

Compliance Data Exchange (CDX)

Version 4.1

Web Service Manual

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REVISIONS

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INTRODUCTION

Hewlett Packard Enterprise (HPE) – 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 (specifically Web Service Description Language *WSDL*). Other systems interact with the Web Service in a manner prescribed by its description using *SOAP* messages, typically conveyed using HTTP with an XML serialization in conjunction with other Web-related standards.

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 interaction is handled by SOAP messages transferred using the HTTP protocol.
- The basic communication format is XML, specified with XSDs.
- Secure Web Service using the user name token.

Used Standards

SOAP Standards for WSDL Schema

<http://schemas.xmlsoap.org/wSDL>

<http://schemas.xmlsoap.org/wSDL/soap/>

W3C Web Service Standards and Policy

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

<http://www.w3.org/ns/ws-policy>

OASIS - XML Namespace Document for WS-SecurityPolicy 1.2

<http://docs.oasis-open.org/ws-sx/ws-securitypolicy/200702>"

COMMON TERMS

Character Set ISO-8859-1

CDX uses ISO-8859-1-encoding. This encoding span 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		ı	ı	ı	ı	ı	ı	ı	ı	ı
170	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
180	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
190	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
200	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
210	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
220	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
230	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
240	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı
250	ı	ı	ı	ı	ı	ı	ı	ı	ı	ı

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.

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

Precondition to Use CDX Web Service

A company requires a valid CDX contract (active billing order) to use CDX Web Service. Otherwise an error message will appear.

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

Using the CDX Model Office instead of CDX Production

All URLs in this document refer to the CDX Production. If you want to use the CDX Model Office for testing purposes, make sure that all URLs you need are changed as below.

Example: URL of the CMDRequest WSDL

CDX Production - <http://www.cdxsystem.com/cdx/service/cmd/request/v0/CMDRequestSOAP?wsdl>

CDX Model - <http://modeloffice.cdxsystem.com/cdx/service/cmd/request/v0/CMDRequestSOAP?wsdl>

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".

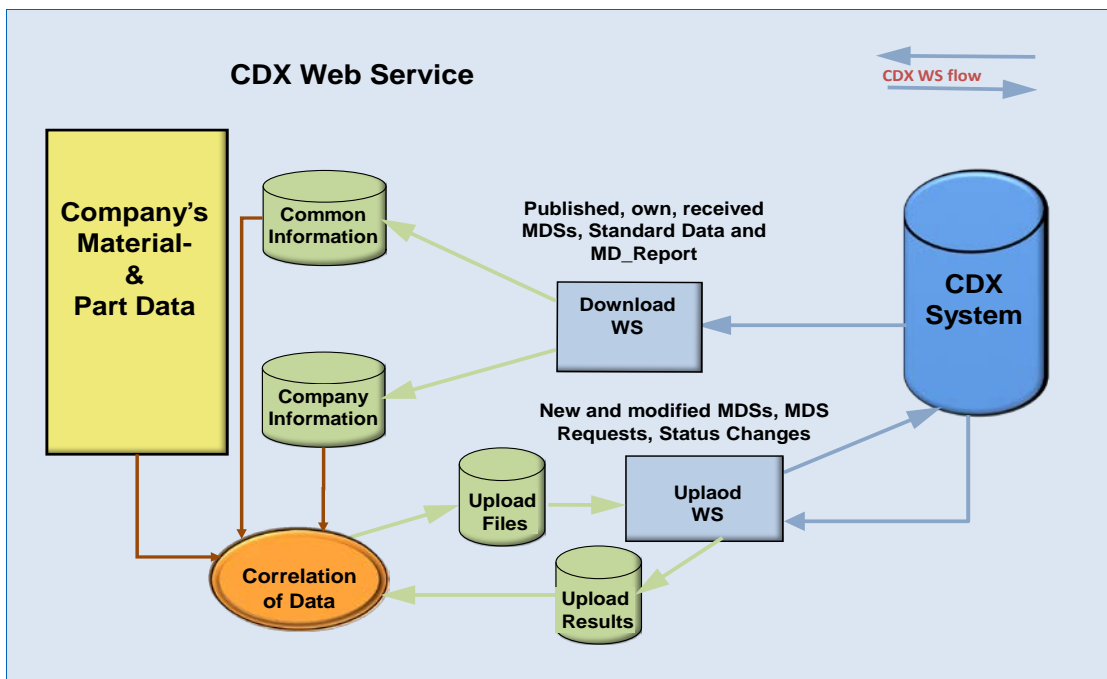
Data Exchange Process Overview

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. Parameters and objects are described in a "wsdl" schema file.

