9.4.2.2 Implementation under test

Reference	Question	Requirement	Response
TRDP_IUT_001	implementation name	M	
TRDP_IUT_002	Version number	M	
TRDP_IUT_003	Special configuration	O	
TRDP_IUT_004	Power supply voltage	M	
TRDP_IUT_005	Power supply current	M	
TRDP_IUT_006	Other information	O	

NOTE 1 Implementation name refers to the identifier of the IUT as indicated by the client. The specific conformance test is applied to the entity identified by the implementation name.

NOTE 2 This is the version number of the IUT. When a version number is defined for an IUT, no subsystem which composes it can progress without a change of this figure (the architecture is frozen and constitutes aconfiguration).

NOTE 3 Indicated if PIXIT is provided for this IUT.

NOTE 4 Indicates the applicable power supply voltage. Power supply voltage is chosen amongst the valuesspecified by IEC 60571.

NOTE 5 Indicates the applicable maximum power supply current. Power supply current is chosen amongst thevalues specified by IEC 60571.

NOTE 6 Other information the client considers relevant for IUT identification.

9.4.2.3 IUT supplier and/or test laboratory client

Reference	Question	Requirement	Response
TRDP_supplier _001	Organisation name	M	
TRDP_supplier _002	Contact name(s)	M	
TRDP_ supplier _003	Address	M	
TRDP_ supplier _004	Telephone number	M	
TRDP_ supplier _005	Fax number	M	
TRDP_ supplier _006	e-mail address	M	
TRDP_ supplier _007	Other information	O	

9.4.2.4 Identification of the standards

Reference	Question	Response
TRDP_ standards _001	Specification document title	
TRDP_ standards _002	Specification document IEC reference numberr	
TRDP_ standards _003	Specification document date of publication	
TRDP_ standards _004	Specification document version number	
TRDP_ standards _005	Conformance document title	
TRDP_ standards _006	Conformance document number	
TRDP_ standards _007	Conformance document date of publication	
TRDP_ standards _008	Conformance document version number	

9.4.2.5 Global statement of conformance

Reference	Question	Requirement	Implementation
TRDP_global _001	Are all mandatory capabilities implemented?	M	Yes [ ]

9.4.2.6 PICS related to general TRDP

Reference	Question	Req	Ref.	Implementation
TRDP_GEN_001	Is TRDP use for the exchange of TCN PD and TCN MD over ETB?	M	A.1	Yes [ ]
TRDP_GEN_002	Is TRDP process data sent with UDP?	M	A.2.3	Yes [ ]
TRDP_GEN_003	Is the process data destination UDP port assigned to 17224?	M	A.2.3	Yes [ ]
TRDP_GEN_004	Is the message data destination UDP/TCP port assigned to 17225?	M	A.2.3	Yes [ ]
TRDP_GEN_005	Is the well-known port be used for receiving any process data telegrams and for receiving UDP message data notification, request and confirm telegrams?	O	A.2.3	Yes[ ] No [ ]
TRDP_GEN_006	Is a private source port different from the well-known port used for sending any process data telegrams and for sending UDP message data notification, request and confirm telegrams?	O	A.2.3	Yes[ ] No [ ]
TRDP_GEN_007	Is CRC32 used according to IEEE 802.3?	M	A.3	Yes [ ]
TRDP_GEN_008	Is the CRC calculation done on the data prepared for transmission – big endian format and byte alignment?	M	A.3	Yes [ ]
TRDP_GEN_009	Is the CRC itself appended in little endian format?	M	A.3	Yes [ ]
TRDP_GEN_010	Is the comIds 1..999 not used by the application?	M	A.3	Yes [ ]
TRDP_GEN_011	ComId in the header of each PDU	M	A.5	Yes [ ]

