

Partner Access Services Info Interface Specification

Version	06
Issue date	12.07.2017
Replaces version	05
Valid from	12.07.2017
Valid until	recalled or replaced by new version
Classification	Technical Support Documentation
Status	released

Contents

Contents.....	2
Release.....	3
1 Introduction.....	4
1.1 Purpose.....	4
1.2 Scope.....	4
1.3 Target readership, requirements of the reader.....	4
1.4 Terms and abbreviations.....	4
1.5 Referenced documents.....	4
1.6 Single Point of Contact in Swisscom (SPOC).....	5
1.7 Document updates.....	5
2 Business Processes.....	6
2.1 Process Reports.....	6
2.1.1 CREATE_REPORT.....	Error! Bookmark not defined.
2.1.2 LIST_REPORT.....	Error! Bookmark not defined.
2.1.3 GET_REPORT.....	Error! Bookmark not defined.
2.2 Process Files.....	7
2.2.1 UPLOAD_FILE.....	Error! Bookmark not defined.
2.2.2 DOWNLOAD_FILE.....	Error! Bookmark not defined.
2.2.3 LIST_FILES.....	Error! Bookmark not defined.
3 Web Service Interface.....	33
3.1 Security.....	33
3.1.1 Encryption.....	33
3.1.2 Authentication, Authorization, and Accounting (AAA).....	33
3.2 Model: WSDL and XML Schemas.....	34
3.3 The WSG Info Service Outbound Web Service.....	34
3.3.1 Success or Error status.....	34
3.3.2 Error Codes.....	34
4 Appendix A.....	35
4.1 Securing a WEB-Service with Powergate.....	35
4.2 Setting up a new WEB-Service.....	35
4.3 Sample Client with wss4j.....	35
4.4 Errors.....	38
4.5 Login from the user point of view.....	39

Checklist of changes

Version	Date	Changed by	Comments / nature of the change
01	31.07.2013	Roland Staub	1st version
03	25.10.2013	Roland Staub	- Updated for Nov13 Release
04	06.11.2013	Roland Staub	- Updated after review feedback
05	08.05.2015	Roland Staub	Updated for June15 Release
05	29.10.2015	Roland Staub	Added classification
06	12.07.2017	Roland Staub	Updated for Aug17 Release
			-

Release

int.Version	Date	Released by	Comments / nature of the change
04	07.11.2013	H.Künzi	Released for WSG-9.6 (NOV2013)
06	17.07.2017	H.Künzi	Released for WSG-08.17 (Aug17)

1 Introduction

The WSG InfoService business processes can be used via a GUI interface or via web service interface.

1.1 Purpose

This document provides the detailed technical specification for the implementation of these interfaces.

1.2 Scope

In summary, for the WSG Info business processes, the specification provides:

- The detail specification of the web service

1.3 Target readership, requirements of the reader

This document addresses the user and the developer of a client application using the mentioned services.

1.4 Terms and abbreviations

aka	also known as
CoPa	Cooperation Partner
FCO	Fiber Cross Connect
FIO	Fiber Inouse Order
OTO	Optical Termination Outlet
NSN	Network Subscriber Number
OHDF	Optical Handout Distribution Frame
OMDF	Optical Main Distribution Frame
XMDF	eXchange Main Distribution Frame
saSLA	Service assurance Service Level Agreement
sfSLA	Service fulfillment Service Level Agreement
WSG	Web Service Gateway
LOV	ListOfValue

1.5 Referenced documents

[1] WSG Messages (WSG_Messages_V**.pdf)

[2] wsgInfoSrv_v4.0.0.zip

[3] wsgNotification_v19.0.0.zip

1.6 Single Point of Contact in Swisscom (SPOC)

The SPOC for all questions or suggestions related to the present document is:
ServiceDesk.IT@swisscom.com

1.7 Document updates

In case of changes Swisscom will provide the Internet Service Provider / Cooperation Partner / Partner with the latest update of this document at least three weeks before the changes becomes effective.

2 Business Processes

For the WSGInfo Business we need to distinguish for 2 areas.

Create/Get a Report which, is described in 2.1

Upload/Download Partner file, which is described in 2.2

The business processes provided by this interface are described by the following actual XML-schema, see [2]

How to use samples can be found in the B2B_Web_Service_Tutorial_WSGInfoServices_V**.doc

2.1 Process Reports

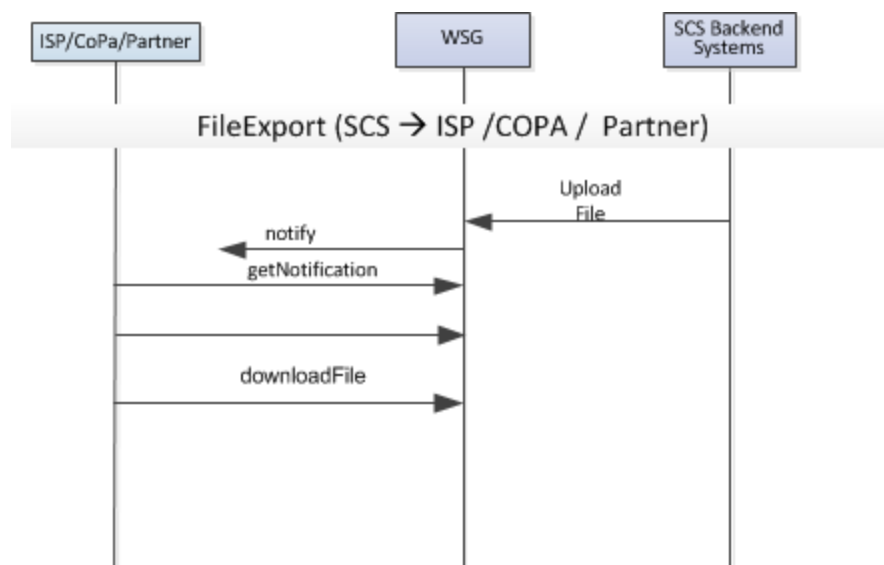
ISP / CoPa can demand a report with defined criteria's in the input parameters using the CREATE_REPORT use case. Using the LIST / GET_REPORT functionality the previous demanded report using CREATE_REPORT can be listed, or the details can be "shown" of the Report.

Business Process	Ver. Vxxx	WebService / Operation <i>wsgInfoSrv_vxxx</i>
CREATE_REPORT	V04	createReport
GET_REPORT	V04	getReport
LIST_REPORT	V04	listReports

2.2 Process Files

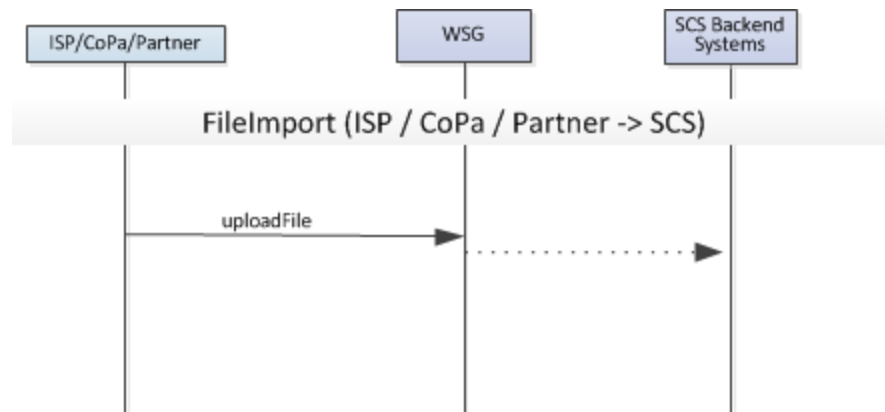
Business Process	Ver.	WebService / Operation
	Vxxx	wsgInfoSrv_vxxx
UPLOAD_FILE	V01	uploadFile
DOWNLOAD_FILE	V01	downloadFile
LIST_FILES	V01	listFiles

