Sections and Section Attributes in the CMIP6 Data Request

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1.1 Model Intercomparison Project [mip]

Model Intercomparison Project

Label	Title	Description	Type
label	MIP short name	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	MIP title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Description of the Model Intercomparison Project	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
url	Project Home Page	Link to external site	`xs:string`

1.2 MIP Variable [var]

Each MIP variable record defines a MIP variable name, associated with a CF Standard Name.

Label	Title	Description	Type
label	Variable Name	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Long name	This value is used as the long_name variable attribute in the NetCDF files. It should conform to the data request style guide for titles.	`xs:string`
description	Record Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
procComment	Processing Comments	Free text comment about processing of the variable.	`xs:string`
procnote	Processing Notes	Space separated list of keywords.	`aa:st__stringList`

Label	Title	Description	Type
prov	Notes on Provenance of Variable Specifications	Information on the provenance of the specification of this variables.	`xs:string`
provmip	MIP Defining this Variable	The MIP responsible for the original definition of this quantity	`xs:string`
sn	CF Standard Name	The CF Standard Name is part of an extensive vocabulary maintained within the CF Convention.	`xs:string`
unid	Link to Units section	Link to a unit description record.	`xs:string`
units	Units of Measure	The units in which the variable is to be measured, as a short text string. They must conform with the canonical units of the CF Standard Name. A link to a record describing the units in more detail is given be the unid attribute.	`xs:string`

1.3 CMOR Variable [CMORvar]

Each Output variable record corresponds to a MIP table variable specification. In a change from the August draft, this record does not contain the 'priority' attribute: the priority is now set in the 'Request Variable' record. The other change is that a collection of attributes specifying dimensions etc have been moved into the 'structure' record, and each CMOR Variable record links to one structure record. This will fa-cilitate provision of clear and consistent definitions of output formats.

Label	Title	Description	Type
label	CMOR Variable Name	When there are multiple options for a variable within one CMOR table, each option must be given a unique CMOR name in this attribute. If there is only one option, the CMOR name should equal the value of the label in the MIP variable record referred to by the vid attribute.	`xs:string`
title	Long name	The long name is used as the long_name variable attribute in the NetCDF files.	`xs:string`
description	Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`

Label	Title	Description	Type
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
defaultPriority	Indicative priority for this parameter, which is over-ruled by the requestVar priority setting, but provides a reference for organisation of the CMORvariables	For the priority of requested data, the priority attribute of the requestVar section should be used.	`xs:integer`
deflate	Deflate: NetCDF compression parameter	Obsolete, not used in CMIP6.	`xs:string`
deflate_level	Deflate Level: NetCDF compression parameter	Obsolete, not used in CMIP6.	`xs:string`
frequency	Frequency of Time Steps to be Archived	See https://earthsystemcog.org/projects/wip/time_of_day for details of time of day for sub-hourly frequencies.	`xs:string`
mipTable	The MIP table	Each table identifies a collection of variables with a common frequency.	`xs:string`
mipTableSection	Section of a table	Some MIP tables are divided into subsections containing different categories of variables.	`xs:string`
modeling_realm	Modeling Realm	A string that indicates the high level modeling component which is particularly relevant. Note that sometimes a variable will be equally (or almost equally relevant) to two or more realms, in which case a primary realm is assigned as the first listed and other relevant realms follow in a space separated list.	`xs:string`
mtid	Link to MIP table record	A link to the record for the MIP table identified by the mipTable attribute.	`xs:string`

Label	Title	Description	Type
positive	CMOR Directive Positive	For any variable where the DREQ has specified a value for 'positive', CMOR requires users to say whether the data they're giving CMOR assumes 'positive is up' or 'positive is down'. If the user's direction is opposite what is requested by DREQ, CMOR multiplies the data by -1 before storing it, so that it will conform with the specifications.	`xs:string`
processing	Processing Notes	Processing notes (questions and issues)	`xs:string`
prov	Provenance	Provides some indication of the origins of the parameter definition (e.g. the MIP responsible for first defining the variable). Once defined, a variable may be requested by multiple MIPs.	`xs:string`
provNote	Provenance Note	Additional information on provenance, intended to be machine interpretable.	`xs:string`
rowIndex	Row index of entry in source sheet	Information about source of information.	`xs:integer`
shuffle	Shuffle: NetCDF compression parameter	Obsolete, not used in CMIP6.	`xs:string`
stid	Link to a record specifying the structure of the variable	Link to a record describing the structure of the variable (e.g. spatial and temporal dimensions).	`xs:string`
subGroup	Sub-group of variables in a table	Identify a sub-group, for ease of processing. A sub-group can be copied to a request variable group.	`xs:string`
type	Data value type, e.g. float or double	Data type is specified using Fortran code words: character, double, integer, real	`aa:st__fortranType`
vid	MIP Variable	The MIP Variable specifies the physical quantity.	`xs:string`

