Sends the current S&B service version including the system configuration and receives the same information of the 3ʳᵈ party system in the response. This is the standard way to exchange version information.

REST-Resource

HTTP-Method	PUT
REST-URI	/version
Formats	XML
Request body	<version> element
Response body	<version> element

Response

Result	HTTP Error Code	HTTP Body
OK	201	<version> element
Error	500	-

Example Request Body

```xml
<?xml version="1.0" encoding="UTF-8"?><version>
  <entervoVersion>entervo_V2R4</entervoVersion>
  <sbAuthorizationServiceVersion>0_0_2</sbAuthorizationServiceVersion>
  <configuration>
    <supportedFunctions>function1</supportedFunctions>
    <supportedFunctions>function2</supportedFunctions>
  </configuration>
</version>
```

Example Response Body

```xml
<?xml version="1.0" encoding="UTF-8"?><version>
  <configuration>
    <supportedFunctions>function1 3rdparty</supportedFunctions>
    <supportedFunctions>function2 3rdparty</supportedFunctions>
  </configuration>
  <customerVersion>3rd party version</customerVersion>
</version>
```

3.2 S&B Creates a New Job

Creates a new job and sends the required information as an URI and a <job> element to the 3rd party system.

REST-Resource

HTTP-Method	POST
REST-URI	/facility/device/jobid
Formats	XML
Request body	<job> element
Response body	<confirmation> element

Response

Result	HTTP Error Code	HTTP Body
OK	201	<confirmation> element
Error	500	<confirmation> element

Example Request Body

```xml
<?xml version="1.0" encoding="UTF-8"?>
<job>
  <jobType>IDENTIFICATION</jobType>
  <jobId>
    <id>123456</id>
  </jobId>
  <mediaDataList>
    <mediaType>UHF_RFID</mediaType>
    <identifier>
      <name>ThisIsTheMediumId</name>
    </identifier>
  </mediaDataList>
  <mediaDataList>
    <mediaType>LICENSE_PLATE</mediaType>
    <identifier>
      <name>MG-SB123</name>
    </identifier>
  </mediaDataList>
  <timeAndPlace>
    <computer>
      <computerNumber>9999</computerNumber>
    </computer>
    <device>
      <deviceNumber>111</deviceNumber>
    </device>
    <facility>
      <facilityNumber>3333</facilityNumber>
    </facility>
  </timeAndPlace>
  <customerInformation>
    <customer>
      <customerId>98765</customerId>
    </customer>
  </customerInformation>
</job>
```

Example Response Body

```xml
<?xml version="1.0" encoding="UTF-8"?><confirmation>
  <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
  <confirmationStatus>OK</confirmationStatus>
</confirmation>
```

3.3 S&B Creates a New Media Data

Creates new media data for an existing job and sends the required information as a <mediaData> element to the 3rd party system. The mediaData element is described as a complex xml type within the job element.

REST-Resource

HTTP-Method	POST
REST-URI	/facility/device/jobid/medialist
Formats	XML
Request body	<mediaData> element
Response body	<confirmation> element

Response

Result	HTTP Error Code	HTTP Body
OK	201	<confirmation> element
Error	500	<confirmation> element

Example Request Body

```
<?xml version="1.0" encoding="UTF-8"?><mediaData>
  <hashValue>
    <value>ab1234</value>
  </hashValue>
  <mediaType>BARCODE</mediaType>
</mediaData>
```

Example Response Body

```
<?xml version="1.0" encoding="UTF-8"?><confirmation>
  <confirmationDetailStatus>MEDIA_DATA_RECEIVED</confirmationDetailStatus>
  <confirmationStatus>OK</confirmationStatus>
</confirmation>
```

3.4 S&B Cancels a Running Job

This request cancels a running job on the 3rd party side. The job is identified by its resource /facility/device/jobid.

REST-Resource

HTTP-Method	PUT
REST-URI	/facility/device/jobid/cancel
Formats	XML
Request body	<reason> element
Response body	<confirmation> element

Response

Result	HTTP Error Code	HTTP Body
OK	201	\<confirmation> element
Error	500	\<confirmation> element

Example Request Body

```xml
<?xml version="1.0" encoding="UTF-8"?><cancel>
  <reason>
    <cancelCode>JOB_CANCELED_BY_USER</cancelCode>
    <reasonText>The user pressed the cancel button</reasonText>
  </reason>
</cancel>
```

Example Response Body

```xml
<?xml version="1.0" encoding="UTF-8"?><confirmation>
  <confirmationDetailStatus>CANCEL_ACCEPTED</confirmationDetailSta-
    tus>
  <confirmationStatus>OK</confirmationStatus>
</confirmation>
```

3.5 S&B Sends Final Message for a Job

This request sends the last message for a job. The job is identified by its re-source /facility/device/jobid.

REST-Resource

HTTP-Method	PUT
REST-URI	/facility/device/jobid/finalmessage
Formats	XML
Request body	\<finalmsgsb> element
Response body	\<confirmation> element

Response

Result	HTTP Error Code	HTTP Body
OK	201	\<confirmation> element
Error	500	\<confirmation> element

Example Request Body

```xml
<?xml version="1.0" encoding="UTF-8"?><finalMessageSB>
  <paymentMedia>CREDITCARD</paymentMedia>
  <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

Example Response Body

```xml
<?xml version="1.0" encoding="UTF-8"?><confirmation>
  <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDetailStatus>
  <confirmationStatus>OK</confirmationStatus>
</confirmation>
```

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4 Resources S&B Web Service

It is essential that for all resources, except version, the full resource consists of "*https:// Host-IP S&B:Port/AuthorizationServiceSB/facility/device/jobid*".

Here facility and device are of type Integer and jobid of type long.

This resource has to be created for each job on the S&B web service. The values for facility, device and jobid are given by the S&B system.

4.1 3rd Party Triggers Exchange Versions

Sends the current 3rd party system version including the system configuration and receives the same information of the S&B system in the response. This resource can be used for reconnection of the 3rd party system.

REST-Resource

HTTP-Method	PUT
REST-URI	/version
Formats	XML
Request body	<version> element
Response body	<version> element

Response

Result	HTTP Error Code	HTTP Body
OK	201	<version> element
Error	500	-

Example Request Body

```
<?xml version="1.0" encoding="UTF-8"?><version>
  <customerVersion>customer version 1.0</customerVersion>
  <sbAuthorizationServiceVersion>0_0_2</sbAuthorizationServiceVersion>
  <configuration>
    <supportedFunctions>customer function1</supportedFunctions>
    <supportedFunctions>customer function2</supportedFunctions>
  </configuration>
</version>
```

Example Response Body

```
<?xml version="1.0" encoding="UTF-8"?><version>
  <entervoVersion>entervo_V2R4</entervoVersion>
  <sbAuthorizationServiceVersion>0_0_2</sbAuthorizationServiceVersion>
  <configuration>
    <supportedFunctions>sb function1</supportedFunctions>
    <supportedFunctions>sb function2</supportedFunctions>
    <supportedFunctions>sb function3</supportedFunctions>
  </configuration>
</version>
```

4.2   3ʳᵈ Party Sends Statusinfo for a Job

This request sends a statusinfo element for a job. The job is identified by its resource /facility/device/jobid.

REST-Resource

HTTP-Method	PUT
REST-URI	/facility/device/jobid/statusinfo
Formats	XML
Request body	<statusinfo> element
Response body	<confirmation> element

Response

Result	HTTP Error Code	HTTP Body
OK	201	<confirmation> element
Error	500	<confirmation> element

Example Request Body

```
<?xml version="1.0" encoding="UTF-8"?><statusinfo>
  <displayMessage>
    <message>Please confirm the payment of 5 Eur</message>
  </displayMessage>
  <cardDataInformation>
    <cardDataInformation>Test Card Data Information</cardDataInfor-
      mation>
  </cardDataInformation>
</statusinfo>
```

Example Response Body

