

IO-Link Profile

Urgent Corrigendum

including "How to use the IO-Link Change Request database"

related to

**IO-Link Profile –
BLOB Transfer & Firmware Update V1.0**

**Version 1.0
April 2018**

Order No: 10.182

File name: IOL-Profile-Corrigendum-B&FW-2018_10182_V10_Apr18.doc

This document has been prepared by the technology working group "BLOB Transfer & Firmware Update" of the IO-Link community. It is, together with the "IO-Link Profile – BLOB Transfer & Firmware Update" specification Version 1.0, and the corresponding project within the Change Request database the basis for implementation and test of Masters and Devices and for the corresponding manufacturer declarations.

Important notes:

NOTE 1 The IO-Link Community Rules shall be observed prior to the development and marketing of IO-Link products. The document can be downloaded from the www.io-link.com portal.

NOTE 2 Any IO-Link device shall provide an associated IODD file. Easy access to the file and potential updates shall be possible. It is the responsibility of the IO-Link device manufacturer to test the IODD file with the help of the IODD-Checker tool available per download from www.io-link.com.

NOTE 3 Any IO-Link devices shall provide an associated manufacturer declaration on the conformity of the device with this specification, its related IODD, and test documents, available per download from www.io-link.com.


Disclaimer:

The attention of adopters is directed to the possibility that compliance with or adoption of IO-Link Community specifications may require use of an invention covered by patent rights. The IO-Link Community shall not be responsible for identifying patents for which a license may be required by any IO-Link Community specification, or for conducting legal inquiries into the legal validity or scope of those patents that are brought to its attention. IO-Link Community specifications are prospective and advisory only. Prospective users are responsible for protecting themselves against liability for infringement of patents.

The information contained in this document is subject to change without notice. The material in this document details an IO-Link Community specification in accordance with the license and notices set forth on this page. This document does not represent a commitment to implement any portion of this specification in any company's products.

WHILE THE INFORMATION IN THIS PUBLICATION IS BELIEVED TO BE ACCURATE, THE IO-LINK COMMUNITY MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS MATERIAL INCLUDING, BUT NOT LIMITED TO ANY WARRANTY OF TITLE OR OWNERSHIP, IMPLIED WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR PARTICULAR PURPOSE OR USE.

In no event shall the IO-Link Community be liable for errors contained herein or for indirect, incidental, special, consequential, reliance or cover damages, including loss of profits, revenue, data or use, incurred by any user or any third party. Compliance with this specification does not absolve manufacturers of IO-Link equipment, from the requirements of safety and regulatory agencies (TÜV, BIA, UL, CSA, etc.).

 **IO-Link** ® is registered trade mark. The use is restricted for members of the IO-Link Community. More detailed terms for the use can be found in the IO-Link Community Rules on www.io-link.com.

Conventions:

In this specification the following key words (in **bold** text) will be used:

may: indicates flexibility of choice with no implied preference.

should: indicates flexibility of choice with a strongly preferred implementation.

shall: indicates a mandatory requirement. Designers **shall** implement such mandatory requirements to ensure interoperability and to claim conformity with this specification.

Publisher:

IO-Link Community

Haid-und-Neu-Str. 7

76131 Karlsruhe

Germany

Phone: +49 721 / 96 58 590

Fax: +49 721 / 96 58 589

E-mail: info@io-link.com

Web site: www.io-link.com

© No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

CONTENTS

- 0 Introduction 4
- 1 Motivation and scope..... 5
- 2 Normative references 5
- 3 Symbols and abbreviated terms..... 5
- 4 Reports on "BLOB Transfer & Firmware Update" V1.0 6
 - 4.1 Overview 6
 - 4.2 Disruption of communication 7
 - 4.3 Missing error messages before Unlock and Activation (Fig. 30)..... 8
 - 4.4 Missing error message at incorrect FW-Password 9
 - 4.5 Missing error message at incorrect SysCmd (Fig. 30) 10
 - 4.6 Padding octets within BLOB_Last 11
 - 4.7 Octet array as BLOB_CH type 12
 - 4.8 Double defined ISDU error at BLOB_Start..... 13
 - 4.9 Double defined ISDU error at BLOB_Finish..... 14
 - 4.10 Incorrect ErrorCodes with SysCmd (Table 16)..... 15
- Annex A (informative) How to use the IO-Link change-request (CR) database? 16
 - A.1 Access CR database..... 16
 - A.2 Access CR project associated with the specification 16
 - A.3 Projects view 16
 - A.4 CR entry 17
 - A.5 View of all project CRs..... 18
 - A.6 View of the project information..... 19
- Bibliography..... 20

