



High**PROTEC**

IEC 61850 | PICS

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**MCDGV4**

Software-Version: 2.4.a

Protocol Implementation Conformance Statement (PICS)

UCA International Users Group Testing Sub Committee

English

## General

This document is applicable for MCDGV4 Version 2.4.a (Firmware-Build 24038).

- ASCI basic conformance statement
- ACSI models conformance statement
- ACSI service conformance statement

The statements specify the communication features mapped to IEC 61850-8-1.

## ASCI basic conformance statement

The basic conformance statement is defined in Table A.1.

Table A.1 – Basic conformance statement

|  |   | Client/<br>Subscriber | Server/<br>Publisher | Value/ Comments |
|--|---|-----------------------|----------------------|-----------------|
| <b>Client-Server roles</b>                       |   |                       |                      |                 |
| B11  | <b>Server</b> side (of TWO-PARTY-APPLICATION-ASSOCIATION) | –                     | Y                    |                 |
| B12  | <b>Client</b> side of (TWO-PARTY-APPLICATION-ASSOCIATION) | –                     | –                    |                 |
|  |   |                       |                      |                 |
| <b>SCSMs supported</b>                           |   |                       |                      |                 |
| B21  | <b>SCSM:</b> IEC 6185-8-1 used                            | –                     | Y                    |                 |
| B22  | <b>SCSM:</b> IEC 6185-9-1 used                            | –                     | N                    |                 |
| B23  | <b>SCSM:</b> IEC 6185-9-2 used                            | –                     | Y                    |                 |
| B24  | <b>SCSM:</b> other  | –                     | N                    |                 |
|  |   |                       |                      |                 |
| <b>Generic substation event model (GSE)</b>      |   |                       |                      |                 |
| B31  | <b>Publisher</b> side                                     | –                     | Y                    |                 |
| B32  | <b>Subscriber</b> side                                    | Y                     | –                    |                 |
|  |   |                       |                      |                 |
| <b>Transmission of sampled value model (SVC)</b> |   |                       |                      |                 |
| B41  | <b>Publisher</b> side                                     | –                     | N                    |                 |
| B42  | <b>Subscriber</b> side                                    | –                     | –                    |                 |
| –<br>Y = supported<br>N or empty = not supported |   |                       |                      |                 |

## ACSI models conformance statement

The ACSI models conformance statement is defined in Table A.2.

Table A.2 – ACSI models conformance statement

|   |                                  | Client/<br>Subscriber | Server/<br>Publisher | Value/<br>Comments |
|---|----------------------------------|-----------------------|----------------------|--------------------|
| If <b>Server</b> or <b>Client</b> side (B11/12) supported |                                  |                       |                      |                    |
| M1  | <b>Logical device</b>            | –                     | Y                    |                    |
| M2  | <b>Logical node</b>              | –                     | Y                    |                    |
| M3  | <b>Data</b>                      | –                     | Y                    |                    |
| M4  | <b>Data set</b>                  | –                     | Y                    |                    |
| M5  | <b>Substitution</b>              | –                     | N                    |                    |
| M6  | <b>Setting group control</b>     | –                     | N                    |                    |
|   | <b>Reporting</b>                 |                       |                      |                    |
| M7  | <b>Buffered report control</b>   | –                     | Y                    |                    |
| M7-1  | sequence-number                  | –                     | Y                    |                    |
| M7-2  | report-time-stamp                | –                     | Y                    |                    |
| M7-3  | reason-for-inclusion             | –                     | Y                    |                    |
| M7-4  | data-set-name                    | –                     | Y                    |                    |
| M7-5  | data-reference                   | –                     | Y                    |                    |
| M7-6  | buffer-overflow                  | –                     | Y                    |                    |
| M7-7  | entryID                          | –                     | Y                    |                    |
| M7-8  | BufTim                           | –                     | Y                    |                    |
| M7-9  | IntgPd                           | –                     | Y                    |                    |
| M7-10   | GI                               | –                     | Y                    |                    |
| M7-11   | conf-revision                    | –                     | Y                    |                    |
| M8  | <b>Unbuffered report control</b> | –                     | Y                    |                    |
| M8-1  | sequence-number                  | –                     | Y                    |                    |
| M8-2  | report-time-stamp                | –                     | Y                    |                    |
| M8-3  | reason-for-inclusion             | –                     | Y                    |                    |
| M8-4  | data-set-name                    | –                     | Y                    |                    |
| M8-5  | data-reference                   | –                     | Y                    |                    |
| M8-6  | BufTim                           | –                     | Y                    |                    |

