

Document history

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1. Introduction

This document describes the interactions with the "**Gents parkeer- en verblijfsregister (GPR)**". The GPR is based on the "Nationaal Parkeer Register (NPR)" that is made available by the Servicehuis Parkeer- en Verblijfsrechten (SHPV, Service House Parking and Staying Rights). The interactions with the GPR mimic the interactions with the NPR as close as possible, although there will be some minor differences.

1.1 Goal

This document is aiming at a clear understanding of all possible interfaces to the GPR for all potential stakeholders.

1.2 Overview and scope

The GPR enables participants to register rights and retrieve rights information for enforcement and settlement. GPR is hosted at **Digipolis Gent**, the IT-Partner of the City of Ghent, 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 GPR to acquire parking or staying rights or for enforcement;
- The design is based on the design of the NPR
- The interfaces will be equal to all stakeholders

1.3 Definitions

AreaManager	Party responsible for exploitation of parking areas like municipalities, governments or private parties.
Enforcer	Party responsible for enforcement of the parking rights (i.e. parking officer)
GPR	Gents parkeer- en verblijfsregister
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.
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 focused 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).

	<p>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.</p>
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2. Global Design

2.1 Context

In figure 1 the context of the GPR 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 the City of Ghent. 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 GPR system using a limited set of well described, standardized interfaces.

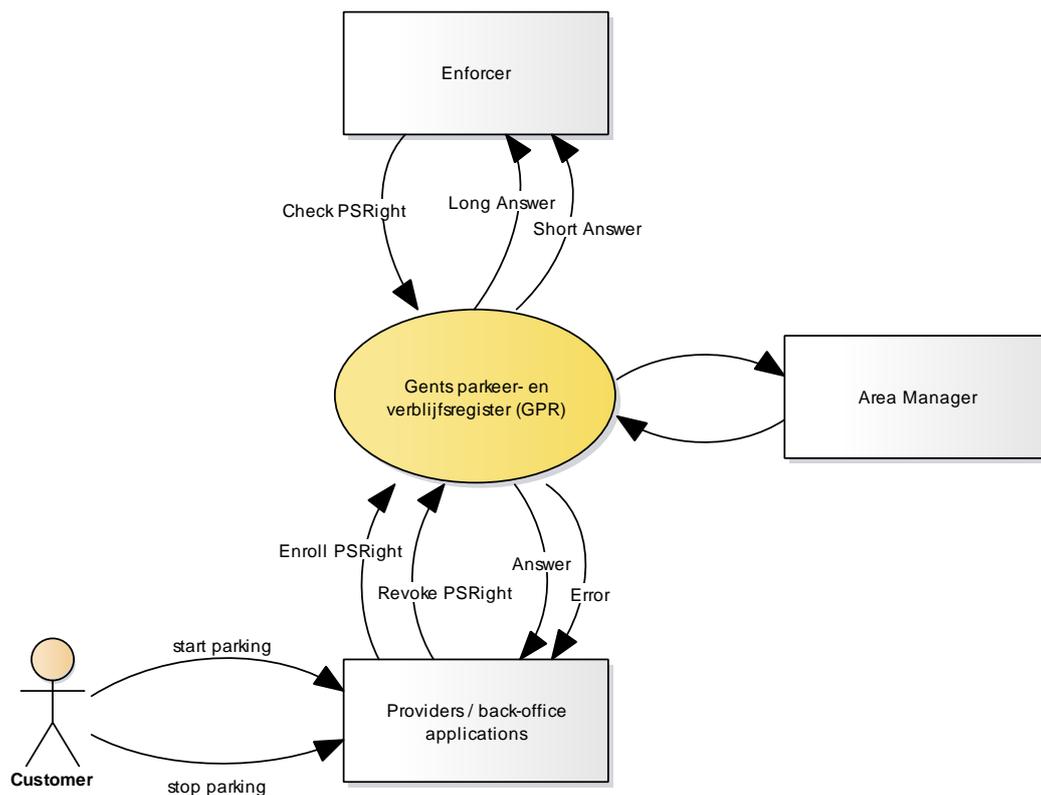


Figure 1 Context diagram

2.2 Usages

The usages that are available for registration in the GPR are listed in the table below.

