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# INTERNATIONAL STANDARD

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**Information technology – Home electronic system (HES) architecture –  
Part 3-4: System management – Management procedures for a network based  
control of HES Class 1**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## CONTENTS

FOREWORD.....	7
INTRODUCTION.....	9
1 Scope.....	10
2 Normative references.....	10
3 Terms, definitions and abbreviations.....	11
3.1 Terms and definitions.....	11
3.2 Abbreviations.....	13
4 Conformance.....	13
5 Network management procedures.....	13
5.1 General.....	13
5.2 NM_IndividualAddress_Read.....	14
5.2.1 Description.....	14
5.2.2 Management service used.....	14
5.2.3 Sequence.....	14
5.2.4 Exception handling.....	14
5.3 NM_IndividualAddress_Write.....	14
5.3.1 Description.....	14
5.3.2 Management services used.....	15
5.3.3 Sequence.....	15
5.3.4 Exception handling.....	16
5.4 NM_SerialNumberDefaultIA_Scan.....	16
5.4.1 Description.....	16
5.4.2 Management service used.....	16
5.4.3 Sequence.....	17
5.4.4 Exception handling.....	17
5.5 NM_IndividualAddress_SerialNumber_Read.....	17
5.5.1 Description.....	17
5.5.2 Management service used.....	17
5.5.3 Sequence.....	17
5.5.4 Exception handling.....	18
5.6 NM_IndividualAddress_SerialNumber_Write.....	18
5.6.1 Description.....	18
5.6.2 Management services used.....	18
5.6.3 Sequence.....	18
5.6.4 Exception handling.....	18
5.7 NM_DomainAddress_Read.....	19
5.7.1 Description.....	19
5.7.2 Management service used.....	19
5.7.3 Sequence.....	19
5.7.4 Exception handling.....	19
5.8 NM_DomainAddress_Write.....	19
5.8.1 Description.....	19
5.8.2 Management services used.....	20
5.8.3 Sequence.....	20

5.8.4	Exception handling.....	21
5.9	NM_DomainAddress_Scan .....	21
5.9.1	Description .....	21
5.9.2	Management service used .....	21
5.9.3	Sequence .....	22
5.9.4	Exception handling.....	22
5.10	NM_Router_Scan .....	22
5.10.1	Description .....	22
5.10.2	Management service used .....	22
5.10.3	Sequence .....	23
5.11	NM_SubnetworkDevices_Scan .....	23
5.11.1	Description .....	23
5.11.2	Management service used .....	23
5.11.3	Sequence .....	23
5.12	NM_SubnetworkAddress_Read.....	24
5.12.1	Description .....	24
5.12.2	Management service used .....	24
5.12.3	Sequence .....	24
5.12.4	Exception handling.....	24
5.13	NM_IndividualAddress_Reset .....	24
5.13.1	Description .....	24
5.13.2	Management services used.....	24
5.13.3	Sequence .....	25
5.14	NM_IndividualAddress_Scan.....	25
5.14.1	Description .....	25
5.14.2	Management services used.....	25
5.14.3	Sequence .....	26
5.14.4	Possible reactions.....	26
5.15	NM_IndividualAddress_Check.....	26
5.15.1	Description .....	26
5.15.2	Management services used.....	26
5.15.3	Sequence .....	27
5.16	NM_IndividualAddress_Check_LocalSubnetwork.....	27
5.16.1	Description .....	27
5.16.2	Management service used .....	27
5.16.3	Sequence .....	28
5.17	NM_GroupAddress_Check.....	28
5.17.1	Description .....	28
5.17.2	Management service used .....	28
5.17.3	Sequence .....	28
5.17.4	Exception handling.....	29
5.18	NM_FunctionalBlock_Scan .....	29
5.18.1	Description .....	29
5.18.2	Management service used .....	29
5.18.3	Sequence .....	29
5.18.4	Exception handling.....	29
6	Device management procedures .....	30
6.1	General .....	30
6.2	General exception handling.....	30

