

Hierarchy	Metadata Name	Data Type	Obligation	Description	Source of Information or name of metadata element at WDC	Reference
MD_Metadata				information describing the metadata file		ISO19115 B.2.1 (1)
	fileIdentifier	String	M	unique identifier for this metadata file, following internal file naming convention of WDC (e.g.: <i>Mission.Sensor.Level.Specie.geolD.Processin Level.Version.yyyymmdd.nc</i>)	Building rule: <Organisation>.<OrgUnit>.<ProductCategory>.<ProductSpecification> where: <Organisation> = "ch.empa" <OrgUnit> = "GAWSIS" <ProductCategory> = <para>_<generation><report><report.unit> <ProductSpecification> = <station>_<submitter> GAWSIS fields used: <station> tblStation.GAWID (if missing: tblStation.Station) <submitter> tblSubmitter.SubmitterShort (if missing: NA) <para> tblParameters.Parameter (if missing: tblParameters.ParamGroup) <generation> tblDataSeries.DataGeneration (if missing: u) <report> tblDataSeries.DataReporting (if missing: X) <report_unit> tblDataSeries.DataReportingUnit (if missing: u) (e.g.: ch.empa.GAWSIS.CH4_c30m.JFJ_Empa.xml)	ISO19115 B.2.1 (2)
	language	String	C	language used for documenting metadata (→WIS requires english "en")	currently "eng"-->change to "en"?	ISO19115 B.2.1 (3)
	characterSet	CodeList B.5.10	C	full name of the character coding standard used for the metadata set (→WIS requires "utf-8")	currently encoding="ISO-8859-1" -->needs to be changed to "utf8"	ISO19115 B.2.1 (4)
	parentIdentifier	String	C	file identifier of the metadata to which this metadata is a subset, following internal file naming convention of WDC (e.g.: <i>Mission.Sensor.Level.Specie.geolD.Processin Level.Version</i>)		ISO19115 B.2.1 (5)
	hierarchyLevel	CodeList B.5.25	C	scope to which the metadata applies: (→WIS requires "dataset" or "series", where "series" describes a collection of single datasets)	dataset	ISO19115 B.2.1 (6)
	hierarchyLevelName	String	C	name of the hierarchy levels for which the metadata is provided		ISO19115 B.2.1 (7)
	dateStamp	Date (B.4.2)	M	date of metadata creation: yyyy-mm-ddThh:mm:ss (e.g.: <i>2012-05-20T09:45:00</i>)	current system date (during metadata file creation)	ISO19115 B.2.1 (9)
	metadataStandardName	String	O	name of the metadata standard used (including profile name) (e.g.: <i>ISO19115 / WDC-RSAT Profile V1.0</i>)	ISO 19115:2003/19139	ISO19115 B.2.1 (10)
	metadataStandardVersion	String	O	version (profile) of the metadata standard used (e.g.: <i>V1.0</i>)	1.0	ISO19115 B.2.1 (11)
↳ Contact information (MD_Metadata > contact)				→contact details of party responsible for metadata information within WDC host organisation		ISO19115 B.2.1 (8)
↳ CI_ResponsibleParty			M			ISO19115 B.3.2.1 (374)
	individualName	String	C	name of the responsible person within WDC host organisation: surname, given name, title separated by a delimiter	Klausen, Jörg, Dr.	ISO19115 B.3.2.1 (375)
	organisationName	String	C	name of WDC host organisation	Swiss Federal Office of Meteorology and Climatology MeteoSwiss	ISO19115 B.3.2.1 (376)
	positionName	String	C	role or position of the responsible person within WDC host organisation (function, division)	International Affairs Division	ISO19115 B.3.2.1 (377)
	RoleCode	CodeList B.5.5	M	function performed by the WDC host organisation (select from dropdown list)	custodian	ISO19115 B.3.2.1 (379)
↳ CI_Contact			O			ISO19115 B.3.2.2 (387)
↳ CI_Address			O	→physical address of WDC host organisation		ISO19115 B.3.2.2 (380)
	deliveryPoint	String	O	street name and number	Krähbühlstrasse 58	ISO19115 B.3.2.2 (381)
	Address.city	String	O	city	Zürich	ISO19115 B.3.2.2 (382)
	administrativeArea	String	O	state, province	ZH	ISO19115 B.3.2.2 (383)
	postalCode	String	O	ZIP or other postal code	8044	ISO19115 B.3.2.2 (384)
