



TRDP

Train Real Time Data Protocol

Release Notes for TRDP 1.4.2.0

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Author :	Armin-Hagen Weiss
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Dissemination Level		
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Please note, that the code is not yet used in a real project and has been tested only in the lab and only for the test cases documented in [TestRep].

Participants

Name and Surname	Organisation	Role
Armin-Hagen Weiss	Bombardier	Lead
Bernd Löhr	Newtec	Reviewer
Michael Koch	Bombardier	Reviewer

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Table of Contents

TABLE OF CONTENTS	3
TABLE OF FIGURES	11
TABLE OF TABLES	11
1. INTRODUCTION	16
1.1. PURPOSE	16
1.2. INTENDED AUDIENCE	16
1.3. REFERENCES/RELATED DOCUMENTS.....	16
1.4. ABBREVIATIONS AND DEFINITIONS	16
2. PRODUCT DEFINITION	17
2.1. GENERAL DESCRIPTION	17
2.2. LICENSE AGREEMENTS	18
2.3. PRODUCT IDENTIFICATION.....	18
2.4. TARGETS.....	18
2.4.1. <i>Primary Targets</i>	18
2.4.2. <i>Secondary Targets</i>	19
3. DELIVERY	20
3.1. PLATFORM.....	20
3.2. SDK	21
3.2.1. <i>TRDPLight</i>	22
3.2.2. <i>TRDPMarshall</i>	23
3.2.3. <i>TRDPXML</i>	23
3.2.4. <i>TRDPCTRL</i>	23
3.2.5. <i>TRDPDNR</i>	24
3.2.6. <i>TRDPTTI</i>	24
3.2.7. <i>TRDPSpy</i>	24
3.2.8. <i>Resources</i>	25
3.2.9. <i>Build Environment</i>	25
3.2.10. <i>Tests</i>	26
3.2.11. <i>Examples</i>	26
3.3. DOCUMENTATION	26
3.4. RESTRICTIONS	27
4. INSTALLATION	28
4.1. PLATFORM.....	28
4.2. SDK	28
5. HOW TO USE	29
5.1. POSIX (LINUX, MAC, QNX, INTEGRITY).....	29
5.2. VxWORKS.....	29

5.3. WINDOWS	29
6. CHANGES	30
6.1. TRDPLIGHT	30
6.1.1. <i>Corrected Errors</i>	30
6.1.2. <i>New or Enhanced Functions</i>	30
6.1.3. <i>Known Errors</i>	30
6.1.4. <i>Compatibility to Earlier Releases</i>	31
6.2. TRDPMARSHALL	31
6.2.1. <i>Corrected Errors</i>	31
6.2.2. <i>New or Enhanced Functions</i>	32
6.2.3. <i>Known Errors</i>	32
6.2.4. <i>Compatibility to Earlier Releases</i>	32
6.3. TRDPXML	32
6.3.1. <i>Corrected Errors</i>	32
6.3.2. <i>New or Enhanced Functions</i>	32
6.3.3. <i>Known Errors</i>	32
6.3.4. <i>Compatibility to Earlier Releases</i>	33
6.4. TRDPCTRL	33
6.4.1. <i>Corrected Errors</i>	33
6.4.2. <i>New or Enhanced Functions</i>	33
6.4.3. <i>Known Errors</i>	33
6.4.4. <i>Compatibility to Earlier Releases</i>	33
6.1. TRDPDNR	33
6.1.1. <i>Corrected Errors</i>	33
6.1.2. <i>New or Enhanced Functions</i>	34
6.1.3. <i>Known Errors</i>	34
6.1.4. <i>Compatibility to Earlier Releases</i>	34
6.1. TRDPTTI	34
6.1.1. <i>Corrected Errors</i>	34
6.1.2. <i>New or Enhanced Functions</i>	34
6.1.3. <i>Known Errors</i>	34
6.1.4. <i>Compatibility to Earlier Releases</i>	35
6.2. TRDPSPY	35
6.2.1. <i>Corrected Errors</i>	35
6.2.2. <i>New or Enhanced Functions</i>	35
6.2.3. <i>Known Errors</i>	35
6.2.4. <i>Compatibility to Earlier Releases</i>	35
7. HISTORY RELEASE 1.1.0.0	36
7.1. TRDPLIGHT	36
7.1.1. <i>Corrected Errors</i>	36
7.1.2. <i>New or Enhanced Functions</i>	36
7.1.3. <i>Known Errors</i>	36
7.1.4. <i>Compatibility to Earlier Releases</i>	37
7.2. TRDPMARSHALL	37

7.2.1. Corrected Errors.....	37
7.2.2. New or Enhanced Functions	37
7.2.3. Known Errors.....	37
7.2.4. Compatibility to Earlier Releases	37
7.3. TRDPXML	38
7.3.1. Corrected Errors.....	38
7.3.2. New or Enhanced Functions	38
7.3.3. Known Errors.....	38
7.3.4. Compatibility to Earlier Releases	38
7.4. TRDPCTRL	38
7.5. TRDPSPY	38
7.5.1. Corrected Errors.....	38
7.5.2. New or Enhanced Functions	38
7.5.3. Known Errors.....	39
8. HISTORY RELEASE 1.2.1.0	40
8.1. TRDPLIGHT	40
8.1.1. Corrected Errors.....	40
8.1.2. New or Enhanced Functions	41
8.1.3. Known Errors.....	42
8.1.4. Compatibility to Earlier Releases	42
8.2. TRDPMARSHALL	42
8.2.1. Corrected Errors.....	42
8.2.2. New or Enhanced Functions	42
8.2.3. Known Errors.....	43
8.2.4. Compatibility to Earlier Releases	43
8.3. TRDPXML	43
8.3.1. Corrected Errors.....	43
8.3.2. New or Enhanced Functions	43
8.3.3. Known Errors.....	43
8.3.4. Compatibility to Earlier Releases	43
8.4. TRDPCTRL	44
8.4.1. Corrected Errors.....	44
8.4.2. New or Enhanced Functions	44
8.4.3. Known Errors.....	44
8.4.4. Compatibility to Earlier Releases	44
8.5. TRDPSPY	44
8.5.1. Corrected Errors.....	44
8.5.2. New or Enhanced Functions	44
8.5.3. Known Errors.....	45
8.5.4. Compatibility to Earlier Releases	45
9. HISTORY RELEASE 1.3.0.0	46
9.1. TRDPLIGHT	46
9.1.1. Corrected Errors.....	46
9.1.2. New or Enhanced Functions	47

9.1.3. Known Errors	47
9.1.4. Compatibility to Earlier Releases	47
9.2. TRDPMARSHALL	48
9.2.1. Corrected Errors	48
9.2.2. New or Enhanced Functions	48
9.2.3. Known Errors	48
9.2.4. Compatibility to Earlier Releases	48
9.3. TRDPXML	48
9.3.1. Corrected Errors	48
9.3.2. New or Enhanced Functions	48
9.3.3. Known Errors	49
9.3.4. Compatibility to Earlier Releases	49
9.4. TRDPCTRL	49
9.4.1. Corrected Errors	49
9.4.2. New or Enhanced Functions	49
9.4.3. Known Errors	49
9.4.4. Compatibility to Earlier Releases	49
9.5. TRDPDNR	50
9.5.1. Corrected Errors	50
9.5.2. New or Enhanced Functions	50
9.5.3. Known Errors	50
9.5.4. Compatibility to Earlier Releases	50
9.6. TRDPTTI	50
9.6.1. Corrected Errors	50
9.6.2. New or Enhanced Functions	50
9.6.3. Known Errors	51
9.6.4. Compatibility to Earlier Releases	51
9.7. TRDPSPY	51
9.7.1. Corrected Errors	51
9.7.2. New or Enhanced Functions	51
10. HISTORY RELEASE 1.3.1.0	52
10.1. TRDPLIGHT	52
10.1.1. Corrected Errors	52
10.1.2. New or Enhanced Functions	52
10.1.3. Known Errors	52
10.1.4. Compatibility to Earlier Releases	52
10.2. TRDPMARSHALL	53
10.2.1. Corrected Errors	53
10.2.2. New or Enhanced Functions	53
10.2.3. Known Errors	53
10.2.4. Compatibility to Earlier Releases	53
10.3. TRDPXML	53
10.3.1. Corrected Errors	53
10.3.2. New or Enhanced Functions	53

10.3.3. Known Errors.....	53
10.3.4. Compatibility to Earlier Releases	54
10.4. TRDPCTRL	54
10.4.1. Corrected Errors.....	54
10.4.2. New or Enhanced Functions	54
10.4.3. Known Errors.....	54
10.4.4. Compatibility to Earlier Releases	54
10.5. TRDPDNR.....	54
10.5.1. Corrected Errors.....	54
10.5.2. New or Enhanced Functions	54
10.5.3. Known Errors.....	55
10.5.4. Compatibility to Earlier Releases	55
10.6. TRDPTTI.....	55
10.6.1. Corrected Errors.....	55
10.6.2. New or Enhanced Functions	55
10.6.3. Known Errors.....	55
10.6.4. Compatibility to Earlier Releases	55
10.7. TRDPSPY	56
10.7.1. Corrected Errors.....	56
10.7.2. New or Enhanced Functions	56
10.7.3. Known Errors.....	56
10.7.4. Compatibility to Earlier Releases	56
11. HISTORY RELEASE 1.3.2.0	57
11.1. TRDPLIGHT	57
11.1.1. Corrected Errors.....	57
11.1.2. New or Enhanced Functions	58
11.1.3. Known Errors.....	58
11.1.4. Compatibility to Earlier Releases	59
11.2. TRDPMARSHALL	59
11.2.1. Corrected Errors.....	59
11.2.2. New or Enhanced Functions	59
11.2.3. Known Errors.....	59
11.2.4. Compatibility to Earlier Releases	59
11.3. TRDPXML	59
11.3.1. Corrected Errors.....	59
11.3.2. New or Enhanced Functions	60
11.3.3. Known Errors.....	60
11.3.4. Compatibility to Earlier Releases	60
11.4. TRDPCTRL	60
11.4.1. Corrected Errors.....	60
11.4.2. New or Enhanced Functions	60
11.4.3. Known Errors.....	60
11.4.4. Compatibility to Earlier Releases	60
11.5. TRDPDNR.....	61

11.5.1. Corrected Errors	61
11.5.2. New or Enhanced Functions	61
11.5.3. Known Errors	61
11.5.4. Compatibility to Earlier Releases	61
11.6. TRDPPTI	61
11.6.1. Corrected Errors	61
11.6.2. New or Enhanced Functions	61
11.6.3. Known Errors	62
11.6.4. Compatibility to Earlier Releases	62
11.7. TRDPSPY	62
11.7.1. Corrected Errors	62
11.7.2. New or Enhanced Functions	62
11.7.3. Known Errors	62
11.7.4. Compatibility to Earlier Releases	62
12. HISTORY RELEASE 1.3.3.0	63
12.1. TRDPLIGHT	63
12.1.1. Corrected Errors	63
12.1.2. New or Enhanced Functions	63
12.1.3. Known Errors	63
12.1.4. Compatibility to Earlier Releases	63
12.2. TRDPMARSHALL	64
12.2.1. Corrected Errors	64
12.2.2. New or Enhanced Functions	64
12.2.3. Known Errors	64
12.2.4. Compatibility to Earlier Releases	64
12.3. TRDPXML	64
12.3.1. Corrected Errors	64
12.3.2. New or Enhanced Functions	64
12.3.3. Known Errors	65
12.3.4. Compatibility to Earlier Releases	65
12.4. TRDPCTRL	65
12.4.1. Corrected Errors	65
12.4.2. New or Enhanced Functions	65
12.4.3. Known Errors	65
12.4.4. Compatibility to Earlier Releases	65
12.5. TRDPDNR	65
12.5.1. Corrected Errors	65
12.5.2. New or Enhanced Functions	66
12.5.3. Known Errors	66
12.5.4. Compatibility to Earlier Releases	66
12.6. TRDPPTI	66
12.6.1. Corrected Errors	66
12.6.2. New or Enhanced Functions	66
12.6.3. Known Errors	66