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

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".

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
Method	callUpload
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>
WSDL Name	UploadWSPort.wsdl
WSDL Location	https://www.cdssystem.com/cdx/service/UploadWSPort?wsdl
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 a 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 a 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 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
Method	getUploadResult
Input Params	Job ID (long) (mandatory)
Output	Result (XML)
WSDL Name	UploadWSPort.wsdl
WSDL Location	https://www.cdssystem.com/cdx/service/UploadWSPort?wsdl
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 results 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 a 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
4	"You can update/replace/delete/re-lease/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.
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.
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'.
32	" 'Measured weight'/Weight' exceeds or nearly exceeds 1,000,000 kg"	1,000,000 kg is the biggest weight value allowed in CDX.
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.

Error Code	Error Message	Explanation
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.
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.
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.
75	"Substance does not exist: <ID>"	Referenced substance does not exist. You are using either a wrong ID or the substance was deleted/hidden.
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.
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.
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.
97	"Company cannot be added:<REASON>"	The company specified in <RecipientData> cannot be added for some unspecified reason.
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.
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.
107	"Only one recycle element per material allowed"	It does not make sense to attach more than one recycle element to materials.
110	"At least one percentage value expected for recycle"	You answered the question on recycle 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 recycle minimum values exceeds 100%."	Sum of 'PostIndMin' and 'PostConsMin' is more than 100%. This is not possible.

Error Code	Error Message	Explanation
114	"Both recycle 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.
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.

Error Code	Error Message	Explanation
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.
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.
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.
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.

Error Code	Error Message	Explanation
168	"Numeric positive value expected for attribute 'SpecificWeight'"	Positive number expected.
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.
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 classification 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.
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.

Error Code	Error Message	Explanation
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.
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.
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.
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.
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.

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 messages 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 messages 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 messages 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 messages 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.

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
Method	getCommonFile
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)
WSDL Name	DataDownloadWSPort.wsdl
WSDL Location	https://www.cdssystem.com/cdx/service/DataDownloadWSPort?wsdl
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 ews
SBAAll	All available B asic S ubstances
SBDaily	B asic S ubstances changes of one day, the previous day
MPAll	All available P ublic M aterial datasheets
MPPDaily	P ublic M aterial datasheets 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

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

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
Method	getCompanyFile
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)
WSDL Name	DataDownloadWSPort.wsdl
WSDL Location	https://www.cdssystem.com/cdx/service/DataDownloadWSPort?wsdl
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
REQ	Own and received REQ uests of your company
CHK	CH eck K 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)

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
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 it's 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 it's 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_MPDownload_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_MPDownload_Response.xsd".

Web Service for MDS Business Functions

You can find a detailed description of the business functions in the CDX User Manual.

Interface Description

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

Purpose	The methods cover many business functions of the MDS handling		
Methods	Name/Input	Output	Comment
	getRegulationExemptionLists	getRegulationExemptionListResponse	Returns the exemptions of a regulation
	getRegulationLimitById	getRegulationLimitByIdResponse	Returns the limits of a regulation
	getOwnRegulations	getOwnRegulationsResponse	Returns public and own regulations of your company
	getRegulationExemptionDetail	getRegulationExemptionDetailResponse	Returns the details of an exemption list
	getSubstanceRegulationById	getSubstanceRegulationByIdResponse	Returns all substances belonging to a regulation
	getSubstanceLists	getSubstanceListsResponse	Returns the company specific substance lists of a company (header information only, no substances)
	getSubstanceByListId	getSubstanceByListIdResponse	Returns the substances of a given substance list ID
	getBoschMaterialTypes	getBoschMaterialTypesResponse	Returns all Bosch material types
	getBatteryTypes	getBatteryTypesResponse	Returns all battery types
getBatteryForms	getBatteryFormsResponse	Returns all battery forms	

	getPackagingMaterials	getPackagingMaterialsResponse	Returns all packaging materials
	addAttachment	addAttachmentResponse	Adds an attachment to an MDS and returns the assignment ID
	getAttachment	getAttachmentResponse	Returns an attachment of an MDS
	removeAttachment	removeAttachmentResponse	Removes an attachment from an MDS
	getAttachmentInfo	getAttachmentInfoResponse	Returns infos about an attachment
	addAddArtNoMDS	addAddArtNoMDSResponse	add additional ArtNo/ranges to public MDS/ and accepted MDS (available for Bosch)
	removeAddArtNoMDS	removeAddArtNoMDSResponse	remove additional ArtNo/ranges to public MDS/ and accepted MDS (available for Bosch)
WSDL Name	Mds_0_1.wsdl		
WSDL Location	https://www.cdssystem.com/cdx/service/v0/MDSManageSOAP?WSDL		
Errors	mdsManageError		