```
<?xml version="1.0" encoding="UTF-8"?><confirmation>
  <confirmationStatus>OK</confirmationStatus>
  <confirmationDetailStatus>STATUSINFO_RECEIVED</confirmationDe-
    tailStatus>
</confirmation>
```

4.3   3ʳᵈ Party System Sends Final Message for a Job

This request sends the last message for a job. The job is identified by its re-source /facility/device/jobid.

REST-Resource

HTTP-Method	PUT
REST-URI	/facility/device/jobid/finalmessage
Formats	XML

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Request body	<finalmsgcustomer> element
Response body	<confirmation> element

Response

Result	HTTP Error Code	HTTP Body
OK	201	<confirmation> element
Error	500	<confirmation> element

Example Request Body

```xml
<?xml version="1.0" encoding="UTF-8"?>
<finalMessageCustomerSystem>
  <event>
    <eventCode>23</eventCode>
    <eventText>This is an event text</eventText>
  </event>
  <paymentInformation>
    <currency>
      <alphabeticCode>EUR</alphabeticCode>
      <nummericCode>30</nummericCode>
    </currency>
    <currentValue>
      <currentValue>56.78</currentValue>
    </currentValue>
    <totalAmount>
      <totalAmount>99.0</totalAmount>
    </totalAmount>
    <authorizationCode>
      <authorizationCode>1234</authorizationCode>
    </authorizationCode>
    <paymentLocation>INVOICING</paymentLocation>
  </paymentInformation>
  <bonusInformation>
    <points>500</points>
  </bonusInformation>
```

```xml
  <customerInformation>
    <customer>
      <customerId>78</customerId>
      <customerName>Tom Jerry</customerName>
      <customerGroup>CUSTOMERGROUP1</customerGroup>
    </customer>
  </customerInformation>
  <displayMessage>
    <message>Have a good trip home</message>
  </displayMessage>
  <voucher>
    <moneyValue>
      <amount>9966</amount>
      <currency>
        <alphabeticCode>EUR</alphabeticCode>
        <nummericCode>30</nummericCode>
      </currency>
    </moneyValue>
    <voucherType>MONEY_VOUCHER</voucherType>
  </voucher>
  <mediaDataList>
    <mediaType>BARCODE</mediaType>
    <identifier>
      <name>4354541</name>
    </identifier>
    <hashValue/>
  </mediaDataList>
  <swap>SWAP_CLASSIC</swap>
  <counting>NON_RESERVED</counting>
  <weekProgramProfile>3</weekProgramProfile>
  <extendedUsageProfile>4</extendedUsageProfile>
</finalMessageCustomerSystem>
```

Example Response Body

```xml
<?xml version="1.0" encoding="UTF-8"?><confirmation>
  <confirmationStatus>OK</confirmationStatus>
  <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</con-
    firmationDetailStatus>
</confirmation>
```

5 Online Authorisation – Samples

5.1 Introduction

This document gives samples of typical OA use cases with message flow diagrams and *xml* data. The message flow diagrams show *http* requests, but do not show the *http* responses. The *xml* data shows *http* requests and *http* responses.

5.2 OA In/Out at the Entry

The OA customer uses LPN as credential media. The response of the OA provider contains the LPN and additionally a NFC-UID. It contains the provider id, customer id, the counting mode and the payment mode.

http request from OA UI:

```xml
<job>
    <jobType>IDENTIFICATION</jobType>
    <jobId>
        <id>6321</id>
    </jobId>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
```

```
<timeAndPlace>
    <operator>
        <operatorNumber>49101</operatorNumber>
    </operator>
    <computer>
        <computerNumber>2010</computerNumber>
    </computer>
    <device>
        <deviceNumber>101</deviceNumber>
        <deviceType>ENTRY</deviceType>
    </device>
    <transactionTimeStamp>
        <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
    </transactionTimeStamp>
    <facility>
        <facilityNumber>2020</facilityNumber>
    </facility>
</timeAndPlace>
<providerInformation>
    <provider>
        <providerId>0</providerId>
    </provider>
</providerInformation>
</job>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

http request from entervo.connect/OA provider:

```
<finalMessageCustomer>
    <paymentInformation>
        <paymentLocation>INVOICING</paymentLocation>
    </paymentInformation>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
            <providerName>OA Provider SuB Classic</providerName>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
            <customerName>Carl Bachmann</customerName>
            <customerGroup>CUSTOMERGROUP1</customerGroup>
        </customer>
    </customerInformation>
```

```xml
<reservation>
    <reservationTariff>
        <tariffName>Tariff OnlineManipulation</tariffName>
        <tariffNumber>34</tariffNumber>
    </reservationTariff>
</reservation>
<mediaDataList>
    <mediaType>LICENSE_PLATE</mediaType>
    <identifier>
        <name>MGSB1872</name>
    </identifier>
</mediaDataList>
<mediaDataList>
    <mediaType>NFC</mediaType>
    <identifier>
        <name>847665680</name>
    </identifier>
</mediaDataList>
<counting>RESERVED</counting>
<businessTransaction>
    <id>76b0fd8d-419e-4e6b-a567-873af806152c</id>
</businessTransaction>
</finalMessageCustomer>
```

http response:

```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirmationDetailStatus>
</confirmation>
```
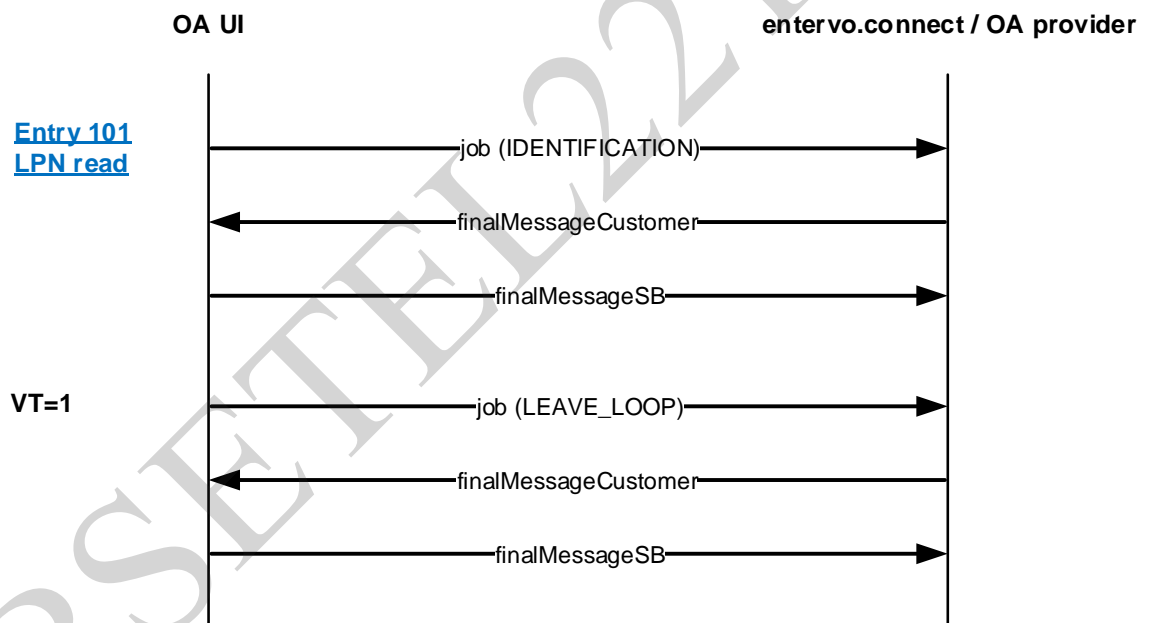
http request from OA UI:

```xml
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:

```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDetailStatus>
</confirmation>
```

http request from OA UI:

```xml
<job>
    <jobType>LEAVE_LOOP</jobType>
    <jobId>
        <id>6322</id>
```

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```xml
        </jobId>
        <businessTransaction>
            <id>76b0fd8d-419e-4e6b-a567-873af806152c</id>
        </businessTransaction>
        <mediaDataList>
            <mediaType>LICENSE_PLATE</mediaType>
            <identifier>
                <name>MGSB1872</name>
            </identifier>
        </mediaDataList>
        <timeAndPlace>
            <operator>
                <operatorNumber>49101</operatorNumber>
            </operator>
            <computer>
                <computerNumber>2010</computerNumber>
            </computer>
            <device>
                <deviceNumber>101</deviceNumber>
                <deviceType>ENTRY</deviceType>
            </device>
            <transactionTimeStamp>
                <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
            </transactionTimeStamp>
            <facility>
                <facilityNumber>2020</facilityNumber>
            </facility>
        </timeAndPlace>
        <providerInformation>
            <provider>
                <providerId>1</providerId>
                <providerName>OA Provider SuB Classic</providerName>
            </provider>
        </providerInformation>
        <customerInformation>
            <customer>
                <customerId>100</customerId>
                <customerName>Carl Bachmann</customerName>
                <customerGroup>CUSTOMERGROUP1</customerGroup>
            </customer>
        </customerInformation>
    </job>
```

http response:

```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

http request from entervo.connect/OA provider:

```
<finalMessageCustomer>
</finalMessageCustomer>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirma-
tionDetailStatus>
</confirmation>
```

http request from OA UI:

```
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDe-
tailStatus>
</confirmation>
```

5.3 OA In/Out at the Exit

Repeated is not configured. SuppressPaymentDiscount is configured.

The OA customer uses LPN as credential media. The present OA customer can drive out.

There is no new authorization request to the OA provider necessary!

OA UI		entervo.connect / OA provider

Exit 201 LPN read

VT=11

job (LEAVE_LOOP, 5€) →

← finalMessageCustomer

finalMessageSB →

http request from OA UI:

```xml
<job>
    <jobType>LEAVE_LOOP</jobType>
    <jobId>
        <id>6322</id>
    </jobId>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
        <computer>
            <computerNumber>2010</computerNumber>
        </computer>
        <device>
            <deviceNumber>201</deviceNumber>
            <deviceType>EXIT</deviceType>
        </device>
        <transactionTimeStamp>
            <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
        </transactionTimeStamp>
        <facility>
            <facilityNumber>2020</facilityNumber>
```

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```xml
            </facility>
        </timeAndPlace>
        <providerInformation>
            <provider>
                <providerId>1</providerId>
                <providerName>OA Provider SuB Classic</providerName>
            </provider>
        </providerInformation>
        <customerInformation>
            <customer>
                <customerId>100</customerId>
                <customerName>Carl Bachmann</customerName>
                <customerGroup>CUSTOMERGROUP1</customerGroup>
            </customer>
        </customerInformation>
        <businessTransaction>
            <id>76b0fd8d-419e-4e6b-a567-873af806152c</id>
        </businessTransaction>
</job>
```

http response:
```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```


http request from entervo.connect/OA provider:
```xml
<finalMessageCustomer>
</finalMessageCustomer>
```

http response:
```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirmationDetailStatus>
</confirmation>
```

http request from OA UI:
```xml
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:
```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDetailStatus>
</confirmation>
```
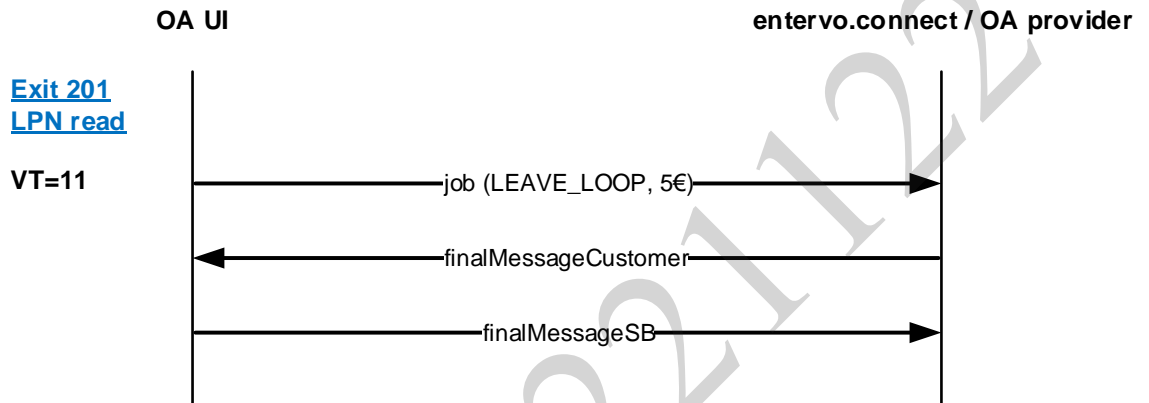
5.4 OA In/Out Repeated at the Exit

Repeated is configured. SuppressPaymentDiscount is configured.

The OA customer uses LPN as credential media. The present OA customer can drive out.

A new authorization request to the OA provider, known from entry, is sent.

OA UI   **entervo.connect / OA provider**

Exit 201
LPN read
                    ──── job (IDENTIFICATION) ────►

                    ◄──── finalMessageCustomer ────

                    ──── finalMessageSB ────►

VT=11   ──── job (LEAVE_LOOP, 5€) ────►

                    ◄──── finalMessageCustomer ────

                    ──── finalMessageSB ────►

http request from OA UI:

```
<job>
    <jobType>IDENTIFICATION</jobType>
    <jobId>
        <id>6321</id>
    </jobId>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
        <computer>
            <computerNumber>2010</computerNumber>
        </computer>
        <device>
            <deviceNumber>201</deviceNumber>
```

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tion   **29**   Interface_en_GB.docx

```
            <deviceType>EXIT</deviceType>
        </device>
        <transactionTimeStamp>
            <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
        </transactionTimeStamp>
        <facility>
            <facilityNumber>2020</facilityNumber>
        </facility>
    </timeAndPlace>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
        </customer>
    </customerInformation>
    <businessTransaction>
        <id>76b0fd8d-419e-4e6b-a567-873af806152c</id>
    </businessTransaction>
</job>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

http request from entervo.connect/OA provider:

```
<finalMessageCustomer>
    <paymentInformation>
        <paymentLocation>INVOICING</paymentLocation>
    </paymentInformation>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
            <providerName>OA Provider SuB Classic</providerName>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
            <customerName>Carl Bachmann</customerName>
            <customerGroup>CUSTOMERGROUP1</customerGroup>
        </customer>
    </customerInformation>
    <reservation>
```

```
        <reservationTariff>
            <tariffName>Tariff OnlineManipulation</tariffName>
            <tariffNumber>34</tariffNumber>
        </reservationTariff>
    </reservation>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
    <mediaDataList>
        <mediaType>NFC</mediaType>
        <identifier>
            <name>847665680</name>
        </identifier>
    </mediaDataList>
    <counting>RESERVED</counting>
    <businessTransaction>
        <id>76b0fd8d-419e-4e6b-a567-873af806152c</id>
    </businessTransaction>
</finalMessageCustomer>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirmationDetailStatus>
</confirmation>
```

http request from OA UI:

```
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDetailStatus>
</confirmation>
```

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tion   Interface_en_GB.docx

5.5 OA In/Out Payment Discount the Exit

Repeated is not configured. SuppressPaymentDiscount is not configured.

The OA customer uses LPN as credential media. The present OA customer can drive out, after discount was checked.

OA UI   **entervo.connect / OA provider**

exit 201 Present OAcustomer fee calculated

job (PAYMENT, fee =10 €) →

← finalMessageCustomer (rebate = 2 €)

finalMessageSB →

VT=11

job (LEAVE_LOOP, 10 €) →

← finalMessageCustomer

finalMessageSB →

http request from OA UI:

