

Building automation and control systems (BACS) - Part
6: Data communication conformance testing (ISO
16484-6:2020)

EESTI STANDARDI EESSÕNA

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See Eesti standard EVS-EN ISO 16484-6:2020 sisaldab Euroopa standardi EN ISO 16484-6:2020 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 16484-6:2020 consists of the English text of the European standard EN ISO 16484-6:2020.
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**Building automation and control systems (BACS) - Part 6:
Data communication conformance testing (ISO 16484-
6:2020)**

Systèmes d'automatisation et de gestion technique du
bâtiment - Partie 6: Essais de conformité de la
communication de données (ISO 16484-6:2020)

Systeme der Gebäudeautomation - Teil 5:
Datenübertragungsprotokoll - Konformitätsprüfung
(ISO 16484-6:2020)

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European foreword

This document (EN ISO 16484-6:2020) has been prepared by Technical Committee ISO/TC 205 "Building environment design" in collaboration with Technical Committee CEN/TC 247 "Building Automation, Controls and Building Management" the secretariat of which is held by SNV.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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This document was prepared by Technical Committee ISO/TC 205, *Building environmental design*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 247, *Building Automation, Controls and Building Management*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 16484-6:2014), which has been technically revised. See the detailed list of changes in pages 724 to 728.

A list of all parts in the ISO 16484 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

CONTENTS

CLAUSE	PAGE
Foreword.....	iii
1. PURPOSE.....	1
2. SCOPE.....	1
3. DEFINITIONS.....	1
4. ELECTRONIC PICS FILE FORMAT.....	1
4.1 Character Encoding.....	1
4.2 Structure of EPICS Files.....	2
4.3 Character Strings.....	3
4.4 Notational Rules for Parameter Values.....	3
4.5 Sections of the EPICS File.....	4
5. EPICS CONSISTENCY TESTS.....	10
6. CONVENTIONS FOR SPECIFYING BACnet CONFORMANCE TESTS.....	12
6.1 TCSL Components.....	12
6.2 TCSL Statements.....	13
6.3 Time Dependencies.....	18
6.4 BACnet References.....	19
6.5 TD Requirements.....	19
7. OBJECT SUPPORT TESTS.....	20
7.1 Read Support for Properties in the Test Database.....	20
7.2 Write Support for Properties in the Test Database.....	22
7.3 Object Functionality Tests.....	24
8. APPLICATION SERVICE INITIATION TESTS.....	186
8.1 AcknowledgeAlarm Service Initiation Tests.....	186
8.2 ConfirmedCOVNotification Service Initiation Tests.....	187
8.3 UnconfirmedCOVNotification Service Initiation Tests.....	196
8.4 ConfirmedEventNotification Service Initiation Tests.....	199
8.5 UnconfirmedEventNotification Service Initiation Tests.....	241
8.6 GetAlarmSummary Service Initiation Tests.....	261
8.7 GetEnrollmentSummary Service Initiation Tests.....	262
8.8 GetEventInformation Service Initiation Tests.....	263
8.9 LifeSafetyOperation Service Initiation Tests.....	265
8.10 SubscribeCOV Service Initiation Tests.....	266
8.11 SubscribeCOVProperty Service Initiation Tests.....	267
8.12 AtomicReadFile Service Initiation Tests.....	268
8.13 AtomicWriteFile Service Initiation Tests.....	268
8.14 AddListElement Service Initiation Tests.....	269
8.15 RemoveListElement Service Initiation Tests.....	270
8.16 CreateObject Service Initiation Tests.....	270
8.17 DeleteObject Service Initiation Tests.....	271
8.18 ReadProperty Service Initiation Tests.....	271
8.19 ReadPropertyConditional Service Initiation Tests.....	273
8.20 ReadPropertyMultiple Service Initiation Tests.....	274
8.21 ReadRange Service Initiation Tests.....	276
8.22 WriteProperty Service Initiation Tests.....	280
8.23 WritePropertyMultiple Service Initiation Tests.....	282
8.24 DeviceCommunicationControl Service Initiation Tests.....	284
8.25 ConfirmedPrivateTransfer Service Initiation Test.....	286
8.26 UnconfirmedPrivateTransfer Service Initiation Test.....	286

