

ANSI/CEA Standard

Control Networking Protocol Specification Part 6: Application Elements

ANSI/CEA-709.6

September 2015



CEA[®]
Consumer Electronics Association
www.CE.org

NOTICE

Consumer Electronics Association (CEA[®]) Standards, Bulletins and other technical publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for his particular need. Existence of such Standards, Bulletins and other technical publications shall not in any respect preclude any member or nonmember of CEA from manufacturing or selling products not conforming to such Standards, Bulletins or other technical publications, nor shall the existence of such Standards, Bulletins and other technical publications preclude their voluntary use by those other than CEA members, whether the standard is to be used either domestically or internationally.

Standards, Bulletins and other technical publications are adopted by CEA in accordance with the American National Standards Institute (ANSI) patent policy. By such action, CEA does not assume any liability to any patent owner, nor does it assume any obligation whatever to parties adopting the Standard, Bulletin or other technical publication.

This document does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before its use.

This document is copyrighted by the Consumer Electronics Association (CEA[®]) and may not be reproduced, in whole or part, without written permission. Federal copyright law prohibits unauthorized reproduction of this document by any means. Organizations may obtain permission to reproduce a limited number of copies by entering into a license agreement. Requests to reproduce text, data, charts, figures or other material should be made to CEA.

(Formulated under the cognizance of the CEA **R7 Home Networks Committee**.)

Published by
©CONSUMER ELECTRONICS ASSOCIATION 2014
Technology & Standards Department
www.CE.org

All rights reserved

CEA-709.6

FOREWORD

This standard is prepared based upon work provided to the Consumer Electronics Association (CEA) R7 Consumer Electronics Networking Committee by LonMark International, a non-profit standards development association. This work has been modified from its original creation to update it to the latest revision. Similar documents have been used in other international standards bodies.

This standard is part of a series of standards for open data transmission in building automation, home automation, and control in building management systems. The content of this standard covers the data communications used for management, automation/control and field functions.

The CEA-709.6 is part of a series of ANSI/CEA-709 Standards under the general title *Control Network Protocol (CNP)*, which comprises the following parts:

Part 1: *Protocol Stack Specification*

Part 2: *Power Line Channel Specification*

Part 3: *Twisted-Pair Communication*

Part 4: *Fiber Optic Specification*

Part 5: *Implementation*

Part 6: *Application Elements*

Tags

Descriptors: system management, open systems interconnection, interoperability, device communications, network interconnection, buildings, heating, ventilation, air conditioning, data bus, data transmission, protocols, device profiles, configuration properties, network variables, enumeration types, device resource files, building automation, controls, building management

<u>Contents</u>	Page
INTRODUCTION.....	1
1 SCOPE.....	1
2 NORMATIVE REFERENCES.....	2
2.1 NORMATIVE REFERENCES.....	2
2.1.1 <i>Normative Reference List</i>	2
2.1.2 <i>Normative Reference Acquisition</i>	2
3 TERMS AND DEFINITIONS.....	2
4 STANDARD NETWORK-VARIABLE TYPE – SNVT.....	10
4.1 INTRODUCTION	10
4.2 SNVT_AMP	11
4.3 SNVT_AMP_MIL	11
4.4 SNVT_ANGLE.....	11
4.5 SNVT_ANGLE_VEL.....	11
4.6 SNVT_BTU_KILO	12
4.7 SNVT_BTU_MEGA	12
4.8 SNVT_CHAR_ASCII.....	12
4.9 SNVT_COUNT	12
4.10 SNVT_COUNT_INC	12
4.11 SNVT_DATE_DAY	12
4.12 SNVT_ELEC_KWH.....	13
4.13 SNVT_ELEC_WHR.....	13
4.14 SNVT_FLOW.....	13
4.15 SNVT_FLOW_MIL.....	13
4.16 SNVT_LENGTH.....	13
4.17 SNVT_LENGTH_KILO	13
4.18 SNVT_LENGTH_MICR	14
4.19 SNVT_LENGTH_MIL	14
4.20 SNVT_LEV_CONT	14
4.21 SNVT_MASS	14
4.22 SNVT_MASS_KILO	15
4.23 SNVT_MASS_MEGA	15
4.24 SNVT_MASS_MIL	15
4.25 SNVT_POWER.....	15
4.26 SNVT_POWER_KILO.....	15
4.27 SNVT_PPM	15
4.28 SNVT_PRESS.....	16
4.29 SNVT_RES.....	16
4.30 SNVT_RES_KILO.....	16
4.31 SNVT_SOUND_DB	16
4.32 SNVT_SPEED	16
4.33 SNVT_SPEED_MIL	16
4.34 SNVT_STR_ASC.....	17
4.35 SNVT_STR_INT	17

CEA-709.6

4.36	SNVT_TELCOM	17
4.37	SNVT_TEMP	18
4.38	SNVT_VOL	18
4.39	SNVT_VOL_KILO	18
4.40	SNVT_VOL_MIL	18
4.41	SNVT_VOLT.....	18
4.42	SNVT_VOLT_DBMV	18
4.43	SNVT_VOLT_KILO.....	19
4.44	SNVT_VOLT_MIL.....	19
4.45	SNVT_AMP_F.....	19
4.46	SNVT_ANGLE_F	19
4.47	SNVT_ANGLE_VEL_F.....	19
4.48	SNVT_COUNT_F.....	20
4.49	SNVT_COUNT_INC_F	20
4.50	SNVT_FLOW_F	20
4.51	SNVT_LENGTH_F.....	20
4.52	SNVT_LEV_CONT_F.....	21
4.53	SNVT_MASS_F.....	21
4.54	SNVT_POWER_F	21
4.55	SNVT_PPM_F.....	21
4.56	SNVT_PRESS_F	21
4.57	SNVT_RES_F	22
4.58	SNVT_SOUND_DB_F.....	22
4.59	SNVT_SPEED_F.....	22
4.60	SNVT_TEMP_F.....	22
4.61	SNVT_TIME_F	22
4.62	SNVT_VOL_F.....	23
4.63	SNVT_VOLT_F	23
4.64	SNVT_BTU_F.....	23
4.65	SNVT_ELEC_WHR_F	23
4.66	SNVT_CONFIG_SRC	23
4.67	SNVT_COLOR	24
4.68	SNVT_GRAMMAGE	24
4.69	SNVT_GRAMMAGE_F.....	24
4.70	SNVT_FILE_REQ.....	25
4.71	SNVT_FILE_STATUS	27
4.72	SNVT_FREQ_F	28
4.73	SNVT_FREQ_HZ	28
4.74	SNVT_FREQ_KILOHZ	29
4.75	SNVT_FREQ_MILHZ	29
4.76	SNVT_LUX	29
4.77	SNVT_LEV_PERCENT	29
4.78	SNVT_MULTIPLIER.....	29
4.79	SNVT_STATE	30
4.80	SNVT_TIME_STAMP.....	31
4.81	SNVT_ZEROSPAN.....	32
4.82	SNVT_MAGCARD.....	32
4.83	SNVT_ELAPSED_TM.....	36
4.84	SNVT_ALARM	36
4.85	SNVT_CURRENCY	38
4.86	SNVT_FILE_POS	38
4.87	SNVT_MULDIV.....	39

