



S1000D and Wiring Data - Successfully in Operation

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CASSIDIAN Manching - COPCI Technical Information

AGENDA

1. Introduction
2. S1000D and Wiring Data
3. IETP-X-AT Electric
4. Summary





Introduction



Paper-based Documentation

- Wiring diagrams
- Loom routings
- Further information in list format



**Data search is
extremely
time-consuming**



New generation of aircraft

- Big amount of data
- High complexity



**Increasing
Quantity**



Different solution required

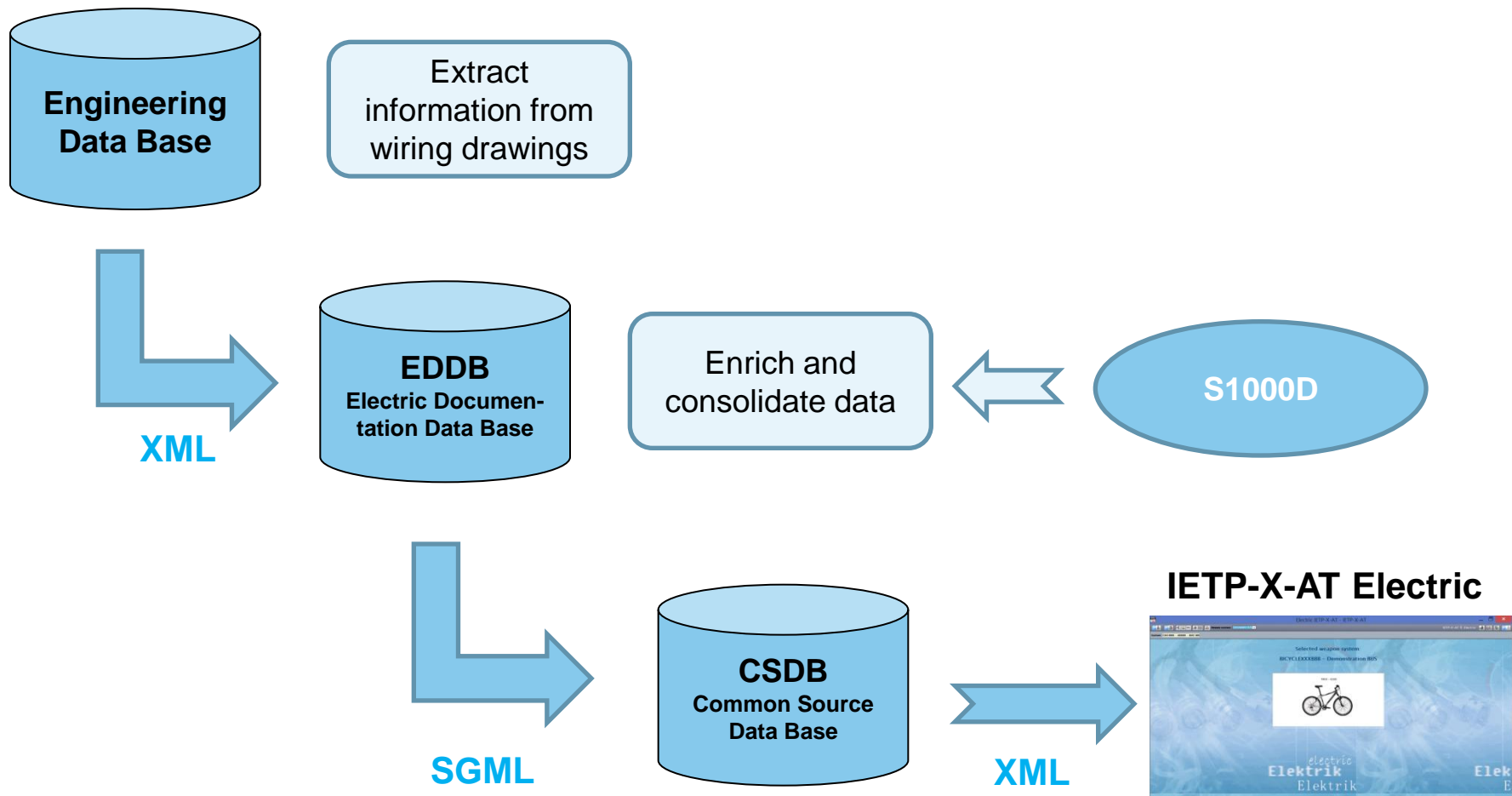
- Standardization with S1000D



**CASSIDIAN started
to investigate
further options**



The information flow





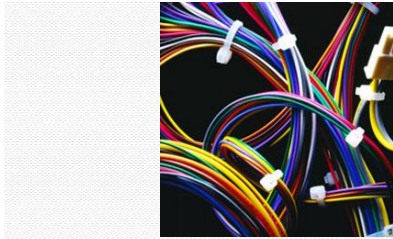
S1000D and Wiring data

Highlights

Issue 2.0	<ul style="list-style-type: none"> ▪ Introducing new data module types for wiring data ▪ Introducing interactive wire tracing possibility
Issue 2.2	<ul style="list-style-type: none"> ▪ Introducing detailed guidance for using the wiring Schema ▪ Describing electrical states and internal connections made possible ▪ Enhancing the Schema by additional attributes (e.g. <screen>)
Issue 2.3	<ul style="list-style-type: none"> ▪ Optimizing the wiring data structure (e.g. wire connection code) ▪ Changing the data module coding to „91“ in the system position
Issue 3.0	<ul style="list-style-type: none"> ▪ Introducing new elements such as element <groupcode> ▪ Redefining existing applicability information elements
