gasunie
transport services

GTS Information Services for External Allocator

Operational External Allocations

Department
GTS

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Final

Version control

Version	Date	Changes
1.0	26/05/2011	Setup document. This document is an extract of all services intended for External Allocator from the documents: GTS InformationServices R1 v1.6, GTS InformationServices R2 v1.2, GTS InformationServices OperationalBidPriceLadder v1.0, GTS InformationServices OperationalExternalAllocations v1.0
1.1	27/09/2013	Number of digits for Counters changed in paragraph '1.3 Measurement type' Added error 51122 to Appendix A Error Codes
1.2	16/05/2013	Some minor textual adjustments made in paragraph '1.1 About this document'.
1.3	06/02/2015	The following paragraphs are updated: 1.1 About this document: minor textual update 1.2 Basic assumptions: the assumptions described in more detail 1.3 Measurement types updated: minor textual update - Appendix A Error codes: unused error codes depreciated and a few described in more detail.

Abbreviations

Abbreviation	Explanation
CET	Central European Time (= UTC+1)
EDSN	Energie Data Services Nederland
GOS	Gasontvangststation (gas receive station)
GTS	Gasunie Transport Services
GU	N.V. Nederlandse Gasunie
IN	Information Contract
LDC (RNB)	Local Distribution Company (Regionaal Netbeheerder)
NRT	Near Real Time
POS	Portfolio Onbalans Signaal (portfolio imbalance signal)
PRP	Program Responsible Party
PTV	Pressure Temperature Volume
SBS	Systeem Balans Signaal (system balance signal)
SO	System Operator, for the Netherlands this is GTS
SU	Supplier Contract
TR	Transport Contract
TZD	Time Zone Designator (Z or +hh:mm or -hh:mm)
UTC	Universal Time Coordinated
UUID	Universally Unique Identifier
XSD	XML Schema Definition

Contents

1 Introduction

1.1 About this document

Gasunie Transport Service (GTS), as part of N.V. Nederlandse Gasunie (GU), provides information to the market parties.

This information is made available as GTS Information Services. The GTS Information Services are deployed as web services. This document is intended for the business specialists.

In case of any questions please refer first to "B2B - Frequently Asked Questions" document which can be found on the GTS website.

1.2 Basic assumptions

This section lists the basic assumptions that are defined for all GTS Information Services:
1. the identification (MessageID) of XML messages is done by means of Universally Unique IDentifier[1] (UUID). The MessageID should follow the XSD of the message. Not every character can be used in the message-id (only 0-9, a-f and A-F are allowed). The characters in the message-id are 5 groups separated by a hyphen (-), e.g. f81d4fae-7dec-11d0-a765-00A0c91e6bf6. Normally, with every request a new MessageID has to be generated as they are unique. For generating a UUID for all platforms and languages functions to create them are available on the web;
2. recognizing (portfolios of) market parties is done by means of:
    a. Edigas code (PortfolioEdigasID) for PRP, e.g. GSxxxxx[2]
    b. Portfolio identifier (PortfolioID) for connected parties, e.g. 5000011111
    c. Portfolio EAN identifier (PortfolioEANID) for connected parties, e.g. 50000000111111
    For details concerning the use of identifiers, see the detailed message definitions in the following chapters;
3. the identification of network points is be done by means of:
    a. Network point identifier (NetworkpointID), e.g. 300123
    b. Network point Edigas code (NetworkpointEdigasID), e.g. ZELZA1;
4. the standard (and sole) unit for exchanging Energy data is kWh;
5. an entry amount is depicted with a negative ("-") sign, e.g. -100 means 100 entry;
6. an exit amount is depicted without a sign, e.g. 100 means 100 exit;
7. the sign convention for a balance signal is as follows:
    a. a negative imbalance amount (e.g. -15) means that a party has realised 15 more entry than exit. In other words: the party should have had 15 more exit or 15 less entry to be in balance (i.e. Long);
    b. a positive imbalance amount (e.g. 80) means that a party has 80 more exit than entry. In other words: the party should have had 80 more entry or 80 less exit (i.e. Short);
8. time is always in CET (=UTC+1) and formatted as specified in the W3C Date and Time Formats (an ISO 8601 Profile): YYYY-MM-DDThh:mm:ssTZD. CET is being used during

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[1] For more information see: http://www.ietf.org/ AND
http://en.wikipedia.org/wiki/Universally_unique_identifier
[2] Where 'x' is a representation of a number, e.g. GP12345.

summer and wintertime. This will always give an offset of +01:00 in the timestamp. Example: 2011-07-15T09:40:10+01:00;

9. allocated and measured energy amounts are noted in max. 18 digits before the decimal dot and max. 6 digits after the decimal dot, e.g. 1200.123456 kWh. The POS and SBS have no decimals;

10. as a label for a period of a full clock hour, the time of the next hour is used. E.g.:
    a. 30th June from 08:00 – 09:00 will be expressed by the hour 09:00
    b. 30th June from 23:00 – 00:00 will be expressed as 1st of July 00:00;

