Interface description v6.4

Corresponding with URL https://psb.rdw.nl/bevraging/rpv/201210/registration.svc

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NPR is ontstaan uit een samenwerkingsverband van shpv RDW

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1 Introduction

This document describes the interactions with the "**Nationaal Parkeer Register** ".

1.1 Goal

This document is aiming at a clear understanding of all possible interfaces to the "Nationaal Parkeer Register" for all potential stakeholders.

1.2 Overview and scope

The NPR enables participants to register rights and retrieve rights information for enforcement and settlement. NPR is hosted at RDW and made accessible through open and standard protocols.

Starting points:

- Stakeholders will be governmental entities like municipalities, private owners of parking garages and private service providers, which connect to the NPR to acquire parking or staying rights or for enforcement;
- The design is driven by NORA;
- Interface will be equal to all stakeholders;

1.3 References

ID	Name	Version	Date	Authors
[NORA]	NORA reference architecture http://www.e-overheid.nl/onderwerpen/over-de-e-overheid/architectuur/nora-familie	3.0	01-11-2011	ICTU
[OSB]	Overheidsservicebus or Digikoppeling https://www.logius.nl/diensten/digikoppeling	2.0	25-03-2009	Logius, Ministry of Internal Affairs

1.4 Definitions

AreaManager	Party responsible for exploitation of parking areas like municipalities, governments or private parties.
Digikoppeling	Digikoppeling is also known as "Overheidsservicebus" (OSB). In this document, the term OSB is used.
Enforcer	Party responsible for enforcement of the parking rights (i.e. parking officer)
Identity	PKI enables the use of certificates to assure the integrity and authenticity of the identity of the certificate holder.
KPS	Koppelnet Publieke Sector, closed network dedicated for Dutch governmental parties
NORA	Nederlandse Overheid Referentie Architectuur (Dutch Government Reference Architecture). Design principles, models and standards regarding e-government.
OIN	Overheids Identificatie Nummer (Government Identification Number). Unique id of the user on a PKI-overheid certificate. An OIN is issued by the Digikoppeling/OSB organisation
OSB	(or Digikoppeling) OSB is the government's "internal postman". OSB/Digikoppeling comprises a set of standards for electronic messaging between government organizations. If you implement these standards in your own software, you can easily exchange digital messages with fellow government organizations. This is done through the connectivity of

	Diginetwerk, the Internet or a different type of connection. OSB/Digikoppeling is an NUP (National Implementation Programme for Service Provision and e-Government) building block. Governmental parties communicating with NPR use the OSB set of standards.
PIN	Private Identification Number. Unique id of the user on an RDW issued certificate. A PIN is issued by RDW.
PKI	Public Key Infrastructure
PSB	Private Service Bus. A set of standards for electronic messaging between private parties, derived from OSB. See also OSB and Digikoppeling. Private parties communicating with NPR use the PSB set of standards.
NPR	Nationaal Parkeer Register. The information system hosted at RDW premises.
Service	The result or effect of a task of an organization, employee or application based on legal obligations or agreements, which provides the needs of multiple organizations, employees or applications.
Servicebus	An integration infrastructure (middleware) which is necessary to facilitate SOA architectures
SHPV	Servicehuis Parkeer- en Verblijfsrechten (Service House Parking and Staying Rights), the cooperation that makes NPR available for parties registering, checking and managing parking and staying rights.
Web service provider	A party that publishes a web service
Web service requestor	A party that consumes a web service
Web service	A web service is a special occurrence of a service focussed at the service between applications.
WSDL	WSDL is an XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information. The operations and messages are described abstractly, and then bound to a concrete network protocol and message format to define an endpoint. Related concrete endpoints are combined into abstract endpoints (services). WSDL is extensible to allow description of endpoints and their messages regardless of what message formats or network protocols are used to communicate, however, the only bindings described in this document describe how to use WSDL in conjunction with SOAP 1.1, HTTP GET/POST, and MIME.
WUS	WSDL/UDDI/SOAP stack. System based on W3C WS-* standards.

2 Global Design

2.1 Context

In figure 1 the context of the NPR is depicted. Concerning the interfaces three significant entities can be defined:

- Enforcers
  By instructions of municipalities and private parties, enforcement of the system will be done. Therefore the enforcer role needs interfaces to check a parking right
- Area Managers
  Area managers own or operate parking space and regulate and charge the usage. Rights based on other vehicle related usage of streets, areas or buildings can also be registered.
- Providers
  Providers will acquire parking or staying rights for areas on behalf of their customers based on contracts with SHPV. People that want to acquire a parking or staying right, will interact with the providers. For electronic registration of a right, the provider will interact with the NPR system in a few well described, standardized interfaces.

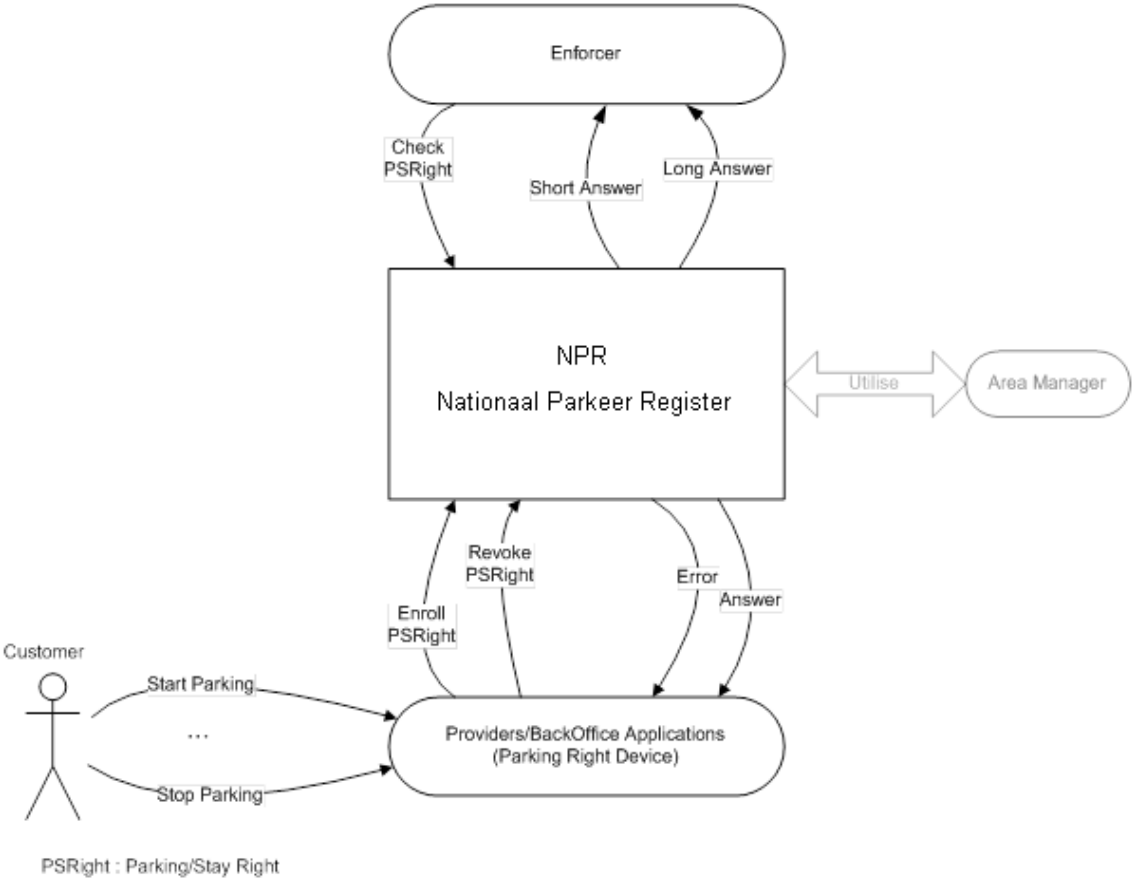

Figure 1 Context Nationaal Parkeer Register

2.2 Usages

The usages that are available for registration in the "Nationaal Parkeer Register" are depicted in the following figure. A list of general usages is shown (‘Gebruiksdoelen_Algemeen’).
There are two main categories for usages: The general usage of parking (‘ Parkeren’) or parking by means of a disabled person’s parking card (‘GPK’). The general usage ‘Parkeren’ is subdivided in charged parking (‘BetaaldParkeren’) and parking with a license (‘VergunningParkeren’). The usage of parking by means of a disabled person’s parking card is subdivided in general usage by a disabled

person (‘GPK’), usage by a disabled driver (‘GPKB’), usage by a disabled passenger (‘GPKP’) or usage by an institution (‘GPKI’). Area managers can also define new usages if necessary.

Gebruiksdoelen_Algemeen

Niveau1	Niveau2	Niveau3	Niveau4	UsageId (max 10pos)
Parkeren				PARKEREN
	BetaaldParkeren			BETAALDP
	VergunningParkeren			VERGUNP
		Autodeler		AUTODELERP
		Hulpdienst		HULPDNSTP
GPK				GPK
	Bestuurder			GPKB
	Instelling			GPKI
	Passagier			GPKP

Legenda	
	Algemeen geldend
	Vrij

Figure 1 Gebruiksdoelen_Algemeen

2.3 URL versions

Due to changes in messages, temporarily different versions of NPR will be used simultaneously. The previous versions of NPR will be available for 6 months after a new version is made available. This version of the NPR Interface description describes the current interface with URL https://psb.rdw.nl/bevraging/rpv/201210/registration.svc. The test environment of this URL can be found at https://psb.gatrdw.nl/bevraging/rpv/201210/registration.svc.

2.4 Disclosure of parking information: List of selling points

The NPR provides an updated list of selling points daily. This list is provided through a URL so it can be downloaded. In figure 2 the URL is shown. It contains two links where, respectively, the production version of the list and a test version of the list can be downloaded: “Productie verkooppunten” and “Acceptatie verkooppunten”. The URL’s of the two versions are:
Production: http://nprverkooppunten.rdw.nl/Productie/verkooppunten.txt
Test: http://nprverkooppunten.rdw.nl/Acceptatie/verkooppunten.txt
The list of selling points contains the following elements: selling point identification; geographical coordinates; area identification; validity of selling point and area; area manager identification and usage of the area.