CEA-709.6

4.88	SNVT_OBJ_REQUEST.....	39
4.89	SNVT_OBJ_STATUS.....	40
4.90	SNVT_PRESET.....	42
4.91	SNVT_SWITCH.....	43
4.92	SNVT_TRANS_TABLE.....	43
4.93	SNVT_OVERRIDE.....	45
4.94	SNVT_PWR_FACT.....	45
4.95	SNVT_PWR_FACT_F.....	45
4.96	SNVT_DENSITY.....	45
4.97	SNVT_DENSITY_F.....	45
4.98	SNVT_RPM.....	46
4.99	SNVT_HVAC_EMERG.....	46
4.100	SNVT_ANGLE_DEG.....	46
4.101	SNVT_TEMP_P.....	46
4.102	SNVT_TEMP_SETPT.....	46
4.103	SNVT_TIME_SEC.....	47
4.104	SNVT_HVAC_MODE.....	47
4.105	SNVT_OCCUPANCY.....	47
4.106	SNVT_AREA.....	47
4.107	SNVT_HVAC_OVERID.....	48
4.108	SNVT_HVAC_STATUS.....	48
4.109	SNVT_PRESS_P.....	49
4.110	SNVT_ADDRESS.....	49
4.111	SNVT_SCENE.....	49
4.112	SNVT_SCENE_CFG.....	50
4.113	SNVT_SETTING.....	51
4.114	SNVT_EVAP_STATE.....	51
4.115	SNVT_THERM_MODE.....	51
4.116	SNVT_DEFR_MODE.....	51
4.117	SNVT_DEFR_TERM.....	52
4.118	SNVT_DEFR_STATE.....	52
4.119	SNVT_TIME_MIN.....	52
4.120	SNVT_TIME_HOUR.....	52
4.121	SNVT_PH.....	52
4.122	SNVT_PH_F.....	52
4.123	SNVT_CHLR_STATUS.....	53
4.124	SNVT_TOD_EVENT.....	54
4.125	SNVT_SMO_OBSCUR.....	54
4.126	SNVT_FIRE_TEST.....	54
4.127	SNVT_TEMP_ROR.....	55
4.128	SNVT_FIRE_INIT.....	55
4.129	SNVT_FIRE_INDCTE.....	55
4.130	SNVT_TIME_ZONE.....	55
4.131	SNVT_EARTH_POS.....	58
4.132	SNVT_REG_VAL.....	59
4.133	SNVT_REG_VAL_TS.....	59
4.134	SNVT_VOLT_AC.....	61
4.135	SNVT_AMP_AC.....	61
4.136	SNVT_TURBIDITY.....	61
4.137	SNVT_TURBIDITY_F.....	61
4.138	SNVT_HVAC_TYPE.....	61
4.139	SNVT_ELEC_KWH_L.....	61

CEA-709.6

4.140	SNVT_TEMP_DIFF_P.....	62
4.141	SNVT_CTRL_REQ.....	62
4.142	SNVT_CTRL_RESP.....	62
4.143	SNVT_PTZ.....	63
4.144	SNVT_PRIVACYZONE.....	64
4.145	SNVT_POS_CTRL.....	64
4.146	SNVT_ENTHALPY.....	66
4.147	SNVT_GFCI_STATUS.....	66
4.148	SNVT_MOTOR_STATE.....	66
4.149	SNVT_PUMPSET_MN.....	66
4.150	SNVT_EX_CONTROL.....	67
4.151	SNVT_PUMPSET_SN.....	68
4.152	SNVT_PUMP_SENSOR.....	70
4.153	SNVT_ABS_HUMID.....	71
4.154	SNVT_FLOW_P.....	71
4.155	SNVT_DEV_C_MODE.....	71
4.156	SNVT_VALVE_MODE.....	72
4.157	SNVT_ALARM_2.....	72
4.158	SNVT_STATE_64.....	72
4.159	SNVT_NV_TYPE.....	78
4.160	SNVT_ENT_OPMODE.....	79
4.161	SNVT_ENT_STATE.....	79
4.162	SNVT_ENT_STATUS.....	79
4.163	SNVT_FLOW_DIR.....	82
4.164	SNVT_HVAC_SATSTS.....	82
4.165	SNVT_DEV_STATUS.....	83
4.166	SNVT_DEV_FAULT.....	87
4.167	SNVT_DEV_MAINT.....	92
4.168	SNVT_DATE_EVENT.....	95
4.169	SNVT_SCHED_VAL.....	95
4.170	SNVT_SEC_STATE.....	95
4.171	SNVT_SEC_STATUS.....	96
4.172	SNVT_SBLND_STATE.....	96
4.173	SNVT_RAC_CTRL.....	97
4.174	SNVT_RAC_REQ.....	100
4.175	SNVT_COUNT_32.....	103
4.176	SNVT_CLOTHES_W_C.....	103
4.177	SNVT_CLOTHES_W_M.....	106
4.178	SNVT_CLOTHES_W_S.....	107
4.179	SNVT_CLOTHES_W_A.....	111
4.180	SNVT_MULTIPLIER_S.....	115
4.181	SNVT_SWITCH_2.....	115
4.182	SNVT_COLOR_2.....	117
4.183	SNVT_LOG_STATUS.....	118
4.184	SNVT_TIME_STAMP_P.....	120
4.185	SNVT_LOG_FX_REQUEST.....	121
4.186	SNVT_LOG_FX_STATUS.....	121
4.187	SNVT_LOG_REQUEST.....	122
4.188	SNVT_ENTHALPY_D.....	122
4.189	SNVT_AMP_AC_MIL.....	122
4.190	SNVT_TIME_HOUR_P.....	122
4.191	SNVT_LAMP_STATUS.....	123