Attachments

Note that this Web Service permits the following file formats:

- *.pdf
- *.xls / *.xlsx
- *.doc / *.docx
- *.zip
- *.png
- *.jpg
- *.gif

XSD Specifications of the MDS Business Functions

This XSD specifies elements and parameters of the MDS specific business functions.

Location: <http://www.cdssystem.com/cdx/service/v0/MDSManageSOAP?xsd=3>

The common specifications are located in the common XSD, referenced by following link:

<http://www.cdssystem.com/cdx/service/v0/MDSManageSOAP?xsd=1>

WEB SERVICE FOR A MATERIAL DECLARATION REPORT

With this Web Service, companies are able to pull down the material declarations of a datasheet that they own or have received as XML format. The **Materials Declaration (MD)** report is a document that states whether there are any substances in the product that fall into Table A substances (prohibited or restricted) or Table B substances (specific chemical substance). If so, the other values in the report are calculated and presented. These tables are designated in accordance with the Hong Kong Convention and Guidelines.

Interface Description

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

Purpose	This method is used to load down Material Declaration as XML, also named "MD Report"
Method	getMDAsXML
Input Params	nodeId (long as String) (mandatory) PackageKey (String), received with previous package
Output	PackageKey of next package (if not appears, no next package available) Complete MD structure (XML)
WSDL Name	DataDownloadWSPort.wsdl
WSDL Location	https://www.cdssystem.com/cdx/service/DataDownloadWSPort?wsdl
Errors	CDXWebServiceException

XSD Specifications of the Material Declaration Report

You will find the XSD specification in the Help menu. The menu item is called "Advanced Interface schemas (xsd)". By clicking on this item you are able to download the specification. Elements and attributes are described in detail in section "Description of XSD Elements and Attributes".

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

WEB SERVICE FOR AN SDOC REPORT

With this Web Service, companies are able to pull down the content of their own SDoCs in XML format. The **Supplier's Declaration of Conformity** for material declaration management (**SDoC**) report is a document assuring that the product and its related **MD (Materials Declaration)** conforms to the law and is suitable for the management and control of the information on chemical substances contained, and who is responsible for the product and **MD**. The **SDoC** remains valid as long as the products are present on board. The relationship between **SDoC** and **MD** is established by using the unique **SDoC_ID** in both reports for **SDoC**. These documents are designated in accordance with the Hong Kong Convention and Guidelines.

Interface Description

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

Purpose	This method is used to download the content of an SDoC in XML format
Method	searchSDoC
Input Params	SDoC_ID (integer) (mandatory)
Output	Content of an SDoC (String) in XML format
WSDL Name	DataDownloadWSPort.wsdl
WSDL Location	https://www.cdssystem.com/cdx/service/SDoCWSPort?wsdl
Errors	CDXWebServiceException

XSD Specifications of the SDoC Report

You will find the XSD specification in the Help menu. The menu item is called "Advanced Interface schemas (xsd)". By clicking on this item you are able to download the specification. Elements and attributes are described in detail in section "Description of XSD Elements and Attributes".

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

WEB SERVICE FOR CONFLICT MINERALS DECLARATION

The CMD Web Service will allow you to integrate CMD communication with your suppliers into your local processes and systems. It enables your company to exchange CMD related data between your internal system and the CDX system.

Customers are provided a typical "SOA" Web Service style which allows them to build their own frontend. The individual methods for business functions and parameters/objects are described in the "WSDL" schema file.

The Web Services cover all use cases from the CDX-CMD web application and fit into a Web Service framework of a complete application.

XSD Specifications

All XSD specifications are located in the WSDL. Elements and attributes of the XSDs are described there.

The XSD Common_0_1.xsd contains the basic elements and attributes that are referenced in all CDX Web Services.