If Swisscom provide a file towards a ISP / CoPa /Partner the sequence diagram looks as follows:



If a File is published, the ISP / CoPa / Partner will be notified either by eMail or using the notification service defined in [2] (as configured)

If the ISP / CoPa / Partner uploads a file, the sequence diagram looks as follows:



2.3 Migration Projects

3 Interface Description

3.1 Operations

3.1.1.1 createReport

Description: Request to generate a Report

Input message	Output message
createReportRequest	createReportResponse
Top	

3.1.1.2 listReports

Description: Lists all generated and available Reports

Input message	Output message
listReportsRequest	listReportsResponse
Top	

3.1.1.3 getReport

Description: Gets a generated and available Report

Input message	Output message
getReportRequest	getReportResponse
Top	

3.1.1.4 uploadFile

Description: Upload a new file

Input message	Output message
uploadFileRequest	uploadFileResponse
Top	

3.1.1.5 downloadFile

Description: Download an existing file

Input message	Output message
downloadFileRequest	downloadFileResponse
Top	

3.1.1.6 listFiles

Description: List existing files

Input message	Output message
listFilesRequest	listFilesResponse
Top	

3.1.1.7 listMigrationProjects

Input message	Output message
listMigrationProjectsRequest	listMigrationProjectsResponse

[Top](#)

3.1.1.8 getMigrationProjectDetail

Input message	Output message
getMigrationProjectDetailRequest	getMigrationProjectDetailResponse

[Top](#)

3.2 Messages

3.2.1.1 createReportRequest

Element	Type	Occ	Comment
parameters	createReportRequest	1..1	

[Top](#)

3.2.1.2 createReportResponse

Element	Type	Occ	Comment
parameters	createReportResponse	1..1	

[Top](#)

3.2.1.3 listReportsRequest

Element	Type	Occ	Comment
parameters	listReportsRequest	1..1	

[Top](#)

3.2.1.4 listReportsResponse

Element	Type	Occ	Comment
parameters	listReportsResponse	1..1	

[Top](#)

3.2.1.5 getReportRequest

Element	Type	Occ	Comment
parameters	getReportRequest	1..1	

[Top](#)

3.2.1.6 getReportResponse

Element	Type	Occ	Comment
parameters	getReportResponse	1..1	

[Top](#)

3.2.1.7 uploadFileRequest

Element	Type	Occ	Comment
parameters	uploadFileRequest	1..1	

[Top](#)

3.2.1.8 uploadFileResponse

Element	Type	Occ	Comment
parameters	uploadFileResponse	1..1	

[Top](#)

3.2.1.9 downloadFileRequest

Element	Type	Occ	Comment
parameters	downloadFileRequest	1..1	

[Top](#)

3.2.1.10 downloadFileResponse

Element	Type	Occ	Comment
parameters	downloadFileResponse	1..1	

[Top](#)

3.2.1.11 listFilesRequest

Element	Type	Occ	Comment
parameters	listFilesRequest	1..1	

[Top](#)

3.2.1.12 listFilesResponse

Element	Type	Occ	Comment
parameters	listFilesResponse	1..1	

[Top](#)

3.2.1.13 listMigrationProjectsRequest

Element	Type	Occ	Comment
parameters	listMigrationProjectsRequest	1..1	

[Top](#)

3.2.1.14 listMigrationProjectsResponse

Element	Type	Occ	Comment
parameters	listMigrationProjectsResponse	1..1	

[Top](#)

3.2.1.15 getMigrationProjectDetailRequest

Element	Type	Occ	Comment
parameters	getMigrationProjectDetailRequest	1..1	

[Top](#)

3.2.1.16 getMigrationProjectDetailResponse

Element	Type	Occ	Comment
parameters	getMigrationProjectDetailResponse	1..1	

[Top](#)

3.3 Root elements

3.3.1.1 createReportRequest

Element	Type	Comment
createReportRequest	createReportRequestType	

[Top](#)

3.3.1.2 createReportResponse

Element	Type	Comment
createReportResponse	createReportResponseType	

[Top](#)

3.3.1.3 listReportsRequest

Element	Type	Comment
listReportsRequest	listReportsRequestType	

[Top](#)

3.3.1.4 listReportsResponse

Element	Type	Comment
listReportsResponse	listReportsResponseType	

[Top](#)

3.3.1.5 getReportRequest

Element	Type	Comment
getReportRequest	getReportRequestType	

[Top](#)

3.3.1.6 getReportResponse

Element	Type	Comment
getReportResponse	getReportResponseType	

[Top](#)

3.3.1.7 uploadFileRequest

Element	Type	Comment
uploadFileRequest	uploadFileType	

[Top](#)

3.3.1.8 uploadFileResponse

Element	Type	Comment
uploadFileResponse	uploadFileResponseType	

[Top](#)

3.3.1.9 downloadFileRequest

Element	Type	Comment
downloadFileRequest	downloadFileType	

[Top](#)

3.3.1.10 downloadFileResponse

Element	Type	Comment
downloadFileResponse	downloadFileResponseType	

[Top](#)

3.3.1.11 listFilesRequest

Element	Type	Comment
listFilesRequest	listFilesType	

[Top](#)

3.3.1.12 listFilesResponse

Element	Type	Comment
listFilesResponse	listFilesResponseType	

[Top](#)

3.3.1.13 listMigrationProjectsRequest

Element	Type	Comment
listMigrationProjectsRequest	listMigrationProjectsRequestType	

[Top](#)

3.3.1.14 listMigrationProjectsResponse

Element	Type	Comment
listMigrationProjectsResponse	listMigrationProjectsResponseType	

[Top](#)

3.3.1.15 getMigrationProjectDetailRequest

Element	Type	Comment
getMigrationProjectDetailRequest	getMigrationProjectDetailRequestType	

[Top](#)

3.3.1.16 getMigrationProjectDetailResponse

Element	Type	Comment
getMigrationProjectDetailResponse	getMigrationProjectDetailResponseType	

[Top](#)

3.4 Types

3.4.1.1 centralOfficeType

Used by: [centralOffice](#)

Element	Type	Occ	Comment
taxRegion	xs:int	1..1	The tax region (e.g. "62") [NC: OFFICE_CODE]
bbDeviceLocation	xs:string (maxLength: 32)	1..1	The broad band device location. (e.g. "AES") [NC: LOCATION_SHORT_NAME]

[Top](#)

3.4.1.2 createReportRequestType

Description: Request for a Report. The report will be generated asynchronously

Used by: [createReportRequest](#)

Element	Type	Occ	Comment
ispCopaId	xs:int (totalDigits: 6)	1..1	ISP ID or CoPa ID [NC: RIGHT_OF_USE]
reportType	xs:int (totalDigits: 3)	1..1	[LOV-ID: 9034] Type of the report (1- OmdfXmdf; 2-OtoOmdf, 3-OtoSap)
centralOffice	centralOfficeType	1..1	
onlyActiveLines	xs:boolean	0..1	used for report OtoOmdf: if true only active Lines will be listed in the report [NC:OMDF_CONNECTOR_STATUS='Assigned' = activeLine]

[Top](#)

3.4.1.3 createReportResponseType

Description: Response of CreateFIO

Used by: [createReportResponse](#)

Extension of: [ackType](#)