```
<job>
    <jobType>PAYMENT</jobType>
    <jobId>
        <id>6321</id>
    </jobId>
    <mediaDataList>
        <mediaType>NFC</mediaType>
        <identifier>
            <name>847665680</name>
        </identifier>
    </mediaDataList>
    <paymentData>
        <originalAmount>
            <amount>1000</amount>
            <vatRate>1900</vatRate>
        </originalAmount>
        <remainingAmount>
            <amount>1000</amount>
            <vatRate>1900</vatRate>
        </remainingAmount>
    </paymentData>
```

```xml
        <timeAndPlace>
            <operator>
                <operatorNumber>49101</operatorNumber>
            </operator>
            <computer>
                <computerNumber>2010</computerNumber>
            </computer>
            <device>
                <deviceNumber>201</deviceNumber>
                <deviceType>EXIT</deviceType>
            </device>
            <transactionTimeStamp>
                <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
            </transactionTimeStamp>
            <facility>
                <facilityNumber>2020</facilityNumber>
            </facility>
        </timeAndPlace>
        <providerInformation>
            <provider>
                <providerId>1</providerId>
            </provider>
        </providerInformation>
        <customerInformation>
            <customer>
                <customerId>100</customerId>
            </customer>
        </customerInformation>
    </job>
```

http response:
```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

http request from entervo.connect/OA provider:
```xml
<finalMessageCustomer>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
            <providerName>OA Provider SuB Classic</providerName>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
            <customerName>Carl Bachmann</customerName>
            <customerGroup>CUSTOMERGROUP1</customerGroup>
```

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```xml
        </customer>
    </customerInformation>
    <reservation>
        <reservationTariff>
            <tariffName>Tariff OnlineManipulation</tariffName>
            <tariffNumber>34</tariffNumber>
        </reservationTariff>
    </reservation>
    <mediaDataList>
        <mediaType>NFC</mediaType>
        <identifier>
            <name>847665680</name>
        </identifier>
    </mediaDataList>
    <paymentInformation>
        <payedAmount>
            <amount>200</amount>
            <vatRate>1900</vatRate>
        </payedAmount>
    </paymentInformation>
</finalMessageCustomer>
```

http response:
```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirmationDetailStatus>
</confirmation>
```

5.6 OA In/Out AuthForNotPresentCustomer at the Exit (Allianz Arena)

AuthForNotPresentCustomer is configured. SuppressPaymentDiscount is configured.

The OA customer uses LPN as credential media. There is no present.

A new authorization request is sent to the OA provider.

http request from OA UI:

```
<job>
    <jobType>IDENTIFICATION</jobType>
    <jobId>
        <id>6321</id>
    </jobId>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
        <computer>
            <computerNumber>2010</computerNumber>
```

```
            </computer>
            <device>
                <deviceNumber>201</deviceNumber>
                <deviceType>EXIT</deviceType>
            </device>
            <transactionTimeStamp>
                <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
            </transactionTimeStamp>
            <facility>
                <facilityNumber>2020</facilityNumber>
            </facility>
        </timeAndPlace>
        <providerInformation>
            <provider>
                <providerId>0</providerId>
            </provider>
        </providerInformation>
    </job>
```
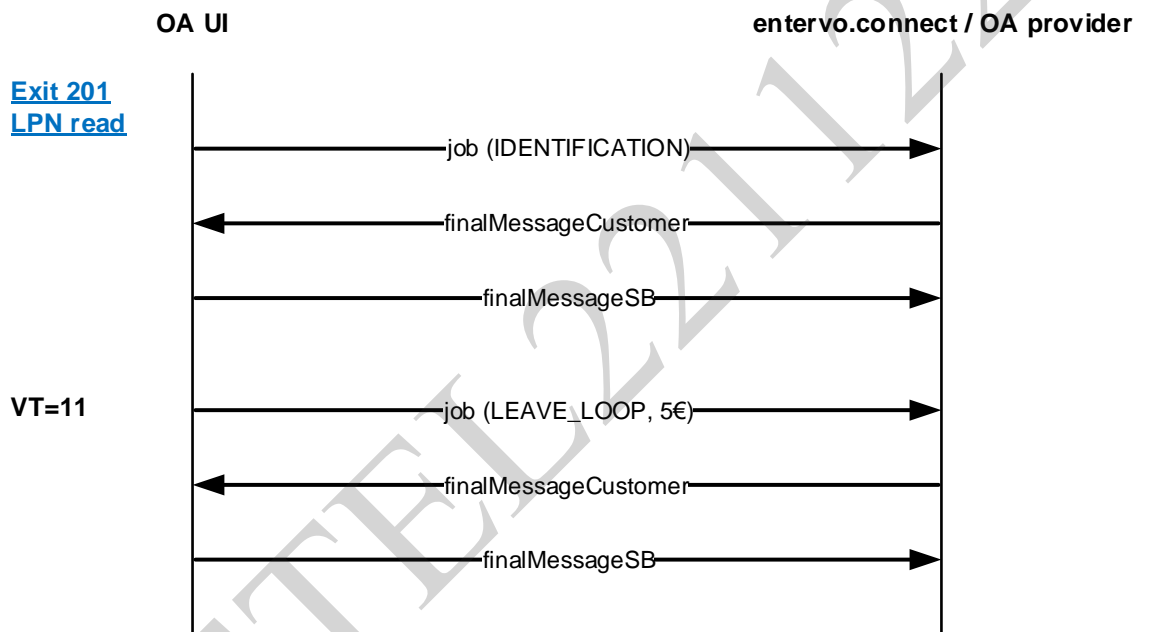
http response:
```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

http request from entervo.connect/OA provider:
```
<finalMessageCustomer>
    <paymentInformation>
        <paymentLocation>INVOICING</paymentLocation>
    </paymentInformation>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
            <providerName>Allianz Arena</providerName>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>1</customerId>
            <customerName>Default Customer</customerName>
            <customerGroup>CUSTOMERGROUP1</customerGroup>
        </customer>
    </customerInformation>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
```

```
    <counting>RESERVED</counting>
</finalMessageCustomer>
```

http response:
```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirma-
tionDetailStatus>
</confirmation>
```

http request from OA UI:
```
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:
```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDe-
tailStatus>
</confirmation>
```

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5.7 OA In/Out with a Virtual Exit

For a present OA customer a virtual exit is requested.

http request from OA UI:

```xml
<job>
    <jobType>LEAVE_LOOP</jobType>
    <jobId>
        <id>6322</id>
    </jobId>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
        <computer>
            <computerNumber>2010</computerNumber>
        </computer>
        <device>
            <deviceNumber>0</deviceNumber>
            <deviceType>EXIT</deviceType>
            <creation>AUTO_BOOKED</creation>
        </device>
        <transactionTimeStamp>
            <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
        </transactionTimeStamp>
        <facility>
            <facilityNumber>2020</facilityNumber>
        </facility>
    </timeAndPlace>
```

```xml
            <providerInformation>
                <provider>
                    <providerId>1</providerId>
                    <providerName>OA Provider SuB Classic</providerName>
                </provider>
            </providerInformation>
            <customerInformation>
                <customer>
                    <customerId>100</customerId>
                    <customerName>Carl Bachmann</customerName>
                    <customerGroup>CUSTOMERGROUP1</customerGroup>
                </customer>
            </customerInformation>
            <businessTransaction>
                <id>76b0fd8d-419e-4e6b-a567-873af806152c</id>
            </businessTransaction>
        </job>
```

http response:
```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

http request from entervo.connect/OA provider:
```xml
<finalMessageCustomer>
</finalMessageCustomer>
```

