TCNOpen	Open Source Development

TRDP

Train Real Time Data Protocol

2.1.0.0 Conformance Test Report

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Dissemination Level		
PU	Public	X
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 report

Participants		
Name and Surname	Organisation	Role
Iris Bosse	NewTec	Participant

History			
V1	23 May 13	Armin-H. Weiss	Initial version
V2	24 May 13	Armin-H. Weiss	Reviewed by UniControls and issued
V3	17 Sept 13	Armin-H. Weiss	License conditions added and issued
V4	18 Oct 13	Petr Cvachoucek	Tests for release 1.1.0.0
V5	12 Nov 14	Petr Cvachoucek	Tests for release 1.2.0.0
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V7	28 Aug 19	Eugen Neufeld	Tests for release 2.0.0.2
V8	23 Oct 19	Eugen Neufeld	Tests for release 2.0.2.0
V9	21 Aug 20	Mohamed Youssef	Tests for release 2.0.3.0
V10	12 Aug 21	Iris Bosse	Tests for release 2.1.0.0

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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 2.1.0.0. For testing the programs “test/pdpatterns/trdp-pd-test.c-fast.c” and “test/mdpatterns/trdp-md-test-fast.c” delivered with this TRDP version shall be used as well as trdp-pd-test.c and trdp-md-test.c

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.

2.1.1. Testconfiguration:

IP address device A: 10.0.1.26

IP address device B: 10.0.1.30

Multicast address: 239.0.1.1

2.1.2. PD1: Windows/TCNOpen - Linux/TCNOpen:

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

Table 3: PD Test Patterns(pdtest-fast-windows)

2.1.3. PD1: Linux/TCNOpen - Windows/TCNOpen:

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

Table 4: PD Test Patterns(pdtest-fast-linux)

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

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

	Device A	Device B
PD1	Windows/TCNOpen	Linux/TCNOpen

Table 5: 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.

2.2.1. Testconfiguration:

IP address device A: 10.0.1.26

IP address device B: 10.0.1.30

Multicast address: 239.0.1.1

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

2.2.2. MD1: Windows/TCNOpen - Linux/TCNOpen

Protocol	Pattern	Destination	Re-plies	Direction	Data Size in Bytes	Result
UDP	notify	unicast	0	A->B	64	OK
					32768	OK
	request/reply	unicast/unicast	1	A->B->A	64	OK
					32768	OK
	request/reply/confirm	unicast/unicast	1	A->B->A->B	64	OK
					32768	OK
	notify	multicast	0	A->B	64	OK
					32768	OK
	request/reply	multicast/unicast	1	A->B->A	64	OK
					32768	OK
	request/reply/confirm	multicast/unicast	1	A->B->A->B	64	OK
					32768	OK
	request/reply	multicast/unicast	?	A->B->A	64	OK
					32768	OK
	request/reply/confirm	multicast/unicast	?	A->B->A->B	64	OK
					32768	OK
TCP	notify	unicast	0	A->B	64	OK
					32768	OK
	request/reply	unicast	1	A->B->A	64	OK
					32768	OK
	request/reply/confirm	unicast	1	A->B->A->B	64	OK
					32768	OK

Table 6: MD Test Patterns

2.2.3. MD2: Linux/TCNOpen - Windows/TCNOpen

Protocol	Pattern	Destination	Re-plies	Direction	Data Size in Bytes	Result
UDP	notify	unicast	0	A->B	64	OK
					32768	OK
	request/reply	unicast/unicast	1	A->B->A	64	OK
					32768	OK
	request/reply/confirm	unicast/unicast	1	A->B->A->B	64	OK
					32768	OK
	notify	multicast	0	A->B	64	OK
					32768	OK
	request/reply	multicast/unicast	1	A->B->A	64	OK
					32768	OK
	request/reply/confirm	multicast/unicast	1	A->B->A->B	64	OK
					32768	OK
	request/reply	multicast/unicast	?	A->B->A	64	OK
					32768	OK
	request/reply/confirm	multicast/unicast	?	A->B->A->B	64	OK
					32768	OK
TCP	notify	unicast	0	A->B	64	OK
					32768	OK
	request/reply	unicast	1	A->B->A	64	OK
					32768	OK
	request/reply/confirm	unicast	1	A->B->A->B	64	OK
					32768	OK

Table 7: MD Test Patterns

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

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

Table 8: MD Test Targets