- Figure 1 – Ensemble of IO-Link "BLOB & FW-Update" specifications 4
- Figure 2 – Previous and new structure of "BLOB_Last" 11
- Figure A.1 – Access to the CR database..... 16
- Figure A.2 – Access CR project 16
- Figure A.3 – Projects view 17
- Figure A.4 – Possible actions on the project 17
- Figure A.5 – Entry of a new CR..... 18
- Figure A.6 – View of all project CRs..... 19
- Figure A.7 – Project information..... 19

- Table 1 – IO-Link "BLOB Transfer & Firmware Update" reports 6
- Table 2 – Disrupt communication 7
- Table 3 – Missing error messages before Unlock and Activation 8
- Table 4 – Missing error message at incorrect FW-Password 9
- Table 5 – Missing error message at incorrect SysCmd..... 10
- Table 6 – Padding octets within BLOB_Last..... 11
- Table 7 – Octet array as BLOB_CH type 12
- Table 8 – Double defined ISDU error at BLOB_Start..... 13
- Table 9 – Double defined ISDU error at BLOB_Finish 14
- Table 10 – Incorrect ErrorCodes with SysCmd..... 15

1 0 Introduction

2 The Single-drop Digital Communication Interface (SDCI) and system technology (IO-Link™¹)
3 for low-cost sensors and actuators is standardized within IEC 61131-9 [3] as well as in [2].

4 Tools allow the association of Devices with their corresponding electronic IO Device Descrip-
5 tions (IODD) and their subsequent configuration to match the application requirements [4].

6 The IO-Link profile "BLOB Transfer & Firmware Update" specification in [1] complements the
7 IO-Link specification in [2] supporting transfer of binary large objects and firmware update of
8 Devices with the help of corresponding PC tools.

9 A test specification [5] supplements the technology specifications and guarantees quality as-
10 surance together with a manufacturer declaration.



11

12

Figure 1 – Ensemble of IO-Link "BLOB & FW-Update" specifications

13 The IO-Link Community established and maintains a so-called Change-Request database for
14 those users having problems to understand while reading the specifications, or who found real
15 bugs, or who would like to get an advice at particular implementation situations. The IO-Link
16 working groups are obliged to provide answers within a reasonable timeframe. This corrigendum
17 is a collection of approved answers to important and urgent change requests (CR).

18 A manual on "How to use the IO-Link change request database" can be found in Annex A.

¹ IO-Link™ is a trade name of the "IO-Link Community". This information is given for the convenience of users of this specification. Compliance to this specification does not require use of the registered logos for IO-Link™. Use of the registered logos for IO-Link™ requires permission of the "IO-Link Community".

19 **IO-Link BLOB & FW-Update Corrigendum 2018 —**
20 **Related to IO-Link Profile "BLOB Transfer & Firmware Update"**
21

22 **1 Motivation and scope**

23 Over time, the number of implementations in the field is growing and users of the IO-Link pro-
24 file

- 25 • BLOB Transfer & Firmware Update, V1.0 [1]

26 may realize some problems with the published version of this profile specification. Usually, it
27 is possible for them to enter these problems into a so-called Change-Request (CR) database
28 maintained by the IO-Link community. Information on how to access the database is available
29 on the second page of each and every specification. It is the task of each associated working
30 group to respond to the individual user problem report or change request (see Figure 1).