12.6.4. Compatibility to Earlier Releases	67
12.7. TRDPSPY	67
12.7.1. Corrected Errors	67
12.7.2. New or Enhanced Functions	67
12.7.3. Known Errors	67
12.7.4. Compatibility to Earlier Releases	67
13. HISTORY RELEASE 1.4.0.0	68
13.1. TRDPLIGHT	68
13.1.1. Corrected Errors	68
13.1.2. New or Enhanced Functions	69
13.1.3. Known Errors	69
13.1.4. Compatibility to Earlier Releases	70
13.2. TRDPMARSHALL	70
13.2.1. Corrected Errors	70
13.2.2. New or Enhanced Functions	70
13.2.3. Known Errors	70
13.2.4. Compatibility to Earlier Releases	70
13.3. TRDPXML	70
13.3.1. Corrected Errors	70
13.3.2. New or Enhanced Functions	70
13.3.3. Known Errors	71
13.3.4. Compatibility to Earlier Releases	71
13.4. TRDPCTRL	71
13.4.1. Corrected Errors	71
13.4.2. New or Enhanced Functions	71
13.4.3. Known Errors	71
13.4.4. Compatibility to Earlier Releases	71
13.5. TRDPDNR	72
13.5.1. Corrected Errors	72
13.5.2. New or Enhanced Functions	72
13.5.3. Known Errors	72
13.5.4. Compatibility to Earlier Releases	72
13.6. TRDPTTI	72
13.6.1. Corrected Errors	72
13.6.2. New or Enhanced Functions	72
13.6.3. Known Errors	73
13.6.4. Compatibility to Earlier Releases	73
13.7. TRDPSPY	73
13.7.1. Corrected Errors	73
13.7.2. New or Enhanced Functions	73
13.7.3. Known Errors	73
13.7.4. Compatibility to Earlier Releases	73
14. HISTORY RELEASE 1.4.1.0	74
14.1. TRDPLIGHT	74

14.1.1. Corrected Errors	74
14.1.2. New or Enhanced Functions	74
14.1.3. Known Errors	74
14.1.4. Compatibility to Earlier Releases	75
14.2. TRDPMARSHALL	75
14.2.1. Corrected Errors	75
14.2.2. New or Enhanced Functions	75
14.2.3. Known Errors	75
14.2.4. Compatibility to Earlier Releases	75
14.3. TRDPXML	75
14.3.1. Corrected Errors	75
14.3.2. New or Enhanced Functions	75
14.3.3. Known Errors	76
14.3.4. Compatibility to Earlier Releases	76
14.4. TRDPCTRL	76
14.4.1. Corrected Errors	76
14.4.2. New or Enhanced Functions	76
14.4.3. Known Errors	76
14.4.4. Compatibility to Earlier Releases	76
14.5. TRDPDNR	77
14.5.1. Corrected Errors	77
14.5.2. New or Enhanced Functions	77
14.5.3. Known Errors	77
14.5.4. Compatibility to Earlier Releases	77
14.6. TRDPPTTI	77
14.6.1. Corrected Errors	77
14.6.2. New or Enhanced Functions	77
14.6.3. Known Errors	78
14.6.4. Compatibility to Earlier Releases	78
14.7. TRDPSPY	78
14.7.1. Corrected Errors	78
14.7.2. New or Enhanced Functions	78
14.7.3. Known Errors	78
14.7.4. Compatibility to Earlier Releases	78
15. PROBLEM REPORTING	79

Table of Figures

Figure 1 TRDP Modular Structure	17
---------------------------------------	----

Table of Tables

Table 1: References	16
Table 2: Abbreviations and Definitions.....	16
Table 3: Product Identifications	18
Table 4: Primary Targets	18
Table 5: Secondary Targets	19
Table 6: Platform Delivery Content TRDPLight	20
Table 7: Platform Delivery Content TRDPMarshall.....	20
Table 8: Platform Delivery Content TRDPXML	20
Table 9: Platform Delivery Content TRDPCTRL.....	20
Table 10: Platform Delivery Content TRDPSpy	20
Table 11: SDK Delivery Directory Structure	22
Table 12: SDK Delivery Content - TRDPLight	23
Table 13: SDK Delivery Content - TRDPMarshall.....	23
Table 14: SDK Delivery Content – TRDPXML	23
Table 15: SDK Delivery Content – TRDPCTRL.....	24
Table 16: SDK Delivery Content – TRDPDNR.....	24
Table 17: SDK Delivery Content – TRDPTTI.....	24
Table 18: SDK Delivery Content - TRDPSpy.....	25
Table 19: SDK Delivery Content – Resources	25
Table 20: SDK Delivery Content – Build Environment.....	25
Table 21: SDK Delivery Content - Tests.....	26
Table 22: SDK Delivery Content - Examples	26
Table 23: SDK Delivery Content - Documentation	26
Table 24: Corrected Errors TRDPLight	30
Table 25: New or enhanced functions TRDPLight	30
Table 26: Known Errors TRDPLight	31
Table 27: Corrected Errors TRDPMarshall.....	31
Table 28: New or enhanced functions TRDPMarshall.....	32
Table 29: Known Errors TRDPMarshall.....	32
Table 30: Corrected Errors TRDPXML	32
Table 31: New or enhanced functions TRDPXML	32
Table 32: Known Errors TRDPXML	32
Table 33: Corrected Errors TRDPCTRL.....	33
Table 34: New or enhanced functions TRDPCTRL.....	33
Table 35: Known Errors TRDPCTRL.....	33
Table 36: Corrected Errors TRDPDNR.....	33
Table 37: New or enhanced functions TRDPDNR	34
Table 38: Known Errors TRDPDNR	34

Table 39: Corrected Errors TRDPTTI	34
Table 40: New or enhanced functions TRDPTTI	34
Table 41: Known Errors TRDPTTI	35
Table 42: Corrected Errors TRDPSpy	35
Table 43: New or enhanced functions TRDPSpy	35
Table 44: Known Errors TRDPSpy	35
Table 45: Corrected Errors TRDPLight.....	36
Table 46: New or enhanced functions TRDPLight.....	36
Table 47: Known Errors TRDPLight.....	37
Table 48: Corrected Errors TRDPMarshall	37
Table 49: New or enhanced functions TRDPMarshall	37
Table 50: Known Errors TRDPMarshall	37
Table 51: Corrected Errors TRDPXML.....	38
Table 52: New or enhanced functions TRDPXML	38
Table 53: Known Errors TRDPXML.....	38
Table 54: Corrected Errors TRDPSpy	38
Table 55: New or enhanced functions TRDPSpy	38
Table 56: Known Errors TRDPSpy	39
Table 57: Corrected Errors TRDPLight.....	41
Table 58: New or enhanced functions TRDPLight.....	41
Table 59: Known Errors TRDPLight.....	42
Table 60: Corrected Errors TRDPMarshall	42
Table 61: New or enhanced functions TRDPMarshall	42
Table 62: Known Errors TRDPMarshall	43
Table 63: Corrected Errors TRDPXML.....	43
Table 64: New or enhanced functions TRDPXML	43
Table 65: Known Errors TRDPXML.....	43
Table 66: Corrected Errors TRDPCTRL	44
Table 67: New or enhanced functions TRDPCTRL	44
Table 68: Known Errors TRDPCTRL	44
Table 69: Corrected Errors TRDPSpy	44
Table 70: New or enhanced functions TRDPSpy	44
Table 71: Known Errors TRDPSpy	45
Table 72: Corrected Errors TRDPLight.....	47
Table 73: New or enhanced functions TRDPLight.....	47
Table 74: Known Errors TRDPLight.....	47
Table 75: Corrected Errors TRDPMarshall	48
Table 76: New or enhanced functions TRDPMarshall	48
Table 77: Known Errors TRDPMarshall	48
Table 78: Corrected Errors TRDPXML.....	48
Table 79: New or enhanced functions TRDPXML	49
Table 80: Known Errors TRDPXML.....	49
Table 81: Corrected Errors TRDPCTRL	49
Table 82: New or enhanced functions TRDPCTRL	49
Table 83: Known Errors TRDPCTRL	49
Table 84: Corrected Errors TRDPDNR	50
Table 85: New or enhanced functions TRDPDNR	50

Table 86: Known Errors TRDPDNR	50
Table 87: Corrected Errors TRDPTTI.....	50
Table 88: New or enhanced functions TRDPTTI.....	51
Table 89: Known Errors TRDPTTI.....	51
Table 90: Corrected Errors TRDPSpy.....	51
Table 91: New or enhanced functions TRDPSpy.....	51
Table 92: Corrected Errors TRDPLight	52
Table 93: New or enhanced functions TRDPLight	52
Table 94: Known Errors TRDPLight	52
Table 95: Corrected Errors TRDPMarshall.....	53
Table 96: New or enhanced functions TRDPMarshall.....	53
Table 97: Known Errors TRDPMarshall.....	53
Table 98: Corrected Errors TRDPXML	53
Table 99: New or enhanced functions TRDPXML	53
Table 100: Known Errors TRDPXML	53
Table 101: Corrected Errors TRDPCTRL.....	54
Table 102: New or enhanced functions TRDPCTRL.....	54
Table 103: Known Errors TRDPCTRL.....	54
Table 104: Corrected Errors TRDPDNR.....	54
Table 105: New or enhanced functions TRDPDNR	55
Table 106: Known Errors TRDPDNR	55
Table 107: Corrected Errors TRDPTTI.....	55
Table 108: New or enhanced functions TRDPTTI.....	55
Table 109: Known Errors TRDPTTI.....	55
Table 110: Corrected Errors TRDPSpy.....	56
Table 111: New or enhanced functions TRDPSpy.....	56
Table 112: Known Errors TRDPSpy.....	56
Table 113: Corrected Errors TRDPLight	58
Table 114: New or enhanced functions TRDPLight	58
Table 115: Known Errors TRDPLight	59
Table 116: Corrected Errors TRDPMarshall.....	59
Table 117: New or enhanced functions TRDPMarshall.....	59
Table 118: Known Errors TRDPMarshall.....	59
Table 119: Corrected Errors TRDPXML	59
Table 120: New or enhanced functions TRDPXML	60
Table 121: Known Errors TRDPXML	60
Table 122: Corrected Errors TRDPCTRL.....	60
Table 123: New or enhanced functions TRDPCTRL.....	60
Table 124: Known Errors TRDPCTRL.....	60
Table 125: Corrected Errors TRDPDNR.....	61
Table 126: New or enhanced functions TRDPDNR	61
Table 127: Known Errors TRDPDNR	61
Table 128: Corrected Errors TRDPTTI.....	61
Table 129: New or enhanced functions TRDPTTI.....	61
Table 130: Known Errors TRDPTTI.....	62
Table 131: Corrected Errors TRDPSpy.....	62
Table 132: New or enhanced functions TRDPSpy.....	62

Table 133: Known Errors TRDPSpy	62
Table 134: Corrected Errors TRDPLight.....	63
Table 135: New or enhanced functions TRDPLight.....	63
Table 136: Known Errors TRDPLight.....	63
Table 137: Corrected Errors TRDPMarshall	64
Table 138: New or enhanced functions TRDPMarshall	64
Table 139: Known Errors TRDPMarshall	64
Table 140: Corrected Errors TRDPXML.....	64
Table 141: New or enhanced functions TRDPXML	64
Table 142: Known Errors TRDPXML.....	65
Table 143: Corrected Errors TRDPCTRL	65
Table 144: New or enhanced functions TRDPCTRL	65
Table 145: Known Errors TRDPCTRL	65
Table 146: Corrected Errors TRDPDNR	66
Table 147: New or enhanced functions TRDPDNR	66
Table 148: Known Errors TRDPDNR	66
Table 149: Corrected Errors TRDPTTI	66
Table 150: New or enhanced functions TRDPTTI	66
Table 151: Known Errors TRDPTTI	66
Table 152: Corrected Errors TRDPSpy	67
Table 153: New or enhanced functions TRDPSpy	67
Table 154: Known Errors TRDPSpy	67
Table 155: Corrected Errors TRDPLight.....	69
Table 156: New or enhanced functions TRDPLight.....	69
Table 157: Known Errors TRDPLight.....	69
Table 158: Corrected Errors TRDPMarshall	70
Table 159: New or enhanced functions TRDPMarshall	70
Table 160: Known Errors TRDPMarshall	70
Table 161: Corrected Errors TRDPXML.....	70
Table 162: New or enhanced functions TRDPXML	71
Table 163: Known Errors TRDPXML.....	71
Table 164: Corrected Errors TRDPCTRL	71
Table 165: New or enhanced functions TRDPCTRL	71
Table 166: Known Errors TRDPCTRL	71
Table 167: Corrected Errors TRDPDNR	72
Table 168: New or enhanced functions TRDPDNR	72
Table 169: Known Errors TRDPDNR	72
Table 170: Corrected Errors TRDPTTI	72
Table 171: New or enhanced functions TRDPTTI	72
Table 172: Known Errors TRDPTTI	73
Table 173: Corrected Errors TRDPSpy	73
Table 174: New or enhanced functions TRDPSpy	73
Table 175: Known Errors TRDPSpy	73
Table 24: Corrected Errors TRDPLight.....	74
Table 25: New or enhanced functions TRDPLight.....	74
Table 26: Known Errors TRDPLight.....	75
Table 27: Corrected Errors TRDPMarshall	75

Table 28: New or enhanced functions TRDPMarshall.....	75
Table 29: Known Errors TRDPMarshall.....	75
Table 30: Corrected Errors TRDPXML	75
Table 31: New or enhanced functions TRDPXML	76
Table 32: Known Errors TRDPXML	76
Table 33: Corrected Errors TRDPCTRL.....	76
Table 34: New or enhanced functions TRDPCTRL.....	76
Table 35: Known Errors TRDPCTRL.....	76
Table 36: Corrected Errors TRDPDNR.....	77
Table 37: New or enhanced functions TRDPDNR	77
Table 38: Known Errors TRDPDNR	77
Table 39: Corrected Errors TRDPTTI.....	77
Table 40: New or enhanced functions TRDPTTI.....	77
Table 41: Known Errors TRDPTTI.....	78
Table 42: Corrected Errors TRDPSPy.....	78
Table 43: New or enhanced functions TRDPSPy.....	78
Table 44: Known Errors TRDPSPy.....	78

1. Introduction

1.1. Purpose

This document is the Release Notes for the Bombardier* Release of TCNOpen* TRDP* Version as implementation of the communication profile defined in [Wire].

