Log of errata in IEC 61131-3 (2003)

	Date 2007-01-25	Document IEC 61131-3, 2nd Ed: 2003

Source	Clause/ Subclause	Paragraph/ Figure/ Table	Type of comment (General/ Technical/Editorial)	COMMENTS	Proposed change	OBSERVATIONS OF SC65B/WG7/TF3 on each comment submitted
WG7/TF3	Various		Editorial	Hanging paragraphs	Introduce new subclauses as appropriate.	Accepted 2007-01-23. TO DO: Correct all hanging paragraphs and update all clause/subclause references in text.
WG7/TF3	Various		Editorial	Table/Figure numbering	Renumber in sequence, deleting effects of previous insertions such as "15a," "19a," etc.	Accepted 2007-01-25. TO DO: Renumber and update all table/figure references in text.
WG7/TF3	Various		Editorial	Non-standard paragraph styles	Apply **iecstd.dot** template styles uniformly throughout document.	Accepted 2007-01-25. TO DO: Complete application of styles.
WG7/TF3	Various		Editorial	Borders around figures not compliant with ISO/IEC Directives, Part 2	Remove borders around figures	Accepted 2007-01-25. TO DO: Finish updating figures.
WG7/TF3	1		Editorial	Clause/subclause numbering not compliant with ISO/IEC Directives, Part 2	Split into 5 clauses, renumbering subsequent clauses/subclauses as necessary.	Accepted 2007-01-25. TO DO: Update all clause/subclause references in text.
WG7/TF3	1.3	1.3.83	Technical	Missing definition: **variable**.	ADD the definition of **variable** from IEC 61499-1.	Accepted and done 2007-01-22.
WG7/TF3	2.2.2	Table 4, Features 4,5,6	Technical	Incorrect numerical values	CHANGE `240` to `224` (3 places)	Already in 61131-3: 2003.
WG7/TF3	2.2.2	Table 5, Feature 4	Technical	Incorrect delimiter	CHANGE `WSTRING#'OK'` to `WSTRING"OK"`	Accepted and done 2007-01-25.
WG7/TF3	2.3.3.2	Table 12	Editorial	Table 12 is referenced in 2.3.3.1 but appears in 2.3.3.2.	MOVE Table 12 to subclause 2.3.3.1.	Accepted and done 2007-01-22.
PLCopen	2.3.3.2	Table 14	Editorial	ANALOG_DATAZ is defined but not used.	Show use in table 14.	Accepted and done 2007-01-23.
WG7/TF3	2.3.3.3	Various	Technical	Rules for assignment of values of "anonymous" enumerated types are not clear.	Include information similar to subclause 3.1.2, 3.1.7 and 3.1.9 of IEC 61131-8, 2nd Ed.	Accepted in principle. Features 9 and 10 added to Table 17, 2007-01-22.
WG7/TF3	2.4.1.2	Various	Technical	Rules for assignment of values of aggregates are not clear.	Include information similar to subclause 3.1.7 and 3.1.9 of IEC 61131-8, 2nd Ed.	NOT ACCEPTED. Assignment of *structures* is covered in 3.3.2.1. *Bulk assignment of array values* is not a requirement.