Element	Type	Occ	Comment
reportId	xs:int	0..1	Identifier of the report

[Top](#)

3.4.1.4 listReportsResponseType

Description: lists all for a ISP or Copa generated and available reports

Used by: [listReportsResponse](#)

Extension of: [ackType](#)

Element	Type	Occ	Comment
report	reportId	xs:int	1..1 Identifier of the report
	reportType	xs:int (totalDigits:3)	1..1 [LOV-ID: 9034] Type of the report (1- OmdfXmdf; 2- OtoOmdf, 3- OtoSap)
	numberOfParts	xs:int	1..1 the number of pieces the report is subdivided into
	centralOffice	centralOfficeType	0..1
	creationDateTime	xs:dateTime	1..1 DateTime when the report was requested from the backend system
0..n the number of pieces the report is subdivided into DateTime when the report was requested from the backend system			

[Top](#)

3.4.1.5 listMigrationProjectsResponseType

Description: lists all migration projects

Used by: [listMigrationProjectsResponse](#)

Extension of: [ackType](#)

Element	Type	Occ	Comment
project	projectId	xs:int (totalDigits:3)	1..1 The migration Project ID: 2 CU@Warp,3 Vectoring Access Node, 5 FTTS/FTTB_Migration, FTTS/FTTB_activation,7 Software Upgrade CAN,8 Maintenance - Port Move,9 Maintenance - Shorting (SpectrumManagement)
	projectName	xs:string (minLength:1, maxLength:256)	1..1 The name of the project
	projectDescription	xs:string	1..1 The project Description
	projectImpact	xs:string	1..1 The impact of the project
	customerAffected	xs:string (minLength:1, maxLength:256)	1..1 Customers impacted, e.g many
0..n			

projectRollout	xs:string (minLength: 1 , maxLength: 256)	1..1	Project Rollout , e.g July 2012 - 2016/2017
migrationReason	xs:string (minLength: 1 , maxLength: 256)	1..1	Project migration reason, 51 - Cu@WARP
transactionDateTime	xs:dateTime	1..1	The date and time when the file was processed

[Top](#)

3.4.1.6 getMigrationProjectDetailResponseType

Description: lists all migration projects

Used by: [getMigrationProjectDetailResponse](#)

Extension of: [ackType](#)

Element	Type			Occ	Comment
migrationElements	Element	Type	Occ	Comment	0..n
	networkElementType	xs:string (minLength: 1 , maxLength: 200)	1..1	The name of the network element	
	networkElementName	xs:string (minLength: 1 , maxLength: 200)	1..1	The name of the network element	
	dnVnNsn	xs:string (pat- tern: 0[1-9]\d{8})	1..1		
	customerNotificationId	xs:string (minLength: 1 , maxLength: 200)	1..1	The customer notification id	
	customerNotificationType	xs:string (minLength: 1 , maxLength: 512)	1..1	The customer notification id	
	migrationDate	xs:dateTime	1..1	The date and time when the migration took place	
	duration	xs:int	1..1	The duration of the disruption in minutes	
	transactionDateTime	xs:dateTime	1..1	The date and time when the file was processed	

[Top](#)

3.4.1.7 getReportResponseType

Description: Report

Used by: [getReportResponse](#)

Extension of: [ackType](#)

Element	Type				Occ	Comment
report	Element	Type	Occ	Comment	0..1	Report
	reportId	xs:int	1..1	Identifier of the report		
	partNumber	xs:int	1..1	part number (starting with 1)		

[Top](#)

3.4.1.8 ackType

Description: The generic acknowledge response type.

Extended by: [createReportResponseType](#), [listReportsResponseType](#), [listMigrationProjectsResponse](#), [getMigrationProjectDetailResponseType](#), [getReportResponseType](#)

Element	Type	Occ	Comment
success	xs:boolean	1..1	The result code for the transaction ("true" if request was successful, "false" otherwise).
reason	xs:string (pattern:[\dA-Z]{3})	0..1	A 3-letter error code (aka messageId) where "000" means "ok".
reasonComment	xs:string (minLength:1, maxLength:256)	0..1	Some additional textual description for the reason.

[Top](#)

3.4.1.9 listReportsRequestType

Description: Request to list all for a ISP or Copa generated and available reports

Used by: [listReportsRequest](#)

Element	Type	Occ	Comment
ispCopaId	xs:int (totalDigits:6)	1..1	ISP ID or CoPa ID [NC: RIGHT_OF_USE]
centralOffice	centralOfficeType	0..1	
creationDateTimeRange	Element	Type	Occ
	from	xs:dateTime	1..1
	to	xs:dateTime	1..1
reportType	xs:int (totalDigits:3)	0..1	[LOV-ID: 9034] Type of the report (1- OmdfXmdf; 2-OtoOmdf, 3-OtoSap)

[Top](#)

3.4.1.10 getReportRequestType

Description: Request for an already generated Report

Used by: [getReportRequest](#)

Element	Type	Occ	Comment
ispCopaId	xs:int (totalDigits:6)	1..1	ISP ID or CoPa ID [NC: RIGHT_OF_USE]
reportId	xs:int	1..1	Identifier of the report

partNumber	xs:int	0..1	
------------	--------	------	--

[Top](#)

3.4.1.11 reportOtoOmdfType

Used by: [reportOtoOmdf](#)