1.2. Intended Audience

The audience of this document and the users of the release are software engineers that want to adapt or to use TCNOpen* TRDP* as implementation of the communication profile defined in [Wire].

1.3. References/Related Documents

Reference	Number	Title
[Wire]	IEC61375-2-3 FDIS	Communication Profile
[TestRep]	TCN-TRDP2-D-BOM-032	TRDP Conformance Test Report
[UserMan]	TCN-TRDP2-D-BOM-011	TRDP User's Manual
[RefMan]	TCN-TRDP2-D-BOM-033	TRDP Reference Manual

Table 1: References

1.4. Abbreviations and Definitions

Abbreviation	Definition
PD	"Process Data" Part of the in [Wire] defined communication protocol used for cyclic data transmissions based on UDP protocol.
UDP-MD	"UDP Message Data" Part of the in [Wire] defined communication protocol used for event driven data transmissions based on UDP protocol.
TCP-MD	"UDP Message Data" Part of the in [Wire] defined communication protocol used for event driven data transmissions based on TCP protocol.
ETBN	Ethernet Train Backbone Node
TSN	Time Sensitive Network

Table 2: Abbreviations and Definitions

2. Product Definition

2.1. General Description

The TCNOpen TRDP is an open source implementation of communication profile described in [Wire] and includes compiled libraries for primary targets and source code to be used for other platforms as well as examples for reference implementation.

TCNOpen TRDP includes:

- TRDPLight (the communication protocol stack for PD, UDP-MD and TCP-MD)
- TRDP Marshall – a service for marshalling/unmarshalling TRDP user data
- TRDP XML – a service for reading TCNOpen TRDP XML configuration files
- TRDP CTRL – a service to control the ETBN functionality
- TRDP DNR – a service for IP-URI address translation
- TRDP TTI – a service to access the train topology information data base of the ETBN
- TRDP SPY – a wireshark plugin to interpret TRDP telegrams

It does not yet include:

- TRDP LADDER – ladder support acc. to IEC61375-3-4
- TRDP SDT – a service for safe data transmission according to the definition in [Wire]

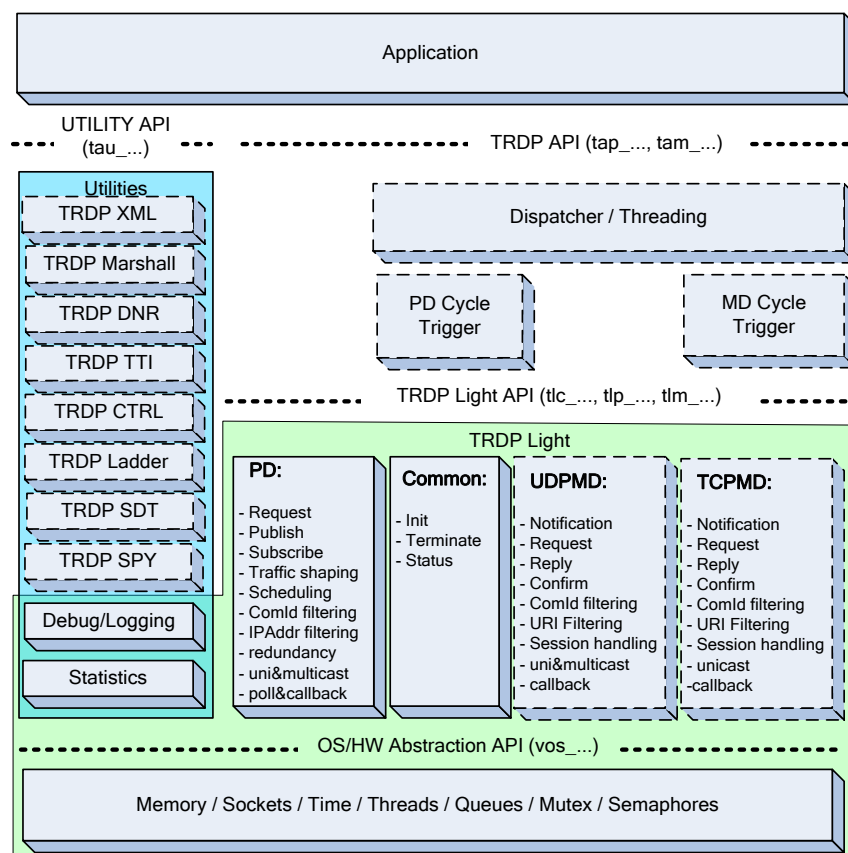


Figure 1 TRDP Modular Structure

2.2. License Agreements

The TRDP Source Code (except the TRDPSpy source code) is subject to the terms of the Mozilla Public License, v. 2.0.

If a copy of the MPL was not distributed with this document, You can obtain one at <http://mozilla.org/MPL/2.0/>.

The TRDPSpy Source Code Form is subject to the terms of the GPL.

2.3. Product Identification

TCNOpen TRDP contains the following parts:

Abbreviation	Identification	Remark
TRDPLight		
TRDPMarshall		
TRDPXML		
TRDPSpy		only Win64 and Linux
TRDPCTRL		Not tested
TRDPLadder		
TRDPDNR		
TRDPTTI		
TRDPSDT		Only under special license agreement with Bombardier

Table 3: Product Identifications

2.4. Targets

2.4.1. Primary Targets

TCNOpen TRDP is provided for a set of primary targets. Outputs for these have been verified during the release process.

Target	Use	OS	CPU-HW
Linux PC	General	Linux 32bit	x86 comp, Power PC
Windows PC	General	Windows XP	x86 comp.
Apple MAC	General	MacOS	x86 comp.
Embedded Controller	General	VxWorks	PowerPC

Table 4: Primary Targets

2.4.2. Secondary Targets

TCNOpen TRDP is also delivered as an SDK with source code and example makefiles only. The makefiles serve as examples for building the binaries for different platforms and can be used as a template for specific platform builds. The following table shows the builds which have not been tested but have been taken care of within the source code.

Target	Use	OS	CPU-HW
Windows PC	General	Windows7 32/64	x86

Table 5: Secondary Targets

3. Delivery

3.1. Platform

Target	File	Description
Windows PC ¹ , VxWorks, Linux (Posix) ² , MAC (Posix), QNX (Posix), Integrity (Posix)		This version does not include ready compiled libraries and DLL but source code and build environments.

Table 6: Platform Delivery Content TRDPLight

Target	File	Description
Windows PC ¹ , VxWorks, Linux (Posix) ² , MAC (Posix), QNX (Posix), Integrity (Posix),		This version does not include ready compiled libraries and DLL but source code and build environments.

Table 7: Platform Delivery Content TRDPMarshall

Target	File	Description
Linux PC ² , Windows PC ¹ ,		This version does not include ready compiled libraries and DLL but source code and build environments.

Table 8: Platform Delivery Content TRDPXML

Target	File	Description
Linux PC ² , Windows PC ¹ ,		This version does not include ready compiled libraries and DLL but source code and build environments.

Table 9: Platform Delivery Content TRDPCTRL

Target	File	Description
Linux32	..\spy\linux32\packet-trdp_spy.so	Linux32 Wireshark plugin
Win64	..\spy\win64\trdp_spy.dll	Win64 Wireshark plugin
Win64	..\spy\win64\readme.txt	Readme for Win64 Wireshark plugin

Table 10: Platform Delivery Content TRDPSPy

¹ 32 bit and 64 bit

² 32 bit and 64 bit

3.2. SDK

To also support other targets than the platform does, TCNOpen TRDP is delivered as an SDK (Software Development Kit). The release is available under SourceForge (<https://svn.code.sf.net/p/tcnopen/trdp/tags/trdp/1.2.0.0>). The release comprises items according to the tables below using the following file structure:

DirLevel1	DirLevel2	DirLevel3	Description
config			XML configuration structure and build environment configurations
doc			Documentation
resources			Open source resources used within TRDP
	posix		
	windows		
		getopt	getopt functionality for test programs
		iconv	XML Parser functionality
		libxml	XML parser functionality
		pthread	Posix threads for vos functionality
		wireshark	Wireshark win64
src			TRDP source code
	api		TRDP API header files
	common		TRDP source code files
	example		TRDP example application files
	vos		VOS source code and header files
		api	VOS API header files
		common	VOS target independent source code files
		posix	VOS POSIX depending source code files
		vxworks	VOS VXWORKS depending source code files
		windows	VOS WIN32 depending source code files
spy			Wireshark plugin for TRDP
	doc		Documentation
	src		Source code for wireshark plugin
	linux32		Plugin for Linux32
	Win64		Plugin for Win64
test			
	diverse		Test diverse functions of the library
	laddermdtest		Test of the TRDP ladder MD functionality
	ladderpdtest		Test of the TRDP ladder MD functionality
	lint		PCLint profile for Windows
	marshalling		Test of marshalling/un-marshalling
	mdpatterns		Test of the TRDP MD patterns

DirLevel1	DirLevel2	DirLevel3	Description
	pdpatterns		Test of the TRDP PD patterns
	udpmdcom		Test of the UDP MD communication
	xml		Test of the TRDP XML configuration
example			Examples for TRDP use
VisualC			VisualC 2010 configuration for TRDP library and related test examples
XCode			Xcode configuration for TRDP library and related test examples

Table 11: SDK Delivery Directory Structure

3.2.1. TRDPLight

The TRDPLight contains the base functionality for PD, UDP-MD and TCP-MD.

File	Description
..\src\api\iec61375-2-3.h	TRDP protocol definitions
..\src\api\trdp_types.h	TRDP type definitions
..\src\api\trdp_if_light.h	TRDP light API definitions
..\src\common\trdp_if.c	TRDP light API
..\src\common\trdp_if.h	TRDP light API internal definitions
..\src\common\trdp_dllmain.c	TRDP light Windows DLL stub
..\src\common\trdp_mdcom.c	TRDP light MD functionality
..\src\common\trdp_mdcom.h	TRDP light MD functionality definitions
..\src\common\trdp_pdcom.c	TRDP light PD functionality
..\src\common\trdp_pdcom.h	TRDP light PD functionality definitions
..\src\common\trdp_private.h	TRDP light private definitions
..\src\common\trdp_stats.c	TRDP light statistics functionality
..\src\common\trdp_stats.h	TRDP light statistics functionality definitions
..\src\common\trdp_utils.c	TRDP light utilities
..\src\common\trdp_utils.h	TRDP light MD utilities definitions
..\src\vos\api\vos_mem.h	VOS memory management functionality definitions
..\src\vos\api\vos_shared_mem.h	VOS shared memory management functionality definitions
..\src\vos\api\vos_sock.h	VOS IP network and socket management functionality definitions
..\src\vos\api\vos_thread.h	VOS thread and timer management functionality definitions
..\src\vos\api\vos_types.h	VOS type definitions
..\src\vos\api\vos_utils.h	VOS utility definitions
..\src\vos\common\vos_mem.c	VOS memory management functionality
..\src\vos\common\utils.c	VOS utilities

File	Description
..\src\vos\posix\vos_private.h	VOS private definitions
..\src\vos\posix\vos_shared_mem.c	VOS shared memory management functionality
..\src\vos\posix\vos_sock.c	VOS IP network and socket management functionality
..\src\vos\posix\vos_thread.c	VOS thread and timer management functionality
..\src\vos\windows\private.h	VOS private definitions
..\src\vos\windows\vos_shared_mem.c	VOS shared memory management functionality
..\src\vos\windows\vos_sock.c	VOS IP network and socket management functionality
..\src\vos\windows\vos_thread.c	VOS thread and timer management functionality using pthread (only <= VS2010)
..\src\vos\windows\vos_winthread.c	VOS thread and timer management functionality using native Windows
..\src\vos\vxworks\private.h	VOS private definitions
..\src\vos\vxworks\vos_shared_mem.c	VOS shared memory management functionality
..\src\vos\vxworks\vos_sock.c	VOS IP network and socket management functionality
..\src\vos\vxworks\vos_thread.c	VOS thread and timer management functionality

Table 12: SDK Delivery Content - TRDPLight

3.2.2. TRDPMarshall

The TRDPMarshall contains the marshalling/un-marshalling functionality.