31 This document lists *important* and *urgent* CRs for the profile. All of the listed changes are
32 mandatory to observe prior to implementation and testing, as well as for the test equipment by
33 the time of the release of this document. *All products on the market supporting BLOB transfer*
34 *and firmware update shall show the specified new feature.*

35 Annex A provides a manual for those users, who are not familiar with the usage of the IO-Link
36 CR database.

37 **2 Normative references**

38 The referenced documents in [1] apply.

39 **3 Symbols and abbreviated terms**

CR-xx	Change Request (Identification number of the particular database)
IP	IO Device Description Specification V1.1
PC	Personal Computer
PSP	IO-Link Profile Specification – BLOB Transfer & Firmware Update V1.0
TPBF	IO-Link Profile Test Specification – BLOB Transfer & Firmware Update Vx.y

41 **4 Reports on "BLOB Transfer & Firmware Update" V1.0**

42 **4.1 Overview**

43 Table 1 shows the urgent "BLOB Transfer & Firmware Update" specification reports sorted by
 44 CR-ID. Problem descriptions are hyper-linked with the individual reports (click on text).

45 **Table 1 – IO-Link "BLOB Transfer & Firmware Update" reports**

PSP CR-ID	Abstract/Problem	Affected clauses	Affected TPBF, IP
13	Disruption of communication	6.6.1	TPBF
17	Missing error messages before Unlock and Activation (Fig. 30)	7.7.2	TPBF
18	Missing error message at incorrect FW-Password	7.6.7.1	TPBF
19	Missing error message at incorrect SysCmd (Fig. 30)	7.7.2	TPBF
21	Padding octets within BLOB_Last	6.5.3.5	TPBF
23	Octet array as BLOB_CH type	6.5.1	TPBF
28	Double defined ISDU error at BLOB_Start	6.5.3.8	TPBF
34	Double defined ISDU error at BLOB_Finish	6.5.3.9	TPBF
36	Incorrect ErrorCodes with SysCmd (Table 16)	7.7.2	TPBF

46

47

48 **4.2 Disruption of communication**

49 This problem report refers to change request ID 13 in the project database (see Annex A).

50 Table 2 shows problem report and solution.

51 **Table 2 – Disrupt communication**

Problem	Device shall not disrupt communication. This behavior is not clearly specified.
Solution	Device shall not disrupt the communication during BLOB transfer by setting robust parameters such as sufficient Min_Cycle_Time
Clauses	6.6 Protocol of BLOB transmission
Subclauses	6.6.1 Device BLOB state machine
Impact on	–
Remark	See PSP-CR-ID 13

