GATEWAY 2013-2020 (GARCHING, GERMANY)

Version	Date	Changes	New CPOs	Revised CPOs (non backward compatible changes)	Kepler version	UAL updates
4.10b (tags/4.10b.3)	12/05/2014 (test release)	Uses a merge of 4.10a.4, 4.10a.3.2, 4.10a.3.complex.2, 4.10test and other IMP based requests. Creates backward incompatibilities for “general grid” data (parts of this complex type have become time-dependent) and complex numbers (have become intrinsic types instead of a structure previously). Backward compatible changes in: NEOCLASSIC: addition of 4 fields from Twiki notes (Basiuk) CORENEUTRALS: neutcompo marked as obsolescent CORESOURCE, CORETRANSPORT, CORENEUTRALS, COREIMPUR, COREDELTA: addition of more fields for the radial grid (volume, area, psi) SCENARIO: new version copied from datastructure/branches/4.10test: new fields for divertor and more precise definitions PFSYSTEMS: added new fields describing the internal structure of the central solenoid and currents flowing into passive structures ANTENNAS: new fields CXDIAG, ECEDIAG: new appinfo tags to have some nodes both in MD and DM	COREFAST (timed) NTM (timed) BB_SHIELD (non-timed) POWER_CONV (non-timed) HEAT_SOURCES (non-timed) TEMPORARY (timed) SOLCURDIAG (timed)	All CPOs that were using the general grid type and complex numbers are not backward compatible with 4.10a.3 pulse files. In addition: AMNS: REFERENCE: deprecated and replaced by a unique TEMPORARY CPO, to serve both for internal state and references in general REFLECTOMET: LIMITER and VESSEL CPOs have been removed FUSIONDIAG: MSEDIAG: WALL:	2.4 (new version + central installation)	New R2 branch: based on R1c (handling of intrinsic complex number types) merged with R1.2 branch. This UAL engine is normally fully backward compatible with 4.10a.3.

				TOROIDFIELD: revised the desc_tf_coils node to allow for different inboard/outboard characteristics SUMMARY CPO has been removed MHD: DISTRIBUTION : DISTSOURCE : NBI : WAVES : PELLETS :		
4.10a (tags/4.10a.3)	22/01/2013	Derived from tags/4.10a.2 which was the datastructure version in operation at the Innsbruck December 2012 code camp (last code camp of the previous Gateway) REFLECTOMET ADDED (from tags/4.10b-dev) Revisions of ECEDIAG/Setup (from trunknew) SCENARIO: corrected one definition EQUILIBRIUM: added rho_mass in profiles_1d WALL: added the wall0d structure (from branches/edrg/4.10b)	REFLECTOMET	ECEDIAG	2.3	No major update

GATEWAY 2008-2012 (PORTICI, ITALY)

Version	Date	Changes	New CPOs	Revised CPOs (non backward compatible changes)	Kepler version	UAL updates
Working 4.10b-dev	17/10/2012	Derived from trunk / 4.10a of October (rev 322) REFLECTOMET ADDED	REFLECTOMET	ECEDIAG	2.3	No major update
4.10a	15/05/2012 ANTENNAS CPO modified again 12/07/2012 Last August modifications: CORENEUTRALS, UTILITIES (compositions), ECEDIAG, AMNS, And many others bug corrections in EDRG CPOs, release pending ECEDIAG: setup modified (reporté en 4.10a en août …)	AMNS: Added a few fields ANTENNAS: restructuring of antennas_units into ec, ic, lh CORE*: rho_tor_norm becomes time-dependent COREDELTA: complete restructuring to allow for several deltas grouped in the CPO (array of structure) CORESOURCE: complete restructuring to allow for several sources grouped in the CPO (array of structure) + add total JxB torque COREPROF: added descimpur structure and other new fields CORETRANSP: complete restructuring to allow for several deltas grouped in the CPO (array of structure) DISTRIBUTION: restructuring of f_expansion to use complex grid types, enum_instances DISTSOURCE: added new fields EQUILIBRIUM: array of structure for profiles_2d EQUILIBRIUM/eqprofiles2D: added phi to profiles_2d EQUILIBRIUM/eqgeometry: added new fields EQUILIBRIUM/eqprofiles: added dvdrho	EFCC HALPHADIAG LITHIUMDIAG PELLETS RFADIAG WALL (nb: redundant information with LIMITER CPO)	ANTENNAS COREDELTA CORESOURCE CORETRANSP COREIMPUR CORENEUTRALS DISTRIBUTION FUSIONDIAG MSEDIAG MHD WAVES	2.3	Includes memory caching