File	Description
..\src\common\tau_marshall.c	Marshalling/un-marshalling functionality
..\src\api\tau_marshall.h	Marshalling/un-marshalling definitions

Table 13: SDK Delivery Content - TRDPMarshall

3.2.3. TRDPXML

The TRDPXML contains the functionality for reading TRDP XML configuration files.

File	Description
..\src\common\tau_xml.c	Read TRDP XML configuration functionality
..\src\api\tau_xml.h	Read TRDP XML configuration definitions
..\src\api\trdp-config.xsd	TRDP configuration XML schema

Table 14: SDK Delivery Content – TRDPXML

3.2.4. TRDPCTRL

The TRDPCTRL contains the functionality for controlling the ETB.

File	Description
..\src\common\tau_ctrl.c	ETB control functionality
..\src\api\tau_ctrl.h	ETB control definitions
..\src\api\tau_ctrl_types.h	ETB control types

Table 15: SDK Delivery Content – TRDPCTRL

3.2.5. TRDPDNR

The TRDPDNR contains the functionality for URI/IP address translation

File	Description
..\src\common\tau_dnr.c	Address translation functionality using DNR
..\src\api\tau_dnr.h	Address translation definitions

Table 16: SDK Delivery Content – TRDPDNR

3.2.6. TRDPPTI

The TRDPPTI contains the functionality for train topology information access

File	Description
..\src\common\tau_tti.c	Train topology information access functionality
..\src\common\tau_cstinfo.c	Train topology information access functionality
..\src\api\tau_tti.h	Train topology information access definitions

Table 17: SDK Delivery Content – TRDPPTI

3.2.7. TRDPSPy

The TRDPSPy contains the wireshark plugin for interpreting TRDP telegrams.

NOTE: The source code needs the resources iconv and libxml.

File	Description
..\spy\linux32\trdp_spy.so	Linux32 Wireshark 2.x.x plugin
..\spy\linux32\readme.txt	Readme for Linux32 Wireshark 2.x.x plugin
..\spy\linux64\trdp_spy.so	Linux64 Wireshark 2.x.x plugin
..\spy\linux64\readme.txt	Readme for Linux64 Wireshark 2.x.x plugin
..\spy\win64\trdp_spy.dll	Win64 Wireshark 1.8.3 plugin
..\spy\win64\readme.txt	Readme for Win64 Wireshark 1.8.3 plugin
..\spy\src\CMakeListsCustom.txt	Installation guide for Wireshark plugin SDK
..\spy\src\README.txt	Build instruction
..\spy\src\trdp_spy\CMakeLists.txt	
..\spy\src\trdp_spy\makefile.am	
..\spy\src\trdp_spy\modulinfo.h	

File	Description
..\spy\src\trdp_spy\packet-trdp_spy.cpp	
..\spy\src\trdp_spy\packet-trdp_spy.h	
..\spy\src\trdp_spy\plugin.c	
..\spy\src\trdp_spy\plugin.rc.in	
..\spy\src\trdp_spy\Readme.txt	
..\spy\src\trdp_spy\TCN-TRDP2-TRDP SPY RefrenceManual.pdf	
..\spy\src\trdp_spy\trdp_env.cpp	
..\spy\src\trdp_spy\trdp_env.h	
..\spy\src\trdp_spy\trdpConfigHandler.cpp	
..\spy\src\trdp_spy\trdpConfigHandler.h	
..\spy\src\scripts\runIDE.bat	
..\spy\src\scripts\setupEnv.bat	

Table 18: SDK Delivery Content - TRDPSPy

3.2.8. Resources

The following open source resources are needed for the below described functionality of the TRDP library are included in the delivery.

File	Description
..\resources\windows\getopt*	Windows getopt implementation for testing
..\resources\windows\pthread*	Posix thread implementation for Windows for VOS necessary only for Visual C 2010
..\resources\windows\wireshark*	Wireshark 1.8.3 for TRDP Spy

Table 19: SDK Delivery Content – Resources

3.2.9. Build Environment

The following files for the build environment are included in the delivery.

File	Description
..\makefile	Makefile for TRDP Light
..\readme-makefile.txt	Makefile configuration instruction
..\config\buildset- tings_posix_TEMPLATE	Makefile configuration settings
..\VSExpress2015*	Visual Studio Express 2015 configuration files to build the WIN32/WIN64 TRDP library as well as the different test applications.
..\Xcode*	XCode configuration files to build the TRDP library as well as the different test applications.

Table 20: SDK Delivery Content – Build Environment

3.2.10. Tests

The following test programs are included in the delivery.

File	Description
..\test\diverse*	Diverse tests for TRDP library
..\test\lint*	PCLint 8.0.w configuration for Windows and Linux
..\test\marshalling*	Marshalling test
..\test\mdpatterns*	MD pattern tests
..\test\pdpatterns*	PD pattern tests
..\test\udpmdcom*	UDP MD communication test
..\test\xml*	XML configuration test
..\test\laddermdtest*	Ladder MD test
..\test\ladderpdtest*	Ladder PD test

Table 21: SDK Delivery Content - Tests

3.2.11. Examples

The following example programs are included in the delivery.

File	Description
..\example\example.xml	TRDP example configuration
..\example\echoPolling.c	PD polling example
..\example\echoSelect.c	PD select example
..\example\echoSelectCmdLine.c	PD select example
..\example\receiveHello.c	PD receive example
..\example\sendHello.c	PD send example

Table 22: SDK Delivery Content - Examples

3.3. Documentation

The following documents are related to the delivered product but not part of the delivery.

#	Document	Revision	Identification
1	TRDP Coding Rules	07	TCN-TRDP1-A-BOM-008
2	TRDP System Requirement Specification	10	TCN-TRDP1-D-BOM-003
3	TRDP Architecture & Design Specification	06	TCN-TRDP2-D-BOM-019
4	TRDP Conformance Test Specification		TCN-TRDP2-D-BOM-031
5	TRDP Conformance Test Report		TCN-TRDP2-D-BOM-032
6	TRDP User's Manual	39	TCN-TRDP2-D-BOM-011
7	TRDP Reference Manual	09	TCN-TRDP2-D-BOM-033

Table 23: SDK Delivery Content - Documentation

3.4. Restrictions

TSN interface is defined but underlying functions are missing in this release.

4. Installation

4.1. Platform

This version does not contain ready made libraries or DLL (except for TRDP SPY) but only the SDK including the build environment configurations.

4.2. SDK

1. Unpack the file “TCNOpenTRDP 1.x.x.0.zip” into your development work area.
2. Check the files in src/vos for targets which fits your target
3. Edit the Makefile by adding or changing your configuration.
4. For windows 32 bit environments, open the VisualC/Win32TRDP_VS2010.sln file with MS Visual Studio 2010. For windows 64 bit environments, open the VisualC/Win_TRDP_VS2015.sln file with MS Visual Studio 2015.

All source files/libraries/executables can be found in the folders described in chapter 3.2.

5. How to use

5.1. Posix (Linux, MAC, QNX, Integrity)

Adapt the delivered configuration for the makefile and compile the TRDP library.

5.2. VxWorks

Adapt the delivered configuration for the makefile and compile the TRDP library.

5.3. Windows

Adapt and use the delivered VisualC 2010 (32 bit) or Visual Studio Express 2015 (64 Bit) configuration and compile the TRDP library.

6. Changes

The following changes have been implemented since the previous release. The column ‘Ticket #.’ Contains the ticket number at <https://sourceforge.net/p/tcnopen/tickets/>. Ticket numbers marked with “XLS” referring to the now closed list “trdp/BugTracking.xls”.

6.1. TRDPLight

6.1.1. Corrected Errors

TICKET #	Description
#225	Issue in Doxygen comment for vos_sc32()
#226	Branch 1.3.1.0: Handle QoS value correctly
#230	multiple Subscribers with same comId, sourceIPs but different destinationIPs not working
#233	Write Access to XML file is not necessary
#234	ComIds for Statistics Interface do not align with IEC61375-2-3
#235	TRDP MD Listener issue if both unicast and multicast is used on the same com id
#236	[TRDP MD] Incorrect Socket Handling for Mixed Unicast and Multicast usage
#238	VOS: Public API headers include private header file
#241	MDCallback: MsgType and reply status not set correctly
#243	Function to add specialized subscriber in addition to general subscriber on same comId
#246	Incorrect reading of "user" part of source uri and destination uri
#249	Issue when parsing memory block configuration from config file
#256	PD: possibility to "register" ComIDs subscribing on several multicast addresses
#259	Shared memory name not stored in VOS_SHRD_T handle (posix)
#260	Error in vos_threadCreate() not handled properly (vxworks)

Table 24: Corrected Errors TRDPLight

6.1.2. New or Enhanced Functions

Ticket #	Description
#244	Extend SendParameters to support VLAN Id and TSN

Table 25: New or enhanced functions TRDPLight

6.1.3. Known Errors

Ticket #	Description
#3	TRDPSTATS: Incorrect counter for received packets on dual interface (XLS #131)

Ticket #	Description
#5 (XLS #37)	MD: For sent unicast MD TRDP assumes that only one reply may be received.
#21	Time dependent functions may fail in 2038 (wrap around of timeval)
#87	Example application for backbone-aware network is missing
#161	Increase performance
#162	Independent handling of PD and MD to reduce jitter
#169	Encapsulate declaration of packed structures within a macro
#173	Invalid refCon in callbacks
#185	MD reply: Infinite timeout wrong handled
#191	Add provisions for TSN / Hard Real Time
#192	WON'T FIX: Compiler warnings on Windows (minGW)
#193	WON'T FIX: MinGW Unused params warnings
#198	WON'T FIX: PD Timeout cannot be disabled.
#227	Possibility to set interface default name used by vos
#229	Test application to change topocounter (emulate ETB gateway)
#239	WON'T FIX: VOS: Problematic type definitions
#240	WON'T FIX: TRDP topography counter check not standard conform
#242	System Requirements Doc: TRDP4025 contradicts standard
#251	WON'T FIX: BITSET types
#261	MD reply/add listener does not use send parameters

Table 26: Known Errors TRDPLight

6.1.4. Compatibility to Earlier Releases

Compatible to previous release.

6.2. TRDPMarshall

6.2.1. Corrected Errors

Ticket #	Description
#252	Bug in unmarshalling/marshalling of TIMEDATE48 and TIMEDATE64

Table 27: Corrected Errors TRDPMarshall

6.2.2. New or Enhanced Functions

Ticket #	Description
None	

Table 28: New or enhanced functions TRDPMarshall

6.2.3. Known Errors

Ticket #	Description
None	

Table 29: Known Errors TRDPMarshall

6.2.4. Compatibility to Earlier Releases

Compatible to previous release.

6.3. TRDPXML

6.3.1. Corrected Errors

Ticket #	Description
#228	TRDP_XMLPDTest.exe multicast issuer
#231	XML config from stream buffer
#232	Write Access to XML file is not necessary
#250	Attribute missing in sdt-parameter element of XML configuration?
#262	XML Parsing Bug Fixes for Debug Output Print Level and SDTv2 Parameters

Table 30: Corrected Errors TRDPXML

6.3.2. New or Enhanced Functions

Ticket #	Description
None	

Table 31: New or enhanced functions TRDPXML

6.3.3. Known Errors

Ticket #	Description
#2 (XLS #64)	TRDPXML: Support of mapped devices missing
#163	WON'T FIX: Extend XML test to include SDT for MD

Table 32: Known Errors TRDPXML

6.3.4. Compatibility to Earlier Releases

Compatible to previous release.