Element	Type	Occ	Comment																																				
ispCopaId	xs:int (totalDigits:6)	1..1																																					
centralOffice	centralOfficeType	1..1																																					
creationDateTime	xs:dateTime	1..1	DateTime when the report was requested from the backend system																																				
onlyActiveLines	xs:boolean	1..1	if true only active lines are listed																																				
row	<table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>otoId</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>An Optical Termination Outlet ID (e.g. A.123.456.789) [NC: OTO_ID]</td></tr> <tr> <td>plugNr</td><td>xs:int (totalDigits:3)</td><td>1..1</td><td>A plug number (1..4) [NC: OTO_CONNECTOR]</td></tr> <tr> <td>otoState</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>State of the Optical Termination Outlet (Possible values: Created, Ordered and Built) [NC: OTO_STATE]</td></tr> <tr> <td>communicationDate</td><td>xs:dateTime</td><td>1..1</td><td>Marketing Communication Date (BEP) [NC: MARKETING_COMMUNICATION_DATE]</td></tr> <tr> <td>inHouseAllowed</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>In house installation allowed (Possible values: Yes, No or 'empty') [NC: IN-HOUSE_ALLOWED]</td></tr> <tr> <td>omdfName</td><td>xs:string (maxLength:256)</td><td>1..1</td><td>Name of the OMDF device [NC: OMDF]</td></tr> <tr> <td>omdfRoomZone</td><td>xs:string (maxLength:256)</td><td>1..1</td><td>Name of the Room/Zone where the OMDF is located [NC: ROOM_ZONE]</td></tr> <tr> <td>omdfSubRack</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>Name of OMDF subrack Slot where one end of 'ISP Wire' is terminated. Subrack is a top level card [NC: OMDF_SUBRACK]</td></tr> </table>	Element	Type	Occ	Comment	otoId	xs:string (maxLength:32)	1..1	An Optical Termination Outlet ID (e.g. A.123.456.789) [NC: OTO_ID]	plugNr	xs:int (totalDigits:3)	1..1	A plug number (1..4) [NC: OTO_CONNECTOR]	otoState	xs:string (maxLength:32)	1..1	State of the Optical Termination Outlet (Possible values: Created, Ordered and Built) [NC: OTO_STATE]	communicationDate	xs:dateTime	1..1	Marketing Communication Date (BEP) [NC: MARKETING_COMMUNICATION_DATE]	inHouseAllowed	xs:string (maxLength:32)	1..1	In house installation allowed (Possible values: Yes, No or 'empty') [NC: IN-HOUSE_ALLOWED]	omdfName	xs:string (maxLength:256)	1..1	Name of the OMDF device [NC: OMDF]	omdfRoomZone	xs:string (maxLength:256)	1..1	Name of the Room/Zone where the OMDF is located [NC: ROOM_ZONE]	omdfSubRack	xs:string (maxLength:32)	1..1	Name of OMDF subrack Slot where one end of 'ISP Wire' is terminated. Subrack is a top level card [NC: OMDF_SUBRACK]	0..n	An Optical Termination Outlet ID (e.g. A.123.456.789) [NC: OTO_ID] A plug number (1..4) [NC: OTO_CONNECTOR] State of the Optical Termination Outlet (Possible values: Created, Ordered and Built) [NC: OTO_STATE] Marketing Communication Date (BEP) [NC: MARKETING_COMMUNICATION_DATE] In house installation allowed (Possible values: Yes, No or 'empty') [NC: IN-HOUSE_ALLOW
Element	Type	Occ	Comment																																				
otoId	xs:string (maxLength:32)	1..1	An Optical Termination Outlet ID (e.g. A.123.456.789) [NC: OTO_ID]																																				
plugNr	xs:int (totalDigits:3)	1..1	A plug number (1..4) [NC: OTO_CONNECTOR]																																				
otoState	xs:string (maxLength:32)	1..1	State of the Optical Termination Outlet (Possible values: Created, Ordered and Built) [NC: OTO_STATE]																																				
communicationDate	xs:dateTime	1..1	Marketing Communication Date (BEP) [NC: MARKETING_COMMUNICATION_DATE]																																				
inHouseAllowed	xs:string (maxLength:32)	1..1	In house installation allowed (Possible values: Yes, No or 'empty') [NC: IN-HOUSE_ALLOWED]																																				
omdfName	xs:string (maxLength:256)	1..1	Name of the OMDF device [NC: OMDF]																																				
omdfRoomZone	xs:string (maxLength:256)	1..1	Name of the Room/Zone where the OMDF is located [NC: ROOM_ZONE]																																				
omdfSubRack	xs:string (maxLength:32)	1..1	Name of OMDF subrack Slot where one end of 'ISP Wire' is terminated. Subrack is a top level card [NC: OMDF_SUBRACK]																																				

omdfRack	xs:string (maxLength:32)	1..1	OMDF rack ID [NC: OMDF_RACK_ID]
omdfSlot	xs:string (maxLength:32)	1..1	OMDF slot [NC: OMDF_SLOT]
omdfPort	xs:string (maxLength:32)	1..1	OMDF port [NC: ??????]
omdfPortStatus	xs:string (maxLength:32)	1..1	OMDF port status (Possible values: Planned, Available and Assigned) [NC: OMDF_CONNECTOR_STATUS]

ED] Name of the OMDF device [NC: OMDF] Name of the Room/Zone where the OMDF is located [NC: ROOM_ZONE] Name of OMDF subrack Slot where one end of 'ISP Wire' is terminated. Subrack is a top level card [NC: OMDF_SUBRACK] OMDF rack ID [NC: OMDF_RACK_ID] OMDF slot [NC: OMDF_SLOT] OMDF port [NC: ??????] OMDF port status (Possible values: Planned, Available and Assigned) [NC: OMDF_CONNECTOR_STATUS]

[Top](#)

3.4.1.12 reportOtoSapType

Used by: [reportOtoSap](#)

Element	Type	Occ	Comment
ispCopaId	xs:int (totalDigits:6)	1..1	ISP ID or CoPa ID [NC: RIGHT_OF_USE]
centralOffice	centralOfficeType	1..1	
creationDateTime	xs:dateTime	1..1	DateTime when the report was requested from the backend sys-

				tem
row	Element	Type	Occ	Comment
	otoId	xs:string (maxLength: 32)	1..1	An Optical Termination Outlet ID (e.g. A.123.456.789) [NC: OTO_ID] A plug number (1..4) [NC: OTO_CONNECTOR]
	plugNr	xs:int (totalDigits: 3)	1..1	A plug number (1..4) [NC: OTO_CONNECTOR]
	omdfName	xs:string (maxLength: 256)	1..1	Name of the OMDF device [NC: OMDF]
	omdfRoom-Zone	xs:string (maxLength: 256)	1..1	Name of the Room/Zone where the OMDF is located [NC: OMDF_ROOM_ZONE]
	omdfSubRack	xs:string (maxLength: 32)	1..1	Name of OMDF subrack Slot where one end of 'ISP Wire' is terminated. Subrack is a top level card [NC: OMDF_SUBRACK]
	omdfRack	xs:string (maxLength: 32)	1..1	OMDF rack ID [NC: OMDF_RACK_ID]
	omdfSlot	xs:string (maxLength: 32)	1..1	OMDF slot [NC: OMDF_SLOT]
	omdfPort	xs:string (maxLength: 32)	1..1	OMDF port [NC: OMDF_PORT]
	xmdfName	xs:string (maxLength: 256)	1..1	Name of XMDF device where one end of 'ISP Wire' is terminated [NC: XMDF]
	xmdfRoom-Zone	xs:string (maxLength: 256)	1..1	Name of the Room/Zone where the XMDF is located [NC: XMDF_ROOM_ZONE]
				0..n

	xmdfSubRack	xs:string (maxLength: 32)	1..1	Name of XMDF sub-rack Slot where one end of 'ISP Wire' is terminated. Subrack is a top level card [NC: XMDF_SUBRACK]	XMDF_RACK_ID] XMDF slot [NC: XMDF_SLOT] Name of XMDF Device Connector where one end of 'ISP Wire' is terminated [NC: XMDF_PORT] Name of OHDF device where another end of 'ISP Wire' is terminated [NC: OHDF] Name of the Room/Zone where the OHDF is located [NC: OHDF_ROOM_ZONE] Name of OHDF subrack Slot where one end of 'ISP Wire' is terminated. Subrack is a top level card [NC: OHDF_SUBRACK] OMDF rack ID [NC: OHDF_RACK_ID] OHDF slot [NC: OHDF_SLOT] OHDF port [NC: OHDF_PORT] The name of the breakout cable (Fan Cable). Only available for PatchType v2 [NC: COOPERATION_CABLE] Number of the breakout cable fiber. Only available for PatchType v2 [NC: CABLE_CONNECTOR]
	xmdfRack	xs:string (maxLength: 32)	1..1	XMDF rack ID [NC: XMDF_RACK_ID]	
	xmdfSlot	xs:string (maxLength: 32)	1..1	XMDF slot [NC: XMDF_SLOT]	
	xmdfPort	xs:string (maxLength: 32)	1..1	Name of XMDF Device Connector where one end of 'ISP Wire' is terminated [NC: XMDF_PORT]	
	ohdfName	xs:string (maxLength: 256)	1..1	Name of OHDF device where another end of 'ISP Wire' is terminated [NC: OHDF]	
	ohdfRoomZone	xs:string (maxLength: 256)	1..1	Name of the Room/Zone where the OHDF is located [NC: OHDF_ROOM_ZONE]	
	ohdfSubRack	xs:string (maxLength: 32)	1..1	Name of OHDF sub-rack Slot where one end of 'ISP Wire' is terminated. Subrack is a top level card [NC: OHDF_SUBRACK]	
	ohdfRack	xs:string (maxLength: 32)	1..1	OMDF rack ID [NC: OHDF_RACK_ID]	
	ohdfSlot	xs:string (maxLength: 32)	1..1	OHDF slot [NC: OHDF_SLOT]	
	ohdfPort	xs:string (maxLength: 32)	1..1	OHDF port [NC: OHDF_PORT]	

	breakout-Cable	xs:string (maxLength: 256)	1..1	The name of the breakout cable (Fan Cable). Only available for PatchType v2 [NC: COOPERATION_CABLE]
	breakout-Fiber	xs:string (maxLength: 32)	1..1	Number of the breakout cable fiber. Only available for PatchType v2 [NC: CABLE_CONNECTOR]