6.3	DM_Connect.....	30
6.3.1	General Description .....	30
6.3.2	Procedure: DMP_Connect_RCo .....	30
6.3.3	Procedure: DMP_Connect_RCI .....	31
6.4	DM_Disconnect .....	32
6.4.1	General description.....	32
6.4.2	Procedure: DMP_Disconnect_RCo.....	32
6.4.3	Procedure: DMP_Disconnect_RCI.....	32
6.5	DM_Authorize.....	33
6.5.1	General description.....	33
6.5.2	Procedure: DMP_Authorize_RCo .....	33
6.6	DM_SetKey .....	33
6.6.1	General description.....	33
6.6.2	Procedure: DM_SetKey_RCo .....	34
6.7	DM_Restart .....	34
6.7.1	General description.....	34
6.7.2	Procedure: DM_Restart_RCo .....	34
6.8	DM_Delay.....	35
6.8.1	Description .....	35
6.8.2	Procedure: DMP_Delay.....	35
6.9	DM_IndividualAddressRead .....	35
6.10	DM_IndividualAddressWrite .....	35
6.11	DM_DomainAddressRead .....	36
6.12	DM_DomainAddressWrite.....	36
6.13	DM_ProgMode_Switch.....	36
6.13.1	Description .....	36
6.13.2	Procedure: DMP_ProgModeSwitch_RCo .....	36
6.14	DM_GroupObject_Link_Read.....	37
6.14.1	Description .....	37
6.14.2	Management service used .....	37
6.14.3	Sequence .....	37
6.14.4	Exception handling.....	37
6.15	DM_GroupObject_Link_Write.....	37
6.15.1	Description .....	37
6.15.2	Management services used.....	38
6.15.3	Sequence .....	38
6.15.4	Exception handling.....	38
6.16	DM_MemWrite.....	38
6.16.1	General description.....	38
6.16.2	Procedure: DMP_MemWrite_RCo .....	39
6.16.3	Procedure: DMP_MemWrite_RCoV.....	40
6.17	DM_MemVerify .....	41
6.17.1	General description.....	41
6.17.2	Procedure: DMP_MemVerify_RCo.....	42
6.18	DM_MemRead.....	42
6.18.1	General description.....	42
6.18.2	Procedure: DMP_MemRead_RCo .....	43
6.19	DM_UserMemWrite .....	43
6.19.1	General description.....	43

6.19.2	Procedure: DMP_UserMemWrite_RCo	44
6.19.3	Procedure: DMP_UserMemWrite_RCoV	45
6.20	DM_UserMemVerify	46
6.20.1	General description	46
6.20.2	Procedure: DMP_UserMemVerify_RCo	46
6.21	DM_UserMemRead	47
6.21.1	General description	47
6.21.2	Procedure: DMP_UserMemRead_RCo	47
6.22	DM_InterfaceObjectWrite	48
6.22.1	General description	48
6.22.2	Procedure: DMP_InterfaceObjectWrite_R	48
6.23	DM_InterfaceObjectVerify	49
6.23.1	General description	49
6.23.2	Procedure: DMP_InterfaceObjectVerify_R	50
6.24	DM_InterfaceObjectRead	51
6.24.1	General description	51
6.24.2	Procedure: DMP_InterfaceObjectRead_R	51
6.25	DM_InterfaceObjectScan	52
6.25.1	General description	52
6.25.2	Procedure: DMP_InterfaceObjectScan_R	53
6.26	DM_LoadStateMachineWrite	54
6.26.1	General description	54
6.26.2	Procedure: DMP_LoadStateMachineWrite_RCo_Mem	56
6.26.3	Procedure: DMP_LoadStateMachineWrite_RCo_IO	59
6.27	DM_LoadStateMachineVerify	62
6.27.1	General description	62
6.27.2	Procedure: DM_LoadStateMachineVerify_RCo_Mem	63
6.27.3	Procedure: DMP_LoadStateMachineVerify_R_IO	64
6.28	DM_LoadStateMachineRead	64
6.28.1	General description	64
6.28.2	Procedure: DMP_LoadStateMachineRead_RCo_Mem	65
6.28.3	Procedure: DMP_LoadStateMachineRead_R_IO	66
6.29	DM_RunStateMachineWrite	67
6.29.1	General description	67
6.29.2	Procedure: DMP_RunStateMachineWrite_RCo_Mem	67
6.29.3	Procedure: DMP_RunStateMachineWrite_R_IO	68
6.30	DM_RunStateMachineVerify	69
6.30.1	General description	69
6.30.2	Procedure: DMP_RunStateMachineVerify_RCo_Mem	70
6.30.3	Procedure: DMP_RunStateMachineVerify_R_IO	70
6.31	DM_RunStateMachineRead	71
6.31.1	General description	71
6.31.2	Procedure: DMP_RunStateMachineRead_RCo_Mem	72
6.31.3	Procedure: DMP_RunStateMachineRead_R_IO	72
6.32	DM_LCSlaveMemWrite	73
6.32.1	General description	73
6.32.2	Procedure: DMP_LCSlaveMemWrite_RCo	74
6.33	DM_LCSlaveMemVerify	75
6.33.1	General description	75