http response:
```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirmationDetailStatus>
</confirmation>
```
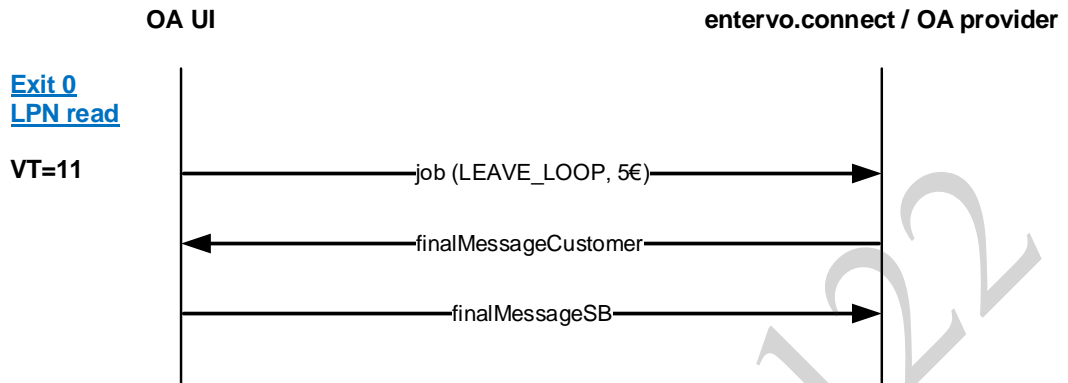
http request from OA UI:
```xml
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:
```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDetailStatus>
</confirmation>
```

5.8 OA In/Out with a Sync

For a present OA customer a synch is requested. This means the OA provider can decide, if the OA customer has left already the car park.

OA UI   **entervo.connect / OA provider**
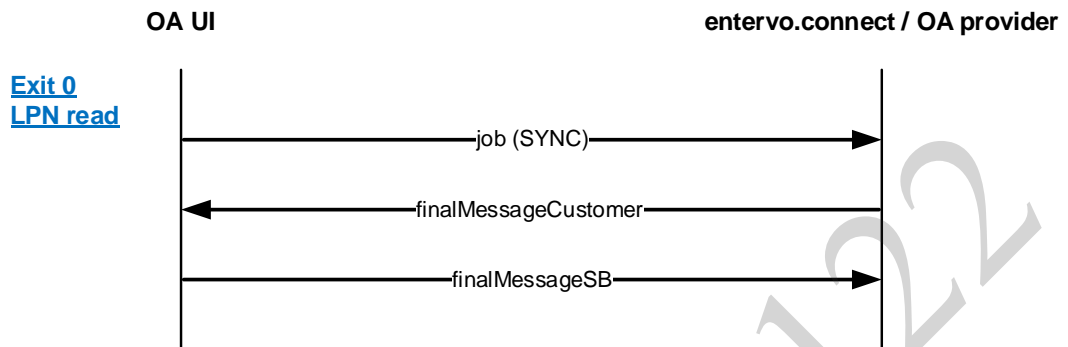
http request from OA UI:

```xml
<job>
    <jobType>SYNC</jobType>
    <jobId>
        <id>6321</id>
    </jobId>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
        <computer>
            <computerNumber>2010</computerNumber>
        </computer>
        <device>
            <deviceNumber>0</deviceNumber>
            <deviceType>EXIT</deviceType>
        </device>
        <transactionTimeStamp>
            <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
        </transactionTimeStamp>
        <facility>
            <facilityNumber>2020</facilityNumber>
        </facility>
    </timeAndPlace>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
```

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```
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
        </customer>
    </customerInformation>
</job>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

http request from entervo.connect/OA provider:

```
<finalMessageCustomer>
    <paymentInformation>
        <paymentLocation>INVOICING</paymentLocation>
    </paymentInformation>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
            <providerName>OA Provider SuB Classic</providerName>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
            <customerName>Carl Bachmann</customerName>
            <customerGroup>CUSTOMERGROUP1</customerGroup>
        </customer>
    </customerInformation>
    <reservation>
        <reservationTariff>
            <tariffName>Tariff OnlineManipulation</tariffName>
            <tariffNumber>34</tariffNumber>
        </reservationTariff>
    </reservation>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
```

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tion   Interface_en_GB.docx

```xml
            <computer>
                <computerNumber>2010</computerNumber>
            </computer>
            <device>
                <deviceNumber>0</deviceNumber>
                <deviceType>EXIT</deviceType>
            </device>
            <transactionTimeStamp>
                <timeStamp>2020-08-11T11:00:00+02:00</timeStamp>
            </transactionTimeStamp>
            <facility>
                <facilityNumber>2020</facilityNumber>
            </facility>
        </timeAndPlace>
        <counting>RESERVED</counting>
</finalMessageCustomer>
```

http response:

```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirmationDetailStatus>
</confirmation>
```

http request from OA UI:

```xml
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:

```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDetailStatus>
</confirmation>
```

5.9   OA PositiveNegativeLists at the Exit (HKS)

A Short Parker would like to drive out by FastExit feature. But before that the OA provider is asked if it is allowed or not to leave. The OA provider gets the Short Parker EPAN and the LPN as identifiers.

OA UI   **entervo.connect / OA provider**

Exit 201
Short Parker
and LPN read
→ job (POSITIVE_NEGATIVE_LISTS) →
← finalMessageCustomer ←
→ finalMessageSB →

http request from OA UI:

```
<job>
    <jobType>POSITIVE_NEGATIVE_LISTS</jobType>
    <jobId>
        <id>6321</id>
    </jobId>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
    <mediaDataList>
        <mediaType>EPAN</mediaType>
        <identifier>
            <name>02491012010012018254270??</name>
        </identifier>
    </mediaDataList>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
        <computer>
            <computerNumber>2010</computerNumber>
        </computer>
        <device>
            <deviceNumber>201</deviceNumber>
            <deviceType>EXIT</deviceType>
```

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```
        </device>
        <transactionTimeStamp>
            <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
        </transactionTimeStamp>
        <facility>
            <facilityNumber>2020</facilityNumber>
        </facility>
    </timeAndPlace>
    <providerInformation>
        <provider>
            <providerId>0</providerId>
        </provider>
    </providerInformation>
</job>
```

http response:
```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

http request from entervo.connect/OA provider:
```
<finalMessageCustomer>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
            <providerName>OA Provider SuB Classic</providerName>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
            <customerName>Carl Bachmann</customerName>
            <customerGroup>CUSTOMERGROUP1</customerGroup>
        </customer>
    </customerInformation>
    <mediaDataList>
        <mediaType>EPAN</mediaType>
        <identifier>
            <name>02490012011012018254270??</name>
        </identifier>
    </mediaDataList>
</finalMessageCustomer>
```

http response:
```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirma-
tionDetailStatus>
```

```
</confirmation>
```