1.4 Request variable (carrying priority and link to group) [requestVar]

The request variable is now a short record which combines a CMOR variable with a priority and assigns it to a request group.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
mip	Endorsed MIP	Name of the Model Intercomparison Project requesting this variable.	`xs:string`
priority	Variable priority	The priority of the variable (1: high, 2: medium or 3: low). An indication of the importance of the variable for the science team requesting it.	`xs:integer`
vgid	Identifier for Variable Group	Link to a requestVarGroup record.	`xs:string`
vid	Identifier for MIP Output Variable	Link to a CMORvar record.	`xs:string`

1.5 Experiments [experiment]

The experiment record contains the key information from the 'Experiment' sheet of the request template, including the tier of the experiment, the duration and start and end dates.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
comment	Comment	Additional information about this experiment group.	`xs:string`

Label	Title	Description	Type
egid	Identifier for experiment group	Link to the exptgroup record associated with this experiment. Each experiment belongs to one experiment group.	`xs:string`
endy	End year	End year specified for the experiment. This is a string. Fit may contain a year or an explanation which makes reference to another experiment, e.g. 'Year 140 of abrupt4xCO2'.	`xs:string`
ensz	Ensemble size	Default ensemble size, excluding multiple start times. Total number of model executions will be nstart time ensz. Note that some MIPs may request data from more than the default ensemble size.	`aa:st__integerListMonInc`
mcfg	Model Source Types	Specifies the model source types which are required/allowed for this experiment (see https://github.com/WCRP-CMIP/CMIP6_Cvs/blob/master/CMIP6_source_type.json). Syntax is a space separated list of required source types, follwed by a | and a space separated list of additional allowed source types.	`xs:string`
mip	MIP defining experiment	Link to a record defining the primary Model Intercomparison Project responsible for the definition of this experiment.	`xs:string`
nstart	Number of Start Dates	For experiments with multiple start times, this gives the number of start times requested. Set to '1' otherwise.	`xs:integer`
ntot	Total number of years	Depricated. Initially used as an estimate of number of years.	`xs:integer`
starty	Start year	Start year specified for the experiment. This is a string. Fit may contain a year or an explanation which makes reference to another experiment, e.g. 'Year 111 of abrupt4xCO2'.	`xs:string`

Label	Title	Description	Type
tier	Tier of Experiment	Experiments are assigned a tier by the MIP specifying the tier, tier 1 experiments being the most important.	`aa:st__integerListMonInc`
yps	Years per Simulation Including all Start Years	The number of years per simulation, including all start years. Equal to ES-DOC min_number_yrs_per_sim times nstart.	`xs:integer`

1.6 Scientific objectives [objective]

The objectives defined by each MIP can be used to select data requirements.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
mip	Endorsed MIP	Link to Model Intercomparison Project with this objective.	`xs:string`

1.7 Specification of dimensions [grids]

Dimensions used by variables in the data request

Label	Title	Description	Type
label	CMOR dimension	Unique label	`xs:string`
title	long name	Used for the variable long_name attribute	`xs:string`
description	description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`