CEA-709.6

4.192	SNVT_ENVIRONMENT	133
4.193	SNVT_GEO_LOC.....	134
4.194	SNVT_PROGRAM_STATUS.....	134
4.195	SNVT_LOAD_OFFSETS	135
4.196	SNVT_WM2_P.....	136
4.197	SNVT_SAFE_1	136
4.198	SNVT_SAFE_2	138
4.199	SNVT_SAFE_4	140
4.200	SNVT_SAFE_8	142
4.201	SNVT_TIME_VAL_2.....	144
4.202	SNVT_TIME_OFFSET.....	145
4.203	SNVT_SCHED_EXC.....	146
4.204	SNVT_SCHED_STATUS	147
4.205	SNVT_MASS_FLOW.....	147
4.206	SNVT_MASS_FLOW_F.....	147
4.207	SNVT_TIME_MIN_P.....	147
4.208	SNVT_STAT_CONTROL	147
4.209	SNVT_FAULTS.....	148
4.210	SNVT_CONTROL_DATA.....	149
4.211	SNVT_POWER_PROFILE	150
4.212	SNVT_VERSION.....	151
4.213	SNVT_CONTROL_CFG.....	151
4.214	SNVT_FAULT_LIMITS.....	152
4.215	SNVT_SCENE_DEF	153
5	STANDARD CONFIGURATION-PROPERTY TYPE – SCPT.....	154
5.1	INTRODUCTION	154
5.2	SCPTACTFBDLY	154
5.3	SCPTALRMCLRT1	154
5.4	SCPTALRMCLRT2	155
5.5	SCPTALRMHBT.....	155
5.6	SCPTALRMSETT1.....	155
5.7	SCPTALRMSETT2.....	155
5.8	SCPTDEFOUTPUT.....	155
5.9	SCPTDRIVET	155
5.10	SCPTHIGHLIMIT1.....	156
5.11	SCPTHIGHLIMIT2.....	156
5.12	SCPTHYSTHIGH1	156
5.13	SCPTHYSTHIGH2	156
5.14	SCPTHYSTLOW1.....	156
5.15	SCPTHYSTLOW2.....	156
5.16	SCPTINFBDLY	157
5.17	SCPTINVRTOUT.....	157
5.18	SCPTLOCATION.....	157
5.19	SCPTLOWLIMIT1	157
5.20	SCPTLOWLIMIT2	157
5.21	SCPTMAXRNGE	158
5.22	SCPTMAXRCVT	158
5.23	SCPTMAXSNDT	158
5.24	SCPTMINRNGE.....	158
5.25	SCPTMINSNDT.....	158
5.26	SCPTNWRKCNFG	158

CEA-709.6

5.27	SCPTOFFSET	159
5.28	SCPTSNDDELTA.....	159
5.29	SCPTRNSTBLX	159
5.30	SCPTRNSTBLY	159
5.31	SCPTOFFDELY	159
5.32	SCPTGAIN	160
5.33	SCPTOVRBEHAVE.....	160
5.34	SCPTOVRVALUE	160
5.35	SCPTBYPASSTIME	160
5.36	SCPTMANOVRTIME	160
5.37	SCPTHUMSETPT	160
5.38	SCPTMAXFLOWHEAT	161
5.39	SCPTFIREINITTYPE	161
5.40	SCPTSMOKE NOMSENS	161
5.41	SCPTSMOKE DAYALRMLIM	161
5.42	SCPTACTUATOR TYPE	161
5.43	SCPTLIMITCO2	162
5.44	SCPTMINDELTA ANGL	162
5.45	SCPTDIRECTION	162
5.46	SCPTDRIVETIME	162
5.47	SCPTDUCTAREA	162
5.48	SCPTMINDELTA FLOW.....	163
5.49	SCPTMAXRCVTIME	163
5.50	SCPTMAXSENDTIME	163
5.51	SCPTMAXSETPOINT.....	163
5.52	SCPTMAXFLOW.....	163
5.53	SCPTMINSENDTIME	164
5.54	SCPTMINSETPOINT	164
5.55	SCPTMINFLOW	164
5.56	SCPTMINFLOWHEAT	164
5.57	SCPTMINFLOWSTBY.....	164
5.58	SCPTNOMAIRFLOW	165
5.59	SCPTNOMANGLE	165
5.60	SCPTNUMVALVES	165
5.61	SCPTSETPTS	165
5.62	SCPTOEMTYPE	165
5.63	SCPTMINDELTA RH	165
5.64	SCPTMINDELTA CO2	166
5.65	SCPTMINDELTA TEMP	166
5.66	SCPTSENSCONSTMP	166
5.67	SCPTGAINVAV.....	166
5.68	SCPTSENSCONSTVAV	166
5.69	SCPTOFFSETCO2.....	167
5.70	SCPTOFFSETRH.....	167
5.71	SCPTOFFSETTEMP.....	167
5.72	SCPTDEFLTBEHAVE	167
5.73	SCPTPWRUPDELAY	167
5.74	SCPTPWRUPSTATE	168
5.75	SCPTHVACMODE.....	168
5.76	SCPTCOOLSETPT.....	168
5.77	SCPTCOOLLOWERSP	168
5.78	SCPTCOOLUPPERSP	168