11. the information that is made available by GTS (e.g. POS, SBS, allocations, etc.) is made available on a "collect basis". This means that the parties, who use this data, have to collect it. In a technical way: GTS deploys the web services that can be used by the PRP to retrieve the queried information;

12. the web services will return the queried information in the response. In case the queried information can not be returned because the query was not correct, a result will be returned instead. The result will contain an error code an error text. See Appendix A for the error codes;

13. operational values have an availability time window of 24 hours in the operational services;

14. analysis values of the above operational values will be available in the analysis services at the latest 36 hours after the current date and time;

15. for some services, the information in the response can be aggregated to hour, day, gasday, month or gasmonth. Hour is the default value for these aggregations;

16. operational values of the actual Within Day Balancing Action (WDBA) do have a time window of 48 hours ahead;

17. the accountable hour values are available between HH:15 and HH:20 for the hour HH:00. Example: requests <u>after</u> 10:15 hours results in the response of accountable value of 10:00 hour. Requests <u>before</u> 10:15 will result in the response of the accountable value of 09:00 hour;

18. in most cases the CreationTimestamp is used as the time of the created request or response message, however, in some cases the CreationTimestamp is being used as the time of the requested value in the webservice. For details concerning the use of CreationTimestamp, see the detailed message definitions.

1.3 Measurement types

Description of the measurement types that are used in GTS Information Services:

Energy	Number of digits before the decimal dot	Number of digits after the decimal dot	Unit
(Cumulated) Energy	12	6	kWh
Rest Energy	9	6	kWh
Prognosis Energy	9	6	kWh
Running Sum Energy (Q)	9	6	kWh/h
Energy details			
Normalized Volume (Vn)	9	6	m3(n)
Superior Calorific Value (Hs)	2	4	kWh/m3(n)
Temperature (T)	2	6	ºC
Pressure (P)	2	6	Bar(A)
Quality			
Inferior Calorific Value (Hi)	2	4	kWh/m3(n)
Relative Density (d)	1	4	-
Wobbe Index (W)	2	4	kWh/m3(n)

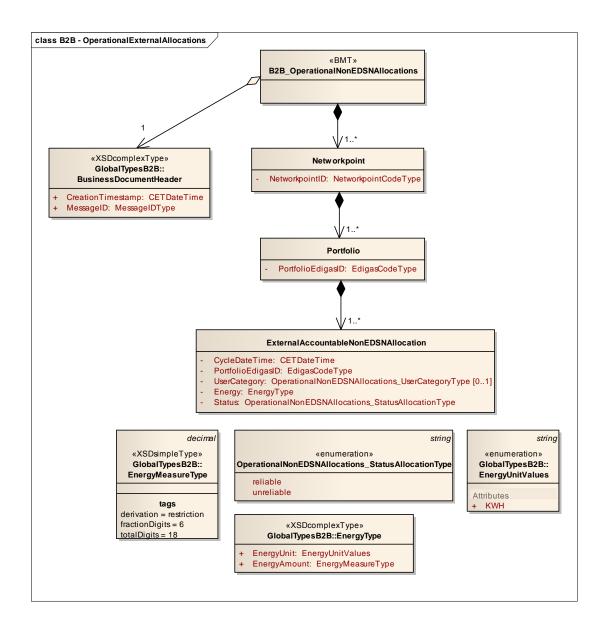|			
Hydrogen (H2)	2	4	mol%
Carbon Monoxide (CO)	2	4	mol%
Carbon Dioxide (CO2)	2	4	mol%
Nitrogen (N2)	2	4	mol%
Helium (He)	2	4	mol%
Methane (CH4)	2	4	mol%
Ethene (C2H4)	2	4	mol%
Ethane (C2H6)	2	4	mol%
Propene (C3H6)	2	4	mol%
Propane (C3H8)	2	4	mol%
I-butane (I-C4H10)	2	4	mol%
N-butane (N-C4H10)	2	4	mol%
I-pentane (I-C5H12)	2	4	mol%
N-pentane (N-C5H12)	2	4	mol%
Neo-pentane (Neo-C5H12)	2	4	mol%
C3H8 (Propane)	2	4	mol%
C3H6 (Propene)	2	4	mol%
Component C4+ (C4plus)	2	4	mol%
Component C6+ (C6plus)	2	4	mol%
TP (water dew point)	2	1	ºC
Rho0 (normal density)	1	4	kg/m³
Counters			
E (counter value energy)	9	5	GJ
Vn (counter value normalized volume)	9	2	m³(n)
Vb (counter value corrected volume)	9	3	m³
Vbu (counter value uncorrected volume)	9	3	m³
Others			
AlfaValue	1	4	-
BetaValue	1	4	-
Quantity	18	6	kWh
Cumulative Quantity	18	6	kWh

2 Operational External Allocations

This GTS Information Service is a <u>information distribution</u> business transaction. This service enables a GTS business partner to provide GTS with external allocations. GTS validates the sum of the measurements with the externally delivered allocations and, if within a margin, will store them as allocations.
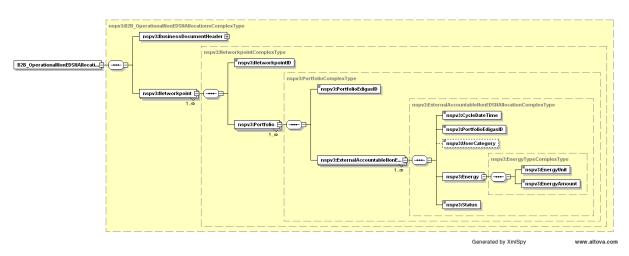
2.1 Class diagram

The class diagram represents the information being exchanged in this information distribution business transaction.

