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Function blocks - Part 1: Architecture

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

drafted.

This document is part 1 of GB/T 19769. GB/T 19769 has released the following parts.

---GB/T 19769.1 Function Block Part 1. Structure;

---GB/T 19769.2 Function Block Part 2. Requirements for Software Tools;

---GB/T 19769.3 Industrial Process Measurement and Control Systems - Part 3. Guidance Information;

---GB/T 19769.4 Function Block Part 4. Rules for Conformance Profiles.

This document replaces GB/T 19769.1-2015 "Function Block Part 1. Structure". Compared with GB/T 19769.1-2015, except for the structure

In addition to structural adjustments and editorial changes, the main technical changes are as follows.

--- Change Note 1 to text "This document does not limit or specify the functions of IPMCS or their system elements, unless a function requires

Use the elements defined in this document to represent. IEC 61499-4 states that elements defined in this document may be subject to conformance systems.

extent of functional limitations of systems, subsystems and equipment. " (see Chapter 1, Chapter 1 of the.2015 edition);

--- Deleted the terms "Access Path", "Configuration (Programmable Control System)"; added "Cross Settlement", "Service Sequence Diagram" and "Temporary Change".

"quantity" and other terms (see Chapter 3, Chapter 3 of the.2015 edition);

--- Change Note 3 to the text "The communication link can be directly connected to the

device, or it can be connected to a specific resource type ("communication resource")

Instances are connected. Depending on the type of resource, some distributed applications on it can be mapped, while others cannot. "

(see 4.2, 4.2 of the.2015 edition);

--- Deleted "methods to obtain traditional scheduling functions, such as periodic execution of function block networks, described in Chapter 3 of GB/T 19769.3

described. "(see 4.3 of the.2015 edition);

--- Added "Through the additional functions of related resources, the internal variables and status information of function block instances can be accessed." (see 4.5.1);

--- Change Note 1 to the text "other function block instances or the event output of the same function block instance as the event input event.

These event outputs are generated by the execution control described above, or by the "communication map" "process map" "scheduling" and resource

other functional abilities. "; will "standardization of the function block execution control specification under normal circumstances (including the above)

Seek is defined in Chapter 5 of this document. " is changed to " The specific requirements for the graphic representation of function block types are shown in 5.2.1.1.";deleted

"Users of this document should be aware that if these requirements are not met, the results of algorithm execution are unpredictable."

(see 4.5.3, 4.5.3 of the.2015 edition);

--- "EI variable" is changed to "event input", "EO variable" is changed to "event output" (see Figure 9, Figure 9 of the.2015 edition);

--- Deleted 5.2.1.3 and 5.2.1.4 of the.2015 edition, and added 5.2.2.3 and 5.2.2.4 (see 5.2, 5.2 of the.2015 edition);

--- Changed the content of EC conversion in 5.2.2.4 and the interpretation of symbols in Figure 11 (see 5.2.2.4,.2015 edition of

5.2.2.4);

---Moved Figure 12 and Table 1 from 5.2.2.2 to 5.2.2.4, and changed the ECC state machine state transitions t1, t2 in Table 1,

Condition for t3; change "The transition function is activated by the generation of the previous event on the event input." in footnote a of Table 1 to "The source should be

Make sure that no more than one input event is fired at any given moment. "; added "(or equivalent) after footnote b in Table 1

function)"; the footnote c of Table 1 has been changed and supplemented (see 5.2.2.4, 5.2.2.2 of the.2015 edition);

--- Added "or provided by software tools to eliminate redundant sampling during the implementation phase" [see 5.3.1e)];

--- In the case of "services represented by two or more service interface function blocks, the ISO /IEC 10731 Figures 4 and 5 shall be used.

Notation, as described in E.2." to "" where the service is represented by two or more service interface function blocks, you can

Use the symbols shown in E.2.2 and E.2.3."[see 6.1.3c),.2015 edition of 6.1.3c)];

--- Added the RESET command with the semantics of "reset the specified object" (see Table 6);

--- Delete the corresponding items of access-related create, delete and query command syntax; add the reset command syntax item; delete the corresponding items

Description of access related commands (see Table 8, Table 8 of the.2015 edition);

--- Added the conditions for running state transitions (see Figure 24);

--- Removed "Maximum number of data connections and event connections that can exist in a resource type instance" and "In each resource type instance

Any access path that always exists in the example. ", and will "any data connections and events that always exist in each resource type instance

file connections" to "Any data connections, adapter connections, and event connections that always exist in each instance of a resource type"

(see 7.2.1, 7.2.1 of the.2015 edition);

--- Added functional specification of segment type (see 7.2.3);

--- Changed the content after "Resource configuration follows the following rules" (see 7.3.3, 7.3.3 of the.2015 edition);

---Added "or the declared value of the network segment parameter is inconsistent with the declaration of the network segment type defined in 7.2.3 (if any)"

(see 7.3.4);

--- Changed the pictures at "ECC/Algorithm/Service Sequence" in the entries numbered 3, 4, 5, 6, 11, 12, 18 in Table A.1 (see

Table A.1, Table A.1 of the.2015 edition);

--- Change the EI event to the START event at the text description numbered 11 in Table

A.1 (see Table A.1, .2015 edition of

Table A.1);

--- Change the EI event to the START event and EO2 to EO1 at the text description numbered 12 in Table A.1 (see

Table A.1, Table A.1 of the .2015 edition);

--- Changed the location of the character set (see B.1, B.1 of the .2015 edition);

--- Changed the content of the grammar parts of B.2.1, B.2.2, B.3, B.5, B.7 (see Appendix B, Appendix B of the .2015 edition);

--- Added "The syntax defined below should be used to assign labels defined in ISO /IEC 8824-1.2008 to this appendix and appendix E

Derived data types defined in. As defined in ISO /IEC 8824-1.2008, class label applications and special procedures shall be used.

order, except for types that are used only for context-specific tags. "(see B.6);

Items of 4 categories such as Declaration (see Table C.3);

--- Figure C.5 is divided into Figure C.5a) composition and Figure C.5b) class inheritance, and the "Component" part adds PlugDeclaration,

--- Added two semantics of "invalid subscript value" and "array size error" (see Table D.1);

--- Added "The prefix F_ instead of FB_ can optionally be used for simple function block types that are IEC 61131-3 function conversions

results" (see D.2);

--- Increased the interaction process with the programmable controller (see D.6);

--- Added "The rules defined in ISO /IEC 8825-1 are used" (see E.3.1);

--- Changed the content of ASN.1MODULE (see E.3.2, E.3.2 of the .2015 edition);

--- Added coding provisions for array elements [see E.3.3.2f)];

--- Changed the specification syntax (see Appendix F, Appendix F of the .2015 edition).

This document is equivalent to IEC 61499-1.2012 "Function Block Part 1.Structure".

The following editorial changes have been made to this document.

--- Normative references have deleted IEC 61131-1 that was not normatively cited, and placed it in the reference.

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