Server Protocols - General Implementation Rules

Server protocols - general implementation rules

Introduction

Since the version V7.0, the D2000 system also supports some protocols, in which theD2000 KOM process implements the server (slave) side. The following protocols are concerned:

- IEC 60870-6 ICCP/TASE.2
- IEC 870-5-101 (balanced, unbalanced Slave)
- IEC 870-5-104 Server
- IEC 870-5-104
- IEC 870-5-104 Sinaut (for balanced mode support)
- MODBUS Server
- OMV24
- SHMU Data
- Transcon DAP 128TC

This document describes the general rules which are valid for output I/O tags (output tags for D2000 system, input ones for the client). There are also "mixed" client-server protocols (IEC 870-5-104 Server, IEC 870-5-104, IEC 870-5-104 Sinaut), which have two types of output I/O tags:

- 'client' output I/O tags - the same as for the other protocols,
- 'server' output I/O tags - their specifications are described in the document.

Operation rules of server protocols

- The values of 'server' output I/O tags are written also while the communication line/station fails, does not communicate or is down. They are to be sent to the client after reconnecting the client.
- When communication is interrupted, the values of 'server' output I/O tags are not invalidated.
- Writing a 'server' output I/O tag is as follows:
    - During the write, the output I/O tag does not pass through the *Transient* status. From this view, the output I/O tag behaves the same as if the Output mode parameter in the tab **Output control** was set to the value **Command** in the I/O tag configuration.
    - If the communication with the client is interrupted at the time of write, the write is marked as unsuccessful (it can be detected e.g. in ESL script using the actions ON ERROR, WAIT) but its value is valid, currently set (in order to provide a new and valid value to the client after establishing the communication)
    - If the communication with the client is OK at the time of write, the write is marked as successful
- Configuration of the parameter Output mode for output I/O tag for 'server' and 'mixed' protocols is as follows:
    - If the Output mode parameter is set to **Value**, the particular 'server' output I/O tag will not pass through the status *Transient* (see the previous point). The only difference between **Value** and **Command** is shown in control windows in the D2000 HI process. **Command** allows to repeat writing of any value consecutively (e.g. for output I/O tag of *Dout* type, the ON and OFF buttons are enabled at the same time - for value outputs, just the opposite button to the current value is enabled).
    - For 'client' output I/O tags in the protocols of the series IEC104, transition through the status *Transient* depends on the ASDU type, which is set in the configuration of the corresponding output I/O tag. ASDUs of the value type (1-40) are not being confirmed and therefore they do not pass through the status *Transient*. ASDUs of command type (45-64) are being confirmed and therefore these output I/O tags pass through the *Transient* status (confirmation/not confirmation of value/command I/O tags is defined on the contrary compared to the D2000 system).
      For 'client' output I/O tags in 'mixed' protocols, which will be implemented in the future, the behavior will depend on the particular protocol.

Changes and modifications

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Document revisions

- Ver. 1.0 – December 15th, 2004

Related pages:

Communication protocols