[Top](#)

3.4.1.13 reportOmdfXmdfType

Used by: [reportOmdfXmdf](#)

Element	Type	Occ	Comment																												
ispCopaId	xs:int (totalDigits: 6)	1..1																													
centralOffice	centralOfficeType	1..1																													
creationDateTime	xs:dateTime	1..1	Date/Time when the report was requested from the backend system																												
row	<table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>omdfXmdfRelation</td><td>xs:string (maxLength:256)</td><td>1..1</td><td>Relation name</td></tr> <tr> <td>omdfName</td><td>xs:string (maxLength:256)</td><td>1..1</td><td>Name of the OMDF device</td></tr> <tr> <td>xmdfName</td><td>xs:string (maxLength:256)</td><td>1..1</td><td>Name of the XMDf device</td></tr> <tr> <td>breakoutCable</td><td>xs:string (maxLength:256)</td><td>1..1</td><td>The name of the breakout cable (Fan Cable)</td></tr> <tr> <td>cableStatus</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>Physical Status of the Breakout Cable. (Cooperation/Fan Cable) Possible Values: Frozen or Available Status "Frozen/Available" Possible Values: Installed, Planned, Ordered, Uninstalled or Defective (Only in case of Installed, provisioning is allowed)</td></tr> <tr> <td>relationStatus</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>Status "Frozen/Available" Possible Values: Installed.</td></tr> </table>	Element	Type	Occ	Comment	omdfXmdfRelation	xs:string (maxLength: 256)	1..1	Relation name	omdfName	xs:string (maxLength: 256)	1..1	Name of the OMDF device	xmdfName	xs:string (maxLength: 256)	1..1	Name of the XMDf device	breakoutCable	xs:string (maxLength: 256)	1..1	The name of the breakout cable (Fan Cable)	cableStatus	xs:string (maxLength: 32)	1..1	Physical Status of the Breakout Cable. (Cooperation/Fan Cable) Possible Values: Frozen or Available Status "Frozen/Available" Possible Values: Installed, Planned, Ordered, Uninstalled or Defective (Only in case of Installed, provisioning is allowed)	relationStatus	xs:string (maxLength: 32)	1..1	Status "Frozen/Available" Possible Values: Installed.	0..n	Reclamation name Name of the OMDF device Name of the XMDf device The name of the breakout cable (Fan Cable) Physical Status of the Breakout Cable. (Cooperation/Fan Cable) Possible Values: Frozen or Available Status "Frozen/Available" Possible Values: Installed, Planned, Ordered, Uninstalled or Defective (Only in case of Installed, provisioning is allowed) Available Lodger ID
Element	Type	Occ	Comment																												
omdfXmdfRelation	xs:string (maxLength: 256)	1..1	Relation name																												
omdfName	xs:string (maxLength: 256)	1..1	Name of the OMDF device																												
xmdfName	xs:string (maxLength: 256)	1..1	Name of the XMDf device																												
breakoutCable	xs:string (maxLength: 256)	1..1	The name of the breakout cable (Fan Cable)																												
cableStatus	xs:string (maxLength: 32)	1..1	Physical Status of the Breakout Cable. (Cooperation/Fan Cable) Possible Values: Frozen or Available Status "Frozen/Available" Possible Values: Installed, Planned, Ordered, Uninstalled or Defective (Only in case of Installed, provisioning is allowed)																												
relationStatus	xs:string (maxLength: 32)	1..1	Status "Frozen/Available" Possible Values: Installed.																												

				Planned, Ordered, Uninstalled or Defective (Only in case of Installed, provisioning is allowed)		
	lodgerId	xs:int (totalDigits:6)	1..1	Available Lodger ID		

[Top](#)

3.4.1.14 reportUmsaType

Used by: [reportUmsa](#)

Element	Type	Occ	Comment																												
ispCopaId	xs:int (totalDigits:6)	1..1	ISP ID or CoPa ID [NC: RIGHT_OF_USE]																												
creationDateTime	xs:dateTime	1..1	DateTime when the report was requested from the backend system																												
umsa	<table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>element</td><td> <table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>service</td><td> <table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>commercialId</td><td>xs:string (maxLength:32)</td><td>0..1</td><td>the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN</td></tr> <tr> <td>usedAs</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>indicates the service how the fiber is used.</td></tr> </table> </td><td>1..1</td><td>the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN indicates the service how the fiber is used. "BBCS-F", "ALO", "COPALayer1", "unknown"</td></tr> </table> </td><td>1..1</td><td>the useCase of the UMSA the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN indicates the service how the fiber is used. "BBCS-F", "ALO", "COPALayer1", "unknown" An Optical Termination Outlet ID (e.g. A.123.456.789) A plug number (1..4) UC.0 - OMDF Connector was not changed UC.1 = "if only OMDF Connector has been changed" UC.2.A = "OMDF has been changed but</td></tr> </table>	Element	Type	Occ	Comment	element	<table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>service</td><td> <table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>commercialId</td><td>xs:string (maxLength:32)</td><td>0..1</td><td>the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN</td></tr> <tr> <td>usedAs</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>indicates the service how the fiber is used.</td></tr> </table> </td><td>1..1</td><td>the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN indicates the service how the fiber is used. "BBCS-F", "ALO", "COPALayer1", "unknown"</td></tr> </table>	Element	Type	Occ	Comment	service	<table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>commercialId</td><td>xs:string (maxLength:32)</td><td>0..1</td><td>the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN</td></tr> <tr> <td>usedAs</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>indicates the service how the fiber is used.</td></tr> </table>	Element	Type	Occ	Comment	commercialId	xs:string (maxLength:32)	0..1	the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN	usedAs	xs:string (maxLength:32)	1..1	indicates the service how the fiber is used.	1..1	the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN indicates the service how the fiber is used. "BBCS-F", "ALO", "COPALayer1", "unknown"	1..1	the useCase of the UMSA the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN indicates the service how the fiber is used. "BBCS-F", "ALO", "COPALayer1", "unknown" An Optical Termination Outlet ID (e.g. A.123.456.789) A plug number (1..4) UC.0 - OMDF Connector was not changed UC.1 = "if only OMDF Connector has been changed" UC.2.A = "OMDF has been changed but	1..1	
Element	Type	Occ	Comment																												
element	<table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>service</td><td> <table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>commercialId</td><td>xs:string (maxLength:32)</td><td>0..1</td><td>the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN</td></tr> <tr> <td>usedAs</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>indicates the service how the fiber is used.</td></tr> </table> </td><td>1..1</td><td>the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN indicates the service how the fiber is used. "BBCS-F", "ALO", "COPALayer1", "unknown"</td></tr> </table>	Element	Type	Occ	Comment	service	<table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>commercialId</td><td>xs:string (maxLength:32)</td><td>0..1</td><td>the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN</td></tr> <tr> <td>usedAs</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>indicates the service how the fiber is used.</td></tr> </table>	Element	Type	Occ	Comment	commercialId	xs:string (maxLength:32)	0..1	the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN	usedAs	xs:string (maxLength:32)	1..1	indicates the service how the fiber is used.	1..1	the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN indicates the service how the fiber is used. "BBCS-F", "ALO", "COPALayer1", "unknown"	1..1	the useCase of the UMSA the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN indicates the service how the fiber is used. "BBCS-F", "ALO", "COPALayer1", "unknown" An Optical Termination Outlet ID (e.g. A.123.456.789) A plug number (1..4) UC.0 - OMDF Connector was not changed UC.1 = "if only OMDF Connector has been changed" UC.2.A = "OMDF has been changed but								
Element	Type	Occ	Comment																												
service	<table> <tr> <th>Element</th><th>Type</th><th>Occ</th><th>Comment</th></tr> <tr> <td>commercialId</td><td>xs:string (maxLength:32)</td><td>0..1</td><td>the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN</td></tr> <tr> <td>usedAs</td><td>xs:string (maxLength:32)</td><td>1..1</td><td>indicates the service how the fiber is used.</td></tr> </table>	Element	Type	Occ	Comment	commercialId	xs:string (maxLength:32)	0..1	the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN	usedAs	xs:string (maxLength:32)	1..1	indicates the service how the fiber is used.	1..1	the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN indicates the service how the fiber is used. "BBCS-F", "ALO", "COPALayer1", "unknown"																
Element	Type	Occ	Comment																												
commercialId	xs:string (maxLength:32)	0..1	the commercialId in case of COPA the layer1ConnectionId, in case of BBCS-F the NSN																												
usedAs	xs:string (maxLength:32)	1..1	indicates the service how the fiber is used.																												

