

INTERNATIONAL STANDARD

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**Industrial communication networks – Fieldbus specifications –
Part 4-19: Data-link layer protocol specification – Type 19 elements**

**Réseaux de communication industriels – Spécifications des bus de terrain –
Partie 4-19: Spécification du protocole de la couche liaison de données –
Éléments de type 19**



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CONTENTS

| | |
|---|-----|
| FOREWORD..... | 21 |
| INTRODUCTION..... | 23 |
| 1 Scope..... | 25 |
| 1.1 General..... | 25 |
| 1.2 Specifications..... | 25 |
| 1.3 Procedures..... | 25 |
| 1.4 Applicability..... | 25 |
| 1.5 Conformance..... | 26 |
| 2 Normative references..... | 26 |
| 3 Terms, definitions, symbols, acronyms, abbreviations and conventions..... | 26 |
| 3.1 Reference model terms and definitions..... | 26 |
| 3.2 Additional Type 19 terms and definitions..... | 26 |
| 3.3 Symbols..... | 30 |
| 3.4 Acronyms and abbreviations..... | 31 |
| 3.5 Additional conventions..... | 32 |
| 4 DL-protocol overview..... | 33 |
| 4.1 Overview..... | 33 |
| 4.2 General DLPDU identification..... | 34 |
| 4.3 General DLPDU structure..... | 35 |
| 4.4 DLPDU header..... | 35 |
| 4.5 MDT DLPDU..... | 36 |
| 4.6 AT DLPDU..... | 48 |
| 4.7 Mechanisms of connections..... | 59 |
| 5 DL management..... | 69 |
| 5.1 Overview..... | 69 |
| 5.2 Initialization of cyclic communication..... | 69 |
| 5.3 Network topologies..... | 91 |
| 5.4 Redundancy of RT communication with ring topology..... | 102 |
| 5.5 Hot-plug procedure..... | 105 |
| 5.6 Status procedures..... | 110 |
| 6 Data transmission methods..... | 111 |
| 6.1 Overview..... | 111 |
| 6.2 Service channel (SVC)..... | 111 |
| 6.3 RT Channel..... | 125 |
| 6.4 Transmission and activation of Type 19 time..... | 125 |
| 6.5 Multiplexing of real-time data with data containers..... | 127 |
| 6.6 Handling of Real-time bits..... | 138 |
| 6.7 SMP..... | 141 |
| 6.8 Oversampling..... | 146 |
| 7 Telegram timing and DLPDU handling..... | 151 |
| 7.1 Communication mechanisms..... | 151 |
| 7.2 Synchronization..... | 206 |
| 7.3 Processing methods of connection data..... | 215 |
| 8 Communication Error handling and monitoring..... | 218 |
| 8.1 Invalid telegrams..... | 218 |

| | | |
|---------|---|-----|
| 8.2 | Response to MDT and AT telegram failure | 218 |
| 8.3 | Error counters in the slave | 219 |
| 8.4 | Status codes of Type 19 communication profile (SCP)..... | 219 |
| 8.5 | Priority of diagnosis classes | 222 |
| Annex A | (normative) IDN – Identification numbers | 223 |
| A.1 | IDN specification | 223 |
| A.1.1 | Introduction | 223 |
| A.1.2 | Element 1: structure of IDN | 223 |
| A.1.3 | Element 2: structure of name..... | 224 |
| A.1.4 | Element 3: structure of attribute..... | 225 |
| A.1.5 | Element 4: structure of unit..... | 227 |
| A.1.6 | Element 5: structure of minimum value | 227 |
| A.1.7 | Element 6: structure of maximum value | 228 |
| A.1.8 | Element 7: structure of operation data | 228 |
| A.1.9 | Structure of Data status | 230 |
| A.2 | Identification numbers in numerical orders | 231 |
| A.3 | Detailed specification of communication-related IDNs | 235 |
| A.3.1 | IDN S-0-0014 Interface status | 235 |
| A.3.2 | IDN S-0-0021 IDN-list of invalid operation data for CP2 | 236 |
| A.3.3 | IDN S-0-0026 IDN allocation of producer RTB word container | 237 |
| A.3.4 | IDN S-0-0027 IDN allocation of consumer RTB word container | 238 |
| A.3.5 | IDN S-0-0127 CP3 transition check..... | 239 |
| A.3.6 | IDN S-0-0128 CP4 transition check..... | 239 |
| A.3.7 | IDN S-0-0144 Producer RTB word container | 240 |
| A.3.8 | IDN S-0-0145 Consumer RTB word container | 240 |
| A.3.9 | IDN S-0-0187 IDN-list of configurable data as producer | 241 |
| A.3.10 | IDN S-0-0188 IDN-list of configurable data as consumer | 242 |
| A.3.11 | IDN S-0-0328 Bit allocation of producer RTB word container..... | 242 |
| A.3.12 | IDN S-0-0329 Bit allocation of consumer RTB word container | 243 |
| A.3.13 | IDN S-0-0360 MDT data container A1 | 243 |
| A.3.14 | IDN S-0-0361 MDT data container B1 | 244 |
| A.3.15 | IDN S-0-0362 MDT data container A list index | 245 |
| A.3.16 | IDN S-0-0363 MDT data container B list index | 246 |
| A.3.17 | IDN S-0-0364 AT data container A1 | 247 |
| A.3.18 | IDN S-0-0365 AT data container B1 | 248 |
| A.3.19 | IDN S-0-0366 AT data container A list index | 249 |
| A.3.20 | IDN S-0-0367 AT data container B list index | 250 |
| A.3.21 | IDN S-0-0368 Data container A pointer | 251 |
| A.3.22 | IDN S-0-0369 Data container B pointer | 252 |
| A.3.23 | IDN S-0-0370 MDT data container A/B configuration list | 254 |
| A.3.24 | IDN S-0-0371 AT data container A/B configuration list | 254 |
| A.3.25 | IDN S-0-0394 List IDN | 255 |
| A.3.26 | IDN S-0-0395 List index | 255 |
| A.3.27 | IDN S-0-0396 Number of list elements | 256 |
| A.3.28 | IDN S-0-0397 List segment | 257 |
| A.3.29 | IDN S-0-0398 IDN list of configurable real-time bits as producer | 258 |
| A.3.30 | IDN S-0-0399 IDN list of configurable real-time bits as consumer..... | 258 |
| A.3.31 | IDN S-0-0444 IDN-list of configurable data in the AT data container..... | 259 |