Figure 2 URL: http://www.nationaalparkeerregister.nl/downloads/downloads-mobiel-parkeren.html **where list of selling points can be downloaded**

2.5 Technology guidelines message exchange

The interfaces will be implemented according to the OSB/Digikoppeling standards. Because OSB/Digikoppeling is reserved for Dutch governments only, private parties will use equivalent standards but different means of authentication. Within the context of NPR, this variant will identified as PSB, Private ServiceBus. The PSB will use the same set of standards and protocols but will use RDW certificates to identify users and will only use Internet as a transport network. The OSB uses PKI http://www.logius.nl/english/products/access/pkioverheid/ certificates and will use Internet instead of the closed network KPS as preferred network.

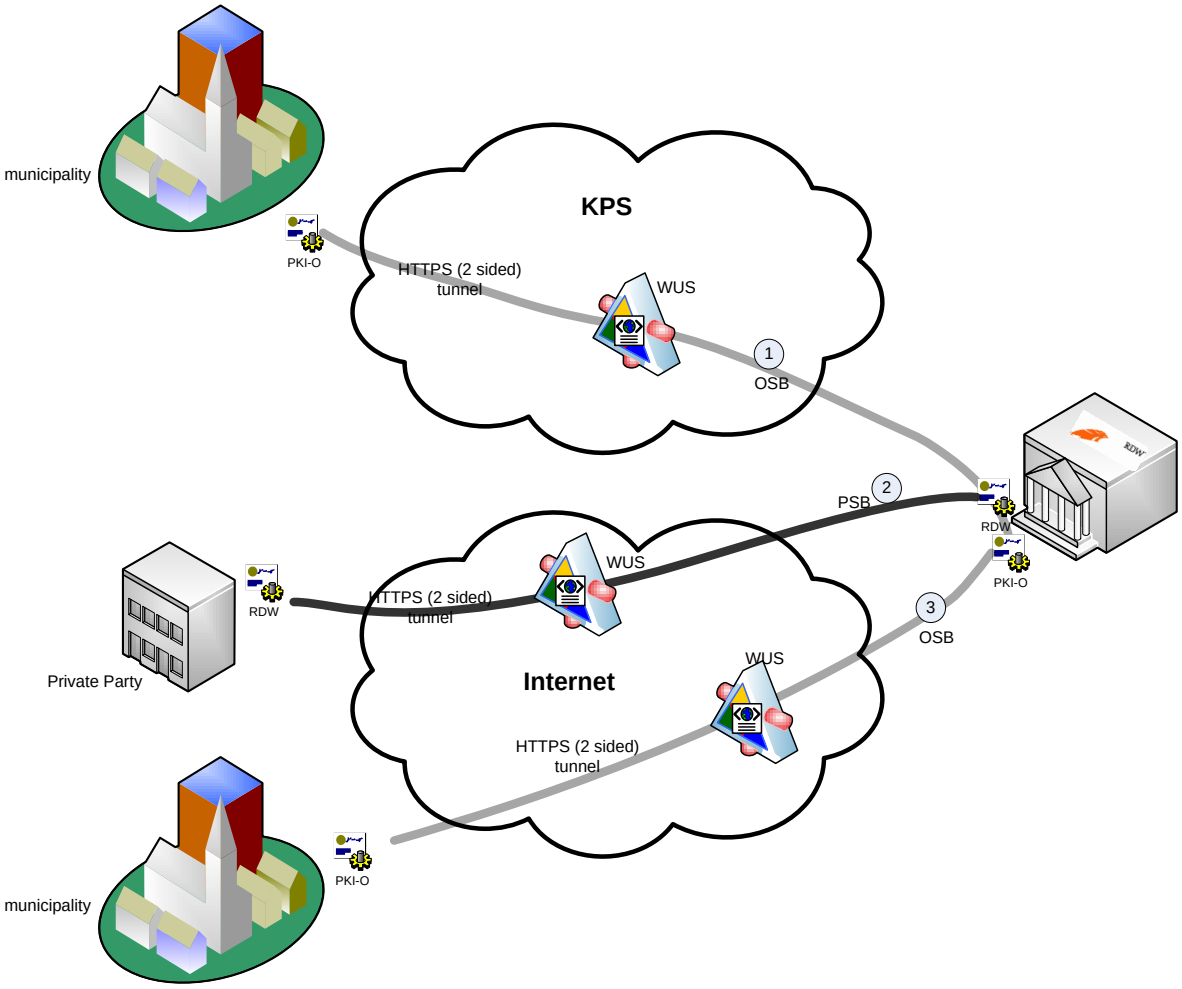

Figure 3 Interaction between RDW, municipalities and private parties

The exchange of information can be divided in 3 layers:

- Transport layer
- In this layer the actual connection is established through either Internet or KPS. KPS is a closed network for governmental parties and therefore dedicated for OSB users. For all transport layer communication 2-sided TLS must be used according the OSB2W-be profile. Logistic Layer Messages are defined according the OSB standard WUS (WS-*):
    - WS-I BP 1.1 which is based on SOAP 1.1, WSDL 1.1, XML 1.0 (second edition)
    - WS-I BP 1.2 with respect to the optional parts of WS-addressing and MTOM
    - WS-I BSP 1.0 with respect to message security based on WS-security
    - WS-I Simple SOAP Binding Profile 1.0
- Content Layer
  The content is based on the functional specification. Content definition is based on the starting points in 1.2.

Figure 2 shows some examples of these layers between different entities:

- Flow 1 describes the interaction between RDW and a municipality according to OSB
    - Transport: KPS
    - Logistic: WUS
    - Content: See chapter 3
    - Identification: PKI-O Certificate

- Flow 2 describes the interaction between RDW and a private party
  - Transport: Internet
  - Logistic: WUS
  - Content: See chapter 3
  - Identification: RDW Certificate
- Flow 3 describes the interaction between RDW and a municipality according to OSB
  - Transport: Internet
  - Logistic: WUS
  - Content: See chapter 3
  - Identification: PKI Certificate

2.6 Security

Although OSB is supporting End-to-End security between web service provider and web service requester, only transport level security will be implemented based on OSB OSB2W-be profile. Transport between requester and provider must use 2-sided TLS.

Identification of both web service requester and web service provider will be done by PKI certificates. A PKI certificate will be used to terminate both sides of the transport tunnel.

These certificates will also be used to identify both requester and provider. Parties using a PKI certificate will be identified by the PIN on the certificate.
Therefore the message specification also contains a field which relates to the certificates, see chapter 3 for the specific messages of NPR.

2.7 How to get WSDL and XSD

The WSDL of the web services that are described in this document can be obtained by typing:
<Server name>?wsdl

The XSD of the web services that are described in this document can be obtained by typing:
<Server name>.xsd2.xsd

3 Overview of web service messages

The NPR web service is used by all entities to interact with NPR.

The following messages are available:

- ❑ Messages to be used by rights acquirers (providers) (see Ch 4)
  - EnrollPSRight
  - RevokePSRight
  - RetrieveRightInfoForProvider
- ❑ Messages to be used by enforcers (see Ch 5)
  - CheckPSRight
- ❑ Messages to be used by area managers (See Ch 6).
  - RetrieveRightInfo
  - RetrieveCheckInfo
- ❑ Messages to be used by all entities (See Ch 7).
  - CalculatePrice
  - RetrieveAreasByLocation
  - RetrieveAreaRegulationFareInfo
  - StatusRequest

The messages of NPR are defined with UTC times unless otherwise described.

4 Messages to be used by providers

4.1 Enroll PSRight

4.1.1 Message dialogue EnrollPSRight

A rights acquirer sends a request message ***PSRightEnrollRequest*** to NPR, containing the data of a PSRight to be registered in NPR. NPR sends a response message ***PSRightEnrollResponse***, containing the message part ***PSRightEnrollResponseData*** if registration was successful. If not, the message contains the element ***PSRightEnrollResponseError***.

The rights acquirer is identified by the OIN or PIN in its certificate. Each request message contains either the OIN or the PIN from the certificate.
The rights acquirer should be authorised for the provided area, if not, the right is not registered and an error message is sent.

The request message contains at least the following information:

- ❑ Identification of an area. The way to specify an area should be one of the following:
    1. *AreaManagerId* and *AreaId*.
    2. A location (*LocationPSRight*), consisting of a *Latitude* and *Longitude* in WGS84 format.
    3. *SellingPointId*.

    If more than one identification is provided, NPR will use the list above to determine priority, e.g. if *AreaManagerId/AreaId + PSRightLocation* are provided, the combination *AreaManager/AreaId* will be used to specify the area, and the location will be omitted.
    If the identification provided does not match any of the supported methods, the PSRight will not be recorded and the rights acquirer will receive an error message.
- ❑ Usage of the PSRight (*UsageId*).
- ❑ Identification of a vehicle (*VehicleId).*
- ❑ Date and time when the PSRight starts *(StartTimePSRight).*
- ❑ UUID *(MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).

Optional information:

- ❑ Country code of a vehicle (*CountryCodeVehicle*).
- ❑ Date and time when the PSRight ends (*EndTimePSRight*).
- ❑ Validity restriction window. A time window in which a validity restriction period for the PSRight can be defined (*StartTimePSrightDayWindow* and *EndTimePSrightDayWindow*). The validity restriction window has to be defined in a local time format.
- ❑ With *AmountPSright* and *VATPSright* an amount can be registered with the enrollment of a PSRight.

To record a PSRight properly, NPR needs to know the area and the area manager to which the area belongs.
When an area is specified through *AreaManagerId/AreaId*, these data are known immediately.
When an area is specified through a location, NPR collects all areas containing the specified location, and the area corresponding with the specified usage will be selected as the area to record with the PSRight.
When an area is specified through a selling point, NPR collects all areas containing the specified selling point, and the area corresponding with the specified usage will be selected as the area to record with the PSRight.
If the area determination results in "no area found" or "more than one area found", the PSRight will not be recorded and the rights acquirer will receive an error message.

EndTimePSRight can be provided immediately, but it can also be provided at a later stage, using the request message ***PSRightRevokeRequest***.
Business Rule: A rights acquirer is obliged to terminate any PSRight he acquires, either by immediately providing an *EndTimePSRight*, or provide it later via a *PSRightRevokeRequest* message.

For usage and rules concerning the elements in the request message, see the request example and Annex A.