8.27	ReinitializeDevice Service Initiation Tests.....	286
8.28	ConfirmedTextMessage Service Initiation Tests.....	287
8.29	UnconfirmedTextMessage Service Initiation Tests.....	288
8.30	TimeSynchronization Service Initiation Tests.....	289
8.31	UTCTimeSynchronization Service Initiation Tests.....	290
8.32	Who-Has Service Initiation Tests.....	290
8.33	I-Have Service Initiation Tests.....	291
8.34	Who-Is Service Initiation Tests.....	291
8.35	I-Am Service Initiation Tests.....	292
8.36	VT-Open Service Initiation Tests.....	292
8.37	VT-Close Service Initiation Tests.....	293
8.38	VT-Data Service Initiation Tests.....	294
8.39	RequestKey Service Initiation Tests.....	296
8.40	Authenticate Service Initiation Tests.....	297
9.	APPLICATION SERVICE EXECUTION TESTS.....	301
9.1	AcknowledgeAlarm Service Execution Tests.....	301
9.2	ConfirmedCOVNotification Service Execution Tests.....	327
9.3	UnconfirmedCOVNotification Service Execution Tests.....	332
9.4	ConfirmedEventNotification Service Execution Tests.....	334
9.5	UnconfirmedEventNotification Service Execution Tests.....	337
9.6	GetAlarmSummary Service Execution Tests.....	337
9.7	GetEnrollmentSummary Service Execution Tests.....	338
9.8	GetEventInformation Service Execution Tests.....	342
9.9	LifeSafetyOperation Service Execution Test.....	345
9.10	SubscribeCOV Service Execution Tests.....	346
9.11	SubscribeCOVProperty Service Execution Tests.....	354
9.12	AtomicReadFile Service Execution Tests.....	361
9.13	AtomicWriteFile Service Execution Tests.....	368
9.14	AddListElement Service Execution Tests.....	379
9.15	RemoveListElement Service Execution Tests.....	381
9.16	CreateObject Service Execution Tests.....	383
9.17	DeleteObject Service Execution Tests.....	388
9.18	ReadProperty Service Execution Tests.....	389
9.19	ReadPropertyConditional Service Execution Tests.....	391
9.20	ReadPropertyMultiple Service Execution Tests.....	392
9.21	ReadRange Service Execution Tests.....	400
9.22	WriteProperty Service Execution Tests.....	410
9.23	WritePropertyMultiple Service Execution Tests.....	415
9.24	DeviceCommunicationControl Service Execution Test.....	424
9.25	ConfirmedPrivateTransfer Service Execution Tests.....	430
9.26	UnconfirmedPrivateTransfer Service Execution Tests.....	431
9.27	ReinitializeDevice Service Execution Tests.....	431
9.28	ConfirmedTextMessage Service Execution Tests.....	434
9.29	UnconfirmedTextMessage Service Execution Tests.....	435
9.30	TimeSynchronization Service Execution Tests.....	435
9.31	UTCTimeSynchronization Service Execution Tests.....	437
9.32	Who-Has Service Execution Tests.....	437
9.33	Who-Is Service Execution Tests.....	444
9.34	VT-Open Service Execution Tests.....	447
9.35	VT-Close Service Execution Tests.....	449