	country	String	O	country	Switzerland	ISO19115 B.3.2.2 (385)
	electronicMailAddress	String	O	email address of the responsible organization or individual	gawsis@meteoswiss.ch	ISO19115 B.3.2.2 (386)
↳ CI_Telephone			O			ISO19115 B.3.2.7 (407)
	voice	String	O	telephone number	+41 (0)44 256 92 23	ISO19115 B.3.2.7 (408)
	facsimile	String	O	telephone number of a facsimile machine	+41 (0)44 256 92 78	ISO19115 B.3.2.7 (409)
↳ CI_OnlineResource			C			ISO19115 B.3.2.5 (396)

	linkage	URL	C	web address of the WDC (URL) (e.g.: http://wdc.dlr.de)	http://gaw.empa.ch/gawsis/	ISO19115 B.3.2.5 (397)
L→Reference System Information (MD_Metadata > referenceSystemInfo)				→description of the spatial and temporal reference systems		ISO19115 B.2.1 (13)
L→ MD_ReferenceSystem				O		ISO19115 B.2.7.3 (205)
L→ MD_Identifier				O		ISO19115 B.2.7.3 (205)
	code	String	C	alphanumeric identifier of the reference system (e.g.: WGS 84)	WGS 84	ISO19115 B.2.7.3 (207)
L→CI_Citation				O		ISO19115 B.3.2 (359)
	title	String	C	name of reference system (e.g.: World Geodetic System)	World Geodetic System	ISO19115 B.3.2.1 (360)
L→CI_Date				O		ISO19115 B.3.2.4 (393)
	date	Date	C	reference date of the reference system: yyyy-mm-dd	currently missing-->1984	ISO19115 B.3.2.4 (394)
	dateType	CodeList B.5.2	C	event used for reference date (select from dropdown list)		ISO19115 B.3.2.4 (395)
L→ MD_Identifier				O		ISO19115 B.2.7.3 (205)
	version	String	O	version of the reference system (e.g.: V1.0)		ISO19115 B.2.7.3 (208.2)
L→Identification Information (MD_Metadata > identificationInfo)				→information used to identify the dataset referred to by this metadata file		ISO19115 B.2.1 (15)
L→MD_Identification				M		ISO19115 B.2.2.1 (23)
	abstract	String	M	short description of the dataset described (abstract) (e.g.: parameter, method, instrument, interval, site etc)	Building rule: "Time series of <para> measurements (type: <para.type>) at Global Atmosphere Watch station <station> (station type: <station.type>). Measurements are <generation>. The measurement interval is <report.str>. The measurement method is <method> (method details: <method_details>). <description>." Value: <para> tblParameters.Parameter (if missing: tblParameters.ParamGroup) <para_type> tblParamType.ParamType <station> tblStation.Station <station_type> tblStation.StationType (if missing: "unknown") <generation> tblDataSeries.DataGeneration (if missing: "generated at unknown interval") <report_str> tblDataSeries.DataReporting tblDataSeries.DataReportingUnit <method> tblMethods.Method (if missing: "unknown") <method_details> tblDataSeries.MethodDetails (if missing: "") <description> tblStation.Description (if missing: "")	ISO19115 B.2.2.1 (25)
	status	CodeList B.5.23	O	status of the data/dataset (select from dropdown list)		ISO19115 B.2.2.1 (28)
L→CI_Citation				M		ISO19115 B.3.2 (359)
	title	String	M	name of the dataset/series referred to by this metadataset following the internal file naming convention of the WDC (e.g.: Mission.Sensor.Level.Specie.geolD.Processin Level.Version.TimePeriod.nc)	same as file identifier	ISO19115 B.3.2.1 (360)
	edition	String	O	version of the dataset		ISO19115 B.3.2.1 (363)
	editionDate	DateTime	O	date of the edition: yyyy-mm-ddThh-mm-ss	currently missing-->tblDataSeries.LastUpdate	ISO19115 B.3.2.1 (364)
	identifier	String	O	value uniquely identifying an object within a namespace (e.g.: DOI of the dataset, if available)		ISO19115 B.3.2.1 (365)
L→CI_Date				M		ISO19115 B.3.2.4 (393)
	date	Date B4.2	M	reference date of the dataset: yyyy-mm-ddThh-mm-ss	tblDataSeries.LastUpdate	ISO19115 B.3.2.4 (394)
	dateType	CodeList B.5.2	M	event used for reference date (select from dropdown list)	revision	ISO19115 B.3.2.4 (395)