Instead of a vehicle ID a disabled persons's parking card ID can be provided in the request message (*VehicleId*). Note that when a disabled person's parking card is used as a vehicle ID the area manager is always The Netherlands (area manager ID is '9999') and the area is always The Netherlands (area ID is 'NEDERLAND')! The value of the usage in this situation reflects the type of disabled person's parking card used to register a parking right: a card for a disabled driver, a card for a disabled passenger or a card for an institution (see also Ch 2).
If no error occurs, the PSRight is recorded in NPR. The response message sent by NPR contains:

- ❑ The area manager and area for which the PSRight is recorded, except when these were already specified in the input (*AreaManagerId/AreaId*)
- ❑ The selling point which is closest to the location for which a PSRight is recorded (*SellingPointId*). The selling point is not specified when the area manager and area for which the PSRight is recorded already were specified in the input
- ❑ Calculated price (*AmountPSRightCalculated, VATPSRightCalculated*), based on the regulation imposed on the area by the area manager. A price calculation is done only when *EndTimePSRight* was provided in the request message. A specification of the calculated price is added if the calculation involved another regulation than the standard regulation, or when more than one regulation was involved in the calculation. In these cases, the price is lower than the usual price according to the standard regulation, because a rebate applies. Examples of rebate regulations are day tickets, evening tickets etc.
  NOTE 1: if NPR was not able to do a calculation, *AmountPSRightCalculated* and *VATPSRightCalculated* will be absent.
  NOTE 2: A PSrightWindow is not taken in account in the calculation of AmountPSRightCalculated.
- ❑ Remarks (*PSRightRemarkList)*, if applicable. For more information on remarks, see Annex B.
- ❑ Adjusted end time (*EndTimePSRightAdjusted*).

  NPR will provide an adjusted end time in these cases:
  - When a right can only be acquired for a limited duration (e.g. maximum parking time one hour). In this case an adjusted end time will be given when no EndTimePSRight was provided, and also when an EndTimePSRight was provided that extends the maximum allowed duration.
  - When the EndTimePSRight was provided in the request, and it is possible to extend duration for the same PSRight price.
  - When in an area with parking interruption a right is registered when a future right is already present. In these cases the end time of the newly registered right will be adjusted, because the parking interruption needs to be maintained (see also PSRightRemark Type 3, Annex B)

  An adjusted end time overrules the end time provided by the rights acquirer (but does not take away the obligation for the rights acquirer to terminate the PSRight).

4.1.2 Example request message

```
<?xml version="1.0" ?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
 <S:Header>
  <a:Action S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/EnrollPSRight</a:Action>
  <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
  <a:MessageID>???</a:MessageID>
  <a:ReplyTo>
   <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
  </a:ReplyTo>
 </S:Header>
 <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
  <PSRightEnrollRequest xmlns="http://rdw.nl/rpv/1.0">
      <PSRightEnrollRequestData>
       <VehicleId>???</VehicleId>
       <!--Optional:-->
       <CountryCodeVehicle>???</CountryCodeVehicle>
       <!--Optional:-->
       <AreaManagerId>???</AreaManagerId>
       <!--Optional:-->
       <AreaId>???</AreaId>
       <!--Optional:-->
       <LocationPSRight>
         <Latitude>???</Latitude>
         <Longitude>???>></Longitude>
       </LocationPSRight>
       <!--Optional:-->
       <SellingPointId>???</SellingPointId>
       <UsageId>???</UsageId>
       <StartTimePSright>???</StartTimePSright>
       <!--Optional:-->
       <EndTimePSright>???</EndTimePSright>
       <!--Optional:-->
       <PSRightWindowList>
         <!--Zero or more repetitions:-->
         <PSRightWindowData>
           <!--Optional:-->
           <StartTimePSrightDayWindow>???</StartTimePSrightDayWindow>
           <!--Optional:-->
           <EndTimePSrightDayWindow>???</EndTimePSrightDayWindow>
           <!--Optional:-->
           <StartTimePSrightWindow>???</StartTimePSrightWindow>
           <!--Optional:-->
           <EndTimePSrightWindow>???</EndTimePSrightWindow>
         </PSRightWindowData>
       </PSRightWindowList>
       <!--Optional:-->
       <AmountPSright>???</AmountPSright>
       <!--Optional:-->
       <VATPSright>???</VATPSright>
       <!--Optional:-->
       <ReferencePSRight>???</ReferencePSRight>
      </PSRightEnrollRequestData>
    </PSRightEnrollRequest>
  </S:Body>
</S:Envelope>
```

4.2 RevokePSRight

4.2.1 Message dialogue RevokePSRight

A rights acquirer sends a request message ***PSRightRevokeRequest*** to NPR, containing the identification of a PSRight, and a time at which the right should end. NPR sends a response message ***PSRightRevokeResponse***, containing the message part ***PSRightRevokeResponseData*** if registration was successful. If not, the message contains the element ***PSRightRevokeResponseError***.

The rights acquirer is identified by the OIN or PIN in his certificate. Each request message contains either the OIN or the PIN from the certificate.
The rights acquirer revoking the right should be the same as the one that registered the PSRight.
If the right already has an EndTime, it is possible to shorten the duration of the right, but it is also possible to extend the duration. Extending a right is only allowed when the original EndTime of the PSRight has not passed yet.

The request message contains at least the following information:

- ❑ Identification of a PSRight (*PSRightId*).
- ❑ Date and time when the PSRight should end (*EndTimePSRight*).
- ❑ UUID (*MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).

If no error occurs, the response message sent by NPR contains:

- ❑ Calculated price (*AmountPSRightCalculated, VATPSRightCalculated*), based on the regulation imposed on the area by the area manager. A specification of the calculated price is added if the calculation involved another regulation than the standard regulation, or when more than one regulation was involved in the calculation. In these cases, the price is lower than the usual price according to the standard regulation, because a rebate applies. Examples of rebate regulations are day tickets, evening tickets, etc.
  NOTE 1: if NPR was not able to do a calculation, *AmountPSRightCalculated* and *VATPSRightCalculated* will be absent.
  NOTE 2: A PSrightWindow is not taken in account in the calculation of AmountPSRightCalculated.
- ❑ Remarks (*PSRightRemarkList*), if applicable. For more information on remarks, see Appendix B.
- ❑ Adjusted end time (*EndTimePSRightAdjusted*).

  NPR will provide an adjusted end time in these cases:
  - When a right can only be acquired for a limited duration (e.g. maximum parking time one hour). In this case an adjusted end time will be given when no EndTimePSRight was provided, and also when an EndTimePSRight was provided that extends the maximum allowed duration.
  - When the EndTimePSRight was provided in the request, and it is possible to extend duration for the same PSRight price.
  - When in an area with parking interruption a right is registered when a future right is already present. In these cases the end time of the newly registered right will be adjusted, because the parking interruption needs to be maintained (see also PSRightRemark Type 3, Annex B)

  An adjusted end time overrules the end time provided by the rights acquirer (but does not take away the obligation for the rights acquirer to terminate the PSRight).

4.2.2 Example request message

```
<?xml version="1.0" ?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
 <S:Header>
  <a:Action S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/RevokePSRight</a:Action>
  <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
  <a:MessageID>???</a:MessageID>
  <a:ReplyTo>
   <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
  </a:ReplyTo>
 </S:Header>
 <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
   <PSRightRevokeRequest xmlns="http://rdw.nl/rpv/1.0">
     <PSRightRevokeRequestData>
       <PSRightId>???</PSRightId>
       <EndTimePSRight>???</EndTimePSRight>
     </PSRightRevokeRequestData>
   </PSRightRevokeRequest>
  </S:Body>
</S:Envelope>
```

4.3 RetrieveRightInfoForProvider

4.3.1 Message dialogue RetrieveRightInfoForProvider

This message can be used to retrieve the rights that were present for a certain vehicle in a specified time frame. Example of usage: in cases of parking tax additional assessments, or objections/appeals to additional assessments.

The provider sends a request message ***RetrieveRightInfoForProvider***. NPR responds with a message ***RetrieveRightInfoForProviderResponse***.

The provider for which information is retrieved, is identified by the OIN or PIN in its certificate. Each request message contains either the OIN or the PIN from the certificate.
The information acquirer should be the same as the one that registered the PSRight.

The request message contains at least the following information:

- ❑ Identification of a vehicle or disabled person's parking card (*VehicleId)* or identification of a right *(PSRightId).*UUID *(MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).

Optional information:

- ❑ When retrieving rights with a vehicle id (VehicleId) or a disabled person's parking card id the *StartTimePSRights* and *EndTimePSRights* must be provided. This is not necessary when retrieving rights with the identification of a right (*PSRightId*).

A vehicle ID or a disabled persons's parking card ID can both be provided as a vehicle ID in the request message (*VehicleId*). A disabled person's parking card ID can be provided to retrieve the data concerning validity of a disabled person's parking card on a specific moment (*StartTimePSRight* and *EndTimePSRight*). If a disabled person's parking card is used the area manager is 'The Netherlands' (area manager ID is '9999') and the area is always 'The Netherlands' (area ID is 'NEDERLAND'.
It is also possible to provide a right ID (*PSRightId*).

The response message contains the following information:

- ❑ Identification of a vehicle or disabled person's parking card (*VehicleId).*
- ❑ Identification of a right (PSRightId).
- ❑ Description or reference of a right (ReferencePSRight).
- ❑ Country code of a vehicle (*CountryCodeVehicle*).
- ❑ Identification of a sellingpoint (SellingPointId).
- ❑ Start time and date when a PSRight has started (*StartTimePSRight*).
- ❑ End time and date when a PSRight has ended (*EndTimePSRight*).
- ❑ Adjusted end time and date when a PSRight has ended (*EndTimePSRightAdjusted*).
- ❑ List of validity windows of a PSRight (*PSRightWindowList*).
- ❑ Identification of an acquirer (*PSRightAcquirerCode*).
- ❑ Description of an acquirer (*PSRightAcquirerDesc*).
- ❑ Identification of an area manager (*AreaManagerId*).
- ❑ Description of an area manager (*AreaManagerDesc*).
- ❑ Identification of an area (*AreaId*).
- ❑ Description of an area (*AreaDesc*).
- ❑ Identification of a usage (*UsageId*).
- ❑ Description of a usage (*UsageDesc*).
- ❑ Time and date of registration when a right has been registered in NPR (*RegistrationTimePSRight*).

