

Compliance Data Exchange (CDX)

Revision 8.6

Web Service Manual

Valid since CDX Release 8.6

REVISIONS

Revision	Date	Description
1.0	Oct-04-2011	Initial Release
1.1	Oct-21-2011	Additional Upload file examples
1.2	June-13-2012	Upload XSD changed (mandatory classification), SDoC added
2.0	Oct-28-2014	Character Set UTF-8 replaced by ISO-8859-1
3.0	June-19-2015	XSD specifications outsourced, CMD-Request Web Service added
4.0	June-26-2015	New MDS download Info types (SPMP, SPMS)
4.1	Nov-14-2015	New error messages (code: 215-243) and warnings (code: 1-5) for MDS upload result files. New business functions for MDSs . Chapter. New error messages for MDS business functions.
5.0	June-09-2016	New functionality " Conflict Minerals Declaration "
5.1	June-16-2016	The need of "SOAP Message Transmission Optimization Mechanism/XML-binary Optimized Packaging" protocol added to chapter " Technology "
5.2	Feb-17-2017	New comment field in MDS and CMD Request - Upload and Download Additional field Supplier Part Number for Recipients in chapter recipient information - MDS Upload and Download New export and import capability for IPC1752A (class C and D) and IEC62474
5.3	Mar-31-2017	New download file types: MPS – standard material mapping CDX Node-ID with IMDS Node-ID SBM – Basic Substance mapping CDX Node-ID with IMDS Node-ID
5.4	May-31-2017	Added methods to import IPC1752A and IEC62474 data file with unknown substances Added Regulations Handling for Semi-components
5.5	Aug-17-2017	Increased precision of weight entry from microgram to nanogram -> Upload xsd ("measuredWeight", "Weight") was changed. Added 2 new MDS business functions ("substanceGroupHistorySearch", "substanceRegulationHistorySearch") Added additional parameters to CMD Web Services "CreateCmd" and "AddSupplierCmds"
5.6	Jan-19-2018	Added "external supplier" for MDS request Updated Transformation Web Service Added independent multiple part numbers for CMD Request Added parameter for usage of external schemas in wsimport
5.7	Apr-04-2018	Added changes for General Data Protection Regulation (GDPR) Added methods/adapted Download-Files for MDS & CMD Request to support email attachment for "external" requests Removed Error Message 120 in the Upload interface

Revision	Date	Description
6.0	Sep-06-2018	Changes in MDS Web Services. Added new method “getSubstanceAndGroupRegulationByld”. Set existing methods “searchSubstanceRegulationHistory” and “getSubstanceRegulationByld” to obsolete. Added new method getQueryListByRegulationId Added query lists in MDS up/download files Added regulations into MDS Request file Added description for changed attributes regulationComplied and relevantDataProvided. Possible values are changed. Transformation WS: refactoring of IPC/IEC WS and enhancement for IPC 1754 Added new methods for MDS Search and MDS Request Search (In- and Outbox) Add numericLimitValue to RegulationLimits
6.1	Mar-06-2019	Added multiple supplier codes for upload (create and change datasheet/request) and download (CMS, REQ files) IPC/IEC adaption of Export Recipient Added multiple supplier codes for CMD and CMD Request WS Adapt Upload Web Service for creating MDS's for matching of part numbers
6.2	Sep-23-2019	Added CompanyExtern WS Added Attachment Document Types (MDS) Added Version to Download and Upload Schema Added Supplier Part Numbers to Request Added Threshold, UnitOfMeasure, ExpiryDate to Exemption Details Added Error messages for Upload Adapted IPC/IEC WS to match Web Application Added Information about package size in download files Added Safe Use Instruction to regulation Added regulation confirmed to request for Up- and Download
6.2.1	Mar-4-2020	Added an attribute for deactivating MDSs in upload file
6.2.2	May-20-2020	Added an attribute for activeStatus to MP/MPS/CMS download file. Removed method getBoschMaterialType in MDS Web Service Added attribute 'attachmentRequired' and 'productNotAffected' to Request (Up/Download)
7.0	July-09-2020	Changed Schema for CMD Web Service to support 6.0 & 6.01 CMRT (removed CMDCreate/ CMDCreatePlain/AddQuestionaryAnswer, refactored CMDResponse for getCMDbyld. Creation of CMD is removed but will be implemented later using IPC/CMRT standard.
7.1	August-27-2020	Added Scip Compliance flag to MDS and MDS Request (Up-/Download) Added new webservice to maintain supplier codes and part numbers matching

Revision	Date	Description
7.2	October-26-2020	Added Scip Model, Scip Type, Scip Brand attributes to MDS (Up-/Download) Added Taric Code, Default Taric Code attributes to (Semi)Component, Material. Added additional names for MDS (Up-/Download) Added ScipNumber (Download) Added isArticle Added additional names for MDS (Up-/Download) Added manufacturingCountry for up&download Added attribute 'Scip Dummy Dossier' to MDS Upload. Added ScipQueueManager Webservice Added echaSubmission flag to Upload
7.3	December-22-2020	Added RegulationId to RegulationDetailResponse in MDSManageWebService Added rejectReason to Download (CMS)
7.4	January-28-2021	Added attributes "recipientReleaseDate" and "c" to Download (CMS) Added internal System (inhouse routing) flag for selected companies for Request and for Upload. (Recipient Data section) Added SellingEntities to SupplierData (Up-/Download) Added attribute "handleDuplicateReference" to MDS Upload
7.5	May-31-2021	Added attribute manufacturing site Added REST API Added Customer SCIP Number to MP Download Allow SCIP Reporting of Received MDS in Upload and Submission Manager Web Service
7.6	July-07-2021	Added attribute type for SellingEntities element Added attribute scipNumber for Entity element Added tarketMargetContries/Regions for supplier and recipient Added new file type CMS_AR (only containing rejected and accepted MDSs) for alternate use to CMS
7.6	Sept-23-2021	Added attribute scipNumber for RefComponent and RefSemiComponent elements New error messages (code: 888) and warnings (code: 356) for MDS upload result files.
7.6	Oct-27-2021	Added SCIP batch submission web service using configurable SCIP report parameters
7.6	Nov-02-2021	Added parameter (recipientTaricCode) to SCIP batch submission web service using configurable SCIP report parameters Added New Error message for ECHA batch submission service
7.7	Dec-12-2021	Added new file type CDX_STATUS (Lightweight CDX MDS Status message) Added Additional Identifier
7.7	Jan-12-2022	Added additional identifiers for MDS (Up-/Download) Added new service method to SCIP (getAdditionalIdentifiers)
7.8	Mar-23-2022	Added parameter (reportSCIPNumbersOnly) to SCIP batch submission web service using configurable SCIP report parameters
7.8	May-18-2022	Add "ExternalScipNumber" for MDS (Up-/Download)
7.8		Add Add/Delete/Download Request Attachment
7.8.2	Aug-10-2022	Added parameter (receivedPartRefType) to SCIP batch submission web service using configurable SCIP report parameters

Revision	Date	Description
7.8.2.1	Sep-23-2022	Removed API description for the REST API. The description is now only in the OPENAPI.json file available. Removed CMD/CMD Request Web Service. This web service will be implemented as REST WS. Removed SDOC web service.
7.8.2.2	Oct-13-2022	Added element SVHCCandidates to MDS Download
8.0.1	Jan-01-2023	Added MT License functionality in upload & download
8.2	Oct-25-2023	Removed not used Error codes
8.3.1	MAY-05-2024	Correction + REST User self-management
8.6	MAY-6-2025	Added OAuth 2.0 with Keycloak

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INTRODUCTION

DXC Technology (DXC) – one of the pioneer companies in recycling and environmental management – provides with the CDX (**C**ompliance **D**ata **E**xchange), a solution enabling you to collect, maintain and analyze material data across all levels of your supply chain. With the help of the CDX system, you can provide information about the materials contained in your products or used during your production process anytime and anywhere. Additionally you can analyze the data in terms of environmental compliance. The CDX data is collected through the entire supply chain, enabling participating companies to comply with global legal requirements such as the Hong Kong Convention (HKC), REACH, SVHC, WEEE, Conflict Minerals Declaration or similar regulations.

CDX also provides the possibility for interfacing with external systems through the CDX Web Service. The Web Service will allow you to integrate MDS and CMD communication with your suppliers and customers into your local processes and systems. It enables your company to exchange data between your internal system and the CDX system.

The download functionality gives your company the ability to transfer information from CDX to your in-house system. The information includes all the data visible to your company in the CDX system including: “own” created and released datasheets, received datasheets, published datasheets, and various other information required to support this information.

The upload functionality increases productivity while reducing errors by allowing you to create datasheets directly from your in-house data.

Technology

A Web Service is a method of communication between two electronic devices over a network. Web Services were intended to solve three main problems: **Firewall Traversal**, **Complexity**, and **Interoperability**. They have an interface described in a machine-processable format-

This document gives you a detailed description of the available CDX Web Service methods and how to use them to interact with your in-house application.

The following contains a list of current technologies in use:

- The basic communication format is XML, specified with XSDs.

Used Standards

W3C Web Service Standards and Policy

<http://www.w3.org/2001/XMLSchema>

COMMON TERMS

Character Set ISO-8859-1

CDX uses ISO-8859-1-encoding. This encoding spans the **ASCII**- and the **Latin-1** code tables, **ASCII** (codes 0-128) which is the common part of all code tables and **Latin-1** (129-255) which covers West-European and American languages. Areas 0-31 and 127-159 are control characters and must not be used (usage of control characters causes an error during upload).

ASCII-Codetabelle										
+	0	1	2	3	4	5	6	7	8	9
30			!	"	#	\$	%	&	'	
40	{	}	*	+	,	-	.	/	0	1
50	2	3	4	5	6	7	8	9	:	;
60	<	=	>	?	@	A	B	C	D	E
70	F	G	H	I	J	K	L	M	N	O
80	P	Q	R	S	T	U	V	W	X	Y
90	Z	[	\	]	^	_	`	a	b	c
100	d	e	f	g	h	i	j	k	l	m
110	n	o	p	q	r	s	t	u	v	w
120	x	y	z	{		}	~			

iso-8859-1										
+	0	1	2	3	4	5	6	7	8	9
160		í	í	í	í	í	í	í	í	í
170	ª	«	¬	¬	¬	¬	°	±	²	³
180	´	µ	¶	·	¸	¹	º	»	¼	½
190	¼	½	¾	À	Á	Â	Ã	Ä	Å	Æ
200	È	É	Ê	Ë	Ì	Í	Î	Ï	Ð	Ñ
210	Ò	Ó	Ô	Õ	Ö	×	Ø	Ù	Ú	Û
220	Ü	Ý	Þ	ß	à	á	â	ã	ä	å
230	æ	ç	è	é	ê	ë	ì	í	î	ï
240	ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù
250	ú	û	ü	ý	þ	ÿ				

Do not use more-byte (two-byte, three-byte etc.) characters taken from some Unicode table.

We cannot store such characters in our database. The upload file is being processed by an ISO-8859-1 decoder which causes such characters being parted in single bytes and so being damaged. The graphical representation of such characters is no more that what you expect. For that reason we require that you include ISO-8859-1 encoding in the first line of your upload files (<?xml version="1.0" encoding="ISO-8859-1"?>) to declare that you store your text files using the ISO-8859-1-codepage and that you understand that no other characters exceeding the ISO-8859-1 range, if being used, can be expected to be stored in the IMDS database.

Packaging of Web Service Output

The Web Service technology is not necessarily applicable for dealing with mass data, but possible with restrictions. Large data volumes in a Web Service can easily lead to cache overflows and can be generated by choosing large time periods in the download to prevent such undesired technical problems, the CDX Download Web Service splits large output data volumes into smaller pieces. The WS user receives the output in one or more packages, which makes the processing more complex at customer's site. If the output of the WS is packaged, the key of the next package will appear as an output parameter. If this parameter does not appear, there is no next package available.

The max size per package is currently set to 1MB.

Therefore, we recommend to use short time periods for the download WS.

Precondition to Use CDX Web Service

A company requires a valid CDX license to use CDX Web Service. Otherwise an error message will appear.

A CDX user must have the profile REST_API or "Web Service Certificate User" and must of course be valid.

REST SERVICES

As some software vendors already discontinued support for SOAP API clients CDX is supporting mostly used CDX SOAP functionality as REST Service. The functionality will be enhanced with an easier API and with future CDX capabilities in later releases. The available methods and schemes are described in an OPEN API document that can be read using swagger editor (<https://editor.swagger.io/>). The tool also provides the capability to generate example clients in different programming language. The OPEN API document is available in the CDX web service help menu.

Used Standards

JSON (Java Script Object Notation)

A lightweight Data exchange format

JWT (JSON Windows Token)

JSON web token (JWT) is an open standard (RFC 7519) that defines a compact and self-contained way for securely transmitting information between parties as a JSON object.

Bearer Token

Bearer authentication (also called token authentication) is an HTTP authentication scheme that involves security tokens called bearer tokens. The bearer token is a cryptic string, generated by the server to a login request.

OAuth 2.0

OAuth2 authentication allows clients to securely access protected resources by obtaining an access token from an authorization server. The client includes this token in API requests, which the server validates before granting access.

Available Resources/Servers

Model Office

<https://nextmodel.cdssystem.com/cdx/service/resources>

Production

<https://www.cdssystem.com/cdx/service/resources>

User Management using the CDX UI

The REST API can be self-managed on all instances by a company administrator using the User administration screen.

CDX supports several standard ways for authentication.

REST_API Profile: This is the default authentication for using the REST API.

The screenshot displays the CDX user management interface, divided into three main sections:

- Company:** Contains fields for User ID, Company ID (set to 0), Company (CDX Service Team (Germany)), and Organisation unit. There are 'Select' and 'Modify' buttons.
- User data:** Contains fields for Last name, First name, Authorization profile (set to REST_API), Telephone No., Fax No., Title, and E-mail Address. It also includes 'Valid as of' (05/06/2024) and 'Valid until' (mm/dd/yyyy) fields with calendar icons.
- Administration:** Contains checkboxes for Contact person, Compliance Contact, and CMD Contact. It has a 'Terms of Use' checkbox and a 'JWT-Secret' field with 'Revoke' and 'Regenerate' buttons. Below these are fields for 'Additional information', 'Last Login Date', and 'SupplyOn User ID'.

- User ID: unique identifier, can be free defined (max length 50 character)
- Authentication Profile: REST_API is the standard Profile which allows to authenticate using a JWT-TOKEN. REST_API_OAUTH is for customer specific OAuth implementation.
- Revoke: Will revoke the JWT Secret, so that the user cannot not be used anymore. Should be used if the user is not needed anymore.
- Regenerate: will create a new, if already exists, recreate "JWT Secret"

Bearer Authentication

The available methods are secured by a Bearer Token. The Tokens contains as claims encrypted user Information and an unix timestamp until the token is valid. For security reason the Token must be expire after less than 20 min.

Postman security setup

Below is a security/authorization example setup for the Postman application.

- Auth Type: JWT Bearer- Postman will create the Token using the downloaded secret
- JWT Token must be added to the RequestHeader.
- Variable secret: points to the downloaded secret from the CDX-UI

- Variable userid: used REST_API userid
- Variable tokenexp: unix timestamp, when the token will expire. Must be applied as integer

Overview **Authorization** Scripts Tests Variables Runs

This authorization method will be used for every request in this collection. You can override this by specifying one in the request.

Auth Type

JWT Bearer

The authorization header will be automatically generated when you send the request.
Learn more about [JWT Bearer](#) authorization.

Add JWT token to

Request Header

i Heads up! These parameters hold sensitive data. To keep this data secure while working in a collaborative environment, we recommend using variables.
Learn more about [variables](#).

Algorithm **i**

HS256

Secret **i**

{{secret}}

☐ Secret Base64 encoded

Payload **i**

```
{
  "userid": "{{userid}}",
  "exp": {{tokenexp}}
}
```

Postman Script to define the tokenexp:

The script should be executed before each request and will create a timestamp in 10 minutes.

Pre-request	<pre>1 var moment = require('moment'); 2 pm.environment.set('tokenexp', moment().add(10, 'minutes').valueOf());</pre>
Post-response	

Applying the security in each request.

The security can be inherited if the security is defined on a folder level.

Intern

Basic Functions

MDS

Upload

Download

Scip

Regulation

Request

Overview

Authorization

Scripts

This authorization method will be used for every request in this folder. You can override this by specifying one in the request.

Auth Type

Inherit auth from parent

The authorization header will be automatically generated when you send the request.
Learn more about [authorization](#)

OAuth REST API Authentication

Our REST API supports OAuth 2.0 for secure authentication and authorization, with Keycloak (internally hosted) as our identity provider. Clients can authenticate using one of the following methods:

1. **Signed JWT & Secret:** Clients must provide a JSON Web Token (JWT) signed by Keycloak along with a client secret. This ensures that the token is valid and issued by a trusted source.
2. **User and Secret:** Clients can authenticate using a username and password combination, along with a client secret. This method is suitable for test environments.