L→CI_ResponsibleParty				O	→information identifying the person/organisation responsible for the dataset	ISO19115 B.3.2.1 (374)
	individualName	String	C	name of the person responsible for the dataset: surname, given name, title, separated by a delimiter	tblDataSeries.ContactID > tblContact.FamilyName, tblDataSeries.ContactID > tblContact	ISO19115 B.3.2.1 (375)

	organisationName	String	C	name of the organisation responsible for the dataset/data generation	tblDataSeries.ContactID > tblContact.Organization	ISO19115 B.3.2.1 (376)
	positionName	String	C	role or position of the person responsible for the dataset (function, division)		ISO19115 B.3.2.1 (377)
	role	CodeList B.5.5	C	function performed by the organisation responsible for the dataset (select from dropdown list)	pointOfContact	ISO19115 B.3.2.1 (379)
L→CI_Contact						
L→CI_Address						
	deliveryPoint	String	O	street name and number	tblDataSeries.ContactID > tblContact.StreetAddress	ISO19115 B.3.2.2 (381)
	Address.city	String	O	city	tblDataSeries.ContactID > tblContact.City	ISO19115 B.3.2.2 (382)
	administrativeArea	String	O	state, province	tblDataSeries.ContactID > tblContact.State	ISO19115 B.3.2.2 (383)
	postalCode	String	O	ZIP or other postal code	tblDataSeries.ContactID > tblContact.ZIP	ISO19115 B.3.2.2 (384)
	country	String	O	country	tblDataSeries.ContactID > tblContact.CountryID > tblCountry.Country	ISO19115 B.3.2.2 (385)
	electronicMailAddress	String	O	email address of the responsible organization or individual	tblDataSeries.ContactID > tblContact.ContactEmail	ISO19115 B.3.2.2 (386)
L→CI_Telephone						
	voice	String	O	telephone number	tblDataSeries.ContactID > tblContact.PhoneMain/ tblContact.PhoneOther	ISO19115 B.3.2.7 (408)
	facsimile	String	O	telephone number of a facsimile machine	tblDataSeries.ContactID > tblContact.Fax	ISO19115 B.3.2.7 (409)
L→CI_OnlineResource						
	linkage	URL	C	web address of the organisation responsible for the dataset (URL) (e.g.: http://meteoswiss.admin.ch)	currently missing-->tblDataSeries.ContactID>tblContact.OrganizationURL	ISO19115 B.3.2.5 (397)
L→MD_resourceConstraints						
L→MD_legalConstraints						
	accessConstraints	CodeList B.5.24	O	access constraints applied to assure the protection of data published by WDC, and any special restrictions or limitations on obtaining the data (select from dropdown list)		ISO19115 B.2.3 (70)
	useConstraints	CodeList B.5.24	O	any special restrictions or limitations or warnings on using the data (select from dropdown list)	otherRestrictions	ISO19115 B.2.3 (71)
	otherConstraints	String	C	other restrictions and legal prerequisites for accessing and using the resource or metadata	currently missing-->change to "FOR SCIENTIFIC PURPOSES, ACCESS TO THESE [GAW] DATA IS UNLIMITED AND PROVIDED WITHOUT CHARGE. BY THEIR USE YOU ACCEPT THAT AN OFFER OF CO-AUTHORSHIP WILL BE MADE THROUGH PERSONAL CONTACT WITH THE DATA PROVIDERS OR OWNERS WHENEVER SUBSTANTIAL USE IS MADE OF THEIR DATA. IN ALL CASES, AN ACKNOWLEDGEMENT MUST BE MADE TO THE DATA PROVIDERS OR OWNERS AND TO THE DATA CENTRE WHEN THESE DATA ARE USED WITHIN A PUBLICATION."	ISO19115 B.2.3 (72)
L→MD_Keywords						
	keyword	String	C	keyword(s) describing the theme of the dataset (select keyword from WMO keyword list on http://www.wmo.int/pages/prog/www/metadata/WMO-keywords.html)	atmospheric composition	ISO19115 B.2.2.3 (53)
	type	CodeList B.5.17	O	subject matter used to group similar keywords (→WIS requires "theme")	theme	ISO19115 B.2.2.3 (54)
L→CI_Citation						
	title	String	O	name of the formally registered thesaurus or a similar authoritative source of keywords (→WIS requires "WMO keyword list, version 1.0")	WMO keyword list, version 1.0	ISO19115 B.3.2.1 (360)
L→CI_Date						
	date	Date	O	reference date for the WMO keyword list: yyyy-mm-dd	2008-06-01	ISO19115 B.3.2.4 (394)