52

53

54 **4.3 Missing error messages before Unlock and Activation (Fig. 30)**

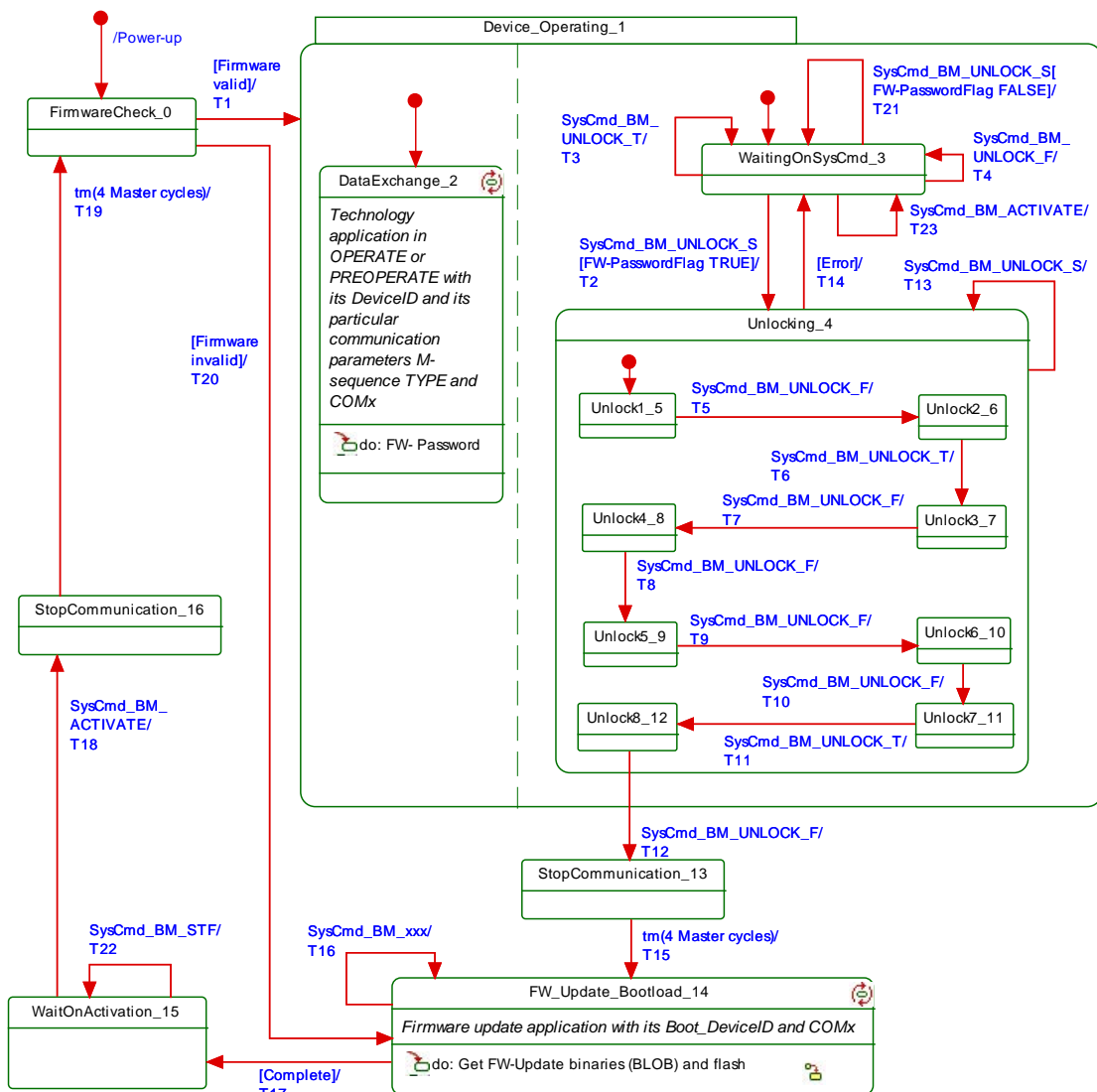
55 This problem report refers to change request ID 17 in the project database (see Annex A).

56 Table 3 shows problem report and solution.

57 **Table 3 – Missing error messages before Unlock and Activation**

Problems	<ol style="list-style-type: none"> 1. There is no error message specified in case the Unlock sequence is started without setting the FW-Update Flag. 2. There is no error message specified in case the Device is waiting on activation but host sends SysCmd_BM_UNLOCK_S/T/F
Solution	<ol style="list-style-type: none"> 1. Device shall return ErrorCode 0x8036 – "Function temporarily not available", if host sends SysCmd_BM_UNLOCK_S and FW-Update Flag is FALSE (see T21 in new Fig. 30). 2. Device shall return ErrorCode 0x8036 – "Function temporarily not available", if host sends SysCmd_BM_UNLOCK_S/T/F in state WaitOnAcitvation_15 (see T22 in new Fig. 30).
Clauses	7.7 FW-Update protocol
Subclauses	7.7.2 Device FW-Update state machine
Impact on	Device implementation (error handling)
Remark	See PSP-CR-ID 17

58



59

60

Figure 30 – Device FW-Update state machine

61 4.4 Missing error message at incorrect FW-Password

62 This problem report refers to change request ID 18 in the project database (see Annex A).

63 Table 4 shows problem report and solution.

64 **Table 4 – Missing error message at incorrect FW-Password**

Problem	No error message is defined when host sends incorrect "FW-Password" parameter to Device
Solution	Device shall return ErrorCode 0x8030 – "Parameter value out of range" in case of an incorrect password.
Clauses	7.6 Definitions and constraints
Subclauses	7.6.7.1 FW-Password
Impact on	Technology firmware implementation (error handling)
Remark	See PSP-CR-ID 18