To configure your client for authentication, follow these steps:

1. Obtain the client ID and secret from CDX-UI. Type in all required information.

2. Choose your preferred authentication method (Signed JWT & Secret or User and Secret). And press save.
3. Copy the new created user ID & secret.
4. Include the necessary credentials in the authorization header of your API requests.

Keycloak/Auth Server URLs:

Model Office Next:

<https://nextmodel.cdssystem.com/realms/cdx-api-public/protocol/openid-connect/token>

Production:

<https://www.cdssystem.com/realms/cdx-api-public/protocol/openid-connect/token>

Example Requests to Obtain an Access Token for Production environment

Using Signed JWT & Secret:

```
curl -X POST "https://www.cdssystem.com/realms/cdx-api-public/protocol/openid-connect/token" \
  -H "Content-Type: application/x-www-form-urlencoded" \
  -d
"grant_type=client_credentials&client_id=your_user_client_id&client_secret=your_client_secret&jwt=your_signed_jwt"
```

Using User and Secret:

```
curl -X POST "https://www.cdssystem.com/realms/cdx-api-public/protocol/openid-connect/token" \
  -H "Content-Type: application/x-www-form-urlencoded" \
  -d
"grant_type=password&username=your_username&password=your_password&client_id=your_user_client_id&client_secret=your_client_secret"
```

Python example for Signed JWT & Secret:

```
import jwt # PyJWT library
import requests
import time
import uuid

# Keycloak Configuration

BASE_URL = "https://www.cdssystem.com/realms/cdx-api-public"
KEYCLOAK_URL = BASE_URL + "/protocol/openid-connect/token"

CLIENT_ID = "gcdtt028" # your CDX UserID - Client ID
CLIENT_SECRET = "7NhIErWu938vuNZWaKWctLmrfKBzMiuy" # Used to sign the JWT (HS256)

# Generate JWT (Client Assertion)
def generate_jwt():
    payload = {
        "iss": CLIENT_ID, # Issuer (Client ID)
        "sub": CLIENT_ID, # Subject (Client ID)
        "aud": BASE_URL, # Audience (Token Endpoint)
        "exp": int(time.time()) + 300, # Expiry (5 minutes)
```

```

    "iat": int(time.time()), # Issued At (Current Time)
    "jti": str(uuid.uuid4()) # JWT ID (Random UUID)
}
# Sign JWT using HS256 and the client secret
token = jwt.encode(payload, CLIENT_SECRET, algorithm="HS256")
return token

# Request Access Token from Keycloak
def get_access_token():
    jwt_token = generate_jwt()
    print ("JWT Token:", jwt_token)
    data = {
        "grant_type": "client_credentials",
        "client_id": CLIENT_ID,
        "client_assertion_type": "urn:ietf:params:oauth:client-assertion-type:jwt-bearer",
        "client_assertion": jwt_token
    }
    headers = {
        "Content-Type": "application/x-www-form-urlencoded"
    }
    response = requests.post(KEYCLOAK_URL, data=data, headers=headers)
    if response.status_code == 200:
        token_data = response.json()
        print("Access Token:", token_data["access_token"])
        return token_data["access_token"]
    else:
        print("Error:", response.status_code, response.text)
        return None

# Run script
if __name__ == "__main__":
    get_access_token()

```

WEB SERVICE FOR MATERIAL DATASHEETS

MDS Key Attributes

Every Material Datasheet (MDS) has three (3) pieces of data associated with it:

- MDS ID – the ID of the datasheet that remains constant during various revisions for traceability
- ID Version – the revision level of the initial datasheet
- Node ID – the spot in the database where the information about this MDS resides. You will need to know the Node ID of datasheets in order to attach (reference) them in your structures when using the interface.

XSD Specifications for Material Datasheets

You will find all valid XSD specifications of the XML documents in the Help menu of the CDX Web Application. The sub menu is called “Web Service”. By clicking on item “Supported Schemas” you are able to download the specifications. The most important elements and attributes are described in detail in section “Description of XSD Elements and Attributes”.

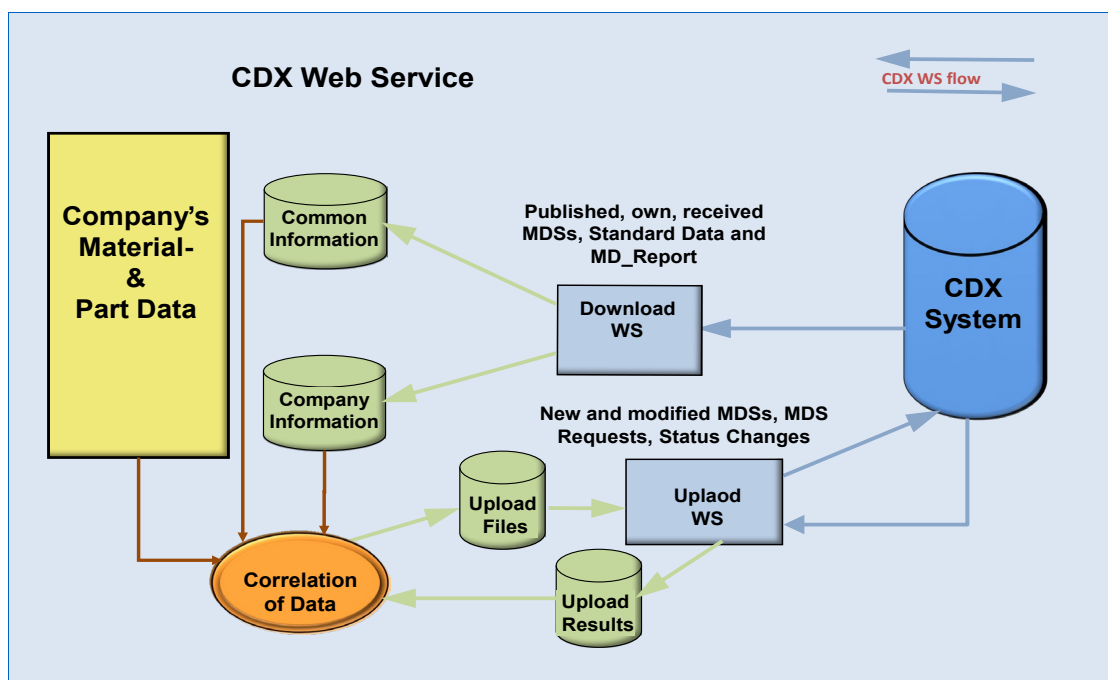
Data Exchange Process Overview

The Web Service maps all CDX functionality and provides the basis for the efficient and consistent data exchange of material data with your company's in-house system. In the picture below, you will see how your local system is able to exchange the data with CDX via Web Service.

Web Services can be basically separated into three categories: **Download XML Document Services, Upload XML Document Services and Services for Business Functions**. *Upload Services* transfer an XML file from client to the CDX server and receive a response XML file containing the information about how the input has been processed. With *Download Services*, the client specifies an information type (this information can be transferred via URL) that is expected to be available on the server and obtains the requested XML file (if successful) or receives an error message (in the case the requested document does not exist or cannot be transferred to the client for some reason). For business functions individual methods are provided in the Web Service.

You can find a detailed description of the CDX processes and functions in the CDX User Manual and CDX OpenAPI.yaml.

Process Diagram XML Document Services



Process Description

The processes described below are the essential processes in the CDX system. There are much more specific options available, which are also covered by the Web Service, but not described here. If you intend to execute such a process, look at the CDX User Manual first, to get a better understanding of the process logic.

Initialize your Local System

Most of all, load the common information down to initialize your in-house system with the required CDX standard data. You will need this information to create your own MDSs or MDS Requests.

Request an MDS

- Specify the expected datasheet and the supplier via an MDS Request in an upload file and use the “callUpload” WS method to import the specifications into the CDX. With the method “getUploadResult” of the upload WS you can pick up the results. View that information to be sure whether your data are imported successfully. In case of a successful import, the supplier will have your request in its inbox. Status changes of your request triggered by the supplier will be reflected in the information of type “REQ”, which should be loaded down periodically via the WS method “getCompanyFile” to update your local data.

Handling of received MDSs

Received MDSs and their status changes triggered by your company or by the supplier are contained in the information of type “CMS”, which should be loaded down periodically via the WS method “getCompanyFile” to keep your local data up to date.

After your checks, you are able to accept or reject that MDS via the “callUpload” WS method. Use mode “Change” combined with element “RecipientStatus”, which contains the status (ACCEPTED or REJECTED) and in case of a rejection, the reject reason. Each status change of the MDS is reflected by the information of type “CMS”.

Create your own MDSs

Specify your MDS and its status (“EDIT” or “INTERN”) in the upload file. Load your data up to CDX with method “callUpload” of the upload WS. Check the results, picked up with method “getUploadResult”. In case of a successful import, you will get the whole MDS with the next download of information type “CMS”.

Change the Status of own MDSs

If you want to change the status of your MDS, use mode “Change” combined with element “OwnerStatus”, which contains the status information. Possible owner status flow is: “EDIT” > “INTERN” > “PUBLIC”.

If the status flow is not correct, you get an error message in the upload results. The status is not changed.

After a correct status change, you will get the new MDS status with the next download of information type “CMS”.

Deactivate MDSs

If you want to deactivate your MDS, use mode “Change” combined with element “Deactivate”.

Make a Copy of an MDS

CDX supports three different copy modes.

“DUPLICATE” > creates an independent copy with a new mdsID.

“NEWVERSION” > creates a new, a higher version of the source MDS. The mdsID will be kept.

“FORWARD” > this is a 1:1 copy of the original MDS, which cannot be modified.

If you want to make a copy of an MDS use mode “Change” combined with element “copyMode”, where you can define one of the 3 copy options. You will get the copy with the next download of information type “CMS”.

Send your MDS to Customer(s)

If you want to send an MDS to one or more customers using mode “Change”, you must specify the recipient(s) in element “RecipientData”. With the attribute “status” of element “OwnerStatus” you have 2 different modus’ to send your datasheet to your customer(s).

- With status = “SEND” you can only send the MDS to one recipient, but the MDS could be in status “EDIT”. You can find more details about this special send modus in the CDX User Manual.
- With status = “PROPOSE” you are able to send the MDS to several recipients, but the MDS status must be “INTERNAL”.

Status changes of your MDS, triggered by the recipient – “ACCEPTED” or “REJECTED” - will be reflected in the next downloads of information type “CMS”.

Upload MDS Data Using XML-Files

You can load your company specific data up to CDX with the interface method described in this section.

Please be aware, that the amount of objects in an upload file is limited. If the limit is exceeded, an error message appears in the results. No object will be processed.

Therefore, we recommend to use a wise amount of MDSs in an upload file.

Interface Description

The following table lists the Input and Output Parameters for the interface.

Purpose	This method is used to load up XML files to CDX
Input Params	Upload-Content (String) (mandatory)
Output	Job ID (long) Due to processing of the upload is asynchronous you’ll only receive a job Id, not the results. You need this job Id as a parameter to get the results with method “getUploadResult”. <i>Please make a note to the job Id.</i>
API Tag	Upload
API- URL	/up-download/upload
Errors	CDXWebServiceException

Upload Procedure Overview

A four-stage procedure can be defined under the technical aspect regarding data exchange:

1. Download Standard Data

You will need this information to create your MDSs. The different information types are described in chapter “Download Common Data”.

2. Create your XML-files

Use the information you have downloaded at “step 1” and attach (reference) to your own MDSs and substances which are already exist in CDX. For this purpose use the *Node IDs* of the items to be referenced.

You also have to know the *Node ID* of an MDS if you update, replace or delete it.

3. Initiate/Execute Upload

Your XML-files will be transferred to our CDX server and the import of your file will be initiated.

4. Retrieve your results

The results will show you whether everything was accepted or some errors occurred. If no errors occurred and new datasheets were created, you can attach (reference) these uploaded objects the same as objects created using the CDX browser interface. Check the Node ID’s of these newly created objects.

If some errors occurred during upload, correct the MDSs concerned and resubmit.

Create a new XML-file with corrected MDSs and repeat the upload procedure.

Creating Upload Files

When all required information is available, you are able to create your own upload files. You can use an XML-editor which is able to apply an XSD-file (recommended) or any other text editors such as “Notepad” are also sufficient.

As mentioned above, in your tree you can reference any existing substance (Node IDs found in the basic substance file) and any existing MDS which is visible to your company. Deleted MDSs/basic substances are not visible and therefore referencing them, even if you have the Node ID, will result in an error. For using hidden MDSs/basic substances particular rules are valid as shown in the following table:

Function	Hidden MDS/Substance	Deleted MDS/Substance
Visible when searching for an MDS/Substance	No	No
Allowed to be used when MDS referencing MDS/Substance is modified	Yes	No
Triggers a warning message in the check procedure	No	Yes
Stays contained in copy of a referencing MDS	Yes	No

This means: if you are creating a new tree, no hidden or deleted MDSs or substances is allowed. If you are updating an existing tree, any hidden MDSs or substances contained in the original tree can stay and any deleted MDSs or substances contained in the original tree must be replaced.

Upload-XSD Specification

The name of the Upload XSD specification is “*CDX_Upload_Request.xsd*”. For detailed information about completeDeclaration elements and attributes, please see the section “Description of XSD Elements and Attributes”.

Remarks concerning Upload

The following section contains tips and things to consider when creating an upload file. It should be noted that the Upload Web Service is a shadow of the CDX browser system and the same check procedures as in online system is being applied before an MDS can be saved in CDX.

Upload Attribute – “Mode”

The attribute mode represents how the MDS should be treated upon Upload. Each MDS uploaded should have this attribute set. You have the choice between “Insert”, “Update” and “Replace”. The “Insert”-mode is the default, so this one will be taken if you omit the “Mode” attribute at the Source element. You can only use “Update” and “Replace” between the same node-types (e.g. “Component” for “Component” etc.). You can mix Updates, Inserts and Replaces inside one XML-file.

The Insert mode means:

A completely new MDS is created in CDX. It gets a new ID and the Version-No = “0.01”. It also gets a new Node-ID.

The Update mode means:

You need to include a valid Node-ID with the ID attribute at the Module element. The upload system checks in the database whether this Node-ID exists. If it does exist, CDX retrieves the ID and Version-No associated with the Node-ID from the system. Then a new MDS will be created according your specification. The new MDS receives the same ID and the next higher Version-No. In this way you have created a new version of an existing MDS. The old version of that MDS stays unchanged. You can only “Update” MDSs of your own company. You cannot update a deleted or hidden MDS.

The Replace mode means:

You need to include a valid Node-ID with the ID attribute at the Module element. The upload system checks in the database whether this Node-ID exists. If it does exist and has not been sent or released, the old MDS will

be deleted, your new MDS gets the same ID, Version and Node-ID.

Upload Attribute – “Status”

This attribute tells the system how the MDS should be left upon successful upload. The Edit-status is the default one, so this one will be taken if you omit the “Status” attribute at the module element, which is possible. The Edit-status means the uploaded MDS will stay “non productive” (in edit mode). The MDS will receive the next non-productive version number (e.g. if the last version was 2.0, then the version of this MDS will be 2.01).

The status *Intern* will put the uploaded MDS into the state “internally released”. It becomes productive and receives the next possible productive version (e.g. if an edit-version was 0.01, the next productive version will be 1.00).

The status *Public* will put the uploaded MDS into the state “published”. It gets productive and receives the next possible productive version (e.g. if an edit-version was 0.01, the next productive version will be 1.00). **This status is restricted to special companies in CDX.**

It is also possible to have status *Send* and *Propose* in the upload file. MDSs which should be sent or proposed need to contain at least one “*RecipientData*” element.

Retrieve MDS Upload Results

The Upload Web Service is an asynchronous process. The system queues the files to be uploaded and processes them as the system demand allows. You must retrieve the results (XML files) using the job ID (received as the result of the upload process). The job ID is unique to each upload file.

Interface Description

The following table lists the input and output parameters for the interface.

Purpose	This method is used to load down the result XML files from CDX
Input Params	Job ID (long) (mandatory)
Output	Result (XML)
API Tag	Upload
API - URL	/up-download/upload/results/{jobid}
Errors	CDXWebServiceException

Upload-Result-XSD Specification

The results you get after an upload are in XML. It follows an XSD grammar similar to the upload XSD. The name of the Upload Result XSD specification is “*CDX_Upload_Response.xsd*”.

Errors in the Result File

There are three different levels of error handling during upload:

“Parse Error”

Parser error will be caused if you forget a closing bracket or break in any way the XML syntax and validation rules. There is one error message and it comes directly from the XML parser. A parse error causes stops the upload process of the file. The upload engine proceeds to the next upload job.