ACSI models conformance statement

|  |                      | Client/<br>Subscriber | Server/<br>Publisher | Value/ Comments |
|--|----------------------|-----------------------|----------------------|-----------------|
| M8-7   | IntgPd               | -                     | Y                    |                 |
| M8-8   | GI                   | -                     | Y                    |                 |
| M8-9   | conf-revision        | -                     | Y                    |                 |
|  | <b>Logging</b>       | -                     | N                    |                 |
| M9   | <b>Log control</b>   | -                     | N                    |                 |
| M9-1   | IntgPd               | -                     | N                    |                 |
| M10  | <b>Log</b>           | -                     | N                    |                 |
| M11  | <b>Control</b>       | -                     | Y                    |                 |
| If <b>GSE</b> (B31/32) is supported  |                      |                       |                      |                 |
| M12  | <b>GOOSE</b>         | Y                     | Y                    |                 |
| M13  | <b>GSSE</b>          | N                     | N                    |                 |
| If <b>SVC</b> (41/42) is supported   |                      |                       |                      |                 |
| M14  | Multicast SVC        | -                     | N                    |                 |
| M15  | Unicast SVC          | -                     | N                    |                 |
| If <b>Server or Client</b> side (B11/12) supported                           |                      |                       |                      |                 |
| M16  | <b>Time</b>          | Y                     | N                    | scheduled       |
| M17  | <b>File Transfer</b> | N                     | N                    | scheduled       |
| <p>Y = service is supported</p> <p>N or empty = service is not supported</p> |                      |                       |                      |                 |

## ACSI service conformance statement

The ACSI service conformance statement is defined in Table A.3 (depending on the statements in Table A.1).

**Table A.3 – ACSI service Conformance statement**

|                                | Services               | AA:<br>TP/MC | Client<br>(C) | Server<br>(S) | Comments |
|--------------------------------|------------------------|--------------|---------------|---------------|----------|
| <b>Server</b>                  |                        |              |               |               |          |
| S1                             | ServerDirectory        | TP           | –             | Y             |          |
| <b>Application association</b> |                        |              |               |               |          |
| S2                             | Associate              |              | –             | Y             |          |
| S3                             | Abort                  |              | –             | Y             |          |
| S4                             | Release                |              | –             | Y             |          |
| <b>Logical device</b>          |                        |              |               |               |          |
| S5                             | LogicalDeviceDirectory | TP           | –             | Y             |          |
| <b>Logical node</b>            |                        |              |               |               |          |
| S6                             | LogicalNodeDirectory   | TP           | –             | Y             |          |
| S7                             | GetAllDataValues       | TP           | –             | Y             |          |
| <b>Data</b>                    |                        |              |               |               |          |
| S8                             | GetDataValues          | TP           | –             | Y             |          |
| S9                             | SetDataValues          | TP           | –             | Y             |          |
| S10                            | GetDataDirectory       | TP           | –             | Y             |          |
| S11                            | GetDataDefinition      | TP           | –             | Y             |          |
| <b>Data set</b>                |                        |              |               |               |          |
| S12                            | GetDataSetValues       | TP           | –             | Y             |          |
| S13                            | SetDataSetValues       | TP           | –             | Y             |          |
| S14                            | CreateDataSet          | TP           | –             | Y             |          |
| S15                            | DeleteDataSet          | TP           | –             | Y             |          |
| S16                            | GetDataSetDirectory    | TP           | –             | Y             |          |
| <b>Substitution</b>            |                        |              |               |               |          |

|     | Services      | AA:<br>TP/MC | Client<br>(C) | Server<br>(S) | Comments |
|-----|---------------|--------------|---------------|---------------|----------|
| S17 | SetDataValues | TP           | -             | N             |          |

| Setting group control |                     |    |   |   |           |
|-----------------------|---------------------|----|---|---|-----------|
| S18                   | SelectActiveSG      | TP | - | N | scheduled |
| S19                   | SelectEditSG        | TP | - | N |           |
| S20                   | SetSGValues         | TP | - | N |           |
| S21                   | ConfirmEditSGValues | TP | - | N |           |
| S22                   | GetSGValues         | TP | - | N |           |
| S23                   | GetSGCBValues       | TP | - | N |           |