| | | |
|--------|---|-----|
| A.3.32 | IDN S-0-0445 IDN-list of configurable data in the MDT data container..... | 259 |
| A.3.33 | IDN S-0-0450 MDT data container A2 | 260 |
| A.3.34 | IDN S-0-0451 MDT data container A3 | 260 |
| A.3.35 | IDN S-0-0452 MDT data container A4 | 261 |
| A.3.36 | IDN S-0-0453 MDT data container A5 | 262 |
| A.3.37 | IDN S-0-0454 MDT data container A6 | 263 |
| A.3.38 | IDN S-0-0455 MDT data container A7 | 264 |
| A.3.39 | IDN S-0-0456 MDT data container A8 | 265 |
| A.3.40 | IDN S-0-0457 MDT data container A9 | 266 |
| A.3.41 | IDN S-0-0458 MDT data container A10 | 267 |
| A.3.42 | IDN S-0-0459 MDT data container B2 | 268 |
| A.3.43 | IDN S-0-0480 AT data container A2 | 269 |
| A.3.44 | IDN S-0-0481 AT data container A3 | 270 |
| A.3.45 | IDN S-0-0482 AT data container A4 | 271 |
| A.3.46 | IDN S-0-0483 AT data container A5 | 272 |
| A.3.47 | IDN S-0-0484 AT data container A6 | 273 |
| A.3.48 | IDN S-0-0485 AT data container A7 | 274 |
| A.3.49 | IDN S-0-0486 AT data container A8 | 275 |
| A.3.50 | IDN S-0-0487 AT data container A9 | 276 |
| A.3.51 | IDN S-0-0488 AT data container A10 | 277 |
| A.3.52 | IDN S-0-0489 AT data container B | 278 |
| A.3.53 | IDN S-0-0490 MDT data container A2 configuration list..... | 279 |
| A.3.54 | IDN S-0-0491 MDT data container A3 configuration list..... | 280 |
| A.3.55 | IDN S-0-0492 MDT data container A4 configuration list..... | 281 |
| A.3.56 | IDN S-0-0493 MDT data container A5 configuration list..... | 281 |
| A.3.57 | IDN S-0-0494 MDT data container A6 configuration list..... | 282 |
| A.3.58 | IDN S-0-0495 MDT data container A7 configuration list..... | 283 |
| A.3.59 | IDN S-0-0496 MDT data container A8 configuration list..... | 283 |
| A.3.60 | IDN S-0-0497 MDT data container A9 configuration list..... | 284 |
| A.3.61 | IDN S-0-0498 MDT data container A10 configuration list..... | 284 |
| A.3.62 | IDN S-0-0500 AT data container A2 configuration list..... | 285 |
| A.3.63 | IDN S-0-0501 AT data container A3 configuration list..... | 286 |
| A.3.64 | IDN S-0-0502 AT data container A4 configuration list..... | 286 |
| A.3.65 | IDN S-0-0503 AT data container A5 configuration list..... | 287 |
| A.3.66 | IDN S-0-0504 AT data container A6 configuration list..... | 288 |
| A.3.67 | IDN S-0-0505 AT data container A7 configuration list..... | 288 |
| A.3.68 | IDN S-0-0506 AT data container A8 configuration list..... | 289 |
| A.3.69 | IDN S-0-0507 AT data container A9 configuration list..... | 289 |
| A.3.70 | IDN S-0-0508 AT data container A10 configuration list..... | 290 |
| A.3.71 | IDN S-0-1000.0.1 Active SCP Classes | 291 |
| A.3.72 | IDN S-0-1000 SCP Type & Version | 291 |
| A.3.73 | IDN S-0-1002 Communication cycle time | 294 |
| A.3.74 | IDN S-0-1003 Allowed MST losses in CP3/CP4..... | 294 |
| A.3.75 | IDN S-0-1005 Minimum feedback processing time (t_5) | 295 |
| A.3.76 | IDN S-0-1006 AT transmission starting time (t_1) | 296 |
| A.3.77 | IDN S-0-1007 Synchronization time (T_{sync}) | 297 |
| A.3.78 | IDN S-0-1008 Command value valid time (t_3)..... | 298 |
| A.3.79 | IDN S-0-1009 Device Control (C-DEV) offset in MDT | 298 |

| | | |
|---------|---|-----|
| A.3.80 | IDN S-0-1010 Lengths of MDTs | 299 |
| A.3.81 | IDN S-0-1011 Device Status (S-DEV) offset in AT | 301 |
| A.3.82 | IDN S-0-1012 Lengths of ATs | 302 |
| A.3.83 | IDN S-0-1013 SVC offset in MDT | 303 |
| A.3.84 | IDN S-0-1014 SVC offset in AT | 304 |
| A.3.85 | IDN S-0-1015 Ring delay | 305 |
| A.3.86 | IDN S-0-1016 Slave delay (P/S)..... | 306 |
| A.3.87 | IDN S-0-1017 UC channel transmission time..... | 306 |
| A.3.88 | IDN S-0-1019 MAC address | 307 |
| A.3.89 | IDN S-0-1020.0.1 Current IP address..... | 308 |
| A.3.90 | IDN S-0-1020 IP address | 309 |
| A.3.91 | IDN S-0-1021.0.1 Current subnet mask..... | 310 |
| A.3.92 | IDN S-0-1021 Subnet mask..... | 310 |
| A.3.93 | IDN S-0-1022.0.1 Current gateway address | 311 |
| A.3.94 | IDN S-0-1022 Gateway address | 312 |
| A.3.95 | IDN S-0-1023 SYNC jitter..... | 313 |
| A.3.96 | IDN S-0-1024 SYNC delay measuring procedure command | 314 |
| A.3.97 | IDN S-0-1026 Version of communication hardware | 315 |
| A.3.98 | IDN S-0-1027.0.1 Requested MTU | 315 |
| A.3.99 | IDN S-0-1027.0.2 Effective MTU | 317 |
| A.3.100 | IDN S-0-1028 Error counter MST-P/S..... | 317 |
| A.3.101 | IDN S-0-1031 Test pin assignment Port 1 & Port 2..... | 318 |
| A.3.102 | IDN S-0-1034 PHY error counter Port 1 & Port 2..... | 319 |
| A.3.103 | IDN S-0-1035 Error counter Port 1 & Port 2..... | 320 |
| A.3.104 | IDN S-0-1036 Inter Frame Gap | 322 |
| A.3.105 | IDN S-0-1037 Slave jitter | 323 |
| A.3.106 | IDN S-0-1039.0.1 Current active hostname | 323 |
| A.3.107 | IDN S-0-1039 Hostname | 324 |
| A.3.108 | IDN S-0-1040 Sub-device address | 325 |
| A.3.109 | IDN S-0-1041 AT Command value valid time (t9) | 326 |
| A.3.110 | IDN S-0-1044 Device Control (C-DEV) | 326 |
| A.3.111 | IDN S-0-1045 Device Status | 327 |
| A.3.112 | IDN S-0-1047 Maximum Consumer Activation Time (t11) | 329 |
| A.3.113 | IDN S-0-1048 Activate network settings | 330 |
| A.3.114 | IDN S-0-1046 List of device addresses in device..... | 331 |
| A.3.115 | IDN S-0-1050.x.1 Connection setup | 332 |
| A.3.116 | IDN S-0-1050.x.2 Connection Number | 333 |
| A.3.117 | IDN S-0-1050.x.3 Telegram assignment | 334 |
| A.3.118 | IDN S-0-1050.x.4 Max. Length of Connection..... | 335 |
| A.3.119 | IDN S-0-1050.x.5 Current length of connection | 336 |
| A.3.120 | IDN S-0-1050.x.6 Configuration List..... | 336 |
| A.3.121 | IDN S-0-1050.x.7 Assigned connection capability | 337 |
| A.3.122 | IDN S-0-1050.x.8 Connection Control | 338 |
| A.3.123 | IDN S-0-1050.x.10 Producer cycle time..... | 338 |
| A.3.124 | IDN S-0-1050.x.11 Allowed Data Losses | 339 |
| A.3.125 | IDN S-0-1050.x.12 Error Counter Data Losses | 339 |
| A.3.126 | IDN S-0-1050.x.20 IDN Allocation of real-time bit..... | 340 |
| A.3.127 | IDN S-0-1050.x.21 IDN Allocation of real-time bit..... | 340 |
| A.3.128 | IDN S-0-1051 Image of connection setups | 341 |

