TAF/TAP-TSI TrainID

Framework for Usage of Case Reference

History of document versions

Version	Date	Author	Reason for change / comment
0.1	2015-03-09	Seid Maglajlic	Creation (1st draft)

Content

1. About this document

This document contains the concise description of the framework for usage of Case Reference – the business object that has been introduced within the concept of the new TAF/TAP-TSI identifiers. The basic cases that explain the usage of the Case Reference are provided in the form of a table with one column and four rows:

Precondition – the precondition that has to be fulfilled in order to process the particular Case Reference **Trigger –** the situation or circumstances which initiate the processing of Case Reference **Business process** – we refer here to the Business Scenarios given in the WG 10 Handbook that are translated into the UML Model Activity Diagrams. **The readers are required to be familiar with WG 10 Handbook or Sector Handbook and the corresponding UML Model before examining this document.**
Illustration
XML content example according to the illustration. The readers are required to be familiar with the XSD structure of the new TAF/TAP TSI identifiers when examining this document.
Consequences: which business processes should be considered when examining the Case Reference.

2. Introduction

As an introduction to the topic of Case Reference we will citate here the content of the Sector Handbook (Chapter 8.2.3.4 Case Reference):

"This object heavily depends on the agreements between the partners that exchange the information with the means of TAF/TAP messages in the industry. The object is here mentioned for the purpose of:
- (*) Umbrella for the business case: The cases where the partners want to provide an identifier as an umbrella for the whole business case which is handled in the process of organizing the Train, sending the Path Requests for it- and constructing, offering and keeping the track on Path for it.
- (**) Transaction scope: this identifier is used in a sequence of actions that have to be started, processed and ended as a whole.
- (***) Differentiation of parallel applications: All the (re-)planning activities to be processed in parallel have to be differentiated by using this identifier."

In order to illustrate the usage of the Case Reference, we will provide an example of the usage of PCS (Path Coordination System of RailNetEurope). The usage of Case Reference in PCS corresponds to the approach (*) described above. More precisely, Case Reference is used in PCS to identify the **PCS-Dossier** that covers the business cases of:
- Path Request harmonization between RUs
- Path Request from RU to IM for all RU-IM pairs in the international/interoperable Path planning process
- Path offer harmonization by IMs
- Path offer communication from IMs to RUs
- Path Modification process (modification of the Path after the allocation, triggered by RU)
- Path Alteration process (modification of the Path after the allocation, triggered by IM)