- Time and date of registration when a right has been stopped in NPR (*RegistrationEndTimePSRight*).
- Geographical position which was provided with the registration of a right (*LocationPSRight*) consisting of a *Latitude* and *Longitude* in WGS84 format.
- The price for a parking right as determined by the provider (*AmountPSRight*).
- The value added tax (V.A.T.) of the price for a parking right as determined by the provider (*VATPSRight*).
- The price for a parking right as determined on basis of the data in NPR (*AmountPSRightCalculated*).
- The value added tax (V.A.T.) of the price for a parking right as determined on basis of the data in NPR (*VATPSRightCalculated*).
- The price for a parking right as recalculated on basis of the data in NPR (*AmountPSRightRecalculated*).
- The value added tax (V.A.T.) of the price for a parking right as recalculated on basis of the data in NPR (*VATPSRightRecalculated*).
- Time and date when the price and V.A.T. of a parking right were recalculated for the last time (*TimeRecalculation*).

4.3.2 Example request message

```
<?xml version="1.0" ?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
 <S:Header>
  <a:Action S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/RetrieveRightInfoForProvider</a:Action>
  <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
  <a:MessageID>???</a:MessageID>
  <a:ReplyTo>
   <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
  </a:ReplyTo>
 </S:Header>
 <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
    <RetrieveRightInfoForProviderRequest xmlns="http://rdw.nl/rpv/1.0">
      <RightInfoRequestData>
        <!--Optional:-->
        <VehicleId>???</VehicleId>
        <!--Optional:-->
        <PSRightId>???</PSRightId>
        <!--Optional:-->
        <StartTimePSRights>???</StartTimePSRights>
        <!--Optional:-->
        <EndTimePSRights>???</EndTimePSRights>
      </RightInfoRequestData>
    </RetrieveRightInfoForProviderRequest>
  </S:Body>
</S:Envelope>
```

5 Messages to be used by enforcers

5.1 CheckPSRight

5.1.1 Message dialogue CheckPSRight

A checking organisation sends a request message ***PSRightCheckRequest***. NPR responds with a message ***PSRightCheckResponse***, containing the message part ***PSRightCheckResponseData*** if the message was processed succesfully. If not, the message contains the element ***PSRightCheckResponseError.***

The checking organisation is identified by the OIN or PIN in its certificate. Each request message contains either the OIN or the PIN from the certificate.
The checking organisation should be authorised to check for PSRights in the specified area, if not, NPR will send an error message and no information is given.

The request message contains at least the following information:

- ❑ Identification of an area. The way to specify an area should be one of the following:
  1. *AreaManagerId* and *AreaId*.
  2. A location (*CheckLocation*), consisting of a *Latitude* and *Longitude* in WGS84 format.
  3. An address (*CheckAddress*), consisting of *StreetCode* or *StreetName*, *HouseNumber*, *HouseNumberAdditions*and *PlaceOfResidence*.
     If more than one identification is provided, NPR will use the list above to determine priority, e.g. if *AreaManagerId/AreaId + CheckLocation* are provided, the combination *AreaManager/AreaId* will be used to specify the area, and the location will be omitted. If *StreetCode* and *StreetName* are both provided, NPR will use *StreetCode* and omit *StreetName*.
     If the identification provided does not match any of the supported methods, NPR will return an error message and no information will be given.
- ❑ Usage that is checked (*UsageId*).
- ❑ Identification of a vehicle (*VehicleId).*
- ❑ Date and time at which must be checked whether or not a PSRight is present. *(CheckTime)*
- ❑ *ExtraInfoIndicator*. If this indicator is set to "N" (no), the checking organisation wants a response that consists of a CheckAnswer only. If this indicator is set to "Y" (yes), a response is given that consists of a CheckAnswer with additional information if available.
- ❑ UUID *(MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).

Optional information

- ❑ Country code of a vehicle (*CountryCodeVehicle*).
- ❑ Identification or description that a checking organisation can register with the logging in NPR of a check (*ReferenceCheckOrg*).

To check for PSRights properly, NPR needs to know the area that is checked and the area manager to which the area belongs.
When an area is specified through *AreaManagerId/AreaId*, these data are known immediately.
When an area is specified through a *CheckLocation*, NPR collects the areas containing the specified location.
When an area is specified through a *CheckAddress,* the location of the address is determined, and the resulting CheckLocation is used to determine the areas to consider.
All areas with a usage either matching the specified usage, or with a usage that is more specific than the specified usage, will be considered in the check for PSRights.

If the area determination results in "no area found", NPR will return an error message and no information will be given.

Instead of a vehicle ID a disabled persons's parking card IDcan be provided in the request message (*VehicleId*). Note that when a disabled person's parking card is used as a vehicle ID the area manager is always The Netherlands (area manager ID is '9999') and the area is always The Netherlands (area ID is 'NEDERLAND')! The value of the usage in this situation reflects the type of disabled person's parking card used to register a parking right: a card for a disabled driver, a card for a disabled passenger or a card for an institution.

If no error occurs, the response message contains the following information:

- ❑ Answer given by NPR at a request to check for a PSRight for a certain vehicle in a specified area at a specified time (*Checkanswer*).
- ❑ Table containing the data of 1 or more areas. (*Areatable*).
- ❑ The area that has been checked. (*AreaId*).
- ❑ The price to pay for one hour of parking (*PriceOneHourParking*).
- ❑ Element containing a list of 1 or more PSRights associated with the check for PSRights and for which information is given (*PSRightCheckPSRightList* with *PSRightCheckPSRightData*).
- ❑ Identification of a right (PSRightId).
- ❑ Identification of an area (*AreaId*).
- ❑ Description of an area (*AreaDesc*).
- ❑ Date and time of the start and end of a PSRight (*StartTimePSRight* and *EndTimePSRight*).
- ❑ Adjusted end time and date when a PSRight has ended (*EndTimePSRightAdjusted*).
- ❑ List of validity windows of a PSRight (*PSRightWindowList*).
- ❑ Description or reference of a right (ReferencePSRight).
- ❑ Indicator denoting whether or not acquired rights are usable (*PSRightIndicator*).
- ❑ Identification of a sellingpoint (*SellingPointId*).
- ❑ Description of a selling point (*SellingPointDesc)*
- ❑ Identification of a usage (*UsageId*).
- ❑ Description of a usage (*UsageDesc*).
- ❑ Description of a regulation imposed by the area manager (*RegulationDesc*)
- ❑ The minimum amount that has to be paid for acquiring a PSRight (*AmountRatePart*)
- ❑ Step size of the fare (*StepSizeFarePart*)
- ❑ Grace period of the parking area (*GracePeriodBefore* and *GracePeriodAfter*)

The check results in a *CheckAnswer*, which is returned in the response message. The following *CheckAnswer*s are possible:
'Y'(es), meaning that either a PSRight was found that is valid in the specified area at *CheckTime*, or that at *CheckTime* no PSRight is required for the specified area.
'N'(o), meaning that no PSRight was found that is valid in the specified area at *CheckTime*, while at *CheckTime* the presence of a valid PSRight is required.
Together with CheckAnswer, the list of areas that have been considered, is returned. This is not done when the area was specified in the request message.

If one or more areas are returned in the response message, the price for one hour of parking is determined and also returned for each of those areas.

If the ExtraInfoIndicator was set to "Y" in the request, NPR will provide extra information, which is:
In case of CheckAnswer = "Y"

- Information about the PSRight that was found, or a message that a PSRight is not required.

In case of CheckAnswer = "N"

- Information about PSRights found in other areas of the same area manager code and the same UsageId (Note: a checking organisation receives only information about areas where the organisation is authorised to check).
- Information about PSRights found in the area specified, before and after check time, within a time frame of 24 hours.

Every check for PSRights is logged in NPR. The logging consists of the data provided in the request message ***PSRightCheckRequest***, and the *CheckAnswer* (Y or N) that NPR has given.

5.1.2 Example request message

```
<?xml version="1.0" ?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
 <S:Header>
  <a:Action S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/CheckPSRight</a:Action>
  <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
   <a:MessageID>???</a:MessageID>
  <a:ReplyTo>
   <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
  </a:ReplyTo>
 </S:Header>
 <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
   <PSRightCheckRequest xmlns="http://rdw.nl/rpv/1.0">
     <PSRightCheckRequestData>
       <!--Optional:-->
       <AreaManagerId>???</AreaManagerId>
       <!--Optional:-->
       <AreaId>???</AreaId>
       <!--Optional:-->
       <CheckLocation>
         <Latitude>???</Latitude>
         <Longitude>???</Longitude>
       </CheckLocation>
       <!--Optional:-->
       <CheckAddress>
         <!--Optional:-->
         <StreetCode>???</StreetCode>
         <!--Optional:-->
         <StreetName>???</StreetName>
         <HouseNumber>???</HouseNumber>
         <!--Optional:-->
         <HouseNumberAdditions>???</HouseNumberAdditions>
         <PlaceOfResidence>???</PlaceOfResidence>
       </CheckAddress>
       <UsageId>???</UsageId>
       <VehicleId>???</VehicleId>
       <!--Optional:-->
       <CountryCodeVehicle>???</CountryCodeVehicle>
       <CheckTime>?</CheckTime>
       <!--Optional:-->
       <ReferenceCheckOrg>???</ReferenceCheckOrg>
       <ExtraInfoIndicator>???</ExtraInfoIndicator>
     </PSRightCheckRequestData>
   </PSRightCheckRequest>
  </S:Body>
</S:Envelope>
```

6 Messages to be used by area managers

6.1 RetrieveRightInfo

6.1.1 Message dialogue RetrieveRightInfo

This message can be used to retrieve the rights that were present for a certain vehicle around a specified date and time. Example of usage: in cases of parking tax additional assessments, or objections to additional assessments.
The area manager sends a request message ***RetrieveRightInfo***. NPR responds with a message ***RetrieveRightInfoResponse***.

The area manager for which information is retrieved, is identified by the OIN or PIN in its certificate. Each request message contains either the OIN or the PIN from the certificate.

The request message contains the following information:

- ❑ Identification of a vehicle or disabled person's parking card (*VehicleId) or identification of a right (PSRightId).*
- ❑ UUID *(MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).
- ❑ Date and time (*Indicatortime*) around which the right information should be retrieved.

For the area manager, the information of all rights registered in NPR for the specified vehicle that were started or stopped within 24 hours around the IndicatorTime, are returned. All information concerning a specified right is returned, in case a PSRightID was used in the request. If no rights were found, the response consists of an empty message.