| Reporting                              |                    |    |   |   |  |
|--|--------------------|----|---|---|--|
| Buffered report control block (BRCB)   |                    |    |   |   |  |
| S24                                    | Report             | TP | - | Y |  |
| S24-1                                  | data-change (dchg) |    | - | Y |  |
| S24-2                                  | qchg-change (qchg) |    | - | Y |  |
| S24-3                                  | data-update (dupd) |    | - | N |  |
| S25                                    | GetBRCBValues      | TP | - | Y |  |
| S26                                    | SetBRCBValues      | TP | - | Y |  |
| Unbuffered report control block (URCB) |                    |    |   |   |  |
| S27                                    | Report             | TP | - | Y |  |
| S27-1                                  | data-change (dchg) |    | - | Y |  |
| S27-2                                  | qchg-change (qchg) |    | - | Y |  |
| S27-3                                  | data-update (dup)  |    | - | N |  |
| S28                                    | GetURCBValues      | TP | - | Y |  |
| S29                                    | SetURCBValues      | TP | - | Y |  |

| Logging           |                |    |   |   |  |
|-------------------|----------------|----|---|---|--|
| Log control block |                |    |   |   |  |
| S30               | GetLCBValues   | TP | - | N |  |
| S31               | SetLCBValues   | TP | - | N |  |
| Log               |                |    |   |   |  |
| S32               | QueryLogByTime | TP | - | N |  |

|     | Services           | AA:<br>TP/MC | Client<br>(C) | Server<br>(S) | Comments |
|-----|--------------------|--------------|---------------|---------------|----------|
| S33 | QueryLogByEntry    | TP           | -             | N             |          |
| S34 | GetLogStatusValues | TP           | -             | N             |          |
|     |                    |              |               |               |          |

| Generic substation event model (GSE) |                       |    |   |   |  |
|--------------------------------------|-----------------------|----|---|---|--|
| GOOSE-CONTROL-BLOCK                  |                       |    |   |   |  |
| S35                                  | SendGOOSEMessage      | MC | - | Y |  |
| S36                                  | GetReference          | TP | - | Y |  |
| S37                                  | GetGOOSEElementNumber | TP | - | Y |  |
| S38                                  | GetGoCBValues         | TP | - | Y |  |
| S39                                  | SetGoCBValues         | TP | - | N |  |
| GSSE-CONTROL-BLOCK                   |                       |    |   |   |  |
| S40                                  | SendGSSEMessage       | MC | - | N |  |
| S41                                  | GetReference          | TP | - | N |  |
| S42                                  | GetGSSEElementNumber  | TP | - | N |  |
| S43                                  | GetGsCBValues         | TP | - | N |  |
| S44                                  | SetGsCBValues         | TP | - | N |  |
|                                      |                       |    |   |   |  |

| Transmission of sampled value model (SVC) |                |    |   |   |  |
|---|----------------|----|---|---|--|
| Multicast SVC                             |                |    |   |   |  |
| S45                                       | SendMSVMessage | MC | - | N |  |
| S46                                       | GetMSVCBValues | TP | - | N |  |
| S47                                       | SetMSVCBValues | TP | - | N |  |
| Unicast SVC                               |                |    |   |   |  |
| S48                                       | SendUSVMessage | TP | - | N |  |
| S49                                       | GetUSVCBValues | TP | - | N |  |
| S50                                       | SetUSVCBValues | TP | - | N |  |
|   |                |    |   |   |  |

| Control |        |  |   |   |  |
|---------|--------|--|---|---|--|
| S51     | Select |  | - | N |  |



ACSI service conformance statement

|     | Services              | AA:<br>TP/MC | Client<br>(C) | Server<br>(S) | Comments |
|-----|-----------------------|--------------|---------------|---------------|----------|
| S52 | SelectWithValue       | TP           | -             | Y             |          |
| S53 | Cancel                | TP           | -             | Y             |          |
| S54 | Operate               | TP           | -             | Y             |          |
| S55 | Command-Termination   | TP           | -             | Y             |          |
| S56 | TimeActivated-Operate | TP           | -             | N             |          |

| File transfer |                        |    |   |   |  |
|---------------|------------------------|----|---|---|--|
| S57           | GetFile                | TP | - | N |  |
| S58           | SetFile                | TP | - | N |  |
| S59           | DeleteFile             | TP | - | N |  |
| S60           | GetFileAttributeValues | TP | - | N |  |

| Time |                                   |  |    |   |  |
|------|-----------------------------------|--|----|---|--|
| T1   | Time resolution of internal clock |  | 10 | - | nearest negative power of 2 in seconds |
| T2   | Time accuracy of internal clock   |  | N  | - | T0                                     |
|      |                                   |  | Y  | - | T1                                     |
|      |                                   |  | N  | - | T2                                     |
|      |                                   |  | N  | - | T3                                     |
|      |                                   |  | N  | - | T4                                     |
|      |                                   |  | N  | - | T5                                     |
| T3   | Supported TimeStamp resolution    |  | 10 | - | nearest negative power of 2 in seconds |