“Simple Error”

If you receive a Simple Error, you have broken some semantic rule in the code representing the construct of your tree. A Simple Error consists of one error message together with an error code at the place of the problem (the upload result traces your own tree syntax structure) and a Verdict attribute at the element with the problem <Summary>.

The verdict will say in this case: *Verdict=“Failure”*. The summary line will also contain the attributes *Source_Element_No* and *LocalKeyDef* which should assist in identification of the erroneous MDS.

Unlike a Parse Error, a Simple Error will not cause processing the file to abort. The system will continue uploading with the next source element in your upload file.

“Release Error”

Release Errors occur if you upload an MDS with the Status = “Intern”, “Public”, “Send” or “Propose” or if you change the status of an existing MDS to one of the above states. During processing, a s “Release check” is started if everything else in your tree build-up succeeded.

The result of the “Release Check” contains “release information” and/or “release errors”. If everything on the MDS uploaded successfully, processing will proceed. If releasing was not successful, a list of all “release errors” is presented between the brackets <ReleaseCheck> and </ReleaseCheck>. The Verdict=“Failure” will be given and in the Summary line and the attributes *Source_Element_No* and *LocalKeyDef* will be given for easier identification of the erroneous MDS in the file. If you created a new MDS in the file, it will not be stored even if everything else was successful.

After a release error(s), the upload continues processing with the next MDS in your upload file.

“Success”

If your element was uploaded properly the Verdict = “Success” will be shown with the <Summary> element.

Upload Error Codes

In the list below, all error messages which can appear in the upload results are explained.

Error Code	Error Message	Explanation
3	"Tag 'ingredients' not found under 'datasheet'"	Ingredients missing under datasheet.
4	"You can update/replace/delete/release/change only your own datasheet"	You are trying to process an MDS that does not belong to your company.
5	"Can't replace a productive datasheet"	Datasheet has a whole number version. Productive datasheets can't be replaced.
6	"Can't update/replace/change <Type> by <Type>"	You have to use the same MDS type: e.g. component for component.
7	"Datasheet locked by another user. Changes not possible"	Datasheet you're trying to change is being edited by another person of your company just now – probably in the online system.
8	"Recipient company ID missing in Chapter Four"	Recipient company ID is missing in chapter four.
9	"Recipient company ID has to be an integer value"	Recipient company ID has the wrong format.
11	"Modules cannot be sent, proposed nor published"	The status is incorrect.
12	"Datasheet already internally released or published"	You are trying to release or use send on an MDS that is already internally released or published.
13	"Datasheet is in status 'HANDSHAKE'. Release not possible"	A part in handshake modus is locked. It cannot be processed until it has been rejected/accepted. Handshake mode is where the MDS has been sent (not proposed) to a recipient and it is locked until the recipient does something with it (reject or accept).
14	"No company in list for send/propose"	You are trying to send or propose a datasheet but there is no recipient information available.
15	"More than one company in list. Send not possible. Try propose"	You can send a datasheet only to one company. If you have more, 'propose' is the required way.
16	"Can't update/replace/change datasheet by module or vice versa"	Datasheet does not exist and it can't be updated/replaced/changed by module.
17	"Missing a regular top node"	A regular top node is missing because there is more than one top node.
18	"Top node can't be a reference"	Top node can't be a reference.
20	"Can't create a new substance"	It is not possible to create a new substance here.
22	"This node type is not allowed here"	The selected node type is not allowed here.

Error Code	Error Message	Explanation
23	"Attribute 'InstName' missing"	The attribute 'InstName' is missing.
24	"Attribute 'NormCode' missing"	The attribute 'NormCode' is missing.
25	"Norm institute name does not exist"	The specified value for the attribute 'InstName' is not valid.
26	"Wrong norm code"	The specified value for the attribute 'NormCode' is not valid.
27	"Locally referenced datasheet was not found"	Reference to an MDS declared in the same file by the attribute 'LocalKeyRef' has failed. Perhaps there was an error in the upload of that MDS. The referenced MDS needs to be declared by means of the attribute 'LocalKeyDef'.
28	"Attribute 'Node_ID' or 'LocalKeyRef' missing"	If you refer to an MDS, you have to specify (depending on the context) either its 'ID' or its 'Local Key'.
29	"Unknown change task"	The change can't be executed.
31	"Amount' has to be an integer value"	The attribute 'amount' is not an integer value.
32	"Measured weight/'Weight' exceeds or nearly exceeds 1,000,000 kg"	1,000,000 kg is the biggest weight value allowed in CDX.
33	"Unexpected value of the attribute 'confidential'"	The value of the attribute 'confidential' is not compatible.
34	"Contact_ID has to be an integer value"	The attribute 'Contact_ID' has to be an integer value.
35	Unexpected value of the attribute 'confidential', substance is in scope of a regulation	A confidential substance is in scope of a regulation in scope.
36	"OrgID has to be an integer value"	The attribute 'OrgID' has to be an integer value.
37	"OrgID <No> does not exist in your company"	The 'OrgID' specified under <Supplier Data> does not exist in your company.
39	"Company does not exist or has been deleted or deactivated: <No>"	You have specified a company ID which is not active or does not exist.
40	"Recipient company cannot be your own company or its Org.-Unit"	Sending or proposing datasheets to your own company or to an Org.-Unit of your own company is not allowed.
44	"Attribute 'SupplCode' has to be composed of four characters for company <CompanyID>"	The attribute 'SupplCode' has not the length of four characters.
46	"Wrong date format. Expected MM/DD/YYYY or DD.MM.YYYY"	The date format is not as expected.
49	"Wrong month in date format"	You have specified a month number which does not exist (>12).
50	"Wrong day in date format"	You have specified a day number which does not exist (>31).
51	"Wrong day/month combination in date format"	You probably entered something such as 31st April.
52	"Year <Year> in date format is not a leap year"	Your date contains 29th February but the specified year is not a leap year.
53	"You are not allowed to reference MDSs that contain confidential information violating your regulatory scope"	It's not allowed to reference MDSs that contain confidential substances for regulations in scope of the current MDS, so that it will not be able to incidentally create non-compliant MDSs.
54	"Referenced node is not a <NodeType>"	Inserted referenced node doesn't match the expected type (e.g. Component or Material).
55	"Appended node already references this object"	You can only reference a Node-ID once under the same parent. In this case, you have a parent node with more than one reference to the same Node-ID.
56	"Appended node already referenced in branch"	Each part can be only once referenced in a branch.
57	"Appended node equals top node"	A branch in the tree references (recursively) the top node.

Error Code	Error Message	Explanation
58	"For referenced part number '{0}' exists no '{1}'"	If no result exists when searching refComponent/refSemicomponent by part number.
59	"Unexpected value of 'Status'"	The value of the attribute 'Status' is not as expected.
60	"Could not find datasheet with user's company as recipient"	For use in offline acceptance, the datasheet for which you are trying to change the recipient status was not sent to your company.
62	"Wanted recipient status <Status> could not be set. Status <Status> remains."	The wanted recipient status could not be set. The status will still remain.
63	"Wanted recipient status invalid."	The recipient status is invalid.
64	"The status is not 'internal released' or 'sent'"	An MDS can only be deactivated when the status of the MDS is 'internally released' or 'sent'.
65	"Wanted RecipientStatus is not in 'Accepted' or 'Rejected'"	The recipient status is not 'accepted' or 'rejected'.
66	"The only owner can deactivate this MDS"	Only the owner can deactivate the MDS.
67	"Appended node already referenced {0}, amount will be increased."	Warning when attribute handleDuplicateReference is set to "ADD" and multiple same datasheets will be referenced
68	"Appended node already referenced {0}. Subsequent occurrence ignored."	Warning when attribute handleDuplicateReference is set to "IGNORE" and multiple same datasheets will be referenced
71	"ILI_ID/ModuleID <ilid> / <ModuleID> could not be inserted."	The relation between IMDS module ID and ILI ID could not be saved.
75	"Substance does not exist: <ID>"	Referenced substance does not exist. You are using either a wrong ID or the substance was deleted/hidden.
76	"Value or text too large. Expected format: <Format>"	The length of a text (e.g. comment, reject reason) is too large.
77	"A positive integer number expected for attribute: <AttributeName>"	It is not allowed to enter a negative number for a listed attribute.
81	"Company <CompanyID> or one of its Org.-Units already in list. It cannot be 'added'"	The company or one of its organization units are already in the list.
82	"Company <Company_ID> not in list"	Recipient data of the company specified by its ID does not exist in the Recipient list. It therefore cannot be deleted from the Recipient list.
83	"Numeric positive value expected for weight, tolerance or percentage: <ValueDescription> = <value>"	The weight, tolerance or percentage is not a numeric positive value.
84	"Unknown weight unit: <unit>"	Unknown weight unit.
88	"Non-negative decimal or integer number between '0' and '100' expected for percentage: <ValueDescription> = <value>"	Non-negative decimal or integer number between '0' and '100' expected for percentage.
89	"Forbidden substances, substances which require declaration and substances which need applications cannot be marked as confidential"	You have marked a substance that requires declaration 'confidential' which is not allowed.
91	"Unexpected percentage type: <type>"	Unexpected percentage type.
94	"Sending or proposing this MDS is not allowed as long as another version of this MDS is in handshake mode with one of the recipients"	You have sent (not proposed) an MDS to a company. The recipient has not yet accepted or rejected it and the MDS is in "handshake" mode. During this time it is not possible to send/propose another version of the MDS to the same company.
96	"Attribute 'DGTLevel' has to composed of three digits"	The length of attribute 'DGTLevel' is not equal to three digits.
97	"Company cannot be added:<REASON>"	The company specified in <RecipientData> cannot be added for some unspecified reason.

Error Code	Error Message	Explanation
98	"This MDS cannot be inserted into the tree because it is the forwarded version of an original MDS that your company accepted. Please insert the original MDS instead."	It is not allowed to enter own forward copies into the MDS trees.
99	"<reason>"	The reason, why the attribute 'CopyMode' is missing.
101	"MDS is not visible to your company. Thus you cannot copy it."	Only own created, received or published datasheets can be copied.
102	"It is not possible to copy or make a new version of a forwarded MDS. Please make a copy of the original MDS instead."	Forwarded datasheets are clones of an original one received by your company. If you need a copy, make a copy of the originally received MDS.
103	"Datasheet was already sent/proposed. Replace not possible"	Mode 'Replace' is suitable only for editable MDSs which were not sent/proposed.
104	"Unexpected value of attribute 'Type' in 'Chap4'"	Unexpected value of attribute 'Type' in 'Chap4'.
107	"Only one recyclate element per material allowed"	It does not make sense to attach more than one recyclate element to materials.
110	"At least one percentage value expected for recyclate"	You answered the question on recyclate content with "Yes". In this case you have to provide at least one value for one of the four percentage attributes.
112	"Either a positive number or a local key expected for attribute 'MatID'"	You omitted an expected value of 'MatID' attribute. 'MatID' can be a Node_ID of an existing material or a local key reference to a previously defined material.
113	"Sum of recyclate minimum values exceeds 100%."	Sum of 'PostIndMin' and 'PostConsMin' is more than 100%. This is not possible.
114	"Both recyclate maximum values are zero. Ranges not valid."	Both 'PostIndMax' and 'PostConsMax' are 0%. This is not possible.
115	"Attribute ID missing"	Expected attribute ID which is needed here was not provided.
116	"Unknown request task"	There was another task specified as AssignRequest', 'SendRequest', 'DeleteRequest', 'UnassignRequest', 'RejectRequest', 'ChangeRequest' or 'CreateRequest'.
117	"Request with this ID does not exist"	Specified request does not exist.
118	"An MDS is already assigned to this request. Please unassign first"	You have tried to attach an MDS to a request which already has an assigned MDS.
119	"The status of request is not 'received'. MDS cannot be assigned"	It is only possible to assign an MDS to a request which is in the status 'received'.
120	"You cannot assign/unassign an MDS to/from your own request"	You have tried to assign or unassign an MDB to a request which was created by yourself.
121	"Datasheet does not exist or is not visible to your company: 'ID'"	You have tried to use an MDS which does not exist or does not belong you.
122	"You are not the owner of this MDS and thus it cannot be assigned to a request"	You can assign only an MDS of your own company to a request.
124	"Expected MDS-type in request is not equal to the type of this MDS"	The request creator expects e.g. a component, but you have created e.g. a material.
125	"No MDS assigned to this request"	You have tried to unassign a request which does not have an MDS assigned.
126	"Request is not in status 'working'. MDS cannot be unassigned"	You can only unassign a request which is in status 'working'.
127	"Recipient data of requestor company missing"	The MDS which can be assigned to a request must possess a <RecipientData> of the requestor company.

Error Code	Error Message	Explanation
128	"Datasheet is in handshake with requestor company and thus cannot be assigned to this request"	A datasheet which is in handshake with the requestor company cannot be assigned to a request of the same company.
129	"Recipient data attribute different from expected value in request or missing: <AttrName>"	The MDS which can be assigned to a request must possess <RecipientData> attributes equal to the request.
130	"You can send/modify/delete only your own requests"	You have tried to send/modify or delete a request of which you are not the owner.
131	"Request can be sent only if its status is 'New' or 'Rejected' "	Only requests in status 'new' and 'rejected' can be sent to the supplier company.
132	"Request cannot be created/modified. Attribute value missing: '<AttrName>'"	An attribute which is needed for the creation or modification of a request is missing.
133	"Request can be changed only if its status is 'New' or 'Rejected'"	Request which shall be modified is not in the needed status.
134	"Request can be rejected only in status 'Received'"	Request which shall be rejected is not in the needed status.
135	"Recipient data can be changed only in status 'Edit', 'Rejected' or 'Modified'"	You have tried to modify <RecipientData> attributes of an MDS but its current status does not allow it.
136	"Datasheet is in status 'HANDSHAKE'. No changes on 'ingredients' and 'supplier data' possible "	You have tried to change < Ingredients> or <SupplierData> data of an MDS which is in handshake.
137	"Datasheet is productive. No changes on 'ingredients' and 'supplier data' possible"	You have tried to change < Ingredients> or < SupplierData > data of an MDS which is productive.
138	"Datasheet is in status 'HANDSHAKE'. No 'RecipientData' can be added or modified "	You have tried to add a <RecipientData> or to modify a present <RecipientData> on an MDS which is in handshake.
139	"Unicode character found in <Place>"	A multi-byte character has been found in the value of an attribute. This does not match the requested ISO-8859-1 code page.
140	"Datasheet cannot be deleted as one of the recipient companies has accepted it"	It is not allowed to delete an MDS which was accepted by at least one recipient.
141	"Recipient data of this company cannot be deleted because this company has accepted the datasheet"	Recipient data of a company which has accepted an MDS cannot be deleted from this MDS.
143	"Attribute 'RecipPartNo' missing in recipient data"	The mandatory attribute 'RecipPartNo' is missing in a <RecipientData> element.
144	"RecipCompanyID can be only your own company or one of your OrgIDs"	You are trying to create a request with foreign recipient companyID.
145	"Unexpected value of attribute 'Type' at 'CreateRequest'"	Expected types are "COMPONENT", "SEMICOMPONENT" and "MATERIAL".
146	"You cannot reject your own request"	Only request receiver can reject.
147	"Request cannot be deleted. Status of request is <Status>"	Request cannot be deleted if its status is 'completed' or 'deleted'.
148	"Request cannot be processed. Attribute value missing: <AttrName>"	Missing an indispensable attribute value. Request cannot be processed.
149	"MDS already sent or proposed to the requestor company cannot be assigned to a request with this company"	You cannot assign an MDS which was already sent to the requestor company to a request. If you sent an appropriate MDS to the requestor before the request was made reject the request and explain it to the requestor by means of the attribute 'RejectReason'.
150	"Your company does not own the SupplierOrgID specified in the request"	Probably are you trying to reject or 'unassign' a request belonging to a foreign company.

