

PCS CB API – TESTING GUIDE

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2 Version History

Version	Date	Description	Author
1	27.10.2025	Document created	Thomas Raney (RNE JO)



3 Introduction

3.1 Purpose of this document

This document is for users who are discovering PCS API and should be used as a guide for how to begin and structure their testing efforts, as well as their eventual usage of PCS API in the production environment.

3.2 PCS Technical Specifications

The Technical Specifications form the basis of PCS CB's API functionalities and thus should be the basis for all API testing.

The technical specifications, including all appendices, can be found on the PCS Capacity Broker basics webpage: https://docs.rne.eu/pcs/pcs-capacity-broker-cb-basics/.

3.3 Accessing PCS

Following are the links to each PCS CB site:

- PCS Production not yet available
- PCS Pre-Production (production data) https://cb-pre-prod.rne.eu/pcs-cb/
- PCS Pre-Production (sandbox) https://cb-pre-prod-sandbox.rne.eu/pcs-cb/
- PCS Test (production data) https://cb-test.rne.eu/pcs-cb/
- PCS Test (sandbox) https://cb-test-sandbox.rne.eu/pcs-cb/

Generic testing account log in credentials (sandbox sites only) can be found at this location: https://docs.rne.eu/pcs/pcs-cb-test-accounts/. Users must have their own accounts to access the production and production data sites. An account can be requested by sending an email to support.pcs@rne.eu.

4 Testing Approaches

4.1 Outbound-only testing

API communication comprises of inbound and outbound TAF TAP TSI messages (see <u>PCS API</u>—<u>First Steps for Connecting</u> section 1.3 for details).

One approach to testing which can be taken is to trigger inbound sub-actions in the graphical user interface (GUI) of PCS and to then check resulting outbound messages. This approach simplifies testing as it removes the need for sending inbound messages to PCS. Through outbound-only testing, users can still gain an understanding of message flows and the expected content of messages.



4.1.1 Outbound-only testing if no CI connection exists

If no API connection exists between the user's company system and PCS, users can view out-bound messages in RNE's local instance. Access to the local instance can be requested by messaging support.pcs@rne.eu.

4.1.2 Outbound-only testing if a CI connection exists

If a CI connection exists between the user's national system and PCS, they can still choose to trigger actions via the graphical user interface of PCS. In this case, users can then take the actions necessary to check the outbound sub-actions received by their system and their effect.

4.2 Inbound and outbound testing

A more comprehensive approach to testing can also be taken which involves both the sending and receiving of TAF TAP TSI messages.

If a connection via the Common Interface does not exist, the user can send messages to PCS via SoapUI and view the resulting outbound messages in the associated PCS environment's Local Instance.

If a connection via the common interface does exist, then users can both send and receive messages via their national system and its associated Local Instance.

4.3 Best practices for testing

4.3.1 General

Reference trains (RTs) created for testing purposes should be given names which indicate the user it belongs to. This is to ensure that the Reference Train is not used by other testers.

4.3.2 IMs

Users should only use reference trains which they have created, or which have been created by other users from within their company. (unless agreed otherwise between applicant and IM).

Users should only edit the reference data associated with the company that they belong to.

4.3.3 Applicants

Users should only use reference trains which they have created, or which have been created by other users from within their company.

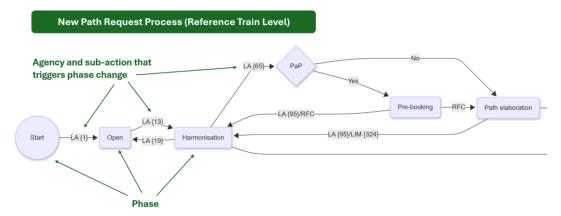
5 Testing structure (suggested steps)

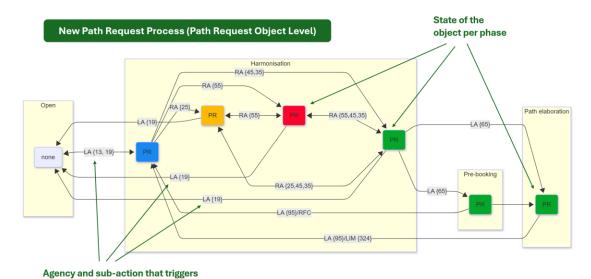
This section contains the steps which are suggested to be taken to begin testing PCS API. These steps do not necessarily need to be taken, nor do they need to be taken in the order shown below.



5.1 Identify the process type(s) to be tested and review the associated process diagrams

- Several process types are available in PCS CB, the complete process flow for each is detailed in chapter 4 of the PCS Technical Specifications
- Indicated in each process flow are the inbound sub-actions (TAF TAP TSI messages)
- Process diagrams are provided for each process type at the reference train and object levels, following are examples of the New Path Request process at the Reference Train and object (path request) levels:





5.2 Determine which process will be tested and in what scope

change in state of the object

- o Based on the information gathered from reviewing chapter 4, determine which process type will be tested
- Determine the scope of testing which will take place, including whether outbound-only or inbound and outbound testing will occur, and whether only certain actions will be tested, or the entire process



5.3 Review the sub-actions associated with each action which will be tested

- For each action which will be tested, users should review the associated sub-actions, detailed in chapter 5 of the Technical Specifications
- Each sub-action corresponds to one (inbound or outbound) message, and is represented by an ID. These IDs are visible in the sequence diagrams for each action shown in chapter 5

5.4 Reference the TSI matrix (Appendix A) for the expected content of each message

- When testing each action, if an inbound message is being sent, users can reference Appendix A of the Technical Specifications (TSI Matrix) based on the ID to find the expected content of the associated message
- Similarly, this check can be done to ensure the resulting outbound message(s) contain the expected content
- Additional information beyond the content can also be found in Appendix A, including:
 - Message type (columns C & D)
 - Triggered outbounds in case of inbound sub-action (column G)
 - Sender and recipient of the message (columns N & O)
 - The phase in which any inbound or outbound sub-action will be sent or received respectively (column Z)

6 Tips when using SoapUI

Testing with SoapUI requires inbound messages to be manually constructed before they can be sent.

