TCNOpen	Open Source Developement

TRDP

Train Real Time Data Protocol

TRDP Conformance Test Specification

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Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

DOCUMENT SUMMARY SHEET

This document contains the TRDP test specification

Participants		
Name and Surname	Organisation	Role
Svoboda Tomáš	UniControls	Participant

History			
V1	23 May 13	Armin-H. Weiss	Initial version
V2	24 May 13	Armin-H. Weiss	Reviewed by UniControls and issued

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1. Introduction

1.1. Purpose

This document describes tests verifying the conformance of a TRDP implementation.

1.2. Intended Audience

This document is intended to be used for verification of the TCNOpen TRDP implementation.

1.3. References/Related Documents

Reference	Number	Title
[Wire]	IEC61375-2-3	TRDP Protocol (Annex A)
[Req]	TCN-TRDP1-D-BOM-003	TRDP System Requirement Specification
[TestRep]	TCN-TRDP1-D-BOM-032	TRDP Conformance Test Report

Table 1: References

1.4. Abbreviations and Definitions

Abbreviation	Definition

Table 2: Abbreviations and Definitions

2. Conformance Tests

The following tests verify the conformance of the TCNOpen TRDP implementation for a specified TRDP Version x.x.x.x (SVN yyyy). For testing the programs "test/pdpatterns/trdp_pd_test.c" and "test/mdpatterns/trdp_md_test.c" delivered with this TRDP version shall be used.

For documentation of the test results [TestRep] shall be used as template.

2.1. Process Data

PD tests verify the exchange of process data between two devices A and B. All in [wire] defined PD patterns are tested.

All the test cases run continuously in parallel during the test session.

Following table defines the test cases performed on the two platforms and implementations:

Pattern	Destination	Direction	Data Size in Bytes	Period in ms	Result
PUSH	unicast	A->B, B->A	256	100	
				250	
			1432	100	
				250	
	multicast	A->B, B->A	256	100	
				250	
			1432	100	
				250	
PULL	unicast / unicast	A->B->A, B->A->B	256	500	
			1432	500	
	multicast / multicast	A->B->A, B->A->B	256	500	
			1432	500	

Table 3: PD Test Patterns

All the test cases run on two target platforms - Linux and Windows.

TCNOpen implementation of TRDP stack is also tested against TRDP implementation developed by UniControls.

Following table summarizes the test targets used for the specific tests:

	Device A	**Device B**
PD1	Windows/TCNOpen	Linux/TCNOpen
PD2	Linux/TCNOpen	Windows/TCNOpen
PD3	Windows/TCNOpen	Windows/TCNOpen
PD4	Windows/UC	Linux/TCNOpen

Table 4: PD Test Targets

2.2. Message Data

MD tests verify the exchange of message data between two devices A and B.

All defined MD patterns are tested on both supported transmission protocols TCP and UDP.

Following table defines the test cases performed on the two platforms and implementations:

Protocol	Pattern	Destination	Re-plies	Direction	Data Size in Bytes	Result
UDP	notify	unicast	0	A->B	64	
					32k	
	request/reply	unicast/unicast	1	A->B->A	64	
					32k	
	request/reply/confirm	unicast/unicast	1	A->B->A->B	64	
					32k	
	notify	multicast	0	A->B	64	
					32k	
	request/reply	multicast/unicast	1	A->B->A	64	
					32k	
	request/reply/confirm	multicast/unicast	1	A->B->A->B	64	
					32k	
	request/reply	multicast/unicast	?	A->B->A	64	
					32k	
	request/reply/confirm	multicast/unicast	?	A->B->A->B	64	
					32k	
TCP	notify	unicast	0	A->B	64	
					32k	
	request/reply	unicast	1	A->B->A	64	
					32k	
	request/reply/confirm	unicast	1	A->B->A->B	64	
					32k	

Table 5: MD Test Patterns

All the test cases run on two target platforms - Linux and Windows.

TCNOpen implementation of TRDP stack is also tested against TRDP implementation developed by UniControls.

Following table summarizes the tests performed on the two platforms and implementations:

	Device A	**Device B**
MD1	Windows/TCNOpen	Linux/TCNOpen
MD2	Linux/TCNOpen	Windows/TCNOpen
MD3	Windows/UC	Linux/TCNOpen
MD4	Linux/TCNOpen	Windows/UC

Table 6: MD Test Targets