CEA-709.6

5.79	SCPTHEATSETPT	169
5.80	SCPTHEATLOWERSP	169
5.81	SCPTHEATUPPERSP	169
5.82	SCPTLIMITCHLRCAP	169
5.83	SCPTLUXSETPOINT	169
5.84	SCPTSTEP	169
5.85	SCPTONOFFHYSTERESIS	170
5.86	SCPTCLOFFDELAY	170
5.87	SCPTCLONDELAY	170
5.88	SCPTPOWERUPSTATE	170
5.89	SCPTMINDELTALEVEL	170
5.90	SCPTREFLECTION	171
5.91	SCPTFIELDCALIB	171
5.92	SCPTHOLDTIME	171
5.93	SCPTSTEPVALUE	171
5.94	SCPTMAXOUT	171
5.95	SCPTSCENENMBR	171
5.96	SCPTFADETIME	172
5.97	SCPTDELAYTIME	172
5.98	SCPTMASTERSLAVE	172
5.99	SCPTUPDATERATE	172
5.100	SCPTSUMMERTIME	172
5.101	SCPTWINTERTIME	173
5.102	SCPTMANUALALLOWED	173
5.103	SCPTDEFWEEKMASK	173
5.104	SCPTDAYDATEINDEX	174
5.105	SCPTTIMEEVENT	175
5.106	SCPTMODEHRTBT	175
5.107	SCPTDEFROSTMODE	175
5.108	SCPTMAXDEFRSTTIME	176
5.109	SCPTDRAINDELAY	176
5.110	SCPTINJDELAY	176
5.111	SCPTMAXDEFRSTTEMP	176
5.112	SCPTSTRUPDELAY	176
5.113	SCPTTERMTEMP	176
5.114	SCPTPUMPDOWNDELAY	177
5.115	SCPTSUPERHTREFINIT	177
5.116	SCPTSTRUPOPEN	177
5.117	SCPTSUPERHTREFMIN	177
5.118	SCPTREFRIGGLIDE	177
5.119	SCPTSUPERHTREFMAX	178
5.120	SCPTREFRIGTYPE	178
5.121	SCPTTHERMMODE	179
5.122	SCPTDAYNIGHTCNTRL	179
5.123	SCPTDIFFNIGHT	180
5.124	SCPTHIGHLIMTEMP	180
5.125	SCPTHIGHLIMDLY	180
5.126	SCPTCUTOUTVALUE	180
5.127	SCPTAIRTEMP1DAY	180
5.128	SCPTSMOKENIGHTALRMLIM	180
5.129	SCPTLOWLIMTEMP	181
5.130	SCPTLOWLIMDLY	181

CEA-709.6

5.131	SCPTDIFFVALUE	181
5.132	SCPTAIRTEMP1NIGHT	181
5.133	SCPTAIRTEMP1ALRM	182
5.134	SCPTHIGHLIMDEFRDLY	182
5.135	SCPTDELTA NIGHT	182
5.136	SCPTRUNHRINIT	182
5.137	SCPTRUNHRALARM	182
5.138	SCPTENERGYCNTINIT	183
5.139	SCPTSMOKEDAYPREALRMLIM	183
5.140	SCPTDEBOUNCE	183
5.141	SCPTSMOKENIGHTPREALRMLIM	183
5.142	SCPTZONENUM	183
5.143	SCPTTHERMALRMROR	183
5.144	SCPTVISOUTPUT	184
5.145	SCPTAUDOUTPUT	184
5.146	SCPTFLASHFREQ	184
5.147	SCPTINSTALLDATE	184
5.148	SCPTMAINTDATE	184
5.149	SCPTMANFDATE	185
5.150	SCPTFIRETXT1	185
5.151	SCPTFIRETXT2	185
5.152	SCPTFIRETXT3	185
5.153	SCPTTHERMTHRESHOLD	185
5.154	SCPTFIREINDICATE	186
5.155	SCPTTIMEZONE	186
5.156	SCPTPRIMEVAL	186
5.157	SCPTSECONDVAL	186
5.158	SCPTSCENEOFFSET	186
5.159	SCPTNOMRPM	186
5.160	SCPTNOMFREQ	187
5.161	SCPTRAMPUP TM	187
5.162	SCPTRAMPDOWN TM	187
5.163	SCPTDEFSCALE	187
5.164	SCPTREGNAME	187
5.165	SCPTBASEVALUE	187
5.166	SCPTDEVMAJVER	188
5.167	SCPTDEVMINVER	188
5.168	SCPTOBJMAJVER	188
5.169	SCPTOBJMINVER	188
5.170	SCPTHVACTYPE	188
5.171	SCPTTIMEOUT	188
5.172	SCPTCONTROL PRIORITY	189
5.173	SCPTDEVICEGROUPID	189
5.174	SCPTMAXPRIVACYZONES	189
5.175	SCPTMAXCAMERAPREPOSITIONS	189
5.176	SCPTDEFAULTPANTILT ZOOM SPEEDS	189
5.177	SCPTDEFAULTAUTOPAN SPEED	190
5.178	SCPTAUTOANSWER	190
5.179	SCPTDIALSTRING	190
5.180	SCPTSERIALNUMBER	190
5.181	SCPTNORMALROTATIONALSPEED	190
5.182	SCPTSTANDBYROTATIONALSPEED	190

CEA-709.6

5.183	SCPTPARTNUMBER	191
5.184	SCPTDISCHARGEAIRCOOLINGSETPOINT	191
5.185	SCPTDISCHARGEAIRHEATINGSETPOINT	191
5.186	SCPTMAXSUPPLYFANCAPACITY	191
5.187	SCPTMINSUPPLYFANCAPACITY	191
5.188	SCPTMAXRETURNEXHAUSTFANCAPACITY	191
5.189	SCPTMINRETURNEXHAUSTFANCAPACITY	192
5.190	SCPTDUCTSTATICPRESSURESETPOINT	192
5.191	SCPTMAXDUCTSTATICPRESSURESETPOINT	192
5.192	SCPTMINDUCTSTATICPRESSURESETPOINT	192
5.193	SCPTDUCTSTATICPRESSURELIMIT	192
5.194	SCPTBUILDINGSTATICPRESSURESETPOINT	193
5.195	SCPTRETURNFANSTATICPRESSURESETPOINT	193
5.196	SCPTFANDIFFERENTIALSETPOINT	193
5.197	SCPTMIXEDAIRLOWLIMITSETPOINT	193
5.198	SCPTMIXEDAIRTEMPSETPOINT	193
5.199	SCPTMINOUTDOORAIRFLOWSETPOINT	194
5.200	SCPTOUTDOORAIRTEMPSETPOINT	194
5.201	SCPTOUTDOORAIRENTHALPYSETPOINT	194
5.202	SCPTDIFFTEMPSETPOINT	194
5.203	SCPTEXHAUSTENABLEPOSITION	194
5.204	SCPTSPACEHUMSETPOINT	194
5.205	SCPTDISCHARGEAIRDEWPOINTSETPOINT	195
5.206	SCPTMAXDISCHARGEAIRCOOLINGSETPOINT	195
5.207	SCPTMINDISCHARGEAIRCOOLINGSETPOINT	195
5.208	SCPTMAXDISCHARGEAIRHEATINGSETPOINT	195
5.209	SCPTMINDISCHARGEAIRHEATINGSETPOINT	195
5.210	SCPTCOOLINGLOCKOUT	196
5.211	SCPTHEATINGLOCKOUT	196
5.212	SCPTCOOLINGRESETENABLE	196
5.213	SCPTHEATINGRESETENABLE	196
5.214	SCPTSETPOINT	196
5.215	SCPTTEMPERATUREHYSTERESIS	197
5.216	SCPTCONTROLTEMPERATUREWEIGHTING	197
5.217	SCPTPWMPERIOD	197
5.218	SCPTDEFROSTINTERNALSCHEDULE	197
5.219	SCPTDEFROSTSTART	197
5.220	SCPTDEFROSTCYCLES	197
5.221	SCPTMINDEFROSTTIME	198
5.222	SCPTMAXDEFROSTTIME	198
5.223	SCPTDEFROSTFANDELAY	198
5.224	SCPTDEFROSTRECOVERYTIME	198
5.225	SCPTDEFROSTHOLD	198
5.226	SCPTDEFROSTDETECT	199
5.227	SCPTSCHEDULEINTERNAL	199
5.228	SCPTTEMPOFFSET	199
5.229	SCPTAUDIBLELEVEL	199
5.230	SCPTSCROLLSPEED	199
5.231	SCPTBRIGHTNESS	199
5.232	SCPTORIENTATION	200
5.233	SCPTINSTALLEDLEVEL	200
5.234	SCPTPUMPCHARACTERISTIC	200