		FUSIONDIAG: complete redesign of the CPO NBI: small addition MHD: use new complex number type for 3D arrays PFPASSIVE: added a few fields PHASE4TOP: add new CPOs UTILITIES: add Identifier, Enum_Instance, weighted_marker complex types. Small additions in complex_grid and complex_grid_scalar. Introduced a temporary structure for complex numbers. WAVES: added representation of the wavefield in terms of complex grid elements				
4.09b	09/03/2012	Same data structure as 4.09a			2.2 with revised UAL actors for memory caching	Includes memory caching
4.09a	20/05/2011 NB: MDS+ model files updated to 10 occurrences of the MHD CPO in December 2011	MHD, WAVES, EDGE, UTILITIES : new error corrected PHASE4TOP : increase again MaxOccurs for SCENARIO and TOROIDFIELD SCENARIO : a few corrections EDGE : complete rewriting AMNS, LIMITER : go to array of structures TURBULENCE : Added var4d and var5d TOROIDFIELD : Added desc_tfcoils subtree. TSDIAG : setup/position is now an RZphi1D (add toroidal position) MHD : add wall elements + correct typo PHASE4TOP : reduce the number of maximum occurrences for several CPOs ANTENNAS, DISTRIBUTION, DISTSOURCE, NBI,	LANGMUIRDIAG FUSIONDIAG	AMNS ANTENNAS DISTRIBUTION DISTSOURCE EDGE LIMITER MHD NBI SCENARIO (minor revision) WAVES	2.2	

		WAVES : converted to arrays of structure LAUNCHS : minor change UTILITIES : minor changes + removed all default values + included gridutilities for complex grids in it EQPROFILES : definitions clarified + removed all default values EQUILIBRIUM : diamagflux added to EQCONSTRAINT CORENEUTRALS : error corrected on the type of boundary_neutrals%rho_tor				
4.08b	23/09/2010	TURBULENCE CPO added ! (IMP4) MHD CPO strongly revisited (added vacuum grid) COREIMPUR, UTILITIES: desc_impur made a generic element EDGE CPO : move to arrays of structure for the spaces LAUNCHS CPO : Added N// spectrum and revisited slightly the structure of spectrum. WAVES CPO : revised to use the new feature of structure array COREPROF CPO : add radial derivatives of transported fields EQUILIBRIUM CPO : new “experimental” flags added (eqprofiles.xsd and eqglobal.xsd). Added a few new quantities in eqprofiles. Definition of vprime and aprime changed in eqprofiles (be careful for ETS !). Changes of names and signal position in eqprofiles2d. Flow quantities added to 0d, 1d and 2d. NBI CPO corrected. AMNS CPO corrected ANTENNAS CPO : flagged “name” signals as machine description for all 3 types of antennas; revised the LH antenna modules phase and amplitude in order to be	TURBULENCE	NBI AMNS ANTENNAS WAVES LAUNCHS EDGE EQUILIBRIUM MHD	1.+	Structure array (new feature). In-memory version revised for common usage, FLUSH and DISCARD routines.

		consistent with its usual form in experimental databases. Added main LH N// as experimental data. REFERENCE CPO : remove all machine description flags in it				
4.08a	02/04/2010	CONTROLLERS CPO removed, never used New NBI, EDGE, DISTSOURCE CPOs (affects also PHASE4TOP) UTILITIES/LINEINTEGRALDIAG revisited (non backward compatible changes), new definition of angles + 3rd point WAVES, ANTENNAS CPOs revisited by IMP5 (non backward compatible changes). REFERENCE CPO added NEOCLASSIC : added “composition” (global element). COREPROF augmented with a few 1D and 0D variables. COREPROF, EQUILIBRIUM, CORETRANSP, NEOCLASSIC, CORESOURCE populated with Exp2ITM flags. Xsd2CPODef7.xsl, CPODef2ExpMapping.xsl modified for “individual non-measurement” signal importation by Exp2ITM. FP CPO renamed to DISTRIBUTION and revisited (affects also PHASE4TOP) AMNS CPO added (amns.xsd and Phase4Top.xsd) UTILITIES : upgraded with 6d and 7d array of float types WAVES : profiles/profiles_2d/ powerd_iharm is now a 6d array MSEDIAG : revised (extension to 9 coefficients, position + width) TSDIAG, ECEDIAG, CXDIAG, UTILITIES : new CPOs + revision of utilities for a new data type	AMNS CXDIAG DISTRIBUTION DISTSOURCE ECEDIAG EDGE NBI REFERENCE TSDIAG	ANTENNAS FP (renamed) MSEDIAG WAVES CONTROLLERS (removed, never used) UTILITIES/LINEINTEGRALDIAG	1.+	