| | | |
|--|---|-----|
| A.3.129 | IDN S-0-1060.x.1 Default configuration | 342 |
| A.3.130 | IDN S-0-1060.x.2 Configuration mask | 342 |
| A.3.131 | IDN S-0-1060.x.3 Maximum quantity of this connection capability | 343 |
| A.3.132 | IDN S-0-1060.x.4 Max. connection length of connection capability | 343 |
| A.3.133 | IDN S-0-1060.x.6 Configurable IDNs of connection capability | 344 |
| A.3.134 | IDN S-0-1060.x.7 Maximum processing time | 344 |
| A.3.135 | IDN S-0-1060.x.10 Minimum producer cycle time | 345 |
| A.3.136 | IDN S-0-1061 Maximum TSref-Counter | 346 |
| A.3.137 | IDN S-0-1080.x.02 Producer RTB list container..... | 346 |
| A.3.138 | IDN S-0-1080.x.03 IDN allocation of producer RTB list container | 347 |
| A.3.139 | IDN S-0-1080.x.04 Bit allocation of producer RTB list container | 348 |
| A.3.140 | IDN S-0-1081.x.02 Consumer RTB list container..... | 348 |
| A.3.141 | IDN S-0-1081.x.03 IDN allocation of consumer RTB list container | 349 |
| A.3.142 | IDN S-0-1081.x.04 Bit allocation of consumer RTB list container..... | 349 |
| A.3.143 | IDN S-0-1099.0.1 Test-IDN Control for SCP Conformity Purpose | 350 |
| A.3.144 | IDN S-0-1099.0.2 Test-IDN Container for SCP Conformity purpose..... | 351 |
| A.3.145 | IDN S-0-1100.0.1 Diagnostic counter sent SMP fragments..... | 352 |
| A.3.146 | IDN S-0-1100.0.2 Diagnostic counter received SMP fragments | 352 |
| A.3.147 | IDN S-0-1100.0.3 Diagnostic counter discarded SMP fragments | 353 |
| A.3.148 | IDN S-0-1101.x.1 SMP Container Data | 353 |
| A.3.149 | IDN S-0-1101.x.2 List of session identifiers..... | 354 |
| A.3.150 | IDN S-0-1101.x.3 List of session priorities | 355 |
| A.3.151 | IDN S-0-1150.x.01 OVS Control (C-OVS)..... | 355 |
| A.3.152 | IDN S-0-1150.x.02 OVS Status (S-OVS) | 356 |
| A.3.153 | IDN S-0-1150.x.03 OVS Container | 357 |
| A.3.154 | IDN S-0-1150.x.04 Sample time | 358 |
| A.3.155 | IDN S-0-1150.x.05 Phase shift..... | 359 |
| A.3.156 | IDN S-0-1150.x.06 Configuration List OVS - IDNs | 359 |
| A.3.157 | IDN S-0-1150.x.07 Configuration List OVS - Offset | 360 |
| A.3.158 | IDN S-0-1150.x.08 Configuration List OVS - Length..... | 361 |
| A.3.159 | IDN S-0-1150.x.09 Assigned Oversampling Capability | 361 |
| A.3.160 | IDN S-0-1150.x.10 Number of Samples..... | 362 |
| A.3.161 | IDN S-0-1151.x.01 Maximum number of samples | 362 |
| A.3.162 | IDN S-0-1151.x.02 Internal resolution | 363 |
| A.3.163 | IDN S-0-1151.x.03 Maximum quantity of this oversampling capability | 364 |
| A.3.164 | IDN S-0-1151.x.04 Minimum sample time..... | 364 |
| A.3.165 | IDN S-0-1151.x.06 Configurable IDNs of OVS capability | 365 |
| A.3.166 | IDN S-0-1151.x.07 Configurable IDNs of OVS Capability - Offset..... | 366 |
| A.3.167 | IDN S-0-1151.x.08 Configurable IDNs of OVS Capability - Length..... | 366 |
| A.3.168 | IDN S-0-1153 Amount of OVS Domains | 367 |
| Annex B (normative) SCP– Classification..... | | 368 |
| B.1 | General concept of profiling..... | 368 |
| B.2 | Function Groups related to the SCP | 369 |
| B.2.1 | FG SCP Identification | 369 |
| B.2.2 | FG Timing | 369 |
| B.2.3 | FG Telegram Setup | 369 |
| B.2.4 | FG Control..... | 370 |
| B.2.5 | FG Bus-Diagnosis | 370 |

| | | |
|---------------------|---|-----|
| B.2.6 | FG Connection | 370 |
| B.2.7 | FG NRT | 371 |
| B.2.8 | FG MUX | 371 |
| B.2.9 | FG SMP | 372 |
| B.2.10 | FG RTB | 373 |
| B.3 | Type 19 communication classes | 373 |
| B.3.1 | General | 373 |
| B.3.2 | SCP_FixCFG | 373 |
| B.3.3 | SCP_FixCFG_0x02 | 375 |
| B.3.4 | SCP_FixCFG_0x03 | 375 |
| B.3.5 | SCP_VarCFG | 375 |
| B.3.6 | SCP_VarCFG_0x02 | 376 |
| B.3.7 | SCP_VarCFG_0x03 | 377 |
| B.3.8 | SCP_Sync | 377 |
| B.3.9 | SCP_Sync | 377 |
| B.3.10 | SCP_Sync_0x02 | 378 |
| B.3.11 | SCP_Sync_0x03 | 378 |
| B.3.12 | SCP_WD | 378 |
| B.3.13 | SCP_WD_0x02 | 378 |
| B.3.14 | SCP_Diag | 379 |
| B.3.15 | SCP_RTB | 379 |
| B.3.16 | SCP_HP | 379 |
| B.3.17 | SCP_SMP | 379 |
| B.3.18 | SCP_Mux | 380 |
| B.3.19 | SCP_Ext_Mux | 380 |
| B.3.20 | SCP_NRT | 380 |
| B.3.21 | SCP_Sig | 381 |
| B.3.22 | SCP_ListSeg | 381 |
| B.3.23 | SCP_IRS | 381 |
| B.3.24 | SCP_Cap | 381 |
| B.3.25 | SCP_RTBListProd | 382 |
| B.3.26 | SCP_RTBListCons | 382 |
| B.3.27 | SCP_SysTime | 382 |
| B.3.28 | SCP_RTBWordProd | 382 |
| B.3.29 | SCP_RTBWordCons | 382 |
| B.3.30 | SCP_SafetyCon | 383 |
| B.3.31 | SCP_OvS_Basic | 383 |
| B.3.32 | SCP_NRTPC | 384 |
| B.3.33 | SCP_Cyc | 384 |
| Annex C (normative) | GDP (Generic Device Profile) | 385 |
| C.1 | General | 385 |
| C.2 | Function Groups | 385 |
| C.2.1 | Function Group Diagnosis | 385 |
| C.2.2 | Function Group Archiving | 387 |
| C.2.3 | Function Group Administration | 387 |
| C.2.4 | Function Group Identification | 387 |
| C.2.5 | Function Group State machine | 388 |
| C.2.6 | Function Group Time | 392 |
| C.2.7 | Function Group Conformance Test GDP | 393 |