6.4. TRDPCTRL

6.4.1. Corrected Errors

Ticket #	Description
None	

Table 33: Corrected Errors TRDPCTRL

6.4.2. New or Enhanced Functions

Ticket #	Description
None	

Table 34: New or enhanced functions TRDPCTRL

6.4.3. Known Errors

Ticket #	Description
#13	Implemented but not yet tested with ETBN

Table 35: Known Errors TRDPCTRL

6.4.4. Compatibility to Earlier Releases

Compatible to previous release.

6.1. TRDPDNR

6.1.1. Corrected Errors

Ticket #	Description
#237	Option to reduce wait times for DNR
#247	tau_uri2Addr() NULL check for pDNR

Table 36: Corrected Errors TRDPDNR

6.1.2. New or Enhanced Functions

Ticket #	Description
None	

Table 37: New or enhanced functions TRDPDNR

6.1.3. Known Errors

Ticket #	Description
None	

Table 38: Known Errors TRDPDNR

6.1.4. Compatibility to Earlier Releases

Compatible to previous release.

6.1. TRDPTTI

6.1.1. Corrected Errors

Ticket #	Description
#245	Incorrect storing of TTDB_OP_TRAIN_DIRECTORY_INFO from network packet into local copy
#248	tau_uri2Addr() : check for non zero IP address while searching cache
#253	Incorrect storing of TTDB_STATIC_CONSIST_INFO_REPLY from network packet into local copy
#254	API of TTI to get OwnOpCstNo and OwnTrnCstNo
#255	opTrnState of pTTDB isn't copied completely
#257	TTI: register for ComID100 PD to both valid multicast addresses

Table 39: Corrected Errors TRDPTTI

6.1.2. New or Enhanced Functions

Ticket #	Description
None	

Table 40: New or enhanced functions TRDPTTI

6.1.3. Known Errors

Ticket #	Description
#258	TTI subsystem should provide un-marshalled data to be used with

Ticket #	Description
	SDT

Table 41: Known Errors TRDPTTI

6.1.4. Compatibility to Earlier Releases

Compatible to previous release.

6.2. TRDPSpy

6.2.1. Corrected Errors

Ticket #	Description
#157	Windows: TRDP Spy needs update for newer Wireshark versions (> 1.8.3)
#187	Windows: TRDP Spy dissector always expects 16 Bits variable size for arrays

Table 42: Corrected Errors TRDPSpy

6.2.2. New or Enhanced Functions

Ticket #	Description
None	

Table 43: New or enhanced functions TRDPSpy

6.2.3. Known Errors

Ticket #	Description
None	

Table 44: Known Errors TRDPSpy

6.2.4. Compatibility to Earlier Releases

Plugin only compatible to Wireshark 2.x. For Wireshark 1.8.3 use plugin of release 1.3.1.0.

7. History Release 1.1.0.0

7.1. TRDPLight

7.1.1. Corrected Errors

TICKET #	Description
XLS #109	vos_getInterfaces for WIN32 does not read subnet masks
XLS #125	After TRDP rev. 891, if own IP address != 0; Subscriber becomes not able to register the socket descriptor which is created in tlp_subscribe() by the Subscriber. After that, Subscriber can not receive PD packet any more.
XLS #126	The TCP reception is not handling properly (WSA)ECONNRESET.
XLS #130	Although the maximum length of PDDATA is 1432 octets in the specification, a PD packet with 1436 octets of PDDATASET is allowed to be sent.
XLS #132	The statistic information gotten with tlc_getPubStatistics() is not for publisher but for subscriber.
XLS #133	Subscriber performs Join multicast. When numJoin is obtained in tlc_getStatistics(), the value is always 0.
XLS #134	While sending PD packet is performed repeatedly in Linux, when the clock time is turned back, sending PD packet is stopped. After that, when the clock time is set forward than the previous time not altered, sending PD packets is restarted.
XLS #135	Although Publisher sends PD packets, the value of numSend obtained in tlc_getPubStatistics() is always 0.

Table 45: Corrected Errors TRDPLight

7.1.2. New or Enhanced Functions

Ticket #	Description
XLS #25	vos_shared_mem.c - WIN32 implementation missing
XLS #29	vos_thread.c semaphore implementation missing
XLS #57	vos_thread.c mailbox implementation

Table 46: New or enhanced functions TRDPLight

7.1.3. Known Errors

Ticket #	Description
#1 (XLS #30)	MD/PD: For performance reasons a un-join shall be done after un-

Ticket #	Description
	subscribing.
#3 (XLS #131)	TRDPSTATS: Incorrect counter for received packets on dual interface
#5 (XLS #37)	MD: For sent unicast MD TRDP assumes that only one reply may be received.
#21	Time dependent functions may fail in 2038 (wrap around of timeval)
#87	<u>Example application for backbone-aware network is missing</u>
#101	<u>Optional callback function on PD send</u>

Table 47: Known Errors TRDPLight

7.1.4. Compatibility to Earlier Releases

Compatible to earlier releases.

7.2. TRDPMarshall

7.2.1. Corrected Errors

Ticket #	Description
None	

Table 48: Corrected Errors TRDPMarshall

7.2.2. New or Enhanced Functions

Ticket #	Description
None	

Table 49: New or enhanced functions TRDPMarshall

7.2.3. Known Errors

Ticket #	Description
None	

Table 50: Known Errors TRDPMarshall

7.2.4. Compatibility to Earlier Releases

Compatible to earlier releases.

7.3. TRDPXML

7.3.1. Corrected Errors

Ticket #	Description
None	

Table 51: Corrected Errors TRDPXML

7.3.2. New or Enhanced Functions

Ticket #	Description
None	

Table 52: New or enhanced functions TRDPXML

7.3.3. Known Errors

Ticket #	Description
#2 (XLS #64)	TRDPXML: Support of mapped devices missing

Table 53: Known Errors TRDPXML

7.3.4. Compatibility to Earlier Releases

Compatible to earlier releases.

7.4. TRDPCTRL

First release in 1.2.0.0.

7.5. TRDPSpy

7.5.1. Corrected Errors

Ticket #	Description
None	

Table 54: Corrected Errors TRDPSpy

7.5.2. New or Enhanced Functions

Ticket #	Description
None	

Table 55: New or enhanced functions TRDPSpy

7.5.3. Known Errors

Ticket #	Description
#4 (XLS #141)	TRDPSPY: Incorrect visualisation of data packets > 1MTU

Table 56: Known Errors TRDPSPy

8. History Release 1.2.1.0

The following changes have been implemented since the previous release. The column ‘Ticket #.’ Contains the ticket number at <https://sourceforge.net/p/tcnopen/tickets/>. Ticket numbers marked with “XLS” referring to the now closed list “trdp/BugTracking.xls”.

8.1. TRDPLight

8.1.1. Corrected Errors

TICKET #	Description
#10	TRDPPD: PD send cycle can shift by the time
#14	PD: In the case of PD Pull pattern Publisher with Traffic-shaping = ON and Interval- setting tlp_publish() is failed
#15	VOS: In case of POSIX, vos_queueReceive() fails for a miss of taking semaphore.
#16	VOS: In case of POSIX, vos_queueReceive() does not release semaphore
#17	tlp_subscribe() returns wrong *pSubHandle
#19	tlc_reinitSession(): rejoin for UDP MD missing
#20	vos_memInit() does not handle provided memory pool
#22	ADR should be named Name Resolution
#23	tlc_getInterval() always returning 10ms
#24	trdp_if.c won't compile without MD_SUPPORT
#25	CRC32 calculation is not according IEEE802.3
#29	TRDP: user references shall be void pointer
#30	TRDP tlc_getListStatistics() implementation is missing
#31	TRDP: tlc_getRedStatistics() implementation missing
#32	IP addresses in TRDP PD INFO T differ depending on functions and are not useful
#35	VOS: currently unused function cyclic_thread does not consider time for actual thread function
#36	VOS: big/little endian auto detection does not work in any environment
#37	Packet defines in tau_ctrl_types.h do not match FDIS-draft
#38	Scheduling policy values do not match pthread/Posix value
#39	Check of protocol version
#40	Feature needed: Option to ignore sequence counter on PD subscriptions
#41	PD sequence counter is not bound to source address
#42	Usage of memcmp() in the trdp_pdReceive() function
#43	Usage of memset() in the trdp_pdReceive() function
#44	Reception of its own sending multicast packets

TICKET #	Description
#45	<u>“validity-behavior” tag spelling</u>
#46	<u>Protocol change: operational topocount needed</u>
#47	<u>Protocol change: no FCS for data part of telegrams</u>
#49	<u>Endianness Setting in Visual C Project incorrect</u>
#51	<u>VOS: change underlying function for vos_dottedIP</u>
#53	<u>Interface clean-up</u>
#54	<u>MS Windows Win32TRDP XMLPDTest not updated with latest API</u>
#55	<u>Allow specific callback within tlp_subscribe and tlm_addListener</u>
#56	<u>Sequence counter reset failure</u>
#57	<u>Padding bytes after user data</u>
#58	<u>Dataset expanding to multiples of 4</u>
#59	<u>MD: user status of reply and confirm not set in telegram</u>
#60	<u>Second sourceIP parameter in tlp_subscribe() is not used</u>
#61	<u>tlm_readListener() and tlp_resubscribe() implementation missing</u>
#62	<u>MD test (md-test) is failing and crashing</u>
#63	<u>Function am_big_endian not needed</u>
#64	<u>MDCOM module needs some restructuring and correction after static analysis</u>
#66	<u>Memory corruption when sending a reply with data size longer than data size of request message</u>
#67	<u>Memory leak when receiving long messages</u>
#68	<u>Telegram statistics for TCP not consistent</u>
#69	<u>Make framework broken for certain make targets</u>
#70	<u>TRDPLight: Automatic Transmission of 'Me' Message accd. A.7.7.2 2nd and 5th Paragraph is missing</u>
#71	<u>TRDPLight: timeout==0 shall mean infinit time is not yet implemented</u>
#72	<u>TRDPLight: Windows7 vos_getInterfaces() bug</u>
#73	<u>TRDPLight: Multicast "join" fails on Windows system with two ethernet interfaces</u>
#74	<u>TRDPLight: topo counts check doesn't take into account local communication</u>

Table 57: Corrected Errors TRDPLight

8.1.2. New or Enhanced Functions

Ticket #	Description
#6	<u>VOS: Add VxWorks support–</u>
#12	<u>VOS: Add INTEGRITY support for POSIX interface</u>
#48	<u>Implement message data unicast retry protocol</u>

Table 58: New or enhanced functions TRDPLight

8.1.3. Known Errors

Ticket #	Description
#1 (XLS #30)	MD/PD: For performance reasons a un-join shall be done after un-subscribing.
#3 (XLS #131)	TRDPSTATS: Incorrect counter for received packets on dual interface
#1	PD/MD: For performance reasons a unjoin shall be done after un-subscribing (XLS #30)
#3	TRDPSTATS: Incorrect counter for received packets on dual interface (XLS #131)
#5 (XLS #37)	MD: For sent unicast MD TRDP assumes that only one reply may be received.
#7	TRDP_TTI: Add topology information support
#8	TRDP DNR: Add URI-IP address translation support
#11	VOS: Complete VxWorks functionality regarding shared memory
#21	Time dependent functions may fail in 2038 (wrap around of timeval)
#87	Example application for backbone-aware network is missing
#101	Optional callback function on PD send

Table 59: Known Errors TRDPLight

8.1.4. Compatibility to Earlier Releases

Incompatible to earlier releases due to #46, #47, #53.

8.2. TRDPMarshall

8.2.1. Corrected Errors

Ticket #	Description
#27	Mashalling/unmarshalling does not work for 32 bit or higher data types on a 16 bit platform
#28	Marshalling: I request to remove the static declaration for find_DS()

Table 60: Corrected Errors TRDPMarshall

8.2.2. New or Enhanced Functions

Ticket #	Description
None	

Table 61: New or enhanced functions TRDPMarshall

8.2.3. Known Errors

Ticket #	Description
#33	<u>TRDP marshall and unmarshall functions shall check source size</u>

Table 62: Known Errors TRDPMarshall

8.2.4. Compatibility to Earlier Releases

Incompatible to earlier releases.