Issue 4.0	<ul style="list-style-type: none"> ▪ Renaming elements & attributes for better readability ▪ Restricting the definition of <applic>
Issue 4.1	<ul style="list-style-type: none"> ▪ Introducing new elements to cover wiring data alternates ▪ Replacing / renaming existing elements (<referenceDesignator>)



Data lists



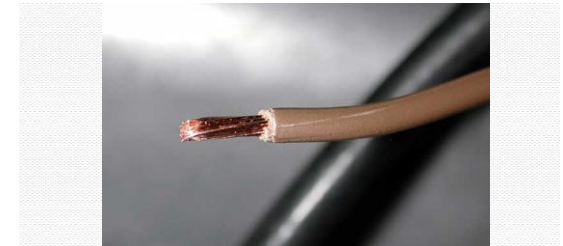
Harness information

- Various search options
 - Harness ID
 - Part number
 - Issue



Equipment information

- Various search options
 - Reference Designator
 - Part number
 - Next higher Assembly



Wire information

- Various search options
 - Wire ID
 - Wire type
 - Connected Equipment

Display of information in list format



Visual display of data lists

Realizing the benefit of the information



Connection plan

- **Displaying all connected wires at a Reference Designator according to**
 - Applicability
 - View option
- **View options**
 - Standard view
 - Connector sibling view
 - Shield view
 - Twist view
 - Harness sort view
 - Harness view



Connection analysis

- **Displaying all connected wires and equipment from a selected starting point / Reference Designator**
- **View options**
 - Standard view
 - Functional view
 - Twist view
 - Harness view
 - Single contact view
- **Optional**
 - Select starting contact
 - Select finishing point