Niveau 1	Niveau 2	Niveau 3	Niveau 4	Usageld
Parkeren	Parkeren			PARKEREN
	Betaald Parkeren			BETAALDP
		Standaard Ticket (Betaald) Parkeren		STDP
		KortParkeren		KORTP
			Gratis Parkeren	GRATISP
			Ultrakort Parkeren	ULTRAP
	Vergunning-Parkeren			VERGUNP
		Bewoners-Parkeren (algemeen)		BEWONERP
			Bewoners-Parkeren (specifiek)	BEWP
			Autodeler-Parkeren	AUTODELERP
		Marktkramer		MARKTP
		Zorgverstrekker		ZORGP
		Veegwagen		VEEGP
		Anoniem politievoertuig		POLITIEP
	Forfaitair Parkeren			FORFAITP
		Forfaitair "Betaald" Parkeren ("30€")		FORFAITBETP
		Forfaitair Vergunning-Parkeren ("80€")		FORFAITVERGUNP

2.3 URL versions

This version of the GPR Interface description describes the current interface with URL https://esbei.gent.be/services/gpr_v1.gpr_v1HttpSoap11Endpoint. The test environment of this URL

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can be found at https://esbeiga.gent.be/services/gpr_v1.gpr_v1HttpSoap11Endpoint.

2.4 Disclosure of parking information: List of selling points

An up-to-date list of selling points is available for all providers.

2.5 Technology guidelines message exchange

The interfaces will be implemented according to the SOAP protocol and exposed by the Digipolis ESB. The Digipolis ESB uses Digipolis certificates to identify users and only uses Internet as a transport network.

The exchange of information can be divided in 3 layers:

- I. Transport layer
In this layer the actual connection is established through Internet. For all transport layer communication 2-sided TLS must be used.
- II. Logistic Layer
Messages are defined according the WS-* specifications:
 - i. WS-I BP 1.1 which is based on SOAP 1.1, WSDL 1.1, XML 1.0 (second edition)
 - ii. WS-I BP 1.2 with respect to the optional parts of WS-addressing and MTOM
 - iii. WS-I BSP 1.0 with respect to message security based on WS-security
 - iv. WS-I Simple SOAP Binding Profile 1.0
- III. Content layer
The content is based on the functional specification. Content definition is based on the starting points in 1.2.

2.6 Security

Although the Digipolis ESB is supporting End-to-End security between web service provider and web service requester, only transport level security will be implemented. 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 web service requester and web service provider. Parties using a PKI certificate will be identified by the CN in the certificate.

2.7 How to get WSDL en XSD

The WSDL and XSD of the web services that are described in this document can be obtained on simple request.

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 GPR web service is used by all entities to interact with GPR.

The following messages are available:

- Messages to be used by rights acquirers (providers) (see Ch 4)
 - EnrollPSRight
 - RevokePSRight
 - RetrieveRightInfo
- Messages to be used by enforcers (see Ch 5)
 - CheckPSRight
- Messages to be used by area managers (See Ch 6)

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- RetrieveRightInfo
- RetrieveCheckInfo
- Messages to be used by all entities (See Ch 7).
 - CalculatePrice
 - RetrieveAreasByLocation
 - RetrieveAreaRegulationFareInfo
 - StatusRequest

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

4. Messages to be used by providers

4.1 EnrollPSRight

4.1.1 Message dialogue EnrollPSRight

A rights acquirer sends a request message **PSRightEnrollRequest** to GPR, containing the data of a PSRight to be registered in GPR. GPR 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 common name (CN) in its certificate.

The rights acquirer should be authorized 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, GPR 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.

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*).

Optional information:

- Country code of a vehicle (*CountryCodeVehicle*).
- Date and time when the PSRight ends (*EndTimePSRight*).
- With *AmountPSright* and *VATPSright* an amount can be registered with the enrollment of a PSRight.
- Identification or description that a rights acquirer can register with a PSRight (*ReferencePSRight*).
- A GUID to uniquely identify a request sent to GPR (*CorrelationId*).

To record a PSRight properly, GPR 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.