24/41

				change in the same room with relation to the old XMDF. Non frozen 'OMDF-XMDF Relation' exists and old patch length is bigger or equal to needed new patch length." UC.2.M = "OMDF has been changed. This change is in the same room without relation to the old XMDF. (Note: Room is the same if	UC.2.M = "OMDF has been changed. This change is in the same room without relation to the old XMDF. (Note: Room is the same if 'Room/Zone' of OMDF device and Office are the same). Old patch length is strictly smaller to needed new patch length; or non frozen 'OMDF-XMDF Relation' does not exist" UC.3 - OMDF has been changed. This change is in the different room in the same central office. (Where Room is defined via 'Room/Zone' of OMDF device and Central Office is found through objects hierarchy) UC.4 - OMDF has been changed. New OMDF is in the	(Note: Room is the same if 'Room/Zone' of OMDF device and Office are the same). Old patch length is strictly smaller to needed new patch length; or non frozen 'OMDF-XMDF Relation' does not exist" UC.3 - OMDF has been changed. This change is in the different room in the same central office. (Where Room is defined via 'Room/Zone' of OMDF device and Central Office is found through objects hierarchy) UC.4 - OMDF has been changed. New OMDF is in the	objects hierarchy) indicates if a interaction by the copa/isp is needed 1 = "no partner interaction needed", 2 = "partner has to disconnect the old and recreate the new connection", 3 = "partner has to recreate existing connection of patchtype 3" the umsaId e.g. change-Request001 the umsaType e.g. Change
--	--	--	--	--	---	--	---

					'Room/Zone' of OMDF device and Office are the same). Old patch length is strictly smaller to needed new patch length; or non frozen 'OMDF-XMDF Relation' does not exist" UC.3 - OMDF has been changed. This change is in the different room in the same central office. (Where Room is defined	defined via 'Room/Zone' of OMDF device and Central Office is found through objects hierarchy) UC.4 - OMDF has been changed. New OMDF is in the different central office. (Where central Office is found through objects hierarchy) indicates if a interaction by the co-pa/isp is needed 1 = "no partner interaction needed", 2 = "partner has to disconnect the old and recreate the new connection", 3 = "partner has to recreate existing connection of patchtype 3"		
--	--	--	--	--	--	---	--	--

					via 'Room/ Zone' of OMDF device and Central Office is found through objects hierar- chy) UC.4 - OMDF has been change d. New OMDF is in the dif- ferent central office. (Where central Office is found through objects hierar- chy)		recreate existing connec- tion of patchtype 3"			
			neede dIn- terac- tion	xs:int	0 .. 1	indi- cates if a inter- action by the co- pa/isp is needed 1 = "no partner inter-				

					action need- ed", 2 = "part- ner has to dis- con- nect the old and recre- ate the new con- nec- tion", 3 = "part- ner has to rec- reate existing con- nection of patcht ype 3"				
startD ateTi me	xs:dateTime	1 .. 1	The start date/time of the dis- ruption						
endDa teTim e	xs:dateTime	0 .. 1	The end date/time of the dis- ruption						
dura- tion	xs:int	0 .. 1	The dura- tion of the disruption in minutes						
umsaI d	xs:string (maxLength: 256)	1 .. 1	the umsaId e.g. change- Re- quest001						
um-	xs:string (maxl ength: 256)	1	the um-						

	saType		..	saType e.g. Change		
	e		1			

[Top](#)

3.4.1.15 downloadFileType

Used by: [downloadFileRequest](#)

Extension of: [requestType](#)

Element	Type	Occ	Comment
irIdWsg	xs:decimal (totalDigits: 10)	1..1	Information request id.

[Top](#)

3.4.1.16 listFilesType

Used by: [listFilesRequest](#)

Extension of: [requestType](#)

Element	Type	Occ	Comment
irIdWsgFrom	xs:decimal (totalDigits: 10)	0..1	Information request id.
irIdWsgTo	xs:decimal (totalDigits: 10)	0..1	Information request id.
objectState	xs:int (totalDigits: 3)	0..1	[LOV-ID: 1103] The objectState of the object that triggered the notification
objectType	xs:int (totalDigits: 3)	1..1	
irDateTimeFrom	xs:dateTime	0..1	The date and time when the file was processed
irDateTimeTo	xs:dateTime	0..1	The date and time when the file was processed

[Top](#)

3.4.1.17 updateFileStatusType

Extension of: [requestType](#)

Element	Type	Occ	Comment
objectStep	xs:int (totalDigits: 3)	1..1	[LOV-ID: 1104] The objectStep of the Object [20=rejected,21=transferred,22=accepted]
comment	xs:string (minLength: 1 , maxLength: 256)	0..1	A comment
- choice:	Element	Type	Occ
	irIdWsg	xs:decimal (totalDigits: 10)	1..1
	fileName	xs:string (minLength: 1 , maxLength: 150)	1..1
Information request id.			
The name of the file			

[Top](#)

3.4.1.18 uploadFileType

Used by: [uploadFileRequest](#)

Extension of: [requestType](#)

Element	Type	Occ	Comment
fileName	xs:string (minLength: 1 , maxLength: 150)	1..1	The name of the file
fileContent	xs:base64Binary	1..1	The binary content of the file

[Top](#)

3.4.1.19 requestType

Description: The abstract generic request message type.