8.3. TRDPXML

8.3.1. Corrected Errors

Ticket #	Description
#9	TAU XML:The offset-address in PD Paramter form XML Config is not included in parsePdParameter().
#18	<u>TAU XML: In case of setting multiple values to level parameters in debug config of XML Configuration, only the first parameter value is effective in parseDebugConfiguration()</u>

Table 63: Corrected Errors TRDPXML

8.3.2. New or Enhanced Functions

Ticket #	Description
None	

Table 64: New or enhanced functions TRDPXML

8.3.3. Known Errors

Ticket #	Description
#2 (XLS #64)	TRDPXML: Support of mapped devices missing
#65	<u>XML - Publish and Subscribe telegram identification</u>

Table 65: Known Errors TRDPXML

8.3.4. Compatibility to Earlier Releases

Incompatible to earlier releases.

8.4. TRDPCTRL

8.4.1. Corrected Errors

Ticket #	Description
None	

Table 66: Corrected Errors TRDPCTRL

8.4.2. New or Enhanced Functions

Ticket #	Description
None	

Table 67: New or enhanced functions TRDPCTRL

8.4.3. Known Errors

Ticket #	Description
None	

Table 68: Known Errors TRDPCTRL

8.4.4. Compatibility to Earlier Releases

First release.

8.5. TRDPSpy

8.5.1. Corrected Errors

Ticket #	Description
#4 (XLS #141)	TRDPSPY: Incorrect visualisation of data packets > 1MTU
#26	<u>TRDP Spy CRC calculation needs fix</u>
#52	<u>Wireshark plugin needs to be adapted to protocol changes</u>

Table 69: Corrected Errors TRDPSpy

8.5.2. New or Enhanced Functions

Ticket #	Description
None	

Table 70: New or enhanced functions TRDPSpy

8.5.3. *Known Errors*

Ticket #	Description
None	

Table 71: Known Errors TRDPSPy

8.5.4. *Compatibility to Earlier Releases*

Incompatible to earlier releases.due to #52.

9. History Release 1.3.0.0

The following changes have been implemented since the previous release. The column 'Ticket #' contains the ticket number at <https://sourceforge.net/p/tcnopen/tickets/>. Ticket numbers marked with "XLS" referring to the now closed list "trdp/BugTracking.xls".

9.1. TRDPLight

9.1.1. Corrected Errors

TICKET #	Description
#11	VOS: Complete VxWorks functionality
#34	<u>Subscribe to multicast address fails</u>
#70	<u>TRDPLight: Automatic Transmission of 'Me' Message accd. A.7.7.2 2nd and 5th Par missing</u>
#71	<u>TRDPLight: timeout==0 shall mean infinit time is not yet implemented</u>
#72	<u>TRDPLight: Windows7 vos_getInterfaces() bug</u>
#73	<u>TRDPLight: Multicast "join" fails on Windows system with two ethernet interfaces</u>
#74	<u>TRDPLight: topo counts check doesn't take into account local communication</u>
#75	<u>TRDP IF: session mutex not freed in tlc_terminate()</u>
#76	<u>TRDP PD: Wrong initialisation of frame pointer</u>
#77	<u>TRDP UTILS: wrong argument for vos_sockJoinMC()</u>
#78	<u>VOS: When the schedule policy is set to VOS_THREAD_POLICY_OTHER and the priority to '0' in Linux, creating thread is failed.</u>
#80	<u>PD/MD: Call back and counting of received multicast packets duplicated in dual homing interfaces</u>
#81	<u>PD/MD: Counts for packet loss needed</u>
#84	<u>Statistics: trdp_getStats() returns error if heap memory is used</u>
#85	<u>PD recovery in case of undetected sequenceCounter overflow</u>
#86	<u>Fix SendHello/ReceiveHello examples</u>
#88	<u>Cleanup makefiles, remove dependencies on external libraries</u>
#89	<u>TCPMD: In case of wrong length or CRC in the header the TCP connection gets unusable</u>
#91	<u>Update User Manual</u>
#92	<u>Update default UDP and TCP port numbers</u>
#94	<u>TRDP_REDUNDANT flag never evaluated</u>
#96	<u>TRDPSTATS: Distinguish between UDP and TCP listener statistics</u>
#97	<u>rdp-xmlpd-test.c subscribed telegram issue.</u>

TICKET #	Description
#98	<u>Telegram Attribute for auto/non-auto configuration needed</u>
#99	<u>userRef in debug-output (TRDP PRINT_DBG T) is always NULL</u>
#103	<u>C++ Interface</u>
#104	<u>PD telegrams with no data is never sent</u>
#105	<u>ERROR INSUFFICIENT_BUFFER in Windows</u>
#106	<u>Add a build flag to indicate if user need to be informed on every received PD packet</u>
#107	<u>tlm_addListener does not allow to set source filtering</u>
#108	<u>tau_marshall does not always work</u>
#111	<u>'unit', 'scale', 'offset' attributes missing in TRDP_DATASET_ELEMENT</u>
#115	<u>MD: Missing parameter pktFlags in tlm_reply() and tlm_replyQuery()</u>

Table 72: Corrected Errors TRDPLight

9.1.2. New or Enhanced Functions

Ticket #	Description
#90	<u>Independent versioning for VOS</u>

Table 73: New or enhanced functions TRDPLight

9.1.3. Known Errors

Ticket #	Description
#1 (XLS #30)	MD/PD: For performance reasons a un-join shall be done after un-subscribing.
#3 (XLS #131)	TRDPSTATS: Incorrect counter for received packets on dual interface
#5 (XLS #37)	MD: For sent unicast MD TRDP assumes that only one reply may be received.
#21	<u>Time dependent functions may fail in 2038 (wrap around of timeval)</u>
#87	<u>Example application for backbone-aware network is missing</u>
#101	<u>Optional callback function on PD send</u>

Table 74: Known Errors TRDPLight

9.1.4. Compatibility to Earlier Releases

Compatible to previous release.

9.2. TRDPMarshall

9.2.1. Corrected Errors

Ticket #	Description
#33	TRDP marshall and unmarshall functions shall check source size
#100	<u>Marshalling/Unmarshalling functions do not allow to add datasets later</u>
#109	<u>unmarshalling: size mismatch when swapping datasetlength</u>
#110	<u>Missing: marshalling/unmarshalling when using message data</u>
#112	<u>Marshalling sets wrong datasetLength (PD)</u>

Table 75: Corrected Errors TRDPMarshall

9.2.2. New or Enhanced Functions

Ticket #	Description
None	

Table 76: New or enhanced functions TRDPMarshall

9.2.3. Known Errors

Ticket #	Description
None	

Table 77: Known Errors TRDPMarshall

9.2.4. Compatibility to Earlier Releases

Compatible to previous release.

9.3. TRDPXML

9.3.1. Corrected Errors

Ticket #	Description
#65	<u>XML – Publish and Subscribe telegram identification</u>
#102	<u>XML parser needed</u>
#113	<u>tau xml: parsing of dataset element “type” always returns 0</u>

Table 78: Corrected Errors TRDPXML

9.3.2. New or Enhanced Functions

Ticket #	Description
None	

Table 79: New or enhanced functions TRDPXML*9.3.3. Known Errors*

Ticket #	Description
#2 (XLS #64)	TRDPXML: Support of mapped devices missing
#65	<u>XML – Publish and Subscribe telegram identification</u>

Table 80: Known Errors TRDPXML*9.3.4. Compatibility to Earlier Releases*

Compatible to previous release.

*9.4. TRDPCTRL**9.4.1. Corrected Errors*

Ticket #	Description
#13	Add ETBN control support
#79	<u>TRDP Ctrl: tau_initEcspCtrl sets data size permanently as 0</u>

Table 81: Corrected Errors TRDPCTRL*9.4.2. New or Enhanced Functions*

Ticket #	Description
None	

Table 82: New or enhanced functions TRDPCTRL*9.4.3. Known Errors*

Ticket #	Description
#13	Implemented but not yet tested with ETBN

Table 83: Known Errors TRDPCTRL*9.4.4. Compatibility to Earlier Releases*

Compatible to previous release.

9.5. TRDPDNR

9.5.1. Corrected Errors

Ticket #	Description
#93	<u>DNR interface definition does not account for multiple network interfaces</u>

Table 84: Corrected Errors TRDPDNR

9.5.2. New or Enhanced Functions

Ticket #	Description
#8	<u>TRDP DNR: Add URI-IP address translation support</u>

Table 85: New or enhanced functions TRDPDNR

9.5.3. Known Errors

Ticket #	Description
#125	<u>tau_dnr: TCN DNS support missing</u>

Table 86: Known Errors TRDPDNR

9.5.4. Compatibility to Earlier Releases

First release.

9.6. TRDPTTI

9.6.1. Corrected Errors

Ticket #	Description
#82	<u>TTI: type for etbId in TRDP TRAIN DIR T not conform to standard</u>
#83	<u>TTI: description for cstClass not acc. standard</u>
#114	<u>CRC computation for OP TRAIN DIRECTORY STATE does not accord with the standard.</u>

Table 87: Corrected Errors TRDPTTI

9.6.2. New or Enhanced Functions

Ticket #	Description
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Ticket #	Description
#7	<u>TRDPTTI: Add train topology information support</u>

Table 88: New or enhanced functions TRDPTTI

9.6.3. Known Errors

Ticket #	Description
None	

Table 89: Known Errors TRDPTTI

9.6.4. Compatibility to Earlier Releases

First release.

9.7. TRDPSpy

9.7.1. Corrected Errors

Ticket #	Description
#95	<u>TRDPSpy: Update port numbers and remove local path names</u>

Table 90: Corrected Errors TRDPSpy

9.7.2. New or Enhanced Functions

Ticket #	Description
None	

Table 91: New or enhanced functions TRDPSpy

10. History Release 1.3.1.0

The following changes have been implemented since the previous release. The column ‘*Ticket #*.’ Contains the ticket number at <https://sourceforge.net/p/tcnopen/tickets/>. Ticket numbers marked with “XLS” referring to the now closed list “trdp/BugTracking.xls”.

10.1. TRDPLight

10.1.1. Corrected Errors

TICKET #	Description
None	

Table 92: Corrected Errors TRDPLight

10.1.2. New or Enhanced Functions

Ticket #	Description
None	

Table 93: New or enhanced functions TRDPLight

10.1.3. Known Errors

Ticket #	Description
#1 (XLS #30)	MD/PD: For performance reasons a un-join shall be done after un-subscribing.
#3 (XLS #131)	TRDPSTATS: Incorrect counter for received packets on dual interface
#5 (XLS #37)	MD: For sent unicast MD TRDP assumes that only one reply may be received.
#21	<u>Time dependent functions may fail in 2038 (wrap around of timeval)</u>
#87	<u>Example application for backbone-aware network is missing</u>
#101	<u>Optional callback function on PD send</u>

Table 94: Known Errors TRDPLight

10.1.4. Compatibility to Earlier Releases

Compatible to previous release.

10.2. TRDPMarshall

10.2.1. Corrected Errors

Ticket #	Description
None	

Table 95: Corrected Errors TRDPMarshall

10.2.2. New or Enhanced Functions

Ticket #	Description
None	

Table 96: New or enhanced functions TRDPMarshall

10.2.3. Known Errors

Ticket #	Description
None	

Table 97: Known Errors TRDPMarshall

10.2.4. Compatibility to Earlier Releases

Compatible to previous release.

10.3. TRDPXML

10.3.1. Corrected Errors

Ticket #	Description
#116	<u>Memory corruption using new XML library</u>

Table 98: Corrected Errors TRDPXML

10.3.2. New or Enhanced Functions

Ticket #	Description
None	

Table 99: New or enhanced functions TRDPXML

10.3.3. Known Errors

Ticket #	Description
None	

Table 100: Known Errors TRDPXML

10.3.4. Compatibility to Earlier Releases

Compatible to previous release.

10.4. TRDPCTRL

10.4.1. Corrected Errors

Ticket #	Description
None	

Table 101: Corrected Errors TRDPCTRL

10.4.2. New or Enhanced Functions

Ticket #	Description
None	

Table 102: New or enhanced functions TRDPCTRL

10.4.3. Known Errors

Ticket #	Description
#13	Implemented but not yet tested with ETBN

Table 103: Known Errors TRDPCTRL

10.4.4. Compatibility to Earlier Releases

Compatible to previous release.

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10.5. TRDPDNR

10.5.1. Corrected Errors

Ticket #	Description
None	

Table 104: Corrected Errors TRDPDNR

10.5.2. New or Enhanced Functions

Ticket #	Description
None	

Table 105: New or enhanced functions TRDPDNR*10.5.3. Known Errors*

Ticket #	Description
#125	<u>tau_dnr</u> : TCN DNS support missing

Table 106: Known Errors TRDPDNR*10.5.4. Compatibility to Earlier Releases*

Compatible to previous release.