CMD Request

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

Interface Description

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

Purpose	The methods cover all required functions of the CMD request handling		
Methods	Name/Input	Output	Comment
	getAllCmdTemplates	getAllCmdTemplatesResponse	Get all available templates with their ID and Version#
	findCmdRequestOwn	findCmdRequestOwnResponse	Find multiple own CMD requests
	findCmdRequestReceived	findCmdRequestReceivedResponse	Find multiple received CMD requests
	getByIdOwn	getByIdOwnResponse	Get an own CMD request by its ID
	getByIdReceived	getByIdReceived	Get an received CMD request by its ID
	createCmdRequest	cmdRequestCreateResponse	Create a CMD request
	cmdRequestSend	cmdRequestSendResponse	Send a CMD request
	cmdRequestCancel	cmdRequestCancelResponse	Cancel/delete a CMD request
	cmdRequestReject	cmdRequestRejectResponse	Reject a received CMD request
	cmdAssign	cmdAssignResponse	Assign a CMD to a request
	unassignCmd	cmdUnAssignResponse	Unassign a CMD from a request
	cmdRequestRequestorUpdate	cmdRequestRequestorUpdateResponse	Update a request by requestor
	cmdRequestRecipientUpdate	cmdRequestRecipientUpdateResponse	Update a request by recipient
WSDL Name	CmdRequest_0_1.wsdl		
WSDL Location	https://www.cdssystem.com/cdx/service/cmd/request/v0/CMDRequestSOAP?wsdl		
Errors	CmdRequestError		

XSD Specifications of the CMD Request

The XSD specifies elements and parameters of the CMD Request business functions.

Location: <http://www.cdssystem.com/cdx/service/cmd/request/v0/CMDRequestSOAP?xsd=1>

The common specifications are located in the common XSD, referenced by following link:

<http://www.cdssystem.com/cdx/service/cmd/request/v0/CMDRequestSOAP?xsd=2>

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.

SOAP Fault Exceptions

SOAPFaultException will be thrown by a meaningful key.

Error code	Description / Solution
USER_ALREADY_LOGGED_ON	a web service is still in use by this user, please try later
INVALID_LOGON	wrong user/password
TOU_NOT_ACCEPTED_OR_TOO_OLD	do not accept terms of use

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 does 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 exists	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
CMD Request specific Error Codes		
100	Project for this company does not exists or is deactivated	The project could not be found.
102	request Id does not belong to your company	Choose a request Id that belongs to your company
103	CMD request is not in edit mode	A CMD request can only be modified in edit mode. Please check current status of it
104	request with this id does not exist	Invalid request Id
105	CMD request is not in received mode	CMD request is not in the correct state

Error code	Error Message	Description / Solution
106	Your company is not the receiver of this request	You tried to assign or unassign a CMD to/from a request that was not sent to your company.
107	a CMD with this Id which belongs to you can not be found	You tried to assign/unassign a CMD that does not exist.
108	Request not sendable	Request is not in sendable state
109	Request is not in status assigned	For this transaction the request must be in status assigned.
110	Recipient Company Id does not exists	Choose a valid recipient company
111	Org Id does not belong to company Id	The specified org.-unit is not part of the specified company.
112	CMD Template Id does not exists	Wrong CMD Template Id
113	to date must be after or equals from date	The date parameter may not be in the past
114	similar company already exists, please choose one of the following {0}	Choose one of the provided companies and try again
115	CMD not found	The CMD you specified does not exist
116	Date must be future date	Enter a future date as parameter
117	Company Level Declaration scope not exist for Version >=3	Decalaraion Scope does not match template verison
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 Nodeld ? 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 exeption} 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.

Error code	Error Message	Description / Solution
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.
SDoC specific Error Codes		
3379	SDoC Web Service failed	For some reason the Web Service is out of service.
3380	Requested SDoC could not be found	The requested SDoC with this ID does not exist.
3381	You may download only SDoCs of your own company	The requested SDoC exists but does not belong to your company.
3382	XML output of SDoC failed	The creation of the XML output failed for some reason.

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
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.
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 semi-components) , <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
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
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 "Supplier Data 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".
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
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

Element	Description
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 " <i>Norm</i> " is allowed with the same " <i>Material</i> "-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 an Company element.
OtherInformation	Element of the MD report
OwnerStatus	With the help of this element it is possible to <i>release</i> (=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
RecipientData	This element describes the recipient of an MDS or the initiator of an MDS Request.
RecipientStatus	Status of an MDS at the Recipient
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
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.