		EQUILIBRIUM(EQGEOMETRY) : mismatch of type in text documentation corrected WAVES : fullwave/poloidal_decomp renamed into pol_decomp EQPROFILES2D : added R and Z position of grid points + documentation on grid type				
4.07c	February 2010	Exactly the same data structure as 4.07b, but includes new functions in the UAL and compatible with the fully consistent release of Kepler (v1.+) and other tools from February 2010.			1.+	Simulation catalogue functions added
4.07b	12/10/2009 NB : WAVES : profiles/profiles_2d/ powerd_iharm declared as 5d array instead of 6d (waiting for UAL update)	UTILITIES : add the param block Phase4Top : increase number of occurrences for all CPOs COREPROF, CORESOURCE and NEOCLASSIC EQPROFILES : beta_pol and li added EQGLOBAL : w_mhd added. CORESOURCE : Make a few definitions more precise, + toroid_field element added to document the normalisation of j (affects EQGLOBAL, UTITILIES). EQGEOMETRY, UTILITIES : add npoints to description of plasma boundary (rz1d_npoints complex type) UTILITIES : correction of the datainfo/whatref/user documentation Phase4Top updated to add FP CPO FP CPO finalised and added ! UTILITIES : exp1d type : add the appinfo about using the unit as parents ANTENNAS : LH, EC, IC power turned to exp1d type WAVES : power densities renamed as “powerd” EQUILIBRIUM CPO : added ne in eqconstraint WAVES CPO completely redesigned, finalised version, + add 3 occurrences of it in PHASE4TOP			1.0	

		Machine description XSLs have been updated to generate directly the “hybrid” format. Names have been changed since this format is becoming the unique one. LAUNCHS, ANTENNAS, WAVES, PFCIRCUITS CPOs (as well as in UTILITIES.XSD) : strange invisible characters in original schemas have been removed … Xsd2CPODef7.xsd : a new version is now available having merged the changes proposed by Matthieu Haefele (includes now visualisation properties) CONTROLLERS : on-going design NEOCLASSIC CPO : modify rho_tor and rho_tor_norm in order to be consistent with COREPROF and the other core profile CPOs SCENARIO CPO : configuration subtree changed to configs (name length was > 12 characters) EQUILIBRIUM CPO : definition of jphi and jparallel has been agreed and written in the schema documentation. COREPROF CPO : definition of jparallel has been agreed and written in the schema documentation.				
4.07a	17/04/09	EQUILIBRIUM CPO : profiles_1d/area, aprime, surface, vprime : definitions clarified UTILITIES : added array5dflt_type and corresponding modifications in xsd2CPODef and xsd2F90TypeDef CORETRANSP/NEOCLASSIC : (utilities.xsd) : energy exchange term added to the transport coefficient complex types transcoefion and transcoefimp EQUILIBRIUM CPO : global_param : added the toroid_field branch as requested by the IMP3/ETS. Added sign convention to b0 and i_plasma.			1.0	

		SCENARIO CPO : “global” subtree renamed as “global_param” in order to avoid problems with the Python interface. This is also more consistent with the other CPOs. EQUILIBRIUM CPO : profiles_1d/gm1, gm2 and gm6 are not multiplied by Vprime anymore PSI definition clarified : full poloidal flux, without 1/2pi for the whole data structure (affects : equilibrium, mhd, sawteeth CPOs) Eqconstraint/eqmes1d/time becomes a scalar IRONMODEL CPO : change B to b (no major case). SAWTEETH CPO added. MHD CPO : added tau_alfven and tau_resistive at the request of IMP2. CORENEUTRALS CPO added ORBIT CPO added ANTENNA, LAUNCHS, and WAVES CPOs added EQUILIBRIUM : profiles_1d%gm8 and gm9 added. Rho_rttor and rho_rtvol deleted, replaced by rho_tor (square root of toroidal flux as used by the ETS/COREPROF) and rho_vol (normalised square root of volume). TOROIDALFIELD and MAGDIAG CPO : added sign convention in the documentation of bvac_r and ip. CORETRANSP, UTILITIES : add transcoefvtor type in utilities (for coretransp/vtor), modify transcoefion type (for coretransp/ti) COREPROF: globalparam/current_total was exceeding the 12 characters length limit and is renamed into current_tot. COREPROF, UTILITITIES : complex types “boundaryel” and “boundaryion” are moved from				