The main way to avoid errors in inbound messages is to construct them based on Appendix A of the Technical Specifications and in accordance with the TAF TAP TSI XSD schema. However, some additional measures can be taken to help ensure efficient and proper construction of inbound messages.

6.1 SoapUI TAFTAP TSI Message Templates

XML message templates for all inbound New Path Request and Late Path Request messages are available for import into SoapUI and are available at this location: https://docs.rne.eu/pcs/pcs-capacity-broker-cb-basics/#api.

With the use of templates, rather than building each message from nothing, the user can just adjust the content of the message template where necessary to match with their reference train.



6.2 Validation, formatting, and replace functionalities

6.2.1 Syntax validation

It can happen that syntax errors, which prevent the sending of messages from SoapUI, are unintentionally caused when editing the content of a message.

To quickly identify syntax errors before trying to send a message, testers should utilise the 'Validate' functionality, available either by right clicking or selecting 'Alt-V'. This action brings up a window which indicates on which line(s) the error exists, or confirms that there are no errors.



6.2.2 Validation against the schema

While SoapUI can provide validation of a message based on its compliance with XML syntax, it cannot provide validation against the TAF TAP TSI schema itself. If a message is sent which is not compliant with the schema, it will result in an InboundMessageProcessingError in the RNE CI.

Most XML readers (e.g. Notepad++, Altova XMLSpy, etc.) can perform validation against a chosen schema. Thus, it is recommended that users utilise these programs to check their messages and prevent wasted time searching for returned inbound processing errors in case their message is not TAF TAP TSI compliant.

The relevant TAF TAP TSI schema can be found at the Joint Sector Group's website (http://taf-jsg.info/?page_id=172)

6.2.3 Formatting

When working with complex XML messages, it is helpful for the message to be formatted with proper indentations according to the level of each element. This indentation can be done automatically by right clicking and selecting 'format' or selecting 'Alt-F'

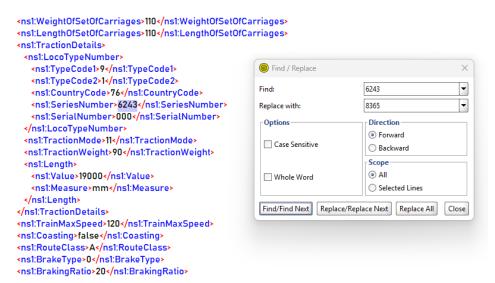
```
<nsl:MessageHeader>
<nsl:MessageType>2500
<nsl:MessageType>2500
<nsl:MessageTypeVersion>3.4.1.0
<nsl:MessageTypeVersion>3.4.1.0
<nsl:MessageIdentifier>
<nsl:MessageIdentifier>
<nsl:MessageIdentifier>
<nsl:MessageIdentifier>
<nsl:MessageRederence>
<nsl:MessageRederence>
<nsl:MessageRoutingID>22
<nsl:MessageRoutingID>22
<nsl:MessageDateTimeCreated>2024-06-04T12:00:00Z
<nsl:MessageDateTimeCreated>00tgoing WSS
Utdidate
AR-V
Format XML
Add WSS Username Token
Add WS-Timestamp
Outgoing WSS
Utgoing WSS
WS-A headers
WS-A headers
WS-A headers
FORMATIME TOKEN
WS-A headers
WS-A headers
WS-A headers
```



6.2.4 Find and replace

It may happen that the data in a certain recurring element needs to be changed. To avoid individually editing the individual element each time it occurs in a message, SoapUI's find and replace functionality can be utilised. The Find / Replace window can be brought up by selecting 'Control+F'.

For example, a user might want to change the SeriesNumber of the locomotive, which appears in every PlannedJourneyLocation in PathInformation. Assuming the locomotive will be the same at every location, the user can find the current SeriesNumber, and replace with the updated number:



6.3 Object information retrieval

When working on inbound messages for any action, it can be helpful to have access to the entire content (all objects and their content) of the reference train in question. It is possible for all companies which have access to a reference train to request this information via inbound message, which is then returned in an ObjectInfoMessage.

The content and details of the inbound message can be found in section 5.13.1 of the PCS Technical Specifications

6.4 Using elements from existing messages

Most inbound messages to PCS require the inclusion of elements such as TrainInformation (TI), PathInformation (PI), NetworkSpecificParameters (NSPs), PlannedTransportIdentifiers (PTIDs), and Related PlannedTransportIdentifiers (RPTIDs). These elements contain several sub elements, meaning the manual fulfilling of all data within these elements in a reasonable amount of time is not realistic.

To expedite the construction of inbound messages, the required elements can be copied directly from outbound messages which have already been received by the user (including from an object information retrieval) and pasted into the inbound message being constructed.

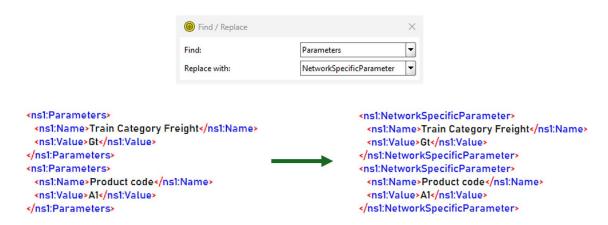


An example is as follows:

- A path request is submitted by an applicant, resulting in an outbound PathRequestMessage (sub-action ID 75)
- A user from an IM using SoapUI must construct a PathDetailsMessage (sub-action ID 108) to create a draft offer in response
- The IM user can copy the PTIDs, TI, PI, and NSPs (if any) from the outbound PathRequest-Message and insert them into the SoapUI template

6.4.1 NetworkSpecificParameter Information

An additional step must be taken in cases where NetworkSpecificParameter(s) are copied from a ObjectInfoMessage. In outbound ObjectInfoMessages, the territory-level NSPs are given in the element <Parameters>. However, PCS only accepts NSPs if they are in the element <Network-SpecificParameter>. This can be easily fixed via SoapUl's 'Find / Replace' functionality:



7 Example testing steps

The following sections contain stepwise examples for testing a sample of actions.