Extended by: [downloadFileType](#), [listFileType](#), [updateFileStatusType](#), [uploadFileType](#)

Element	Type	Occ	Comment
ispCopaId	xs:int (totalDigits: 6)	1..1	ISP ID or CoPa ID [NC: RIGHT_OF_USE]

[Top](#)

3.4.1.20 downloadFileResponseType

Used by: [downloadFileResponse](#)

Extension of: [responseType](#)

Element	Type	Occ	Comment
fileInformation	fileInformationType	1..1	Detailed information about the file
fileContent	xs:base64Binary	1..1	The binary content of the file

[Top](#)

3.4.1.21 listFilesResponseType

Used by: [listFilesResponse](#)

Extension of: [responseType](#)

Element	Type	Occ	Comment
fileInformation	fileInformationType	0..n	Detailed information about the file

[Top](#)

3.4.1.22 fileInformationType

Description: Information about a file

Used by: [fileInformation](#)

Extension of: [fileInformationBaseType](#)

Element	Type	Occ	Comment
irIdWsg	xs:decimal (totalDigits: 10)	1..1	Information request id.
fileName	xs:string (minLength: 1 , maxLength: 150)	1..1	The name of the file
objectType	xs:int (totalDigits: 3)	1..1	
initiator	xs:int (totalDigits: 3)	1..1	[LOV-ID: 1106] The initiator of the object
activator	xs:int (totalDigits: 3)	1..1	[LOV-ID: 1105] The activator of the object

[Top](#)

3.4.1.23 fileInformationBaseType

Description: Information about a file

Used by: [fileInformationHistory](#)

Extended by: [fileInformationType](#)

Element	Type	Occ	Comment
irDateTime	xs:dateTime	1..1	The date and time when the file was processed
objectStep	xs:int (totalDigits: 3)	1..1	[LOV-ID: 1104] The objectStep of the Object [20=rejected,21=transferred,22=accepted]
objectState	xs:int (totalDigits: 3)	1..1	[LOV-ID: 1103] The objectState of the object that triggered the notification
comment	xs:string (minLength: 1 , maxLength: 256)	1..1	A comment

[Top](#)

3.4.1.24 updateFileStatusResponseType

Extension of: [responseType](#)

Element	Type	Occ	Comment
fileInformation	fileInformationType	1..1	Detailed information about the file
fileInformationHistory	fileInformationBaseType	1..1	The file information history

[Top](#)

3.4.1.25 uploadFileResponseType

Used by: [uploadFileResponse](#)

Extension of: [responseType](#)

Element	Type	Occ	Comment
irIdWsg	xs:decimal (totalDigits: 10)	1..1	Information request id.

[Top](#)

3.4.1.26 responseType

Description: The generic response message type.

Extended by: [downloadFileResponseType](#), [listFilesResponseType](#), [updateFileStatusResponseType](#), [uploadFileResponseType](#)

Element	Type	Occ	Comment
success	xs:boolean	1..1	The flag indicating success or failure: True if request succeeded, false if not.
reason	xs:string (pattern:[\dA-Z]{3})	0..1	A 3-letter error code (aka messageId) where "000" means "ok".
reasonComment	xs:string (minLength: 1 , maxLength: 256)	0..1	Some additional textual description for the reason.

[Top](#)

3.4.1.27 listMigrationProjectsRequestType

Description: lists all migration projects

Used by: [listMigrationProjectsRequest](#)

Element	Type	Occ	Comment
ispCopaId	xs:int (totalDigits: 6)	1..1	ISP ID or CoPa ID [NC: RIGHT_OF_USE]

[Top](#)

3.4.1.28 getMigrationProjectDetailRequestType

Description: lists all migration projects

Used by: [getMigrationProjectDetailRequest](#)

Element	Type	Occ	Comment
ispCopaId	xs:int (totalDigits: 6)	1..1	ISP ID or CoPa ID [NC: RIGHT_OF_USE]
projectId	xs:int (totalDigits: 3)	1..1	The migration Project ID: 2 CU@Warp,3 Vectoring Access Node, 5 FTTS/FTTB_Migration, FTTS/FTTB_activation,7 Software Upgrade CAN,8 Maintenance - Port Move,9 Maintenance - Shorting (SpectrumManagement)
migrationDateFrom	xs:dateTime	0..1	The date and time when the migration started
migrationDateTo	xs:dateTime	0..1	The date and time when the migration started
dnVnNsn	xs:string (pattern: 0[1-9]\d{8})	0..1	
networkElementName	xs:string (minLength: 1 , maxLength: 200)	0..1	The name of the network element
customerNotificationId	xs:string (minLength: 1 , maxLength: 200)	0..1	The customer notification id
transactionDateFrom	xs:dateTime	0..1	The date and time when the element was added
transactionDateTo	xs:dateTime	0..1	The date and time when the element was added

[Top](#)

4 Web Service Interface

The WSGInfoServices are all also exposed through a Web service interface.

4.1 Security

The following sections describe the implemented precautions aiming to improve the security of data transport in terms of confidentiality and non-repudiation.

4.1.1 Encryption

To meet the confidentiality aspect of information security the data transport between the web service client and its server is protected using the https schema.

Https is a URI scheme equivalent to the http scheme, originally intended to be used with the HTTP protocol, but with added encryption layer. The URI structure is the same, except that URIs begins with "https:" rather than "http:". The scheme was invented by Netscape Communications Corporation to provide authentication and encrypted communication and is widely used on the Web for security-sensitive communication, such as payment transactions.

Instead of using plain text socket communication, the session data is encrypted using either a version of the SSL (Secure Socket Layer) protocol or the TLS (Transport Layer Security) protocol, thus ensuring reasonable protection from eavesdroppers, and man in the middle attacks. The default TCP port of https: is 443.

4.1.2 Authentication, Authorization, and Accounting (AAA)

To meet the accountability and non-repudiation aspects of information security each Web Service requires username tokens according to the OASIS Web Service Security (WS-Security) definition.

4.2 Model: WSDL and XML Schemas

The definition of the Web Services is defined in WSDL and based on the already described XML schema. Refer to the attached ZIP-file described above (section 2).

4.3 The WSG Info Service Outbound Web Service

The WSG Info Service Outbound Web is published under the following URLs:

Version 2.0 (current version)

Platform	URL	Description
Production	https://webservices.swisscom.com/wsg/prod/infosrv/WsgInfoSrvV004	Production environment
ISP-Test	https://webservices.swisscom.com/wsg/isp/infosrv/WsgInfoSrvV004	Test environment

4.3.1 Success or Error status

All response messages contain a member named **"success"** which indicates if the operation has been successful or not and -- if not -- which error has been raised through its attributes **"reason"** (the error-code) and **"reasonComment"** (the error-text) (refer to the schema documentation for all details).

4.3.2 Error Codes

The WSG outbound web-services may return the following general error codes (list is not complete; please refer to [1] for a complete list):

Error Code	Error Message
571	The Online Webservice could not be reached
572	The Online Webservice could not process the request and did report an error
618	Access denied, you are not allowed to execute this function
808	Procedure called with invalid argument value.
998	A connection error to the Database is occurred

5 Appendix A

5.1 Securing a WEB-Service with Powergate

A WEB-Service can be secured by using WSS Security (ref. OASIS Standard

<http://www.oasis-open.org/specs/index.php#wssv1.0>). WSS Security Tokens have to be included in the header of the SOAP Requests. Realizing this feature is dependent of the implementation of the WS Clients.

The header has to look as follows:

```
<soapenv:Header>
  <wsse:Security
    soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next"
    soapenv:mustUnderstand="0"
    xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-
1.0.xsd">
    <wsse:UsernameToken
      <wsse:Username>586221</wsse:Username>
      <wsse:Password>te3LsD43</wsse:Password>
    </wsse:UsernameToken>
  </wsse:Security>
</soapenv:Header>
```

Concerning "Username" and "Password" please refer to 5.5 Login.

5.2 Setting up a new WEB-Service

1. Determining the URL for the WEB-Service
2. Implementing the client in such a way that the WSS Security Tokens are included in the SOAP (see following example).