| | | |
|--------|---|-----|
| C.3 | Classification..... | 393 |
| C.3.1 | General | 393 |
| C.3.2 | GDP_Basic..... | 393 |
| C.3.3 | GDP_DiagT..... | 393 |
| C.3.4 | GDP_DiagTAdv | 394 |
| C.3.5 | GDP_LNg..... | 394 |
| C.3.6 | GDP_PWD | 394 |
| C.3.7 | GDP_Id | 394 |
| C.3.8 | GDP_Rev | 394 |
| C.3.9 | GDP_QA | 395 |
| C.3.10 | GDP_CKs..... | 395 |
| C.3.11 | GDP_CKsUser..... | 395 |
| C.3.12 | GDP_StM | 395 |
| C.3.13 | GDP_BKP | 395 |
| C.3.14 | GDP_BKPAdv..... | 396 |
| C.3.15 | GDP_RST | 396 |
| C.3.16 | GDP_CIPSafetyDev..... | 396 |
| C.4 | List of all GPD related IDNs..... | 396 |
| C.4.1 | IDN specification | 396 |
| C.4.2 | Identification numbers in numerical orders..... | 396 |
| C.4.3 | Detailed specification of communication-related IDNs..... | 398 |
| C.5 | GDP status codes | 443 |
| | Bibliography..... | 445 |
| | Figure 1 – Example of offsets within MDT payload..... | 42 |
| | Figure 2 – Example of Offsets within AT payload | 54 |
| | Figure 3 – Flow of application data..... | 60 |
| | Figure 4 – Telegram assignment and connection length..... | 61 |
| | Figure 5 – Connection control state machine producer..... | 63 |
| | Figure 6 – Connection control state machine consumer | 66 |
| | Figure 7 – Communication phase (CP) state machine..... | 71 |
| | Figure 8 – CPSwitch state machine master | 78 |
| | Figure 9 – CPSwitch state machine of the slave..... | 83 |
| | Figure 10 – Address allocation with line..... | 90 |
| | Figure 11 – Address allocation with ring..... | 90 |
| | Figure 12 – Address allocation with interrupted ring..... | 91 |
| | Figure 13 – Ring topology with P&S channel..... | 92 |
| | Figure 14 – Line topology with P channel (as example)..... | 93 |
| | Figure 15 – Block diagram of a slave | 93 |
| | Figure 16 – Topology conditions of a slave | 94 |
| | Figure 17 – Addressing of multi-slave device | 95 |
| | Figure 18 – Multi-slave device in ring topology or not last in line topology..... | 96 |
| | Figure 19 – Multi-slave device as last in line topology..... | 96 |
| | Figure 20 – Multi-slave device in line (left)..... | 98 |
| | Figure 21 – Multi-slave device in line (right)..... | 98 |
| | Figure 22 – Multi-slave device in ring..... | 98 |

| | |
|---|-----|
| Figure 23 – Topology state machine of a slave | 99 |
| Figure 24 – Ring without break | 102 |
| Figure 25 – Ring break | 103 |
| Figure 26 – Ring break on master | 103 |
| Figure 27 – Recovery of P channel (1) | 104 |
| Figure 28 – Recovery of P channel (2) | 104 |
| Figure 29 – Recovery of S channel (1) | 105 |
| Figure 30 – Recovery of S channel (2) | 105 |
| Figure 31 – Communication phase and hot-plug state machine | 106 |
| Figure 32 – Service channel handling diagram | 112 |
| Figure 33 – Communication step proceeding diagram | 113 |
| Figure 34 – State machine for procedure command execution | 122 |
| Figure 35 – Interaction of procedure command control and acknowledgement | 123 |
| Figure 36 – Procedure command execution without interrupt | 124 |
| Figure 37 – Procedure command execution with interrupt | 124 |
| Figure 38 – Procedure command execution with error message | 125 |
| Figure 39 – Type 19 Time Transmission | 126 |
| Figure 40 – Data container configuration without acknowledge (slave) | 131 |
| Figure 41 – Data container configuration with acknowledge (slave) | 132 |
| Figure 42 – Processing of list index in the MDT data | 133 |
| Figure 43 – Structure of extended data container | 136 |
| Figure 44 – Transport container | 142 |
| Figure 45 – UML Sequence Diagram: Multiplexing of two sessions (Example) | 145 |
| Figure 46 – Oversampling overview | 147 |
| Figure 47 – Oversampling timing input (producer) | 147 |
| Figure 48 – Oversampling timing output (consumer) | 148 |
| Figure 49 – Oversampling state machine | 150 |
| Figure 50 – Telegram timing reference | 152 |
| Figure 51 – Calculation of telegram length | 153 |
| Figure 52 – Calculation of t1 | 154 |
| Figure 53 – Determination of UC channel | 156 |
| Figure 54 – Timing diagram of CP0 | 156 |
| Figure 55 – Timing diagram of CP1 and CP2 with 2 MDT, 2AT and UC channel | 157 |
| Figure 56 – Timing diagram of CP1 and CP2 with 4 MDT, 4 AT and UC channel | 158 |
| Figure 57 – Timing diagram of CP1 and CP2 with 2 MDT, UC channel and 2 AT | 158 |
| Figure 58 – Timing diagram of CP1 and CP2 with 4 MDT, UC channel and 4 AT | 159 |
| Figure 59 – Telegram sequence | 160 |
| Figure 60 – The two defined positions of the UC channel | 161 |
| Figure 61 – First and last transmit during UC channel | 162 |
| Figure 62 – Activated and deactivated collision buffer | 163 |
| Figure 63 – Time response of store and forward method | 164 |
| Figure 64 – Cut through forwarding | 164 |
| Figure 65 – Ethernet frame with payload | 165 |

Figure 66 – Unhealed broken ring 168

Figure 67 – Broken ring with Type 19 slave in between..... 169

Figure 68 – S/IP busy response 174

Figure 69 – Client connection 175

Figure 70 – Server connection 175

Figure 71 – S/IP asynchronous request 176

Figure 72 – S/IP PDU 177

Figure 73 – S/IP error response 179

Figure 74 – UDP Browsing..... 183

Figure 75 – Sequence of setting a new network configuration on one device using UDP 186

Figure 76 – UDP Identification 191

Figure 77 – Usage UDP reset request..... 203

Figure 78 – Sequence for watchdog trigger service and client application timeout..... 204

Figure 79 – Synchronization timing 207

Figure 80 – Synchronization trigger 207

Figure 81 – Timing of TSref with ring and line 209

Figure 82 – Timing of TSref with interrupted ring 210

Figure 83 – Determination of the SYNC delay time 211

Figure 84 – Definition of TSref 213

Figure 85 – Timing with different cycle times 214

Figure 86 – Timing with the same cycle times 215

Figure 87 – Synchronous application data processing 216

Figure 88 – Cyclic application data processing..... 217

Figure 89 – Non-synchronous application data processing 218

Figure A.1 – IDN name structure..... 225

Figure A.2 – Unit structure..... 227

Figure A.3 – Structure of IDN operation data with variable length 229

Figure A.4 – Example of synchronization timing with different producer cycles..... 298