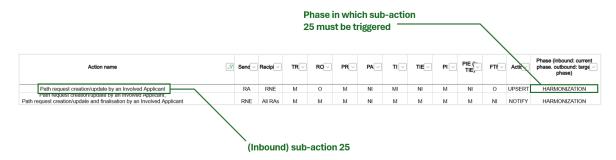
7.1 Path request update by an Involved Applicant

7.1.1 Perform the pre-requisite steps necessary to trigger the action

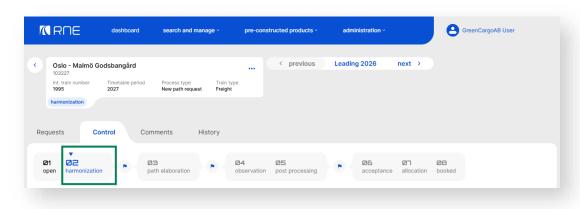
The RT which is used for this test can be either created via the GUI or API.

For an inbound sub-action to work, the RT should be brought to the appropriate state. To determine which state the RT must be in, check the content of the column 'Phase' for the inbound sub-action:





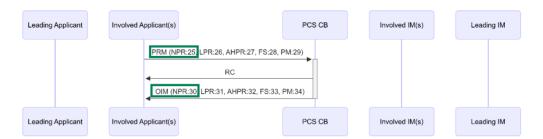
For the action **Path request creation/update by an Involved Applicant**, the reference train should be in the Harmonisation phase:



7.1.2 Check the message sequence in Technical Specifications

This action is detailed in section 5.1.5 of the Technical Specifications. The sub-actions (for NPR) consist of the following sub-actions:

- o One inbound message (ID 25), sent by an Involved Applicant
- o One outbound message (ID 30), sent to all Involved Applicants

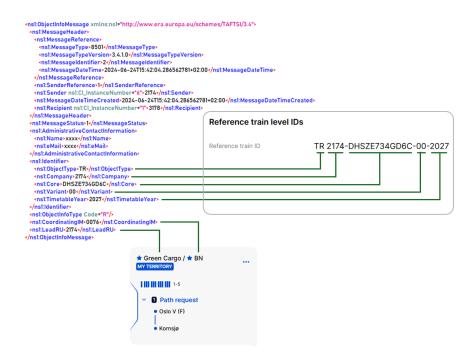


7.1.3 Construct and send the inbound message (if using SoapUI) – Sub-action ID 25

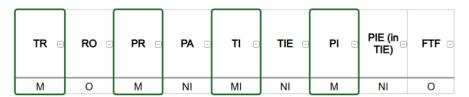
Using the provided SoapUI template and the information in Appendix A as a basis, the necessary data can be added into the message.

The user can first send an OIM to retrieve all objects associated with the reference train. The inbound OIM retrieval message can be constructed as follows:





The following elements can be taken from the ObjectInfoMessage and/or from the PCS GUI and inserted into the SoapUI template:



PlannedTransportIdentifiers (TRID, ROID*, PRID)



o TrainInformation (MI – Mandatory but content is ignored)



PathInformation

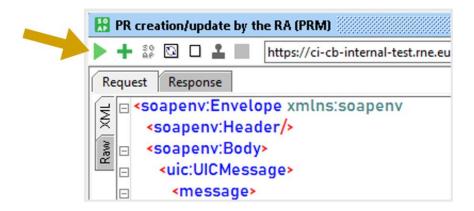
 Territory-level NetworkSpecificParameter(s) (if any, element name should be changed according to section 4.4.1)

```
<ns1:PlannedCalendar
                  <ns1:ValidityPeriod>
    <ns1:StartDateTime>2026-12-13T00:00:00+01:00</ns1:StartDateTime>
                       <ns1:EndDateTime>2027-12-11T23:59:59+01:00</ns1:EndDateTime</pre>
                   </ns1:ValidityPeriod>
                  <ns1:OffsetToReference>0</ns1:OffsetToReference>
              </ns1:PlannedCalendar>
          </ns1:PathInformation>
      </ns1:PathInformationExtended>
 </nsl:TrainInformationExtended>
<nsl:Parameters>
<nsl:Name>Train Category Freight</nsl:Name>
      <ns1:Value>Gt</ns1:Valu
  </ns1:Parameters>
  <ns1:Parameters>
      <ns1:Name>Product code</ns1:Name>
      <ns1:Value>A1</ns1:Value>
</ns1:Parameters>
ns1:ObjectInfoMessage>
```

Once the above elements have been added to the message in SoapUI, the desired update to the path request can be made in the PathInformation element. In this case, the departure time at the origin is shifted from 05:00:00 to 05:15:00:



Once the desired changes have been made, the message can be sent:

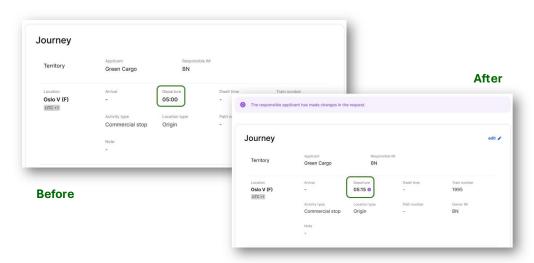


7.1.4 Trigger the action (if using national system) - Sub-action 25

The user should take the necessary action(s) required to send this message to PCS.