5.3 Sample Client with wss4j

wss4j will be used for creating the WSS Header (ref. <http://ws.apache.org/wss4j/>). The called service offers the method "list()" which will return the received header as a string.

```
public String[] doCall(
    com.swisscom.powergate.ws.TestwsSoapBindingStub binding)
    throws Exception {

    String userName = "58622141964";
    String pwd = "tXVLsD43";

    Stub bindingStub = (Stub) binding;

    Document doc = DocumentBuilderFactory.newInstance()
        .newDocumentBuilder().newDocument();

    Element element = doc.createElementNS(WSConstants.WSSE_NS_OASIS_1_0,
        "wsse:" + WSConstants.USERNAME_TOKEN_LN);

    WSSecurityUtil.setNamespace(element, WSConstants.WSSE_NS_OASIS_1_0,
```

```

        WSConstants.WSSE_PREFIX);

// create username element
Element elementUsername = doc.createElementNS(
    WSConstants.WSSE_NS_OASIS_1_0, "wsse:"
        + WSConstants.USERNAME_LN);
WSSecurityUtil.setNamespace(elementUsername,
    WSConstants.WSSE_NS_OASIS_1_0, WSConstants.WSSE_PREFIX);
elementUsername.appendChild(doc.createTextNode(userName));
element.appendChild(elementUsername);

// create password element
Element elementPassword = doc.createElementNS(
    WSConstants.WSSE_NS_OASIS_1_0, "wsse:"
        + WSConstants.PASSWORD_LN);
WSSecurityUtil.setNamespace(elementPassword,
    WSConstants.WSSE_NS_OASIS_1_0, WSConstants.WSSE_PREFIX);
elementPassword.appendChild(doc.createTextNode(pwd));
element.appendChild(elementPassword);

// set the header
bindingStub.setHeader(WSConstants.WSSE_NS_OASIS_1_0, "wsse:Security",
    element);
assertNotNull("binding is null", binding);

// Time out after a minute
binding.setTimeout(60000);

return binding.list();
}

public void testHeaders() throws Exception {

    com.swisscom.powergate.ws.TestwsSoapBindingStub binding;
    try {

        binding = (com.swisscom.powergate.ws.TestwsSoapBindingStub) new
com.swisscom.powergate.ws.TestWSServiceLocator()
            .gettestws(new URL(
                "https://www.zugang.ch:44300/bg/services/testws"));

        Stub bindingStub = (Stub) binding;

        // keep session
        bindingStub.setMaintainSession(true);

        System.out.println("\n\rCALL 1");
        String[] headers = doCall(binding);
        for (int i = 0; i < headers.length; i++) {
            System.out.println(headers[i]);
        }

        System.out.println("\n\rCALL 2");
        headers = doCall(binding);
        for (int i = 0; i < headers.length; i++) {
            System.out.println(headers[i]);
        }
    }
}

```

```
    } catch (javax.xml.rpc.ServiceException jre) {  
        if (jre.getLinkedCause() != null)  
            jre.getLinkedCause().printStackTrace();  
        throw new junit.framework.AssertionFailedError(  
            "JAX-RPC ServiceException caught: " + jre);  
    }  
    assertNotNull("binding is null", binding);  
  
    // Time out after a minute  
    binding.setTimeout(60000);  
  
}
```

5.4 Errors

Authentication error

In case of an authentication error the system will return *HTTP Status 403 Forbidden*. The error will be returned inside the SOAP body as <SOAP-ENV:Fault>

```
<SOAP-ENV:Fault>
  <faultcode>SOAP-ENV:Client</faultcode>
  <faultstring>Authentication required (realm='soap')</faultstring>
</SOAP-ENV:Fault>
```

Backend Server not available:

```
HTTP/1.1 502 Bad Gateway
Date: Thu, 20 Apr 2006 11:49:22 GMT
Server: Apache
Pragma: no-cache
Connection: close
Cache-Control: no-cache
Content-Type: text/xml
```

```
<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
  <SOAP-ENV:Body>
    <SOAP-ENV:Fault>
      <faultcode>SOAP-ENV:Server</faultcode>
      <faultstring>Upstream server is not available</faultstring>
      <faultactor>https://wstest.swisscom.com/wsg/omsol/bb/WsgBb</faultactor>
      <detail>Upstream server is not available</detail>
    </SOAP-ENV:Fault>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Error on the Backend Server

Here an example in the form of a standard http error:

```
HTTP/1.1 500 Internal Server Error
Date: Wed, 19 Apr 2006 14:27:03 GMT
Server: Apache
Set-Cookie: Navajo=AUCaUVoasEVlDVm29EUvYRYuqxwWRG4ozwlKJEewSpvKoVwVEz9mjIclAEQ0goaIH3ZnB9g/RXA-;
path=/; secure; HttpOnly
Set-Cookie: JSESSIONID=AEC47F88F1B35E4329C5C58F40841B4E; path=/wsg/e2e/bb/wsg-outbound; secure;
HttpOnly
Content-Type: text/xml; charset=utf-8
Connection: close
```

```
<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <soapenv:Body>
    <soapenv:Fault>
      <faultcode xmlns:ns1="http://xml.apache.org/axis/">
        ns1:Client
```

```

        </faultcode>
        <faultstring>No such operation 'list'</faultstring>
        <detail>
            <ns2:hostname xmlns:ns2="http://xml.apache.org/axis/">
                sbe18304.swissptt.ch
            </ns2:hostname>
        </detail>
    </soapenv:Fault>
</soapenv:Body>
</soapenv:Envelope>

```

Wrong URL (Webservice not existing)

HTTP/1.1 404 Not Found
 Date: Wed, 19 Apr 2006 14:30:38 GMT
 Server: Apache
 Pragma: no-cache
 Connection: close
 Cache-Control: no-cache
 Content-Type: text/xml

```

<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
    <SOAP-ENV:Body>
        <SOAP-ENV:Fault>
            <faultcode>SOAP-ENV:Client</faultcode>
            <faultstring>mapping for request URI '/wsgdf/e2e/bb/WsgBb' not found</faultstring>
            <faultactor>https://wstest.swisscom.com/wsgdf/e2e/bb/WsgBb</faultactor>
            <detail>mapping for request URI '/wsgdf/e2e/bb/WsgBb' not found</detail>
        </SOAP-ENV:Fault>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

No authorisation for the service but valid Login

HTTP/1.1 403 Forbidden
 Date: Wed, 19 Apr 2006 14:31:40 GMT
 Server: Apache
 Pragma: no-cache
 Connection: close
 Cache-Control: no-cache
 Content-Type: text/xml

```

<?xml version="1.0" encoding="utf-8"?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
    <SOAP-ENV:Body>
        <SOAP-ENV:Fault>
            <faultcode>SOAP-ENV:Client</faultcode>
            <faultstring>Your are not authorized to access the requested resource</faultstring>
            <faultactor>https://wstest.swisscom.com/wsg/prod/bb/WsgBb</faultactor>
            <detail>Your are not authorized to access the requested resource</detail>
        </SOAP-ENV:Fault>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

5.5 Login from the user point of view

Two possibilities can be used for Login:

- Login with PUI (Personal User Identification: 11-digit number) and Password (4 – 15 characters). The PUI will be sent to the user by email or letter after registration. It has to be used for the first Login.
The password will be sent to the user by letter and can be changed arbitrarily by the user after the first Login.
- Login with username (unique alphanumeric identification) and Password (4 – 15 digits).
The username (formerly also known as synonym) can be created by the user after the first login with the PUI. It must start with an alphabetic character, must be 7-20 characters in length and must be unique. Maybe the user needs several trials till a unique and not yet used name could be found.
The password will be sent to the user by letter and can be changed arbitrarily by the user after the first Login.

