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TECHNICAL REPORT

Function blocks (FB) for process control – Electronic device description language (EDDL) – Part 6: Meeting the requirements for integrating fieldbus devices in engineering tools for field devices

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FUNCTION BLOCKS (FB) FOR PROCESS CONTROL – ELECTRONIC DEVICE DESCRIPTION LANGUAGE (EDDL) –

Part 6: Meeting the requirements for integrating fieldbus devices in engineering tools for field devices

FOREWORD

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The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

IEC 61804-6, which is a Technical Report, has been prepared by subcommittee 65E: Devices and integration in enterprise systems, of IEC technical committee 65: Industrial-process measurement, control and automation.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
65E/212A/DTR	65E/239/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

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

A list of all parts of the IEC 61804 series, under the general title *Function blocks (FB) for process control – Electronic device description language (EDDL),* can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

The information contained in this part of IEC 61804 is provided for information only and is not part of the IEC 61804-3 requirements.

NOTE 1 ANSI/ISA-61804-3 (104.00.01):2007 is an equivalent to IEC 61804-3:2006.

The need for device integration has grown significantly in recent years. The combination of open systems, growth and mix of bus protocols, more intelligent devices and more sophisticated and complex devices has increased the requirements for integrating these devices in a single tool.

The purpose of this technical report is to investigate if the IEC 61804-3 technology meets the requirements of NAMUR NE 105. NAMUR is an international users association of automation technology in the process industries (www.namur.de). Recommendation NE 105 prepared by working group 2.6: Fieldbus, contains requirements for device integration technologies such as the electronic device description language (EDDL).

From experience, control system manufacturers and plant operations do not permit third-party software to be installed on DCS server, engineering station, or operator consoles – but rather only on separate application stations. One of the objectives of the EDDL standard is to reduce or minimize the need for third-party software to be installed. The question this technical report addresses is if EDDL can meet device integration requirement without the need for software drivers.

Most NAMUR NE 105 requirements are concerned with the long-term viability of the system and the ease of managing the system. A few requirements are concerned with consistency between different protocols, device types, and manufacturers.

EDDL meets all requirements of NAMUR NE 105. Most requirements are met by virtue of the fact that an EDD file is a compressed text, not a software.

Early EDDL, before enhancements were specified in IEC 61804-3:2006, met most but not all of the NAMUR NE 105 requirements.

NOTE 2 A system combining EDDL with other technologies that do not meet NAMUR NE 105, overall will not meet the requirements of NAMUR NE 105.

EDDL is a language to write the electronic device description (EDD) files. An EDD file describes how an engineering software can integrate a fieldbus device. EDD files provides information which command to send to a field device to read or to write information, how to decode the response, and how to display the information.

The main focus is on investment protection in the face of modern information technology because automation technology users cannot tolerate constant upgrades, updates, and releases – that is, long-term viability for systems and devices without undue maintenance effort. Other major points include ease of keeping systems up to date with new device types and versions, robustness, and uniform display of devices from different manufacturers, for a human interface that is intuitive and easy to learn.

The NE 105 recommendation provided important input for developing the enhancements made to EDDL.

FUNCTION BLOCKS (FB) FOR PROCESS CONTROL – ELECTRONIC DEVICE DESCRIPTION LANGUAGE (EDDL) –

Part 6: Meeting the requirements for integrating fieldbus devices in engineering tools for field devices

1 Scope

This Technical Report (TR) provides an evaluation and assessment of electronic device description language (EDDL) technology. It provides guidance to device and system manufacturers for how EDDL technology can help them meet user requirements. It provides guidance to system integrators, as well as instrumentation and maintenance practitioners at end-user companies, on how EDDL technology can help them integrate systems and incorporate device management in their work processes.

This TR gives examples of requirements from the NAMUR NE 105 recommendation. It is the intent of this TR to illustrate how EDDL technology and products based on EDDL technology meet these requirements.

This TR provides a current assessment of the capability of the EDDL technology and the features and capabilities it enables in devices and tools such as handheld field communicators, distributed control system (DCS) engineering software, DCS operator software, device management software as part of plant asset management solutions, as well as stand-alone software for use in laptop or tablet computers.