

© Copyright SEK. Reproduction in any form without permission is prohibited.

Industriell processtyrning – Funktionsblock (FB) – Del 4: Vägledning till interoperabilitet för EDD

*Function blocks (FB) for process control –
Part 4: EDD interoperability guideline
(CENELEC Technical Report 61804-4:2007)*

ISSN 1651-1417

ICS 25.040.20

Upplysningar om **sakinnehållet** i rapporten lämnas av
SEK Svensk Elstandard.
Postadress: SEK, Box 1284, 164 29 KISTA
Telefon: 08 - 444 14 00. Telefax: 08 - 444 14 30
E-post: sek@elstandard.se. Internet: www.elstandard.se

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK Svensk Elstandard

Box 1284
164 29 Kista
Tel 08-444 14 00
www.elstandard.se

**Function blocks (FB) for process control -
Part 4: EDD interoperability guideline
(IEC/TR 61804-4:2006)**

Blocs fonction
pour les processus industriels -
Partie 4: Recommandations
pour l'interopérabilité EDD
(CEI/TR 61804-4:2006)

Funktionsbausteine
für die Prozessautomation -
Teil 4: Leitfaden für die Interoperabilität
von EDD-Anwendungen
(IEC/TR 61804-4:2006)

This Technical Report was approved by CENELEC on 2007-04-09.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the Technical Report IEC/TR 61804-4:2006, prepared by SC 65C, Industrial networks, of IEC TC 65, Industrial-process measurement and control, was submitted to vote and was approved by CENELEC as CLC/TR 61804-4 on 2007-04-09.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the Technical Report IEC/TR 61804-4:2006 was approved by CENELEC as a Technical Report without any modification.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-351	- ¹⁾	International Electrotechnical Vocabulary (IEV) - Part 351: Automatic control	-	-
IEC 61804-2	2006	Function blocks (FB) for process control - Part 2: Specification of FB concept	EN 61804-2	2007
IEC 61804-3	2006	Function blocks (FB) for process control - Part 3: Electronic device description language (EDDL)	EN 61804-3	2007
ISO/IEC 15948	2004	Information technology - Computer graphics and image processing - Portable Network Graphics (PNG) - Functional specification	-	-

¹⁾ Undated reference.

CONTENTS

INTRODUCTION.....	6
1 Scope.....	7
2 Normative references.....	7
3 Terms, definitions, abbreviated terms and acronyms	7
3.1 Terms and definitions	7
3.2 Abbreviated terms and acronyms	8
4 User interface support	8
4.1 Overview	8
4.2 Menu conventions for applications	8
4.3 Menu conventions for PC-based applications	8
4.4 Menu conventions for all applications	16
4.5 User interface extensions	16
4.6 Layout rules	21
4.7 Default menu styles	29
5 Additional user interface elements	30
5.1 Overview	30
5.2 Graph and chart.....	31
5.3 IMAGE	45
5.4 GRID.....	46
6 EDDL data description	47
6.1 Variables	47
6.2 EDDL application stored device data	48
7 EDDL built-in library.....	57
7.1 User interface built-ins	57
Annex A (informative) Technology specific guidance.....	59
Figure 1 – Example of an EDD application for diagnostics	13
Figure 2 – Example of an EDD application for process variables	14
Figure 3 – Example of an EDD application for primary variables	14
Figure 4 – Example of an EDD application for process-related device features.....	15
Figure 5 – Example of an EDD application for device features	15
Figure 6 – Example of an EDD application for a variable of type BIT_ENUMERATED	20
Figure 7 – Example of an EDD for an overview menu	22
Figure 8 – Example of an EDD application for an overview window	22
Figure 9 – Example of an EDD using COLUMNBREAK	22
Figure 10 – Example of an EDD application for an overview window	23
Figure 11 – Example of an EDD application for an overview window	23
Figure 12 – Example of an EDD application for an overview window	24
Figure 13 – Example of an EDD for in-line graphs and charts	24
Figure 14 – Example of an EDD application for an in-line graph	25
Figure 15 – Example of an EDD for full-width graphs and charts	25

Figure 16 – Example of an EDD application for a full-width graph	26
Figure 17 – Example of an EDD for nested containers	27
Figure 18 – Example of an EDD application for nested containers.....	27
Figure 19 – Example of an EDD for EDIT_DISPLAYS	28
Figure 20 – Example of an EDD application for EDIT_DISPLAYS.....	28
Figure 21 – Example of an EDD for images	29
Figure 22 – Example of an EDD application for images.....	29
Figure 23 – HEIGHT and WIDTH attributes for CHART and GRAPH	31
Figure 24 – EMPHASIS attribute to differentiate one or more SOURCES or WAVEFORMs	32
Figure 25 – Example of a chart with one curve in a dialogue	34
Figure 26 – Graph and the visual elements.....	37
Figure 27 – Result of the EDD example	47
Figure 28 – Example of a file declaration	49
Figure 29 – Example of comparing valve signatures	50
Figure 30 – Example of more complex file declaration	51
Figure 31 – Example of reviewing the stored radar signals.....	52
Table 1 – List of defined menu identifiers	9
Table 2 – List of defined menu identifiers	30
Table 3 – Image formats	45

INTRODUCTION

This Technical Report

- contains an overview of the use of EDDL;
- provides examples demonstrating the use of the EDDL constructs;
- shows how the use cases are fulfilled; and
- shows the proper EDD application interpretation for each example.

This Technical Report is not an EDDL tutorial and is not intended to replace the EDDL specification.

Instructions are provided for the EDD application, which describe what is to be performed without prescribing the technology used in the host implementation. For example, the FILE construct describes data that is to be stored by the EDD application on behalf of the EDD. The FILE construct does not specify how the data is to be stored. The EDD application can use a database, a flat file, or any other implementation it chooses.

FUNCTION BLOCKS (FB) FOR PROCESS CONTROL –

Part 4: EDD interoperability guideline

1 Scope

This part of IEC 61804 is a guideline to support EDD interoperability. This Technical Report is intended to ensure that field device developers use the EDDL constructs consistently and that the EDD applications have the same interpretations of the EDD. It supplements the EDDL specification to promote EDDL application interoperability and improve EDD portability between EDDL applications.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-351, *International Electrotechnical Vocabulary (IEV) – Part 351: Automatic control*

IEC 61804-2:2006, *Function blocks (FB) for process control – Part 2: Specification of FB concept*

IEC 61804-3:2006 *Function blocks (FB) for process control – Part 3: Electronic Device Description Language (EDDL)*

ISO/IEC 15948:2004, *Information technology – Computer graphics and image processing – Portable Network Graphics (PNG) – Functional specification*