A vehicle ID or a disabled persons's parking card ID can both be provided as a vehicle ID in the request message (*VehicleId*). A disabled person's parking card ID can be provided to retrieve the data concerning validity of a disabled person's parking card at a specific moment (*IndicatorTime*).
The response message contains the following information:

- ❑ Identification of a vehicle or disabled person's parking card (*VehicleId).*
- ❑ Identification of a right (PSRightId).
- ❑ Description or reference of a right (ReferencePSRight).
- ❑ Country code of a vehicle (*CountryCodeVehicle*).
- ❑ Identification of a selling point (SellingPointId).
- ❑ Start time and date when a PSRight has started (*StartTimePSRight*).
- ❑ End time and date when a PSRight has ended (*EndTimePSRight*).
- ❑ Adjusted end time and date when a PSRight has ended (*EndTimePSRightAdjusted*).
- ❑ List of validity windows of a PSRight (*PSRightWindowList*).
- ❑ Identification of an acquirer (*PSRightAcquirerCode*).
- ❑ Description of an acquirer (*PSRightAcquirerDesc*).
- ❑ Identification of an area manager (*AreaManagerId*).
- ❑ Description of an area manager (*AreaManagerDesc*).
- ❑ Identification of an area (*AreaId*).
- ❑ Description of an area (*AreaDesc*).
- ❑ Identification of a usage (*UsageId*).
- ❑ Description of a usage (*UsageDesc*).
- ❑ Time and date of registration when a right has been registerd in NPR (*RegistrationTimePSRight*).
- ❑ Time and date of registration when a right has been stopped in NPR (*RegistrationEndTimePSRight*).
- ❑ Geographical position which was provided with the registration of a right (*LocationPSRight*) consisting of a *Latitude* and *Longitude* in WGS84 format.

- The price for a parking right as determined by the provider (AmountPSRight).
- The value added tax (V.A.T.) of the price for a parking right as determined by the provider (*VATPSRight*).
- The price for a parking right as determined on basis of the data in NPR (*AmountPSRightCalculated*).
- The value added tax (V.A.T.) of the price for a parking right as determined on basis of the data in NPR (*VATPSRightCalculated*).
- The price for a parking right as recalculated on basis of the data in NPR (*AmountPSRightRecalculated*).
- The value added tax (V.A.T.) of the price for a parking right as recalculated on basis of the data in NPR (*VATPSRightRecalculated*).
- Time and date when the price and V.A.T. of a parking right were recalculated for the last time (*TimeRecalculation*).

6.1.2 Example request message

```
<?xml version="1.0" ?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
  <S:Header>
    <a:Action S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/RetrieveRightInfo</a:Action>
    <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
    <a:MessageID>???</a:MessageID>
    <a:ReplyTo>
      <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
    </a:ReplyTo>
  </S:Header>
  <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
     <RetrieveRightInfoRequest xmlns="http://rdw.nl/rpv/1.0">
       <RightInfoRequestData>
         <!--Optional:-->
         <VehicleId>???</VehicleId>
         <!--Optional:-->
         <PSRightId>???</PSRightId>
         <!--Optional:-->
         <IndicatorTime>???</IndicatorTime>
       </RightInfoRequestData>
     </RetrieveRightInfoRequest>
  </S:Body>
</S:Envelope>
```

6.2 RetrieveCheckInfo

6.2.1 Message dialogue RetrieveCheckInfo

This message can be used to determine if a certain vehicle was checked around a specified time, and what check result was given by NPR.
Example of usage: in cases of parking tax additional assessments, or objections to additional assessments.

The area manager employee sends a request message ***RetrieveCheckInfo***. NPR responds with a message ***RetrieveCheckInfoResponse***.

The area manager for which information is retrieved, is identified by the OIN or PIN in its certificate. Each request message contains either the OIN or the PIN from the certificate.

The request message contains the following information:

- ❑ Identification of a vehicle or disabled person's parking card (*VehicleId) or identification of a right (PSRightId).*
- ❑ Date and time (*Indicatortime*) around which the check information should be retrieved.
- ❑ UUID (*MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).

For the specified area manager, information of all logged check answers registered in NPR for the vehicle or disabled person's parking card, with a reference date-time within 24 hrs. of IndicatorTime, are returned. If no check answers were found, the response consists of an empty message.

A vehicle ID or a disabled persons's parking card ID can both be provided as a vehicle ID in the request message (*VehicleId*). A disabled person's parking card ID can be provided to retrieve the data concerning validity of a disabled person's parking card at a specific moment (*IndicatorTime*).

The response message contains the following information:

- ❑ Identification of a vehicle or disabled person's parking card (*VehicleId).*
- ❑ Identification of an area manager (*AreaManagerId*).
- ❑ Description of an area manager (*AreaManagerDesc*).
- ❑ Date and time of the check of the PSRight.
- ❑ Indicator denoting if the checking organisation received extra information, while checking for PSRights (*ExtraInfoIndicator*).
- ❑ Identification or description that a checking organisation can register with the logging in NPR of a check (*ReferenceCheckOrg*).
- ❑ Answer given by NPR at a request to check for a PSRight for a certain vehicle in a specified area at a specified time (*Checkanswer*).
- ❑ Code of a PSRight checking organisation (*CheckOrgCode*).
- ❑ Description of a PSRight checking organisation (*CheckOrgDesc*).
- ❑ Identification of a usage (*UsageId*).
- ❑ Identification of a area (*AreaId*).
- ❑ Description of an area (*AreaDesc*).
- ❑ Specification of the area that is checked for the presence of PSRights (*Checklocation*).

6.2.2 Example request message

```
<?xml version="1.0"?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
  <S:Header>
    <a:Action S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/RetrieveCheckInfo</a:Action>
    <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
    <a:MessageID>???</a:MessageID>
    <a:ReplyTo>
      <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
    </a:ReplyTo>
  </S:Header>
  <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
    <RetrieveCheckInfoRequest xmlns="http://rdw.nl/rpv/1.0">
      <CheckInfoRequestData>
        <VehicleId>???</VehicleId>
        <IndicatorTime>???</IndicatorTime>
      </CheckInfoRequestData>
    </RetrieveCheckInfoRequest>
  </S:Body>
</S:Envelope>
```

7 Messages to be used by all entities

7.1 CalculatePrice

7.1.1 Message dialogue CalculatePrice

An entity sends a request message ***CalculatePriceRequest*** to NPR, containing the data of a fictional PSRight, to calculate its price. NPR sends a response message ***CalculatePriceResponse***, containing the message part ***CalculatePriceResponseData*** if price calculation was successful. If not successful, the message contains the element ***CalculatePriceResponseError***.

The request message contains the information necessary to calculate the price of a PSRight, which could be an actual PSRight (calculate before recording), a potential PSRight (price inquiry) or a hypothetical PSRight (e.g testing, what if?).

The entity is identified by the OIN or PIN in its certificate. Each request message contains either the OIN or the PIN from the certificate.
A rights acquirer should be authorised to do a calculate price for the specified area. If not, an error message is sent.

The request message contains the following information:

- ❑ Identification of an area. The way to specify an area should be one of the following:
  1. *AreaManagerId* and *AreaId*.
  2. A location (*PSRightLocation*), consisting of a *Latitude* and *Longitude* in WGS84 format.
  3. *SellingPointId*.

  If more than one identification is provided, NPR will use the list above to determine priority, e.g. if *AreaManagerId/AreaId + PSRightLocation* are provided, the combination *AreaManager/AreaId* will be used to specify the area, and the location will be omitted.
  If the identification provided does not match any of the supported methods, the PSRight will not be calculated and the rights acquirer will receive an error message.
- ❑ Usage of the PSRight (*UsageId*).
- ❑ Date and time when the PSRight starts *(StartTimePSRight).*
- ❑ Date and time when the PSRight ends *(EndTimePSRight).*
- ❑ UUID *(MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).

To be able to calculate the price of a PSRight properly, NPR needs to know the area and the area manager to which the area belongs.
When an area is specified through *AreaManagerId/AreaId*, these data are known immediately.
When an area is specified through a location, NPR collects all areas containing the specified location, and the area corresponding with the specified usage will be selected as the area to calculate a price for.
When an area is specified through a selling point, NPR collects all areas containing the specified selling point, and the area corresponding with the specified usage will be selected as the area to calculate a price for.
If the area determination results in "no area found" or "more than one area found", the rights acquirer will receive an error message.

If no error occurs, the response message sent by NPR contains

- ❑ The area and area manager for which a calculation was done, unless this was already specified in the input (*AreaId /AreaManagerId*).
- ❑ Calculated price (*AmountPSRightCalculated, VATPSRightCalculated*), based on the regulation imposed on the area by the area manager.

A specification of the calculated price is added if the calculation involved another regulation than the standard regulation, or when more than one regulation was involved in the calculation. In these cases, the price is lower than the usual price according to the standard regulation, because a rebate applies. Examples of rebate regulations are day tickets, evening tickets, etc.

- ❑ Adjusted end time (*EndTimePSRightAdjusted*).

  NPR will provide an adjusted end time in these cases:

  - When a right can only be acquired for a limited duration (e.g. maximum parking time one hour). In this case an adjusted end time will be given when no EndTimePSRight was provided, and also when an EndTimePSRight was provided that extends the maximum allowed duration.
  - When the EndTimePSRight was provided in the request, and it is possible to extend duration for the same PSRight price.

  An adjusted end time overrules the end time provided by the rights acquirer.
- ❑ A list that further specifies AmountPSRightCalculated (*SpecifCalcAmountList*). The list is only present when the calculated amount is based on additional regulation(s), besides the standard regulation of the area.

7.1.2 Example request message

```
<?xml version="1.0" ?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
 <S:Header>
  <a:Action S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/CalculatePrice</a:Action>
  <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
 <a:MessageID>???</a:MessageID>
  <a:ReplyTo>
   <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
  </a:ReplyTo>
 </S:Header>
 <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
    <CalculatePriceRequest xmlns="http://rdw.nl/rpv/1.0">
      <CalculatePriceRequestData>
        <!--Optional:-->
        <AreaManagerId>???</AreaManagerId>
        <!--Optional:-->
        <AreaId>???</AreaId>
        <!--Optional:-->
        <LocationPSRight>
          <Latitude>???</Latitude>
          <Longitude>???</Longitude>
        </LocationPSRight>
        <!--Optional:-->
        <SellingPointId>???</SellingPointId>
        <UsageId>???</UsageId>
        <StartTimePSright>???</StartTimePSright>
        <!--Optional:-->
        <EndTimePSright>???</EndTimePSright>
      </CalculatePriceRequestData>
    </CalculatePriceRequest>
  </S:Body>
</S:Envelope>
```

7.2 RetrieveAreasByLocation

7.2.1 Message dialogue RetrieveAreasByLocation

An entity sends a request message ***RetrieveAreasByLocationRequest***, containing a location. NPR sends a response message ***RetrieveAreasByLocationResponse***, containing a list of areas matching the specified location, together with their usage, as well as the address that is closest to the specified location (if available).