		COREPROF to UTILITIES. In addition, the codeparam element in them is removed. And their “rho” field is renamed into “rho_tor”. SCENARIO : heat_power/pel_nbi added. Neutron/ndt_tot and ndt_th documentation corrected. EQUILIBRIUM and SCENARIO : eqgeometry/boundarytype is now an integer (instead of a string previously)				
4.06d	23/09/08	COREPROF, CORESOURCE, COREDELTA, CORETRANSP : Mtor equation turned into Vtor → change of all related fields (mtor → vtor and change of type and definition). CORESOURCE (UTILITIES) : complex types source_el, source_ion, source_imp, have now different leaf signal names (exp and imp instead of explicit and implicit before), since « explicit » is a keyword for C++. COREPROF : Change of names between rho_tor_norm, rho_tor. rho_tor and drho_dt become vectors. Multiple changes in types boundary_el, boundary_ion, and in element psi/boundary. COREIMPUR : same change of rho_tor_norm and rho_tor. Same change in the boundary (condition) sub-structure. CORETRANSP : same change of rho_tor_norm and rho_tor. C1 variable removed and a dimension is added to the transport coefficients of the particle flux (electrons and ions, not done for nz yet since no 4D time-dependent arrays yet) in order to describe the multiplier of the particle flux to be used in the expression of the heat flux. CORESOURCE : same change of rho_tor_norm and rho_tor. COREDELTA : NEW CPO defined, added to TOP with maxOccurs=3.			1.0	

		UTILITIES : new generic element « composition » describing the ion species characteristics and placed for consistency in COREPROF, CORESOURCE, COREDELTA and CORETRANSP. The same kind of thing can be done for the description of multiple charge state species (« impurity ») when these are defined more precisely (later).				
4.06c	16/09/08 Not installed anymore	EQUILIBRIUM/eqgeometry : elongation, tria_upper, tria_lower : are now dimensionless (instead of [m] before, by mistake). MHD : m and n changed from real to integer types (was a mistake in the schema definition). UTILITIES : implement correct processing of “parenttime” and “parentmachine” : added <xs:appinfo>parent-dependent</xs:appinfo> for complex Types for which the time-dependence and machine description status depends on their parent node. SCENARIO : change configuration/configuration to configuration/config (otherwise, not allowed in Java).				
4.06b	09/09/08 Not installed anymore	Contains the same modifications as done in 4.05b. Coreprof.xsd : drho_normdt added ADDED MULTIPLE CPO OCCURRENCES Coresource.xsd : added new generic source types (utilities : source_el, source_ion, source_imp) for implicit + explicit source terms Coretransp.xsd : added sigma. Added c1 coefficient. ADDED SCENARIO.XSD. The F90 Type Definition XSL may have some problems (conflicting names in the arborescence) --> need to write the new one soon, using CPODef). September 2008 : In scenario.xsd : change each subtree to a local complexType in the schemas. Center turned				

		into Centre for English reasons. P_ohmic turned to pohmic. Lim_div_wall corrected (ni_lim_div was duplicated). EQUILIBRIUM CPO updated : g13 and g23 added to coord_sys CURRENT STATUS : INSTALLED ON GATEWAY (4.06b_September2006), F90 UAL COMPILED : TEST SCENARIO FUNCTIONALITIES : DONE				
4.06a	Second draft, 12/03/08 Not installed anymore	IMP3 data structure rationalised for Kepler workflow : 1) All IMP3 CPOs referring to 1D radial profiles and the core transport equations are renamed with the prefix “core”, to avoid confusion when adding the “edge” data structure : coreprof, coreimpur, coresource, coretransp. The only exception is neoclassic, which is not defined in the edge. 2) Remove all explicit rules for combining source terms and transport coefficients from the data structure : such rules have to be defined at the level of the workflow The general trend should be to remove workflow description flags as much as possible : the data structure should be workflow agnostic. However some flags can still be used for bookkeeping, if they can be filled by a generic transport solver (generic meaning workflow agnostic). Coreprof/(te,ti,psi,ne,ni,mtor_tot)/source_term/multiplier : removed and replaced by a general “source” comment field. Coreprof/(te,ti,ne,ni,mtor_tot)/transp_coef/ : sub levels below diff and vconv removed and replaced by a general “source” comment field. Coreimpur/source_term/multiplier : removed and replaced by a general “source” comment field.				