6.33.2 Procedure: DMP_LCSlaveMemVerify_RCo.....	75
6.34 DM_LCSlaveMemRead .....	76
6.34.1 General description.....	76
6.34.2 Procedure: DMP_LCSlaveMemRead_RCo .....	76
6.35 DM_LCExtMemWrite .....	77
6.35.1 General description.....	77
6.35.2 Procedure: DMP_LCExtMemWrite_RCo.....	78
6.36 DM_LCExtMemVerify.....	79
6.36.1 General description.....	79
6.36.2 Procedure: DMP_LCExtMemVerify_RCo .....	80
6.37 DM_LCExtMemRead .....	80
6.37.1 General description.....	80
6.37.2 Procedure: DMP_LCExtMemRead_RCo.....	81
6.38 DM_LCExtMemOpen .....	81
6.38.1 General description.....	81
6.38.2 Procedure: DMP_LCExtMemOpen_RCo.....	82
6.39 DM_LCRouteTableStateWrite .....	82
6.39.1 General description.....	82
6.39.2 Procedure: DMP_LCRouteTableStateWrite_RCo.....	82
6.40 DM_LCRouteTableStateVerify.....	83
6.40.1 General description.....	83
6.40.2 Procedure: DMP_LCRouteTableStateVerify_RCo .....	83
6.41 DM_LCRouteTableStateRead .....	84
6.41.1 General description.....	84
6.41.2 Procedure: DMP_LCRouteTableStateRead_RCo.....	84
Bibliography.....	86
Table 1 – Resulting states after each event .....	55
Table 2 – Overview state machine types and tables .....	55
Table 3 – Overview addresses for the load management controls .....	56
Table 4 – Addresses of the load state controls.....	63
Table 5 – Addresses of the load state controls.....	65
Table 6 – Run state events and resulting run states.....	67
Table 7 – Addresses of the run state controls .....	68

## INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE –

### Part 3-4: System management – Management procedures for network based control of HES Class 1

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EP 0817 423A1

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International Standard ISO/IEC 14543-3-4 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

This International Standard is a product family standard. It shall be used in conjunction with ISO/IEC 14543-2-1, 14543-3-1, 14543-3-2, 14543-3-3, 14543-3-5, 14543-3-6 and 14543-3-7.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the title page.

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



## INTRODUCTION

The management procedures capture the dynamics of managing distributed resources on the network in terms of abstract procedures. On the network itself, a procedure consists of a sequence of telegrams, exchanged between two partners, the management client and the management server.