Introduction

S1000D & Wiring Data

IETP-X-AT Electric

Summary

**IETP-X-AT Electric**

Functionality & use cases

Preselect Wiring Data

Applicability

Modifications

External systems

Filter Wiring Data

Harness

Electrical Equipment

Wires

Visualize Wiring Data

Connection plan

Connection analysis

Introduction

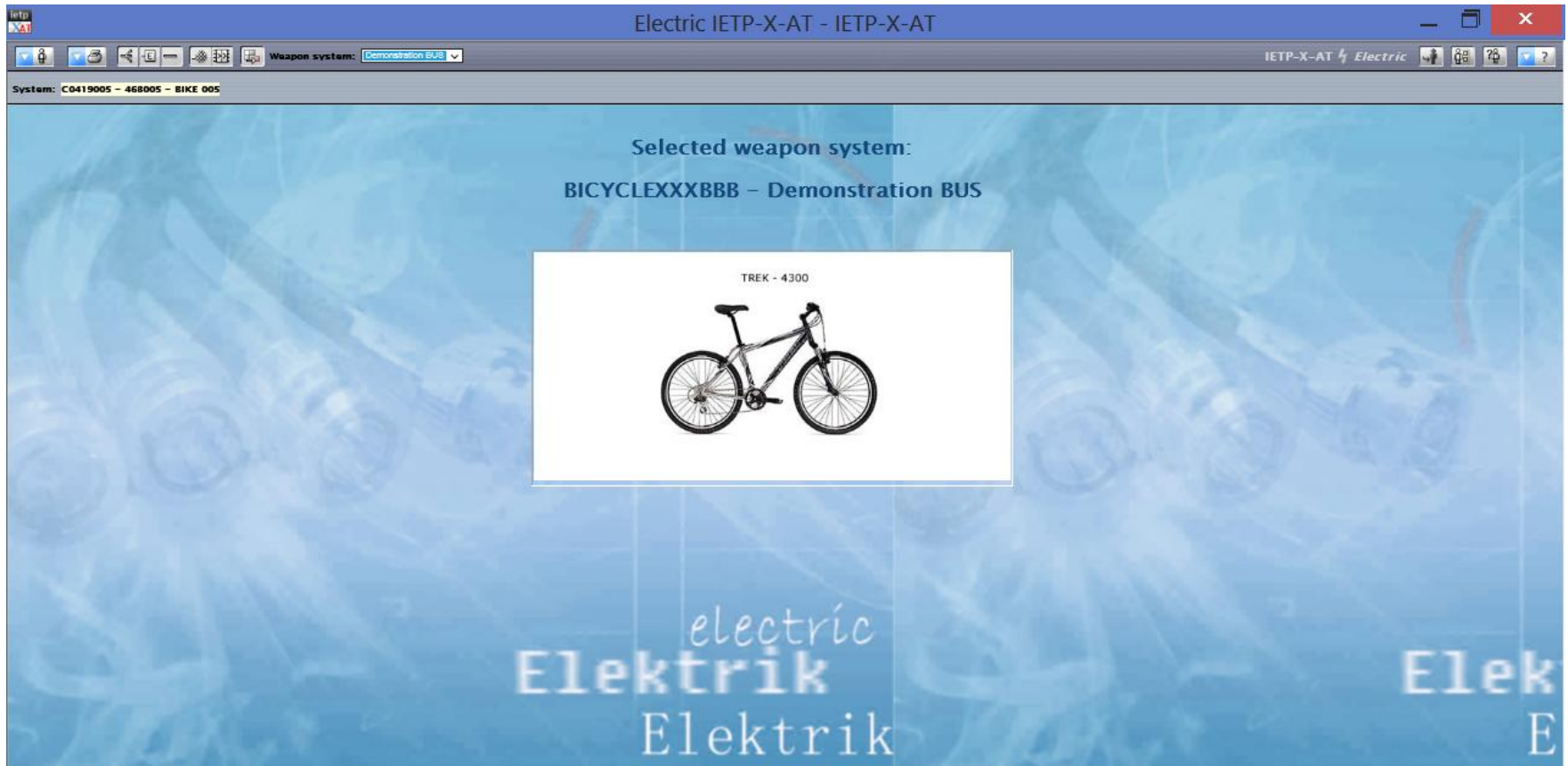
S1000D & Wiring Data

IETP-X-AT Electric

Summary

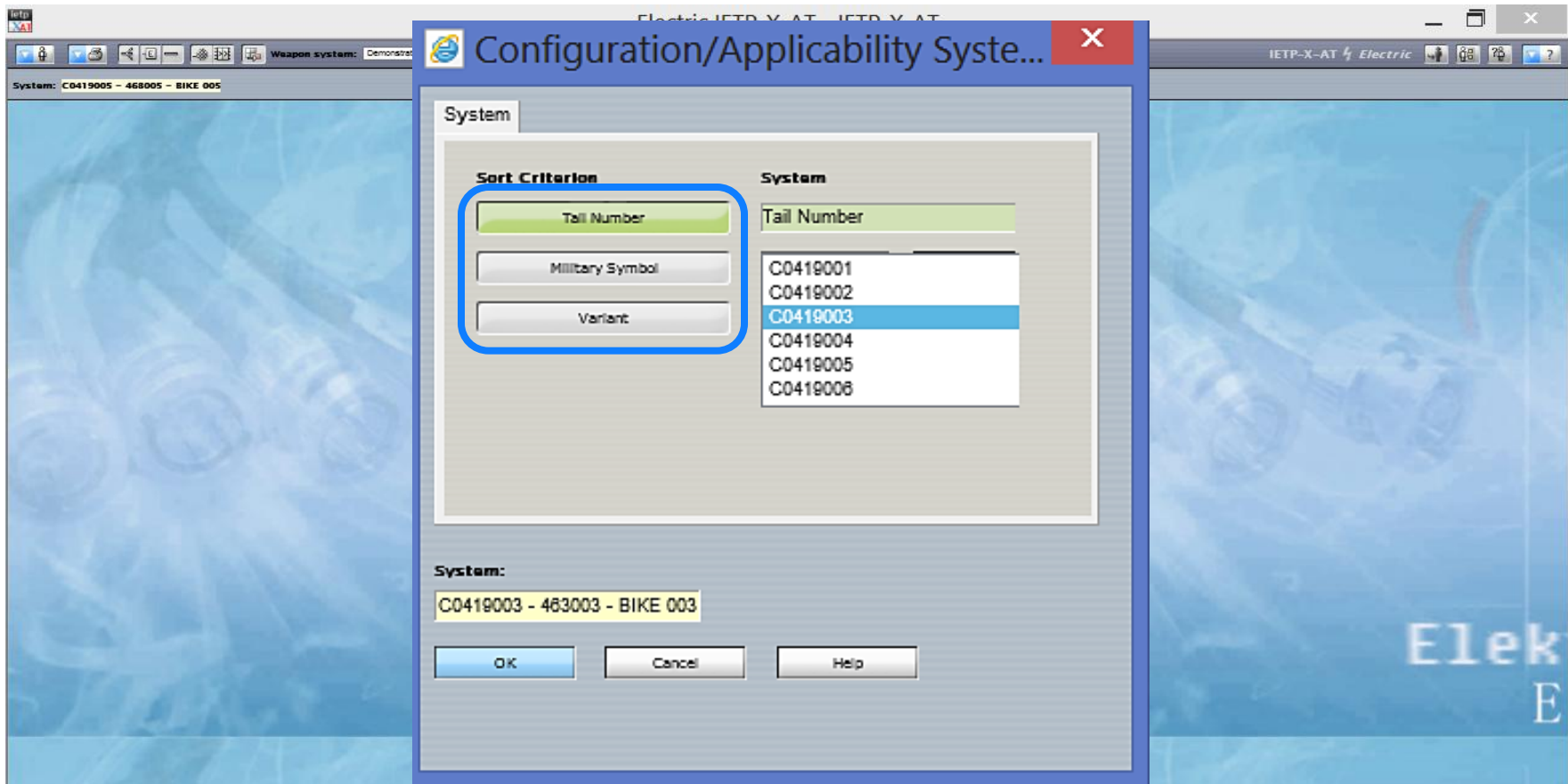


IETP-X-AT Electric Start





IETP-X-AT Electric Applicability





Example

Wire list – filter options

Electric IETP-X-AT - IETP-X-AT

Weapon system: Demonstration BUS

System: C0419006 - 468006 - BIKE 006

Wiring data

Wire Ident:	WIRENO	HARNID	WIRETYPE	WIREGAUGE	EMC-CODE	COLOUR	WIREROUTE	RFD	Contact Name	Contact Name	LENGTH
<input checked="" type="checkbox"/>											
<input checked="" type="checkbox"/>											
<input type="checkbox"/>											
<input type="checkbox"/>											
<input type="checkbox"/>											
<input type="checkbox"/>											
<input checked="" type="checkbox"/>											
<input checked="" type="checkbox"/>											
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is is is is is is is is is is