The entity is identified by the OIN or PIN in its certificate. Each request message contains either the OIN or the PIN from the certificate.

The request message contains the following information:

- ❑ A location (*AreaLocation*) (mandatory), consisting of a *Latitude* and *Longitude* in WGS84 format.
  or
- ❑ An address (*AddressData*) consisting of *StreetCode* or *StreetName*, *HouseNumber*, *HouseNumberAdditions* and *PlaceOfResidence*.
  or
- ❑ A sellingpoint identification (*SellingPointId*)
  If more than one identification is provided, NPR will use the list above to determine priority.
- ❑ If the identification provided does not match any of the supported methods, NPR will return an error message and no information will be given.UUID *(MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).

Optional information:

- ❑ Date and time for matching areas at an *x* moment (*ReferenceTime*).
- ❑ Usage of the areas to retrieve (*UsageId*).

If no reference date-time is provided, all current and future areas matching the specified location, are retrieved. Otherwise all areas valid at reference date-time, matching the specified location, are retrieved.
If a *UsageId* is provided, only found areas matching the specified UsageId are returned, otherwise all areas are returned. The hierarchy in the UsageIds is not taken in account.
Besides the area or areas that were found, the address that is closest to the specified location, is returned. Note that an address will only be returned if there were areas found (if available).

If no error occurs, the response message sent by NPR consists of the following

- ❑ Identification of an area manager (*AreaManagerId*).
- ❑ List of areas matching the specified location (*AreaTable*) consisting of *AreaId, AreaDesc, StartDateArea, EndDateArea, UsageId , GracePeriodBefore, GracePeriodAfter* and *PriceOneHourParking*, if applicable.
- ❑ Address closest to the specified location (*LocationAddress*) consisting of *StreetCode, StreetName*, *HouseNumber*, *HouseNumberAdditions* and *PlaceOfResidence.*

7.2.2 Example request message

```
<?xml version="1.0" ?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
 <S:Header>
  <a:Action S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/RetrieveAreasByLocation</a:Action>
  <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
  <a:MessageID>???</a:MessageID>
  <a:ReplyTo>
   <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
  </a:ReplyTo>
 </S:Header>
 <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
    <RetrieveAreasByLocationRequest xmlns="http://rdw.nl/rpv/1.0">
      <RetrieveAreasByLocationRequestData>
        <!--Optional:-->
        <AreaLocation>
          <Latitude>???</Latitude>
          <Longitude>???</Longitude>
        </AreaLocation>
        <!--Optional:-->
        <RequestAddress>
          <!--Optional:-->
          <StreetCode>???</StreetCode>
          <!--Optional:-->
          <StreetName>???</StreetName>
          <HouseNumber>???</HouseNumber>
          <!--Optional:-->
          <HouseNumberAdditions>???</HouseNumberAdditions>
          <PlaceOfResidence>???</PlaceOfResidence>
        </RequestAddress>
        <!--Optional:-->
        <SellingPointId>???</SellingPointId>
        <!--Optional:-->
        <ReferenceTime>???</ReferenceTime>
        <!--Optional:-->
        <UsageId???</UsageId>
      </RetrieveAreasByLocationRequestData>
    </RetrieveAreasByLocationRequest>
  </S:Body>
</S:Envelope>
```

7.3 RetrieveAreaRegulationFareInfo

7.3.1 Message dialogue RetrieveAreaRegulationFareInfo

An entity can ask for information about the areas, regulations and fares that are recorded in NPR. It is possible to ask information about one specific area, as well as information about all recorded areas.

The entity for which information is retrieved, is identified by the OIN or PIN in its certificate. Each request message contains either the OIN or the PIN from the certificate.

- ❑ The request message contains the following information:Identification of an area manager (*AreaManagerId*).
- ❑ UUID *(MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).

Optional information:

- ❑ Identification of an area (*AreaId).*
- ❑ Reference date-time *(CheckTime).*

If no reference date-time is provided, the current and future data will be retrieved, otherwise the data that are valid on reference date-time will be retrieved.
If no AreaId is provided, all recorded areas will be retrieved, as well as all recorded regulations and all recorded fares.
If an AreaId is provided with an reference date-time, the specified area is retrieved, together with the associated regulation(s) and the associated fare(s). The area data also contains the price for one hour of parking, if applicable (*PriceOneHourParking*).
If no areas were found, the response consists of an empty message.

If no error occurs, the response message sent by NPR consists of the following

- ❑ List of areas matching the specified request (*AreaTable*) consisting of *AreaId, AreaDesc, StartDateArea, EndDateArea, UsageId , GracePeriodBefore, GracePeriodAfter* and *PriceOneHourParking*, if applicable.
- ❑ List of regulations for the retrieved areas (*RegulationTable*) consisting of *RegulationId, RegulationDesc, RegulationType, StartDateRegulation* and *EndDateRegulation*.
- ❑ List of Time frames data for the retrieved regulations (*TimeFrameTable*) consisting of *DayTimeFrame, StartTimeTimeFrame*, *EndTimeTimeFrame*, *ClaimRightPossible*, *MaxDurationRight* and *FareTimeFrame*.
- ❑ List of Fare data for the retrieved regulations (*FareTable*) constisting of *StartDateFarePart*, *EndDateFarePart*, *StartDurationFarePart*, *EndDurationFarePart*, *TotalAmountParts*, and *StepSizeFarePart*.

7.3.2 Example request message

```
<?xml version="1.0" ?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
  <S:Header>
    <a:Action
S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/RetrieveAreaRegulationFareInfoRequest</a:Action>
    <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
    <a:MessageID>???</a:MessageID>
    <a:ReplyTo>
      <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
    </a:ReplyTo>
  </S:Header>
  <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
     <RetrieveAreaRegulationFareInfoRequest xmlns="http://rdw.nl/rpv/1.0">
       <AreaArrangeAccountInfoRequestData>
         <AreaManagerId>???</AreaManagerId>
         <!--Optional:-->
         <AreaId>???</AreaId>
         <!--Optional:-->
         <CheckTime>???</CheckTime>
       </AreaArrangeAccountInfoRequestData>
     </RetrieveAreaRegulationFareInfoRequest>
   </S:Body>
</S:Envelope>
```

7.4 StatusRequest

A Connected system is always allowed to send a Status Request in order to check the availability of NPR and the connection. The Response by NPR (if possible) contains OK or NOK and the error

7.4.1 Message dialogue StatusRequest

An entity sends a request message ***StatusRequestRequest***. NPR sends a response message ***StatusRequestResponse***, containing the status OK/NOK and if applicable an error or information message

The entity is identified by the OIN or PIN in its certificate. Each request message contains either the OIN or the PIN from the certificate.

The following information is provided in the request message:

- ❑ Date and time at which the request is sent (*StatusTime*).UUID *(MessageID*) which is the identification of a request and can be used for a resend (see also Ch 8.2).

Optional information:

- ❑ A reference that the sender of the status request can provide with the status request (*StatusReference*).

If no error occurs, the response message sent by NPR consists of the following

- ❑ Time at which a StatusRequest was processed (*StatusTime*).
- ❑ The status of NPR, which is OK or NOK *(StatusRPV*).
- ❑ The reference defined in the request (*StatusReference*).

7.4.2 Example request message

```
<?xml version="1.0" ?>
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/" xmlns:a="http://www.w3.org/2005/08/addressing">
 <S:Header>
  <a:Action S:mustUnderstand="1">http://rdw.nl/rpv/1.0/IRegistration/StatusRequestRequest</a:Action>
  <h:PIN xmlns="http://rdw.nl/rpv/1.0" xmlns:h="http://rdw.nl/rpv/1.0">???</h:PIN>
  <a:MessageID>???</a:MessageID>
  <a:ReplyTo>
   <a:Address>http://www.w3.org/2005/08/addressing/anonymous</a:Address>
  </a:ReplyTo>
 </S:Header>
 <S:Body xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
   <StatusRequestRequest xmlns="http://rdw.nl/rpv/1.0">
     <StatusRequestRequestData>
       <StatusTime>???</StatusTime>
       <!--Optional:-->
       <StatusReference>???</StatusReference>
     </StatusRequestRequestData>
   </StatusRequestRequest>
  </S:Body>
</S:Envelope>
```

8 Error handling

8.1 Error procedure

In this chapter the procedure for connected systems is described in case of an error situation. From the point of view of the connected system two types of errors can occur after sending a request to NPR:

1. *Error:* Reply from NPR with an error message 1-206.
2. *Communication lost and error messages 302 and 999:* no Reply from NPR is received within a time-out period, set by the Connected system (e.g. 10s) or a Reply with error code 302 and 999.

Ad 1 Reply with an error messsage 1 – 206:
All error messages except 302 and 999 are errors in the content of the Request. A resend of the Request is not allowed because it will result in the same error: repair of the content of the Request is required. Contact the help desk if analysis of the Request shows that a parameter in NPR seems incorrect.

Ad 2 State "Communication lost":
This state is started when the Connected system does not get a Reply on a Request within a certain period (e.g. a time-out after 10 seconds). Or when the Reply indicates error code 302 or 999. The following procedure starts:

1. The Connected system should decide after a certain number of retries (e.g. 3 times) to stop sending Requests to NPR and buffer them.(In case of error code 302 or 999, the NPR system will, after a certain period, automatically stop sending error code 302 or 999 and produce a time-out)
2. Start sending StatusRequests, for example every 60 seconds.
3. After 5 minutes of communication loss, contact Helpdesk
4. After communication is re-established (according to Help desk or when StatusResponse OK is received), start sending buffered messages *with the original UUID.*

8.2 Resending a Request

A connected system can always resend a Request with the original UUID. If NPR already replied with a response, the original Response based on the UUID is replied, if the message type of the resent Request is the same as the original Request. In this situation changes in the content of the resent Request in comparison to the original Request are neglected and the original Reply is sent, even if it contains error messages.
If the original Response contained an error code 302 or 999, the resent Request is processed as a regular Request.