7.1.5 Check the GUI for the result

Following the sending of the message from SoapUI or the completion of the update in a national system, all changes should be visible in the GUI of PCS with a mark indicating that the change has been made:





7.1.6 Check outbound message(s) - Sub-action 30

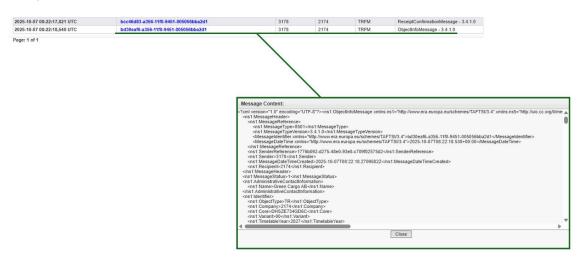
The outbound ObjectInfoMessage with ID 30 should be sent to all applicants which are involved in the reference train. Additionally, a ReceiptConfirmationMessage (RC) should have been sent to the sender company.

Users testing with SoapUI can access OutboundMessageProcessingLog of the PCS Local Instance of the relevant environment to check if the expected messages have been sent:



Users should check that the timestamp(s) of the listed messages are consistent with when the inbound sub-action was taken. Users can then confirm that the message types and recipients are as expected. Note that for outbound messages, the 'Sender ID' will always read 3178 (RailNetEurope).

A detailed check of the content of the outbound message(s) can also be done. In this case the user should cross check the content of the outbound ObjectInfoMessage with the expected content (indicated in sub-action ID 30 in Appendix A of the Technical Specifications):



If the inbound sub-action has been done via a national system, users should take the steps necessary to ensure the reception of the outbound sub-action and associated ReceiptConfirmationMessage has achieved the expected result.

7.2 Path request submission by the Leading Applicant

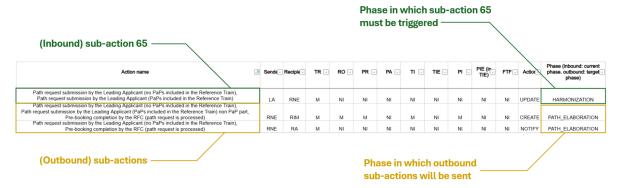
7.2.1 Perform the necessary pre-perquisite steps to trigger the action

The reference train used for this test can be created either via the GUI or API.

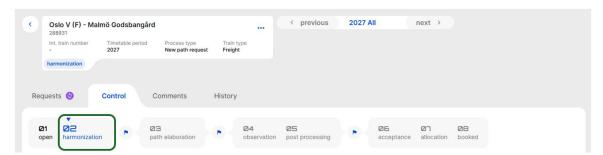
This reference train should be brought to the appropriate state. To determine which state the RT must be in, check the content of the column 'Phase' for the inbound sub-action. Note that compared to the action tested in the previous section, this one involves a phase change, indicated



by the different state shown for the inbound sub-action versus the outbound sub-actions.



For the action **Path request submission by the Leading Applicant**, the reference train should be brought to the Harmonisation phase:



Additionally, the progress for all path requests should be set to 'accepted':

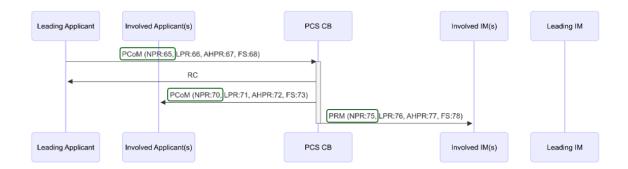


7.2.2 Check the Technical Specifications

This action is detailed in section 5.1.9 of the Technical Specifications. The sub-actions (for NPR) consist of the following:

- One inbound message (PCoM ID 65), sent by the Leading Applicant
- Two outbound messages:
 - PCoM ID 70 sent to all Involved Applicants
 - PRM ID 75 sent to all Involved IMs (one per request per IM)



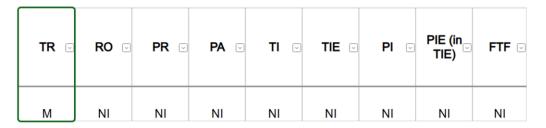


7.2.3 Construct and send the inbound message (if using SoapUI) – Sub-action 65

Using the provided SoapUI template and the information in Appendix A as a basis, the necessary data can be added into the message.

The user can first send an OIM to retrieve all objects associated with the reference train. The inbound OIM retrieval message can be constructed as shown in section 5.1.3.

The following element can be taken from the ObjectInfoMessage or from the PCS GUI and inserted into the SoapUI template:



PlannedTransportIdentifiers (TRID only)