Label	Title	Description	Type
uid	Identifier	*Identifier, unique within a given version of the data request.*	aa:st__uid
altLabel	output dimension name	Name used for the dimension in NetCDF files	xs:string
axis	axis	For spatial or temporal dimensions, set to X, Y, Z or T.	xs:string
bounds	bounds?		xs:string
boundsRequested	bounds_ requested		aa:st__floatList
boundsValues	bounds _values		xs:string
coords	coords_attrib		xs:string
direction	stored direction	decreasing, increasing or empty	xs:string
isGrid	grid?		xs:string
isIndex	index axis?	Set to 'OK' if the axis is an index axis with no coordinate values. Used, for example, for the generic vertical coordinates in the atmosphere, 'alev'.	xs:string
positive	positive		xs:string
requested	requested		xs:string
standardName	standard name	Standard Name from the CF Conventions, used for the standard_name attribute of the axis variable.	xs:string
tables	CMOR table(s)	List of tables which make use of this dimension	xs:string
tolRequested	tol_on_requests: variance from requested values that is tolerated		xs:string
type	type	Data type is specified using Fortran code words: character, double, integer, real	aa:st__fortranType
units	units	Units of measure used for the axis data variable.	xs:string
valid_max	valid_max		xs:float
valid_min	valid_min		xs:float
value	value of a scalar coordinate	This attribute is only for scalar coordinates. Otherwise use *requested*	xs:string

1.8 CF Standard Names [standardname]

CF Standard Names (copied into data request to facilitate validation, particularly validation of consistency of definition in the CF standard with usage in the data request).

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Record Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	CF Standard Name	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
units	Canonical Units	The canonical units provide reference unit of measure. Any variable using the standard name should us units which conform with the canonical units. For example, if the canonical units are 'm' (metres) then 'km' (kilometres) would be valid variable units.	`xs:string`

1.9 Experiment Group [exptgroup]

The experiment group defines a collection of experiments within a MIP which might be part of a collective data request.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
ntot	Total number of years	Total number of simulation years associated with experiments in this group.	`xs:integer`

Label	Title	Description	Type
tierMin	Minimum tier of experiments in group	Minimum tier of experiments associated with this group.	`xs:integer`

2.1 Spatial dimensions [spatialShape]

The spatial shape record contains the spatial dimensions of the field, and also, for convenience, an integer specifying the number of levels if that number is specified. A boolean level flag is set to 'true' if the number of vertical levels is specified.

Label	Title	Description	Type
label	Record Label	A string of the form 'hh-vv' where 'hh' and 'vv' are short mnemonics for the horizontal and vertical structure respectively, each set to 'na', for 'not applicable', if there are no relevant dimensions.	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
dimensions	List of spatial dimensions	List of the labels of dimension attributes (redundant with dimids).	`xs:string`
dimids	Identifiers for records in grids section	List of links to dimensions specified by records in the grids section.	`aa:st__stringList`
levelFlag	Flag set to *false* if number of levels is optional (e.g. determined by the model)	True is there is a fixed number of levels specified by the 'levels' attribute.	`xs:boolean`
levels	Number of vertical levels (ignored if levelFlag=false)	The number of vertical levels, if fixed.	`xs:integer`

2.2 Temporal dimension [temporalShape]

The temporal shape record contains the temporal dimensions.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
dimensions	Dimensions	List of the labels of dimension attributes (redundant with dimids).	`xs:string`
dimid	Identifiers for record in grids section	List of links to dimensions specified by records in the grids section.	`xs:string`

2.3 Dimensions and related information [structure]

The structure record combines specification of dimensions, cell_measures and cell_methods attributes. Spatial and temporal dimensions are specified through links to 'spatialshape' and 'temporalshape' records.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`

Label	Title	Description	Type
cell_measures	Cell Measures	This can be either a string value for inclusion in the NetCDF variable attribute cell_measures, or a directive. In the latter case it will be a single word, –OPT or –MODEL. The first of these indicates that the data may be provided either on the cell centres or on the cell boundaries. –MODEL indicates that the data should be provided at the cell locations used for that variable in the model code (e.g. cell vertices).	`xs:string`
cell_methods	Cell Methods	Text for the NetCDF cell_methods attribute: describes processing used to generate the data values (redundant with cmid).	`xs:string`
cids	Identifiers for records in grids section for coordinates	List of links to the records defining coordinates (dimensions referenced from the variable coordinates attribute).	`aa:st__stringList`
cmid	Link to Cell Methods Record	Link to a cell methods record.	`xs:string`
coords	Coordinates	List of labels of coordinates. Redundant with cids.	`xs:string`
dids	Identifiers for records in grids section for dimensions	List of links to the records defining dimensions other than spatial and temporal dimensions.	`aa:st__stringList`
flag_meanings	FLag Meanings	If present, specifies values to be inlcuded in the 'flag_meanings' attribute.	`xs:string`
flag_values	Flag Values	If present, specifies values to be inlcuded in the 'flag_values' attribute.	`xs:string`
odims	Other Dimensions	Dimensions other than temporal and spatial dimensions (redundant with dids).	`xs:string`
procNote	Processing Note	This is used to specify the category of structure. One of: areaType, areaTypeP, glsl, glslp, glslo, gm, h2mcm, misc, oneLevel, xyz, icesheet, xyzplus, zonaletc.	`xs:string`
prov	Provenance	Information about the origins of this record.	`xs:string`