CEA-709.6

5.235	SCPTMINPRESSURESETPOINT	200
5.236	SCPTMAXPRESSURESETPOINT	201
5.237	SCPTMINFLOWSETPOINT	201
5.238	SCPTMAXFLOWSETPOINT	201
5.239	SCPTDEVICECONTROLMODE	201
5.240	SCPTMINREMOTEPRESSURESETPOINT	201
5.241	SCPTMAXREMOTEPRESSURESETPOINT	202
5.242	SCPTMINREMOTEFLOWSETPOINT	202
5.243	SCPTMAXREMOTEFLOWSETPOINT	202
5.244	SCPTMINREMOTETEMPSETPOINT	202
5.245	SCPTMAXREMOTETEMPSETPOINT	202
5.246	SCPTCONTROLSIGNAL	203
5.247	SCPTNIGHTPURGEPOSITION	203
5.248	SCPTFREECOOLPOSITION	203
5.249	SCPTVALVEFLOWCHARACTERISTIC	204
5.250	SCPTVALVEOPERATINGMODE	204
5.251	SCPTEMERGENCYPOSITION	204
5.252	SCPTBLOCKPROTECTIONTIME	204
5.253	SCPTMINSTROKE	204
5.254	SCPTMAXSTROKE	204
5.255	SCPTNVTYPE	205
5.256	SCPTMAXNVLENGTH	205
5.257	SCPTNVDYNAMICASSIGNMENT	205
5.258	SCPTSAFEXTCNFG	206
5.259	SCPTEMERGCNFG	206
5.260	SCPTSLUICECNFG	206
5.261	SCPTFANOPERATION	206
5.262	SCPTMINFLOWUNIT	207
5.263	SCPTMAXFLOWUNIT	207
5.264	SCPTMINFLOWHEATSTBY	207
5.265	SCPTMINFLOWUNITSTBY	207
5.266	SCPTOFFSETFLOW	207
5.267	SCPTAREADUCTHEAT	208
5.268	SCPTNOMAIRFLOWHEAT	208
5.269	SCPTGAINVAVHEAT	208
5.270	SCPTNUMDAMPERS	208
5.271	SCPTMINFLOWUNITHEAT	208
5.272	SCPTSATURATIONDELAY	208
5.273	SCPTEFFECTIVEPERIOD	209
5.274	SCPTSCHEDULEDATES	210
5.275	SCPTSCHEDULE	211
5.276	SCPTSCHEDULETIMEVALUE	212
5.277	SCPTVALUEDEFINITION	212
5.278	SCPTVALUENAME	213
5.279	SCPTWEEKLYSCHEDULE	213
5.280	SCPTSCHEDULENAME	214
5.281	SCPTVALVESTROKE	214
5.282	SCPTVALVENOMINALSIZE	214
5.283	SCPTVALVEKVS	214
5.284	SCPTVALVETYPE	214
5.285	SCPTACTUATORCHARACTERISTIC	215
5.286	SCPTTRNSTBLX2	215

CEA-709.6

5.287	SCPTRNSTBLY2	215
5.288	SCPTCOMBFLOWCHARACTERISTIC	215
5.289	SCPTRNSTBLX3	215
5.290	SCPTRNSTBLY3	216
5.291	SCPTRUNTIMEALARM	216
5.292	SCPTTIMEPERIOD	216
5.293	SCPTPULSEVALUE	217
5.294	SCPTNUMDIGITS	217
5.295	SCPTNVPRIORITY	218
5.296	SCPTDEFAULTSETTING	218
5.297	SCPTLOWLIMIT1ENABLE	218
5.298	SCPTLOWLIMIT2ENABLE	218
5.299	SCPTCLOCKCALIBRATION	219
5.300	SCPTNEURONID	219
5.301	SCPTHIGHLIMIT1ENABLE	219
5.302	SCPTHIGHLIMIT2ENABLE	219
5.303	SCPTAHAMAPPLIANCEMODEL	220
5.304	SCPTDEFINPUT	220
5.305	SCPTNAME1	220
5.306	SCPTSCENE	221
5.307	SCPTSCENETIMING	221
5.308	SCPTNAME2	222
5.309	SCPTNAME3	222
5.310	SCPTBUTTONPRESSACTION	223
5.311	SCPTBUTTONCOLOR	224
5.312	SCPTBUTTONREPEATINTERVAL	225
5.313	SCPTBUTTONHOLDACTION	225
5.314	SCPTPWRSENDONDELTA	226
5.315	SCPTSCENENAME	226
5.316	SCPTMAXPOWER	226
5.317	SCPTIFACEDESC	227
5.318	SCPTMONINTERVAL	227
5.319	SCPTLINKPOWERDETECTENABLE	227
5.320	SCPTSCANTIME	227
5.321	SCPTDEVLISTDESC	227
5.322	SCPTDEVLISTENTRY	228
5.323	SCPTLOGCAPACITY	229
5.324	SCPTLOGNOTIFICATIONTHRESHOLD	229
5.325	SCPTLOGSIZE	229
5.326	SCPTLOGTYPE	229
5.327	SCPTFANINENABLE	229
5.328	SCPTLOGTIMESTAMPENABLE	230
5.329	SCPTLOGHIGHLIMIT	230
5.330	SCPTLOGLOWLIMIT	230
5.331	SCPTMAXFANIN	230
5.332	SCPTLOGMINDELTAVALUE	231
5.333	SCPTLOGMINDELTAVALUE	231
5.334	SCPTPOLLRATE	232
5.335	SCPTSOURCEADDRESS	232
5.336	SCPTLOGRECORD	233
5.337	SCPTLOGFILEHEADER	235
5.338	SCPTLOGALARMTHRESHOLD	236