9.4.2.7 PICS related to Process Data

Reference	Question	Req	Ref.	Implementation
TRDP_PD_001	Is PD-PDUs cyclically transmitted or transmitted on request between a publisher and one or many subscribers using a connectionless and unconfirmed TRDP service?	M	A.6.1	Yes [ ]
TRDP_PD_002	Does Process data exchange support the following push communication pattern as defined in IEC 61375-1? a) point to point, cyclic without acknowledge, source knows the sink b) point to multipoint, cyclic without acknowledge, source knows the sink, e.g.redundancy groups c) point to multipoint, cyclic without acknowledge, source does not know the sink	O	A.6.3.1	Yes [ ]
TRDP_PD_003	Does Process data exchange support the following pull communication pattern as defined in IEC 61375-1? – Point to point, without acknowledge, sink knows the source – Multipoint to point, without acknowledge, sink does not know the source – Point to multipoint, without acknowledge, sink knows the source. Here, one dedicated subscriber is requesting the known publisher to send its PD-PDU. – Multipoint to multipoint, without acknowledge, sink does not know the source. Here, one dedicated subscriber is requesting one or multiple unknown publisher to send their PD-PDU.	O	A.6.3.2	Yes [ ]
TRDP_PD_004	Does a publisher/subscriber use an IP unicast address for addressing a known subscriber/publisher?	M	A.6.4	Yes [ ]
TRDP_PD_005	Does a publisher/subscriber use an IP multicast address for addressing unknown subscribers/publishers?	M	A.6.4	Yes [ ]
TRDP_PD_006	Does a publisher/subscriber use an IP multicast address for addressing groups of known subscribers/publishers?	M	A.6.4	Yes [ ]
TRDP_PD_007	Is the structure of a PD-PDU defined in Figure A.11 of IEC 61375-2-3:2015 and in ASN.1 notation (additional explanation in Table A.3 of IEC 61375-2-3:2015)?	M	A.6.5	Yes [ ]

Reference	Question	Req	Ref.	Implementation
TRDP_PD_008	Does the TRDP layer provide the service primitives PD.publish/PD.unPublish/PD.putData/PD.activateRed/PD.deactivateRed/PD.request/PD.subscribe/PD.unsubscribe/PD.indicate/PD.poll(defined in Table A.4 of IEC 61375-2-3:2015) to the TRDP user?	M	A.6.6.1	Yes [ ]
TRDP_PD_009	Does the TRDP user have two possibilities to retrieve PD: either via a poll mechanism, typically used in cyclic user tasks, or via indication mechanism, where the TRDP layer notifies the user when new data are available or when there is a timeout?	M	A.6.6.2	Yes [ ]
TRDP_PD_010	Are process data prepared cyclically by the publisher and given to the TRDP layer calling the PD.putData primitive?	M	A.6.6.3	Yes [ ]
TRDP_PD_011	Does the publisher subscribe for it to receive a request?	M	A.6.6.3	Yes [ ]
TRDP_PD_012	Is the related data in the receive buffer of the replier marked as invalid until receiving the first request telegram matching to the filter criteria of the subscription?	M	A.6.6.3	Yes [ ]
TRDP_PD_013	Is an incoming request telegram discarded when the parameter values ‘etbTopoCnt’ and ‘opTrnTopoCnt’ different to expected (own locally stored) values?	M	A.6.6.3	Yes [ ]
TRDP_PD_014	Does the TRDP layer using the available process data to response each incoming request?	M	A.6.6.3	Yes [ ]
TRDP_PD_015	Is the source IP address of the request telegram used as destination IP address for the reply if the reply IP address of the request telegram is 0?	M	A.6.6.3	Yes [ ]
TRDP_PD_016	Does the requester needs to subscribe for it to receive the related reply for a request?	M	A.6.6.3	Yes [ ]
TRDP_PD_017	Is related data in the receive buffer of the subscriber marked as invalid until receiving the first reply telegram matching to the filter criteria of the subscription?	M	A.6.6.3	Yes [ ]
TRDP_PD_018	Is the related reply data in the receive buffer of the subscriber set to invalid before sending the request telegram?	M	A.6.6.3	Yes [ ]
TRDP_PD_019	Is the timeout supervision at subscriber TRDP layer restarted after sending the request telegram?		A.6.6.3	Yes [ ]