Label	Title	Description	Type
spid	Spatial Shape		`xs:string`
tmid	Temporal Shape	Link to a temporalShape record, defining the temporal dimensions.	`xs:string`

2.4 MIP tables [miptable]

The MIP tables are used to organise the variables. Each variable in a MIP table must have a unique output name (defined by the label of the var record associated with each CMORvar record). The structure of the MIP tables has evolved as the request has expanded from CMIP3 through CMIP5 to CMIP6. The naming convention for the CMIP6 tables is described on the WIP [https://earthsystemcog.org/projects/wip/mip_table_about MIP Tables in the CMIP6 Data Request] page.

Label	Title	Description	Type
label	Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
altLabel	Alternative Label	Depricated: holds old form of the table label. Used for tracking changes.	`xs:string`
comment	Comment	Comment about the table.	`xs:string`
frequency	Frequency	Frequency of data variables defined in this table.	`xs:string`

3.1 Request variable group: a collection of request variables [requestVarGroup]

A group of request variables, or a table, which can be referred to from a request link.

Label	Title	Description	Type

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
mip	Endorsed MIP defining the variable group	Link to the MIP which specified this collection of variables. The collection may be re-used by other MIPs through the requestLink records.	`xs:string`
ref	Reference	Information about the origins of this group	`xs:string`
refNote	Reference Note	Further information about the origins of this group.	`xs:string`

3.10 Indicates variables for which a there is a range of potential CMOR Variables [varChoice]

There are several instances where variables defined in the tables are mutually exclusive options of which only one should be requested. The varChoice section is designed to hold this information, but is not yet complete. Examples are between ocean cell volume on a fixed grid for some models and monthly means for others, or between 6 hourly pressure level data on 8 levels vs. 4 levels for different objectives in the HighResMIP request. If the choiceClass in ConfigurationOptionSet the record should be linked to by one or more varChoiceLinkC records. If the choiceClass is RedundancySet the record should be linked to by one or more varChoiceLinkR records.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Record description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`

Label	Title	Description	Type
choiceClass	Class of choice: heirarchy|cfg	Specifies which class of choice this is. 'ConfigurationOptionSet' (a set of variables for which the choice depends on some aspect of model configuration) or 'RedundancySet' (a set of variables which have some mutual redundancy, such as having overlapping sets of pressure levels).	`xs:string`
optionList	A list of options, one for each variable	Redundant attribute: instructions are taken from rank attribute of varChoiceLinkR records.	`xs:string`
varList	A colon separated list of variable names	A list of the labels of the variables associated with this choice.	`xs:string`

3.11 Time Slices for Output Requests [timeSlice]

Time slices are used in some cases where some diagnostics required only for a subset of the years computed.

Label	Title	Description	Type
label	Record Label	Mnemonic label for record	`xs:string`
title	Record Title	Title of record	`xs:string`
description	Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Unique identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
child	Child experiment	For type branchOffsetRange, the child attribute carries the name of the experiment which is branched. The time range is then specified in terms of the years in the child experiment.	`xs:string`
end	End year	Last year of the time slice. Blank if a startList is given.	`xs:integer`
nyears	Total number of years	Total number of years. Leave blank for dayList. For sliceList, the number of discrete slices is given by nyears divided by sliceLen. Otherwise, nyears should be equal to start minus end plus one.	`xs:float`