In the topology of the TAF/TAP objects, we may express the relation of PCS-Dossier and Case Reference with the following illustration.
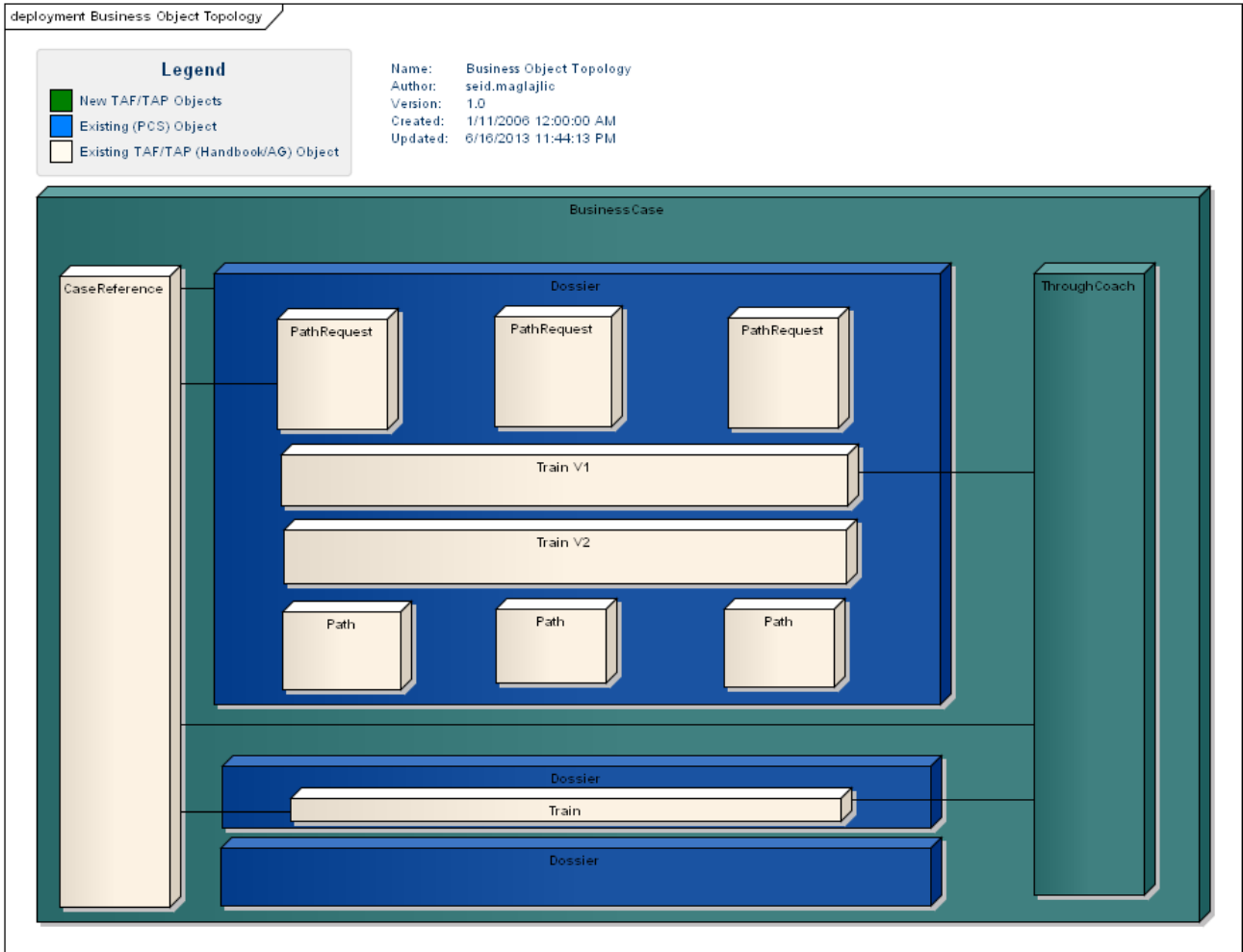
Fig. 1 Business objects topology