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WG7/TF3	2.4.3.2	Table 18, Feature 7	Editorial	Array notation is not correctly represented.	CHANGE `ARRAY(1..2,1..3)` to `ARRAY[1..2,1..3]`	Accepted and done 2007-01-22.
PLCopen	2.5.1.2	Table 20	Technical	Footnote **a** of this table would render existing compliant implementations non-compliant, contrary to the goal of "upward compatibility." For instance, since EN/ENO has to be supported in LD to allow e.g. arithmetic functions, the support of LD automatically forces a vendor to support EN/ENO in all languages (according to Note a in Table 20).	Change this footnote to: "A manufacturer may specify that a feature of this table is supported in all languages, or in a particular language. When a feature is supported in a particular language, an appropriate suffix shall be employed, namely f,l,i, or s for FBD, LD, IL or ST languages, respectively, as defined in clauses 3 and 4. For instance, the first example given above could be for feature 1 or 1l; the second example could be for feature 2 or 2f, etc."	Accepted and done 2007-01-22.
WG7/TF3	2.5.1.5	2nd para	Technical	Change "parameter names" to "variable names"	Received 2003-06-02.	Accepted and done 2007-01-23.
WG7/TF3	2.5.1.5.6	Table 30	Technical	Certain features are deprecated.	Delete deprecated features in 3rd Ed.	NOT ACCEPTED 2007-01-23. Footnote refers to "future editions" so can be left as is.
PLCopen	2.5.2.2	Figure 10	Technical	Output of SR function block should be Q1, not Q.	Change in FBD and ST.	Accepted and done 2007-01-23.
WG7/TF3	2.5.2.2	Table 33	Technical	"Description" is inconsistent with "Example" in items 2c, 2d.	CHANGE `RETAIN` to `NON_RETAIN` in "Description" column	Accepted and done 2007-01-22.
WG7/TF3	2.5.2.3.3	Table 36	Editorial	`CTUD_UDINT` is missing from Features 3a-3d.	ADD `CTUD_UDINT` as Feature 3d, renumber `CTUD_ULINT` as Feature 3e	Accepted and done 2007-01-22.
PLCopen	2.6.4	Para 2	Technical	Unanticipated effects may arise when Boolean actions are modified from outside their SFC; see attached COMMENT and RESPONSES.	ADD after para 2: "It shall be an **error** if the value of a Boolean variable used as the name of an action is modified in any manner other than as the name of one or more actions in the same SFC."	Accepted and done 2007-01-23. Explanation to be added to 61131-8, 3rd Ed.
WG7/TF3	2.6.4.5	NOTE 5	Technical	This NOTE may be misinterpreted as allowing both options (with/without "final scan") to be implemented simultaneously.	CHANGE"which" to "which one"	Accepted and done 2007-01-22.
WG7/TF3	2.6.4.5	Table 45a	Technical	This table may be misinterpreted as allowing both options (with/without "final scan") to be implemented simultaneously.	ADD "NOTE - These two features are mutually exclusive, i.e., only one of the two shall be supported in a given SFC implementation."	Accepted and done 2007-01-22 (footnote instead of NOTE – Contains a normative requirement)

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WG7/TF3	2.6.5	Fig. 17a	Technical	"x = 0 or 1" in the caption may be misinterpreted as "`x = (0 OR 1)`", i.e. "`x = 1`"	CHANGE to "x = (don't care), i.e. x∈{0,1}"	Accepted and done 2007-01-22.
WG7/TF3	2.7	Figure 19a	Editorial	Incorrect reference: IEC 1131-5	Change to 61131-5.	Accepted and done 2007-01-22. TO DO: Edit/clean up Figure 19a.
PLCopen	2.7	Figure 19b	Editorial	Semicolon missing after each END_VAR	Add "missing: semicolons	NOT ACCEPTED. Semicolon after END_VAR is not permitted according to syntax in Annex B, but may be an implementer-defined extension.
WG7/TF3	2.7.1	Figure 20	Editorial	Title in wrong position.	Change to Table 49a.	Noted 2007-01-22. Title moved to bottom. Tabular format converted to Figure.
WG7/TF3	2.7.1	Table 50	Editorial	Use table cell lines missing in schedule of EXAMPLE 3 of feature 5b		Accepted and done 2007-01-22.
PLCopen	3.3.2	Table 56	Technical	In item 4, "4" is not a REAL constant	Change to "4.0"	Accepted and done 2007-01-23.
PLCopen	3.3.2.4	Figure 22	Technical	Missing semicolon after END_IF	Insert missing semicolon	Accepted and done 2007-01-23.
PLCopen	3.3.2.4	Para 4	Technical	The phrase "...the statement sequence is not executed if the initial value exceeds the final value" is not a correct interpretation if the increment value (the value following the BY keyword) is negative. Furthermore, inconsistent results could be obtained from different compliant systems with the identical program if the value of the increment is changed during execution of the FOR loop.	CHANGE the two sentences "The control variable … defaults to 1." TO "The FOR statement increments the control variable from an initial value to a final value in increments determined by the value of an expression; this value shall be positive and non-zero with a default value of 1. The initial value, increment, and final value shall be determined by expressions of the same integer type (for example, SINT, INT, or DINT) as the control value, and shall not be altered by any of the repeated statements."	1) Description and example of termination condition added; this still allows negative increments to avoid reverse compatibility issues. 2) It is already stated in the Standard that the value of the increment shall not be changed during execution.
WG7/TF3	4.1.4	Table 58	Editorial	(PDF) Spelling: "Jjump" in Feature 1	Change to "jump"	Accepted and done 2007-01-22.
WG7/TF3	4.2.3, 4.2.4	Tables 61,62	Editorial	Missing blanks in figures	Correct per FDIS.	TO DO 2007-01-22.
WG7/TF3	4.2.3, 4.2.4	Tables 61,62	Editorial	Notes and footnotes should be in smaller type size from body of table.		TO DO 2007-01-22. Notes and footnotes are now same small size per IEC template.