Label	Title	Description	Type
sliceLen	Length of slice	Length of slice if less than the full range from start to end. Units specified by 'sliceLenUnit' if present, otherwise in years.	`xs:integer`
sliceLenUnit	Units of slice length	The units used to specify the slice length. Set to years if left blank.	`xs:string`
start	Start year	First year of the time slice. Blank if a startList is given.	`xs:integer`
startList	Optional list of start times.	If type is 'dayList', then a list of (year,month,day) triples can be specified. E.g. '1850 1 1 1850 4 1' for first January and April 1850. If this value is given, start and end attributes should be empty.	`aa:st__integerList`
step	Step (years)	The step, in years, between different years in a 'yearList' or different start years in a 'sliceList' or 'sliceListExt'.	`xs:float`
type	Type of time slice	This is a string indicating how the year selection is described: 'simpleRange' is a single span of years indicated by a start and duration; 'yearList' is a collection of single years indicated by a start, number of years and a step; 'sliceList' is a list of multi-year time slices, indicated by a start year, a slice length, a total number of years (which must be an integer multiple of the slice length) and a step between slice starts; 'dayList' specifies a list of days as y/m/d triples; 'monthlyClimatology' implies 12 monthly values averaged over a specified range of years; 'relativeRange' specifies a range of years relative to the start of the simulation; 'branchedYears' specifies a list of years relative to a time in a branched experiment.	`aa:st__sliceType`

3.2 Request Item: specifying the number of years for an experiment [requestItem]

The request item links a collection of variables with a specific experiment or group of experiments, and a temporal range for output. The 'esid' attribute links to an experiment, and experiment group or a MIP. In the latter case, the request applies to all experiments defined by that MIP.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
esid	A link to an experiment, an experiment group or a MIP	This links to an individual experiment, to an experimentGroup, specifying a collection of experiments, or to a MIP. If it links to a MIP it means that the request applies to all experiments defined by that MIP.	`xs:string`
esidComment	Comment on experiment(s) linked to.	An explanatory commemt for the esid attribute.	`xs:string`
expt	Name of experiment or group of experiments	This is redundant: the information is provided through the esid link.	`xs:string`
mip	The MIP making the request.	Model Intecomparison Project associated with the requestItem. Redundant because this is specified through the requestLink.	`xs:string`
nenmax	Number of ensemble members requested.	If set to -1 then the request applies to to all the ensemble members specified in the ensz attribute of the experiment or experiments associated with the request. Note that ensz is a default ensemble size, and nenmax may be greater if one MIP wants more than the default number of ensembles.	`xs:integer`
nexmax	Maximum number of experiments requested.	Used to provide volume estimate before the links to experiment groups was fully functional.	`xs:integer`

Label	Title	Description	Type
ny	Default number of years.	Default number of years, only used if experiment specifications are incomplete: will be redundant in final request.	`xs:integer`
nymax	Number of years requested.	Number of years specified by the requesting MIP (will be redundant when links to temporal slices are fully implemented).	`xs:float`
preset	Option to override priority set in each variable group	If, for example, preset is set to 2, all priority one variables in the variable group associated with this request are treated as priority 2 variables.	`xs:integer`
rlid	Identifier of Corresponding Request Link	Link to a requestLink record, which makes the connection to a variableGroup and a set of objectives.	`xs:string`
tab	Redundant?	Redundant attribute ...	`xs:string`
treset	Option to override tier set for experiment(s)	If, for example, treset is set to 1, all tier 2 and 3 experiments associated with this request are treated as tier 1 variables.	`xs:integer`
tslice	Selection of years from experiment	Optional link to a time slice specifier which will define subset of the years from an experiment.	`xs:string`

3.3 Request link: linking a set of variables and a set of experiments [requestLink]

The request link records specify some additional information about variable groups, concerning shared output requirements and objectives.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
comment	Comment	Comment on the requestLink record.	`xs:string`

