

# INTERNATIONAL STANDARD

Communication networks and systems for power utility automation –  
Part 7-3: Basic communication structure – Common data classes

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ELECTROTECHNICAL  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### COMMUNICATION NETWORKS AND SYSTEMS FOR POWER UTILITY AUTOMATION –

#### Part 7-3: Basic communication structure – Common data classes

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**IEC 61850-7-3 edition 2.1 contains the second edition (2010-12) [documents 57/1087/FDIS and 57/1085/RVD] and its amendment 1 (2020-02) [documents 57/2101/FDIS and 57/2132/RVD].**

International Standard IEC 61850-7-3 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

This second edition cancels and replaces the first edition, published in 2003.

Compared to the first edition, this second edition:

- defines new common data classes used for new standards defining object models for other domains based on IEC 61850 and for the representation of statistical and historical data;
- provides clarifications and corrections to the first edition of IEC 61850-7-3;

Compared to the second edition, this first revision of the second edition:

- a) provides clarifications and corrections to the second edition of IEC 61850-7-3, based on the tissues = { 690, 691, 692, 697, 698, 707, 709, 711, 722, 814, 816, 819, 832, 839, 846, 868, 887, 919, 924, 925, 926, 929, 953, 954, 962, 968, 996, 1078, 1079, 1122, 1127, 1184, 1187, 1189, 1220, 1233, 1240, 1242, 1247, 1253, 1265, 1270, 1311, 1372, 1387, 1388, 1403, 1430, 1438, 1578, 1581, 1598, 1602, 1623 };
- b) includes semantic of attributes within tables in clauses 6 and 7 and thus removes the need for explicit semantic definition in Clause 8;
- c) Clause 8 now contains definitions of newly introduced explicit enumerated types (with tables); this is fully backward compatible as the value of the literals have not changed;
- d) some subclauses in clause 7 have different numbering because of introduction of some abstract types (that group common attributes for several concrete types);
- e) first subclause under any CDC group in Clause 7, that contained the tables with applicable services with respect to functional constraints, have been removed; that information is explicitly defined in IEC 61850-7-2 with functional constraints, and temporarily included as Annex B, Functional constraints;
- f) content of 6.2.7 and 6.2.8 has been moved to the normative Annex D of IEC 61850-7-2: Clarification on usage of quality;
- g) implements extension introduced by IEC 62351-6 for security;
- h) presence conditions have been redesigned and renamed to support their uniform usage in all of the IEC 61850-7-xxx series as necessary. Below is the table containing the old and the new presence conditions:

IEC 61850-7-3:2010

new	original	Notes
M	M	
O	O	
MOcond(condID)	Various C, C1, ...	In IEC 61850-7-4
MFcond(condID)	Various C, C1, ...	In IEC 61850-7-4
OFcond(condID)	Various C, C1, ...	In IEC 61850-7-4
MFsubst	PICS_SUBST	
AtLeastOne(1)	GC_1	
AtMostOne	GC_1_EXCL	
AllOrNonePerGroup(n)	GC_2_n	
AllOnlyOneGroup(n)	GC_2_XOR_n	
MO(sibling)	GC_CON_attr	
MOIn0	AC_LN0_M	
MFIn0	AC_LN0_EX	
MOrootLD	C1 in CommonLN	
MOInNs	AC_DLD_M	
MOdataNs	AC_DLN_M	
MOcdcNs	AC_DLNDA_M	
MFscaledAV	AC_SCAV	
MFscaledMagV	AC_SCAV	

new	original	Notes
MFscaledAngV	AC_SCAV	
MAIOrNonePerGroup(n)	AC_ST	
O	AC_CO_O	Documentation provided in ControllableCDC class.
	AC_SG_M	Split into explicit subtype, no need for presence condition.
	AC_SG_O	Split into explicit subtype, no need for presence condition.
	AC_SG_C1	Split into explicit subtype, no need for presence condition.
	AC_NSQ_M	Split into explicit subtype, no need for presence condition.
	AC_NSQ_O	Split into explicit subtype, no need for presence condition.
	AC_NSQ_C1	Split into explicit subtype, no need for presence condition.
MOrms	AC_RMS_M	
O	AC_CLC_O	Eliminated presence condition on Vector.ang in favour of documenting the relevant DO (in IEC 61850-7-4).

Clauses 5 to 8 and their subclauses, replacement for Annex A, Annex B and XML enumerations from Annex D are automatically generated from the UML model.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61850 series, published under the general title: *Communication networks and systems for power utility automation*, can be found on the IEC website.

Contrary to usual IEC practice, for ease of use in this case, all tables and figures (including those which have been added since Edition 2) have been numbered consecutively in the amendment and the consolidated version.

This IEC standard includes Code Components i.e. components that are intended to be directly processed by a computer. Such content is any text found between the markers <CODE BEGINS> and <CODE ENDS>, or otherwise is clearly labeled in this standard as a Code Component. In the current version of this document, such indication is made at the beginning of each concerned top-level clauses

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- reconfirmed,
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- replaced by a revised edition, or
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