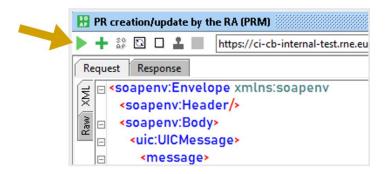


In addition to adding the PlannedTransportIdentifier, the user should ensure <LeadRU> and <CoordinatingIM> are correct. The final message would look as follows:



```
<ns1:PathCoordinationMessage xmlns:ns5="http://uic.cc.org/li/messageprocessing/header"</p>
  <ns1:MessageHeader>
   <ns1:MessageReference
    <ns1:MessageType>2500</ns1:MessageType>
    <ns1:MessageTypeVersion>3.4.1.0/ns1:MessageTypeVersion>
     <ns1:MessageIdentifier>2</ns1:MessageIdentifier</p>
     <ns1:MessageDateTime>2024-06-04T12:00:00Z</ps1:MessageDateTime>
   </ns1:MessageReference>
   <ns1:MessageRoutingID>22</ps1:MessageRoutingID>
   <ns1:Sender>2174</ns1:Sender>
   <ns1:MessageDateTimeCreated>2024-06-04T12:00:00Z</ps1:MessageDateTimeCreated>
   <ns1:Recipient>3178</ns1:Recipient>
 </ns1:MessageHeader>
 <ns1:AdministrativeContactInformation>
   <ns1:Name>xxx</ns1:Name>
   <ns1:eMail>xxx</ns1:eMail>
  </ns1:AdministrativeContactInformation>
  <ns1:Identifiers>
   <ns1:PlannedTransportIdentifiers>
    <ns1:ObjectType>TR</ns1:ObjectType>
    <ns1:Company>2174</ns1:Company>
     <ns1:Core>HFZF23461347</ns1:Core>
     <ns1:Variant>00</ns1:Variant>
    <ns1:TimetableYear>2027</ns1:TimetableYear>
   </ns1:PlannedTransportIdentifiers
  </ns1:Identifiers>
 <ns1:MessageStatus>1</ns1:MessageStatus>
 <ns1:TypeOfRUHarmonization>Full</ns1:TypeOfRUHarmonization>
<ns1:TypeOfIMHarmonization>Full
/ns1:TypeOfIMHarmonization>
 <ns1:LeadRU>2174</ns1:LeadRU>
 <ns1:CoordinatingIM>0076</ps1:CoordinatingIM>
 <ns1:TypeOfRequest>2</ns1:TypeOfRequest>
 <ns1:ProcessType>0</ns1:ProcessType>
 <ns1:TypeOfInformation>4</ns1:TypeOfInformation>
</ns1:PathCoordinationMessage>
```

After confirming that the information in the message is correct, the message can be sent:



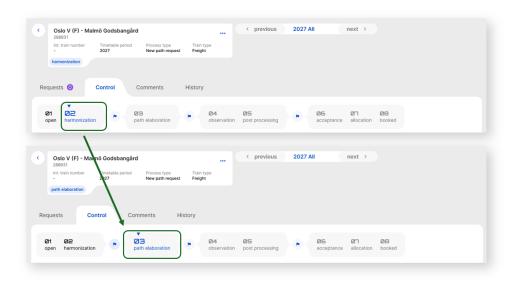
7.2.4 Trigger the action (if using national system) - Sub-action 65

The user should take the necessary action(s) required to send this message to PCS.

7.2.5 Check GUI for the result

Following the sending of the message from SoapUI or completion of the necessary action in the national system, the expected phase change should be reflected in the GUI of PCS:

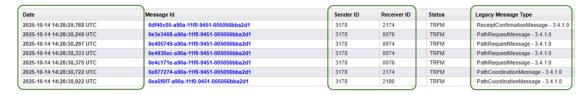




7.2.6 Check the outbound message(s) – Sub-actions 70 & 75

The outbound PCoM ID 70 and PRM ID 75 should sent to all applicants and IMs involved in the reference train respectively, as well as a ReceiptConfirmationMessage (RC) to the sender.

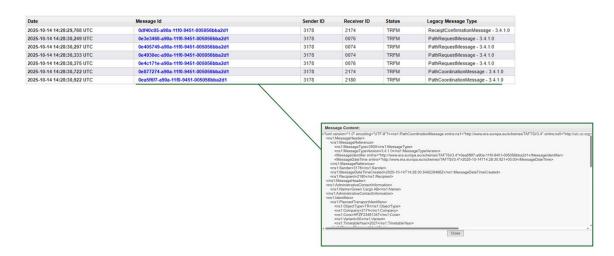
Users testing with SoapUI can access OutboundMessageProcessingLog of the PCS Local Instance of the relevant environment to check if the expected messages have been sent:



Users should check that the timestamp(s) of the listed messages are consistent with when the inbound action was taken. Users can then confirm that the message types and recipients are as expected.

A detailed check of the content of the outbound message(s) can also be done. In this case the user should cross check the content of the outbound ObjectInfoMessage with the expected content (indicated in sub-action IDs 70 & 75 in Appendix A of the Technical Specifications):





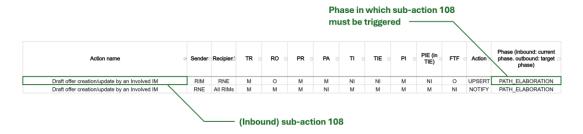
If the inbound sub-action has been done via a national system, users should take the steps necessary to ensure the reception of the outbound sub-action and associated ReceiptConfirmationMessage has achieved the expected result.

7.3 Draft offer creation/update by an Involved IM

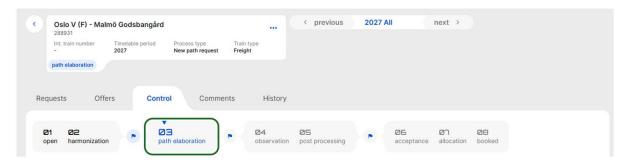
7.3.1 Perform the pre-requisite steps necessary to trigger the action

The RT which is used for this test can be either created via the GUI or API.