Error Code	Error Message	Explanation
153	"Changed MDS is assigned to a request. Following recipient data attribute is different from expected value in request or missing: <AttrName>"	A request requires the assigned datasheet to have certain values for the attributes in RecipientData. These values cannot be changed.
155	"Attribute 'Reference' has to be composed of ten characters for company <CompanyID>"	The attribute 'Reference' has to be composed of ten characters for the company.
156	"Datasheet cannot be replaced as it is assigned to a request"	Datasheets assigned to a request cannot be replaced.
157	"Change of Supplier-Company root not allowed in request-status 'Rejected'"	In status 'rejected' only change of internal OrgID allowed. If you need to send request to a different roof company, you need to create a new request.
158	"SupplierCompanyID in request cannot be your own company or one of its OrgIDs"	You cannot create requests with your own company as a supplier.
159	"You cannot send a request to your own company or one of its OrgIDs"	You cannot send requests to your own company.
160	"External request, companies with similar names found: choose one of the following <Companies> "	Companies with similar names found.
161	"A non-empty alphanumeric value expected for attribute <ATTRIBUTE>"	You have not specified a value for this attribute.
162	"Unexpected value for attribute 'ProcessChemType' provided on substance <Substance>. Correct values are: 'Intended', 'Residue', 'Impurity'"	Check your spelling, only values: INTENDED, RESIDUE, IMPURITY are accepted.
163	"This CompanyOrgID may not publish this MDS type"	'CompanyOrgId' provided in <SupplierData> is not allowed to publish this MDS-type ('Component', 'SemiComponent', 'Material').
164	"Contact person with ID <ID> is REACH-only"	The contact person selected is not valid for datasheets, only a contact for REACH/Compliance.
165	"Unexpected value for attribute 'SpecificWeightType'. Correct values are 'kgm', 'kgm2', 'kgm3'"	Check your spelling, only 'kgm', 'kgm2', 'kgm3' are accepted.
166	"Missing value for attribute 'SpecificWeightType'. 'SpecificWeight' has been provided",	Attributes 'SpecificWeight' and 'SpecificWeightType' must be provided together – not applicable at this time.
168	"Numeric positive value expected for attribute 'SpecificWeight'"	Positive number expected.
169	The requested MDS type does not match the given MDS type	The requested MDS type does not match the given MDS type.
170	This MDS cannot be assigned. It is already assigned to an MDS-Request of the same company	Datasheet is already assigned to an MDS-Request of the same company.
171	It is not possible to add another recipient in the current MDS status	For this MDS status it's not allowed to add another recipient.
177	"Could not do billing –funds exceeded. Status remains 'browsed'"	MDS could not be accepted. Funds must be filled up
199	"Mandatory attribute <Attribute> fits only with the type: <Type> (i.e. Material)"	Error message of transactions "CreateRequest" and "ChangeRequest". Some attributes only appear in one object type. Check if attribute belongs to that object type.
200	Changed request could not be saved as it has meanwhile been changed by another user	Check change status and repeat the "ChangeRequest" transaction.
201	Please fill out all required fields in request	Check the Request XSD for mandatory attributes.

Error Code	Error Message	Explanation
205	Mandatory request attribute or element missing on datasheet: 'XXX'	Check the Request XSD for mandatory attributes.
206	Mandatory recipient data attribute missing: <Attribute>	Check the Request XSD for mandatory attributes.
207	Classification does not exist. Classif_List_Id: <ClassifListId> Classif_id: <ClassifId>.	Only valid classifications are allowed. Download the material classifications and compare.
208	You can create a new version only from your own datasheet	Datasheets, of which your company is not the owner, cannot be copied.
209	You can forward only accepted datasheets	Only accepted datasheets can be forward. Not foreign, own or published ones.
211	"A forward copy of this datasheet already exists. Only one is possible"	Only one forward copy of a datasheet is possible.
212	"This datasheet is a forward copy thus cannot be sent. Try propose"	It is not possible to send a forward copy.
213	"Datasheet is a forward copy. No changes on 'ingredients' possible"	Datasheet is a forward copy and therefore, no changes on 'ingredients' are possible.
214	"Company is not authorized to use web services. An active contract is necessary"	For using web services, an active contract is necessary.
215	Publishing for suppliers is not possible. This is allowed only to restricted companies	Your company is not authorized to use the "PUBLIC_FOR_SUPPLIERS" status.
216	This company is not allowed to publish this type of MDS for suppliers	"PUBLIC_FOR_SUPPLIERS" can be restricted to some MDS types (e.g. Components) for certain companies. Your company is not allowed to "PUBLIC_FOR_SUPPLIERS" this type of MDS.
217	Only users of company 'Bosch' are allowed to use ranges in ArtNoList	Your company is not authorized to use "range" numbers in ArtNoList. Please, use single article numbers.
218	Only users of company 'Bosch' are allowed to use visibility in ArtNoList	Your company is not authorized to use the attribute "visibility" in ArtNoList.
219	Value <No> is not a valid article number of company Bosch	Bosch article numbers must obey certain pattern rules. This is being checked. Specified number is not a valid Bosch article number.
220	Range <Lower>-<Upper> is not a valid article number range of company Bosch	The lower and upper boundary of a range must obey certain pattern rules. This is being checked. Specified range boundary is not a valid Bosch article number.
221	Value <No> is not a valid recipient part number of company Bosch	Bosch part numbers must obey certain pattern rules. This is being checked. Specified number is not a valid Bosch part number.
222	Range <Lower>-<Upper> is not a valid recipient part number range of company Bosch	The lower and upper boundary of a range must obey certain pattern rules. This is being checked. Specified range boundary is not a valid Bosch part number.
223	It is not allowed to use ranges in recipient part number list for this recipient company	Using part number ranges is restricted to certain companies. This company does not belong to it. Please, use single part numbers for this recipient company.
224	Article number <No> already contained in the article number list	Each article number may occur only once in the article number list. This article number occurs a second time.
225	Article number range <Lower>-<Upper> already contained in the article number list	Each article number range boundary may occur only once in the article number list. This article number range boundary occurs a second time.
226	Article number range <Lower>-<Upper> contains equal range bounds	This article number range contains the same value for lower and upper boundary. This is not allowed.
227	Recipient part number <No> already contained in the recipient part number list	Each part number may occur only once in the part number list. This part number occurs a second time.

Error Code	Error Message	Explanation
228	Recipient part number range <Lower>-<Upper> already contained in the recipient part number list	Each part number range boundary may occur only once in the part number list. This part number range boundary occurs a second time.
229	Datasheet has been already published for suppliers	You may not use "PUBLIC_FOR_SUPPLIERS" on an MDS twice. This MDS has already been published for suppliers.
230	Regulation/Packaging: declared material <MAT_ID> not contained in the subtree	Material you are referring to in the RegulationExemption/Packaging element has to occur in the tree.
231	Regulation/Packaging: declared substance <SUBST_ID> not contained in the subtree. Possible underlying materials? <MAT_ID>	Substance you are referring to in the RegulationExemption/Packaging element could not be found in the subtree of the referred material. If this substance is located under a further sub-material you may need to specify this sub-material using the attribute MatID.
232	Regulation/Packaging: declared substance <SUBST_ID> not located under <>	Substance you are referring to in the RegulationExemption/Packaging element is not contained in the subtree.
233	Regulation/Packaging: declared substance <SUBST_ID> does not occur in the branch. If the substance is contained in a referenced material please provide its MatId	Substance you are referring to in the RegulationExemption/Packaging element could not be found in the subtree. If this substance is located under a material, please specify this material using the attribute MatID.
234	Regulation: specified exemption code <EXEMPTION_CODE> is not suitable for this combination of regulation and substance	Provided ExemptionCode does not fit to this specific regulation.
235	Users of company 'Bosch' must not use visibility 'ALL_COMPANIES'	Users of company Bosch are not allowed to use the visibility type "ALL_COMPANIES".
236	Recipient part number range <Lower>-<Upper> contains equal range bounds	This part number range contains the same value for lower and upper boundary. This is not allowed.
237	Users of company 'Bosch' are not allowed to publish for all companies	Users of company 'Bosch' are not allowed to use status "PUBLIC" which means publishing to all companies. Use "PUBLIC_FOR_SUPPLIERS" instead.
238	Missing mandatory visibility on article number/range <ArtNo>	In cases visibility is mandatory, a value for the attribute "Visibility" has to be provided.
239	RegulationExemption does not exist	Provided "ExemptionCode" does not exist.
240	Specified project for MDS-Request has to be owned by your company	Your company is not the owner of the specified request project (attribute: "projectname"). Please, specify a project which is owned by your company. In case you specify a new (non-existent) project name, a new request project will be drawn up for your company.
241	Regulation <REG> does not offer exemptions for substance <SUB>	Regulation <RegulationID> does not offer exemptions for substance <Subst_ID>. Please, remove this RegulationExemption element.
242	Regulation does not exist	Provided "RegulationType" does not exist.
243	Regulation/Packaging: declared substance <SUBST_ID> does not exist	Substance you are referring to in the RegulationExemption/Packaging element does not exist.
244	"Request cannot be created/modified. The Regulation ID <AttrValue>' is not company or common specific."	The value of the regulation ID is not allowed, because it's not a company specific regulation ID and no common regulation ID.
245	The entered number is not in the valid format. The entered number should be entered as 1-13 alphanumeric characters, not allowing anything other than 'a-z', 'A-Z' and '0-9'.	
246	The entered value already exists. Please enter a unique value	

Error Code	Error Message	Explanation
247	The entered number range is not in the valid format. The entered number should be entered as 1-10 alphanumeric characters (must be identical for upper and lower limit) not allowing anything other than 'a-z', 'A-Z' and '0-9') followed by 3 numeric digits.	
248	Entered upper/lower limits are equal. Please enter different upper/lower limits	
249	The entered number range already exists. Please enter a unique range.	
250	Number type is a mandatory field and cannot be empty.	
251	Number value is a mandatory field and cannot be empty.	
252	Number lower and upper limits for Range part numbers are mandatory fields and cannot be empty.	
253	Number visibility is a mandatory field and cannot be empty.	
254	It is not allowed to use ranges in supplier part number list for this supplier company.	
260	Internal System attribute already set by request and cannot be overwritten	If the internalSystem attribute was set in the request it cannot be overwritten
300	"Request can be not be send, recipient company does not exists/deleted"	It is not possible to send the request, because the recipient company does not exist/deleted.
402	"Wrong QueryId or QueryListId"	The attribute 'QueryId' or 'QueryListId' is not valid.
551	"Errors during processing. Datasheet not saved"	Datasheet was not saved.
552	"Errors during processing. No changes made"	No changes were made.
553	"Errors during processing. Request not created"	It was not possible to create the request.
555	"Errors during processing. MDS not unassigned from request"	The MDS is not unassigned from the request.
556	"Errors during processing. Request not sent"	The request was not sent.
557	"Errors during processing. Request not rejected"	The request was not rejected.
558	"Errors during processing. Request not deleted"	The request was not deleted.
559	"Errors during processing. Request not changed"	The request was not changed.
560	"Errors during processing. Request task not processed"	The request task was not processed.
661	"There was another tag than 'module', 'datasheet', 'change' or 'request' in the Vector of nodes"	There was another tag than 'module', 'datasheet', 'change' or 'request' in the vector of nodes.
663	"Unknown update task"	Unknown update task ('update' or 'replace' is not used)
666	"ERROR in <info>: <message>"	Internal error in the system.
667	"The node type to be added is not valid"	The node type to be added is not valid.

Error Code	Error Message	Explanation
671	"Could not determine node type"	Node type is not a component, semi-component, material or substance.
672	"Node connector not found in tree"	Node connector not found in tree.
673	"Module does not exist"	The module does not exist.
674	"Undefined error. Request could not be assigned/unassigned"	Undefined error. Request could not be assigned/unassigned.
676	"Undefined error. Request could not be created"	Undefined error. Request could not be created.
679	"Undefined error. Request could not be rejected"	Undefined error. Request could not be rejected.
680	"Undefined error. Request could not be deleted"	Undefined error. Request could not be deleted.
681	"Datasheet cannot be deleted. Reason: 'unspecified'"	The datasheet cannot be deleted because of an unspecified reason.
777	"Release not possible. Errors found:"	It is not possible to make a module/datasheet productive in case of any errors.
883	"Job was terminated by Operator at <Date>"	The operator has terminated the job.
950	"Module cannot be deleted. Reason: <reason>"	The module cannot be deleted because of the reason specified in the error message.
951	"Attribute <attribute> expected"	The attribute 'version' or 'moduleID' is expected.
952	"ERROR: Element 'Datasheet' or 'Module' missing."	Element 'Datasheet' or 'Module' is missing.
953	"A node with NODE_ID <nodeID> already exists in DB. No deletion/hiding could be detected"	The node already exists in the database. No deletion/hiding could be detected.
959	"Attribute 'nodeID' expected"	The attribute 'nodeID' is expected.
960	"Attribute nodeID on an internal material, semi-component or component node missing"	The attribute 'nodeID' on an internal material, semi-component or component node is missing.
961	"Internal NODE_ID <nodeID> already assigned in this tree"	The internal nodeID is already assigned in the tree.
991	"Wrong parent/child combination. Child_ID:<ChildId>"	It is not possible to insert a child node of this type under a father node of this type.
992	"Appended node is not a module: <nodeID>"	The appended node is not a module.
993	"It is not possible to append a node without 100% declaration to a datasheet with 100% declaration. Child_ID:<ChildId>"	It is not possible to insert datasheets without 100% declaration into a tree with 100% declaration.
994	"No adequate material classification could be found"	An adequate material classification could not be found.
996	"Error appending node with Node_ID <NodeID>. Error value = <Value>"	For some reason this node could not be inserted into the tree. The error value shows the reason.
998	"Error during storage of Mip data <errorMessage> "	For some reason, an error during storage of MIP data occurs. The message shows the reason.
999	"Error in MIP data: <![CDATA[<info>]]>"	The MIP data does not exist, the info shows the reason.
1012	SLE <Selling legal entity company ID> already configured	Trying to append an already existing Selling legal entity to supplier data of an MDS
1013	SLE <Selling legal entity company ID> does not exist	Trying to remove non-existing Selling legal entity from supplier data of an MDS

Error Code	Error Message	Explanation
1014	Cannot remove SLE <Selling legal entity company ID> as SCiP number exists	Trying to remove an existing Selling legal entity which has an existing SCiP number from supplier data of an MDS
888	Contact ID is not a valid MDS contact	Trying to set an invalid contact ID for SupplierData

Upload Warning Codes

In the list below, all warning messages which can appear in the upload results are explained.

Warning Code	Warning Message	Explanation
1	RegulationExemption/Packaging: RegulationExemption/Packaging element <ELEMENT> will be ignored. Reason: <Reason>	For some reason the provided RegulationExemption/Packaging element has to be ignored. The reason has been specified. This is not causing any error. This message appears only for your information.
2	RegulationExemption/Packaging: Attribute matID <MAT_ID> at element <ELEMENT> will be ignored. Substance will be searched directly under parent node. Reason: Parent node is not a reference.	You have provided an abundant MatId - value (which would make sense only if the node were a reference). This is not causing any error. This message appears only to inform you that this attribute value will be ignored.
3	GeneralRegulationConfirmation: Confirmation <CONFIRMATION> will be ignored. Reason: regulation type <REGULATION_TYPE> is not an valid general regulation type.	You have provided an abundant confirmation for a regulation which is not a general regulation. This is not causing any error. This message appears only to inform you that this confirmation element will be ignored.
4	CompanySpecificRegulationConfirmation: Confirmation <CONFIRMATION> will be ignored. Reason: regulation type <REGULATION_TYPE> is not an valid company specific regulation type for company <COMPANY_ID>	You have provided an abundant confirmation for a regulation which is not a valid company specific regulation for this recipient company. Each recipient company may restrict the amount of company specific regulations for which a confirmation is possible or requested. This is not causing any error. This message appears only to inform you that this confirmation element will be ignored.
5	RegulationExemption/Packaging: RegulationExemption element <ELEMENT> has been saved. However recipient company <COMPANY_ID> does not accept any information on regulation <REG_ID>. Be aware that this exemption will not be displayed in GUI as long as recipient company <COMPANY_ID> remains in the recipient list	Each recipient company may restrict the collection of regulations for which they want to have information displayed in GUI. In your case one of the present recipient companies blocks the regulation for which you provided a RegulationExemption. This is not causing any error. This message appears only to inform you that this regulation will not be visible in GUI in the "Ingredients" section. Your information has been stored and will be visible again if for some case the blocking company will be removed from the recipients list.
356	For <PARTNUMBER> a SCIP number other than the one provided is already set, updating. Dossier submissions may revert changes	A SCIP number is provided for either < RefComponent> or < RefSemicomponent> elements which is different from the originally assigned SCIP number. This message appears only to inform you that SCIP number will be updated with the newly assigned value.

Download Common MDS Data

The CDX standard/common data is information that can be accessed – viewed, used, downloaded – by every CDX WS user.

Common data will be generated automatically in XML once a day (0:02 CET) and stored in the database until the next daily data generation. Older data will be replaced by the current.

Information types with "Daily" identifier contain data which was modified or created between 0:00:00 and 23:59:59 of the previous day.

Information types with "All" identifier contain data which was modified or created between go live of the CDX system and 23:59:59 of the previous day.

Interface Description

The following table lists the input and output parameters for the interface.

Purpose	This method is used to pull down common data XML files from CDX
Input Params	Information Type (String) (mandatory) Package Key (String), received with previous package
Output	PackageKey of next package (if not appears, no next package available) Common data (XML)
API Tag	Download
API - URL	/up-download/download/commonfile
Errors	CDXWebServiceException

Available Information Types

The following table shows the file names and what is contained in each file.