Technically speaking, the Case Reference object is related to all other TAF/TAP objects as shown below in the TAF/TAP object model.
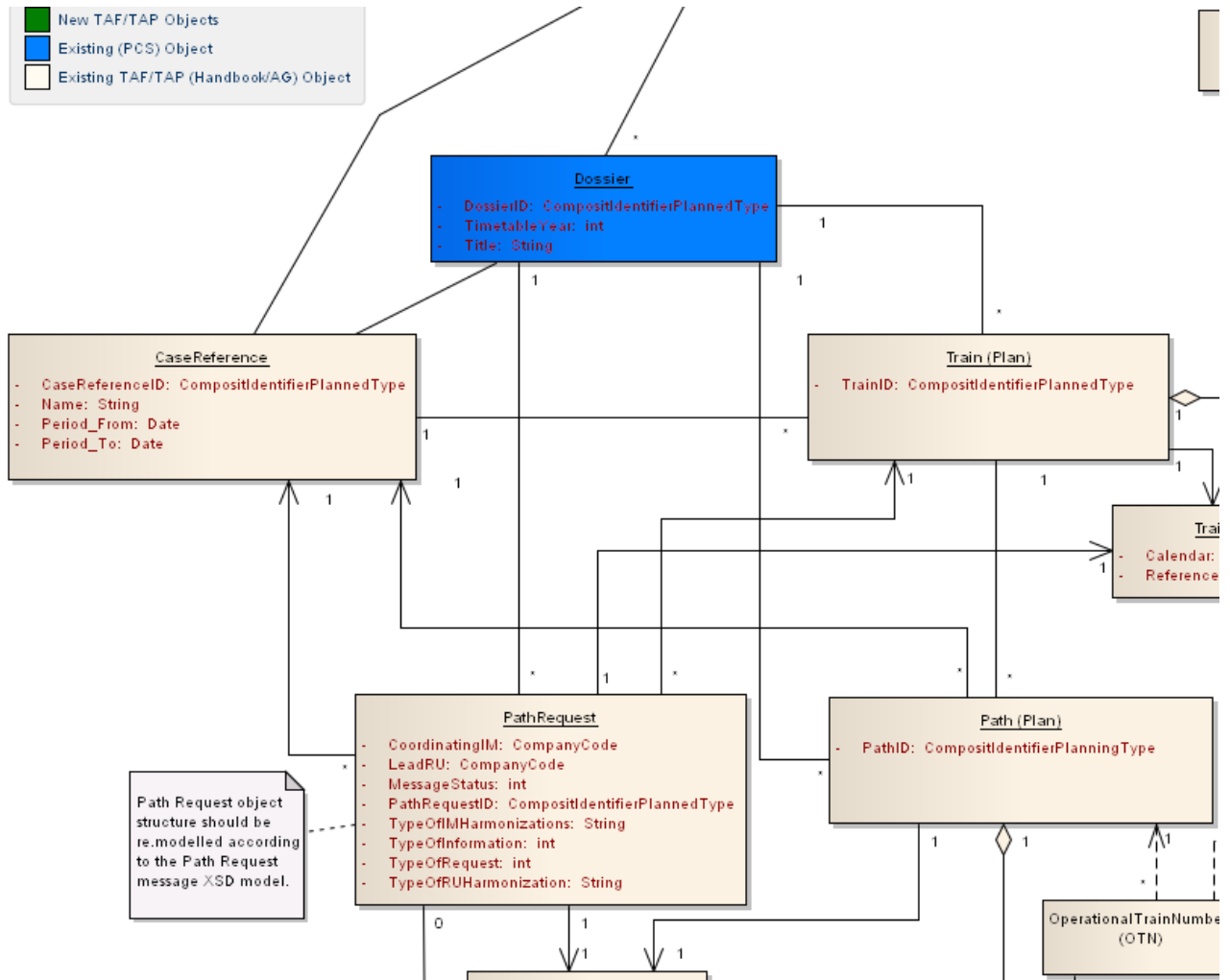
Fig. 2 TAF/TAP object model - restricted only to the basic objects

Basically, the Case Reference object can be linked to one or more Trains, Paths and Path Requests. As mentioned earlier, it serves as an umbrella over Trains, Paths and Path Requests and, as such, can cover the business case of the PCS Dossier (shown in the blue color in the diagram in Fig. 2). Because of such a definition of the Case Reference, the Case Reference identifier has been chosen as "cover-identifier" of PCS-Dossier to be used in the TAF/TAP-TSI compliant messaging with PCS.