Element	Description
Row	Element of the MD report
SDoCID	Element of the MD report
Semicomponent	When using this element (Semicomponent) you can use other <u>Semicomponents</u> , <u>RefSemicomponents</u> (= referenced semi-components), <u>Materials</u> , <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.
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.
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

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
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. Maximim 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 " <u>1</u> ".

Attribute	Format	Description
		The value of this attribute is <i>mandatory</i> if attribute Status has one of the values: " <i>INTERN</i> ", " <i>PUBLIC</i> ", " <i>SEND</i> " " <i>PROPOSE</i> ". If you <i>omit</i> 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".
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 " <i>true</i> " or " <i>false</i> " (default value is " <i>false</i> "). If " <i>true</i> " 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
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
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.

Attribute	Format	Description
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 <i>confidential</i> use Confidential = "true" with the <Substance>-tag. Absence of the 'Confidential -attribute or Confidential = "false" 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 <i>mandatory</i> . "ContactID" means the ID of an <i>existing</i> contact person of your company. A list of contact persons together with their ID's can be downloaded with the Web Service (" <i>Company Contacts</i> "). Element <SupplierData> with attribute " <i>ContactID</i> " is <i>mandatory</i> if one of the values " <i>INTERN</i> ", " <i>PUBLIC</i> ", " <i>SEND</i> " or " <i>PROPOSE</i> " was put for the attribute " <i>Status</i> ". If you <i>omit</i> " <i>ContactID</i> " with Status="Edit", 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 "true" or "false". If the value of "ContainsRecyclate" is "true", percentage values for either "Post Industrial Recyclate" (" <i>PostIndMin</i> " and " <i>PostIndMax</i> ") or "Post Consumer Recyclate" (" <i>PostConsMin</i> " and " <i>PostConsMax</i> "), or both <u>have to be provided</u> . If not, the system will return an error message. If the value of "ContainsRecyclate" is "false", 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
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"
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.
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" d.
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- <u>nnn</u> -nnnn.

Attribute	Format	Description
einecElinec	A20	Standard attribute of a substance
element	A250	Name of the element where an error/warning occurs.
eMail	A80	E-mail address.
enteredWeightGrams	N18,6	Weight - in grams - of an object, entered manually.
errorCode	A4	Unique ID of an error
eulIndex	A20	Standard EU index of a substance
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
fileversion	N6,2	The attribute only occurs in headers of downloaded 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 "type" and "percentage attributes" 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".
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. "DIN"). This is an alphanumeric string. In an upload file this attribute is <i>mandatory</i> .
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".
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 unselectable group header in the list. Possible values are "true" or "false".
langCode	A2	Standard 2 digid 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.

Attribute	Format	Description
localKeyRef	A13	Used with LocalKeyDef, it enables connecting two objects within the same upload file. A value for this attribute is <i>mandatory</i> with a <i>locally</i> referenced object. The expected value corresponds to an object with the attribute <i>localKeyDef</i> . 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".
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 StdMatNr is required. Possible values are "true" or "false". Upload specific: If omitted, the default value is "false".

Attribute	Format	Description
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".
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 <i>omitted</i> .
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 <i>mandatory</i> if the value "From-To" was provided for the attribute "type". The attribute "minValue" is also required.
measuredWeight	N18,6	Associated with a Component, this is the weight of the component. A decimal or an integer number is expected.
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 <i>mandatory</i> 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", "NMOKEN" and "PEPLACE". If the value is <i>omitted</i> , the value "INSERT" will be assumed.
midsID	N18	This attribute is the CDX internal number of an MDS. Together with the attribute "Version", a datasheet is specified unambiguously
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.
ownOrReceived	A3	Indicates whether the MDS Request was created by own company or received from a supplier company. Values can be 'OWN' or 'REC'
phoneNumber	A50	Any alphanumeric string but should be a valid telephone number including all dialing codes.