Info Type	Description
SGAll	All available S ubstance G roups
CCAll	All available C ompanies and C ontacts
CCDaily	C ompanies and C ontacts changes of one day, the previous day
MCAAll	All available M aterial C ategories
NIAAll	All available N orm I nstitutes of Material Norms
NSAll	All current CDX N ew S
SBAAll	All available B asic S ubstances
SBDaily	B asic S ubstances changes of one day, the previous day
SBMAAll	All available B asic S ubstances with M apping of CDX Node-ID and IMDS Node-ID
SBMDaily	B asic S ubstances with M apping of CDX Node-ID and IMDS Node-ID, changes of one day, the previous day
MPAAll	All available P ublic M aterial datasheets
MPDaily	P ublic M aterial datasheets changes of one day, the previous day
MPSAAll	All P ublic S tandard M aterial datasheets with mapping of CDX Node-ID and IMDS Node-ID
MPSDaily	P ublic S tandard M aterial datasheets with mapping of CDX Node-ID and IMDS Node-ID, changes of one day, the previous day

XSD Specifications

In this section you'll find the names of all XSDs of the common MDS data. Elements and attributes are described in detail in chapter "Description of XSD Elements and Attributes".

XSD of Substances (SB and SBM)

The name of the XSD specification is "*CDX_BSDownload_Response.xsd*".

XSD of Substance Groups

The name of the XSD specification is "*CDX_SGDownload_Response.xsd*".

XSD of CDX News

The name of the XSD specification is "*CDX_NSDownload_Response.xsd*".

XSD of Material Classifications

The name of the XSD specification is "*CDX_MCDownload_Response.xsd*".

XSD of Companies and Contacts

The name of the XSD specification is "*CDX_CCDownload_Response.xsd*".

XSD of Material Norms (Norm Institutes)

The name of the XSD specification is "*CDX_MNDownload_Response.xsd*".

XSD of Published Datasheets (MP and MPS)

The name of the XSD specification is "*CDX_MPDDownload_Response.xsd*".

Download Company Specific MDS Data

Company specific data can only be downloaded by the company whose information is contained in the file. In other words, the company must be the owner of the data. The CDX system searches for the corresponding Company ID using the User ID.

Interface Description

The following table lists the input and output parameters for the interface.

Purpose	This method is used to load down company specific data from CDX
Input Params	Start Date (date format: yyyyymmdd) (optional, depends on period) End Date (date format: yyyyymmdd) (optional, depends on period) Info Type (String) (mandatory) Node-Id (long as String) (optional, only used for a single material datasheet) Package Key (String), received with previous package
Output	PackageKey of next package (if not appears, no next package available) Company specific data (XML)
API Tag	Download
API - URL	/up-download/download/companyfile
Errors	CDXWebServiceException

Available Information Types

The following table shows the names of the different types and what data is contained.

Info Type	Description
CMS	C ompany S pecific M aterial datasheets
CMS_AR	Company Specific Materials datasheets containing only accepted or rejected MDSs (attention: for alternate usage for CMS=> uses same delta Timestamp as CMS)
REQ	Own and received REQ uests of your company
CHK	C heck results of datasheets of a specified time period
SPMP	S upplier P arts in M DSs that are P ublic (this information type is available only for authorized companies)
SPMS	S upplier P ublished M aterial D atasheets (this information type is available only for authorized companies)
CDX_STATUS	Lightweight CDX MDS Status message

Possible Input Parameter Combinations

With the parameter combinations below, you are able to specify a time period for the data collection. If you enter an incorrect parameter combination, the method returns an error.

Info Type	Time period	Start Date	End Date	Info Type	Node Id
CMS	Data from the beginning of the CDX system up to the specified date		X	X	
	Data of one specific date	X		X	
	Data from and to a specific date	X	X	X	
	Unspecified time period. Data from the last run up to process start time. The timestamp is stored in the database.			X	
	Contains only one object specified by its Id			X	X

Info Type	Time period	Start Date	End Date	Info Type	Node Id
CMS_AR	Data from the beginning of the CDX system up to the specified date		X	X	
	Data of one specific date	X		X	
	Data from and to a specific date	X	X	X	
	Unspecified time period. Data from the last run up to process start time. The timestamp is stored in the database.			X	
	Contains only one object specified by its Id			X	X
CDX_STAT US	Data from the beginning of the CDX system up to the specified date		X	X	
	Data of one specific date	X		X	
	Data from and to a specific date	X	X	X	
	Unspecified time period. Data from the last run up to process start time. The timestamp is stored in the database.			X	

Info Type	Time period	Start Date	End Date	Info Type	Node Id
REQ	All available data from the beginning of the CDX system up to the specified date		X	X	
	Data of one specific date	X		X	
	Available data from and to a specific date	X	X	X	
	Unspecified time period. Data from the last run up to process start time. The timestamp is stored in the database.			X	
CHK	Data from the beginning of the CDX system up to the specific date		X	X	
	Data of one specific date	X		X	
	Data from and to a specific date	X	X	X	
	Contains only one object specified by its Id			X	X
	Unspecified time period. Data from the last run up to process start time. The timestamp is stored in the database.			X	
SPMS	Data from the beginning of the CDX system up to the specific date		X	X	
	Data of one specific date	X		X	
	Data from and to a specific date	X	X	X	
	Contains only one object specified by its Id			X	X
	Unspecified time period. Data from the last run up to process start time. The timestamp is stored in the database.			X	
SPMP	Data from the beginning of the CDX system up to the specific date		X	X	
	Data of one specific date	X		X	
	Data from and to a specific date	X	X	X	
	Contains only one object specified by its Id			X	X
	Unspecified time period. Data from the last run up to process start time. The timestamp is stored in the database.			X	

Examples

This section gives some examples of code to retrieve information. Empty parameters are represented by quotation marks.

Get data from the beginning of CDX up to a specific date

```
getCompanyFile "" [end date] [info type] ""
```

Get data of one specific date

```
getCompanyFile [start date] "" [info type] ""
```

Get data from a time period

```
getCompanyFile [start date] [end date] [info type] ""
```

Get data from the last run of an unspecified timeperiod period

```
getCompanyFile "" "" [info type] ""
```

Get a single Datasheet

```
getCompanyFile "" "" [info type] [node id]
```

XSD Specifications of the Information Types

In this section you'll find the names of all XSDs of the company specific MDS data. Elements and attributes are described in chapter "Description of XSD Elements and Attributes".

XSD of Company Specific Datasheets

The name of the XSD specification is "CDX_MPDDownload_Response.xsd".

XSD of MDS Requests (REQ)

The name of the XSD specification is "CDX_REQDownload_Response.xsd".

XSD of MDS Checks

The name of the XSD specification is "CDX_CHKDownload_Response.xsd".

XSD of MDS Checks

The name of the XSD specification is "CDX_CHKDownload_Response.xsd".

XSD of Supplier Parts in MDSs that are Public

The name of the XSD specification is "CDX_SPMPDownload_Response.xsd".

XSD of Supplier Published Material Datasheets

The name of the XSD specification is "CDX_MPDDownload_Response.xsd".

ERROR MESSAGES AND TROUBLE SHOOTING

If the WS did not perform its task successfully (uploading or downloading data), it exits with an error message and an error code that tells you what went wrong. You can analyze this error code, correct the error, and try again. The following table lists the error codes and possible solutions.

Application Specific Errors

The following error codes are output of the CDX application. In the table below the codes are grouped by application. The column "Description/Solution" is used to describe errors in more detail and to provide a solution, even if it is necessary at this point.

Error code	Error Message	Description / Solution
Common Error Codes		
1	Internal Error please contact Help Desk	Should not occur, internal error.
2	Access denied	User access denied. Probably your account is locked, your password is expired or your user-ID is not authorized. Please contact the CDX service desk
3	User does not belong to this given OrganisationId	The user has no access to the given organization. User-Id or Organisation-Id is wrong
10	Virus Scan failed	Attachment contained a virus and was not uploaded
11	File size exceed limit	Attachment size is too large. Please downsize or split it.
12	Total size per Node exceeded	Total size of all attachments per node is too large. Attachment could not be saved.
13	File already uploaded	The attachment you want to upload already exists.
14	Invalid file type	The file type of the attachment is not supported.
15	NodeId does not exists	The given Node-ID das not exist in CDX.
17	Node Invalid State	You tried to add an attachment, but the MDS is not in the correct state.
18	Attachment does not exist	The attachment (ID) you specified does not exist.
19	Error in Attachment: ?	Error occurred during attachment import
21	Your company is not allowed to use this service	Your company is not authorized to use Web Service
22	NodeId does not exist or invalid state	Specified node has not a valid state
23	Email Attachment not possible, wrong state	Email Attachment not possible, request has wrong state
24	Email Attachment not possible, external request does not exist	External request with this id does not exist
25	For Export IPC1754 document in Request-Reply mode, a company has to be specified	Request-Reply mode always needs a company.
27	Specified recipient is not a MDS recipient	Recipient is not a MDS recipient.
28	You need to select a Regulation	No regulation is selected.
29	Org Unit does not exist, or you are not a member	The Org Unit does not exist for your user.
30	NodeIDList and PartNumberList are both empty	Both lists you want to upload are empty.
31	Minimum one of the nodeIDs do not exist	One or multiple NodeIDs do not exist for your company.
32	Minimum one of the part numbers do not exist	One or multiple part numbers do not exist. It is not possible no match with any NodeID.

Error code	Error Message	Description / Solution
MDS specific Error Codes		
401	Node ID is in invalid state	The MDS is not in the correct state for adding/removing article numbers
402	MDS does not exists with this ID	Invalid MDS ID specified
403	MDS partnumber ? for NodeId ? not valid. Reason: ?	Invalid article number specified
404	ARTNO ID ? not assigned to this MDS ?	The specified article number (ID) is not assigned to the MDS
Web Service Process Error Codes		
3210	The same request (with identical parameters) for your company is already running, please wait until it's finished	Occurs if a company requests 2 identical selections (same parameter values). Wait till the first request finished or change the parameters.
3211	You requested an invalid file type {entered type}	File type means information type like CHK, REQ, CMS, CC, etc. Please enter a valid file type and start again.
3213	Internal Processing Exception, detail: {text of exception} Please Contact support	If an error occurs that is not in this list you'll receive the entire exception/error text. Please contact support and provide the error text.
3214	You entered an invalid date format	The format of date parameters must be "yyyymmdd"
3215	You entered a wrong node ID {wrong id}	Node ID is must be an integer value. The format is N18.
3216	Would Exceed Funds {funds}	Your funds are nearly depleted. The process you are going to run would need more funds than are left.
3217	You entered invalid parameters {invalid parameter}	The value or the format of the parameter is invalid.
3218	Uploading is currently disabled due to maintenance	CDX is currently down for maintenance. Try later, when the system is up.
3219	Upload schedule failed	The process queue could be full. Please contact support.
3220	BatchScheduler is not running	The batch scheduler is down. Please contact support.
3221	Job does not exist	An upload job with this jobId does not exist.
3222	Job has not finished yet	Try to get the upload results later.
3223	Upload failed. Result content is empty	This could be an unexpected error. Please contact support.
3224	Error during retrieving upload result	The transfer process could be interrupted. Please try again later or contact support.
3244	Company is not authorized to use Web Service. No active billing order exists.	Your company requires a valid CDX contract (billing order) to use Web Service.
SCiP Errors		
801	BatchId not found or not your own	The batchId is not associated to your company or does not exist.
802	JobId not found or not your own	The jobId is not associated to your company or does not exist.
803	S2S Key is not available	If no S2S key is added to your company, SCiP Upload will not work.

Error code	Error Message	Description / Solution
804	Invalid taric code	The provided taric code for generating SCIP dossier is invalid

DESCRIPTION OF XSD ELEMENTS AND ATTRIBUTES

In this chapter elements and attributes are described that are mainly used in the MDS Web Service. All others are described directly in the XSD files.

Element Description

The following table provides a description of the XSD elements.

Element	Description
AdditionalNames	This element contains a list of 'AdditionalName'.
AdditionalName	This element contains the attribute "otherName". This is in case that the datasheet need some other names.
AdditionalIdentifiers	This element contains additional Identifiers used for scip submissions
AdminSupplierCodes	This element contains a list of admin supplier codes.
Attachment	Element for File attachment
AssignRequest	By using this element, it is possible to assign an existing datasheet of your company to a request received by your company
Change	Element <Change> allows you to change an existing MDS. The kind of the change is determined by the underlying XML element).
ChangeRequest	The request shall be unassigned. Only the supplier company for which the MDS is meant (and who has previously assigned an MDS to it) can unassign the request.
Chapters	This element allows replacement of single tabs of an MDS (Ingredients, Supplier Data, Recipient Data) of existing datasheets depending on the MDS status.
CheckSummary	This element shows the check results.
Classification	This element contains the attributes which describe a material classification.
ClassificationList	This element presents Grouped classifications.
ClassificationListName	Names of the lists/groups
ClassificationName	Name of the classifications
Company	This element presents the CDX company.
CompanySupplierCodes	This element contains a list of company supplier codes.
Component	When using this element (<i>Component</i>) you can use other <i>Components</i> , <i>RefComponents</i> (= referenced components), <i>SemiComponents</i> , <i>RefSemiComponents</i> (= referenced semicomponents), <i>Materials</i> , <i>RefMaterials</i> (= referenced materials) and <i>Substances</i> .
Conditions	Conditions regarding the assigned MDS in a request
Contact	This element contains the contact information from the list of contacts in a company
CompanyAdministrator	Company Administrator data of Not Registered Supplier (used for MDS Request)
Copy	This element contains attributes, which describe a copy of an MDS.
CreateRequest	By means of this element you can create a new MDS request. A request always contains <SupplierData> and <RecipientData> as underlying elements.
AboveThreshold	Element of the MD report
Address	Element of the MD report
CompanyData	Company Data of a not registered Company (used for MDS Request)
CompanyName	Element of the MD report
CompanyOrgName	Element of the MD report
ContactPerson	Element of the MD report
DataDownload	Function element which does not contain any attributes, only underlying elements.
Datasheet	Each "Datasheet" requires "Ingredients", "SupplierData" and (one or more) "RecipientData". It's possible to omit the "SupplierData" and/or "RecipientData" and still save the datasheet. If "Datasheet" shall be released, sent or proposed, it must have "Ingredients", "SupplierData" and (if sending/proposing) at least one "RecipientData".

Element	Description
Date	This element describes a date.
Delete	This element contains attributes, which describe an MDS, which shall be deleted.
DeleteRequest	This element contains attributes that describe a Request which is to be deleted.
DeliveredAmount	Element of the MD report
Email	Element of the MD report/Element of Supplier Data (for not registered companies)
Entity	This Element describes an organization unit of a company as an underlying element of a SellingEntities element.
Error	This element describes an error with error code, error message and the error location (element and attribute)
FaxNumber	Element of the MD report
GroupName	Name of the substance group
Information	This describes the information (warning) element with information code, information message and the information location (element and attribute)
Ingredients	This element contains the main attributes of an MDS, such as Node_ID, Module_ID, Version, the current status and important dates.
MandatoryRecipData	Element contains Boolean attributes which specify the required recipient information in an MDS request.
Material	When using this element (<i>Material</i>) you can use only other “Materials”, “RefMaterials” (= referenced materials), “Substances” and “Norms”. (A “Norm” is not really an autonomous node. It is a complement to the material node).
MaterialInformation	Element of the MD report
MaterialName	Element of the MD report
MdID	Element of the MD report
Member	This element describes members of a substance group.
News	This element describes a CDX news item
NewsLanguage	Available languages of a news item
Norm	This element describes a norm and is only used in an upload file when new material is created. More than one “Norm” is allowed with the same “Material”-element.
NormCodeList	For some norms, a user-defined string needs to be used here.
OrgUnit	This element describes an organisation unit of a company as an underlying element of a Company element.
OtherInformation	Element of the MD report
OwnerStatus	With the help of this element it is possible to <u>release</u> (=to change the “OwnerStatus”) of an existing datasheet.
ParseError	This element describes a special error type in the upload results.
PartsRegion	Element of the MD report
PhoneNumber	Element of the MD report
ProductInformation	Element of the MD report
ProductName	Element of the MD report
ProductNumber	Element of the MD report
Query	Contains the attributes queryId and response (answer of the query)
QueryList	Contains the attribute queryListId and the different queries
QueryLists	Contains different query lists
RecipientData	This element describes the recipient of an MDS or the initiator of an MDS Request.
RecipientStatus	Status of an MDS at the Recipient
RecipientSupplierCodes	This element contains a list of recipientSupplierCodes (company and admin supplier codes)
RecipientSupplierCode	This element contains the recipSupplierCode attribute