Figure A.5 – Definition of MDT length 300

Figure A.6 – Lengths of MDTs (example) 301

Figure A.7 – Definition of AT length 303

Figure A.8 – Lengths of ATs (example) 303

Figure A.9 – Structure of MAC address 308

Figure A.10 – Structure of IP address 310

Figure A.11 – Structure of subnet mask 311

Figure A.12 – Structure of gateway address..... 313

Figure A.13 – Structure of List of Sub-device addresses 332

Figure A.14 – Definition of connection length 336

Figure A.15 – Synchronization with ring 345

Figure A.16 – Configuration example 358

Figure B.1 – Technical Profiling in Type 19..... 368

Figure C.1 – State machine without class GDP_StM 389

Figure C.2 – State machine without class GDP_StM 391

| | |
|--|-----|
| Figure C.3 – Password State Machine | 406 |
| Figure C.4 – Structure of Date information | 425 |
| Figure C.5 – Structure of QA date information..... | 425 |
| Figure C.6 – Structure of Service date information | 427 |
| Figure C.7 – Structure of Calibration date information..... | 428 |
| Figure C.8 – Structure of Calibration due date information | 428 |
| Figure C.9 – Mapping of data into the InputData and OutputData container | 433 |
| | |
| Table 1 – Ethernet DLPDU identification | 34 |
| Table 2 – Data structure in a DLPDU | 35 |
| Table 3 – DLPDU payload header | 35 |
| Table 4 – DLPDU type | 36 |
| Table 5 – MDT header | 36 |
| Table 6 – MDT header to be considered by the slave | 36 |
| Table 7 – MDT phase..... | 37 |
| Table 8 – MDT0 structure in CP0 | 38 |
| Table 9 – Communication version | 38 |
| Table 10 – MDT0 in CP1 and CP2 (topology indices 0 to 127) | 39 |
| Table 11 – MDT1 in CP1 and CP2 (topology indices 128 to 255) | 40 |
| Table 12 – MDT2 in CP1 and CP2 (topology indices 256 to 383) | 40 |
| Table 13 – MDT3 in CP1 and CP2 (topology indices 384 to 511) | 41 |
| Table 14 – MDT data field..... | 42 |
| Table 15 – MDT hot-plug field | 43 |
| Table 16 – HP address in MDT-HP field..... | 43 |
| Table 17 – HP control field (in HP0 and HP1) | 43 |
| Table 18 – Extended Field (EF) | 45 |
| Table 19 – MDT service channel field | 45 |
| Table 20 – MDT SVC (for each slave)..... | 45 |
| Table 21 – SVC control word (DLL)..... | 46 |
| Table 22 – MDT device control | 47 |
| Table 23 – MDT application data..... | 47 |
| Table 24 – Device control field (C-DEV)..... | 47 |
| Table 25 – AT MST header | 48 |
| Table 26 – AT header fields to be considered by the slave..... | 48 |
| Table 27 – AT0 structure in CP0 | 49 |
| Table 28 – Topology address in AT0-CP0 | 50 |
| Table 29 – AT0 in CP1 and CP2 (topology indices 0 to 127) | 51 |
| Table 30 – AT1 in CP1 and CP2 (topology indices 128 to 255) | 51 |
| Table 31 – AT2 in CP1 and CP2 (topology indices 256 to 383) | 52 |
| Table 32 – AT3 in CP1 and CP2 (topology indices 384 to 511) | 52 |
| Table 33 – AT data field..... | 53 |
| Table 34 – AT hot-plug field in HP0 and HP1 | 54 |
| Table 35 – HP address in AT-HP field..... | 55 |

| | |
|--|-----|
| Table 36 – HP status field (in HP0 and HP1)..... | 55 |
| Table 37 – AT service channel field | 56 |
| Table 38 – AT SVC (for each slave)..... | 56 |
| Table 39 – AT SVC status description (DLL) | 56 |
| Table 40 – AT device status..... | 57 |
| Table 41 – AT connection data | 57 |
| Table 42 – Device status field | 58 |
| Table 43 – Structure of the connection..... | 61 |
| Table 44 – Connection control (C-CON)..... | 61 |
| Table 45 – Connection control combinations..... | 63 |
| Table 46 – States of the producer state machine | 64 |
| Table 47 – States of the producer sub-state machine..... | 64 |
| Table 48 – Producer transitions | 64 |
| Table 49 – States of the consumer state machine | 66 |
| Table 50 – States of the consumer sub-state machine | 67 |
| Table 51 – Consumer transitions..... | 68 |
| Table 52 – MDT hot-plug field in CP3 and after ring recovery..... | 75 |
| Table 53 – Transitions of CP state machine..... | 76 |
| Table 54 – States of master CPSwitch state machine | 80 |
| Table 55 – Transitions of master CPSwitch state machine | 81 |
| Table 56 – States of slave CPSwitch state machine..... | 85 |
| Table 57 – Transitions of slave CPSwitch state machine..... | 85 |
| Table 58 – Transitions of slave CPSwitch state machine (transitions with warning)..... | 86 |
| Table 59 – Transitions of slave CPSwitch state machine (transitions with error) | 86 |
| Table 60 – Diagnostics of CPS state machine slave..... | 87 |
| Table 61 – Determination of the topology indices (1)..... | 96 |
| Table 62 – Determination of the topology indices (2)..... | 96 |
| Table 63 – Determination of the topology indices (3)..... | 97 |
| Table 64 – Topology status of multi-slave device | 97 |
| Table 65 – Topology settings of multi-slave device | 97 |
| Table 66 – States of Topology state machine of slave..... | 100 |
| Table 67 – Transitions of Topology state machine | 101 |
| Table 68 – Transitions of Topology state machine (transitions with warning)..... | 101 |
| Table 69 – Transitions of Topology state machine (transitions with error) | 102 |
| Table 70 – States of HP state machine | 106 |
| Table 71 – MDT hot-plug field in HP0 | 108 |
| Table 72 – MDT hot-plug field in HP1 | 109 |
| Table 73 – AT hot-plug field in HP1 | 109 |
| Table 74 – Transitions of HP state machine..... | 109 |
| Table 75 – AT hot-plug field in HP1 (error)..... | 110 |
| Table 76 – Condition for modifying data block elements..... | 113 |
| Table 77 – List of data block element and step numbers | 113 |
| Table 78 – SVC channel evaluation | 115 |

| | |
|---|-----|
| Table 79 – Reaction to handshake timeout | 116 |
| Table 80 – Reaction to error message | 116 |
| Table 81 – Error messages | 117 |
| Table 82 – Structure of Procedure command control | 120 |
| Table 83 – Procedure command acknowledgment (data status) | 120 |
| Table 84 – List of valid standard data container combinations | 129 |
| Table 85 – Example of IDN and bit allocation of RTB container | 141 |
| Table 86 – Structure of the Session Control Header | 142 |
| Table 87 – Lists in S-0-1101.7.x | 146 |
| Table 88 – States of the oversampling state machine | 150 |
| Table 89 – Transitions of the oversampling state machine | 151 |
| Table 90 – Parameter for timing calculation | 152 |
| Table 91 – Default values of CP1/2 (case 1) | 157 |
| Table 92 – Default values of CP1/2 (case 2) | 158 |
| Table 93 – Structure of port/MAC table | 167 |
| Table 94 – Insertion of entry | 167 |
| Table 95 – Update of entries | 167 |
| Table 96 – Slave collision buffer | 168 |
| Table 97 – Physical topology Master (CP0) | 169 |
| Table 98 – Physical topology Master (CP 1-4) | 170 |
| Table 99 – Definition of data types | 171 |
| Table 100 – Overview on IP-based protocols | 172 |
| Table 101 – Message Types | 177 |
| Table 102 – User-specific Message Types | 178 |
| Table 103 – Common error codes | 180 |
| Table 104 – Nameplate IDs | 192 |
| Table 105 – IPS classes | 205 |
| Table 106 – Class TCP Basic | 205 |
| Table 107 – Class UDP Basic | 206 |
| Table 108 – Class Device Management | 206 |
| Table 109 – Explore & IP Configuration Services | 206 |
| Table 110 – Class Type 19 Parameter Access | 206 |
| Table 111 – SCP specific status codes | 220 |
| Table 112 – Overview on diagnosis classes | 222 |
| Table A.1 – Data block structure | 223 |
| Table A.2 – Parameter structure | 224 |
| Table A.3 – Element 3 of IDNs | 225 |
| Table A.4 – Valid combinations of the display formats | 227 |
| Table A.5 – Example of the structure of an IDN-list | 230 |
| Table A.6 – Data status structure | 231 |
| Table A.7 – List of relevant communication-related IDNs | 231 |
| Table A.8 – Attributes for IDN S-0-0014 | 235 |
| Table A.9 – Structure of interface status | 236 |