Reference	Question	Req	Ref.	Implementation
TRDP_PD_020	Before sending out a request, does the TRDP layer check the topopology counters submitted with the request against the actual topology counters?	M	A.6.6.3	Yes [ ]
TRDP_PD_021	Are process data prepared cyclically by the publisher and given to the TRDP layer calling the PD.putData primitive?	M	A.6.6.4	Yes [ ]
TRDP_PD_022	Does the publisher TRDP layer send the data in the configured cycle to the configured address?	M	A.6.6.4	Yes [ ]
TRDP_PD_023	Does the publisher TRDP layer send out the data only after checking the locally stored topography counters submitted with the publish against the actual topography counters and at least one of the cases listed in Table A.5 for the topography counters be fulfilled?	M	A.6.6.4	Yes [ ]
TRDP_PD_024	Does any subscriber subscribe for the process telegram using ComID, destination IP address and source IP address of the process telegram as possible filter criteria?	O	A.6.6.4	Yes[ ] No [ ]
TRDP_PD_025	Is timeout supervision at subscriber TRDP layer started after subscription?	M	A.6.6.4	Yes [ ]
TRDP_PD_026	Is timeout supervision at subscriber TRDP layer restarted after receiving the related PD PDU?	M	A.6.6.4	Yes [ ]
TRDP_PD_027	Does the subscriber TRDP layer check the topography counters of the received telegram against the actual topography counters and against the topography counters submitted with the subscription and at least one of the cases listed in Table A.5 for the topography counters be fulfilled?	M	A.6.6.4	Yes [ ]
TRDP_PD_028	Is the data marked as invalid until receiving the first valid telegram matching to the filter criteria?	M	A.6.6.4	Yes [ ]
TRDP_PD_029	Are the service primitives for redundancy handling used in the same way by the publisher for the pull and the push pattern?	M	A.6.6.5	Yes [ ]
TRDP_PD_030	Does a redundant device call PD.activate to start publishing process data related to ComIds marked as redundant if it enters the redundancy leader state?	M	A.6.6.5	Yes [ ]
TRDP_PD_031	Does a redundant device call PD.deactivate to stop publishing process data related to ComIds marked as redundant if it enters the redundancy follower state?	M	A.6.6.5	Yes [ ]

Reference	Question	Req	Ref.	Implementation
TRDP_PD_032	Are publishers of redundant process data (identified by ComId marked as redundant) initialized in redundancy follower mode (publishing deactivated) when starting TRDP ?	M	A.6.6.5	Yes [ ]
TRDP_PD_033	Before sending a telegram, does the topography counters of the telegram be checked against the actual topography counters to ensure that the sending application shares the actual train backbone view and operational train view?	M	A.6.7	Yes [ ]
TRDP_PD_034	After reception of a telegram, does the topography counter values be checked to ensure that caller and replier share an identical train backbone view and operational train view?	M	A.6.7	Yes [ ]
TRDP_PD_035	Does a publisher publish PD-PDU(data) when a defined time cycle terminates (push pattern) and/or when it receives a request from a dedicated subscriber or an independent communication device?	M	A.6.8.1	Yes [ ]
TRDP_PD_036	Does the publisher of pushed PD-PDU apply a traffic shaping mechanism for equal distribution of the PD-PDU's over the time not to overload subscribers?	M	A.6.8.1	Yes [ ]
TRDP_PD_037	Does the publishing of PD-PDU process follow the state diagram shown in Figure A.15.?	O	A.6.8.1	Yes[ ] No [ ]
TRDP_PD_038	Does one dedicated subscriber or an independent communication device request one or many publishers to send their PD-PDUs?	O	A.6.8.2	Yes[ ] No [ ]
TRDP_PD_039	Does the requesting of PD-PDU process follow the state diagram shown in Figure A.16.?	O	A.6.8.2	Yes[ ] No [ ]
TRDP_PD_040	Does the receiving of PD-PDU process follow the state diagram shown in Figure A.17.?	O	A.6.8.2	Yes[ ] No [ ]

9.4.2.8 PICS related to Message Data

9.4.2.8.1 PICS related to Communication Model

Reference	Question	Req	Ref.	Implementation
TRDP_MD_001	Does MD support "notification" communication model ?	M	A.7.1	Yes [ ]
TRDP_MD_002	Does MD support "request without confirmation" communication model?	M	A.7.1	Yes [ ]
TRDP_MD_003	Does MD support "request with confirmation" communication model?	M	A.7.1	Yes [ ]
TRDP_MD_004	Is the caller able to define by request type whether a reply is expected or not?	M	A.7.1	Yes [ ]
TRDP_MD_005	Is the replier able to define by the reply type whether a confirmation of its reply is expected or not?	M	A.7.1	Yes [ ]
TRDP_MD_006	Does TRDP provide two mechanisms to transfer MD(via UDP and TCP)?	M	A.7.1	Yes [ ]
TRDP_MD_007	Are the different service primitives of UDP transfer and TCP transfer mixed?	M	A.7.1	Yes [ ]