Attribute	Format	Description
polymericMark	A13	<p>Following values are possible for "PolymericMark": "<u>MARKED</u>", "<u>UNMARKED</u>" and "<u>NOTAPPLICABLE</u>".</p> <p>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.</p> <p>In other cases any answer of: "<u>MARKED</u>", "<u>UNMARKED</u>" or "<u>NOTAPPLICABLE</u>" is correct.</p>
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	<p>Represents the amount of post consumer recycled content. Depending on the value of the attribute "ContainsRecyclate" the attribute "PostConsMax" may be <i>mandatory</i>.</p> <p>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".</p> <p>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.</p>
postConsMin	N7,4	<p>Represents the amount of post consumer recycled content. Depending on the value of the attribute "ContainsRecyclate" the attribute "PostConsMin" may be <i>mandatory</i>.</p> <p>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.</p> <p>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.</p>
postIndMax	N7,4	<p>Represents the amount of post consumer recycled content. Depending on the value of the attribute "containsRecyclate" the attribute "postIndMax" may be <i>mandatory</i>.</p> <p>A decimal or a whole positive number ≤ 100 and \geq "postIndMin" is expected.</p> <p>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.</p>
postIndMin	N7,4	<p>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>.</p> <p>A decimal or a whole positive number ≤ 100 and \leq "postIndMax" is expected.</p> <p>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.</p>
processChemType	A8	<p>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%.</p> <p>Valid values are "NO", "RESIDUE" and "IMPURITY".</p> <p>Upload specific: This attribute can be <i>omitted</i>.</p>
projectName	A50	<p>This attribute appears in an MDS Request and represents the name of a customer project.</p> <p>In an upload file this attribute is <i>optional</i>. If no project with the given "ProjectName" exists, a new one will be created.</p>

Attribute	Format	Description
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.
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.
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 HPE to put in a number check, a wrong <i>recipient-supplier-code</i> causes an error. The <u>omitting</u> of the " <i>recipient-supplier-code</i> " 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.
rejectReason	A10000	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"
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 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.

Attribute	Format	Description
requestStatus	A25	Current status of a request. Possible values are: "NEW", "SEND", "RECEIVED", "REJECTED", "WAITING FOR ACCEPTANCE", "ATTACHED", "COMPLETED", "DELETED"
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>
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 <i>mandatory</i> 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 <i>omitted</i> , " <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 <i>omitted</i> .
synonymID	N4	Unique ID of a substance synonym.
time	A8	Common time attribute. The format is "hh:mm:ss"
title	A200	Title of a news item.

Attribute	Format	Description
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>Q</u> " will be assumed if attribute "Tolerance" has been <i>omitted</i> .
topNode	A9	Describes the type of an object/task. Possible values are "Datasheet", "Request", "Change"
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".
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 <i>omitted</i> , 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 a existing datasheet is being modified. Possible values for this attribute are: " ADD ", " DELETE ", " MODIFY ". If <i>omitted</i> , the default value is "Add". When creating a new datasheet, " <u>ADD</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.
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	N18,6	A decimal or a whole number > 0 is expected. Depending on the parent node type, either " <i>weight attributes</i> " (= <i>weight</i> and <i>unit</i>) or " <i>percentage attributes</i> " (= <i>type</i> , <i>fixValue</i> , <i>minValue</i> and <i>maxValue</i>) <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 " <i>weight attributes</i> " are expected and evaluated (any " <i>percentage attributes</i> " will be ignored). If the father of a " <u>Semicomponent</u> " is a " <u>Semicomponent</u> " only " <i>percentage attributes</i> " are expected and evaluated (" <i>weight attributes</i> " will be ignored).

HOW TO CREATE YOUR WEB SERVICE CLIENT

As a client, several applications can be used or own systems (in several programming languages) can be extended. Since the users will have different requirements for the client they want to use, CDX does not provide a client for its Web Service. Instead, in the following section two ways to access the CDX Web Service will be described.

Example 1: Using the free soapUI software

First, download and install the free open source client soapUI from the following link: <http://www.soapui.org/> After starting the program, go to the File menu and select “New soapUI Project” to create a new project. For the project name enter “CDX Upload” and for the initial WSDL use the URL: <https://www.cdssystem.com/cdx/service/UploadWSPort?wsdl>

After clicking OK, the new project will be created and in the project navigator tree two operations (callUpload, getResult) are shown that can be called on this Web Service. Below the operations requests and their parameters can be stored. Initially there is a request called “Request 1” for each operation. By double clicking this request entry a window opens which is split into the request and the response section. On the left side, the request parameters can be entered. These are user id, password and either the upload xml for “callUpload”, or the job id for “getResult”.