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When an area is specified through a location, GPR 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 *SellingPointId*, GPR 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. It is advised that a (known or default) *EndTimePSRight* is always provided immediately. This *EndTimePSRight* can be adjusted later via a **PSRightRevokeRequest** message.

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

If no error occurs, the PSRight is recorded in GPR. The response message sent by GPR contains:

- The area manager and area for which the PSRight is recorded, except when these were already specified in the input (*AreaManagerId/Areald*)
- 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: if GPR was not able to do a calculation, *AmountPSRightCalculated* and *VATPSRightCalculated* will be absent.
- Adjusted end time (*EndTimePSRightAdjusted*). GPR 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 of 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.

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

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://gps.digipolis.be/parkeerregister/v1.0.0"
xmlns:data="http://gps.digipolis.be/parkeerregister/v1.0.0/data/data"
xmlns:data1="http://gps.digipolis.be/parkeerregister/v1.0.0/data">
```

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```

<soapenv:Header/>
<soapenv:Body>
  <v1:EnrollPSRight>
    <!--Optional:-->
    <v1:data>
      <data:VehicleId>???

```

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4.1.3 Example response message

```

<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <EnrollPSRightResponse xmlns="http://gps.digipolis.be/parkeerregister/v1.0.0">
      <EnrollPSRightResult xmlns:a="http://gps.digipolis.be/parkeerregister/v1.0.0/data"
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <a:PSRightEnrollResponseData
          xmlns:b="http://gps.digipolis.be/parkeerregister/v1.0.0/data/data">
          <b:PSRightId>???</b:PSRightId>
          <b:AreaManagerId>???</b:AreaManagerId>
          <b:AreaId>???</b:AreaId>
          <b:SellingPointId>???</b:SellingPointId>
          <b:EndTimePSRightAdjusted>???</b:EndTimePSRightAdjusted>
          <b:AmountPSRightCalculated>???</b:AmountPSRightCalculated>
          <b:VATPSRightCalculated>???</b:VATPSRightCalculated>
          <b:SpecifCalcAmountList>
            <b:SpecifCalcAmountData>
              <b:RegulationId>???</b:RegulationId>
              <b:StartTimeApplied>???</b:StartTimeApplied>
              <b:EndTimeApplied>???</b:EndTimeApplied>
              <b:AmountFraction>???</b:AmountFraction>
              <b:VATAmountFraction>???</b:VATAmountFraction>
            </b:SpecifCalcAmountData>
          </b:SpecifCalcAmountList>
          <b:CorrelationId>???</b:CorrelationId>
        </a:PSRightEnrollResponseData>
      </EnrollPSRightResult>
    </EnrollPSRightResponse>
  </s:Body>
</s:Envelope>

```

4.2 RevokePSRight

4.2.1 Message dialogue RevokePSRight

A rights acquirer sends a request message **PSRightRevokeRequest** to GPR, containing the identification of a PSRight, and a time at which the right should end. GPR sends a response message

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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 common name (CN) in its certificate. 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*).

Optional information:

- A GUID to uniquely identify a request sent to GPR (*CorrelationId*).

If no error occurs, the response message sent by GPR 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: if GPR was not able to do a calculation, *AmountPSRightCalculated* and *VATPSRightCalculated* will be absent.
- Adjusted end time (*EndTimePSRightAdjusted*). GPR 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.

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

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://gps.digipolis.be/parkeerregister/v1.0.0"
xmlns:data="http://gps.digipolis.be/parkeerregister/v1.0.0/data">
  <soapenv:Header/>
  <soapenv:Body>
    <v1:RevokePSRight>
      <v1:data>
        <data:PSRightId>???

```

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```

    <data:EndTimePSRight>???
```

```

    </data:EndTimePSRight>
    <data:CorrelationId>???
```

```

    </data:CorrelationId>
  </v1:data>
</v1:RevokePSRight>
</soapenv:Body>
</soapenv:Envelope>