http request from OA UI:
```
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```
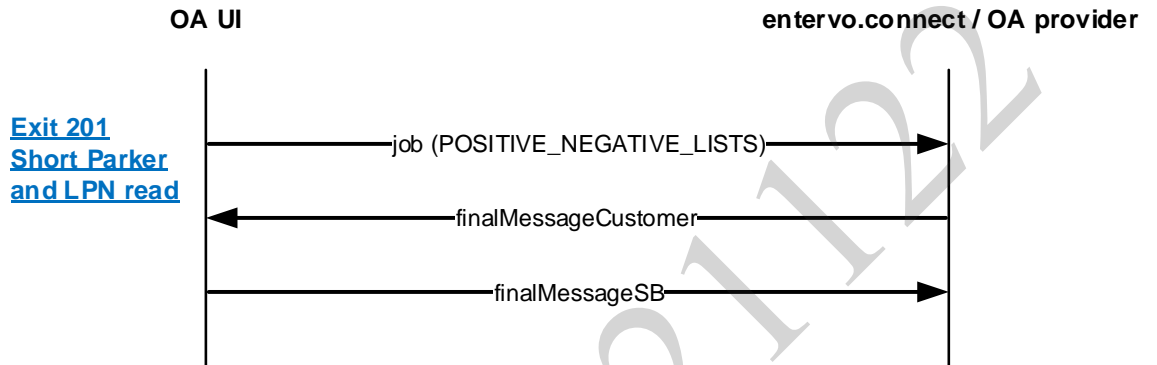
http response:
```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDe-
tailStatus>
</confirmation>
```

5.10 OA In/Out at the Door Reader

Repeated is not configured.

The OA customer uses LPN as credential media. The door opens for the present OA customer.

There is no new authorization request to the OA provider necessary!

| OA UI | entervo.connect / OA provider |

**Door 401
LPN read**

VT=28 — job (LEAVE_LOOP) →

← finalMessageCustomer

finalMessageSB →

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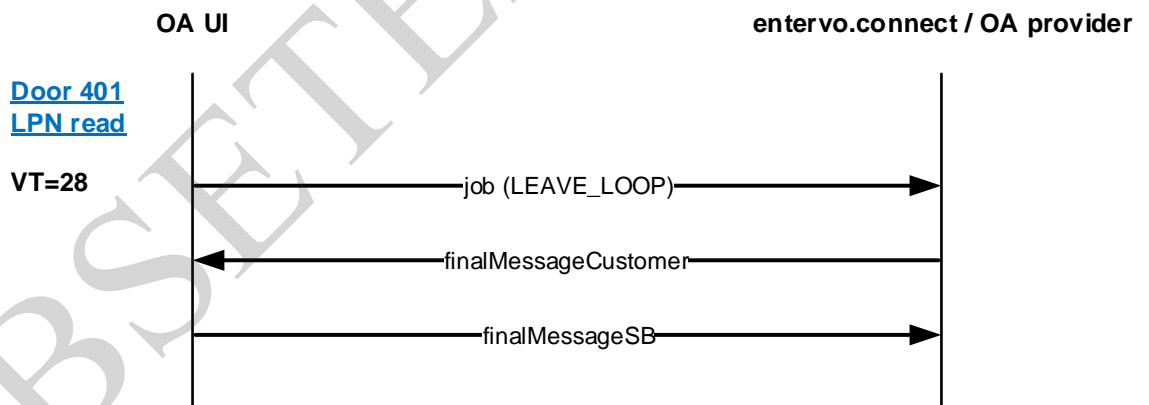
5.11 OA In/Out AuthForNotPresentCustomer at the Door Reader (Metro)

AuthForNotPresentCustomer is configured. This means that even the OA customer is not present in the car park, he can use the door reader. He uses LPN as credential media.

OA UI   **entervo.connect / OA provider**

**Door 401
LPN read**

job (IDENTIFICATION) →

← finalMessageCustomer

finalMessageSB →

VT=28   job (LEAVE_LOOP) →

← finalMessageCustomer

finalMessageSB →
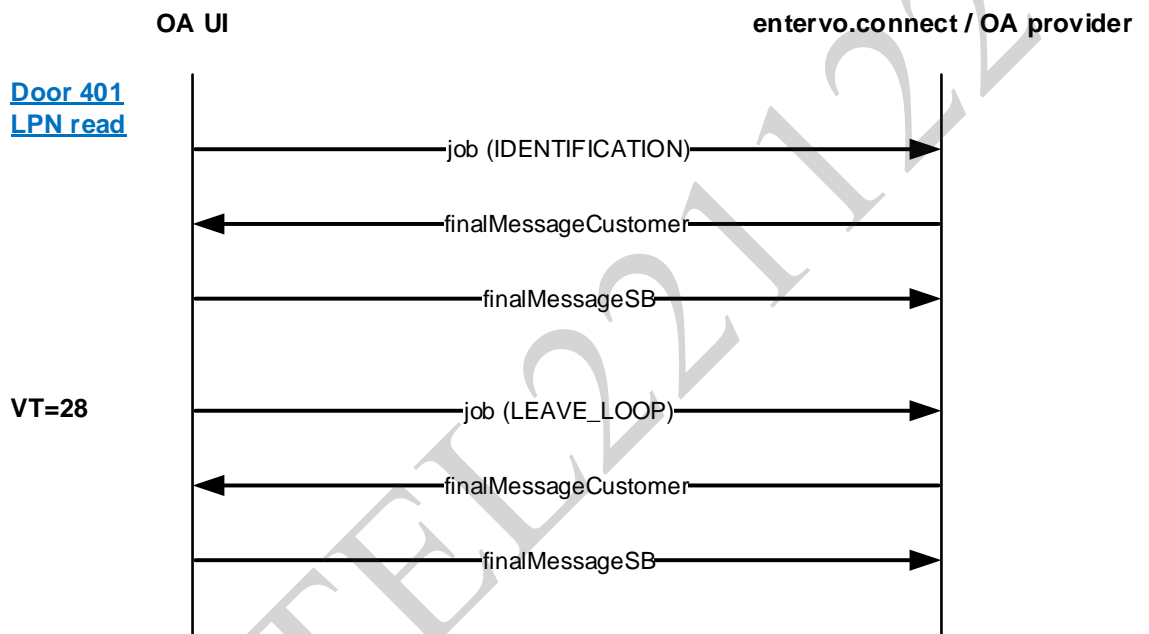
http request from OA UI:

```xml
<job>
    <jobType>IDENTIFICATION</jobType>
    <jobId>
        <id>6321</id>
    </jobId>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
        <computer>
            <computerNumber>2010</computerNumber>
        </computer>
```

```
        <device>
            <deviceNumber>401</deviceNumber>
            <deviceType>DOORREADER</deviceType>
        </device>
        <transactionTimeStamp>
            <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
        </transactionTimeStamp>
        <facility>
            <facilityNumber>2020</facilityNumber>
        </facility>
    </timeAndPlace>
    <providerInformation>
        <provider>
            <providerId>0</providerId>
        </provider>
    </providerInformation>
</job>
```

http response:
```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

a) Open door

http request from entervo.connect/OA provider:
```
<finalMessageCustomer>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
            <providerName>OA Provider SuB Classic</providerName>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
            <customerName>Carl Bachmann</customerName>
            <customerGroup>CUSTOMERGROUP1</customerGroup>
        </customer>
    </customerInformation>
    <mediaDataList>
        <mediaType>LICENSE_PLATE</mediaType>
        <identifier>
            <name>MGSB1872</name>
        </identifier>
    </mediaDataList>
</finalMessageCustomer>
```

b) Don't open door

http request from entervo.connect/OA provider:

```
<finalMessageCustomer>
</finalMessageCustomer>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirma-
tionDetailStatus>
</confirmation>
```

http request from OA UI:

```
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDe-
tailStatus>
</confirmation>
```
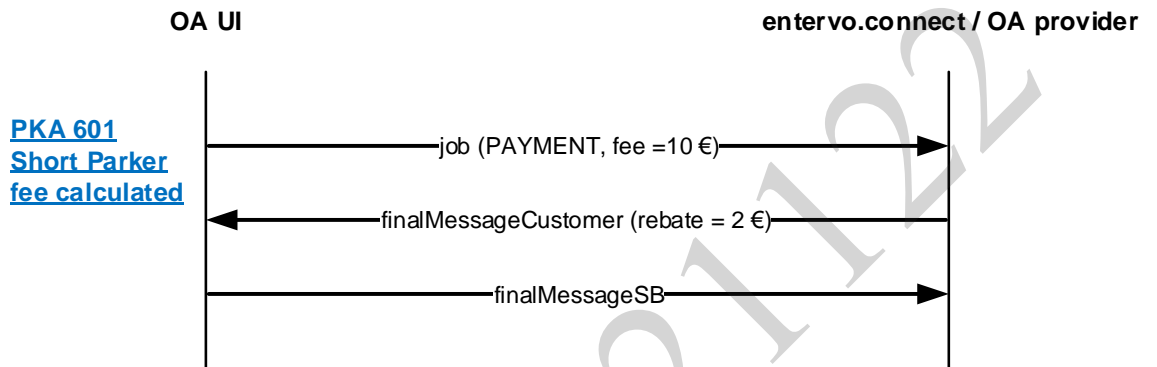
5.12 OA Pay Short Parker at the PKA (Moscow)

A Short Parker would like to get a rebate with his OA NFC transponder at the PKA. The OA NFC transponder shall not be used to pay the remaining amount by invoicing.