Label	Title	Description	Type
grid	Grid options	Specified required or preferred (depending on the value of gridreq) horizontal grid. Options: native (for model grid), 1deg, 2deg, 8 to 25km (8km preferred, less than 25km required), 5 to 25km (5km preferred, less than 25km required), blank (no prerefence).	`xs:string`
gridreq	Grid option constraints	Is the grid specified by the grid attribute optional (yes) or (no), conditionally (no*1 – used for ocean data, when native is required only from models using a regular grid)	`xs:string`
mip	Endorsed MIP requesting the data	Link to record defining the MIP using this record.	`xs:string`
objective	Science objectives associated with this request	Every request for model ouput is linked to one or more objectives. The XML link is made via objectiveLink records, each of which associates one requestLink with one objective record.	`xs:string`
opar	parameter associated with *opt*	Parameter associated with 'opar'. If 'opar' is 'priority' it should be set to '1', '2', or '3'.	`xs:string`
opt	Option for selecting a subset of variables	Option for specifying that only a subset of the variables specified in the requestVarGroup should be used. This option is designed to enable the re-use of groups when an easily identified subset of an existing group is wanted. Forreen completed at the request compilation stage. If 'prioirty' is specified, then only variables with priority less than the value specified by 'opar' should be used.	`xs:string`
ref	Reference	Not used.	`xs:string`
refNote	Note on reference	A comment on the provenance of the record.	`xs:string`
refid	Reference to a request Variable Group	Link to the requestVarGroup record defining the variables associated with this requestLink.	`xs:string`
tab	Redundant	A redundant attribute.	`xs:string`

3.4 CMOR Table Sections [tableSection]

Section of a MIP tables

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
gpid	Identifier for CMOR Tables	Link to a record defining a CMOR table.	`xs:string`
mip	Project	Redundant. Specification of a MIP.	`xs:string`
ref	Reference	Comment on provenance.	`xs:string`
refNote	Note on reference	Further information on provenance.	`xs:string`

3.5 Model configuration options [modelConfig]

Configuration options for models

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
MIPs	MIPs which make use of this feature	List of MIPs using this option.	`xs:string`
range	Range of valid values, e.g. xs:boolean	Specification of the value type, e.g. 'xs:boolean'.	`xs:string`

Label	Title	Description	Type
type	Type of model	A categorisation of model configuration options: capability (indicating whether a model has a specific capability); size (indicating a size, such as number of grid points); category (inidcating a type of model); ioOption (indicating a choice taken regarding IO).	`aa:st__configurationType`
usage	How the feature is relevant to the data request	Usage notes.	`xs:string`

3.6 Links a variable to a choice element [varChoiceLinkC]

Link between a variable choice element and variables

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
cfg	Configuration Value	Gives the configuration option value for which the variable linked from thos record should be used.	`xs:boolean`
cfgid	Configuration Option	A link to a record defining a model configuration options. Configuration options should be defined so that they are either True of False when a model is configured for execution. E.g. does the model have a Boussinesq ocean?	`xs:string`
cid	Choice – can provide a link to related variables	Link to a record which identifies the collection of related variables associated with this configuration option.	`xs:string`
vid	Variable	Link to a variable which should be treated as requested if the configuration option is appropriately set.	`xs:string`

3.7 Link between scientific objectives and requests [objectiveLink]

Each objective link record joins one objective to one request link. Some requests are linked to multiple objectives and most objectives are linked to multiple requests.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
oid	Identifier for a scientific objective		`xs:string`
rid	Identifier for a request link		`xs:string`

3.8 Remarks about other items [remarks]

The remarks section contains additional comments about other records. It can be used to add detail without adding to the complexity of the other sections.

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Free text remarks – unless there are specific restrictions associated with the class attribute of this remark	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`

Label	Title	Description	Type
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
class	Class categorisation of remarks	Different classes of remark support a range of specialised usages: free (a free text comment), modelTypeReq (a model type requirement), modelTypeExcl (a model type exclusion), varAlt (an alternative variable that my be used instead of this one), varSup (an alternative variable which, if selected makes this one redundant), attChange (a change in the value of an attribute – old value provided in 'techNote').	`xs:string`
prov	Provenance		`xs:string`
qid	Identifier linking to a related record.	Identifier required for classes modelTypeReq, modelTypeExcl, varAlt, varSup. For the first two classes, the identifier points to a model type specification, for the last two it points to an output variable specification.	`xs:string`
tattr	Target attribute: an attribute of the target item, or 'ALL'		`xs:string`
techNote	Optional additional machine readable content (though not restricted by the schema)		`xs:string`
tid	Target identifier: the record ID of the item this refers to.		`xs:string`

3.9 Links a variable to a choice element [varChoiceLinkR]

Link between a variable choice element and variables

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
cid	Choice		`xs:string`
rank	For ranked choices, the rank of this variable (higher rank makes lower ranks redundant)		`xs:integer`
vid	Variable		`xs:string`

7.1 Cell Methods [cellMethods]

Description of cell methods entries

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
description	Record Description	*An extended description of the object/concept. Specialization of SKOS definition.*	`xs:string`
uid	Record Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
cell_methods	Cell Methods String	The string to be used in the NetCDF cell_methods attribute	`xs:string`

Places, States or Reservoirs [places]

An abstract entity defining an extensive quantity of something, e.g. liquid water, suspended carbon.