CEA-709.6

5.339	SCPTLOGREQUEST	236
5.340	SCPTLOGRESPONSE.....	237
5.341	SCPTLIGHTINGGROUPENABLE	237
5.342	SCPTSCENECOLOR	238
5.343	SCPTBKUPSCHEDULE	238
5.344	SCPTOLCLIMITS.....	238
5.345	SCPTLAMPPOWER	239
5.346	SCPTDEVICEOUTSELECTION	239
5.347	SCPTENABLESTATUSMSG.....	239
5.348	SCPTMAXLEVELVOLT.....	243
5.349	SCPTGEOLOCATION.....	243
5.350	SCPTPROGNAME	243
5.351	SCPTPROGREVISION	244
5.352	SCPTPROGSELECT	244
5.353	SCPTPROGSOURCELOCATION	244
5.354	SCPTPROGFILEINDEXES.....	244
5.355	SCPTPROGCMDHISTORY	245
5.356	SCPTPROGSTATEHISTORY.....	245
5.357	SCPTNSDSFBINDEX	245
5.358	SCPTCURRENTSENSEENABLE.....	246
5.359	SCPTMEASUREMENTINTERVAL	246
5.360	SCPTLIGHTINGGROUPMEMBERSHIP	246
5.361	SCPTLOADCONTROLOFFSET.....	246
5.362	SCPTPROGERRORHISTORY.....	246
5.363	SCPTNVUSAGE.....	247
5.364	SCPTSCHEDULESUNDAY	247
5.365	SCPTSCHEDULEMONDAY.....	247
5.366	SCPTSCHEDULETUESDAY	248
5.367	SCPTSCHEDULEWEDNESDAY	248
5.368	SCPTSCHEDULETHURSDAY	248
5.369	SCPTSCHEDULEFRIDAY.....	249
5.370	SCPTSCHEDULESATURDAY	249
5.371	SCPTOCCUPANCYBEHAVIOR.....	249
5.372	SCPTTIMESOURCE	250
5.373	SCPTSCHEDULEEXCEPTION.....	250
5.374	SCPTSCHEDULEHOLIDAY	250
5.375	SCPTRANDOMIZATIONINTERVAL	250
5.376	SCPTSUNRISETIME	251
5.377	SCPTSUNSETTIME	251
5.378	SCPTSCHEDULEROPTIONS.....	251
5.379	SCPTOCCUPANCYTHRESHOLDS	252
5.380	SCPTPOWERPROFILE	252
5.381	SCPTCONTROLCFG.....	252
5.382	SCPTLIMITS	252
5.383	SCPTSCENEDEF	253
6	STANDARD ENUMERATION TYPE	254
6.1	INTRODUCTION	254
6.2	DAYS_OF_WEEK_T.....	254
6.3	DISCRETE_LEVELS_T	254
6.4	TELCOM_STATES_T	255
6.5	CONFIG_SOURCE_T.....	256

CEA-709.6

6.6	FILE_REQUEST_T	256
6.7	FILE_STATUS_T	256
6.8	ALARM_TYPE_T.....	257
6.9	PRIORITY_LEVEL_T.....	258
6.10	CURRENCY_T	259
6.11	OBJECT_REQUEST_T.....	261
6.12	LEARN_MODE_T.....	262
6.13	OVERRIDE_T	263
6.14	EMERG_T.....	263
6.15	HVAC_T.....	263
6.16	OCCUP_T	264
6.17	HVAC_OVERID_T.....	265
6.18	SCENE_T	267
6.19	SCENE_CONFIG_T.....	268
6.20	SETTING_T	268
6.21	EVAP_T.....	268
6.22	THERM_MODE_T.....	269
6.23	DEFROST_MODE_T	269
6.24	DEFROST_TERM_T.....	269
6.25	DEFROST_STATE_T.....	270
6.26	CHILLER_T.....	270
6.27	FIRE_TEST_T.....	270
6.28	FIRE_INITIATOR_T.....	271
6.29	FIRE_INDICATOR_T	271
6.30	CALENDAR_TYPE_T	272
6.31	REG_VAL_UNIT_T.....	272
6.32	HVAC_HVT_T.....	274
6.33	CONTROL_RESP_T.....	274
6.34	PAN_DIR_T	275
6.35	TILT_DIR_T.....	275
6.36	ZOOM_T	275
6.37	PRIVACYZONE_T	275
6.38	CAM_FUNC_T.....	276
6.39	CAM_ACT_T	276
6.40	GFCI_STATUS_T.....	276
6.41	MOTOR_STATE_T	277
6.42	BOOLEAN_T.....	277
6.43	EX_CONTROL_T.....	277
6.44	UNIT_TEMP_T.....	278
6.45	DEVICE_C_MODE_T	278
6.46	VALVE_MODE_T.....	279
6.47	NV_TYPE_CATEGORY_T	279
6.48	ENT_OPMODE_CMD_T.....	280
6.49	ENT_CMD_T.....	281
6.50	FLOW_DIRECTION_T.....	282
6.51	DEVICE_SELECT_T.....	282
6.52	EVENT_MODE_TYPE_T	282
6.53	MASTER_SLAVE_T.....	282
6.54	FAN_OPERATION_T.....	283
6.55	DAYS_OF_MONTH_T.....	283
6.56	MONTHS_T.....	288
6.57	SEC_STATUS_T.....	289