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WG7/TF3	B.1.2.1			Syntax for Boolean_literal is inconsistent with Table 4, item 9	Change syntax	Accepted and done 2007-01-23.
PLCopen	B.1.2.1		Technical	Undefined non-terminal: unsigned_integer	Add production for unsigned_integer	Accepted and TO DO 2007-01-23.
PLCopen	B.1.3.3		Technical	Syntax allows, e.g., A#B in enumerated_specification	Correct the production.	Accepted and done 2007-01-23.
PLCopen	B.1.4.3		Technical	global_var_decl production allows, e.g., VAR_GLOBAL A: ; END_VAR;	Correct the production.	Accepted and done 2007-01-23.
PLCopen	B.1.5.2		Technical	non_retentive_var_declarations is used but not defined	Correct the production for non_retentive_var_decls to non_retentive_var_declarations..	Accepted and done 2007-01-23.
PLCopen	B.3.1		Technical	primary_expression production is not consistent with fb_invocation (does not allow zero-argument functions)	Correct the production for primary_expression by making param_assignment list optional.	Accepted and done 2007-01-23.
WG7/TF3	Annex E	Table E.1	Technical	See comment on 2.6.4.	ADD "2.6.4 - Modification of a Boolean action from outside its SFC"	Accepted and done 2007-01-23.
WG7/TF3	Annex F	Figure F.7	Editorial	Title is at top of figure.	Move title to bottom of figure.	Accepted and done 2007-01-22.
WG7/TF3	F.6.3		Technical	Type conflict.	Change "N" to "INT_TO_REAL(N)".	Accepted and done 2007-01-23.
Japan	F.11	Function block ALRM_INT	Editorial	Explanation of the figure of VAR_INPUT is reverse. (Data type : VAR name) IN --- INT THI --- INT THL--- INT	These should be correct INT --- IN INT --- THI INT --- THL	Accepted and done 2007-01-22.
PLCopen	F.11	Function block ALRM_INT	Editorial	Definition and usage of variables in ST example is inconsistent.	Correct the ST example.	Accepted and done 2007-01-23.
PLCopen	General		General	Comments in paper by M. de Sousa, "An IEC 61131-3 compiler for the MatPLC"	Explicit changes not listed.	Referred back to PLCopen for development of specific comments and proposed changes in appropriate format.

COMMENT received 2007-01-03: This comment concerns the SFC action qualifiers "S" and "R" when used with simple Boolean actions. The latest version clearly describes how the qualifiers operate with the action control function block - using a RS latch within the block. unfortunately, this method if implementing the qualifiers has an undesirable side effect: After the execution of an "S" action, the latch will write TRUE to the variable

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every program cycle even if that step  is no longer active. This means that another step or program etc cannot
write a FALSE to the variable - i.e it can ONLY be reset by an "R" step in the same POU.
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RESPONSE TO COMMENT: This effect can only occur if the scope of the Boolean variable in the "simple Boolean action" is external, i.e. if it is declared in a VAR_EXTERNAL block or is directly represented. This is an unintended and unanticipated usage; the scope of an action was intended to be local to the POU in which the SFC is contained. The standard should restrict the scope of a "simple Boolean action" to a Boolean internal or output variable.

ADDITIONAL RESPONSE received 2006-01-08 from H-D FERLING: Inexperienced programmers could also try to reset a variable representing a boolean action by multi-assignment, if it is local to the POU - with the same effect: the variable can not be reset this way! In addition, the proposed resolution does no longer allow to READ the value of such a variable in a different POU, which would be desirable in some cases.
I would propose to introduce the RULE, that any variables representing boolean actions should generally only be controlled by the respective action control block, and not by assignments from elsewhere. Vulneration of this RULE could be introduced as an ERROR in Table E.1.