| | |
|---|-----|
| Table A.10 – Attributes for IDN S-0-0021 | 236 |
| Table A.11 – Attributes for IDN S-0-0022 | 237 |
| Table A.12 – Attributes for IDN S-0-0026 | 238 |
| Table A.13 – Attributes for IDN S-0-0027 | 238 |
| Table A.14 – Attributes for IDN S-0-0127 | 239 |
| Table A.15 – Attributes for IDN S-0-0128 | 239 |
| Table A.16 – Attributes for IDN S-0-0144 | 240 |
| Table A.17 – Attributes for IDN S-0-0027 | 241 |
| Table A.18 – Attributes for IDN S-0-0187 | 241 |
| Table A.19 – Attributes for IDN S-0-0188 | 242 |
| Table A.20 – Attributes for IDN S-0-0328 | 242 |
| Table A.21 – Attributes for IDN S-0-0329 | 243 |
| Table A.22 – Attributes for IDN S-0-0360 | 243 |
| Table A.23 – Attributes for IDN S-0-0361 | 244 |
| Table A.24 – Attributes for IDN S-0-0362 | 245 |
| Table A.25 – List index of MDT data container A | 246 |
| Table A.26 – Attributes for IDN S-0-0363 | 246 |
| Table A.27 – List index of MDT data container B | 247 |
| Table A.28 – Attributes for IDN S-0-0364 | 247 |
| Table A.29 – Attributes for IDN S-0-0365 | 248 |
| Table A.30 – Attributes for IDN S-0-0366 | 249 |
| Table A.31 – List index of AT data container A | 250 |
| Table A.32 – Attributes for IDN S-0-0367 | 250 |
| Table A.33 – List index of AT data container B | 251 |
| Table A.34 – Attributes for IDN S-0-0368 | 251 |
| Table A.35 – Data container A pointer structure | 252 |
| Table A.36 – Attributes for IDN S-0-0369 | 253 |
| Table A.37 – Data container B pointer structure | 253 |
| Table A.38 – Attributes for IDN S-0-0370 | 254 |
| Table A.39 – Attributes for IDN S-0-0371 | 254 |
| Table A.40 – Attributes for IDN S-0-0394 | 255 |
| Table A.41 – Attributes for IDN S-0-0395 | 256 |
| Table A.42 – Attributes for IDN S-0-0396 | 256 |
| Table A.43 – Attributes for IDN S-0-0397 | 257 |
| Table A.44 – Attributes for IDN S-0-0398 | 258 |
| Table A.45 – Attributes for IDN S-0-0399 | 258 |
| Table A.46 – Attributes for IDN S-0-0444 | 259 |
| Table A.47 – Attributes for IDN S-0-0445 | 259 |
| Table A.48 – Attributes for IDN S-0-0450 | 260 |
| Table A.49 – Attributes for IDN S-0-0451 | 261 |
| Table A.50 – Attributes for IDN S-0-0452 | 262 |
| Table A.51 – Attributes for IDN S-0-0453 | 263 |
| Table A.52 – Attributes for IDN S-0-0454 | 264 |

| | |
|---|-----|
| Table A.53 – Attributes for IDN S-0-0455 | 265 |
| Table A.54 – Attributes for IDN S-0-0456 | 266 |
| Table A.55 – Attributes for IDN S-0-0457 | 267 |
| Table A.56 – Attributes for IDN S-0-0458 | 268 |
| Table A.57 – Attributes for IDN S-0-0459 | 269 |
| Table A.58 – Attributes for IDN S-0-0480 | 270 |
| Table A.59 – Attributes for IDN S-0-0481 | 271 |
| Table A.60 – Attributes for IDN S-0-0482 | 272 |
| Table A.61 – Attributes for IDN S-0-0483 | 273 |
| Table A.62 – Attributes for IDN S-0-0484 | 274 |
| Table A.63 – Attributes for IDN S-0-0485 | 275 |
| Table A.64 – Attributes for IDN S-0-0486 | 276 |
| Table A.65 – Attributes for IDN S-0-0487 | 277 |
| Table A.66 – Attributes for IDN S-0-0488 | 278 |
| Table A.67 – Attributes for IDN S-0-0489 | 279 |
| Table A.68 – Attributes for IDN S-0-0490 | 280 |
| Table A.69 – Attributes for IDN S-0-0491 | 280 |
| Table A.70 – Attributes for IDN S-0-0492 | 281 |
| Table A.71 – Attributes for IDN S-0-0493 | 281 |
| Table A.72 – Attributes for IDN S-0-0494 | 282 |
| Table A.73 – Attributes for IDN S-0-0495 | 283 |
| Table A.74 – Attributes for IDN S-0-0496 | 283 |
| Table A.75 – Attributes for IDN S-0-0497 | 284 |
| Table A.76 – Attributes for IDN S-0-0498 | 285 |
| Table A.77 – Attributes for IDN S-0-0500 | 285 |
| Table A.78 – Attributes for IDN S-0-0501 | 286 |
| Table A.79 – Attributes for IDN S-0-0502 | 286 |
| Table A.80 – Attributes for IDN S-0-0503 | 287 |
| Table A.81 – Attributes for IDN S-0-0504 | 288 |
| Table A.82 – Attributes for IDN S-0-0505 | 288 |
| Table A.83 – Attributes for IDN S-0-0506 | 289 |
| Table A.84 – Attributes for IDN S-0-0507 | 289 |
| Table A.85 – Attributes for IDN S-0-0508 | 290 |
| Table A.86 – Attributes of IDN S-0-1000.0.1 | 291 |
| Table A.87 – Attributes of IDN S-0-1000 | 291 |
| Table A.88 – SCP type and version | 292 |
| Table A.89 – Attributes of IDN S-0-1002 | 294 |
| Table A.90 – Attributes of IDN S-0-1003 | 295 |
| Table A.91 – Attributes of IDN S-0-1005 | 296 |
| Table A.92 – Attributes of IDN S-0-1006 | 296 |
| Table A.93 – Attributes for IDN S-0-1007 | 297 |
| Table A.94 – Attributes for IDN S-0-1008 | 298 |
| Table A.95 – Attributes of IDN S-0-1009 | 299 |