The management client is a powerful device with 'controller' function, typically, but not exclusively, PC-based. Except for network-oriented management, the server is always a 'target device'. In the former case, it is in fact the network as a whole which acts as partner or server. Ultimately, of course, the response to a client request is always generated by the individual devices connected to the network, either one or many. In addition to its run-time behaviour (based on group communication), every device moreover supports a rich management server profile for this purpose. An important objective of this part "Management Procedures" is to allow a concise description of such a profile. It is clear that the information about the full set of management procedures supported by a particular device or implementation tells us significantly more about the device than merely the list of services through which this is realised.

In general, one single device may well implement both client as well as server function. For and during the execution of a particular management procedure, however, one device takes on one single role.

Currently, ISO/IEC 14543, *Information technology – Home Electronic System (HES) architecture*, consists of the following parts:

- Part 2-1: *Introduction and device modularity*
- Part 3-1: *Communication layers – Application layer for network based control of HES Class 1*
- Part 3-2: *Communication layers – Transport, network and general parts of data link layer for network based control of HES Class 1*
- Part 3-3: *User process for network based control of HES Class 1*
- Part 3-4: *System management – Management procedures for network based control of HES Class 1*
- Part 3-5: *Media and media dependent layers – Power line for network based control of HES Class 1*
- Part 3-6: *Media and media dependent layers – Twisted pair for network based control of HES Class 1*
- Part 3-7: *Media and media dependent layers – Radio frequency for network based control of HES Class 1*
- Part 4: *Home and building automation in a mixed-use building (technical report)*
- Part 5-1: *Intelligent grouping and resource sharing for HES Class 2 and Class 3 – Core protocol (under consideration)*
- Part 5-2: *Intelligent grouping and resource sharing for HES Class 2 and Class 3 – Device certification (under consideration)*

Additional parts may be added later.

## INFORMATION TECHNOLOGY – HOME ELECTRONIC SYSTEM (HES) ARCHITECTURE –

### Part 3-4: System management – Management procedures for network based control of HES Class 1

#### 1 Scope

This part of ISO/IEC 14543 establishes general principles for network and device management shared by all installation modes for network based control of HES Class 1 and independent of the installation mode used. The aim is to standardize the interaction between a management client and a management server which leads to the successful configuration of the devices. The management procedures thus specify the highest level communication requirements between a management client and a management server. These requirements specify

- a) the **sequence** of messages that shall be exchanged between a management client and a management server,
- b) the **contents** and **interpretation** of the transported data,
- c) the **action** to take based on this data (setting internal resources, state machines, physical actions, ...), and
- d) the error and exception handling.

The management procedures are based on the application layer services.

Some management procedures are solely based on the use of one or a sequence of dedicated application layer services to achieve the required goal. For these, ISO/IEC 14543-3-1 and ISO/IEC 14543-3-2 provide sufficient information concerning the underlying mechanisms.

Other management procedures additionally use the application layer services to access internal data in the management server to achieve the required goal. This data is defined as objects as specified in ISO/IEC 14543-3-3.

#### 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.

ISO/IEC 14543-2-1, *Information technology – Home electronic system (HES) architecture – Part 2-1: Introduction and device modularity*

ISO/IEC 14543-3-1, *Information technology – Home electronic system (HES) architecture – Part 3-1: Communication layers – Application layer for network based control of HES Class 1*

ISO/IEC 14543-3-2, *Information technology – Home electronic system (HES) architecture – Part 3-2: Communication layers – Transport, network and general parts of data link layer for network based control of HES Class 1*

ISO/IEC 14543-3-3, *Information technology – Home electronic system (HES) architecture – Part 3-3: User process for network based control of HES Class 1*

ISO/IEC 14543-3-5, *Information technology – Home electronic system (HES) architecture – Part 3-5: Media and media dependent layers – Power line for network based control of HES Class 1*

ISO/IEC 14543-3-6, *Information technology – Home electronic system (HES) architecture – Part 3-6: Media and media dependent layers – Twisted pair for network based control of HES Class 1*

ISO/IEC 14543-3-7, *Information technology – Home electronic system (HES) architecture – Part 3-7: Media and media dependent layers – Radio frequency for network based control of HES Class 1*