For an inbound sub-action to work, the RT should be brought to the appropriate state. To determine which state the RT must be in, check the content of the column 'Phase' for the inbound sub-action:



For the action **Draft offer creation/update by an Involved IM**, the reference train should be in the Path Elaboration phase:

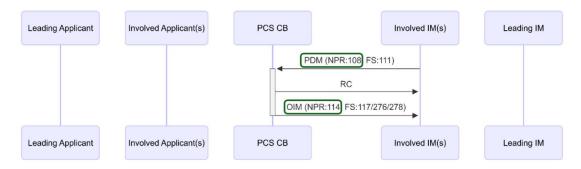




7.3.2 Check the Technical Specifications

This action is detailed in section 5.1.9 of the Technical Specifications. The sub-actions (for NPR) consist of the following:

- o One inbound message (PDM ID 108), sent by an Involved IM
- One outbound Message (OIM ID 114), sent to each Involved IM



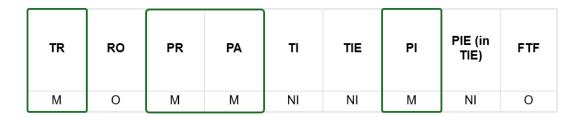
7.3.3 Construct and send the inbound message (if using SoapUI) - Sub-action 108

Using the provided SoapUI template and the information in Appendix A as a basis, the necessary data can be added into the message.

The user can first send an OIM to retrieve all objects associated with the reference train. The inbound OIM retrieval message can be constructed as shown in section 5.1.3.

Alternatively, the user can use the content of the PathRequestMessage (ID 75) for the relevant path request which was received when the reference was promoted to Path Elaboration.

The following elements can be taken from the ObjectInfoMessage (if doing OIM retrieval) or PathRequestMessage (ID 75), and inserted into the SoapUI template for sub-action 108:



- PlannedTransportIdentifier (TRID, ROID*, PRID, and PAID)
 - The PRID should be that of the request to which the offer is being created
 - The PAID should be new (for creation of an offer) or existing (for update of an existing offer). In this example, an offer is being created, so a new core element will be used.



From outbound PRM (sub-action 75)

```
<ns1:Identifiers>
   <ns1:PlannedTransportIdentifiers>
        <ns1:ObjectType>TR</ns1:ObjectType>
        <ns1:Company>2174</ns1:Company>
        <ns1:Core>HFZF23461347</ns1:Core>
                                                      TRID
        <ns1:Variant>00</ns1:Variant>
        <ns1:TimetableYear>2027</ns1:TimetableYear>
     /ns1:PlannedTransportIdentifiers>
    <ns1:PlannedTransportIdentifiers>
        <ns1:ObjectType>PR</ns1:ObjectType>
        <ns1:Company>2174</ns1:Company>
        <ns1:Core>DFCGBQW8734R</ns1:Core>
                                                       PRID
        <ns1:Variant>01</ns1:Variant>
        <ns1:TimetableYear>2027</ns1:TimetableYear>
     /ns1:PlannedTransportIdentifiers>
    <ns1:PlannedTransportIdentifiers>
        <ns1:ObjectType>RO</ns1:ObjectType>
        <ns1:Company>2174</ns1:Company>
        <ns1:Core>GR23VBO4578G</ns1:Core>
                                                       ROID *Optional
        <ns1:Variant>01</ns1:Variant>
        <ns1:TimetableYear>2027</ns1:TimetableYear>
      ns1:PlannedTransportIdentifiers>
 ns1:Identifiers>
```

PathInformation

 Any changes in the offer compared to the request can be made directly in the PathInformation prior to sending the message

NetworkSpecificParameters

```
<ns1:NetworkSpecificParameter>
    <ns1:Name>Train Category Freight</ns1:Name>
    <ns1:Value>Gt</ns1:Value>
</ns1:NetworkSpecificParameter>
                                                       From PathRequestMessage (ID 75):
<ns1:NetworkSpecificParameter>
                                                       Can be inserted directly
    <ns1:Name>Product code</ns1:Name>
    <ns1:Value>A1</ns1:Value>
</nsl:NetworkSpecificParameter>
                                         <ns1:Parameters>
                                              <ns1:Name>Train Category Freight/ns1:Name>
                                              <ns1:Value>Gt</ns1:Value>
          From ObjectInfoMessage:
                                         </ns1:Parameters>
          Element name must be changed
                                         <ns1:Parameters>
          (see section 4.4.1)
                                              <ns1:Name>Product code</ns1:Name>
                                              <ns1:Value>A1</ns1:Value>
                                         </ns1:Parameters>
```

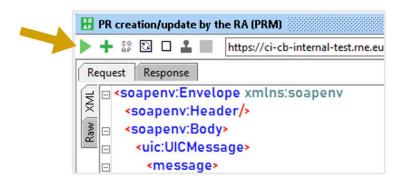
FreeTextField (FTF)



 An FTF can be added in case the sender would like to leave a comment for the Applicant for which the offer is being created:

</nsi:NetworkSpecificParameter>
<nsi:FreeTextField>Example comment to Applicant regarding the draft offer to PR 2174-DFCGBQW8734R-01-2027</nsi:FreeTextField>
</nsi:PathDetailsMessage>

Once the above elements are added to the message, the user can do a validation check (see section 4.2.1 and 4.2.2), and send the message:

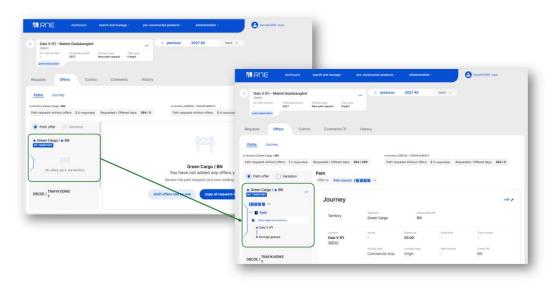


7.3.4 Trigger the action (if using national system) - Sub-action 108

The user should take the necessary action(s) required to send this message to PCS.