When putting the xml into the third parameter of “callUpload”, the content must be enclosed in a cdata section. Put “<![CDATA[“ in front of the xml content and “]]>” at the end. This is necessary, because the SOAP message itself is xml, and xml in xml must be masked like this.

To submit the request to the server, click the green arrow in the top left area of the window. The tooltip of the button is called “Submit request to specified endpoint URL”. The request will be submitted and the result message will be presented in the right section of the window.

For the second Web Service “Download”, the same steps as before can be repeated. The URL of the WSDL is: <https://www.cdssystem.com/cdx/service/DataDownloadWSPort?wsdl>

In the Download Web Service the available operations are “getCommonFile”, “getCompanyFile” and “getMDAsXML”. **Please note:**

- With newer versions of SOAP UI the handling may change and the description above is no longer applicable.
- SOAP UI can of course also be used for all other projects described in this document.

Example 2: Generating a java client

Typically, the interface to CDX will be used by software running in the user’s company. If the system is based on JAVA, a Web Service client can be easily generated using the “wsimport” tool of JAVA. The documentation of the tool can be found here: <http://download.oracle.com/javase/6/docs/technotes/tools/share/wsimport.html>

A basic use of the tool for the Upload Web Service would be:

wsimport -keep <https://www.cdssystem.com/cdx/service/UploadWSPort?wsdl>

Important parameters of wsimport are:

-keep	Keeps the generated java source files, without only class files to execute will be there
-p	specifies the target java package
-d	directory for the class files
-s	directory for the source files
-httpproxy	the HTTP proxy used to access internet

After successful import, several java classes are generated. The two main classes are the Web Service client called “UploadWSService” and the interface for the Web Service called “UploadWS”. The UploadWSService can be created by calling the no argument constructor. The service interface can then be obtained by calling the method “getUploadWSPort()”. The Web Service operations can be called with a normal JAVA method invocation on the service interface. Available methods are “callUpload” and “getResult”.

For the second Web Service “Download”, the same steps as before can be repeated. The basic command for the import is: wsimport -keep <https://www.cdssystem.com/cdx/service/DataDownloadWSPort?wsdl>

In the Download Web Service interface the available operations are “getCommonFile”, “getCompanyFile” and “getMDAsXML”.

TIPS & 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 *Semi-Component*, 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 a 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 *Semi-Component* 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="Sample Material" unit="MG" weight="0.1"
matNo="123" 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 instName="DIN" normCode="000033"/>
        <Norm instName="JAMA" 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="901001082" type="FROMTO"
minValue="10"/>
      </Material>
    </Ingredients>
    <SupplierData contactID="3" companyOrgID="5671"/>
  </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 artNo="2011-SC-001" name="Sample Semicomponent"
specificWeight="12" specificWeightType="KGM2">
        <RefMaterial nodeID="900297611" type="FIX" fixValue="27">
          <Recyclate containsRecyclate="true" postConsMin="5"
postConsMax="14" postIndMin="7" postIndMax="15"/>
        </RefMaterial>
        <RefMaterial nodeID="900297772" type="REST">
          <Recyclate containsRecyclate="true" postConsMin="5"
postConsMax="14" postIndMin="7" postIndMax="15"/>
        </RefMaterial>
      </Semicomponent>
    </Ingredients>
    <SupplierData contactID="3" companyOrgID="5671"/>
  </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 artNo="123456" name="Axle Drive Shaft" unit="T"
measuredWeight="0.1" tolerance="10" polymericMark="NOTREQUIRED">
        <RefMaterial nodeID="900297611" unit="T" weight="0.90">
          <Recyclate containsRecyclate="true" postConsMin="5"
postConsMax="14" postIndMin="7" postIndMax="15"/>
        </RefMaterial>
        <RefSemicomponent nodeID="901007529" type="WEIGHT" unit="KG"
weight="10"/>
        <RefComponent nodeID="901008211" amount="2"/>
      </Component>
    </Ingredients>
    <SupplierData contactID="3" companyOrgID="5671"/>
  </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".

```
<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.

```
<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"
        recipSupplierCode = "Rovno"
        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 it's companyID and/or it's 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"
                    recipSupplierCode ="abc"
                    forwardAllowed  ="true"/>
    </CreateRequest>
  </Request>
```

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: <ul style="list-style-type: none"> • 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 it's 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-du!') is an <u>XML</u> -based language that is used for describing the functionality offered by a <u>Web Service</u> . 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 X ML S chema D efinition. 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

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