OA UI   **entervo.connect / OA provider**

**PKA 601
Short Parker
fee calculated**

job (PAYMENT, fee =10 €) ───────▶

◀─────── finalMessageCustomer (rebate = 2 €)

finalMessageSB ───────▶

http request from OA UI:

```
<job>
    <jobType>PAYMENT</jobType>
    <jobId>
        <id>6321</id>
    </jobId>
    <mediaDataList>
        <mediaType>NFC</mediaType>
        <identifier>
            <name>847665680</name>
        </identifier>
    </mediaDataList>
    <paymentData>
        <originalAmount>
            <amount>1000</amount>
            <vatRate>1900</vatRate>
        </originalAmount>
        <remainingAmount>
            <amount>1000</amount>
            <vatRate>1900</vatRate>
        </remainingAmount>
        <controlCard>
            <cardType>1</cardType>
            <cardSubtype>0</cardSubtype>
            <cardClass>0</cardClass>
            <epan>024910120100110103443976102??</epan>
            <tariffTime>2020-12-09T11:02:41+01:00</tariffTime>
            <facilityPresent>
```

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```xml
                <facilityNumber>2020</facilityNumber>
            </facilityPresent>
        </controlCard>
    </paymentData>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
        <computer>
            <computerNumber>2010</computerNumber>
        </computer>
        <device>
            <deviceNumber>601</deviceNumber>
            <deviceType>PAY_ON_FOOT</deviceType>
        </device>
        <transactionTimeStamp>
            <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
        </transactionTimeStamp>
        <facility>
            <facilityNumber>2020</facilityNumber>
        </facility>
    </timeAndPlace>
    <providerInformation>
        <provider>
            <providerId>0</providerId>
        </provider>
    </providerInformation>
</job>
```

http response:

```xml
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```

http request from entervo.connect/OA provider:

```xml
<finalMessageCustomer>
    <paymentInformation>
        <paymentLocation>PAY_LOCAL</paymentLocation>
    </paymentInformation>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
            <providerName>OA Provider SuB Classic</providerName>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
```

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tion   Interface_en_GB.docx

```
                <customerName>Carl Bachmann</customerName>
                <customerGroup>CUSTOMERGROUP1</customerGroup>
            </customer>
        </customerInformation>
        <reservation>
            <reservationTariff>
                <tariffName>Tariff OnlineManipulation</tariffName>
                <tariffNumber>34</tariffNumber>
            </reservationTariff>
        </reservation>
        <mediaDataList>
            <mediaType>NFC</mediaType>
            <identifier>
                <name>847665680</name>
            </identifier>
        </mediaDataList>
        <paymentInformation>
            <payedAmount>
                <amount>200</amount>
                <vatRate>1900</vatRate>
            </payedAmount>
        </paymentInformation>
</finalMessageCustomer>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirma-
tionDetailStatus>
</confirmation>
```

http request from OA UI:

```
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDe-
tailStatus>
</confirmation>
```
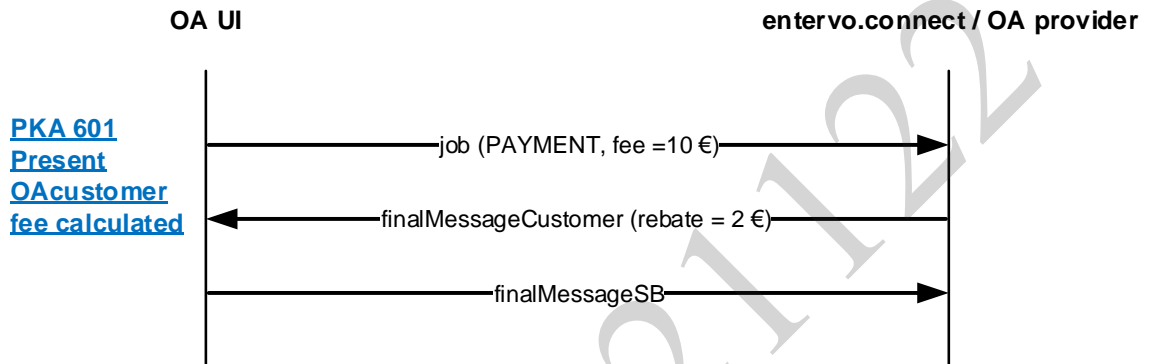
5.13 OA Pay Present OA Customer at the PKA

Repeated is not configured. SuppressPaymentDiscount is not configured.

A present OA customer would like to get a rebate with his OA NFC transponder at the PKA.

OA UI   **entervo.connect / OA provider**

**PKA 601
Present
OAcustomer
fee calculated**

job (PAYMENT, fee =10 €) →

← finalMessageCustomer (rebate = 2 €)

finalMessageSB →

http request from OA UI:

```xml
<job>
    <jobType>PAYMENT</jobType>
    <jobId>
        <id>6321</id>
    </jobId>
    <mediaDataList>
        <mediaType>NFC</mediaType>
        <identifier>
            <name>847665680</name>
        </identifier>
    </mediaDataList>
    <paymentData>
        <originalAmount>
            <amount>1000</amount>
            <vatRate>1900</vatRate>
        </originalAmount>
        <remainingAmount>
            <amount>1000</amount>
            <vatRate>1900</vatRate>
        </remainingAmount>
    </paymentData>
    <timeAndPlace>
        <operator>
            <operatorNumber>49101</operatorNumber>
        </operator>
        <computer>
            <computerNumber>2010</computerNumber>
```

```
            </computer>
            <device>
                <deviceNumber>601</deviceNumber>
                <deviceType>PAY_ON_FOOT</deviceType>
            </device>
            <transactionTimeStamp>
                <timeStamp>2020-08-11T06:12:34+02:00</timeStamp>
            </transactionTimeStamp>
            <facility>
                <facilityNumber>2020</facilityNumber>
            </facility>
        </timeAndPlace>
        <providerInformation>
            <provider>
                <providerId>1</providerId>
            </provider>
        </providerInformation>
        <customerInformation>
            <customer>
                <customerId>100</customerId>
            </customer>
        </customerInformation>
    </job>
```

http response:
```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>JOB_CREATED</confirmationDetailStatus>
</confirmation>
```


http request from entervo.connect/OA provider:
```
<finalMessageCustomer>
    <providerInformation>
        <provider>
            <providerId>1</providerId>
            <providerName>OA Provider SuB Classic</providerName>
        </provider>
    </providerInformation>
    <customerInformation>
        <customer>
            <customerId>100</customerId>
            <customerName>Carl Bachmann</customerName>
            <customerGroup>CUSTOMERGROUP1</customerGroup>
        </customer>
    </customerInformation>
    <reservation>
        <reservationTariff>
            <tariffName>Tariff OnlineManipulation</tariffName>
            <tariffNumber>34</tariffNumber>
```

```
                </reservationTariff>
        </reservation>
        <mediaDataList>
                <mediaType>NFC</mediaType>
                <identifier>
                        <name>847665680</name>
                </identifier>
        </mediaDataList>
        <paymentInformation>
                <payedAmount>
                        <amount>200</amount>
                        <vatRate>1900</vatRate>
                </payedAmount>
        </paymentInformation>
</finalMessageCustomer>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGE3RDPARTY_RECEIVED</confirma-
tionDetailStatus>
</confirmation>
```

http request from OA UI:

```
<finalMessageSB>
    <finalState>SUCCESSFUL</finalState>
</finalMessageSB>
```

http response:

```
<confirmation>
    <confirmationStatus>OK</confirmationStatus>
    <confirmationDetailStatus>FINALMESSAGESB_RECEIVED</confirmationDe-
tailStatus>
</confirmation>
```

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6 Property File Setting

Together with the *ProviderId* some new property entries became necessary. Those were introduced with UP100_5169. The *ProviderId* became necessary for the *entervo* connect (*TrafficManager*).