10.6. TRDPTTI

10.6.1. Corrected Errors

Ticket #	Description
None	

Table 107: Corrected Errors TRDPTTI*10.6.2. New or Enhanced Functions*

Ticket #	Description
None	

Table 108: New or enhanced functions TRDPTTI*10.6.3. Known Errors*

Ticket #	Description
None	

Table 109: Known Errors TRDPTTI*10.6.4. Compatibility to Earlier Releases*

Compatible to previous release.

10.7. TRDPSpy

10.7.1. Corrected Errors

Ticket #	Description
None	

Table 110: Corrected Errors TRDPSpy

10.7.2. New or Enhanced Functions

Ticket #	Description
None	

Table 111: New or enhanced functions TRDPSpy

10.7.3. Known Errors

Ticket #	Description
None	

Table 112: Known Errors TRDPSpy

10.7.4. Compatibility to Earlier Releases

Compatible to previous release.

11. History Release 1.3.2.0

The following changes have been implemented since the previous release. The column ‘*Ticket #.*’ Contains the ticket number at <https://sourceforge.net/p/tcnopen/tickets/>. Ticket numbers marked with “XLS” referring to the now closed list “trdp/BugTracking.xls”.

11.1. TRDPLight

11.1.1. Corrected Errors

TICKET #	Description
#117	PD Status packet is not sent on request
#118	<u>Defines in iec61375-2-3.h do not match IEC IS</u>
#119	<u>tlc_getInterval() repeatedly returns 0 after timeout</u>
#120	<u>ComID messed up in 61375-2-3: Which one to use?</u>
#121	<u>Timeout-ed PD receiver should trigger callback after receiving packet again</u>
#122	<u>64Bit Problem: Definition of VOS_TIME_T is not compatible</u>
#123	<u>TopoCount check does not follow standard (Table A.3)</u>
#124	<u>tau_dnr: Cache keeps etbTopoCount only</u>
#126	<u>Opened UDP socket is not released if join or bind failed in trdp_requestSocket()</u>
#127	<u>MD notify message: Invalid session identifier</u>
#128	<u>PD: Support of ComId == 0</u>
#129	<u>Found a bug which yields wrong output params and potentially seg-faults</u>
#130	<u>PD Pull: Request is always sent to the same ip address</u>
#132	<u>tlp_publish: Check of datasize wrong if using marshaller</u>
#133	<u>Accelerate PD packet reception</u>
#134	<u>Example trdp-xmlpd-test crash due to zero elemSize.</u>
#136	<u>PD topography counter with faulty behavior</u>
#137	<u>tlc_closeSession should close the tcp socket used for md communication</u>
#138	<u>Erroneous closing of receive md socket</u>
#139	<u>Swap parameter in tlm_reply</u>
#140	<u>tlp_get reports immediately TRDP TIMEOUT_ERR for a subscription with TRDP_TIMER_FOREVER</u>
#141	<u>PD: Pull request with replyComId==0 and ComId!=0 fails</u>
#142	<u>Compiler warnings / MISRA-C 2012 issues</u>

TICKET #	Description
#143	<u>What is tlm_replyErr() for?</u>
#144	<u>32bit mode enforcement not complete</u>
#145	<u>Optional callback for each received valid PD</u>
#146	<u>On Timeout, PD Callback is always called with no data/datasize == 0</u>
#147	<u>No timeout with TCP if destination is not reachable</u>
#148	<u>Wrong element used in trdp_mdCheckTimeouts() to invoke the callback</u>
#149	<u>SourceUri and DestinationUri don't with 32 characters</u>
#150	<u>Destination IP address is not copied to md_info on TCP-Layer</u>
#151	<u>tlp_request: timeout-flag is not cleared</u>
#152	<u>tlp_publish: Error if srcIpAddr is a multicast-address</u>
#153	<u>Two replies on one pull-request at multicast address</u>
#154	<u>ComIds and DSIds literals (#define TRDP ...) in trdp_proto.h too long</u>
#155	<u>Kill trdp_proto.h - move definitions to iec61375-2-3.h</u>
#156	<u>Recursion counter never decremented</u>
#158	<u>MdReplyTimeout: Standard defines 0 as infinite time and not -1</u>
#159	<u>Is there any plan to include the SDTv2 implementation?</u>
#160	<u>TRDP MD Test 4 (TCP request/reply) fails with reply timeout</u>

Table 113: Corrected Errors TRDPLight

11.1.2. New or Enhanced Functions

Ticket #	Description

Table 114: New or enhanced functions TRDPLight

11.1.3. Known Errors

Ticket #	Description
#1	<u>PD/MD: For performance reasons a unjoin shall be done after unsubscribing (XLS #30)</u>
#3	<u>TRDPSTATS: Incorrect counter for received packets on dual interface (XLS #131)</u>
#5 (XLS #37)	<u>MD: For sent unicast MD TRDP assumes that only one reply may be received.</u>
#21	<u>Time dependent functions may fail in 2038 (wrap around of timeval)</u>
#87	<u>Example application for backbone-aware network is missing</u>
#101	<u>Optional callback function on PD send</u>
#161	<u>Increase performance</u>

Ticket #	Description
#162	Independent handling of PD and MD to reduce jitter

Table 115: Known Errors TRDPLight

11.1.4. Compatibility to Earlier Releases

Incompatible to earlier releases due to #46, #47, #53.

11.2. TRDPMarshall

11.2.1. Corrected Errors

Ticket #	Description
None	

Table 116: Corrected Errors TRDPMarshall

11.2.2. New or Enhanced Functions

Ticket #	Description
None	

Table 117: New or enhanced functions TRDPMarshall

11.2.3. Known Errors

Ticket #	Description
None	

Table 118: Known Errors TRDPMarshall

11.2.4. Compatibility to Earlier Releases

Compatible to previous release.

11.3. TRDPXML

11.3.1. Corrected Errors

Ticket #	Description
None	

Table 119: Corrected Errors TRDPXML

11.3.2. New or Enhanced Functions

Ticket #	Description
None	

Table 120: New or enhanced functions TRDPXML

11.3.3. Known Errors

Ticket #	Description
#2 (XLS #64)	TRDPXML: Support of mapped devices missing

Table 121: Known Errors TRDPXML

11.3.4. Compatibility to Earlier Releases

Compatible to previous release.

11.4. TRDPCTRL

11.4.1. Corrected Errors

Ticket #	Description
#131	TRDP_ECSP_CTRL_T in the tau_ctrl_types.h should not include the <u>leadVehOfCst</u> field

Table 122: Corrected Errors TRDPCTRL

11.4.2. New or Enhanced Functions

Ticket #	Description
None	

Table 123: New or enhanced functions TRDPCTRL

11.4.3. Known Errors

Ticket #	Description
#13	Implemented but not yet tested with ETBN

Table 124: Known Errors TRDPCTRL

11.4.4. Compatibility to Earlier Releases

Compatible to previous release.

11.5. TRDPDNR

11.5.1. Corrected Errors

Ticket #	Description
None	

Table 125: Corrected Errors TRDPDNR

11.5.2. New or Enhanced Functions

Ticket #	Description
None	

Table 126: New or enhanced functions TRDPDNR

11.5.3. Known Errors

Ticket #	Description
#125	<u>tau_dnr: TCN DNS support missing</u>

Table 127: Known Errors TRDPDNR

11.5.4. Compatibility to Earlier Releases

Compatible to previous release.

11.6. TRDPTTI

11.6.1. Corrected Errors

Ticket #	Description
None	

Table 128: Corrected Errors TRDPTTI

11.6.2. New or Enhanced Functions

Ticket #	Description
None	

Table 129: New or enhanced functions TRDPTTI

11.6.3. Known Errors

Ticket #	Description
None	

Table 130: Known Errors TRDPTTI

11.6.4. Compatibility to Earlier Releases

Compatible to previous release.

11.7. TRDPSpy

11.7.1. Corrected Errors

Ticket #	Description
#157	<u>TRDP Spy needs update for newer Wireshark versions (> 1.8.3)</u>

Table 131: Corrected Errors TRDPSpy

11.7.2. New or Enhanced Functions

Ticket #	Description
None	

Table 132: New or enhanced functions TRDPSpy

11.7.3. Known Errors

Ticket #	Description
#157	<u>TRDP Spy needs update for newer Wireshark versions (> 1.8.3)</u> XML parsing still open for Wireshark 2.x

Table 133: Known Errors TRDPSpy

11.7.4. Compatibility to Earlier Releases

DLL only compatible to Wireshark 2.x. For Wireshark 1.8.3 the previous release needs to be used

12. History Release 1.3.3.0

The following changes have been implemented since the previous release. The column ‘*Ticket #.*’ Contains the ticket number at <https://sourceforge.net/p/tcnopen/tickets/>. Ticket numbers marked with “XLS” referring to the now closed list “trdp/BugTracking.xls”.

12.1. TRDPLight

12.1.1. Corrected Errors

TICKET #	Description
#164	tlp_request: EXOR used to clear a bit

Table 134: Corrected Errors TRDPLight

12.1.2. New or Enhanced Functions

Ticket #	Description

Table 135: New or enhanced functions TRDPLight

12.1.3. Known Errors

Ticket #	Description
#1	<u>PD/MD: For performance reasons a unjoin shall be done after unsubscribing (XLS #30)</u>
#3	<u>TRDPSTATS: Incorrect counter for received packets on dual interface (XLS #131)</u>
#5 (XLS #37)	<u>MD: For sent unicast MD TRDP assumes that only one reply may be received.</u>
#21	<u>Time dependent functions may fail in 2038 (wrap around of timeval)</u>
#87	<u>Example application for backbone-aware network is missing</u>
#101	<u>Optional callback function on PD send</u>
#161	<u>Increase performance</u>
#162	<u>Independent handling of PD and MD to reduce jitter</u>

Table 136: Known Errors TRDPLight

12.1.4. Compatibility to Earlier Releases

Compatible to previous release.

12.2. TRDPMarshall

12.2.1. Corrected Errors

Ticket #	Description
None	

Table 137: Corrected Errors TRDPMarshall

12.2.2. New or Enhanced Functions

Ticket #	Description
None	

Table 138: New or enhanced functions TRDPMarshall

12.2.3. Known Errors

Ticket #	Description
None	

Table 139: Known Errors TRDPMarshall

12.2.4. Compatibility to Earlier Releases

Compatible to previous release.

12.3. TRDPXML

12.3.1. Corrected Errors

Ticket #	Description
None	

Table 140: Corrected Errors TRDPXML

12.3.2. New or Enhanced Functions

Ticket #	Description
None	

Table 141: New or enhanced functions TRDPXML

12.3.3. Known Errors

Ticket #	Description
#2 (XLS #64)	TRDPXML: Support of mapped devices missing

Table 142: Known Errors TRDPXML

12.3.4. Compatibility to Earlier Releases

Compatible to previous release.

12.4. TRDPCTRL

12.4.1. Corrected Errors

Ticket #	Description
None	

Table 143: Corrected Errors TRDPCTRL

12.4.2. New or Enhanced Functions

Ticket #	Description
None	

Table 144: New or enhanced functions TRDPCTRL

12.4.3. Known Errors

Ticket #	Description
#13	Implemented but not yet tested with ETBN

Table 145: Known Errors TRDPCTRL

12.4.4. Compatibility to Earlier Releases

Compatible to previous release.

12.5. TRDPDNR

12.5.1. Corrected Errors

Ticket #	Description
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Ticket #	Description
None	

Table 146: Corrected Errors TRDPDNR

12.5.2. New or Enhanced Functions

Ticket #	Description
None	

Table 147: New or enhanced functions TRDPDNR

12.5.3. Known Errors

Ticket #	Description
#125	<u>tau_dnr: TCN DNS support missing</u>

Table 148: Known Errors TRDPDNR

12.5.4. Compatibility to Earlier Releases

Compatible to previous release.

12.6. TRDPTTI

12.6.1. Corrected Errors

Ticket #	Description
None	

Table 149: Corrected Errors TRDPTTI

12.6.2. New or Enhanced Functions

Ticket #	Description
None	

Table 150: New or enhanced functions TRDPTTI

12.6.3. Known Errors

Ticket #	Description
None	

Table 151: Known Errors TRDPTTI

12.6.4. Compatibility to Earlier Releases

Compatible to previous release.