```

4.2.3 Example response message

```

<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <RevokePSRightResponse xmlns="http://gps.digipolis.be/parkeerregister/v1.0.0">
      <RevokePSRightResult xmlns:a="http://gps.digipolis.be/parkeerregister/v1.0.0/data"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <a:PSRightRevokeResponseData>
          <a:EndTimePSRightAdjusted>???
```

```

          </a:EndTimePSRightAdjusted>
          <a:AmountPSRightCalculated>???
```

```

          </a:AmountPSRightCalculated>
          <a:VATPSRightCalculated>???
```

```

          </a:VATPSRightCalculated>
          <a:SpecifCalcAmountList
xmlns:b="http://gps.digipolis.be/parkeerregister/v1.0.0/data/data">
            <b:SpecifCalcAmountData>
              <b:RegulationId>???
```

```

              </b:RegulationId>
              <b:StartTimeApplied>???
```

```

              </b:StartTimeApplied>
              <b:EndTimeApplied>???
```

```

              </b:EndTimeApplied>
              <b:AmountFraction>???
```

```

              </b:AmountFraction>
              <b:VATAmountFraction>???
```

```

              </b:VATAmountFraction>
            </b:SpecifCalcAmountData>
          </a:SpecifCalcAmountList>
          <a:CorrelationId>???
```

```

          </a:CorrelationId>
        </a:PSRightRevokeResponseData>
      </RevokePSRightResult>
    </RevokePSRightResponse>
  </s:Body>
</s:Envelope>

```

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5. Messages to be used by enforcers

5.1 CheckPSRight

5.1.1 Message dialogue CheckPSRight

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

The checking organization is identified by the common name (CN) in its certificate. The checking organization must be authorised to check for PSRights in the specified area. If not, GPR 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. If more than one identification is provided, GPR will use the list above to determine priority, e.g. if *AreaManagerId/AreaId* and *CheckLocation* 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, GPR will return an error message and no information will be given.
- Usage that is checked (*Usageld*).
- Identification of a vehicle (*VehicleId*).
- Date and time at which must be checked whether or not a PSRight is present (*CheckTime*)
- *ExtrInfoIndicator*. If this indicator is set to "N" (no), the checking organization 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.

Optional information

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

To check for PSRights properly, GPR 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*, GPR collects the areas containing the specified location.

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", GPR will return an error message and no information will be given.

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

- Answer given by GPR 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*).

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- The area that has been checked (*AreaId*).
- 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*).
- Description or reference of a right (*ReferencePSRight*).
- Identification of a sellingpoint (*SellingPointId*).
- Description of a selling point (*SellingPointDesc*).
- Identification of a usage (*Usageld*).
- 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*)

The check results in a *CheckAnswer*, which is returned in the response message. The following *CheckAnswers* 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, GPR 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 *Usageld* (Note: a checking organization receives only information about areas where the organization 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 GPR. The logging consists of the data provided in the request message *PSRightCheckRequest*, and the *CheckAnswer* (Y or N) that GPR has given.

5.1.2 Example request message

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://gps.digipolis.be/parkeerregister/v1.0.0"
xmlns:data="http://gps.digipolis.be/parkeerregister/v1.0.0/data">
```

```
<soapenv:Header/>
```

```
<soapenv:Body>
```



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```

<v1:CheckPSRight>
  <v1:data>
    <!--Optional:-->
    <data:AreaManagerId>???

```

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.

The area manager sends a request message **RetrieveRightInfo**. GPR responds with a message **RetrieveRightInfoResponse**.

The area manager for which information is retrieved, is identified by the common name (CN) in its certificate.

The request message contains the following information:

- Identification of a vehicle (VehicleId) or identification of a right (PSRightId).
- Date and time (Indicatortime) around which the right information should be retrieved.

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For the area manager, the information of all rights registered in GPR 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.

The response message contains the following information:

- Identification of a vehicle (*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*).
- 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 GPR (*RegistrationTimePSRight*).
- Time and date of registration when a right has been stopped in GPR (*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 GPR (*AmountPSRightCalculated*).
- The value added tax (V.A.T.) of the price for a parking right as determined on basis of the data in GPR (*VATPSRightCalculated*).
- The price for a parking right as recalculated on basis of the data in GPR (*AmountPSRightRecalculated*).
- The value added tax (V.A.T.) of the price for a parking right as recalculated on basis of the data in GPR (*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

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://gps.digipolis.be/parkeerregister/v1.0.0"
xmlns:data="http://gps.digipolis.be/parkeerregister/v1.0.0/data">
  <soapenv:Header/>
```



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```

<soapenv:Body>
  <v1:RetrieveRightInfo>
    <v1:data>
      <!--Optional:-->
      <data:VehicleId>???
```

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 GPR.