Label	Title	Description	Type
label	Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
matter	Substance		`xs:string`
mip	Model Intercomparison Project (MIP)		`xs:string`
pid	Parent Entity	A place, state or reservoir containing this one.	`xs:string`
vid	Variable Identifier		`xs:string`

Quality Control Ranges [qcranges]

Data ranges for use in quality control

Label	Title	Description	Type
label	Record Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Record Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Record identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
comment	Comment		`xs:string`
ok_max_mean_abs	Maximum expected value of the global mean absolute value at each point in time	This value, if set, will be used in quality control tests, and files containing data values above this value will be marked as containing errors.	`xs:float`

Label	Title	Description	Type
ok_max_mean_abs_status	Status of ok_mx_mean_abs	Indicates the degree of confidence in the value ok_max_mean_abs provided. Valid values are robust, suggested or tentative. Robust values are based on previous results from a broad range of models with consistent output or on clear physical constraints.	`xs:string`
ok_min_mean_abs	Minimum expected value of the global mean absolute value at each point in time	This value, if set, will be used in quality control tests, and files containing data values above this value will be marked as containing errors.	`xs:float`
ok_min_mean_abs_status	Status of ok_min_mean_abs	Indicates the degree of confidence in the value ok_min_mean_abs provided. Valid values are robust, suggested or tentative. Robust values are based on previous results from a broad range of models with consistent output or on clear physical constraints.	`xs:string`
prov	Provenance		`xs:string`
url	Link to review page	Link to a web page providing background information.	`xs:string`
valid_max	Maximum expected value for this variable.	The maximum expected value will be used, if set, in quality control tests, and files containing data values above this value will be marked as containing errors.	`xs:float`
valid_max_status	Status of valid_max	Indicates the degree of confidence in the valid_max value provided. Valid values are robust, suggested or tentative. Robust values are based on previous results from a broad range of models with consistent output or on clear physical constraints.	`xs:string`
valid_min	Minimum expected value for this variable.	The minimum expected value will be used, if set, in quality control tests, and files containing data values below this value will be marked as containing errors.	`xs:float`

Label	Title	Description	Type
valid_min_status	Status of valid_min	Indicates the degree of confidence in the valid_min value provided. Valid values are robust, suggested or tentative. Robust values are based on previous results from a broad range of models with consistent output or on clear physical constraints.	`xs:string`
vid	Variable	Link to variable record	`xs:string`

Transfers of Material [transfers]

Quantities expressing the transfer of material from one 'place' to another.

Label	Title	Description	Type
label	Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
frid	Source Identifier	Identifier of the 'place' that the flux is from.	`xs:string`
isOneWay	Unidirectional Flag	Set true if the flux is associated with a physical process which only transfers mass in one direction. E.g.	`xs:boolean`
mip	Model Intercomparison Project (MIP)		`xs:string`
signInverted	Sign Inversion	Sign Inverted should be set True for one way fluxes if the variable is defined to be negative definite. The competing constraints of CF Standard Name protocols and domain usage can cuase problems with the sign convention.	`xs:boolean`
toid	Target Identifier	Identifier of the 'place' that the flux is to.	`xs:string`
vid	Variable Identifier	Identifier of the 'CMORvar' associated with the flux.	`xs:string`

Units [units]

The units of the parameters defined in the var section

Label	Title	Description	Type
label	Label	*A single word, with restricted character set. Specialization of SKOS prefLabel.*	`xs:string`
title	Title	*A few words describing the object. Specialization of Dublin Core title.*	`xs:string`
uid	Identifier	*Identifier, unique within a given version of the data request.*	`aa:st__uid`
group	Group	A group, designated by a string value, expresses a relationship between units.	`xs:string`
text	Text representation of units	Plain text representation with no special characters	`xs:string`