| | |
|--|-----|
| Table A.96 – C-DEV Offset in MDT | 299 |
| Table A.97 – Attributes of IDN S-0-1010 | 300 |
| Table A.98 – Attributes of IDN S-0-1011 | 301 |
| Table A.99 – S-DEV Offset in AT | 302 |
| Table A.100 – Attributes of IDN S-0-1012 | 302 |
| Table A.101 – Attributes of IDN S-0-1013 | 303 |
| Table A.102 – SVC Offset in MDT | 304 |
| Table A.103 – Attributes of IDN S-0-1014 | 304 |
| Table A.104 – SVC Offset in AT | 305 |
| Table A.105 – Attributes of IDN S-0-1015 | 305 |
| Table A.106 – Attributes of IDN S-0-1016 | 306 |
| Table A.107 – Attributes of IDN S-0-1017 | 307 |
| Table A.108 – Attributes of IDN S-0-1019 | 308 |
| Table A.109 – Attributes of IDN S-0-1020.0.1 | 309 |
| Table A.110 – Attributes of IDN S-0-1020 | 309 |
| Table A.111 – Attributes of IDN S-0-1021.0.1 | 310 |
| Table A.112 – Attributes of IDN S-0-1021 | 311 |
| Table A.113 – Attributes of IDN S-0-1022.0.1 | 312 |
| Table A.114 – Attributes of IDN S-0-1022 | 312 |
| Table A.115 – Attributes of IDN S-0-1023 | 313 |
| Table A.116 – Attributes of IDN S-0-1024 | 314 |
| Table A.117 – Attributes of IDN S-0-1026 | 315 |
| Table A.118 – Attributes of IDN S-0-1027.0.1 | 316 |
| Table A.119 – Upper and lower Limit of MTU | 317 |
| Table A.120 – Attributes of IDN S-0-1027.0.2 | 317 |
| Table A.121 – Attributes of IDN S-0-1028 | 318 |
| Table A.122 – Attributes of IDN S-0-1031 | 318 |
| Table A.123 – Structure of test pin assignment Port 1 & Port 2 | 319 |
| Table A.124 – Selectable output signals | 319 |
| Table A.125 – Attributes of IDN S-0-1035 | 320 |
| Table A.126 – Coding of PHY errors | 320 |
| Table A.127 – Attributes of IDN S-0-1035 | 321 |
| Table A.128 – Checking of MAC telegrams | 321 |
| Table A.129 – Attributes of IDN S-0-1036 | 322 |
| Table A.130 – Attributes of IDN S-0-1037 | 323 |
| Table A.131 – Attributes of IDN S-0-1039.0.1 | 324 |
| Table A.132 – Attributes of IDN S-0-1039 | 324 |
| Table A.133 – Attributes of IDN S-0-1040 | 325 |
| Table A.134 – Attributes of IDN S-0-1041 | 326 |
| Table A.135 – Attributes of IDN S-0-1044 | 326 |
| Table A.136 – Device control field (C-DEV) | 327 |
| Table A.137 – Attributes of IDN S-0-1045 | 328 |
| Table A.138 – Device status field | 328 |

| | |
|---|-----|
| Table A.139 – Attributes of IDN S-0-1047 | 330 |
| Table A.140 – Attributes of IDN S-0-1048 | 330 |
| Table A.141 – Attributes of IDN S-0-1046 | 331 |
| Table A.142 – Attributes of IDN S-0-1050.x.1..... | 332 |
| Table A.143 – Connection setup | 333 |
| Table A.144 – Attributes of IDN S-0-1050.x.2..... | 334 |
| Table A.145 – Attributes of IDN S-0-1050.x.3..... | 334 |
| Table A.146 – Structure of telegram assignment..... | 335 |
| Table A.147 – Attributes of IDN S-0-1050.x.4..... | 335 |
| Table A.148 – Attributes of IDN S-0-1050.x.5..... | 336 |
| Table A.149 – Attributes of IDN S-0-1050.x.6..... | 337 |
| Table A.150 – Attributes of IDN S-0-1050.x.7..... | 337 |
| Table A.151 – Attributes of IDN S-0-1050.x.8..... | 338 |
| Table A.152 – Attributes of IDN S-0-1050.x.10..... | 338 |
| Table A.153 – Attributes of IDN S-0-1050.x.11..... | 339 |
| Table A.154 – Attributes of IDN S-0-1050.x.12..... | 339 |
| Table A.155 – Attributes of IDN S-0-1050.x.20..... | 340 |
| Table A.156 – Attributes of IDN S-0-1050.x.21..... | 341 |
| Table A.157 – Attributes of IDN S-0-1051..... | 341 |
| Table A.158 – Attributes of IDN S-0-1060.x.01..... | 342 |
| Table A.159 – Attributes of IDN S-0-1060.x.02..... | 342 |
| Table A.160 – Attributes of IDN S-0-1060.x.03..... | 343 |
| Table A.161 – Attributes of IDN S-0-1060.x.04..... | 343 |
| Table A.162 – Attributes of IDN S-0-1060.x.06..... | 344 |
| Table A.163 – Attributes of IDN S-0-1060.x.07..... | 344 |
| Table A.164 – Attributes of IDN S-0-1060.x.10..... | 345 |
| Table A.165 – Attributes of IDN S-0-1061..... | 346 |
| Table A.166 – Attributes of IDN S-0-1080.x.02..... | 347 |
| Table A.167 – Attributes of IDN S-0-1080.x.03..... | 347 |
| Table A.168 – Attributes of IDN S-0-1080.x.04..... | 348 |
| Table A.169 – Attributes of IDN S-0-1081.x.02..... | 348 |
| Table A.170 – Attributes of IDN S-0-1081.x.03..... | 349 |
| Table A.171 – Attributes of IDN S-0-1081.x.04..... | 350 |
| Table A.172 – Attributes of IDN S-0-1099.0.1 | 350 |
| Table A.173 – Structure of Test-IDN control..... | 351 |
| Table A.174 – Attributes of IDN S-0-1099.0.2 | 351 |
| Table A.175 – Attributes of IDN S-0-1100.0.1 | 352 |
| Table A.176 – Attributes of IDN S-0-1100.0.2 | 352 |
| Table A.177 – Attributes of IDN S-0-1100.0.3 | 353 |
| Table A.178 – Attributes of IDN S-0-1101.x.1..... | 354 |
| Table A.179 – Attributes of IDN S-0-1101.x.2..... | 354 |
| Table A.180 – Attributes of IDN S-0-1101.x.3..... | 355 |
| Table A.181 – Attributes of IDN S-0-1150.x.01..... | 355 |

| | |
|---|-----|
| Table A.182 – OVS Control structure | 356 |
| Table A.183 – Attributes of IDN S-0-1150.x.02..... | 356 |
| Table A.184 – OVS Status structure | 357 |
| Table A.185 – Attributes of IDN S-0-1150.x.03..... | 357 |
| Table A.186 – Configuration example | 358 |
| Table A.187 – Attributes of IDN S-0-1150.x.04..... | 358 |
| Table A.188 – Attributes of IDN S-0-1150.x.05..... | 359 |
| Table A.189 – Attributes of IDN S-0-1150.x.06..... | 360 |
| Table A.190 – Attributes of IDN S-0-1150.x.07..... | 360 |
| Table A.191 – Attributes of IDN S-0-1150.x.08..... | 361 |
| Table A.192 – Attributes of IDN S-0-1150.x.09..... | 361 |
| Table A.193 – Attributes of IDN S-0-1150.x.10..... | 362 |
| Table A.194 – Attributes of IDN S-0-1151.x.01..... | 363 |
| Table A.195 – Attributes of IDN S-0-1151.x.02..... | 363 |
| Table A.196 – Attributes of IDN S-0-1151.x.03..... | 364 |
| Table A.197 – Attributes of IDN S-0-1151.x.04..... | 365 |
| Table A.198 – Attributes of IDN S-0-1151.x.06..... | 365 |
| Table A.199 – Attributes of IDN S-0-1151.x.07..... | 366 |
| Table A.200 – Attributes of IDN S-0-1151.x.08..... | 366 |
| Table A.201 – Attributes of IDN S-0-1151.x.08..... | 367 |
| Table C.1 – Type 19 LED..... | 386 |
| Table C.2 – SDx LED..... | 387 |
| Table C.3 – List of relevant communication-related IDNs | 396 |
| Table C.4 – Attributes of IDN S-0-0000..... | 398 |
| Table C.5 – Attributes of IDN S-0-0017..... | 399 |
| Table C.6 – Attributes of IDN S-0-0025..... | 399 |
| Table C.7 – Attributes of IDN S-0-0095..... | 400 |
| Table C.8 – Attributes of IDN S-0-0099..... | 400 |
| Table C.9 – Attributes of IDN S-0-0192..... | 401 |
| Table C.10 – Attributes of IDN S-0-0262..... | 401 |
| Table C.11 – Attributes of IDN S-0-0263..... | 402 |
| Table C.12 – Attributes of IDN S-0-0264..... | 403 |
| Table C.13 – Attributes of IDN S-0-0265..... | 403 |
| Table C.14 – Language codes | 404 |
| Table C.15 – Attributes of IDN S-0-0266..... | 404 |
| Table C.16 – Attributes of IDN S-0-0267..... | 405 |
| Table C.17 – States of the password state machine..... | 406 |
| Table C.18 – Transitions of the password state machine..... | 407 |
| Table C.19 – Changing the password..... | 407 |
| Table C.20 – Attributes of IDN S-0-0269..... | 408 |
| Table C.21 – Structure of storage mode..... | 408 |
| Table C.22 – Attributes of IDN S-0-0270..... | 409 |
| Table C.23 – Attributes of IDN S-0-0279..... | 409 |