Example of usage: in cases of parking tax additional assessments, or objections to additional assessments.

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

The area manager for which information is retrieved, is identified by the common name (CN) in its 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.

For the specified area manager, information of all logged check answers registered in GPR for the vehicle, 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.

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*).
- The country of origin of the vehicle licence plate, as provided by the enforcer in a check for PSRights (*CountryCodeCheck*).
- Date and time of the check of the PSRight (*CheckTime*).

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- Indicator denoting if the checking organization received extra information, while checking for PSRights (*ExtraInfoIndicator*).
- Identification or description that a checking organization can register with the logging in GPR of a check (*ReferenceCheckOrg*).
- Answer given by GPR 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 organization (*CheckOrgCode*).
- Description of a PSRight checking organization (*CheckOrgDesc*).
- Identification of a usage (*Usageld*).
- Identification of an area (*Areald*).
- Description of an area (*AreaDesc*).
- Specification of the area that is checked for the presence of PSRights (*Checklocation*).

6.2.2 Example request message

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://gps.digipolis.be/parkeerregister/v1.0.0"
xmlns:data="http://gps.digipolis.be/parkeerregister/v1.0.0/data">
  <soapenv:Header/>
  <soapenv:Body>
    <v1:RetrieveCheckInfo>
      <v1:data>
        <data:VehicleId>???

```

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 GPR, containing the data of a fictional PSRight, to calculate its price. GPR 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 common name (CN) in its certificate.

A rights acquirer should be authorized to do a calculate price for the specified area. If not, an error message is sent.

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When the request message is used to calculate price before recording an actual PSRight, it is possible to include a VehicleId. When a VehicleId is provided in the request message, GPR checks whether the recording of a PSRight is allowed in combination with a possible minimum parking interruption as instated by the Areamanager. Rights acquirers can only use a message with a VehicleId when they are authorized to acquire rights for the specific area and AreaManagers can only use this message for their own Areald's. When a rights acquirer has no authorization or an AreaManager tries to use this message for other Areald's than its own, an error message will be given.

When a VehicleId is not provided in the request message, GPR calculates the price based on the provided information and does not perform extra checks for minimum parking interruption and/or authorizations. This request can be used by all entities to acquire information about any parking area known in the GPR, therefore including areas in which no PsRightId's can be acquired.

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 *Areald*.
 2. A location (*PSRightLocation*), consisting of a *Latitude* and *Longitude* in WGS84 format.
 3. *SellingPointId*.

If more than one identification is provided, GPR will use the list above to determine priority, e.g. if *AreaManagerId/Areald* + *PSRightLocation* are provided, the combination *AreaManager/Areald* 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*).

Optional information:

- Identification of a vehicle (*VehicleId*).
- Country code of a vehicle (*CountryCodeVehicle*).
- Date and time when the PSRight ends (*EndTimePSRight*).

To be able to calculate the price of a PSRight properly, GPR needs to know the area and the area manager to which the area belongs.

When an area is specified through *AreaManagerId/Areald*, these data are known immediately.

When an area is specified through a location, GPR 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, GPR 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 GPR contains

- The area and area manager for which a calculation was done, unless this was already specified in the input (*Areald/AreaManagerId*).
- 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

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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: if GPR was not able to do a calculation, *AmountPSRightCalculated* and *VATPSRightCalculated* will be absent.

- Adjusted end time (*EndTimePSRightAdjusted*). GPR 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.

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

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://gps.digipolis.be/parkeerregister/v1.0.0"
xmlns:data="http://gps.digipolis.be/parkeerregister/v1.0.0/data">
```

```
<soapenv:Header/>
```

```
<soapenv:Body>
```

```
<v1:CalculatePrice>
```

```
<v1:data>
```

```
<!--Optional:-->
```

```
<data:AreaManagerId>???
```

```
<!--Optional:-->
```

```
<data:AreaId>???
```

```
<!--Optional:-->
```

```
<data:LocationPSRight>
```

```
<data:Latitude>???
```

```
<data:Longitude>???
```

```
</data:LocationPSRight>
```

```
<!--Optional:-->
```

```
<data:SellingPointId>???
```

```
<data:Usageld>???
```

```
<data:StartTimePSright>???
```