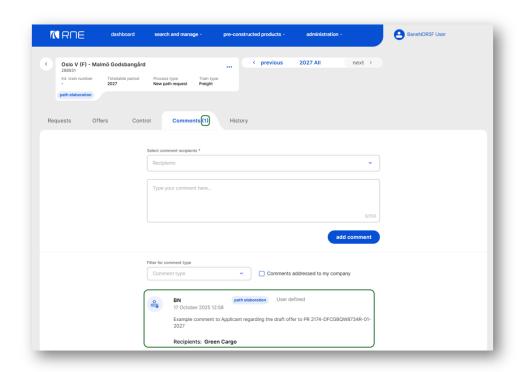
7.3.5 Check GUI for the result

Following the submission of the inbound sub-action, the user can check if the expected result has occurred in the graphical user interface of PCS. In this case, the draft offer should appear in the 'Offers' tab where previously there were none:



Because a FreeTextField was also sent with the inbound message, the comment should appear in the 'comments' tab, and be addressed to the expected recipient:

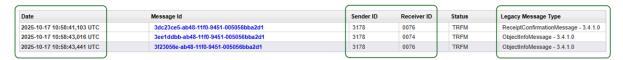




7.3.6 Check the outbound message(s) - Sub-action 114

The outbound OIMID 114 should be sent to all IMs involved in the reference train, as well as a ReceiptConfirmationMessage (RC) to the sender.

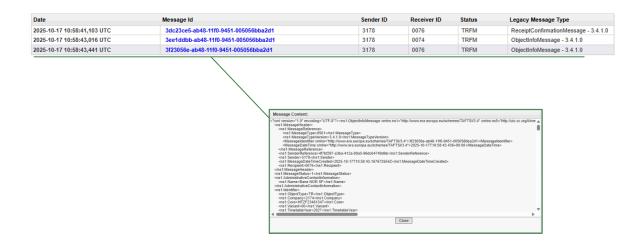
Users testing with SoapUI can access OutboundMessageProcessingLog of the PCS Local Instance of the relevant environment to check if the expected messages have been sent:



Users should check that the timestamp(s) of the listed messages are consistent with when the inbound action was taken. Users can then confirm that the message types and recipients are as expected.

A detailed check of the content of the outbound message(s) can also be done. In this case the user should cross check the content of the outbound ObjectInfoMessage with the expected content (indicated in sub-action ID 114 in Appendix A of the Technical Specifications):





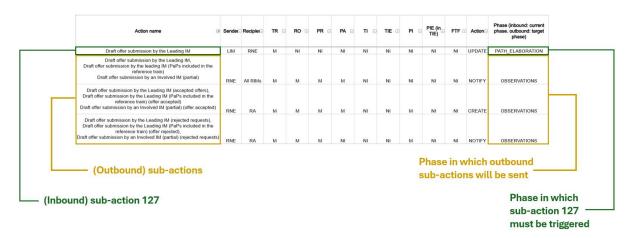
If the inbound sub-action has been done via a national system, users should take the steps necessary to ensure the reception of the outbound sub-action and associated ReceiptConfirmationMessage has achieved the expected result.

7.4 Draft/final offer submission by the Leading IM

7.4.1 Prepare the reference train

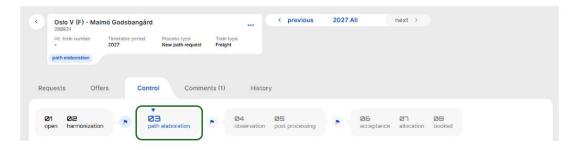
The reference train used for this test can be created either via the GUI or API.

This reference train should be brought to the appropriate state. To determine which state the RT must be in, check the content of the column 'Phase' for the inbound sub-action. Note that compared to the action tested in the previous section, this one involves a phase change, indicated by the different state shown for the inbound sub-action versus the outbound sub-actions.

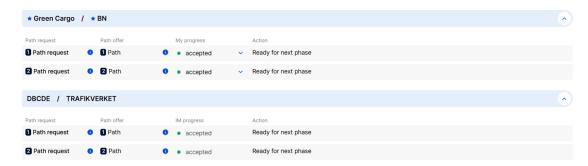


For the action **Draft offer submission by the Leading IM**, the reference train should be brought to the Path Elaboration phase:





Additionally, the progress for all path requests should be set to 'accepted':

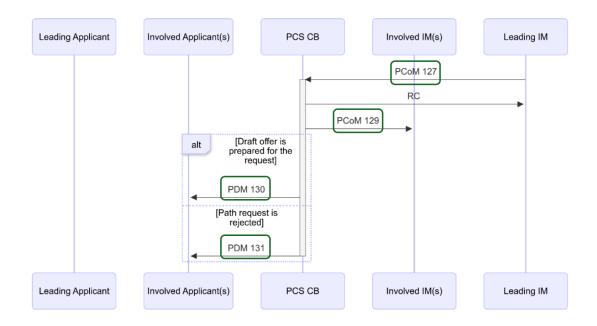


7.4.2 Check the Technical Specifications

This action is detailed in section 5.2.4 of the Technical Specifications. The sub-actions (for NPR) consist of the following:

- o One inbound message (PCoM ID 127), sent by the Leading IM
- Two or three outbound messages:
 - PCoM ID 129 sent to all Involved IMs
 - PDM ID 130 sent to Involved Applicants (one per draft offer)
 - PDM ID 131 sent to Involved Applicants (one per request which did not have an offer prepared in response)



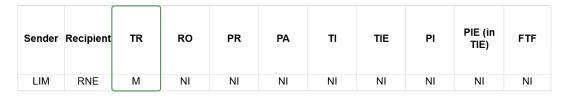


7.4.3 Construct and send the inbound message (if using SoapUI) - Sub-action 127

Using the provided SoapUI template and the information in Appendix A as a basis, the necessary data can be added into the message.

The user can first send an OIM to retrieve all objects associated with the reference train. The inbound OIM retrieval message can be constructed as shown in section 5.1.3.

