

**TRDP****Train Real Time Data Protocol**

## **TRDP Conformance Test Specification**

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<b>PU</b>	Public	
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)	
<b>CO</b>	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
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### 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

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## *1. Introduction*

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### *1.1. Purpose*

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

### *1.2. Intended Audience*

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

### *1.3. References/Related Documents*

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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*

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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:

	<b>Device A</b>	<b>Device B</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	
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:

	<b>Device A</b>	<b>Device B</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**