ISO/IEC 14543-3-1 :2006-09 (E)

Information technology_- Home Electronic Systems (HES) Architecture_- Part_3-1: Communication layers_- Application layer for network based control of HES Class 1

CONTENTS

FOREWORD 5
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms, definitions and abbreviations 7
3.1 Terms and definitions 7
3.2 Abbreviations 8
4 Conformance 8
5 Services of the application layer 8
5.1 Communication modes 8
5.2 Service primitives of the application layer 9
6 Application layer protocol data unit (APDU) 10
7 Application layer services 12
7.1 Application layer services on multicast communication mode 12
7.1.1 General 12
7.1.2 A_GroupValue_Read Service 13
7.1.3 A_GroupValue_Write Service 17
7.2 Application layer services on broadcast communication mode 19
7.2.1 A_IndividualAddress_Write Service 19
7.2.2 A_IndividualAddress_Read-Service 20
7.2.3 A_IndividualAddressSerialNumber_Read-Service 23
7.2.4 A_IndividualAddressSerialNumber_Write Service 26
7.2.5 A_ServiceInformation_Indication_Write Service 27
7.2.6 A_DomainAddress_Write Service 28
7.2.7 A_DomainAddress_Read Service 30
7.2.8 A_DomainAddressSelective_Read Service 32
7.2.9 A_NetworkParameter_Read Service 33
7.2.10 A_NetworkParameter_Write Service 36
7.3 Application layer services on point-to-point connectionless communication mode 37
7.3.1 General 37
7.3.2 A_PropertyValue_Read Service 38
7.3.3 A_PropertyValue_Write Service 41
7.3.4 A_PropertyDescription_Read Service 43
7.3.5 A_DeviceDescriptor_Read Service 46
7.3.6 A_Link_Read Service 49
7.3.7 A_Link_Write Service 50
7.4 Application layer services on point-to-point connection-oriented communication mode 51
7.4.1 General 51
7.4.2 A_ADC_Read Service 52
7.4.3 A_Memory_Read Service 54
7.4.4 A_Memory_Write Service 57
7.4.5 A_MemoryBit_Write Service 59
7.4.6 A_UserData 62

7.4.7 A_Restart Service 73
7.4.8 A_Authorize_Request Service 74
7.4.9 A_Key_Write Service 76
7.5 Router-specific application layer services on point-to-point connection-oriented communication mode 78
8 Parameters of application layer 79
8.1 Association table 79
8.2 Verify flag 79
Bibliography 80

Figure 1 – Interaction of the application layer for services that are not remote confirmed 9
Figure 2 – Interaction of the application layer for services that are remote confirmed 10
Figure 3 – APDU (Example) 10
Figure 4 – Mapping the ASAP to the TSAP (Example) 13
Figure 5 – Mapping a TSAP to an ASAP 13
Figure 6 – Handling requests and responses 13
Figure 7 – Message flow for the A_Group_Value_Read service 13
Figure 8 – A_GroupValue_Read-PDU (Example) 14
Figure 9 – A_GroupValue_Response-PDU (Example), length of ASAP data is more than 6 bit 14
Figure 10 – A_GroupValue_Response-PDU (Example) length of ASAP data is 6 bit or less 15
Figure 11 – Message flow for the A_Group_Value_Write service 17
Figure 12 – A_GroupValue_Write-PDU (Example), length of ASAP data is more than 6 bit 17
Figure 13 – A_GroupValue_Write-PDU (Example), length of ASAP data is 6 bit or less 18
Figure 14 – A_IndividualAddress_Write-PDU (Example) 19
Figure 15 – A_IndividualAddress_Read-PDU (Example) 21
Figure 16 – A_IndividualAddress_Response-PDU (Example) 21
Figure 17 – Message flow for the A_IndividualAddressSerialNumber_Read service 23
Figure 18 – A_IndividualAddressSerialNumber_Read-PDU (Example) 23
Figure 19 – A_IndividualAddressSerialNumber_Response-PDU (Example) 24
Figure 20 – A_IndividualAddressSerialNumber_Write-PDU (Example) 26
Figure 21 – A_ServiceInformation_Indication_Write-PDU (Example) 27
Figure 22 – A_DomainAddress_Write-PDU 29
Figure 23 – A_DomainAddress_Read-PDU (Example) 30
Figure 24 – A_DomainAddress_Response-PDU (Example) 30
Figure 25 – A_DomainAddressSelective_Read-PDU (Example) 32
Figure 26 – A_NetworkParameter_Read-PDU (Example) 34
Figure 27 – A_NetworkParameter_Response-PDU (Example) 34
Figure 28 – A_NetworkParameter_Write-PDU (Example) 36
Figure 29 – A_PropertyValue_Read-PDU (Example) 38
Figure 30 – A_PropertyValue_Response-PDU (Example) 39
Figure 31 – A_PropertyValue_Write-PDU (Example) 41
Figure 32 – A_PropertyDescription_Read-PDU (Example) 44

Figure 33 – A_PropertyDescription_Response-PDU (Example) 44
Figure 34 – A_DeviceDescriptor_Read-PDU (Example) 47
Figure 35 – A_DeviceDescriptor_Response-PDU (Example) 47
Figure 36 – Message flow for A_Link_Read Service 49
Figure 37 – A_Link_Read-PDU (Example) 49
Figure 38 – A_Link_Response-PDU 49
Figure 39 – Message flow for A_Link_Write Service 50
Figure 40 – A_Link_Write-PDU 51
Figure 41 – A_ADC_Read-PDU (Example) 52
Figure 42 – A_ADC_Response-PDU (Example) 52
Figure 43 – A_Memory_Read-PDU (Example) 55
Figure 44 – A_Memory_Response-PDU (Example) 55
Figure 45 – A_Memory_Write-PDU (Example) 57
Figure 46 – A_MemoryBit_Write-PDU 61
Figure 47 – A_UserMemory_Read-PDU (Example) 63
Figure 48 – A_UserMemory_Response-PDU 63
Figure 49 – A_UserMemory_Write-PDU 66
Figure 50 – A_UserMemoryBit_Write-PDU (Example) 69
Figure 51 – A_UserManufacturerInfo_Read-PDU (Example) 71
Figure 52 – A_UserManufacturerInfo_Response-PDU 72
Figure 53 – A_Restart-PDU (Example) 74
Figure 54 – A_Authorize_Request-PDU (Example) 75
Figure 55 – A_Authorize_Response-PDU (Example) 75
Figure 56 – A_Key_Write-PDU (Example) 77
Figure 57 – A_Key_Response-PDU (Example) 77

Table 1 – APCI overview 11
Table 2 – Function table for A_MemoryBit_Write-Services 60
Table 3 – Function table for A_UserMemoryBit_Write-Services 68
Table 4 – Association table of keys to access levels 76