9.36	VT-Data Service Execution Tests	450
9.37	RequestKey Service Execution Test.....	450
9.38	Authenticate Service Execution Tests.....	452
9.39	General Testing of Service Execution.....	456
10.	NETWORK LAYER PROTOCOL TESTS.....	458
10.1	General Network Layer Tests.....	458
10.2	Router Functionality Tests	459
10.3	Half-Router Functionality Tests	483
10.4	B/IP PAD Tests	490
10.5	Initiating Network Layer Messages	492
10.6	Non-Router Functionality Tests	494
10.7	Route Binding Tests	496
10.8	Virtual Routing Functionality Tests.....	501
11.	LOGICAL LINK LAYER PROTOCOL TESTS.....	520
11.1	UI Command and Response	520
11.2	XID Command and Response.....	520
11.3	TEST Command and Response	521
12.	DATA LINK LAYER PROTOCOLS TESTS	523
12.1	MS/TP State Machine Tests.....	523
12.2	PTP State Machine Tests	587
13.	SPECIAL FUNCTIONALITY TESTS.....	626
13.1	Segmentation	626
13.2	Time Master	635
13.3	Character Sets	640
13.4	Malformed PDUs	640
13.5	Slave Proxy Tests.....	642
13.6	Automatic Network Mapping.....	644
13.7	Automatic Device Mapping.....	645
13.8	Backup and Restore Procedure Tests	645
13.9	Application State Machine Tests	657
13.10	Workstation Scheduling Tests.....	658
14.	BACnet/IP Functionality Tests.....	676
14.1	Non-BBMD B/IP Device.....	676
14.2	BBMD B/IP Device with a Server Application.....	678
14.3	Broadcast Distribution Table Operations	682
14.4	Foreign Device Table Operations (Negative Tests).....	686
14.5	BACnet Broadcast Management (No Foreign Device Table, No Applications)	687
14.6	Foreign Device Management.....	689
14.7	Broadcast Management (BBMD, Foreign Devices, Local Application).....	693
14.8	Registering as a Foreign Device.....	701
14.9	Initiating BVLL Service Requests Conveying an NPDU.....	702
15.	Reporting Test Results	704
	ANNEX A – EXAMPLE EPICS (INFORMATIVE).....	705
	HISTORY OF REVISIONS.....	722

1. PURPOSE

To define a standard method for verifying that an implementation of the BACnet protocol provides each capability claimed in its Protocol Implementation Conformance Statement (PICS) in conformance with the BACnet standard.

2. SCOPE

This standard provides a comprehensive set of procedures for verifying the correct implementation of each capability claimed on a BACnet PICS including:

- (a) support of each claimed BACnet service, either as an initiator, executor, or both,
- (b) support of each claimed BACnet object-type, including both required properties and each claimed optional property,
- (c) support of the BACnet network layer protocol,
- (d) support of each claimed data link option, and
- (e) support of all claimed special functionality.

3. DEFINITIONS

All definitions from ANSI/ASHRAE Standard 135-2016 also apply to this addendum.

3.1 local network: the network to which a BACnet device is directly connected.

3.2 remote network: a network that is accessible from a BACnet device only by passing through one or more routers.

3.3 test database: a database of BACnet functionality and objects created by reading the contents of an EPICS.

3.4 Abbreviations and Acronyms Used in the Standard

BNF	Backus-Naur Form syntax
EPICS	electronic protocol implementation conformance statement
IUT	implementation under test
TCSL	testing and conformance scripting language
TD	testing device
TPI	text protocol information

4. ELECTRONIC PICS FILE FORMAT

An electronic protocol implementation conformance statement (EPICS) file contains a BACnet protocol implementation conformance statement expressed in a standardized text form. EPICS files are machine and human readable representations of the implementation of BACnet objects and services within a given device. EPICS files shall use the extension ".TPI" (text protocol information) and contain normal editable text lines consisting of text character codes ending in carriage return/linefeed pairs (X'0D', X'0A').

EPICS files are used by software testing tools to conduct and interpret the results of tests defined in this standard. An EPICS file shall accompany any device tested according to the procedures of this standard.

4.1 Character Encoding

BACnet provides for a variety of possible character encodings. The character encodings in BACnet fall into three groups: octet streams, double octet streams and quad octet streams. Octet streams represent characters as single octet values. In some cases, such as Microsoft DBCS and JIS C 6226, certain octet values signal that the second octet which follows should be viewed along with the leading octet as a single value, thus extending the range to greater than 256 possible characters. In contrast, double octet streams view pairs of octets as representing single characters. The ISO 10646 UCS-2 encoding is an example. The first or leading octet of the pair is the most significant part of the value. Quad octet streams, such as ISO 10646 UCS-4, treat tuples of four octets at a time as single characters with the first or leading octet being the most significant.