65

66

67 **4.5 Missing error message at incorrect SysCmd (Fig. 30)**

68 This problem report refers to change request ID 19 in the project database (see Annex A).

69 Table 5 shows problem report and solution.

70

Table 5 – Missing error message at incorrect SysCmd

Problem	No error message is defined when host sends SysCmd_BM_ACTIVATE before starting the unlock sequence
Solution	Device shall return ErrorCode 0x8036 – "Function temporarily not available" when host sends SysCmd_BM_ACTIVATE in state WaitOnSysCmd_3 (see T23 in new Fig. 30)
Clauses	7.7 FW-Update protocol
Subclauses	7.7.2 Device FW-Update state machine
Impact on	Device implementation (error handling)
Remark	See 4.3 and PSP-CR-ID 19

71

72

73 **4.6 Padding octets within BLOB_Last**

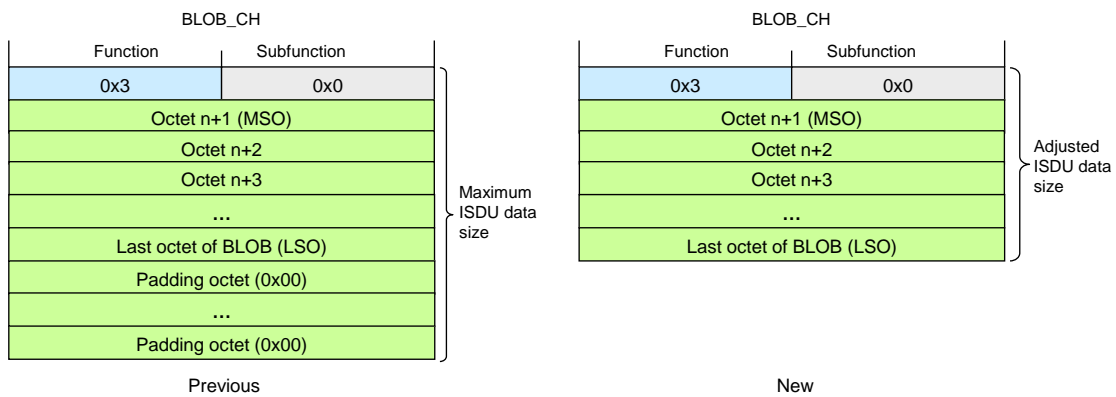
74 This problem report refers to change request ID 21 in the project database (see Annex A).

75 Table 6 shows the problem report and the solution.

76 **Table 6 – Padding octets within BLOB_Last**

Problem	Specification requires padding octets (0x00) to "fill up the space to maximum ISDU data size", if the size of the entire BLOB is not exact a multiple of the maximum ISDU size. As a consequence, the receiver cannot distinguish between the padding octets (0x00) and a certain number of intended 0x00 octets. The exact end of the payload is required, for example to calculate the CRC signature.
Solution	The host shall use the maximum possible ISDU size. Padding octets shall not be used. The last ISDU shall have the length of the remaining octets of the BLOB including the BLOB_CH header.
Clauses	6.5 BLOB parameters and transfer
Subclauses	6.5.3.5 BLOB_Last
Impact on	BLOB transfer tools and Device implementations
Remark	See PSP-CR-ID 21

77



78

79 **Figure 2 – Previous and new structure of "BLOB_Last"**

80

81

82

83

84 **4.7 Octet array as BLOB_CH type**

85 This problem report refers to change request ID 23 in the project database (see Annex A).

86 Table 7 shows problem report and solution.

87 **Table 7 – Octet array as BLOB_CH type**

Problem	In case technology firmware does not use BLOB transfer (only the boot mode) the FW-Update Tool does not know how many octets to be written to BLOB_CH Index. The chosen type OctetStringT is not flexible within its length. Thus, shorter requests will be rejected by the Device (for example reading the BLOB_Info via BLOB_CH to retrieve maximum ISDU length, which probably should be equal to the BLOB_CH ISDU length).
Solution	Type of the BLOB_CH ISDU shall not be a standard IO-Link OctetStringT, which is fixed regarding its length. The BLOB_CH type shall be an octet array referred to as OctetString with a dynamic range depending on the transmitted content.
Clauses	6.5 BLOB parameters and transfer
Subclauses	6.5.1 Profile related Index space
Impact on	–
Remark	See PSP-CR-ID 23