CEA-709.6

6.58	SEC_STATE_T.....	290
6.59	INTERVAL_OF_MONTH_T.....	291
6.60	SBLND_CMD_SOURCE_T.....	291
6.61	SBLND_ERROR_T.....	293
6.62	RAIL_AUDIO_SENSOR_TYPE_T.....	293
6.63	RAIL_AUDIO_TYPE_T.....	294
6.64	APPL_CWC_T.....	295
6.65	APPL_CWS_T.....	296
6.66	APPL_CWP_T.....	296
6.67	APPL_RIN_T.....	297
6.68	AHAM_APPL_T.....	297
6.69	BUTTON_ACTION_T.....	298
6.70	CHAR_ENCODING_T.....	300
6.71	SWITCH_STATE_T.....	300
6.72	COLOR_ENCODING_T.....	302
6.73	LOG_STATUS_T.....	302
6.74	LOG_TYPE_T.....	303
6.75	TIMESTAMP_T.....	303
6.76	LOG_RECORD_T.....	303
6.77	POINT_STATUS_T.....	303
6.78	MESSAGE_CODE_T.....	304
6.79	LOG_ACCESS_REQ_T.....	304
6.80	LOG_RESPONSE_CODE_T.....	304
6.81	ADDRESS_TYPE_T.....	305
6.82	OLC_SELECT_T.....	305
6.83	PROGRAM_STATE_T.....	305
6.84	FILE_TYPE_T.....	306
6.85	PROGRAM_STATUS_ERROR_T.....	306
6.86	TIME_SOURCE_T.....	307
6.87	SCHEDULER_STATUS_T.....	307
6.88	STAT_MANAGE_T.....	307
6.89	OLC_STATE_T.....	308
7	STANDARD FUNCTIONAL PROFILES	310
7.1	GENERAL	310
7.2	FUNCTIONAL PROFILE LIST.....	310
7.3	SFPTNODEOBJECT (0).....	310
7.4	SFPTOPENLOOPSENSOR (1).....	313
7.5	SFPTCLOSEDLOOPSENSOR (2).....	317
7.6	SFPTOPENLOOPACTUATOR (3).....	320
7.7	SFPTCLOSEDLOOPACTUATOR (4).....	323
7.8	SFPTCALENDAR (6).....	326
7.9	SFPTSCHEDULER (7).....	327
7.10	SFPTISI-MONITORPOINT (8).....	329
7.11	SFPTDATALOGGER (9).....	330
7.12	SFPTSCHEDULERSIMPLE (17).....	334
7.13	SFPTCHANNELMONITOR (132).....	335
7.14	SFPTDEVICEMONITOR (136).....	342
7.15	SFPTCHANNELCONTINUITYMONITOR (137).....	343
7.16	SFPTSTATICPROGRAMMABLE (410).....	344
7.17	SFPTANALOGINPUT (520).....	345
7.18	SFPTANALOGOUTPUT (521).....	345

CEA-709.6

7.19	SFPTLIGHTSENSOR (1010)	346
7.20	SFPTGLOBALSOLARRADIATION (1015)	346
7.21	SFPTPRESSURESENSOR (1030)	347
7.22	SFPTHVACTEMPSENSOR (1040)	349
7.23	SFPTFROSTSENSOR (1042)	350
7.24	SFPTHVACRELATIVEHUMIDITYSENSOR (1050)	351
7.25	SFPTTRAINSENSOR (1051)	352
7.26	SFPTOCCUPANCYSENSOR (1060)	352
7.27	SFPTISI OCCUPANCYSENSOR (1061)	353
7.28	SFPTCO2SENSOR (1070)	356
7.29	SFPTAIRVELOCITYSENSOR (1083)	357
7.30	SFPTUTILITYDATA LOGGERREGISTER (2110)	359
7.31	SFPTUTILITYMETER (2201)	361
7.32	SFPTLAMPACTUATOR (3040)	362
7.33	SFPTISILAMPACTUATOR (3041)	363
7.34	SFPTCONSTANTLIGHTCONTROLLER (3050)	368
7.35	SFPTOCCUPANCYCONTROLLER (3071)	370
7.36	SFPTSWITCH (3200)	372
7.37	SFPTSCENEPANEL (3250)	373
7.38	SFPTSCENECONTROLLER (3251)	374
7.39	SFPTPARTITIONWALLCONTROLLER (3252)	375
7.40	SFPTISIKEYPAD (3253)	376
7.41	SFPTREALTIMEKEEPER (3300)	379
7.42	SFPTREALTIMEBASEDSCHEDULER (3301)	380
7.43	SFPTLIGHTINGPANELCONTROLLER (3401)	381
7.44	SFPTOUTDOORLUMINAIRCONTROLLER (3512)	381
7.45	SFPTSMARTLUMINAIRECONTROLLER (3514)	383
7.46	SFPTHARDWIREDGASDETECTIONSHUTDOWN (4310)	385
7.47	SFPTHARDWIREFIREALARMSHUTDOWN (4311)	386
7.48	SFPTHARDWIREDRECIRCULATION (4312)	386
7.49	SFPTHARDWIREFULLVENTILATION (4313)	387
7.50	SFPTHARDWIRESAFETYINSTRUMENTEDSYSTEMSIS (4314)	388
7.51	SFPTIDENTIFIERSENSOR (5035)	389
7.52	SFPTENTRYEXIT (5051)	390
7.53	SFPTMODEMCONTROLLER (5091)	393
7.54	SFPTTELEPHONEDIRECTORY (5092)	394
7.55	SFPTVARIABLESPEEDMOTORDRIVE (6010)	395
7.56	SFPTSUNBLINDACTUATOR (6110)	397
7.57	SFPTSUNBLINDCONTROLLER (6111)	399
7.58	SFPTISISUNBLINDACTUATOR (6112)	404
7.59	SFPTVARIABLEAIRVOLUME (8010)	407
7.60	SFPTFANCOILUNIT (8020)	412
7.61	SFPTROOFTOPUNIT (8030)	415
7.62	SFPTCHILLER (8040)	419
7.63	SFPTHEATPUMP (8051)	422
7.64	SFPTTHERMOSTAT (8060)	425
7.65	SFPTCHILLEDCEILINGCONTROLLER (8070)	429
7.66	SFPTUNITVENTILATORCONTROLLER (8080)	438
7.67	SFPTSCCCOMMANDMODULE (8090)	448
7.68	SFPTDAMPERACTIONATOR (8110)	454
7.69	SFPTPUMPCONTROLLER (8120)	458
7.70	SFPTHVACVALVEPOSITIONER (8131)	463