		Coreimpur/transp_coef/ : sub levels below diff and vconv removed and replaced by a general “source” comment field. 3) Define generic CPOs for source terms and transport coefficients The proposed solution for the source terms is to declare Coresource as a generic CPO in the data structure (just below TOP level) for which many instances can be used in the workflow, without naming a priori to which physical process it refers. The new CPO Coresource defines a generic format for all “source term” CPOs. If a source module produces additional information (like distribution functions or ray-tracing results), it is proposed to have separate CPOs for it. Thus the source module would produce more than one output CPO. One could add bookkeeping information to track that different CPOs have been produced by the same module (but may be difficult to use afterwards). The same solution is proposed for transport coefficients : declaration of a generic transport coefficient CPO Coretransp in the data structure that can be used for any anomalous transport model. There is an issue here for the neoclassical module. We could split its output in two CPOs, i.e. a generic transport coefficient CPO and a specific CPO for exclusively neoclassical quantities. This has to be discussed. 4) Keep information on the source term, transport coefficient, and calculation methods flags in coreprof and coreimpur. Expected to be used for traceability only, not for input to the transport solver (explicit CPOs coresource and coretransp are defined for this purpose). The calculation flags for the transport solver (whether a				

		field should be calculated or not) is decided at the level of the workflow, and should be passed at this level (likely using codeparam). In coreprof, the general organisation of the “corefields” groups the field, the transport coefficient, source term, boundary conditions, ... it assumes explicitly that this field comes from a transport equation solver, and this information is only for documentation (the input values coming from an input transport coefficient / source CPO). Is this ok ? I would say yes (the equilibrium CPO also stores the constraints it used to do the calculation). “Source” comment fields added at several places for information ... not sure how they are going to be filled. Could be removed if not used, depending on the solver / workflow. Coreprof/composition/imp_flag : induces an explicit dependence between coreprof and impurity CPOs. Not nice but let’s keep like that since usually dealt by distinct transport solvers. Coreprof/(te,ti,psi,ne,ni,mtor_tot)/flag : left as generic bookkeeping flag, could be removed depending on its use in workflow. Coreimpur/flag : same remark.				
4.06	First draft, posted 11/10/07 Not installed anymore	IMP3 data structure added : Equilibrium/profiles_1d augmented for IMP3 requests Utilities/coreprofile, coreprofion, corefield, corefieldion modified Utilities/transport and subtypes added Coreprof.xsd modified Phase4top modified for new CPOs : transport1 to transport5, transport_tot, impurity, neoclassic Utilities.xsd : eqmes0d and eqmes1d complex types are				

		moved to eqconstraint.xsd, for clean up. Utilites.xsd : setup_line becomes an explicit complex type, to avoid the small problem with the F90 type def parser. Toroidalfield.xsd : r0 added.				
4.05b	05/07/08 Not installed anymore	Post-release modification 29/08/08 : in Phase4TOP/topinfo, the entry node becomes machine description (information on the machine name is now in this node and needed to be in the machine description file). The topinfo/dataversion node becomes also part of the machine description. Some change to xsd2CPODef.xsl to handle some exceptions. Affects only the machine description files. Utilities.xsd / eqconstraint.xsd : eqmes0d and eqmes1D : “measured” signal added. “source” signal added to q, isoflux and xpts. Utilities.xsd : “output_flag” added to codeparam Summary.xsd : “time” signal added Utilities.xsd : “entry_def” type added. Phase4top.xsd/topinfo modified using this new type (add “entry” and “parent_entry”), “children” entry removed from the data structure (will be written in the database only). Utilities.xsd : “entry_def_cor” type added, for the whatref subtype of datainfo. It includes the CPO occurrence number in the original (reference) database Phase4TOP.xsd : topinfo/md_info/md_entry : type becomes entry_def eqfixboundary.xsd : was obsolete for a long time and is removed from the schemas (previously included in equilibrium.xsd) eqgeometry.xsd : there was a datainfo node, which had				