A. Annex A – Description of XML elements

This Annex describes in detail the elements used in the messages, in alphabetical order. The following information is provided:

- Item

The name of the XML element. Some elements have values, others do not, e.g. nesting elements to support multiple occurrences.

- Type

The data type, only applicable to those elements that have a value.

Type	Description
Text	A sequence of characters.
DT	Date and Time in UTC format (Co-ordinated Universal Time) as *'CCYY-MM-DDThh:mm:ss*Z' or Date and Time in local time ± offset to UTC '*CCYY-MM-DDThh:mm:ss±hh:mm*'
Date	Date in format CCYYMMDD, area manager local time.
Int	Numeric, integer values only.
Dec	Numeric, fractional numbers possible.
Enum	Enumeration; the element has a specified set of values. The possible values will be listed.

- Len

This column indicates the length of the element.

  - 'n' indicates a fixed length where 'n' is the number of characters
  - 'm-n' indicates a variable length where "m" is the minimum and "n" is the maximum

- Description

Information about the purpose of the element, rules for usage and examples of usage. For elements of type "Enum", i.e. elements with a fixed set of values, in the description the possible values will be listed.

General message rules

- ❑ The order in which to put tags, is specified in the XSD. Putting tags in the wrong order, will result in an error while processing the request.The XSD is leading for defining the tag order.
- ❑ In request messages, optional elements that are not applicable, can be delivered in two ways:
  - Leave out the tag
  - Include the tag, but state explicitly that it has no value, i.e. value xsi:nil="**true**".

  Note: If an empty tag is sent with no explicit "nil" value, this will result in an XSD validation error.
- ❑ In response messages, NPR delivers optional elements that have no value, by including the tag in the message, stating explicitly that it has no value, i.e. value xsi:nil="**true**".
- ❑ Dates and times of PSRights and reference date-times are either delivered as UTC , i.e. format *CCYY-MM-DDThh:mm:ss*Z, or delivered in local time with an offset to UTC, i.e. format *CCYY-MM-DDThh:mm:ss±hh:mm*. If no Z or offset is provided, UTC is assumed.
- ❑ Dates and times used for managing areas, regulations and fares, as well as dates and times concerning price calculation, are area manager local dates and times.
- ❑ The format of tags with price values is €.cc

Item	Type	Len	Description
AmountFarePart	Dec	1.8-7.8	Amount per step size that has to be paid in a fare
AmountFraction	Dec	1.2-8.2	Amount, being a fraction of AmountPSRightCalculated. Is used within a SpecifCalcAmountList.
AmountPSRight	Dec	1.2-8.2	The price to pay for the PSRight. VAT included. Format €.cc. The price for the PSRight, calculated by the rights acquirer or the selling point (e.g. parking meter) that was used for acquiring the PSRight.
AmountPSRightCalculated	Dec	1.2-8.2	Price to pay for the PSRight, VAT included. Format €.cc. A price calculated by NPR, set by the area manager. The calculation is based on the regulation applicable to the area where the PSRight was acquired, and depends on the day or days the right was acquired, the duration of the right, and the fare per hour. A price is calculated anytime a request message is sent that contains *EndTimePSRight* (new or changed).
AmountRatePart	Dec	1.2-8.2	The minimum amount that has to be paid for acquiring a PSRight. Format €.cc. This amount is the minimum timeframe to pay, multiplied by the fare at time = *CheckTime.*
AreaData			Data of 1 specific area.
AreaDesc	Text	1-80	Description of the Area in the NPR, as set by the area manager.
AreaId	Text	1-10	Identification of the Area in the NPR. The area IDs in NPR are set by the area manager, they are unique for the area manager but not necessarily unique within NPR.
AreaLocation			This node contains the location of an area
AreaManagerId	Int	1-4	Identification of the area manager in the NPR. Area manager identifications are unique in NPR, and are issued by SHPV.
AreaManagerDesc	Text	1-80	Description of the Area Manager in NPR.
AreaRegulationData			Data of 1 specific regulation applying to an area.
AreaRegulationTable			Table containing the regulations that apply to a certain area.
AreaTable			Table containing the data of 1 or more areas.
CheckAddress			Node in which an address is given, specifying the area that should be checked for the presence of PSRights.
CheckAnswer	Text	1	Answer given by NPR at a request to check for a PSRight for a certain vehicle in a specified area at a specified time. Value list: Y = Yes, a PSRight was found. N = No, a PSRight was not found.
CheckInfoData			Information on one specific logged check.

Item	Type	Len	Description
CheckInfoList			A list of information on logged checks.
CheckLocation			Node in which a location is given, specifying the area that should be checked for the presence of PSRights.
CheckOrgCode	Int	5	Code of a PSRight checking organisation. CheckOrgCodes are unique in NPR, and are issued by SHPV.
CheckOrgDesc	Text	1-80	Description of a PSRight checking organisation.
CheckTime	DT		Date and time at which must be checked whether or not a PSRight is present.
ClaimRightPossible	Int	1	Indicator whether or not PSRights are valid in a timeframe Y = Yes, claimed PSRights are valid. N = No, claimed PSRights are not valid.
CountryCodeCheck	Text	1-3	Denotes the country of origin of the vehicle licence plate, as provided by the enforcer in a check for PSRights. The coding scheme used is UN agreed. For the list of possible codes http://www.unece.org/trans/conventn/Distsigns.pdf.
CountryCodeVehicle	Text	1-3	Denotes the country of origin of the vehicle licence plate. The coding scheme used is UN agreed. For the list of possible codes .http://www.unece.org/trans/conventn/Distsigns.pdf. Advise: to avoid problems in enforcement, omit the CountryCode if unknown: don't use NL as default.
DayTimeframe	Text	20	Name of a regular day of the week, in the language of the area manager (i.e. zondag, maandag etc.), or name of a special day where special fares apply (e.g. marktdag or christelijke feestdag).
EndDateArea	Date	8	End date of an area (exclusive).
EndDateAreaRegulation	DT		End date-time of a regulation of an area (exclusive, time included).
EndDateFare	Date	8	End date of a fare (exclusive).
EndDateFarePart	Date	8	End date of a fare part (exclusive).
EndDateRegulation	Date	8	End date of a regulation (exclusive).
EndDurationFarePart	Int	6	Indicates the duration of the PSRight when the fare part ends to be applicable (minutes).
EndTimeApplied	DT		Date and time when a certain regulation ends to be applicable (time exclusive). Is used within a SpecifCalcAmountList.
EndTimeTimeFrame	Int	4	End time of a timeframe, format uumm (time exclusive). This is the area manager local time when a certain fare ends to be applicable.
EndTimePSRight	DT		Date and time when the PSRight ends (time exclusive). In price calculations, maximum significance is minutes, i.e. the seconds are ignored. However, if seconds are delivered, they will be

Item	Type	Len	Description
			recorded.
EndTimePSRightAdjusted	DT		System calculated date and time (time exclusive) when a PSRight ends, overrules the *EndTimePSRight* provided by the rights acquirer.
EndTimePSRightDayWindow	Text	1-20	If this element is present, *StartTimePSRightDayWindow* is also present. The day provided is inclusive.For further information see *StartTimePSRightDayWindow*.
EndTimePSRightWindow	Int	4	If this element is present, *StartTimePSRightWindow* is also present. Consists of a time value in format hhmm (time exclusive). For further information see *StartTimePSRightWindow*.
EndTimeRemark	DT		Time associated with a PSRightRemark. Date and time at which the remark ends to be applicable (time exclusive)
ErrorCode	Int	3	Code explaining an error situation.
ErrorDesc	Text	1-80	Description explaining an error situation.
ErrorVariable	Text	1-200	In this element, when an error situation occurs, extra information that might be useful for the recipient can be given.
ExtraInfoIndicator	Text	1	Indicator denoting if the checking organisation wants to receive extra information, on checking for PSRights. Value list: Y = Yes, I want extra information N = No, I don't want extra information
FareCalculationCode	Text	1-10	Code of a certain fare. The fare calculation IDs in NPR are set by the area manager, they are unique for the area manager but not necessarily unique for NPR.
FareCalculationDesc	Text	1-80	Description of a certain fare, as set by the area manager.
FareData			Data of one specific fare
FarePartData			Data of one specific fare part
FarePartTable			Table containing the data of 1 or more fare parts
FareTable			Table containing the data of 1 or more fares
FareTimeFrame	Text	10	Code of the fare that is applied within this timeframe.
GracePeriodAfter	Int	2	Grace period to apply beyond end date-time PSRight, e.g. after expiration of a parking right, the time in minutes a customer is still allowed to stay on the parking spot.
GracePeriodBefore	Int	2	Grace period to apply before start date-time PSRight, e.g. after actual parking, time in minutes a customer is granted to acquire a parking right.
IndicatorTime	DT		Date and time around which something should be retrieved, e.g. rights or check answers.
InfoMessageCode	Int	3	Code denoting an informational message.
InfoMessageDesc	Text	1-80	Description of an informational message.

Item	Type	Len	Description
Latitude	Dec	3.10	Latitude of a location for which a PSRight is acquired Coordinate frame WGS84, decimal format. If no sign is provided, a positive sign is assumed. Maximum significance: 10 digits behind the decimal point.
AddressLocation			Node containing the data of an address related to (closest to) a specified location.
LocationPSRight			Node in which a location is given, specifying the area for which a PSRight should be recorded.
Longitude	Dec	4.10	Longitude of a location for which a PSRight is acquired Coordinate frame WGS84, decimal format. If no sign is provided, a positive sign is assumed. Maximum significance: 10 digits behind the decimal point.
MaxDurationRight	Int	4	Maximum possible duration of a PSRight (in minutes) within this timeframe.
MessageID	Byte	16	Universally Unique identifier which uniquely identifies a message (UUID (GUID)). A description of the UUID/GUID is found at: http://en.wikipedia.org/wiki/Universally_unique_identifier#Version_4_.28random.29 In NPR a version is used with 36 digits in the form: xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx where hexadecimal digit 'x' is one of 0,1,2,3,4,5,6,7,8,9,a,b,c,d,e,f.
PlaceOfResidence	Text	1-24	The place of residence of an address.
PriceOneHourParking	Dec	1.2-8.2	The price to pay for one hour of parking, using the fare applicable at a certain reference time.
PSRightAcquirerCode	Int	5	The code of the right acquirer as known in NPR. Right acquirer codes are unique in NPR, and are issued by SHPV.
PSRightAcquirerDesc	Text	1-80	The description of the right acquirer as recorded in NPR.
PSRightCheckPSRightData			Element containing the data of a single PSRight, associated with a check for PSRights.
PSRightCheckPSRightList			Element containing a list of 1 or more PSRights, associated with a check for PSRights, for which information is given
PSRightId	Int	1-10	Unique, system issued, identification of a PSRight in NPR.
PSRightIndicator	Text	1	Indicator denoting whether or not acquired rights are usable.Value list Y = Usage of acquired rights is possible N = Usage of acquired rights is not possible
PSRightInfoData			Information of one specific PSRight.
PSRightInfoList			A list of information on PSRights
PSRightRemarkData			Element containing the data of a single PSRightRemark. On registering a right, NPR gives remarks if applicable.
PSRightRemarkList			Element containing a list of 1 or more remarks