Wire Ident ascending



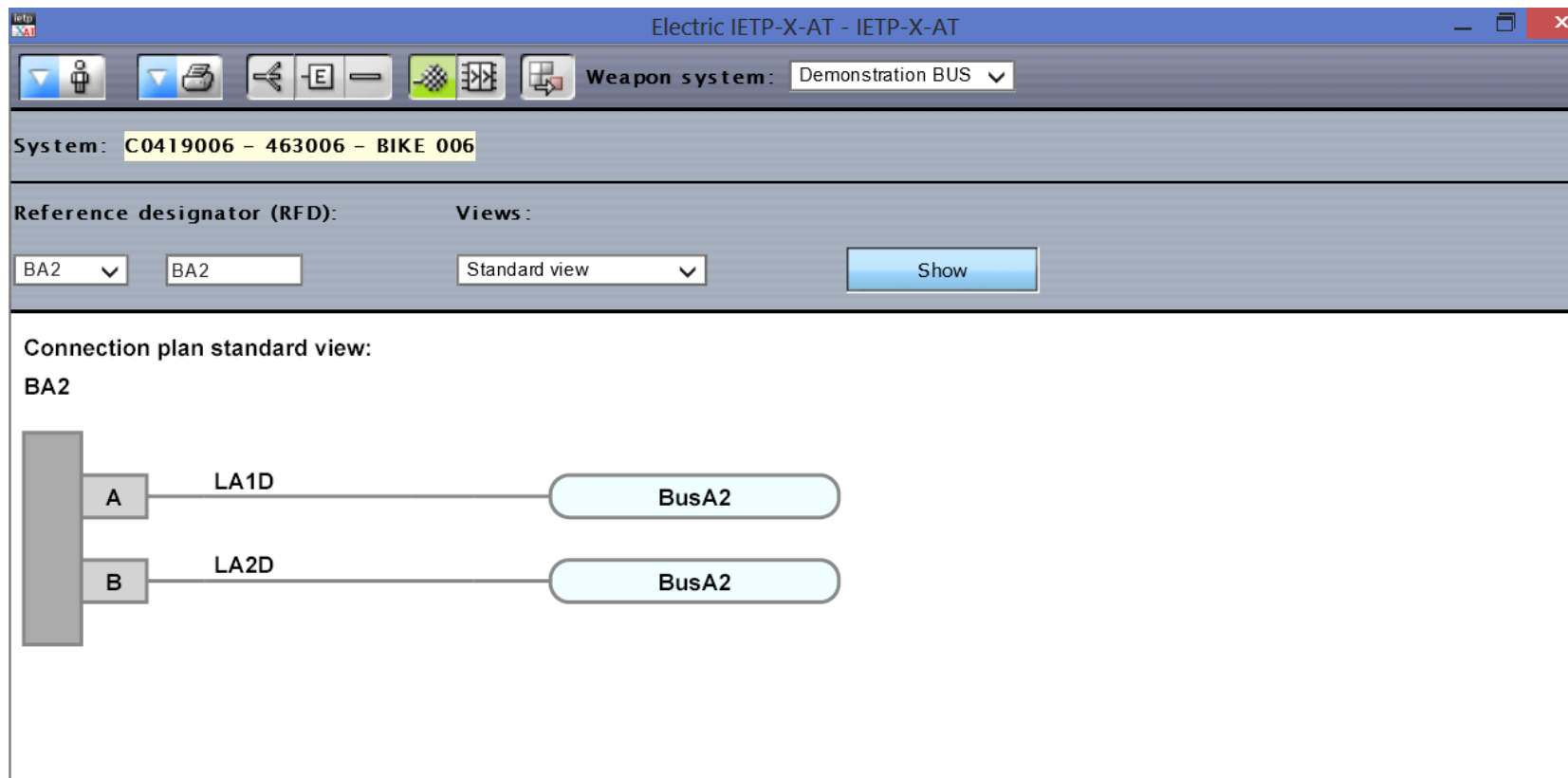
Example

Wire list – filter options

Electric IETP-X-AT - IETP-X-AT					
Weapon system: Demonstration BUS					
System: C0419006 – 463006 – BIKE 006					
List view of Wires - 31 hits found					
Search Export ? Help					
WIRENO	HARNID	RFD	Contact Name	RFD	Contact Name
BA1AA		C_Bike	±	S1	Batt
BA1AB		S1	ON	Rel	3
BA2AA		C_Bike	=	VV1	4-
BT1AA	Batt_01	Batt	±	C_Batt	±
BT2AA	Batt_01	Batt	=	C_Batt	=
FL1AA	Lampe1	L1	±	VV1	1+
FL2AA	Lampe1	L1	=	VV1	1-
GE1AA		Gen		Rel	2
GE2AA		Gen	GND	VV1	3-
GE3AA		Gen		Diode	A
GE4AA		Gen	GND	Rel	