		no reason to be there since eqgeometry is not a CPO. It has been replaced simply by a “source” signal for describing the source of the eqgeometry. summary.xsd : a datainfo node has been added.				
4.05a	06/03/08 Not installed anymore	Phase4TOP.xsd : Add data management nodes in topinfo (user, md_info) Other changes, 11/04/08 : ironmodel CPO flagged as Machine Description. The Machine Description Template is modified accordingly. No change in the Fortran routines / MDS tree.				
4.05	09/10/07 Not installed anymore	Introduction of arrays of strings in the existing data structure: Utilities.xsd : new simple type : vecstring_type Controllers.xsd : input, output, statespace/observable moved to vecstring_type Ironmodel.xsd : desc_iron/name, desc_iron/id observable moved to vecstring_type Magdiag.xsd : flux_loops/setup_floops/name and id, bpol_probes/setup_bprobe/name and id moved to vecstring_type pfsystems.xsd : pf_supply/desc_supply/name, id and type moved to vecstring_type pfsystems.xsd : pfcircuits/name, id and type moved to vecstring_type pfsystems.xsd : pfcoils/desc_pfcoils/name and id moved to vecstring_type. Note that the pfelement name and id should be matstring_type, but this is not handled by the UAL yet. Other changes : Pfsystems/time : is now declared as time-dependent ironmodel/desc_iron/geom_iron/rzcoordinates renamed as rzcoordinate (was above the 12 character limitation of				

		node names in MDS+) Other changes, 09/10/07 : Pfcoils/desc_pfcoils/emax and Pfsupplies/desc_supply/emax : have been added				
4.04	20/04/2007 Not installed anymore	Flags for machine description added in the schema Magdiag.xsd corrected : npoints added to document fluxloops/position. Time removed at the bottom level (in flux_loops and bpol_probes). fluxloop/position definition updated. Utilities.xsd : relative error becomes time-dependent in complex types exp0D, exp1D, exp2D. Eqconstraint.xsd and Utilities.xsd : Boolean type removed from “exact” and replaced by Integer type. Also : eqmes1D/exact becomes a time-dependent vector of integers. Pfsystems/Pfcircuits/Connections : Definition updated and array3dint type added in Utilities Pfsystems/Pfcoils/desc_pfcoils/turns : removed (defined at the level of the Pfelements) Genprof CPO renamed into coreprof Equilibrium/profiles_2d : added grid_connect for finite element representation				
4.03	06/02/2007 Not installed anymore	Rule for storing the time dependence is changed : time-dependent arrays of structure (CPO) is used instead of having time at the bottom level (individual signals had an additional time dimension). This change affects the annotations (which described the signal dimension) of almost all signals. Summary.xsd : name for impurity A and Z changed Controller.xsd : variable “class” renamed into “type” Summary and Topinfo annotated as CPO. Phase4top.xsd : added utilities.xsd in the include list (for				

		the new parsers – useful ?) utilities.xsd : added output_diag in codeparam				
4.02	11/01/2007 Last version with time stored at the bottom leaf in the schemas Not installed anymore	Utilities.xsd : codeparam updated with more explicit structure; parsers updated (previous specific instructions for codeparam removed) Topinfo : workflow field added Genprof updated with a “codeparam” element + description updated. Eqconstrain/magnetise changed to Eqconstrain/magnet_iron to avoid conflict with iron_model Genprof type definition conflict solved All schemas properly included at the TOP.xsd level Controllers.xsd : “double” declaration of statespace/deltat changed to “float” (convention) ironmodel.xsd : geometry_iron changed to geom_iron (12 characters constraint) utilities.xsd : Documentation of “eqmes1d/time” and “eqmes2d/time” slightly updated for addressing linear interpolation between time slices. Lineintegraldiag/function changed to Lineintegraldiag/expression to avoid the use of the keyword “function”				
4.01	31/10/2006 Not installed anymore	Node names with more than 12 characters removed (MDS+ limitation). datainfo/isref revised datainfo/whatref added datainfo/putinfo added top/summary added (reduced data) reduced complex type defined in utilities topinfo/dataversion, shot, entry, children, machine, treename added				

4.00	19/10/2006 Not installed anymore	First release of Phase 4 data structure (IMP1 only)				