XSD Structure of the new identifiers

Let us briefly recapitulate the structure of the new TAF/TAP-TSI identifiers in the XSD:
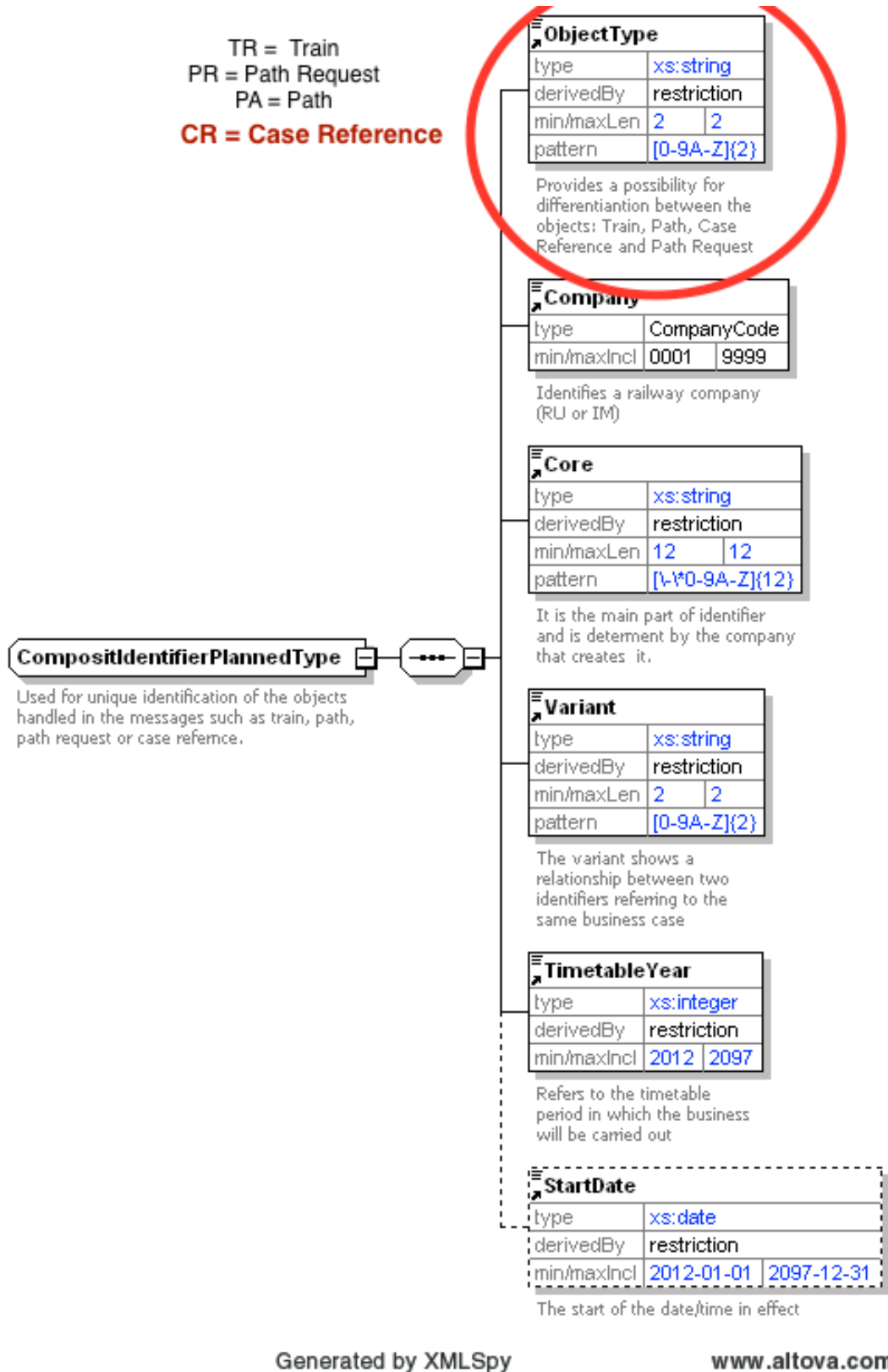
TR = Train
PR = Path Request
PA = Path

CR = Case Reference

ObjectType

type	xs:string	
derivedBy	restriction	
min/maxLen	2	2
pattern	[0-9A-Z]{2}	

Provides a possibility for differentiantion between the objects: Train, Path, Case Reference and Path Request

Company

type	CompanyCode	
min/maxIncl	0001	9999

Identifies a railway company (RU or IM)

Core

type	xs:string	
derivedBy	restriction	
min/maxLen	12	12
pattern	[\-*0-9A-Z]{12}	

It is the main part of identifier and is determent by the company that creates it.

CompositIdentifierPlannedType

Used for unique identification of the objects handled in the messages such as train, path, path request or case refernce.

Variant

type	xs:string	
derivedBy	restriction	
min/maxLen	2	2
pattern	[0-9A-Z]{2}	

The variant shows a relationship between two identifiers referring to the same business case

TimetableYear

type	xs:integer	
derivedBy	restriction	
min/maxIncl	2012	2097

Refers to the timetable period in which the business will be carried out

StartDate

type	xs:date	
derivedBy	restriction	
min/maxIncl	2012-01-01	2097-12-31

The start of the date/time in effect

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Fig. 1 XSD structure of the new TAF/TAP identifiers

As indicated with the red letters in Fig.1 - the Case Reference object type is **CR**.