88

89

90

91 **4.8 Double defined ISDU error at BLOB_Start**

92 This problem report refers to change request ID 28 in the project database (see Annex A).

93 Table 8 shows problem report and solution.

94 **Table 8 – Double defined ISDU error at BLOB_Start**

Problem	ISDU ErrorCode is double defined in case BLOB_Start is send when BLOB transfer is already active: 0x8036 and 0x8022.
Solution	ISDU ErrorCode 0x8022 – "Service not available" shall be used in case the transfer is active.
Clauses	6.5 BLOB parameters and transfer
Subclauses	6.5.3.8 BLOB_Start
Impact on	–
Remark	See PSP-CR-ID 28

95

96

97

98 **4.9 Double defined ISDU error at BLOB_Finish**

99 This problem report refers to change request ID 34 in the project database (see Annex A).

100 Table 9 shows problem report and solution.

101

Table 9 – Double defined ISDU error at BLOB_Finish

Problem	ISDU ErrorCode is double defined in case BLOB_Finish is used incorrectly: 0x8036 and 0x8030.
Solution	ISDU ErrorCode 0x8030 – "Parameter value out of range" shall be used in case the Device receives BLOB_Finish and is not in state "WaitOn_BLOB_complete_6" (see Fig. 18 in [1]).
Clauses	6.5 BLOB parameters and transfer
Subclauses	6.5.3.9 BLOB_Finish
Impact on	Device implementation
Remark	See PSP-CR-ID 34

102

103

104 **4.10 Incorrect ErrorCodes with SysCmd (Table 16)**

105 This problem report refers to change request ID 36 in the project database (see Annex A).

106 Table 10 shows problem report and solution.

107 **Table 10 – Incorrect ErrorCodes with SysCmd**

Problem	Transitions T3, T4, and T16 in Table 16 define ErrorCode 0x8020 – "Service Temporarily not available". The IO-Link Interface and Systems specification in [2] defines another ErrorCode in conjunction with SysCmd.
Solution	Device shall return ErrorCode 0x8036 – "Function temporarily not available" when host sends <ul style="list-style-type: none"> • SysCmd_BM_UNLOCK_T or SysCmd_BM_UNLOCK_F in state "WaitOnSysCmd_3"; • SyCmd_BM_xxx in state "FW_Update_Bootload_14"
Clauses	7.7 FW-Update protocol
Subclauses	7.7.2 Device FW-Update state machine
Impact on	Device implementation (error handling)
Remark	See 4.3 and PSP-CR-ID 36

108

Annex A (informative)

How to use the IO-Link change-request (CR) database?

A.1 Access CR database

Figure A.1 demonstrates the access to the CR database of a particular specification.

IO-Link Profile BLOBs & FW-Update

Version 1.0

File name: **IOL-Profile_Firmware-Update_V10_10082_Jun16.doc**

This profile specification has been developed by the IO-Link FW-Update profile group.

Any comments, proposals, requests on this document are appreciated through the IO-Link CR database www.io-link-projects.com. Please provide name and email address.

Login: *IOL-FW-Update*

Password: *Report*

Important notes:

NOTE 1 The IO-Link Consortium Rules shall be observed prior to the development and marketing of IO-Link products.

The document can be downloaded from the [main file list](#) section.

Figure A.1 – Access to the CR database

On second page (behind the title sheet) you will find the link (URL) to the database to be entered in a web browser.

A.2 Access CR project associated with the specification

The browser will display the entry to the database with its Login (Name) and Password, which can be copied from the second page of the PDF document (see Figure A.2). In this case you will be first an anonymous user for the system.

Members of working groups, who are already registered within the IO-Link Community and assigned to the related project, should use their personal account provided by the business office.



Please login to the IO-LINK Document Management System

Login Name	<input type="text" value="IOL-FW-Update"/>
Password	<input type="password" value="....."/>
Save Login	<input type="checkbox"/>
<input type="button" value="Login"/>	

Figure A.2 – Access CR project

A.3 Projects view

After login, the system will display either one particular project or several of them as shown in Figure A.3. The specification related project can be found in third blue row.