Element	Description
Recyclate	Recyclate information
RefComponent	This element contains the attributes of a referenced Component
RefMaterial	This element contains the attributes of a referenced Material
RefSemicomponent	This element contains the attributes of a referenced Semicomponent
Regulations	Contains different regulations
Regulation	Contains the regulationID
RejectRequest	By means of this element you can reject an MDS request received by your company.
ReleaseCheck	This element describes a special check type in the upload results.
ReleaseError	This element describes a special error type in the upload results.
ReleaseInformation	This element describes a special information type in the upload results.
Remark1, Remark2, Remark3	Elements of the MD report
Request	By means of the element <Request> you can handle all request subtasks. Depending on the underlying element you can <i>create</i> a new request, <i>assign</i> an existing MDS to a received request. (for how to <i>assign</i> a datasheet during its creation to a request refer to the description of the attribute "Request_ID" at the <Datasheet>- element), <i>send</i> a created request to the supplier, <i>'unassign'</i> a previously assigned request, <i>reject</i> a received request, <i>delete</i> or <i>change</i> a created request.
Results	This element contains the results of uploading an MDS through Web Service. The results are in the upload result information.
Row	Element of the MD report
SDoCID	Element of the MD report
SellingEntities	This Element describes a list of organizations of a company which sell related product (datasheet).
Semicomponent	When using this element (Semicomponent) you can use other <u>Semicomponents</u> , <u>RefSemicomponents</u> (= referenced semicomponents), Materials, <u>RefMaterials</u> (= referenced materials), and <u>Substances</u> are allowed.
SendRequest	By means of this element you can send an MDS request to one of your suppliers.
SourceElement	This element describes the object type to which the underlying results belong in an upload result file. SellingEntities
Substance	This element describes a substance. A " <u>Substance</u> " is always a referenced node a tree. You cannot create your own " <u>Substances</u> ". When used in a tree " <u>Substance</u> " actually means " <u>RefSubstance</u> " (but we do not use this terminology). For this reason, a reference to a " <u>Substance</u> " is always an absolute reference; this means: all needed " <u>Substances</u> " are already created in CDX. A reference to a " <u>Substance</u> " is accomplished by means of the attribute " <u>Node_ID</u> ". No other nodes are allowed under element " <u>Substance</u> ".
SubstanceGroup	This element describes a group of substances. For each group its multilingual names will be shown first, followed by all group members (=substances). A substance can be a member of different groups, so substances can occur multiple times in the file.
Summary	This element contains the summary of the check results of one MDS in the upload result file.
SupplierData	This element describes the owner of an MDS.
SupplierInformation	This element describes the owner of an MDS in an MD report.
SupplierPartNoList	This element describes a list of supplier part numbers. It is used in the MDS up- and download environment and appears in the recipient information part if recipient companies require supplier part numbers (internal numbers) from their suppliers.
SupplierPartNoListRequest	This element describes a list of supplier part numbers. It is used in the MDS Request.
SingleSupplierPartNo	This element represents a single supplier part number (artNo).
SupplierPartNoRange	This element is only for Bosch and describes a range of supplier part numbers in request.
SupplierNotRegisteredData	Supplier Data of not registered company for an MDS Request.

Element	Description
Synonym	This element describes the synonyms of a basic substance.
TableA, TableB	Element of the MD report
Task	The content of the upload file builds a “ <u>Task</u> ”. A task consists of one or more Datasheets or “ <u>Change</u> ” subtasks
UnassignRequest	By means of this element it is possible to unassign a datasheet from a received request.
Unit	Element of the MD report
Weight	Element of the MD report
AdditionalIdentifiers	This element contains a list of ‘AdditionalIdentifier’.
AdditionalIdentifier	This element contains the attribute “identifierTypeCode”, “identifierText” and “deactivated”.
SVHCCandidates	This element contains Substance/s of Very High Concern included in the MDS (if any) as a list of ‘Substance’

XSD Attribute Description

The following table describes the XSD Attributes. Using the following code:

- Format A defines a character string and maximum length, e.g. ‘A20’ is a character string of length 20. Format A without length specification defines a string of variable length.
- Format N defines numeric values with the maximum number of digits, e.g. ‘N8’ is an integer of maximum length of 8 digits, ‘N12,6’ is a floating point of 12 digits with 6 digits behind the decimal point. The length of a floating number includes the digits after the comma. European users please note: use only decimal point (US-notation).
- Booleans (B) represent values that are either ‘true’ or ‘false’.
- Date defines a string containing a date of format “MM/DD/YYYY” and maximum length 10.
- DateTime defines a string containing date and time of format “MM/DD/YYYY hh:mm:ss” and maximum length 19.

Attribute	Format	Description
activeStatus	A	Active Status of Datasheet: - DELETED - HIDDEN - DEACTIVATED ACTIVE
activationDateTime	DateTime	Date when news item was activated. The format is “MM/DD/YYYY hh:mm:ss”
Amount	N12	“Amount” means quantity, only integer values are allowed. Maximum value is 1,000,000,000,000. In an upload file, this attribute is meaningful only with <u>Components</u> that are <u>not</u> “top-level nodes”. For the “top node”, it is assumed that the value of this attribute is “1”. The value of this attribute is <u>mandatory</u> if attribute Status has one of the values: “<u>INTERN</u>”, “<u>PUBLIC</u>”, “<u>SEND</u>” “<u>PROPOSE</u>”. If you <u>omit</u> this value, you will have to provide it before you can make your MDS productive (Internally Release, Send or Propose).
artNo	A50	This attribute represents the Part-/Article number of a component and a semicomponent. Any alphanumeric string can be used for the value.
assignedMdsNodeID	N18	Node-ID of the assigned MDS.
assignedMdsType	A13	Type of the assigned MDS. Possible values are “COMPONENT”, “SEMICOMPONENT” and “MATERIAL”.
assignmentId	N18	assignmentId of a File
attachmentInfo	A250	Info stored with an Attachment

Attribute	Format	Description
attachmentRequired	Boolean	Possible values for this attribute are 'true' or 'false' (default value is 'false'). If 'true' has been set, the associated Datasheet of the request needs an attachment on the top node.
attachmentRequired	Boolean	Possible values for this attribute are 'true' or 'false' (default value is 'false'). If 'true' has been set, the associated Datasheet of the request needs an attachment on the top node.
attachmentType	A	Type of an attachment: - REPORT - SAFE_USE_INSTRUCTION - SAFETY_DATASHEET - IMPORT_SOURCE - OTHER (default)
Attribute	A250	Name of the attribute where an error/warning occurs.
billOfDeliveryNo	A30	Any desired alphanumeric string can be the value of this attribute. This attribute is optional.
breakOnError	Boolean	Possible values for this attribute are " <u>true</u> " or " <u>false</u> " (default value is " <u>false</u> "). If " <u>true</u> " has been set, the upload <i>stops</i> processing the upload file with the subtask where the first error occurred and skips all following subtasks.
calculatedWeight	N18,6	Weight of an object, calculated by the system. Different weight units are possible.
calculatedWeightGrams	N18,6	Weight - in grams - of an object, calculated by the system.
casCode	A20	Standard CAS Number of a substance.
changeDate	Date	Date when the status of the MDS changed. The format is "MM/DD/YYYY"
checkDate	Date	Date when the MDs was checked. The format is "MM/DD/YYYY"
checkOnly	Boolean	This is an upload specific flag. If checkOnly is set to "true", only the check procedure executes. The datasheets will not be saved. Possible values are "true" or "false". "false" is the default value if omitted.
City	A50	City of a company's address.
classificationCode	A12	Material classification code.
classificationDescription	A250	Material classification code description.
classificationID	N4	Object id of a material classification
classificationListID	N4	Unique id of a classification list.
classificationListName	A100	Name of a classification list.
classificationName	A100	Name of the material classification item
Comment	A2000	"Comment" field in MDS and CMD Request This field can be used for additional information if the given information in an MDS and/or CMD Request are not sufficient.
companyID	N9	Unique CDX ID of a company.
companyName	A100	Name of a company in CDX.
companyOrgCity	A50	The city associated with the Org unit.
companyOrgCountryCode	A2	The 2-digit country code associated with an Org Unit.
companyOrgDunsNumber	A11	DUNS number associated with an Org Unit.
companyOrgID	N9	You can assign your datasheet to an <u>organization unit</u> of your company. For this you can provide the attribute "CompanyOrgID". The value must be an ID of an <u>existing</u> Org Unit associated with your roof company. A numerical integer value is expected here but a value is optional.
companyOrgName	A50	Org unit name

Attribute	Format	Description
companyOrgPostalCode	A10	Postal code of an org unit
companyOrgPostbox	A20	Postbox of an org unit
companyOrgStreet	A50	Street of an org unit
companyRootID	N9	ID of the top level company with an organization structure.
completeDeclaration	Boolean	Set to "true" if 100% Substance Declaration required. The value will automatically be set to TRUE in assigned MDS, if mandatory. Possible values are "true" or "false". The default value is "true" if omitted.
Confidential	Boolean	This attribute is optional. This Attribute serves for marking a substance in a tree as confidential. Once marked as confidential, the substance is hidden for all other companies. Users in your company and associated Org Units can see the content. There is a possibility in the system to grant the visibility of confidential substances to selected persons of other companies. To mark a substance as <u>confidential</u> use Confidential = "<u>true</u>" with the <Substance>-tag. Absence of the 'Confidential -attribute or Confidential = "<u>false</u>" means not confidential.
contactID	N4	An integer value is expected for this attribute. If you provide the <SupplierData>-element in your datasheet, this attribute is <u>mandatory</u>. "ContactID" means the ID of an <u>existing</u> contact person of your company. A list of contact persons together with their ID's can be downloaded with the Web Service ("<u>Company Contacts</u>"). Element <SupplierData> with attribute "<u>ContactID</u>" is <u>mandatory</u> if one of the values "<u>INTERN</u>", "<u>PUBLIC</u>", "<u>SEND</u>" or "<u>PROPOSE</u>" was put for the attribute "<u>Status</u>". If you <u>omit</u> "<u>ContactID</u>" with Status="<u>Edit</u>", you'll still have to provide it before making your MDS productive.
contactFirstName	A50	Any alphanumeric string can be the value of this attribute.
contactLastName	A50	Any alphanumeric string can be the value of this attribute.
containsRecyclate	Boolean	Possible values for the attribute "ContainsRecyclate" are "<u>true</u>" or "<u>false</u>". If the value of "ContainsRecyclate" is "<u>true</u>", percentage values for either "Post Industrial Recyclate" ("<u>PostIndMin</u>" and "<u>PostIndMax</u>") or "Post Consumer Recyclate" ("<u>PostConsMin</u>" and "<u>PostConsMax</u>"), or both <u>have to be provided</u>. If not, the system will return an error message. If the value of "ContainsRecyclate" is "<u>false</u>", no recyclate values retained and none should be provided. If values have been provided, they will be ignored without an error message.
Content	A4000	News text
companyName	50	Name of the Company that is not registered
copyMode	A10	This attribute describes how the MDS should be copied. Possible values are: "Duplicate", "NewVersion", "Forward"
countryCode	A2	Two-digit standard country code.
createDate	Date	Date when the MDs was created. The format is "MM/DD/YYYY"
customerScipNumber	A500	SCIP Number if reported as a recipient
date	Date	Common date attribute. The format is "MM/DD/YYYY"
deactivationDateTime	DateTime	Date when a news item was deactivated. The format is "MM/DD/YYYY hh:mm:ss"
deadlineDate	Date	Deadline of an MDS Request. The format is "MM/DD/YYYY"
department	A50	Any alphanumeric string can be the value of this attribute.
drawingChangeNo	A20	Represents the drawing change level in the <RecipientData>. Any alphanumeric string can be the value of this attribute. This attribute is optional.

Attribute	Format	Description
drawingDate	A20	Any alphanumeric string can be the value of this attribute. This attribute is optional.
drawingDateRequired	Boolean	Information on an MDS Request indicating whether the DrawingDate is required in the Recipient information. Possible values are "true" or "false". If omitted, the default value is "false".
drawingNo	A20	Any alphanumeric string can be the value of this attribute. This attribute is optional.
dunsNumber	A11	Standard DUNS number of a company. The required format is nn-nnn-nnnn.
einecElinec	A20	Standard attribute of a substance
element	A250	Name of the element where an error/warning occurs.
eMail	A80	E-mail address.
eMailAddress	A80	E-mail address.
eMailAddressCC	50	E-mail cc-address
eMailLanguage	A2	Two-digit standard country code
eMailSubject	80	E-mail subject
eMailText	2000	E-mail text
enteredWeightGrams	N18,6	Weight - in grams - of an object, entered manually.
errorCode	A4	Unique ID of an error
euIndex	A20	Standard EU index of a substance
expiryDate	Date	Information in Exemption Details
externalRecipient	Boolean	Indicates if the recipient of a request is registered or not in CDX
faxNumber	A50	Any alphanumeric string can be the value of this attribute.
filetype	A	Specifies the type of Information downloaded. The attribute occurs only in headers of download files. Examples: "MDBCCOMPLETE" for datasheets "REQUEST" for MDS requests "CHECK" for check result "INSTITUTE" for material norms "COMPCONTACT" for companies & contacts
fileName	A100	File Name
fileversion	N6,2	The attribute only occurs in headers of downloaded files.
fileSize	N9	Size in bytes of files
fixValue	N18,6	A decimal or an integer value is expected with this attribute. This attribute represents a percentage used in portions. The value has to be ≤ 100. In an upload file a value for this attribute is <i>mandatory</i> if the value "Fix" was provided for the attribute " <u>type</u> " and " <i>percentage attributes</i> " are expected with this node.
forwardAllowed	Boolean	Value on the Recipient information indicating whether the recipient is allowed to make a copy/forward of this MDS. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
handleDuplicateReference	A3	This attribute represents the handling of duplicated references: Possible values are " <u>ERROR</u> " (default), " <u>ADD</u> ", " <u>IGNORE</u> ". Add: Only for components (amount will be increased). SemiComponents does not have an amount. If "ADD" is used, for SemiComponents it will be ignored.

Attribute	Format	Description
imdsNodeID	N18	Unique identifier in the database of all of objects transferred from the IMDS.
importDate	Date	This is an attribute of the Upload Result information. It represents the date, when an MDS was successfully imported.
instDescription	A250	Description of a Norm institute.
instName	A50	Attribute "instName" represents the name of the norm (like e.g. " <u>DIN</u> "). This is an alphanumeric string. In an upload file this attribute is <u>mandatory</u> .
isContact	Boolean	Flag indicating whether or not a person is a data entry contact of a company and will appear on the Supplier Data page. Possible values are "true" or "false".
isCmdContact	Boolean	Flag indicating whether or not a person is a CMD contact of a company and will appear on the Supplier Data page. Possible values are "true" or "false".
isDeleted	Boolean	Flag indicating whether or not an object is deleted. Possible values are "true" or "false".
isForbidden	Boolean	Flag indicating whether or not a substance is prohibited. Possible values are "true" or "false".
isHidden	Boolean	Flag indicating whether or not an object is "hidden" and not available for attachment to a structure. Possible values are "true" or "false".
isReachContact	Boolean	Flag indicating whether or not a user is a Reach/Compliance contact. Possible values are "true" or "false".
isSelectable	Boolean	Flag indicating whether or not a Material Classification is selectable or is an un-selectable group header in the list. Possible values are "true" or "false".
langCode	A2	Standard 2 digit language code.
localKeyDef	A13	LocalKeyDef is a unique identifier within an upload file. This attribute is used to define a relation between two CDX objects being created in the same Upload file.
localKeyRef	A13	Used with LocalKeyDef, it enables connecting two objects within the same upload file. A value for this attribute is <u>mandatory</u> with a <u>locally</u> referenced object. The expected value corresponds to an object with the attribute <u>localKeyDef</u> . The object with LocalKeyDef must appear before the object with LocalKeyRef in the upload file.
mailbox	A20	The mailbox associated with the company.
mandatoryBillOfDeliveryNo	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryClassification	Boolean	Information on a material MDS Request indicating whether or not Classification information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryDrawingChangeNo	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryDrawingDate	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".

Attribute	Format	Description
mandatoryDrawingNo	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryForwardAllowed	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryMeasuredWeight	Boolean	Information on a Component MDS Request indicating whether or not the MeasuredWeight required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryPolymerMark	Boolean	Information on a Component MDS Request indicating whether or not the PolymerMark answer is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryPurchaseOrderNo	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryRecipPartNo	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryRecipSupplierCode	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryReportDate	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryReportNo	Boolean	Information of recipient data on an MDS Request indicating whether or not the information is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatorySpecWeight	Boolean	Information on a semicomponent MDS Request indicating whether or not the SpecWeight attribute is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatoryStdMatNo	Boolean	Information on a material MDS Request indicating whether or not the StdMatNo is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
mandatorySymbol	Boolean	Information on a material MDS Request indicating whether or not the Symbol required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false" is the default value if omitted.
mandatoryTotalDeclaration	Boolean	Information on an MDS Request indicating whether or not the total declaration is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".
manufacturingCountry	A2	Country Code of the manufacturing Country.
manufacturingSite	A160	Attribute to add manufacturing site.