| | |
|--|-----|
| Table C.24 – Attributes of IDN S-0-0293 | 410 |
| Table C.25 – Attributes of IDN S-0-0326.x.00 | 410 |
| Table C.26 – Attributes of IDN S-0-0327.x.00 | 411 |
| Table C.27 – Attributes of IDN S-0-0390 | 412 |
| Table C.28 – Prioritization of diagnostic events..... | 412 |
| Table C.29 – Transitions of the password state machine..... | 413 |
| Table C.30 – Attributes of IDN S-0-0420 | 414 |
| Table C.31 – Attributes of IDN S-0-0422 | 414 |
| Table C.32 – Attributes of IDN S-0-0423 | 415 |
| Table C.33 – Attributes of IDN S-0-0425 | 416 |
| Table C.34 – Structure of the sub-device state machine control | 416 |
| Table C.35 – Attributes of IDN S-0-0531 | 417 |
| Table C.36 – Attributes of IDN S-0-1300.x.1 | 417 |
| Table C.37 – Attributes of IDN S-0-1300.x.2 | 418 |
| Table C.38 – Attributes of IDN S-0-1300.x.3 | 418 |
| Table C.39 – Vendor code | 419 |
| Table C.40 – Attributes of IDN S-0-1300.x.4 | 419 |
| Table C.41 – Attributes of IDN S-0-1300.x.5 | 420 |
| Table C.42 – Attributes of IDN S-0-1300.x.6 | 420 |
| Table C.43 – Attributes of IDN S-0-1300.x.7 | 421 |
| Table C.44 – Attributes of IDN S-0-1300.x.8 | 421 |
| Table C.45 – Attributes of IDN S-0-1300.x.9 | 422 |
| Table C.46 – Attributes of IDN S-0-1300.x.10 | 422 |
| Table C.47 – Attributes of IDN S-0-1300.x.11 | 423 |
| Table C.48 – Attributes of IDN S-0-1300.x.12 | 424 |
| Table C.49 – Attributes of IDN S-0-1300.x.13 | 424 |
| Table C.50 – Attributes of IDN S-0-1300.x.14 | 425 |
| Table C.51 – Attributes of IDN S-0-1300.x.20 | 426 |
| Table C.52 – Attributes of IDN S-0-1300.x.21 | 426 |
| Table C.53 – Attributes of IDN S-0-1300.x.22 | 427 |
| Table C.54 – Attributes of IDN S-0-1300.x.23 | 428 |
| Table C.55 – Attributes of IDN S-0-1301 | 429 |
| Table C.56 – Structure of GDP classes & version | 430 |
| Table C.57 – Attributes of IDN S-0-1302.x.1 | 430 |
| Table C.58 – Coding of S-1302.x.01 | 431 |
| Table C.59 – Attributes of IDN S-0-1302.x.2 | 431 |
| Table C.60 – Attributes of IDN S-0-1302.x.3 | 434 |
| Table C.61 – Attributes of IDN S-0-1303.0.1 | 434 |
| Table C.62 – Attributes of IDN S-0-1303.0.2 | 435 |
| Table C.63 – Coding of S-1303.0.02 | 435 |
| Table C.64 – Attributes of IDN S-0-1303.0.3 | 436 |
| Table C.65 – Coding of S-1303.0.2 | 436 |
| Table C.66 – Attributes of IDN S-0-1303.0.10 | 437 |

| | |
|---|-----|
| Table C.67 – Attributes of IDN S-0-1303.0.11 | 438 |
| Table C.68 – Attributes of IDN S-0-1303.0.12 | 438 |
| Table C.69 – Attributes of IDN S-0-1305.0.1 | 439 |
| Table C.70 – Structure of Type 19 time | 439 |
| Table C.71 – Attributes of IDN S-0-1305.0.2 | 440 |
| Table C.72 – Attributes of IDN S-0-1310 | 440 |
| Table C.73 – Attributes of IDN S-0-1350 | 441 |
| Table C.74 – Attributes of IDN S-0-1310 | 442 |
| Table C.75 – Structure of Test IDN Diagnostic Event | 443 |
| Table C.76 – Status codes with the diagnosis class "operational state" | 443 |
| Table C.77 – Status codes with the diagnosis class "procedure command specific state" | 444 |

Withdrawal

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INDUSTRIAL COMMUNICATION NETWORKS –
FIELDBUS SPECIFICATIONS –****Part 4-19: Data-link layer protocol specification –
Type 19 elements**

FOREWORD

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NOTE Combinations of protocol types are specified in IEC 61784-1 and IEC 61784-2.

International Standard IEC 61158-4-19 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation.

This third edition cancels and replaces the second edition published in 2010. This edition constitutes a technical revision. The main changes with respect to the previous edition are listed below:

- introducing connections based on a producer-consumer model;

- introducing additional mechanisms to realize features such as timestamping and oversampling;
- improving the hotplug and redundancy features;
- improving the phase switching and the error handling;
- editorial improvements.

The text of this standard is based on the following documents:

| | |
|--------------|------------------|
| FDIS | Report on voting |
| 65C/762/FDIS | 65C/772/RVD |

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

A list of all the parts of the IEC 61158 series, under the general title *Industrial communication networks – Fieldbus specifications*, can be found on the IEC web site.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This part of IEC 61158 is one of a series produced to facilitate the interconnection of automation system components. It is related to other standards in the set as defined by the “three-layer” fieldbus reference model described in IEC 61158-1.

The data-link protocol provides the data-link service by making use of the services available from the physical layer. The primary aim of this standard is to provide a set of rules for communication expressed in terms of the procedures to be carried out by peer data-link entities (DLEs) at the time of communication. These rules for communication are intended to provide a sound basis for development in order to serve a variety of purposes:

- a) as a guide for implementors and designers;
- b) for use in the testing and procurement of equipment;
- c) as part of an agreement for the admittance of systems into the open systems environment;
- d) as a refinement to the understanding of time-critical communications within OSI.

This standard is concerned, in particular, with the communication and interworking of sensors, effectors and other automation devices. By using this standard together with other standards positioned within the OSI or fieldbus reference models, otherwise incompatible systems may work together in any combination.

NOTE Attention is drawn to the fact that use of the associated protocol type(s) is restricted by its (their) intellectual-property-right holder(s). In all cases, the commitment to limited release of intellectual-property-rights made by the holder(s) of those rights permits a particular data-link layer protocol type to be used with physical layer and application layer protocols in Type combinations as specified explicitly in the profile parts. Use of the various protocol type(s) in other combinations may require permission from their respective intellectual-property-right holders.

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of patents concerning Type 19 elements and possibly other types given in this document as follows:

| | | |
|-------------------------|------|---|
| DE 102 00 502 4759.8-32 | [BR] | Verfahren zur Laufzeitkorrektur in einer Kommunikationsstruktur |
| DE 102 37 097 | [RI] | Korrektur von Signallaufzeiten in verteilten Kommunikationssystemen |

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Withdrawn