Logged in as: IOL-FW-Update
(IOL-FW-Update, IOL-FW-Update - Anonymous User)

02.04.2018 - 11:25

WG: All WGs

[Home](#) | [Logout](#)

C3/PG13 - IO-Link Profile
You are an anonymous user.

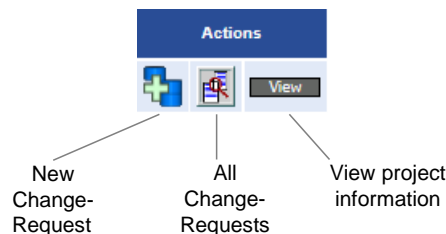
Project	TRM	Priority	Certification Required	Last Author	Last Update	State	State Deadline	Actions
00_CommonProfile				Kai Hackenstraß	31.07.2017	PI Review	Not Set	View
13_Update Smart Sensor Profile				Kai Hackenstraß	16.03.2017	PI Review	Not Set	View
23_Firmware Update Profile				Dr.-Ing. Wolfgang Stripf	28.06.2016	PI Review	Not Set	View

131

Figure A.3 – Projects view

132

133 In menu "Actions" (red circle) you will find three icons allowing for a new entry of a CR (see
134 Annex A.4), for a view on all existing CRs within this project (see Annex A.5), and a view on
135 the project information (see Annex A.6) as shown in Figure A.4.



136

Figure A.4 – Possible actions on the project

137

138 Members of the working group can get access to intermediate working draft documents or
139 meeting minutes via the view on the project information.

A.4 CR entry

140 Figure A.5 demonstrates the entry fields of a new CR.

142 First of all it is necessary to enter at least one of your identifications, preferably the E-Mail
143 address. This allows the working group to send you an E-Mail in case of an inquiry.

144 In the *Priority* field you are able to overwrite "n/a" and chose one of three other levels: *low*,
145 *medium*, or *high*.

146 In the *Cause* field you are able to overwrite "New Feature" and chose one of five other levels:
147 *Change feature*, *Layout change*, *Bug*, *Optimization*, or *Management*.

148 In the *Type of comment* field you are able to overwrite "General" and chose one of two other
149 levels: *Technical* or *Editorial*.

150 The field *Precedent CR* can be skipped.

Create CR No. 100 for Project		"02_IO-Link Interface and System V1.1" (CC/PG1)	
*First Name	<input type="text"/>		
*Last Name	<input type="text"/>		
*Company	<input type="text"/>		
*E-mail	<input type="text"/>		
Priority	n/a		▼
Cause	New Feature		▼
Type of comment	General		▼
Precedent CR	<input type="text"/>		▼
*Abstract	<input type="text"/>		▼
*Description	<input type="text"/>		▲
Context / Constraint	<input type="text"/>		▼
Found in Version	V1.1.2 (file: IOL-Interface-Spec_10002_V112_Nov12.pdf)		
*Line	<input type="text"/>		
*Clause / Subclause	<input type="text"/>	<input type="text"/>	
*Page	<input type="text"/>		
Create more CRs	<input type="checkbox"/> (check to report more CRs)		
Send Mail	<input type="checkbox"/> Send Mails		
		Submit CR	

* required
* at least one

151

152

Figure A.5 – Entry of a new CR

153 In field *Abstract* you should enter a brief description characterizing best your problem. This is
 154 very import, since many readers rely on a quick and comprehensible idea of this problem
 155 when scrolling through the CRs before reading the details within the description field.

156 In field *Description* you should enter a comprehensive description as precise as possible us-
 157 ing references to the specification such as Figures, Tables, etc.

158 NOTE The IO-Link Community plans for a new release of the database where it will be possible to attach any
 159 commonly readable file of limited size such as scans of handwritten papers as PDF, or WORD or POWERPOINT
 160 documents.

161 In field *Context/Constraints* you may enter information on used hardware or software for your
 162 particular problem.

163 Field *Found in Version* shows you the current valid specification you can refer to. It is not
 164 possible to enter a CR for older versions of the specification.