CEA-709.6

7.71	SFPTBOILERCONTROLLER (8301)	471
7.72	SFPTSPACECOMFORTCONTROLLER (8500)	475
7.73	SFPTSCCFANCOIL (8501)	486
7.74	SFPTSCCVAV (8502)	497
7.75	SFPTSCCHEATPUMP (8503)	508
7.76	SFPTSCCROOFTOP (8504)	520
7.77	SFPTSCCUNITVENTILATOR (8505)	531
7.78	SFPTSCCCHILLEDCEILING (8506)	542
7.79	SFPTSCCRADIATOR (8507)	554
7.80	SFPTSCCAHU (8508)	565
7.81	SFPTSCCSELFCONTAINED (8509)	576
7.82	SFPTWALLUNIT (8540)	587
7.83	SFPTUNITHEATER (8550)	593
7.84	SFPTDISCHARGEAIRCONTROLLER (8610)	598
7.85	SFPTTRAILCARAUDIOCONTROLLER (9111)	613
7.86	SFPTTRAILCARAUDIOSENSOR (9112)	615
7.87	SFPTREFRIGDISPLAYCASECONTROLLERDEFROST (10010)	616
7.88	SFPTREFRIGDISPLAYCASECONTROLLEREVAPORATOR (10011)	618
7.89	SFPTREFRIGDISPLAYCASECONTROLLERTHERMOSTAT (10012)	622
7.90	SFPTFIRESMOKEDAMPERACTUATOR (11001)	625
7.91	SFPTSMOKEFIREINITIATORINTELLI (11002)	627
7.92	SFPTSMOKEFIREINITIATORCONVENT (11003)	630
7.93	SFPTTHERMALFIREINITIATOR (11004)	632
7.94	SFPTPULLSTATIONFIREINITIATOR (11005)	634
7.95	SFPTAUDIBLEFIREINDICATOR (11006)	636
7.96	SFPTVISIBLEFIREINDICATOR (11007)	638
7.97	SFPTUNIVERSALFIREINITIATOR (11010)	640
7.98	SFPTUNIVERSALFIREINDICATOR (11011)	642
7.99	SFPTGENERATORSET (13110)	643
7.100	SFPTAUTOMATICTRANSFERSWITCH (13120)	647
7.101	SFPTLEVATORPOSITIONINDICATOR (14011)	651
7.102	SFPTLEVATORHALLLANTERN (14012)	653
7.103	SFPTLEVATORARRIVALGONG (14013)	654
7.104	SFPTLEVATORDIRECTIONLANTERN (14014)	655
7.105	SFPTLEVATORFIRESYSTEMSPORT (14041)	657
7.106	SFPTLEVATORVOICEANNOUNCER (14061)	658
7.107	SFPTCLOTHESWASHERDOMESTIC (15011)	660
8	DEVICE-INTERFACE FILES	662
8.1	INTRODUCTION	662
8.2	TEXT DEVICE-INTERFACE FILE FORMAT	662
8.2.1	General	662
8.2.2	Header Section	663
9	STANDARD METHOD OF FILE TRANSFER BETWEEN DEVICES	681
9.1	INTRODUCTION	681
9.2	WINDOWED TRANSFER PROTOCOL	682
9.3	SETTING-UP A FILE TRANSFER	683
9.4	RANDOM ACCESS	684
9.5	DELAYED RESPONSES	684
9.6	COMPLETING A DATA EXCHANGE	684
9.7	COMPLETING A FILE TRANSFER	685

CEA-709.6

9.8	MULTICAST FILE TRANSFERS	685
9.9	CONCURRENCY.....	685
9.10	SNVT_FILE_REQ DATA STRUCTURE	685
9.11	SNVT_FILE_STATUS DATA STRUCTURE.....	687
9.12	SNVT_FILE_POS DATA STRUCTURE	688
9.13	APPLICATION PROTOCOL DATA UNIT STRUCTURE	688
ANNEX A (INFORMATIVE) PROTOCOL PROCESSOR TYPES.....		689
ANNEX B (NORMATIVE) STANDARD PROGRAM IDENTIFIER (SPID) MASTER LIST		690
B.1	GENERAL	690
B.2	MANUFACTURER FIELD.....	690
B.3	DEVICE CLASS FIELD	690
B.4	USAGE FIELD	697
<i>B.4.1</i>	<i>General</i>	697
<i>B.4.2</i>	<i>Usage ID</i>	698
B.5	CHANNEL TYPE FIELD	698
ANNEX C (INFORMATIVE) STANDARD TRANSCEIVER-TYPE IDENTIFIERS.....		699

CONTROL NETWORKING PROTOCOL SPECIFICATION PART 6: APPLICATION ELEMENTS

Introduction

CEA-709.6 is used by all involved in specifying, design, manufacture, engineering, installation, management and commissioning activities.

This standard specifies the definition of various types of data-transfer containers for carrying temperature, pressure, state, and other forms of data over the protocol defined by ANSI/CEA-709.1-D from any number of devices to any other number of devices, as defined by the limits in ANSI/CEA-709.1-D. This standard also specifies the data types for configuration information, used to define timing, default values, and other data. This standard also specifies a data-file transfer method that may be used for transferring configuration information to and from devices. This standard specifies the device-interface format that describes the interconnection points of a device. This standard also defines a set of application specific device profile definitions.

NOTE The file-transfer mechanism is not exclusively for loading configuration information into a device and therefore it can be used for other purposes.

This standard is contributing to the general US policy for energy savings for building automation, monitoring, and control of energy consuming systems in typical buildings.

ANSI/CEA-709 Control Network Protocol	CEA-709.6 Application Elements			
	CEA-709.5 Implementation Guideline			
	ANSI/CEA-709.1 Protocol Stack			
	ANSI/CEA-709.2 Power Line Channel	ANSI/CEA-709.3 Twisted Pair Communication	ANSI/CEA-709.4 Fiber Optic Channel	ANSI/CEA-852.1 Enhanced IP Tunneling Protocol

Figure 1 — Scope of the ANSI/CEA-709 suite of standards

1 Scope

This specification provides mechanisms through which various vendors of building automation, home automation, control, and building management systems may exchange information in a standardised way.

This document provides specifications for the Application Elements of Control Network Protocol packets as follows:

- Definitions of standardized packet (network-variable) data types;
- Definitions of device-interface files;