3. Path Request Message with Case Reference ID for PCS Dossier

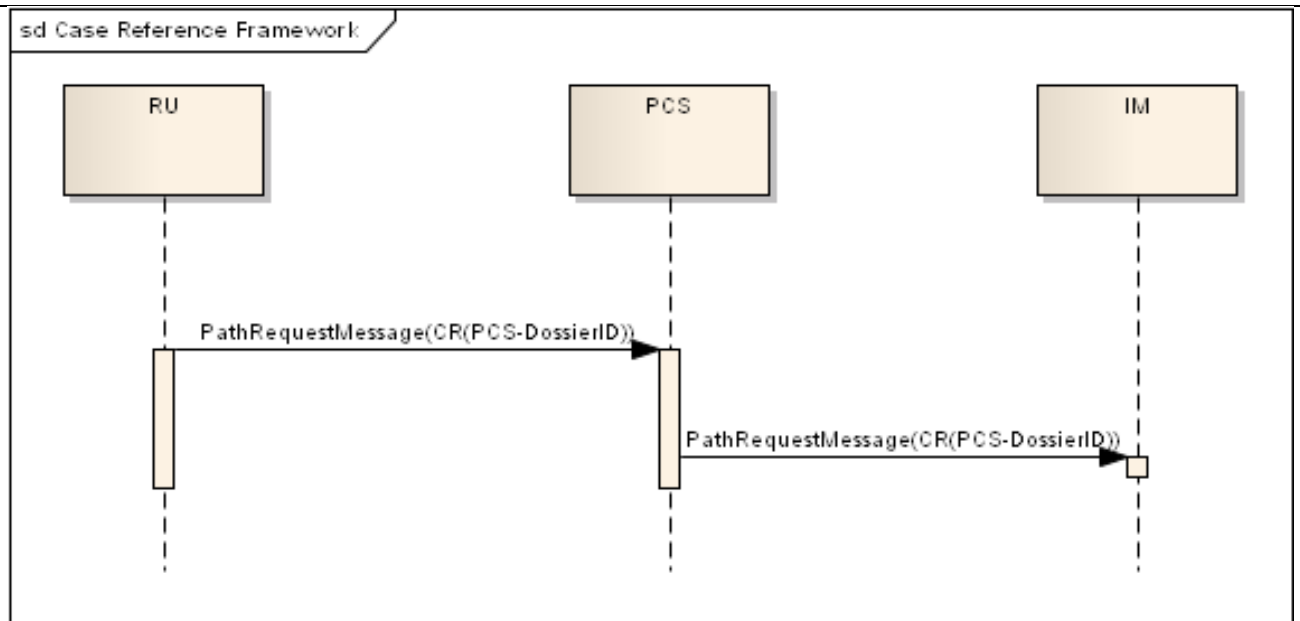**Precondition:**
Dossier is created by the LeadRU in PCS.
Trigger:
RU/Applicant wants to issue the Path Request to the IM**.**
Business process:
See sequence diagram. By the usage of the Case Reference for carrying the PCS-Dossier identifier, it is possible to use the PCS as the mediator from RU to IM. RU does not need to send the Path Request Message directly to the IM - PCS transmits the Path Request to the IM, on behalf of the RU.
Activity: Path Request


```xml
<PathRequestMessage>
   ...
   <Identifiers>
      <PlannedTransportIdentifiers>
         <ObjectType>CR</ObjectType>
         <Company>3178</Company>
         <Core>******132477</Core>
         <Variant>00</Variant>
         <TimetableYear>2016</TimetableYear>
      </PlannedTransportIdentifiers>
      <PlannedTransportIdentifiers>
         <ObjectType>TR</ObjectType>
         <Company>2180</Company>
         <Core>*******43215</Core>
         <Variant>00</Variant>
         <TimetableYear>2016</TimetableYear>
      </PlannedTransportIdentifiers>
      <PlannedTransportIdentifiers>
         <ObjectType>PR</ObjectType>
         <Company>2180</Company>
         <Core>54652-313308</Core>
         <Variant>00</Variant>
         <TimetableYear>2016</TimetableYear>