165 The database system will only allow you to submit the CR if you provided at least a number in
 166 field *Line*, or the related number (e.g. 6.2) in field *Clause/Subclause*, or a related number in
 167 field *Page*. Usually, the working group prefers the Line indication. The IO-Link Community de-
 168 cided to publish also all released specifications with line numbers.

169 In case you want to enter more than one CR you can check the box in *Create more CRs* sav-
 170 ing you time by omitting the entry of the identification over and over again.

171 In case you want to alert all members of the working group you can check the box in *Send*
 172 *Mail*. The members will receive a standardized e-mail from the database system.

173 A.5 View of all project CRs

174 Figure A.6 shows only one out of the possible list of several CRs in the project as an exam-
 175 ple.



176 The system assigned ID numbers automatically when the CR was entered (here: 41). Next to
 177 the ID you will find the state of this CR (here: *Closed*), which means, the working group de-
 178 cided already and the result is shown in the field *Responses*. Other possible states you may
 179 encounter are: *Created*, *FAQ*, *Implementation*, *Review*, *ReOpened*, *Deferred*, *Closed*, and *Re-*
 180 *fused*.

[Home](#) | [Logout](#)

Display-Filter

Project: 02_IO-Link Interface and System V1.1

Working Group: CC / PG1

Show additional CR columns  

Change Request:

All (State) ▼

CR's which have been found in document version and have been closed >>OK

Displaying Change-Requests of Project: **02_IO-Link Interface and System V1.1** New CR

Originator	Assignee	Found in Version	Fixed in Version
	Moritz, Frank	V1.1.2	1.1.3
ID	State	Creation Date	Last Changed
41	Closed	04.03.2013 16:45:57	17.05.2013 15:12:01
Line	Clause / Subclause Number	Clause / Subclause Title	Page
---	---	---	215

Abstract:
Table B.1 DeviceID octet 3 misspelled

Description:
correct ocet to octet. additional add a space for MSB at Device ID 1 (cosmetic)

Responses:
accepted. will be changed response from IOL coreteam 13/03/14

181

182

Figure A.6 – View of all project CRs

183 With the help of the selection box within the red circle you can filter the view by one of the
 184 listed states or optionally show *All* CRs (as in Figure A.6) or all *Not closed* CRs.

185 **A.6 View of the project information**

186 Figure A.7 shows the project information. An anonymous user cannot see and access inter-
 187 mediate documents of the working group.

[Home](#) | [Logout](#)

<

View Project

Project Name	02_IO-Link Interface and System V1.1.x
Abstract	IO-Link Technology is an international Standard in IEC 61131-9. The IO-Link Community publishes their own intermediate releases to support the users of this technology in case of change requests, clarifications, etc. Current version of this specification is V 1.1.2. This project to collect those change requests from all over the world. ^ v
Belonging to	CC/PG1 - Technology
Project Creation Date	18.11.2010
Last Update	11.01.2016 by
Attached Files	<input checked="" type="checkbox"/> Show downloadable Files

Intermediate documents only for working group members.

188

189

Figure A.7 – Project information

190

191

Bibliography

- 192 [1] IO-Link Community, *IO-Link Profile – BLOB Transfer & Firmware Update*, V1.0, June
193 2016, Order No. 10.082
- 194 [2] IO-Link Community, *IO-Link Interface and System*, V1.1.2, July 2013, Order No.
195 10.002
- 196 [3] IEC 61131-9, *Programmable controllers – Part 9: Single-drop digital communication
197 interface for small sensors and actuators (SDCI)*
- 198 [4] IO-Link Community, *IO Device Description (IODD)*, V1.1, July 2011, Order No. 10.012
- 199 [5] In progress: IO-Link Community, *IO-Link Profile Test – BLOB Transfer & Firmware Up-
200 date Specification*, V1._._, ____ 2018, Order No. 10.192

201

202

© Copyright by:

IO-Link Community
Haid-und-Neu-Str. 7
76131 Karlsruhe
Germany

Phone: +49 (0) 721 / 96 58 590

Fax: +49 (0) 721 / 96 58 589

e-mail: info@io-link.com

<http://www.io-link.com/>