9.4.2.8.2 PICS related to Communication Pattern and Addressing

Reference	Question	Req	Ref.	Implementation
TRDP_MD_008	Is MD exchange support the following push communication pattern defined in IEC 61375-1? a) point to point , sporadic with acknowledge, source knows the sink; b) point to point , sporadic without acknowledge, source knows the sink; c) point to multipoint, sporadic with acknowledge, source knows the sink; d) point to multipoint, sporadic without acknowledge, source knows the sink; e) point to multipoint, sporadic with acknowledge, source does not know the sink; f) point to multipoint, sporadic without acknowledge, source does not know the sink.	O	A.7.3.1	Yes [ ]
TRDP_MD_009	Is MD exchange support the following pull communication pattern defined in IEC 61375-1? a) point to point , sporadic with acknowledge, sink knows the source; b) point to point , sporadic without acknowledge, sink knows the source; c) point to multipoint, sporadic with acknowledge, sink knows the source; d) point to multipoint, sporadic without acknowledge, sink knows the source; e) point to multipoint, sporadic on first acknowledge, sink does not know the source; f) point to multipoint, sporadic without acknowledge, sink does not know the source.	O	A.7.3.2	Yes [ ]
TRDP_MD_010	Does MD caller use an IP unicast address or an IP multicast address for addressing known replier(s)?	M	A.7.4	Yes [ ]
TRDP_MD_011	Does MD caller use an IP multicast address for addressing unknown repliers?	M	A.7.4	Yes [ ]
TRDP_MD_012	Does MD replier respond to the caller's unicast address?	M	A.7.4	Yes [ ]

9.4.2.8.3 PICS related to MD-PDU

Reference	Question	Req	Ref.	Implementation
TRDP_MD_013	Is the structure of a MD-PDU defined in Figure A.19 of IEC 61375-2-3:2015 and subsequently in ASN.1 notation (additional explanation in Table A.18 of IEC 61375-2-3:2015)?	M	A.7.5	Yes [ ]

9.4.2.8.4 PICS related to TRDP Layer Service Primitives

Reference	Question	Req	Ref.	Implementation
TRDP_MD_014	Does the caller provide MD.request/MD. indicate/MD.confirm/MD.abort services primitive to TRDP user?	M	A.7.6.1	Yes [ ]
TRDP_MD_015	Does the replier provide MD.addListener/MD.updatelistener/MD.remListener/MD.indicate/MD.reply/MD.release services primitive to TRDP user?	M	A.7.6.1	Yes [ ]

9.4.2.8.5 PICS related to TRDP Layer Filtering Rules

Reference	Question	Req	Ref.	Implementation
TRDP_MD_016	Does the service primitive MD.addListener allows to define SourceURI and Destination URI for filtering received MD telegrams according the fllowing rules?	O	A.7.6.3	Yes [ ] NO[ ]?

9.4.2.8.6 PICS related to Caller TRDP Layer

Reference	Question	Req	Ref.	Implementation
TRDP_MD_019	Is the message discarded If none of the cases listed in Table A.21 of IEC 61375-2-3:2015 is TRUE when caller requests sending a message and check the topography counters?	M	A.7.8.1	Yes [ ]
TRDP_MD_020	Is the session identifier of the notification message set to 0?	M	A.7.8.1	Yes [ ]
TRDP_MD_021	Is each request-reply/request-reply-confirm session identified by a 16 byte UUID according to RFC 4122, time based version to ensure that the session identifier is unique?	M	A.7.8.1	Yes [ ]
TRDP_MD_022	Is The session identifier calculated at caller side in the TRDP layer, transmitted within each message and used at caller and replier side to identify the related caller and replier session?	M	A.7.8.1	Yes [ ]
TRDP_MD_023	Is a timeout value for the reply message(s) defined by the TRDP user (caller)?	M	A.7.8.1	Yes [ ]
TRDP_MD_024	Does the TRDP layer wait for incoming reply messages (MsgType ‘Mp’, ‘Mq’ or ‘Me’)?	M	A.7.8.1	Yes [ ]