	dateType	CodeList B.5.2	O	event used for reference date (select from dropdown list)	publication	ISO19115 B.3.2.4 (395)
L→CI_OnlineResource						
	linkage	URL	C	web address for keyword list (URL)	http://www.wmo.int/pages/prog/www/metadata/WMO-keywords.html	ISO19115 B.3.2.5 (397)
L→MD_DataIdentification						
	spatialRepresentationType	CodeList B.5.26	O	method used to spatially represent geographic information of the dataset	textTable	ISO19115 B.2.2.1 (37)
	language	String	M	language used within the dataset (→WIS requires english "en")	currently "eng"-->change to "en"?	ISO19115 B.2.2.1 (39)
	characterSet	CodeList B.5.10	C	full name of the character coding standard used for the dataset (select from the dropdown list) (→WIS requires "utf-8")	currently "ISO-8859-1", needs to be changed to "utf8"	ISO19115 B.2.2.1 (40)
	topicCategory	CodeList B.5.27	C	main theme(s) of the dataset (select from dropdown list)	environment	ISO19115 B.2.2.1 (41)
L→EX_Extent						
	description	String	C	description of spatial and temporal extent for the dataset (e.g.: general size of bounding box, temporal period covered etc.)	The bounding box covers the country where dataset was acquired.	ISO19115 B.3.1.1 (335)
L→EX_GeographicExtent						
L→EX_GeographicDescription						
L→ MD_Identifier						
	code	String	C	WMO-region (e.g.: "VI - Europe")	tblDataSeries.StationID > tblStation.RegionID > tblRegion.Region	ISO19115 B.2.7.3 (207)
	code	String	C	country the measurement site is located in (in english)	tblDataSeries.StationID > tblStation.CountryID > tblCountry.Country	ISO19115 B.2.7.3 (207)
	code	String	C	name of the measurement site (station name)	tblDataSeries.StationID > tblStation.Station	ISO19115 B.2.7.3 (207)
L→EX_GeographicBoundingBox						
	westBoundLongitude	Decimal	C	western-most coordinate of the limit of the dataset extent (bounding box), expressed in longitude in decimal degrees (positive east)	tblDataSeries.StationID > tblStation.CountryID > tblCountry.WB_Lon	ISO19115 B.3.1.2 (344)
	eastBoundLongitude	Decimal	C	eastern-most coordinate of the limit of the dataset extent (bounding box), expressed in longitude in decimal degrees (positive east)	tblDataSeries.StationID > tblStation.CountryID > tblCountry.SB_Lat	ISO19115 B.3.1.2 (345)
	southBoundLatitude	Decimal	C	southern-most coordinate of the limit of the dataset extent (bounding box), expressed in longitude in decimal degrees (positive north)	tblDataSeries.StationID > tblStation.CountryID > tblCountry.EB_Lon	ISO19115 B.3.1.2 (346)
	northBoundLatitude	Decimal	C	northern-most coordinate of the limit of the dataset extent (bounding box), expressed in longitude in decimal degrees (positive north)	tblDataSeries.StationID > tblStation.CountryID > tblCountry.NB_Lat	ISO19115 B.3.1.2 (347)
L→EX_TemporalExtent						
	extent	Class	C	ISO19108		ISO19115 B.3.1.3 (351)
	gml:TimePeriod	Class	O	ISO8601		ISO19108
	gml:TimePeriodBegin	Date, B.4.5	O	date and time of period begin for the content of the dataset: yyyy-mm-ddThh-mm-ss	tblDataSeries.SubmissionStart (yyyy-mm-dd)	ISO8601
	gml:TimePeriodEnd	Date, B.4.5	O	date and time of period end for the content of the dataset: yyyy-mm-ddThh-mm-ss	tblDataSeries.SubmissionEnd (yyyy-mm-dd)	ISO8601

	gml:TimePeriod.factor	Integer	O		currently missing-->1???	ISO8601
	gml:TimePeriod.radix	Integer	O		currently missing-->tblDataSeries.DataReporting	ISO8601
	gml:TimePeriod.unit	Code	O	interval unit of measurement (e.g.: month, day, hour etc.)	currently missing--> tblDataSeries.DataReportingUnit	ISO8601
L→EX_VerticalExtent						
			C	→vertical information of instrument		ISO19115 B.3.1.4 (354)
	minimumValue	Real	C	lowest vertical extent contained in the dataset (altitude of the instrument)	tblDataSeries.StationID > tblStation.Elevation	ISO19115 B.3.1.4 (355)