      </PlannedTransportIdentifiers>
```
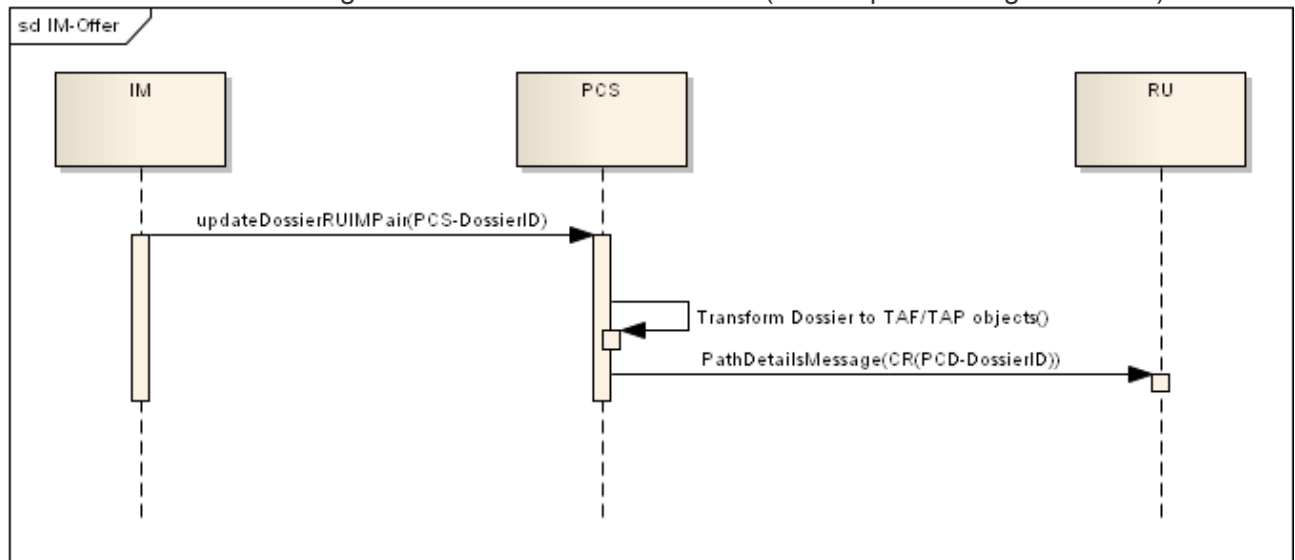
```
    </Identifiers>
    <MessageStatus>1</MessageStatus>
    <TypeOfRUHarmonization>Full</TypeOfRUHarmonization>
    <CoordinatingIM>80</CoordinatingIM>
    <LeadRU>2180</LeadRU>
    <TypeOfRequest>2</TypeOfRequest>
    <TypeOfInformation>4</TypeOfInformation>
    <TrainInformation>...</TrainInformation>
    <PathInformation>...</PathInformation>
</PathRequestMessage>
```

Consequences:
1) PCS was able to identify to which dossier is this Path Request related
2) The IM has got the Path Reqeust data compiled by PCS
3) RU does not have to care about eventually more IMs and notification of the partners – this is done by PCS
4) IM gets the PCS-DossierID and can use it if the IM has the PCS-specific interface connection (PCS Integration Platform). In that case, IM can provide the offer for the RU by executing one of the PCS functions by using the PCS-DossierID, and PCS sends the PathDetailsMessage on behalf of the IM to the RU (see sequence diagram below).

4. Conclusion

The description provided in this document serves as the guideline for further development of applications that use Case Reference. The further combinations of different operations in the message are possible, and depend on the particular situations and agreements between the partners.