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```

<!--Optional:-->
<data:EndTimePSright>??</data:EndTimePSright>
</v1:data>
</v1:CalculatePrice>
</soapenv:Body>
</soapenv:Envelope>

```

7.2 RetrieveAreasByLocation

7.2.1 Message dialogue RetrieveAreasByLocation

An entity sends a request message **RetrieveAreasByLocationRequest**, containing a location. GPR 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 common name (CN) in its certificate.

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 (*LocationPSRight*), consisting of a *Latitude* and *Longitude* in WGS84 format.
 3. *SellingPointId*.

If more than one identification is provided, GPR 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.

Optional information:

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

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 *Usageld* is provided, only found areas matching the specified *Usageld* are returned, otherwise all areas are returned. The hierarchy in the *Usagelds* is not taken in account.

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

- Identification of an area manager (*AreaManagerId*).
- List of areas matching the specified location (*AreaTable*) consisting of *AreaId*, *AreaDesc*, *StartDateArea*, *EndDateArea*, *Usageld*, if applicable.

7.2.2 Example request message

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://gps.digipolis.be/parkeerregister/v1.0.0"
xmlns:data="http://gps.digipolis.be/parkeerregister/v1.0.0/data">
<soapenv:Header/>

```

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```

<soapenv:Body>
  <v1:RetrieveAreasByLocation>
    <v1:data>
      <!--Optional:-->
      <data:AreaLocation>
        <data:Latitude>???

```

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 GPR. 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 common name (CN) in its certificate.

The request message contains the following information:

- Identification of an area manager (*AreaManagerId*).

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 a reference date-time, the specified area is retrieved, together with the associated regulation(s) and the associated fare(s).

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If no areas were found, the response consists of an empty message.

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

- List of areas matching the specified request (*AreaTable*) consisting of *Areald*, *AreaDesc*, *StartDateArea*, *EndDateArea*, and *Usageld*, 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*, *MinParkingInterruption* and *FareTimeFrame*.
- List of Fare data for the retrieved regulations (*FareTable*) consisting of *StartDateFarePart*, *EndDateFarePart*, *StartDurationFarePart*, *EndDurationFarePart*, *TotalAmountParts*, and *StepSizeFarePart*.

7.3.2 Example request message

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://gps.digipolis.be/parkeerregister/v1.0.0"
xmlns:data="http://gps.digipolis.be/parkeerregister/v1.0.0/data">
```

```
<soapenv:Header/>
```

```
<soapenv:Body>
```

```
<v1:RetrieveAreaRegulationFareInfo>
```

```
<v1:data>
```

```
<data:AreaManagerId>???
```

```
<!--Optional:-->
```

```
<data:Areald>???
```

```
<!--Optional:-->
```

```
<data:CheckTime>???
```

```
</v1:data>
```

```
</v1:RetrieveAreaRegulationFareInfo>
```

```
</soapenv:Body>
```

```
</soapenv:Envelope>
```

7.4 StatusRequest

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

7.4.1 Message dialogue StatusRequest

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

The entity is identified by the common name (CN) in its certificate.

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The following information is provided in the request message:

- Date and time at which the request is sent (*StatusTime*).

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 GPR consists of the following