An explanation of the most important attributes of this GTS Information Service can be found the following table:

Attribute	Class	Description
MessageID	BusinessDocumentHeader	This identifier is a UUID used to uniquely identify every document instance and is provided by the infrastructure.
Creation Timestamp	BusinessDocumentHeader	The date and time when the query or response was created. Pattern is [YYYY]-[MM]-[DD]T[hh]:[mm]:[ss]+01:00.
NetworkpointID	Networkpoint	This identifier is the GTS code of the Networkpoint.
PortfolioEdigasID	Portfolio	This identifier is the Edigas code of the Portfolio.
CycleDateTime	ExternalAccountableNonEDSNAllocation	Date and time label (in CET). Pattern is [YYYY]-[MM]-[DD]T[hh]:[mm]:[ss]+01:00.
PortfolioEdigasID	ExternalAccountableNonEDSNAllocation	This identifier is the Edigas code of the Portfolio.
UserCategory	ExternalAccountableNonEDSNAllocation	Optional user category attribute. This attribute is for future use.
Energy	ExternalAccountableNonEDSNAllocation	Amount of energy.
Status	ExternalAccountableNonEDSNAllocation	Identifying the reliability of the data.

2.2 XML Schema

Generated by XmlSpy   www.altova.com

Appendix A Error codes

This appendix lists the Error Numbers that are specified for <u>all</u> GTS Information Services.
One or more of these Error Numbers may apply to the GTS Information Service(s) described in this document.

Error Number	External Message
10006	Message Processed too late
10007	Not a valid LDC network point
10008	You are not licensed for LDC
10010	Allocation deviation too large
10011	One or more allocation within netcoupling delivered
10012	One or more allocation(s) in netcoupling unreliable
10013	Not a valid NON LDC network point
10104	Confirmation Edigas networkpoint code is empty.
10105	Confirmation Edi contractcode is empty
10107	Counterparty portfolio is not found
10108	Quantity does not have a valid energy unit
10204	No measurement for allocation found
10254	End date time is in the past
10301	Program is completely in the past
10501	GC Identifier not found
10502	StationRun Identifier [{0}] not found.
10601	Contracted Working Volume of portfolio [0] is not sufficient
10602	Actual Available Working Gas of Portfolio [0] is not sufficient
51121	The requested period is invalid.
51122	There is no data available for this request.
51140	Run Identifier without Station Identifier
51150	Unauthorized portfolio/networkpoint combination
60022	StartDate [{0}] is older than 7 calendar years.
60130	QuantityType [{0}] not found.
60160	No Networkpoint found in request.
60170	Station [{0}] not found.
60180	Networkpoint [{0}] not found.
60181	Parent Networkpoint [{0}] not found.
60220	BusinessPartner [{0}] not found.
60230	Portfolio [{0}] not found.
60240	StartDate [{0}] is later than EndDate [{1}].
60280	Portfolio [{0}] not found
60320	Given enddate [{0}] is in the future
60440	Portfolio [{0}] / Networkpoint [{1}] combination not found
60470	MeasureUnitType [{0}] not found.
60480	No portfolio identification provided in request.
60481	Unauthorized portfolio [{0}] networkpoint [{1}] combination.
60520	BidPriceLadderCallType [{0}] not found
60540	QuantityType should be kWh or MWh
60600	Unauthorized networkpoint [{0}] for Business Partner [{1}].
60621	QuantityType should be kWh, MJ, GJ or m3g

Error Number	External Message
60640	End time/date [{0}] may not be greater than start time/date month [{1}] plus 3 full calendar months in the future
60650	The maximum requested period is longer than one year
60690	Selection period is not for previous gas day
60700	Selection period is not for previous gas day and current gas day.
69020	No networkpoint supplied for run
69030	Run [{0}] not found.
69040	GasChromatograph [{0}] not found.
69050	No station supplied for run
69051	Gastype [{0}] not found.
69053	Invalid system type [{0}].
70020	End time/date [{0}] may not be greater than start time/date [{1}] plus 31 full calendar days in the future
70030	End time/date [{0}] may not be greater than start time/date [{1}] plus 1 hour.
80000	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80010	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80020	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80030	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80040	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80050	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80060	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80070	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80080	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80090	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80110	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80120	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80180	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80190	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80200	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80210	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80220	An unexpected error occurred. Error logged in SynchronizeMessagesLog
80230	Changes found
80240	No changes found
80250	StartDate [{0}] is older than 4 years.
99995	An unexpected error occurred
99996	An unexpected error occurred
99997	An unexpected error occurred
99998	An unexpected error occurred
99999	An unexpected error occurred