The following element can be taken from the ObjectInfoMessage or from the PCS GUI and inserted into the SoapUI template:



PlannedTransportIdentifiers (TRID only)

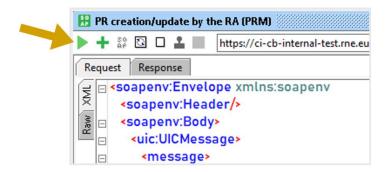


In addition to adding the PlannedTransportIdentifier, the user should ensure <LeadRU> and <CoordinatingIM> are correct. The final message would look as follows:



```
<ns1:PathCoordinationMessage xmlns:ns5="http://uic.cc.org/li/messageprocessing/header"</p>
 <ns1:MessageHeader>
   <ns1:MessageReference>
    <ns1:MessageType>2500</ns1:MessageType>
    <ns1:MessageTypeVersion>3.4.1.0/ns1:MessageTypeVersion>
    <ns1:MessageIdentifier>4</ns1:MessageIdentifier</p>
    <ns1:MessageDateTime>2024-06-04T12:00:00Z</ps1:MessageDateTime>
   </ns1:MessageReference>
   <ns1:MessageRoutingID>22</ns1:MessageRoutingID>
   <ns1:Sender>0076</ns1:Sender>
   <ns1:MessageDateTimeCreated>2024-06-04T12:00:00Z</ps1:MessageDateTimeCreated>
   <ns1:Recipient>3178</ns1:Recipient>
 </ns1:MessageHeader>
 <ns1:AdministrativeContactInformation>
   <ns1:Name>xxx</ns1:Name>
   <ns1:eMail>xxx</ns1:eMail>
 </ns1:AdministrativeContactInformation>
 <ns1:Identifiers>
   <ns1:PlannedTransportIdentifiers>
    <ns1:ObjectType>TR</ns1:ObjectType>
    <ns1:Company>2174</ns1:Company>
    <ns1:Core>HFZF23461347</ns1:Core>
    <ns1:Variant>00</ns1:Variant>
    <ns1:TimetableYear>2027</ps1:TimetableYear>
   </ns1:PlannedTransportIdentifiers>
 </ns1:Identifiers>
 <ns1:MessageStatus>1</ns1:MessageStatus>
 <ns1:TypeOfRUHarmonization>Full
 <ns1:TypeOfIMHarmonization>Full
/ns1:TypeOfIMHarmonization>
 <ns1:LeadRU>2174</ns1:LeadRU>
 <ns1:CoordinatingIM>0076</ps1:CoordinatingIM>
 <ns1:TypeOfRequest>2</ns1:TypeOfRequest>
 <ns1:ProcessType>0</ns1:ProcessType>
 <ns1:TypeOfInformation>9</ns1:TypeOfInformation>
</ns1:PathCoordinationMessage>
```

After confirming that the information in the message is correct, the message can be sent:



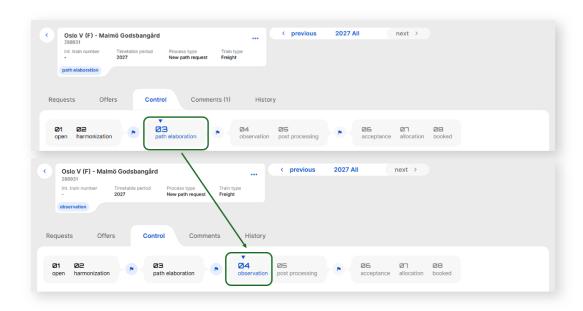
7.4.4 Trigger the action (if using national system) - Sub-action 127

The user should take the necessary action(s) required to send this message to PCS.

7.4.5 Check GUI for the result

Following the sending of the message from SoapUI or completion of the necessary action in the national system, the expected phase change should be reflected in the GUI of PCS:

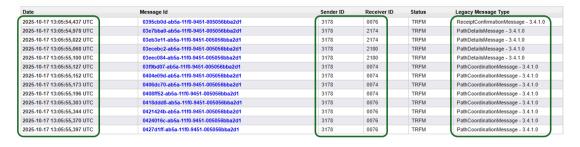




7.4.6 Check the outbound messages - Sub-actions 129 & 130

All requests had offers created in response, thus only outbound PCoM 129 and PDM ID 130 are expected, as well as a ReceiptConfirmationMessage (RC) to the sender.

Users testing with SoapUI can access OutboundMessageProcessingLog of the PCS Local Instance of the relevant environment to check if the expected messages have been sent:

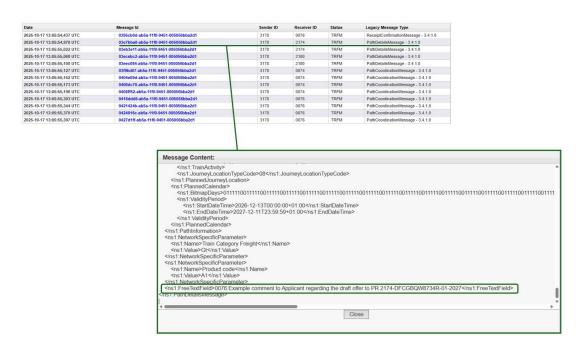


Users should check that the timestamp(s) of the listed messages are consistent with when the inbound action was taken. Users can then confirm that the message types and recipients are as expected.

A detailed check of the content of the outbound message(s) can also be done. In this case the user should cross check the content of the outbound ObjectInfoMessage with the expected content (indicated in sub-action IDs 129 & 130 in Appendix A of the Technical Specifications).

Given that a user defined comment was added in section 5.3 (Draft offer creation/update by an Involved IM), the user should additionally check that the comment was delivered to the intended recipient and in the right message(s) (expected behaviour is described in the Technical Specifications).





If the inbound sub-action has been done via a national system, users should take the steps necessary to ensure the reception of the outbound sub-action and associated Receipt Confirmation Message has achieved the expected result.