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

7.4.2 Example request message

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:v1="http://gps.digipolis.be/parkeerregister/v1.0.0"
xmlns:data="http://gps.digipolis.be/parkeerregister/v1.0.0/data">
  <soapenv:Header/>
  <soapenv:Body>
    <v1:StatusRequest>
      <v1:data>
        <data:StatusTime>???

```

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 GPR:

1. Error: Reply from GPR with an error message 1-206.
2. Communication lost: no Reply from GPR is received within a time-out period, set by the Connected system (e.g. 10s).

Ad 1 Reply with an error message 1 - 206:

All these error messages 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 GPR seems incorrect.

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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). 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 GPR and buffer them.
2. Start sending StatusRequests, for example every 60 seconds.
3. After 5 minutes of communication loss, contact Help Desk
4. After communication is re-established (according to Help desk or when StatusResponse OK is received), start sending buffered messages with the original GUID.

8.2 Resending a Request

A connected system can always resend a Request with the original GUID. If GPR already replied with a response, the original Response based on the GUID 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.

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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:ssZ'
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.

- **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, GPR 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"`.
- The format of tags with price values is €.`cc`

Item	Type	Description
AmountFarePart	Dec	Amount per step size that has to be paid in a fare
AmountFraction	Dec	Amount, being a fraction of AmountPSRightCalculated. Is used within a SpecifCalcAmountList
AmountPSright	Dec	The price to pay for the PSRight. VAT included. Format €. <code>cc</code> . 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	Price to pay for the PSRight, VAT included. Format €. <code>cc</code> . A price calculated by GPR, set by the area manager. The

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		<p>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.</p> <p>A price is calculated anytime a request message is sent that contains <i>EndTimePSRight</i> (new or changed).</p>
AmountRatePart	Dec	<p>The minimum amount that has to be paid for acquiring a PSRight. Format €.cc.</p> <p>This amount is the minimum timeframe to pay, multiplied by the fare at time = <i>CheckTime</i>.</p>
AreaData		Data of 1 specific area.
AreaDesc	Text	Description of the Area in the GPR, as set by the area manager.
Areald	Text	Identification of the Area in the GPR. The area IDs in GPR are set by the area manager, they are unique for the area manager but not necessarily unique within GPR.
AreaManagerDesc	Text	Description of the Area Manager in GPR.
AreaManagerId	Int	<p>Identification of the area manager in the GPR.</p> <p>Area manager identifications are unique in GPR.</p>
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.
CheckAnswer	Text	<p>Answer given by GPR at a request to check for a PSRight for a certain vehicle in a specified area at a specified time.</p> <p>Value list: Y = Yes, a PSRight was found. N = No, a PSRight was not found.</p>
CheckInfoData		Information on one specific logged check.
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	<p>Code of a PSRight checking organization.</p> <p>CheckOrgCodes are unique in GPR.</p>
CheckOrgDesc	Text	Description of a PSRight checking organization.
CheckTime	DT	Date and time at which must be checked whether or not a PSRight is present.
ClaimRightPossible	Text	<p>Indicator whether or not PSRights are valid in a timeframe</p> <p>Y = Yes, claimed PSRights are valid.</p>

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		N = No, claimed PSRights are not valid.
CorrelationId	GUID	Unique identification of a request sent to GPR. Takes the form of 32 hexadecimal (base 16) digits, displayed in five groups separated by hyphens, in the form 8-4-4-4-12
CountryCodeCheck	Text	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.
CountryCodeVehicle	Text	Denotes the country of origin of the vehicle licence plate. The coding scheme used is UN agreed. Advise: to avoid problems in enforcement, omit the CountryCode if unknown: don't use 'B' as default.
DayTimeFrame	Text	Name of a day of the week.
EndDateArea	Date	End date of an area (exclusive).
EndDateAreaRegulation	DT	End date-time of a regulation of an area (exclusive, time included).
EndDateFare	Date	End date of a fare (exclusive).
EndDateFarePart	Date	End date of a fare part (exclusive).
EndDateRegulation	Date	End date of a regulation (exclusive).
EndDurationFarePart	Int	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.
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 recorded.
EndTimePSRightAdjusted	DT	System calculated date and time (time exclusive) when a PSRight ends, overrules the EndTimePSRight provided by the rights acquirer.
EndTimeTimeFrame	Int	End time of a timeframe, format uumm (time exclusive). This is the area manager local time when a certain fare ends to be applicable.
ErrorCode	Int	Code explaining an error situation.
ErrorDesc	Text	Description explaining an error situation.