	maximumValue	Real	C	highest vertical extent contained in the dataset (reach of instrument)	tblDataSeries.StationID > tblStation.Elevation	ISO19115 B.3.1.4 (356)
	unitOfMeasure	String	C	unit of measure (→WIS requires "m above sea level")	m above sea level	ISO19115 B.3.1.4 (357)
	VerticalCRS	Index	O			ISO19136, ISO19139
	VerticalCRS	Class	O			ISO19136, ISO19139
	VerticalCRS	Description	O		m above sea level	ISO19136, ISO19139
	VerticalCRS	DescriptionRef	O			ISO19136, ISO19139
	VerticalCRS	Identifier	O		WGS84	ISO19136, ISO19139
	VerticalCRS	Scope	O		0-50000	ISO19136, ISO19139
	VerticalCRS	VerticalCS	O			ISO19136, ISO19139
	VerticalCRS	VerticalDatum	O			ISO19136, ISO19139
L→Content Information (MD_Metadata > contentInfo)						
L→MD_CoverageDescription						
			O			ISO19115 B.2.8.1 (239)
	attributeDescription	RecordType	C	parameter name	tblDataSeries.ParameterID > tblParameters.Parameter	ISO19115 B.2.8.1 (240)
	contentType	CodeList B5.12	C	type of information represented by the cell value (select from dropdown list)	physicalMeasurement	ISO19115 B.2.8.1 (241)
L→Distribution Information (MD_Metadata > distributionInfo)						
L→MD_Distribution						
L→MD_Format						
			O			ISO19115 B.2.10.1 (270)
			O			ISO19115 B.2.10.4 (284)
	name	String	C	name of the data transfer format (e.g.: netcdf, hdf, ascii etc.)	tblDataSeries.Source > tblDataCenter.DataFormat	ISO19115 B.2.10.4 (285)
	version	String	C	version number of the transfer format	tblDataSeries.Source > tblDataCenter.DataFormatVersion	ISO19115 B.2.10.4 (286)
L→MD_FormatDigitalTransferOptions						
			O			ISO19115 B.2.10.2 (274)
	transferSize	Real	O	estimated size of a unit in the specified transfer format, expressed in megabytes. The transfersize is > 0.0		ISO19115 B.2.10.2 (276)
L→CI_OnlineResource						
			O			ISO19115 B.3.2.5 (396)
	linkage	URL	O	link to the data file (URL) (e.g.: http://ebas.nilu.no/Pages/DataSetList.aspx?key=5CDED20FD7374D4982F41B0097B604E8)	tblDataSeries.DataURL	ISO19115 B.3.2.5 (397)
	protocol	String	O	connection protocol to be used	WWW:LINK-1.0-http--link	ISO19115 B.3.2.5 (398)
	description	String	O	detailed text description of what the online database is/does		ISO19115 B.3.2.5 (401)
	function	CodeList B.5.3	O	code for function performed by the online database (select from dropdown list)		ISO19115 B.3.2.5 (402)
L→Data Quality Information (MD_Metadata > dataQualityInfo)						
L→DQ_DataQuality						
L→DQ_Scope						
			C			ISO19115 B.2.4.1 (78)
			C			ISO19115 B.2.4.5 (138)
	level	CodeList B.5.25	C	scope to which the metadata applies: (→WIS requires "dataset" or "series", where "series" describes a collection of single datasets)	series	ISO19115 B.2.4.5 (139)
L→LI_Lineage						
			C			ISO19115 B.2.4.2.1 (82)
	statement	String	C	general explanation of the data producer's knowledge about the lineage of a dataset (e.g.: general statement on data correction, quality control etc.)	The data is subject to quality control according to specific procedures of the data origin	ISO19115 B.2.4.2.1 (83)
L→LI_ProcessStep						
			C			ISO19115 B.2.4.2.2 (86)

	description	String	C	description of the correction/quality control measures, including related parameters or tolerances <i>(i.e.: description of QA/QC procedures used in the validation of the data)</i>	The data might further be quality controlled by the GAW WDC, see quality flags.	ISO19115 B.2.4.2.2 (87)
L→Maintenance Information (MD_Metadata > metadataMaintenance)						ISO19115 B.2.1 (22)
L→MD_MaintenanceInformation						ISO19115 B.2.5.1 (142)
	maintenanceAndUpdateFrequency	CodeList B.5.18	C	frequency with which changes and additions are made to the dataset after the initial dataset is completed		ISO19115 B.2.5.1 (143)