The following has to be set in the property file:

#Property-File of AuthorizationBackendSB

# 18198 -> 0x4716
PsiId = 18198

#logLevel : OFF, SEVERE, WARNING, INFO, CONFIG, FINE, FINER, FINEST, ALL
level=ALL

LogFileFolder=C:\\newsys\\log.server\\AuthorizationBackendSB\\

#Path for ks file used for ssl only for REST Client
PathToKSFile=C:\\newsys\\classes\\com\\scheidtbachmann\\phfa\\Authoriza-tionBackendSB\\KSFile\\

#Name for ks file used for ssl, olymplr1.ks is the default S&B ks file only for REST Client
KSFileName=olymplr1.ks

#debug ON/OFF
debug=true

#Execute a test run
ExecuteTestRun=false

#Time between the creation of two dummy jobs in ms
DummyDataCreationDelay=1000

#IPandPort - this is an Authorization instance
#IPandPort0=http://localhost:8084
#IPandPort0=https://gsphtestraumzr.ads.local:8443
IPandPort0=https://80.12.87.73:33001
#IPandPort2=https://10.46.27.1:8443
#IPandPort1=https://gsphtestraumzr.ads.local:8443
#-- Port3 == port1 also working for testing

#URI

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RESTDefaultURI=/AuthorizationService3rdParty/

#Timeout for a Job in seconds, default is 20
JobTimeOut=15

#Delay time in ms for a rest response when a job is created
DelayTime=10000

#Waiting time for a BcAuth request in ms
BcAuthWaitingTime=8000

#Database ip
#DatabaseIP=gsphtestraumzr.ads.local
DatabaseIP=localhost
#DatabaseIP=10.46.27.147

#starts system info thread
UseTestLog=true

#REST user name for 3rd party
#RestUser=6
RestUser=akis

#REST password for 3rd party
#RestPassword=4711
RestPassword=passwakis

#Update time for the ProviderScheduler
ProviderSchedulerTime=60000

#Until the location specific parameters CompanyId, ZRId and FacilityId can be read from the entervo system, read them via property
CompanyId=99998

ZRId=3010

FacilityId=3011

#UseEntervoConnect=true -> only the EntervoConnectUrl is used, further Providers are ignored
UseEntervoConnect=false
EntervoConnectUrl=https://10.46.27.104:8443

UseProviderService=false

```
#BEGIN this properties are only used for UseProviderService==false, maxi-
mum of three providers can be defined here
#all defined providers are assumed to be valid for this ZR


#ProviderName1=EvoPark
#ProviderId1=1
#ProviderUrl1=https://10.46.27.104:8443

ProviderName1=Akis
ProviderId1=3
ProviderUrl1=https://80.12.87.73:33001


#Waiting time for leave loop job service, default is 60 seconds
LeaveLoopRepeaterWaitTime=60000
#After a number of http request errors the following jobs are canceled until
the repetition period
MaxNumberOfAllowedFailsForLeaveLoopRepeat=3


#BEGIN this properties are only used for DummyJobs

# BARCODE -> 1
# NFC -> 2
# UHF_RFID -> 3
# LICENSE_PLATE -> 4
# MAGNET -> 5
# PINCODE -> 6
DummyMediumType=3
DummyDeviceId=111
DummyFacilityId=9876
DummyBetrNo=747
# DummyComputerNo is also used for wComputerNo, wAnlagein, wAnlageout
in case of LeaveLoop dummy job
DummyComputerNo=9999
# For a LeaveLoop dummy job the DummyEpan must exists in MEDI-
UMASSIGNMENT
DummyEpan=016008563200000098??????????
DummyProviderId=1
#END this properties are only used for DummyJobs
```

7 Appendices

7.1 Appendix 1: List of Interface Versions and Related Functionalities

Interface Version	Functionality
1.0.0	Initial release of the AuthUI Project specific adaptation of AuthUI
1.0.0	Online Authorization Interface – 1st milestone SQL Script for AutProz and KBD for Authorization Interface
1_1_5@V 2R4	AuthUI second release Several enhancements Bug fixing
1_1_7	AuthUI third release, version 1_1_7, replace RFID by NFC and UHF_RFID
1_2_0	AuthUI fourth release, version 1_2_0, introduce LeaveLoopRepeater Secure transmission of LEAVE-LOOP message Bug fixing
1_2_2	Bug fixing for time vouchers
1_2_3	Bug fixing: device type EXIT_CASHIER was missing; added to coding and Job.xsd

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8 Record of Revisions

Revision	Date	Description	Author
0.1	04/04/2014	Creation of first draft	S. Herschbach
0.2	14/04/2014	Add all xsd, add confirmation element and removed error element	S. Herschbach
0.3	29/04/2014	Change job element and FinalMessageCustomer element	S. Herschbach
1.0	29/04/2014	Initial released version	S. Herschbach Reviewer: B. Möller
1.1	30/04/2014	Allow update of a running job	S. Herschbach
1.2	11/07/2014	Small corrections found during the implementation phase for the "Identification" part	S. Herschbach
2.0	25/08/2014	Extend job element by timeAndPlace element Extend finalMessageCustomer element by Reservation and voucher element	S. Herschbach Reviewer: B. Möller
2.1	20/10/2014	Rename JobType element EXIT to LEAVE_LOOP, because it is not limited for exit devices Extend ConfirmationDetailStatusElement by ☐ JOB_ALREADY_CANCELED ☐ CREATE_DUMMY_JOB ☐ MEDIA_DATA_RECEIVED	S. Herschbach
2.2	22/04/2016	OA 2.0	S. Herschbach F. Jennes
2.3	02/09/2016	Add new elements to finalMessageCustomer: countingType, weekProgramProfile, extendedUsageProfile, paymentLocationTpye Add new element to paymentInformation: paymentLocationType	S. Herschbach F. Jennes Reviewer: F. Jennes
2.4	18/01/2017	Add new element to finalMessageCustomer: customerAttribute	S. Herschbach F. Jennes Reviewer: F. Jennes
2.5	16/03/2017	New OA features -> API	F. Jennes Reviewer:

			S. Herschbach
	Swap to Park Cheque: finalMessageCustomer.swap = "SWAP_CLASSIC" Tariff Switching of Short Parker: finalMessageCustomer.swap= "SWAP_WITH_DISCOUNT" Control Counting: finalMessageCustomer.counting Control Invoicing/Local Payment: finalMessageCustomer.paymentInformation.paymentLocation Control Week Program Profile: finalMessageCustomer.weekProgramProfile Control Extended Usage Profile: finalMessageCustomer.extendedUsageProfile Display Text: finalMessageCustomer.displayMessage.message Receipt Text: finalMessageCustomer.receipt.customerReceipt Payment: job.paymentData.remainingAmount finalMessageCustomer.paymentInformation.payedAmount		
2.5.1	04/07/2017	Add ProviderInformation element to Job element and FinalMessageCustomer element -> This is necessary if the providers are known only by the entervo connect and not by the AuthorizationBackendRMI	S. Herschbach Reviewer: F. Jennes
2.5.2	07/03/2018	Add facilityIn and facilityOut elements to timeAndPlace element	F. Jennes Reviewer: S. Herschbach
2.5.3	29/03/2018 21/05/2018	Add vatRate element to amount elements Document adapted for the new template Chapters added: ☐ 1 "Introduction" ☐ 1.1 "Interface Overview" ☐ 1.2 "Protocol" ☐ 1.3 "Authentication and Authorisation" ☐ 5 "Online Authorisation – Samples" ☐ 6 "Property File Setting" ☐ 7 "Appendices"	F. Jennes Reviewer: S. Herschbach J. Srponova

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		Chapter 5 "XSD for Used XML Data" removed Grammar revision Moved to SharePoint	
2.5.4	16/03/2021	Chapter 5 "Identification Process – Examples" removed New chapter 5 "Online Authorisation – Samples" added based on the *OA Samples, version 13* document	J. Srponova
2.5.5	16/02/2022	The JSON format removed (*not* supported for now)	M. Lejtrich
2.5.6	23/05/2022	The `businessTransaction` tag added to the examples New examples added in: ☐ "OA In/Out at the Exit" ☐ "OA In/Out with a Virtual Exit" ☐ "OA In/Out with a Sync"	F. Jennes Reviewer: J. Chovanec

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