ErrorVariable	Text	In this element, when an error situation occurs, extra information that might be useful for the recipient can be given.
ExtraInfoIndicator	Text	Indicator denoting if the checking organization wants to receive extra information, on checking for PSRights.

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		Value list: Y = Yes, I want extra information. N = No, I don't want extra information
FareCalculationCode	Text	Code of a certain fare. The fare calculation IDs in GPR are set by the area manager, they are unique for the area manager but not necessarily unique for GPR.
FareCalculationDesc	Text	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	Code of the fare that is applied within this timeframe.
Indicatortime	DT	Date and time around which something should be retrieved, e.g. rights or check answers.
Latitude	Dec	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.
LocationPSRight		Node in which a location is given, specifying the area for which a PSRight should be recorded.
Longitude	Dec	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.
MaxDurationRight	Int	Maximum possible duration of a PSRight (in minutes) within this timeframe.
MinParkingInterruption	Int	Minimum time between registering PsRights of the same VehicleId for the same AreaUsageld.
PSRightAcquirerCode	Int	The code of the right acquirer as known in GPR. Right acquirer codes are unique in GPR.
PSRightAcquirerDesc	Text	The description of the right acquirer as recorded in GPR.
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	Unique, system issued, identification of a PSRight in GPR.
PSRightInfoData		Information of one specific PSRight.
PSRightInfoList		A list of information on PSRights
ReferenceCheckOrg	Text	Identification or description that a checking organization can register with the logging in GPR of a check. If, how and when to use this element, is to be decided by the

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		checking organization.
ReferencePSRight	Text	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	Description of a regulation imposed by the area manager.
RegulationId	Text	Identification of a regulation imposed by the area manager. The regulation IDs in GPR are set by the area manager, they are unique for the area manager but not necessarily unique for GPR.
RegulationIdArea	Text	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
SellingPointDesc	Text	Description of a selling point.
SellingPointId	Int	Identification of the selling point where the right was acquired. Selling point IDs are unique within GPR.
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	Start date of an area (inclusive).
StartDateAreaRegulation	DT	Start date-time of a regulation of an area (inclusive).
StartDateFare	Date	Start date of a fare (inclusive).
StartDateFarePart	Date	Start date of a fare part (inclusive).
StartDateRegulation	Date	Start date of a regulation (inclusive).
StartDurationFarePart	Int	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.

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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.
StartTimeTimeFrame	Int	Start time of a time frame, format uumm (inclusive). This is the area manager local time when a certain fare starts to be applicable.
StatusReference	Text	A reference that the initiator of a status request can provide with the status request. It will be returned in the status request response.
StatusRPV	Text	OK or NOK: GPR available or not
StatusTime	DT	Time at which a StatusRequest was sent (in the request) or processed (in the response)
StepSizeFarePart	Int	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.
TimeFrameTable		A table containing timeframes when a certain fare applies.
TimeFrameTableData		The data of one individual timeframe
TotalAmountParts	Dec	Total amount in €.cc of the previous fare parts before this fare part.
UsageDesc	Text	Description of the usage.
Usageld	Text	Identification of the usage.
VATAmountFraction	Dec	Amount, being a fraction of VATPSRightCalculated. Is used within a SpecifCalcAmountList.
VATPercentage	Dec	Percentage VAT of a certain fare.
VATPSright	Dec	Format €.cc.VAT portion of AmountPSRight, only present if applicable.
VATPSRightCalculated	Dec	Format €.cc. VAT portion of AmountPSRightCalculated, only present if applicable.
VehicleId	Text	The licence plate number of a vehicle. Before storage in GPR, 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 – List of error messages and informational message

ErrorCode	ErrorDesc
1	No current regulation for areamanager id <AreamanagerId>, area id <Areald>
5	No PSRight required

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8	Usage Id does not exist or is not valid
9	Area could not be determined uniquely
10	Area does not exist or is not valid
11	Area manager does not exist or is not valid
13	Sellingpoint is not valid
100	Area is not provided
102	No authorisation
103	Invalid parking duration
104	Checking organization has no authorisation to check
110	PSRight not found <i>If there are no rights found after "RetreiveRightInfo" there will not occur an error code 110. Not finding rights is not an error situation.</i>
204	It is not possible to grant PSRightId until dd/mm/yyyy hh:mm:ss (UTC) <i>or</i> It is not possible to grant PSRight as long as previous right has not ended.
205	Too many PSRights for AreaUsage
206	Required data not filled
1011	No GIS layer defined
1021	No unique Base Regulation
1031	AreaUsage does not exist or is not valid