Attribute	Format	Description
matNo	A50	This attribute represents the internal (owner) “material number”. Upload specific: In an upload file any alphanumeric string can be put for the value. This attribute can be <u>omitted</u> .
maxValue	N12,6	This is used as the end point of a portion range. A decimal or a whole number ≤ 100 is expected In an upload file, a value for this attribute is <u>mandatory</u> if the value “From-To” was provided for the attribute “type”. The attribute “minValue” is also required.
measuredWeight	Float	Associated with a Component, this is the weight of the component. A decimal, integer or exponential values are expected. Examples for small weights: 0.001 mg (= 1 microgram), 0.000001 mg (= 1 nanogram).
message	A250	Any alphanumeric string can be the value of this attribute.
minValue	N12,6	This is used as the starting point of a portion range. A decimal or a whole number ≥ 0 and ≤ 100 is expected In an upload file a value for this attribute is <u>mandatory</u> if the value “From-To” was provided for the attribute “type”. The attribute “maxValue” is also required.
mode	A7	Describes how the MDS should be handled in saving to the CDX system in an upload file. Possible values are “INSERT”, “UPDATE”, “NMToken” and “PEPLACE”. If the value is <u>omitted</u> , the value “INSERT” will be assumed.
mdsID	N18	This attribute is the CDX internal number of an MDS. Together with the attribute “Version”, a datasheet is specified unambiguously
mtSponsoredRequest	Boolean	Indicates a sponsored request (“MT Lincense”)
mtVoucherId	N9	VoucherId of the sponsored request.
name	A250	Name of an object. Any alphanumeric string can be used.
newsID	N4	Unique ID of a news item.
nodeID	N18	Unique identifier in the database of all of objects including components, semicomponents, materials and substances.
normCode	A100	For common norms any character string can be filled out here.
numberOfErrors	N7	This is the number of errors occurring during a check.
numberOfInformation	N7	This is the number of information/warnings returned during a check.
numberOfNodesInTree	N9	The total number of nodes in a tree of an MDS.
objectID	N18	Error or Information ID in a check result
objectType	A13	Specifies the type of an object in an upload file. Possible values are “COMPONENT”, “MATERIAL” and “SEMICOMPONENT”.
originNodeID	N18	This attribute identifies the original (received) MDS that the copy/forward was created from.
otherName	A125	Other datasheet names.
ownOrReceived	A3	Indicates whether the MDS Request was created by own company or received from a supplier company. Values can be ‘OWN’ or ‘REC’
parentsponsoredRequestID	N9	requestId of the parent Sponsored Request
phoneNumber	A50	Any alphanumeric string but should be a valid telephone number including all dialing codes.

Attribute	Format	Description
polymericMark	A13	Following values are possible for “PolymericMark”: “<u>MARKED</u>”, “<u>UNMARKED</u>” and “<u>NOTAPPLICABLE</u>”. In an upload file, in cases where the top-level component contains materials of indicated categories which exceed a defined weight limit (this limit may change from release to release) this attribute is <i>mandatory</i> and only the answers “<u>TRUE</u>” or “<u>NOTAPPLICABLE</u>” are expected. If the answer “<u>FALSE</u>” has still been provided a <i>warning</i> message from the check procedure will be risen if trying to make the part productive. If no answer was provided at all the check procedure will rise an <i>error</i> message if trying to make the part productive. In other cases any answer of: “<u>MARKED</u>”, “<u>UNMARKED</u>” or “<u>NOTAPPLICABLE</u>” is correct.
postalCode	A10	Part of the company’s address – another name for zip code.
postbox	A20	Part of the company’s address. This value is optional
postConsMax	N7,4	Represents the amount of post-consumer recycled content. Depending on the value of the attribute “ContainsRecyclate” the attribute “PostConsMax” may be <i>mandatory</i>. This represents the maximum value of a from/to range of recycled content. A decimal or a whole positive number ≤ 100 is expected that is also $\geq$ “PostConsMin”. If only one of the “postConsMin” / “PostConsMax” values has been provided it will be assumed that a <u>fix value</u> instead of an <u>interval</u> is meant.
postConsMin	N7,4	Represents the amount of post-consumer recycled content. Depending on the value of the attribute “ContainsRecyclate” the attribute “PostConsMin” may be <i>mandatory</i>. This represents the minimum value of a from/to range of recycled content. A decimal or a whole positive number ≤ 100 and $\leq$ “PostConsMax” is expected. If only one of the “postConsMin” / “PostConsMax” bound values has been provided it will be assumed that a <u>fixed value</u> instead of an <u>interval</u> is meant.
postIndMax	N7,4	Represents the amount of post-consumer recycled content. Depending on the value of the attribute “containsRecyclate” the attribute “postIndMax” may be <i>mandatory</i>. A decimal or a whole positive number ≤ 100 and $\geq$ “postIndMin” is expected. If only one of the “PostIndMin” / “PostIndMax” values has been provided, it will be assumed that a <u>fixed value</u> instead of an <u>interval</u> is meant.
postIndMin	N7,4	Represents the amount of post-consumer recycled content. Depending on the value of the attribute “containsRecyclate” the attribute the attribute “postIndMin” may be <i>mandatory</i>. A decimal or a whole positive number ≤ 100 and $\leq$ “postIndMax” is expected. If only one of the “postIndMin” / “postIndMax” values has been provided, it will be assumed that a <u>fixed value</u> instead of an <u>interval</u> is meant.
processChemType	A8	A value for this attribute is <i>mandatory</i> if the basic substance is classified as a process chemical and its content is more than 0.1%. Valid values are “NO”, “RESIDUE” and “IMPURITY”. Upload specific: This attribute can be <i>omitted</i>.
productNotAffected	Boolean	Possible values for this attribute are ‘true’ or ‘false’ (default value is ‘true’).
projectId	N9	MDS request search attribute

Attribute	Format	Description
projectName	A50	This attribute appears in an MDS Request and represents the name of a customer project. In an upload file this attribute is <u>optional</u> . If no project with the given "ProjectName" exists, a new one will be created.
purchaseOrderNo	A20	This value is associated with the Recipient data. Any alphanumeric string can be the value. This value is optional unless required by a Request.
queryListId	N	This id includes different queries
queryId	N	This id is associated to a specific query
recipCompanyId	N9	This attribute is the CDX company or Org Unit ID which will receive the sent or proposed MDS. An integer value of an existing CDX company or Org Unit is expected here. In an upload file this attribute is <u>mandatory</u>
recipientStatus	A11	This represents the status of the MDS at the Recipient. Possible values "NOTBROWSED", "BROWSED", "ACCEPTED", "CANCELLED", "REJECTED"
recipPartName	A250	This is the part name/description from the recipient data tab. Any alphanumeric string is accepted of this attribute. Upload specific: If the value is omitted, the part name from the Ingredients tab will be copied into it.
recipPartNo	A50	Any desired alphanumeric string can be the value of this attribute.
recipientReleaseDate	Date	Recipient release date
recipientStatusChangeDate	Date	Recipient status change date
recipSupplierCode	A20	This is how the recipient of the MDS refers to your company in communications. Some companies expect have their own numbering system and some companies use a standard such as a DUNS number. Sometimes the number is checked against the DB. If a company has hired DXC to put in a number check, a wrong <i>recipient-supplier-code</i> causes an <u>error</u> . The <u>omitting</u> of the "recipient-supplier-code" may cause a <u>release error</u> , depending on requirements. With other companies this attribute is optional. Any alphanumeric string can be the value of this attribute. It is now possible to add multiple supplier codes by using the RecipientSupplierCodes element.
regulationID		This ID is associated to a specific regulation.
regulationComplied	A	The following values are possible NO_SELECTION YES NO NOTAPPLICABLE
regulationConfirmed	Boolean	This attribute is now added to Requests and describes if regulation has to be confirmed.
rejectReason	A4000	This is the reason for rejecting the MDS. Any alphanumeric string can be the value of this attribute. Upload specific: This attribute can be <u>omitted, also when an MDS was rejected</u> .
releaseDate	Date	Date when the MDs was released. The format is "MM/DD/YYYY"
relevantDataProvided	A	The following values are possible NO_SELECTION YES NO NOTAPPLICABLE

Attribute	Format	Description
remark	A250	This represents the remark field on the ingredients tab. Any alphanumeric string can be used for the value of this attribute. This attribute is optional.
reportDate	Date	This represents the Report Date field on the Recipient Data page. It has the format is "MM/DD/YYYY". Providing a value in <u>unexpected format</u> causes an <u>error</u> . Unless required in a Request, this attribute is optional.
reportNo	A20	This is the Report No. field on the Recipient Data tab. Any alphanumeric string is acceptable. Unless required in a Request, this attribute is optional.
reqDeclaration	Boolean	Part of a substance specification. Possible values are "true" or "false".
requestID	N9	Unique ID of an MDS Request (created by CDX) which an already existing MDS is to be assigned. To be valid, the Request_ID must be the ID of a Request received by your company. If no request with this ID exists or the request with this ID was not received by your company, an error message will be given. To <u>fulfill a request</u> you must: 1. Assign the appropriate existing MDS to the request (the status request changes to 'working'). 2. Send the MDS (in the normal way) to the requestor company specified by the attribute "RecipCompanyID" is in the RecipientData of the request (<i>after</i> the MDS has been assigned to the request). This attribute is <u>mandatory</u> when responding to a Request.
requestStatus	A25	Current status of a request. Possible values are: "NEW", "SEND", "RECEIVED", "REJECTED", "WAITING FOR ACCEPTANCE", "ATTACHED", "COMPLETED", "DELETED"
response	??	This is the answer of the query depending on the queryId
safeUseInstructioncal	A	Type of Safe Use Instruction: - Not in Scope - Mandatory
scipCompliance	Boolean	This attribute describes if the MDS Request or the MDS is scip compliant
scipDummyDossier	Boolean	This attribute describes if a dummy dossier will be created. If true, the datasheet will only be created in our application to upload it to scip. Afterwards, the MDS will be deleted.
scipModel	A100	This attribute describes the scip model.
scipNumber	A500	This attribute describes SCIP number assigned to (Selling legal entity ,reference component, reference semi-component).
scipType	A100	This attribute describes the scip type.
scipBrand	A100	This attribute describes the scip brand.
sequence	N4	Sequence specifies the order under a parent in a tree.
Send	Boolean	This attribute specifies whether the created request shall be sent to the recipient during its creation in one step. After sending it is no more possible to modify the request. Possible values are "true" or "false". If omitted, the default value is "false".
sourceElementNo	N4	This attribute assists in identifying elements in an upload file with issues. The objects of an upload file are numbered in the results, starting with 1. <i>With the Source_Element_No and the LocalKeyDef it is easier to identify the erroneous object in the upload file</i>

Attribute	Format	Description
specificDateTime	A	It is a date attribute and appears in headers of download information. If a time period is requested, startDate and endDate appear. The date format is "MM/DD/YYYY". If a "delta" is requested, timestamps of start and end appear. DateTime format is "MM/DD/YYYY hh:mm:ss"
specificWeight	N12,6	This is used on a semicomponent to define a weight parameter for calculations of the Measured Weight when attaching a semicomponent to a component. A decimal or a whole number is expected with this attribute. If a value for this attribute is provided, the attribute "specificWeightType" must also be provided. Both attributes 'specificWeight' and 'specificWeightType' are only to be provided with top level nodes. Otherwise they will be ignored.
specificWeightType	A4	Used with attribute specificWeight, assists in the calculation of the weight of a semicomponent when attaching to a component. Possible values are "KGM", "KGM2", "KGM3". A value for this attribute is <u>mandatory</u> if the attribute "SpecificWeght" has also been provided.
status	A7	This attribute represents the status of an own MDS. Possible values are " <u>EDIT</u> ", " <u>INTERN</u> ", " <u>PUBLIC</u> ", " <u>SEND</u> " and " <u>PROPOSE</u> ". If the value is <u>omitted</u> , " <u>EDIT</u> " will be assumed in an upload file.
statusChangeDate	Date	Date, when status of own MDS changed.
stdMatNo	A50	This attribute represents the "standard material number" used in the material industry for materials of some specific categories. Unless required in a Request, this value is optional.
street	A50	Part of a company's address.
substGroupID	N9	Unique ID of a substance group.
substanceName	A250	Alphanumeric name of a substance.
supplierCompanyID	N9	CDX Company ID of the MDS supplier
symbol	A100	A "symbol" attribute can be declared for a material (usually polymeric materials). Any alphanumeric string can be the value of this attribute. Upload specific: This attribute can be <u>omitted</u> .
synonymID	N4	Unique ID of a substance synonym.
taricCode	N10	Taric Code which can be added to Component and also to SemiComponent and Material. For SemiComponent and Material the taric code is only visible if the node is set to 'isArticle'
defaultTaricCode	N10	Default Taric Code which can be added to Component and also to SemiComponent and Material. For SemiComponent and Material the default taric code is only visible if the node is set to 'isArticle'
time	A8	Common time attribute. The format is "hh:mm:ss"
title	A200	Title of a news item.
tolerance	N6,3	This value is on the Ingredients page of a component and reflects the permissible deviation between the Measured Weight and Calculated Weight. A decimal or an integer value ≤ 100 is expected as this is a percentage. In an upload file, a value for this attribute should be provided if the attributes " <i>measuredWeight</i> " and " <i>unit</i> " have values. Without them a "Tolerance" value has no sense. A value " <u>0</u> " will be assumed if attribute "Tolerance" has been <u>omitted</u> .
topNode	A9	Describes the type of an object/task. Possible values are "Datasheet", "Request", "Change"

Attribute	Format	Description
total_declaration	Boolean	Indication of whether the MDS has 100% Substance Declaration. If mandatory on a request, then it is set to "true". Possible values are "true" or "false". If omitted, the default value is "true".
threshold	N10	Information in Exemption Details
type (weight type)	A7	The value for this attribute figures as a switch depicting following: shall the "weight – " or the "percentage – attributes" be evaluated with this node? if the "percentage-attributes" should be chosen, which value is meant (a fix value, an interval beginning by a minimum value and ending by a maximum value, or the remaining (rest) percentage value at this node). If the latter, the value will be calculated by the system. Possible values for this attribute are: "<u>FIX</u>", "<u>FROMTO</u>", "<u>REST</u>" and "<u>WEIGHT</u>". Upload specific: If <u>omitted</u>, the default value is "<u>WEIGHT</u>".
type (transaction type for RecipientData, appears only in an upload file)	A6	This attribute is only meaningful if an existing datasheet is being modified. Possible values for this attribute are: " ADD ", " DELETE ", " MODIFY ". If <u>omitted</u>, the default value is "Add". When creating a new datasheet, "<u>ADD</u>" will be assumed.
type (Selling entity type)	A	This attribute is only meaningful if an existing datasheet is being modified. Possible values for this attribute are: " ADD ", " REMOVE ", " REPLACE ". If <u>omitted</u>, the default value is "REPLACE". When creating a new datasheet, "<u>REPLACE</u>" will be assumed.
unit	A2	Unit values for weight. Possible values are " <u>T</u> ", " <u>KG</u> ", " <u>G</u> " or " <u>MG</u> ". The default value is " <u>g</u> ". All values are stored as grams in CDX.
unitOfMeasure	Enumeration	Information in Exemption Details (% or mg)
uploadDate	Date	Date of upload
value	A250	Text attribute, which can contain different information.
verdict	A7	The Verdict attribute occurs in the upload results at the element <Summary>. Possible values are "Success" or "Failure".
version	N9,2,N7	Version of an MDS. It can be an Integer value in case of an internally released MDS or a float value in case of an MDS that is still in edit mode.
warningCode	A4	Unique code/id of a warning/information presented after a check.
Weight	Float	Decimal, integer or exponential values > 0 are expected. Depending on the parent node type, either "<u>weight attributes</u>" (= <u>weight</u> and <u>unit</u>) or "<u>percentage attributes</u>" (= <u>type</u>, <u>fixValue</u>, <u>minValue</u> and <u>maxValue</u>) <u>have to be provided</u> if the top-level node is to be made productive at the same time. If the father of a "<u>Semicomponent</u>" is a "<u>Component</u>" only "<u>weight attributes</u>" are expected and evaluated (any "<u>percentage attributes</u>" will be ignored). If the father of a "<u>Semicomponent</u>" is a "<u>Semicomponent</u>" only "<u>percentage attributes</u>" are expected and evaluated ("<u>weight attributes</u>" will be ignored). Examples for small weights: 0.001 mg (= 1 microgram), 0.000001 mg (= 1 nanogram).

TIPPS & TRICKS

Use the CDX User Manual and the CDX GUI

We recommend to read the CDX User Manual, to get a better understanding of the process logic. In many cases it could be very helpful to simulate a process in the online system.

Please note that the “*Upload*”- program is based on online CDX. You cannot do anything in Web Service that you cannot do online in CDX. Above all, you have to obey the same rules in creating MDSs as you would do in CDX. If you create something in CDX online, the GUI will not allow you to create a “syntactically” incorrect MDS. For example, if you create a part, which is a *Semicomponent*, you cannot put a component as a child under it. There are many rules that and we have built some of them into the XSD-grammar and partly into check routines that are invoked during the upload run.