Item	Type	Len	Description
			given by NPR
PSRightRemarkType	Int		Denotes the kind of remark. For more information on remark types, see Appendix B.
PSRightWindowData			Element containing the data of one validity window.
PSRightWindowList			List of validity windows of a PSRight, PSRights with 1 or more validity windows are only valid during window days/times and not outside the windows days/times.
ReferenceCheckOrg	Text	1-40	Identification or description that a checking organisation can register with the logging in NPR of a check. If, how and when to use this element, is to be decided by the checking organisation.
ReferencePSRight	Text	1-40	Identification or description that a rights acquirer can register with a PSRight. If, how and when to use this element, is to be decided by the rights acquirer.
ReferenceTime	DT		Reference time used for selection of data, in UTC.
ReferenceTimeRegulation	DT		Reference time used to select the valid regulation(s) to apply.
RegulationData			Data of 1 specific regulation
RegulationDesc	Text	1-80	Description of a regulation imposed by the area manager.
RegulationId	Text	1-10	Identification of a regulation imposed by the area manager. The regulation IDs in NPR are set by the area manager, they are unique for the area manager but not necessarily unique for NPR.
RegulationIdArea	Text	1-10	RegulationId that is applicable to the associated area.
RegulationTable			Table containing the data of 1 or more regulations
RegulationType	Enum		Denotes the kind of regulation. Possible values: B = base regulation, i.e. the regulation applying for paid parking. A = additional regulation, e.g. discount regulations like evening tickets or day tickets.
SellingPointId	Int	1-10	Identification of the selling point where the right was acquired. Selling point IDs are unique within NPR, and are issued by SHPV.
SellingPointDesc	Int	1-80	Description of a selling point
SpecifCalcAmountData			This node contains one specific entry in a SpecifCalcAmountList.
SpecifCalcAmountList			List that further specifies AmountPSRightCalculated The list is only present when the calculated amount is based on additional regulation(s), besides the standard regulation, of the area.
StartDateArea	Date	8	Start date of an area (inclusive).
StartDateAreaRegulation	DT		Start date-time of a regulation of an area (inclusive).
StartDateFare	Date	8	Start date of a fare (inclusive).

Item	Type	Len	Description
StartDateFarePart	Date	8	Start date of a fare part (inclusive).
StartDateRegulation	Date	8	Start date of a regulation (inclusive).
StartDurationFarePart	Int	6	Duration of a PSRight when this fare part starts to be applicable.
StartTimeApplied	DT		Date and time (inclusive) when a certain regulation starts to be applicable. Is used within a SpecifCalcAmountList.
StartTimeTimeFrame	Int	4	Start time of a time frame, format uumm (inclusive). This is the area manager local time when a certain fare starts to be applicable.
StartTimePSRight	DT		Date and time when the PSRight starts (inclusive). In price calculations, maximum significance is minutes, i.e. the seconds are ignored. However, if seconds are delivered, they will be recorded.
StartTimePSRightDayWindow	Text	1-20	If this element is present, *EndTimePSRightDayWindow* is also present. Consists of a day name value. The day name values that can be used are ZONDAG, MAANDAG, DINSDAG, WOENSDAG, DONDERDAG, VRIJDAG, ZATERDAG. The day provided is inclusive.
StartTimePSRightWindow	Int	4	If this element is present, *EndTimePSRightWindow* is also present. Consists of a time value in format uumm (inclusive). Used when a PSRight is only valid during a certain time window per day. The right itself is valid for a period of 1 day or more, but each day the validity is only a few hours. Examples monthly parking ticket for mornings: 08.00-12.00 or evenings. 19.00-23.00.
StartTimeRemark	DT		Time associated with a PSRightRemark (inclusive). Date and time at which the remark starts to be applicable
StatusReference	Text	1-10	A reference that the initiator of a status request can provide with the status request. It will be returned in the status request response.
StatusTime	DT		Time at which a StatusRequest was sent (in the request) or processed (in the response).
StatusRPV	Text	1-10	OK or NOK: NPR available or not
StepSizeFarePart	Int	6	Step size (in minutes) of the fare. The amount to pay for a PSRight is always equal to N times the step size of the fare, i.e. the minimum amount to pay is one step.
StreetCode	Text	1-5	The code of a street. Using a street code instead of a street name in the geographic determination of NPR areas, eliminates the influence of spelling errors, mismatch in diacritic characters etc. Street codes shorter than 5 digits should be preceded by leading zeroes.
StreetName	Text	1-24	The street name of an address
HouseNumber	Int	5	The house number of an address, without

Item	Type	Len	Description
			additions, i.e. without "huisnummertoevoeging" or "huisletter" or "aanduiding bij huisnummer".
HouseNumberAdditions	Text	10	Additions to the house number, like “huisnummertoevoeging” and/or “huisletter” and/or “aanduiding bij huisnummer”.
TimeFrameTable			A table containing timeframes when a certain fare applies.
TimeFrameTableData			The data of one individual timeframe
TotalAmountParts	Dec	1.2-8.2	Total amount in €.cc of the previous fare parts before this fare part.
UsageDesc	Text	1-80	Description of the usage of a certain area (or set of areas) in NPR.
UsageId	Text	1-10	Identification of the usage of an area, regulation or PSRight in the NPR. A general set of usage identifications are issued by SHPV, to be used by all area managers. Each area manager can extend the general usages, subdividing the general usages into more specific usages. To correctly determine the validity of rights, it is necessary that the subdivision of usages matches the ruling set in parking legislation. E.g. when the validity rules of a parking permit for residents and the validity rules of a parking permit for companies are not the same, it is required that a PSRight "parking permit resident" has a different UsageId than a PSRight "parking permit company", therefore, the area manager will distinguish these usages. However, when the validity rules for these two permits are the same any time, any place, then it is not necessary to distinguish, and the PSRights of these two permits can have the same UsageId.
VATAmountFraction	Dec	1.2-8.2	Amount, being a fraction of VATPSRightCalculated. Is used within a SpecifCalcAmountList.
VATPercentage	Dec	3.1	Percentage VAT of a certain fare.
VATPSRight	Dec	1.2-8.2	Format €cc.VAT portion of *AmountPSRight*, only present if applicable.
VATPSRightCalculated	Dec	1.2-8.2	Format €.cc.VAT portion of *AmountPSRightCalculated*, only present if applicable.
VehicleId	Text	1-25	Usually the licence plate number of a vehicle, in some cases another identification, e.g. the number of a disabled person’s parking card. Before storage in NPR, or before retrieval, the vehicle ID provided in a request message is stripped of non alphabetical characters (-, spaces) and converted to uppercase.

B. Annex B – Remarks

Some response messages contain an optional table (PSRightRemarkList), containing one or more remarks. A remark might be accompanied by a StartTimeRemark and/or an EndTimeRemark, both in UTC.

The following table lists the remarks that can be given and the meaning of the remark.

PSRightRemarkType	StartTimeRemark	EndTimeRemark	Meaning of the remark
1	Present	Present	Period in which an acquired PSRight is not valid. The remark is given when a PSRight is acquired without an end time, or when a PSRight is acquired or revoked with an end time that lies in or beyond the period in which the remark applies. The remark is only given when the period starts within 24 hours of StartTimePSRight.
2	Not present	Present	This remark is given when a PSRight is acquired without an end time, and a maximum parking duration applies. NPR now returns the last time at which the PSRight is valid. Beyond EndTimeRemark, NPR will consider the PSRight to be invalid.
3	Present	Present	The start and end time of this remark show the period where parking rights cannot be acquired due to a parking interruption that is included in the source data of a municipality. The start time of this exception is equal to the start time of the interruption period and the end time is equal to the start time of the PSRight that causes the changed end time. To summarize: a right will be ended earlier because there is a future right and the parking interruption says there has to be x time between two rights.

The handling of the remark is up to the rights acquirer. The acquirer can present them as warnings to its customers (but leave the responsibility to terminate a PSRight in time to the customer). He can also actively ensure that an acquired PSRight cannot lose its validity before its end of use e.g. by sending a Revoke.

C. Annex C – List of error messages and informational messages

ErrorCode	ErrorDesc
1	No current regulation for areamanager id <AreamanagerId>, area id <AreaId>
5	No PSRight required
7	No information available for price calculation
8	Usage Id does not exist or is not valid *Occurs also when an " Area does not exist or is not valid" or when a " Area manager does not exist or is not valid"*
9	Area could not be determined uniquely
10	Area does not exist or is not valid *This error code does not occur at the moment when an Area does not exist or is not valid, error code 8 will occur.*
11	Area manager does not exist or is not valid *This error code does not occur at the moment when an area manager does not exist or is not valid, error code 8 will occur.*
13	Sellingpoint is not valid
100	Area is not provided *Can also occur if there is no Area found in the GEO data according to the coordinates in the request.*
102	No authorisation
103	Invalid parking duration
104	Checking organisation has no authorisation to check
110	PSRight not found *If there are no rights found after "RetreiveRightInfo" there will not occur an error code 110. Not finding rights is not an error situation.*
111	Erroneous validity restricting window
116	PSRight was recorded more than once with different data
123	No information found for provided selection criteria *If there is no Check Information found after "RetreiveCheckInfo" there will not occur a error code 123. Not finding info is not a error situation.*
127	PSRight is already frozen for settling *Every night, all PSRights with an EndTime older than 6 hours are frozen for settling, and cannot be altered anymore.*
129	Substitution is not possible: REGULATION IS NOT SUITABLE FOR LONG TERM PARKING
202	Tag is not filled properly
204	It is not possible tot grant PSRightId until uumm (UTC)
206	Required data not filled
302	Technical failure, please contact Service House Parking
999	Technical failure, please contact ICT Servicedesk