12.7. TRDPSpy

12.7.1. Corrected Errors

Ticket #	Description
None	

Table 152: Corrected Errors TRDPSpy

12.7.2. New or Enhanced Functions

Ticket #	Description
None	

Table 153: New or enhanced functions TRDPSpy

12.7.3. Known Errors

Ticket #	Description
#157	TRDP Spy needs update for newer Wireshark versions (> 1.8.3) XML parsing still open for Wireshark 2.x

Table 154: Known Errors TRDPSpy

12.7.4. Compatibility to Earlier Releases

DLL only compatible to Wireshark 2.x. For Wireshark 1.8.3 use plugin of release 1.3.1.0

13. History Release 1.4.0.0

13.1. TRDPLight

13.1.1. Corrected Errors

TICKET #	Description
#1	PD/MD: For performance reasons a unjoin shall be done after unsubscribing (XLS #30)
#101	Optional callback function on PD send
#166	Bug in trdp_pdReceive() "if data have changed()
#165	VxWorks vos_dottedIP() bug
#167	Window vos_dottedIP() bug
#168	Unnecessary multicast join on tlp_publish()
#170	VxWorks: Multicast TTL setsockopt has wrong size
#171	Wrong socket binding for multicast request messages
#172	Infinite loop of message sending after PD Pull Request when registered in multicast group
#174	Socket is closed, even if in use
#175	PD: Handling of sequence counter
#176	TRDP_LABEL T breaks field alignment
#177	Should a UDP receive socket for MD be closed in case of TRDP_BLOCK_ERR
#178	trdp_releaseSocket does not cleanup tcpParams
#179	maxNumRetries in tlm_request() are not limited
#180	Filtering rules for DestinationURI does not follow the standard
#181	Missing padding bytes in user dataset of PD-PDU
#182	Missing padding bytes in user dataset of MD-PDU
#183	tau_getOwnIds declared but not defined
#184	Building with VS 2015: WIN64 and Windows threads (was: time spec redefined)
#185	MD reply: Infinite timeout wrong handled
#186	Potential SEGFAULT in case of PD timeout
#188	Typo in the TRDP_VAR_SIZE definition
#189	timeout-value not parsed in tau_xml
#190	Source filtering (IP-range) for PD subscribe
#192	Compiler warnings on Windows (minGW)
#194	Platform independent format specifiers in vos_printLog
#195	Invalid thread handle (SEGFAULT)
#196	setRedundant with RedID = 0 stops all publishers
#197	Incorrect Marshalling/Unmarshalling for nested datasets

TICKET #	Description
#199	Setting redId on tlp_request() has no effect
#200	Notify 'sender element' fields, set twice
#201	tlp_setRedundant return value if redId is 0
#202	vos_mutexTrylock return value
#203	Incorrect unmarshalling of datasets containing TIMEDATE64 array.
#204	tlp_publish should take default callback function if flags == DEFAULT
#205	tlm_addListener() does not acknowledge TRDP_FLAGS_DEFAULT flag
#206	trdp-md-test fails for several test cases
#207	tlp_put() and variable dataSize
#208	vos_getInterfaces returning incorrect "name" and "linkState" on windows.
#209	vos_getInterfaces returning incorrect "name" and "linkState" on windows.
#210	IF condition for DNS Options incorrect in tau_uri2Addr()

Table 155: Corrected Errors TRDPLight

13.1.2. New or Enhanced Functions

Ticket #	Description

Table 156: New or enhanced functions TRDPLight

13.1.3. Known Errors

Ticket #	Description
#3	TRDPSTATS: Incorrect counter for received packets on dual interface (XLS #131)
#5 (XLS #37)	MD: For sent unicast MD TRDP assumes that only one reply may be received.
#21	Time dependent functions may fail in 2038 (wrap around of timeval)
#87	Example application for backbone-aware network is missing
#161	Increase performance
#162	Independent handling of PD and MD to reduce jitter
#169	Encapsulate declaration of packed structures within a macro
#173	Invalid refCon in callbacks
#185	MD reply: Infinite timeout wrong handled
#191	Add provisions for TSN / Hard Real Time

Table 157: Known Errors TRDPLight

13.1.4. Compatibility to Earlier Releases

Incompatible to earlier releases due to #46, #47, #53.

13.2. TRDPMarshall

13.2.1. Corrected Errors

Ticket #	Description
None	

Table 158: Corrected Errors TRDPMarshall

13.2.2. New or Enhanced Functions

Ticket #	Description
None	

Table 159: New or enhanced functions TRDPMarshall

13.2.3. Known Errors

Ticket #	Description
None	

Table 160: Known Errors TRDPMarshall

13.2.4. Compatibility to Earlier Releases

Compatible to previous release.

13.3. TRDPXML

13.3.1. Corrected Errors

Ticket #	Description
#211	XML handling: Dataset Name should be stored in TRDP_DATASET_ELEMENT_T

Table 161: Corrected Errors TRDPXML

13.3.2. New or Enhanced Functions

Ticket #	Description
#2 (XLS #64)	TRDPXML: Support of mapped devices missing
#163	Extend XML test to include SDT for MD

Ticket #	Description

Table 162: New or enhanced functions TRDPXML

13.3.3. Known Errors

Ticket #	Description
#2 (XLS #64)	TRDPXML: Support of mapped devices missing

Table 163: Known Errors TRDPXML

13.3.4. Compatibility to Earlier Releases

Compatible to previous release.

13.4. TRDPCTRL

13.4.1. Corrected Errors

Ticket #	Description
#131	TRDP ECSP CTRL T in the tau ctrl types.h should not include the leadVehOfCst field

Table 164: Corrected Errors TRDPCTRL

13.4.2. New or Enhanced Functions

Ticket #	Description
None	

Table 165: New or enhanced functions TRDPCTRL

13.4.3. Known Errors

Ticket #	Description
#13	Implemented but not yet tested with ETBN

Table 166: Known Errors TRDPCTRL

13.4.4. Compatibility to Earlier Releases

Compatible to previous release.

13.5. TRDPDNR

13.5.1. Corrected Errors

Ticket #	Description
None	

Table 167: Corrected Errors TRDPDNR

13.5.2. New or Enhanced Functions

Ticket #	Description
None	

Table 168: New or enhanced functions TRDPDNR

13.5.3. Known Errors

Ticket #	Description
#125	<u>tau_dnr: TCN DNS support missing</u>

Table 169: Known Errors TRDPDNR

13.5.4. Compatibility to Earlier Releases

Compatible to previous release.

13.6. TRDPTTI

13.6.1. Corrected Errors

Ticket #	Description
None	

Table 170: Corrected Errors TRDPTTI

13.6.2. New or Enhanced Functions

Ticket #	Description
None	

Table 171: New or enhanced functions TRDPTTI

13.6.3. Known Errors

Ticket #	Description
None	

Table 172: Known Errors TRDPTTI

13.6.4. Compatibility to Earlier Releases

Compatible to previous release.

13.7. TRDPSpy

13.7.1. Corrected Errors

Ticket #	Description
#157	Linux: TRDP Spy needs update for newer Wireshark versions (> 1.8.3)
#187	Linux: TRDP Spy dissector always expects 16 Bits variable size for arrays

Table 173: Corrected Errors TRDPSpy

13.7.2. New or Enhanced Functions

Ticket #	Description
None	

Table 174: New or enhanced functions TRDPSpy

13.7.3. Known Errors

Ticket #	Description
#157	Windows: TRDP Spy needs update for newer Wireshark versions (> 1.8.3)
#187	Windows: TRDP Spy dissector always expects 16 Bits variable size for arrays

Table 175: Known Errors TRDPSpy

13.7.4. Compatibility to Earlier Releases

Plugin only compatible to Wireshark 2.x. For Wireshark 1.8.3 the previous release needs to be used

14. History Release 1.4.1.0

The following changes have been implemented since the previous release. The column ‘Ticket #.’ Contains the ticket number at <https://sourceforge.net/p/tcnopen/tickets/>. Ticket numbers marked with “XLS” referring to the now closed list “trdp/BugTracking.xls”.

14.1. TRDPLight

14.1.1. Corrected Errors

TICKET #	Description
#222	CRC Test in LibraryTests.c fails
#223	Windows: Excessive error reporting when polling (rcvmsg)
#224	TCP/UDP MD Listening will fail to respond to UDP MD requests

Table 176: Corrected Errors TRDPLight

14.1.2. New or Enhanced Functions

Ticket #	Description
None	

Table 177: New or enhanced functions TRDPLight

14.1.3. Known Errors

Ticket #	Description
#3	TRDPSTATS: Incorrect counter for received packets on dual interface (XLS #131)
#5 (XLS #37)	MD: For sent unicast MD TRDP assumes that only one reply may be received.
#21	Time dependent functions may fail in 2038 (wrap around of timeval)
#87	Example application for backbone-aware network is missing
#161	Increase performance
#162	Independent handling of PD and MD to reduce jitter
#169	Encapsulate declaration of packed structures within a macro
#173	Invalid refCon in callbacks
#185	MD reply: Infinite timeout wrong handled
#191	Add provisions for TSN / Hard Real Time
#192	WON'T FIX: Compiler warnings on Windows (minGW)
#193	WON'T FIX: MinGW Unused params warnings
#198	WON'T FIX: PD Timeout cannot be disabled.

Table 178: Known Errors TRDPLight*14.1.4. Compatibility to Earlier Releases*

Compatible to previous release.

*14.2. TRDPMarshall**14.2.1. Corrected Errors*

Ticket #	Description
None	

Table 179: Corrected Errors TRDPMarshall*14.2.2. New or Enhanced Functions*

Ticket #	Description
None	

Table 180: New or enhanced functions TRDPMarshall*14.2.3. Known Errors*

Ticket #	Description
None	

Table 181: Known Errors TRDPMarshall*14.2.4. Compatibility to Earlier Releases*

Compatible to previous release.

*14.3. TRDPXML**14.3.1. Corrected Errors*

Ticket #	Description
None	

Table 182: Corrected Errors TRDPXML*14.3.2. New or Enhanced Functions*

Ticket #	Description
None	

Table 183: New or enhanced functions TRDPXML

14.3.3. Known Errors

Ticket #	Description
#2 (XLS #64)	TRDPXML: Support of mapped devices missing
#163	Extend XML test to include SDT for MD

Table 184: Known Errors TRDPXML

14.3.4. Compatibility to Earlier Releases

Compatible to previous release.

14.4. TRDPCTRL

14.4.1. Corrected Errors

Ticket #	Description
None	

Table 185: Corrected Errors TRDPCTRL

14.4.2. New or Enhanced Functions

Ticket #	Description
None	

Table 186: New or enhanced functions TRDPCTRL

14.4.3. Known Errors

Ticket #	Description
#13	Implemented but not yet tested with ETBN

Table 187: Known Errors TRDPCTRL

14.4.4. Compatibility to Earlier Releases

Compatible to previous release.

14.5. TRDPDNR

14.5.1. Corrected Errors

Ticket #	Description
#125	<u>tau_dnr: TCN DNS support missing</u>

Table 188: Corrected Errors TRDPDNR

14.5.2. New or Enhanced Functions

Ticket #	Description
None	

Table 189: New or enhanced functions TRDPDNR

14.5.3. Known Errors

Ticket #	Description
None	

Table 190: Known Errors TRDPDNR

14.5.4. Compatibility to Earlier Releases

Compatible to previous release.

14.6. TRDPTTI

14.6.1. Corrected Errors

Ticket #	Description
None	

Table 191: Corrected Errors TRDPTTI

14.6.2. New or Enhanced Functions

Ticket #	Description
None	

Table 192: New or enhanced functions TRDPTTI

14.6.3. Known Errors

Ticket #	Description
None	

Table 193: Known Errors TRDPTTI

14.6.4. Compatibility to Earlier Releases

Compatible to previous release.

14.7. TRDPSpy

14.7.1. Corrected Errors

Ticket #	Description
#157	Windows: TRDP Spy needs update for newer Wireshark versions (> 1.8.3)
#187	Windows: TRDP Spy dissector always expects 16 Bits variable size for arrays

Table 194: Corrected Errors TRDPSpy

14.7.2. New or Enhanced Functions

Ticket #	Description
None	

Table 195: New or enhanced functions TRDPSpy

14.7.3. Known Errors

Ticket #	Description
None	

Table 196: Known Errors TRDPSpy

14.7.4. Compatibility to Earlier Releases

Plugin only compatible to Wireshark 2.x. For Wireshark 1.8.3 use plugin of release 1.3.1.0.

15. Problem reporting

Please report detected problems with this release to
<https://sourceforge.net/p/tcnopen/tickets>