Create Your Own MDSs for Upload

Even after you succeeded in uploading an MDS it is still possible that it won’t be accepted if you try to make it productive. The checks for making an MDS productive in Web Service are the same as those run online.

Take a look at the XSD grammar if you don’t understand the error message you received and try to understand which tree is a legal one and which one builds an illegal MDS.

Additionally, there are rules that go behind the syntax of a tree. The following list shows a few of them since some of them are not obvious. They should help you to realize what’s wrong with your MDS in case you’re getting error messages and don’t understand why:

- The top node of a tree (MDS) can be a *Component*, a *Semicomponent* or a *Material*. Not allowed as top nodes are referenced units (*RefComponent*, *RefSemicomponent*, *RefMaterial*). Also not allowed as top nodes are *Substances*. This means, you can’t create your own *Substance*. Any use of a *Substance* anywhere in your syntax tree means a reference to it. That’s why you always have to put an *ID* attribute at the *Substance* element. And that’s why we have omitted the “*RefSubstance*” element.
- The attribute “*amount*” works only with a *Component*, which is not the top-level node.
- Referenced nodes (*RefComponent*, *RefSemicomponent*, *RefMaterial*) can’t be a parent node (cannot have child nodes). It is not possible to add any other nodes (Components, RefComponents, Semicomponents, RefSemicomponents, Materials, RefMaterials or Substances) under them.
- A *Substance* can’t have child nodes (because *Substances* are already referenced nodes).
- If a *Semicomponent* / *RefSemicomponent* is a child of a *Component*, only *weight* statements will be evaluated (any *percent* statements will be ignored!).
- If a *Semicomponent* / *RefSemicomponent* is a child of a *Semicomponent*, only *percent* statements are evaluated (*weight* statements will be ignored!).
- If a *Material* or *RefMaterial* is a child of a *Component*, only *weight* statements are evaluated (any *percent* statements will be ignored!).
- If a *Material* or *RefMaterial* is a child of a *Semicomponent*, only *percent* statements are evaluated (*weight* statements will be ignored!).
- If a *Material* or *RefMaterial* is a child of a *Material*, only *percent* statements are evaluated (*weight* statements will be ignored!).
- If a *Substance* is a child of a *Material* or a *Semicomponent*, only *percent* statements are evaluated (*weight* statements will be ignored!).
- If a *Substance* is a child of a *Component*, only *weight* statements will be evaluated (any *percent* statements will be ignored!).

Multiple Datasheets in One Upload File

It is possible to put multiple datasheets in one file, but there are some rules to follow.

- If you want to build a tree (father-child relations) with these datasheets the referenced datasheets must be positioned before the father datasheet in the file. If not, an error occurs.
- If datasheets do not exist in CDX (new MDSs) use the attributes *localKeyDef* in the datasheet definition (child) and *localKeyRef* in the reference of the father datasheet.
- This option is only possible for new datasheets (INSERT), not for Changes or Requests.

EXAMPLES OF MDS UPLOAD FILES

This section presents some examples of Upload XML files for different use cases. Text passages, which are important for the described use case, are marked with yellow.

Create Different MDS Types

Create a Material with different Portion Types

This example shows how to create a new Material, with status "EDIT", containing different portion types.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Datasheet>
    <Ingredients mode="INSERT" status="EDIT" localKeyDef="GG11"
completeDeclaration="true">
      <Material name="GZM Sample Material" unit="MG" weight="0.1"
stdMatNo="567" symbol="SYMBOLX">
        <Classification listID="0" classifID="1"/>
        <Classification listID="1" classifID="9"/>
        <Recyclate containsRecyclate="true" postConsMin="5"
postConsMax="14" postIndMin="7" postIndMax="15"/>
        <Norm instId="0" normCode="000033"/>
        <Norm instId="105" normCode="35-12"/>
        <Substance nodeID="701" confidential="true" type="FIX"
fixValue="50" processChemType="NO"/>
        <Substance nodeID="991" confidential="false" type="FROMTO"
minValue="30" maxValue="35" processChemType="RESIDUE"/>
        <Substance nodeID="995" confidential="true" type="REST"
processChemType="IMPURITY"/>
        <RefMaterial nodeID="1074316" type="FROMTO" minValue="10"/>
      </Material>
    </Ingredients>
    <SupplierData contactID="218" companyOrgID="0"/>
  </Datasheet>
</Task>
```

Referenced Component/SemiComponent

Since version 6.1 it is possible to add referenced Component/SemiComponent by 'partNumber' and not only by 'nodeID' (see yellow marked in the figure below), so that it can be matched better against the inhouse datastore. On multiple matched MDS's by part number, the one released/accepted with the latest status date for the action will be used. If node ID is provided as matching criteria, the node ID will be used and the part number will be disregarded.

Important: In the application, 'Part/Item No' only exist in components. For semi components, it is named 'Item/Material No' instead of 'Part/Item No'. In the web service, it will also be named as 'partNumber'. The attribute 'partNumber' exists only for referenced Component/SemiComponent and not for referenced Material.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Datasheet checkOnly="false">
    <Ingredients status="EDIT" mode="INSERT" localKeyDef="A12"
completeDeclaration="false">
      <Component name="Axle Drive Shaft" unit="T"
```

```

        measuredWeight="0.1" tolerance="10" polymericMark="NOTREQUIRED">
        <ArtNoList>
            <SingleArtNo ArtNo="abcd1234"/>
        </ArtNoList>
        <RefSemicomponent nodeID="2774337" partNumber="W000004695"
            type="WEIGHT" unit="KG" weight="10"/>
        <RefComponent nodeID="1102977" amount="2"/>
    </Component>
</Ingredients>
<SupplierData contactID="218" companyOrgID="0"/>
</Datasheet>
</Task>

```

Create a Semicomponent with referenced Materials

This example shows how to create a new Semicomponent with status "EDIT", containing referenced Materials.

```

<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
    <Datasheet >
        <Ingredients status="EDIT" mode="INSERT" localKeyDef="GG12"
completeDeclaration="true" >
            <Semicomponent name="Sample Semicomponent" specificWeight="12"
specificWeightType="KGM2">
                <ArtNoList>
                    <SingleArtNo ArtNo="2011-SC-001"/>
                </ArtNoList>
                <RefMaterial nodeID="1088412" type="FIX" fixValue="27">
                    <Recyclate containsRecyclate="true" postConsMin="5"
postConsMax="14" postIndMin="7" postIndMax="15"/>
                </RefMaterial>
                <RefMaterial nodeID="1070483" type="REST">
                    <Recyclate containsRecyclate="true" postConsMin="5"
postConsMax="14" postIndMin="7" postIndMax="15"/>
                </RefMaterial>
            </Semicomponent>
        </Ingredients>
        <SupplierData contactID="218" companyOrgID="0"/>
    </Datasheet>
</Task>

```

Create a Component with referenced Objects

This example shows how to create a new Component, with status "EDIT", containing referenced Object.

```

<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
    <Datasheet checkOnly="false">
        <Ingredients status="EDIT" mode="INSERT" localKeyDef="A12"
completeDeclaration="false">
            <Component name="Axle Drive Shaft" unit="T" measuredWeight="0.1"
tolerance="10" polymericMark="NOTREQUIRED">
                <ArtNoList>
                    <SingleArtNo ArtNo="abc123456"/>
                </ArtNoList>
                <RefMaterial nodeID="1088412" unit="T" weight="0.90">
                    <Recyclate containsRecyclate="true" postConsMin="5"

```

```
postConsMax="14" postIndMin="7" postIndMax="15"/>
  </RefMaterial>
  <RefSemicomponent nodeID="2774337" type="WEIGHT" unit="KG"
weight="10"/>
  <RefComponent nodeID="2841594" amount="2"/>
</Component>
</Ingredients>
<SupplierData contactID="218" companyOrgID="0"/>
</Datasheet>
</Task>
```

Change Datasheets and Status

Change the Owner Status of your Datasheet

This example shows how to change the owner status of an MDS from “EDIT” to “**INTERN**”.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Change localKeyDef="G12" nodeID="901007529">
    <OwnerStatus status="INTERN"/>
  </Change>
</Task>
```

Send/Propose a Datasheet

This example shows how to send a datasheet, which already exists in CDX.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Change localKeyDef="G12" nodeID="901007529">
    <OwnerStatus status="SEND"/>
  </Change>
</Task>
```

Accept/Reject a received Datasheet

This example shows how to accept or reject a received MDS. As you can see below, the received datasheet should be **status="ACCEPTED"**. In case of a reject, the status must be set to “**REJECTED**”.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Change nodeID="901005423">
    <RecipientStatus status="ACCEPTED" />
  </Change>
</Task>
```

Change Recipient Data of your Datasheet

This example shows how to change the recipient data of your MDS. All listed attributes of element **RecipientData** below will be changed. Not listed attributes of this element will be set to null.

With `type="ADD"` a new recipient will be added to your MDS. With `type="DELETE"` a recipient will be removed from your MDS.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Change nodeID="901005804" localKeyDef="B14">
    <Chapters>
      <RecipientData recipCompanyID ="900425" type="MODIFY"
        recipPartNo = "123-90-12"
        recipPartName = "Recip Part Name"
        drawingNo ="12.34.C7"
        drawingDate = "11/17/2002"
        drawingChangeNo = "656"
        reportNo = "12A77"
        reportDate ="12/05/2002"
        purchaseOrderNo = "00458000012"
        billOfDeliveryNo = "1735"
        forwardAllowed = "true"
      />
    </Chapters>
  </Change>
</Task>
```

Copy Datasheets

Duplicate a Datasheet

This example shows how to create a copy of an MDS. With `copyMode="DUPLICATE"` a new datasheet will be created with a new mdsID and version 0.01. This option is possible for own and received datasheets.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Change localKeyDef="A6" nodeID="900505913">
    <Copy copyMode="DUPLICATE"/>
  </Change>
</Task>
```

Create a new version of a Datasheet

This example shows how to create a new version of an MDS. With `copyMode="NEWVERSION"` a datasheet will be created with the same mdsID as the original and a version, which is 0.01 higher (e.g. 3.01). This option is only possible for **own** datasheets.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Change localKeyDef="A6" nodeID="900505913">
    <Copy copyMode="NEWVERSION"/>
  </Change>
</Task>
```

MDS Requests

The creator of a request can only be the recipient of a datasheet. The recipient is represented by its companyID and/or its OrgID (attribute "recipCompanyID").

Create an MDS Request and send it to your Supplier in one Step

If you set attribute **send="true"** the request will be send to your supplier after creation. The **supplierCompanyID** must exist in your upload file. You will receive the requestID with the result file.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Request localKeyDef="A12">
    <CreateRequest send="true" type="COMPONENT"
mandatoryComplDeclaration="true"
                    mandatoryClassif="false" mandatoryStdMatNo="false"
mandatorySymbol="false"
                    mandatoryMeasuredWeight ="true"
mandatorySpecWeight="false"
                    mandatoryPolymerMark="true"
                    projectName="New Project" supplierCompanyID="900425"
deadlineDate="12/22/2011">
      <MandatoryRecipData
        mandatoryRecipPartNo="true"
        mandatoryDrawingNo="true"
          mandatoryDrawingDate="true"
          mandatoryDrawingChangeNo ="true"
          mandatoryReportNo          ="true"
          mandatoryReportDate        ="true"
          mandatoryPurchaseOrderNo ="true"
          mandatoryBillOfDeliveryNo ="true"
          mandatoryRecipSupplierCode="true"
          mandatoryForwardAllowed   ="false"/>
      <RecipientData
        recipCompanyID ="5671"
        recipPartName  ="Part Name"
        recipPartNo    ="2C24-5005-CRB"
        drawingNo      ="1830"
        drawingDate     ="02/01/2007"
        drawingChangeNo ="15051234567890"
        reportNo        ="27"
        reportDate       ="12/10/2008"
        purchaseOrderNo ="00450000478"
        billOfDeliveryNo ="00450000478-11"
        forwardAllowed  ="true"/>
    </CreateRequest>
  </Request>
```

Create an MDS Request for a not registered supplier company

This request sends an email to a not registered Supplier company

```
<?xml version="1.0" encoding="utf-8"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Request localKeyDef="A12">
    <CreateRequest send="true" type="COMPONENT"
mandatoryComplDeclaration="true" mandatoryStdMatNo="false"
mandatorySymbol="false" mandatoryMeasuredWeight="true"
mandatorySpecWeight="false" mandatoryPolymerMark="true"
projectName="Rumpel" deadlineDate="12.12.2017" externalRecipient="true">
      <MandatoryRecipData mandatoryRecipPartNoList="true"
        mandatoryDrawingNo="true"
        mandatoryDrawingDate="true"
        mandatoryDrawingChangeNo="true"
        mandatoryReportNo="true"
        mandatoryReportDate="true"
        mandatoryPurchaseOrderNo="true"
        mandatoryBillOfDeliveryNo="true"
        mandatoryRecipSupplierCode="true"
        mandatoryForwardAllowed="true" />
      <RequestRecipData recipCompanyID="0"
        recipPartName="test 4"
        drawingNo="1830"
        drawingDate="meinetwegen"
        drawingChangeNo="15051234567890"
        reportNo="27" reportDate="12.10.2008" purchaseOrderNo="abc"
        billOfDeliveryNo="1234">
        <RecipientSupplierCodes>
          <CompanySupplierCodes>
            <RecipientSupplierCode recipSupplierCode="Test"/>
          </CompanySupplierCodes>
        </RecipientSupplierCodes>
        <RecipPartNoList>
          <SingleRecipPartNo ArtNo="2000"></SingleRecipPartNo>
        </RecipPartNoList>
      </RequestRecipData>
      <SupplierNotRegisteredData>
        <CompanyData companyName="mc company" street="test street"
postalCode="test" state="NA" city="Mainz" countryCode="DE" mailbox="123"
/>
        <CompanyAdministrator lastName="Mustermann" firstName="Hans"
phone="123456" fax="0123231" emailAddress="hansMustermann@testcompany.de"
/>
        <EMail eMailSubject="MDS Request" eMailText="Please register to
CDX" eMailLanguage="de" />
      </SupplierNotRegisteredData>
    </CreateRequest>
  </Request>
</Task>
```

Create an MDS and assign it to a Request in one Step

Based on the example above, the MDS supplier can assign the datasheet to the request (**requestID="501"**) and send it to the customer (**recipCompanyID ="5671"**) in one step.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<Task xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="CDX_Upload_Request.xsd">
  <Datasheet requestID="501">
    <Ingredients status="SEND" mode = "INSERT" nodeID="2338912"
completeDeclaration="true" localKeyDef="A12">
      <Component artNo="123456" name="Mixer" unit="KG" measuredWeight="0.1">
        <RefMaterial nodeID="900297611" unit="KG" weight="0.1">
          <Recyclate containsRecyclate="true" postConsMin="5"
postConsMax="14" postIndMin="7" postIndMax="15"/>
        </RefMaterial>
      </Component>
    </Ingredients>
  </Datasheet>
</Task>
```

GLOSSARY

Terms not provided here can be found in the CDX User Manual.

Term	Description
Attribute (XML)	XML attributes are normally used to describe XML elements, or to provide additional information about elements. Attributes are always contained within the start tag of an element.
CMD	Abbreviation of C onflict M inerals D eclaration
Element (XML)	An XML element is everything from (including) the element's start tag to (including) the element's end tag. An element can contain: • other elements • text • attributes • or a mix of all of the above
MDS	Abbreviation of M aterial D atasheet
REF (object type)	Referenced object in a tree. It is represented only by its object ID. Example: RefComponent, RefMaterial
WS	Abbreviation of W eb S ervice: The Web Service standard is the industry's choice for interfacing a software product with external systems. A Web Service provides platform-neutral and language-neutral interfaces that are self-describing (WSDL) and leverage a variety of supporting tools.
WSDL	The W eb S ervice D escription L anguage (WSDL, pronounced 'wiz-dul') is an XML-based language that is used for describing the functionality offered by a W eb S ervice. A WSDL description of a Web Service (also referred to as a <i>WSDL file</i>) provides a machine-readable description of how the service can be called, what parameters it expects and what data structures it returns. It thus serves a roughly similar purpose as a <u>Method signature</u> in a programming language.
XSD	Abbreviation of XML Schema Definition. XSD is a library that provides an API for manipulating the components of an XML Schema as described by the W3C XML Schema specifications, as well as an API for manipulating the DOM-accessible representation of XML Schema as a series of XML documents, and for keeping these representations in agreement as schemas are modified. The XML Schema Definition is a reference library that provides an API for use with any code that examines, creates or modifies W3C XML Schema (standalone or as part of other artifacts, such as XForms or WSDL documents).

USEFUL INFORMATION

CDX Website and Additional Services and Tools

www.cdssystem.com

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