Reference	Question	Req	Ref.	Implementation
TRDP_MD_025	Are all incoming reply messages related to the caller session (identified by the received session id) given immediately to the TRDP user?	M	A.7.8.1	Yes [ ]
TRDP_MD_026	Is the caller session closed if the number of expected incoming replies is reached and there are no more outstanding confirmations from TRDP user (caller)	M	A.7.8.1	Yes [ ]
TRDP_MD_027	Does the TRDP layer start a timer with the given confirm timeout time of the reply and wait for the confirmation from the TRDP user (caller) If the replier requests a confirmation MsgType 'Mq')?	M	A.7.8.1	Yes [ ]
TRDP_MD_028	Does the confirmation use as destination URI the source URI received in the reply message?	M	A.7.8.1	Yes [ ]
TRDP_MD_029	Does the TRDP layer send a confirmation message (MsgType 'Mc') to the replier after getting the confirmation from TRDP user (caller)?	M	A.7.8.1	Yes [ ]
TRDP_MD_030	Does a confirmation message not contain user data and be sent only as unicast?	M	A.7.8.1	Yes [ ]
TRDP_MD_031	Does the TRDP user (caller) take care to provide the confirmation in time as indicated by the ReplyTimeOut parameter of the reply?	M	A.7.8.1	Yes [ ]
TRDP_MD_032	Is the TRDP user (caller) notified that confirmations are missing and the caller session be closed If the number of incoming replies is reached and the confirm timeout timer expires while waiting for outstanding confirmations from TRDP user (caller),	M	A.7.8.1	Yes [ ]
TRDP_MD_033	Does the TRDP layer, depending on the given parameter value 'MaxNumRetries', repeat the request up to two times before it notifies the TRDP user (caller) about the missing reply and closes the caller session if the reply timeout timer of the caller session expires because of a missing reply and the number of expected repliers is 1?	M	A.7.8.1	Yes [ ]
TRDP_MD_034	Does the TRDP Layer notify its TRDP user (caller) about the timeout and the number of missing replies if the reply timeout timer expires and the number of expected repliers is greater than 1 and less than the expected replies have been received?	M	A.7.8.1	Yes [ ]
TRDP_MD_035	Is the caller session closed when all requested confirmations are sent or the confirmation timeout timer has timed out?	M	A.7.8.1	Yes [ ]

Reference	Question	Req	Ref.	Implementation
TRDP_MD_036	Is the total number of replies indicated to the TRDP user (caller) and the caller session closed if the number of repliers is not known (parameter NoOfRepliers = 0 and the reply timeout timer expires?	M	A.7.8.1	Yes [ ]
TRDP_MD_037	Is no retransmission used of request messages if TCP is used?	M	A.7.8.1	Yes [ ]
TRDP_MD_038	Does TRDP provide the interface to continue a transmission after the connection was lost for TCP used?	M	A.7.8.1	Yes [ ]
TRDP_MD_039	Is the message discarded if the TRDP layer receives a reply message (MsgType 'Mp', 'Mq' or 'Me') without having opened a caller session for the indicated session id?	M	A.7.8.1	Yes [ ]
TRDP_MD_040	Is the topography counter values obtained during caller session opening used throughout the session (for request and confirmation messages)?	M	A.7.8.1	Yes [ ]
TRDP_MD_041	Is the message discarded if a TRDP user receives a reply message with topography counter values different to the expected ones?	M	A.7.8.1	Yes [ ]
TRDP_MD_042	Is the session identifier destroyed and the session closed and running timers stopped if a TRDP user aborts an (open) session (e.g. after a train topology change)?	M	A.7.8.1	Yes [ ]

9.4.2.8.7 PICS related to Replier TRDP Layer

Reference	Question	Req	Ref.	Implementation
TRDP_MD_043	Does each TRDP user (replier) that wants to receive MD register as listener for MD sent to a specific URI (multicast or unicast) or for MD of a specific ComId?	M	A.7.8.2	Yes [ ]
TRDP_MD_044	Are all incoming messages checked against the actual topography counters?	M	A.7.8.2	Yes [ ]
TRDP_MD_045	Are all incoming reply messages related to the caller session (identified by the received session id) given immediately to the TRDP user?	M	A.7.8.2	Yes [ ]
TRDP_MD_046	Are all incoming messages checked against registered listeners?	M	A.7.8.2	Yes [ ]
TRDP_MD_047	Is any message to a not registered listener or to a listener expecting another value of the topography counters discarded?	M	A.7.8.2	Yes [ ]