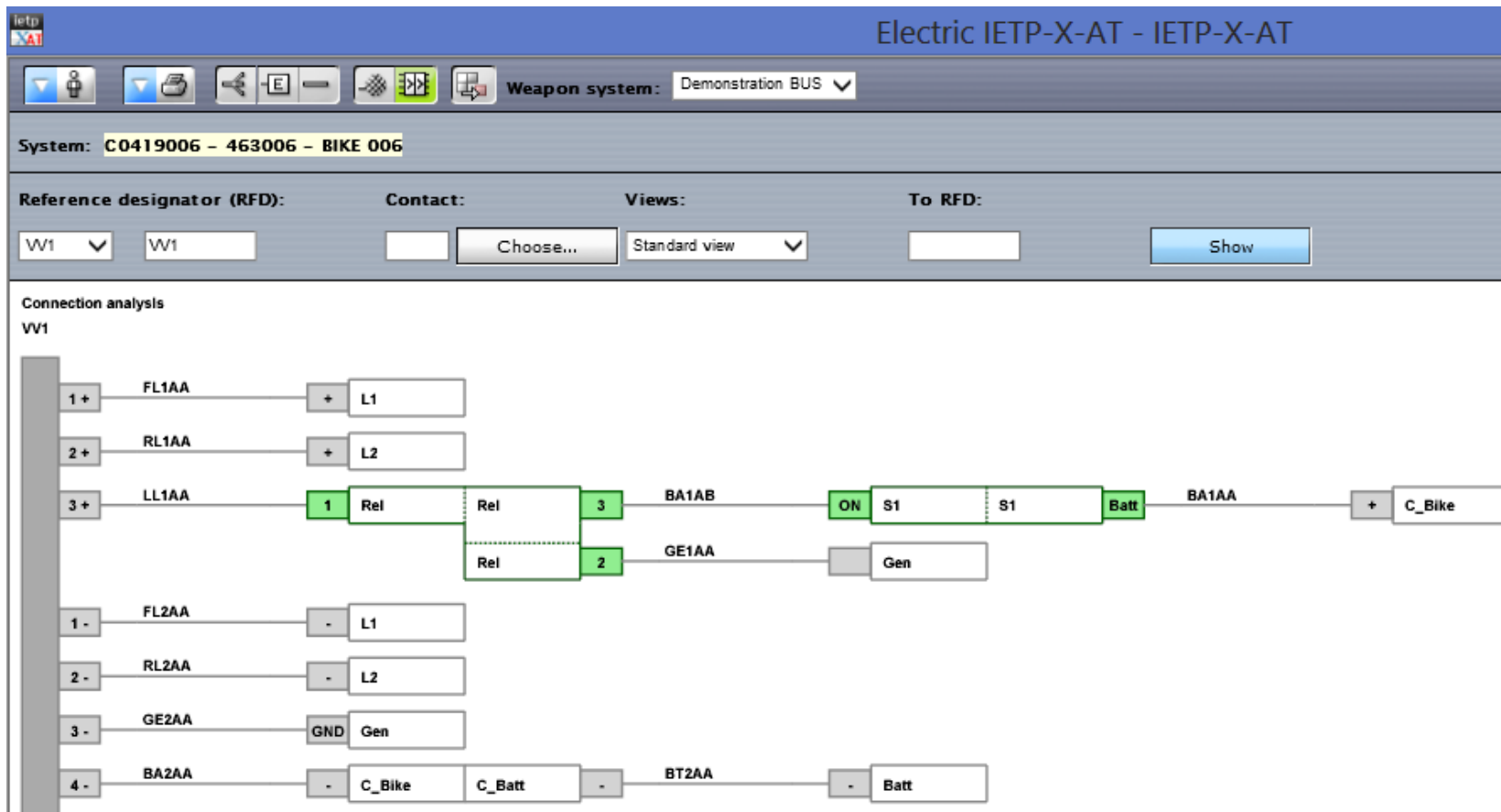
Example Connection plan





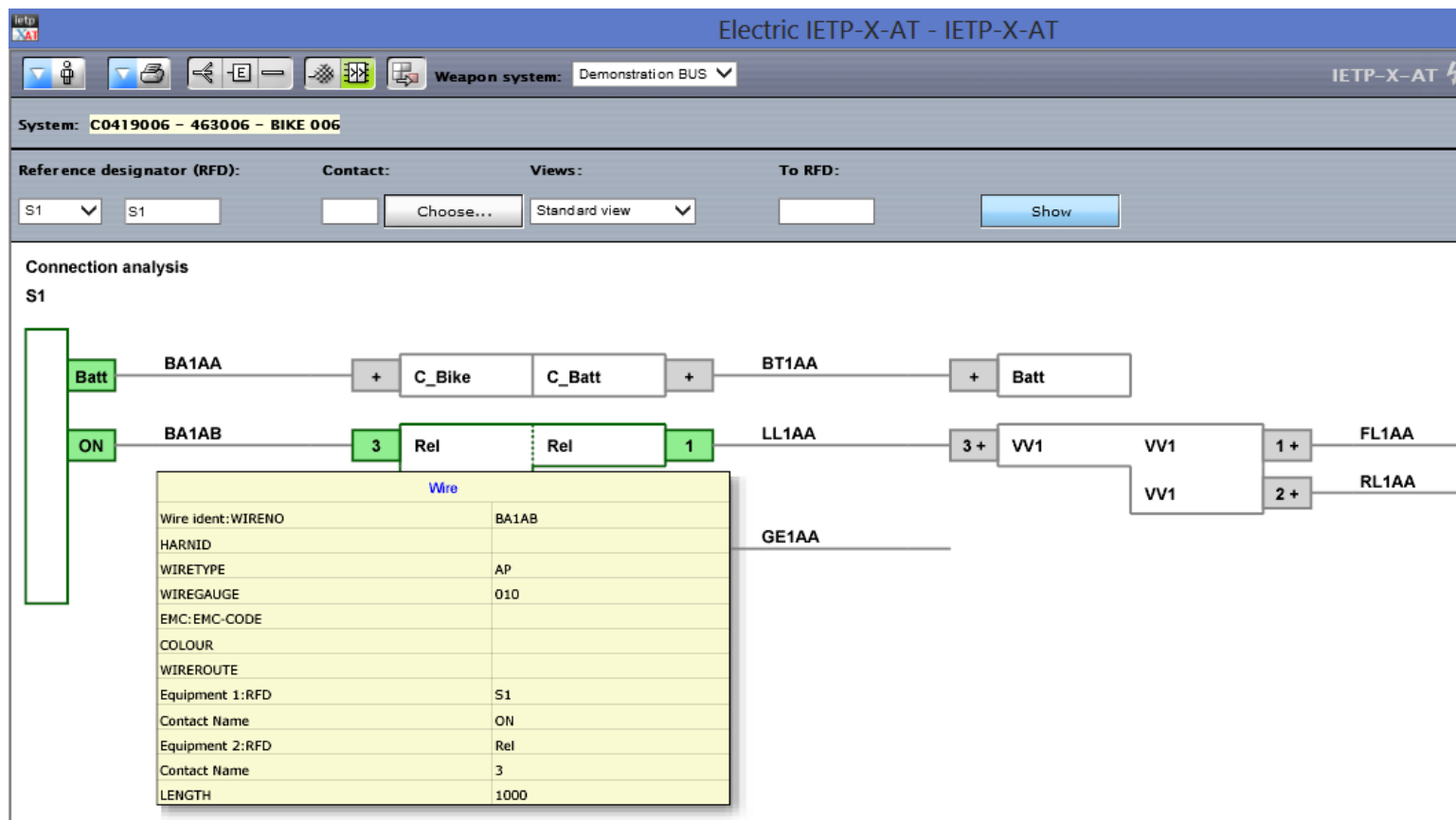
Example

Connection analysis





Example Tool tips





Example

Direct links to corresponding data modules

Electric IETP-X-AT - IETP-X-AT

Weapon system: Demonstration BUS

System: C0419006 - 463006 - BIKE 006

Reference designator (RFD): S1 S1 Contact: Choose... Views: Standard view To RFD:

Connection analysis S1

BA1AA + C_Bike C_Batt + BT1AA +

BA1AB 3 Rel Rel 1

GE1AA

Wire

Wire ID: WIRENO BA1AB

HARNID

WIRETYPE AP

WIREGAUGE 010

ENC/ENC CODE

COLOUR

WIREROUTE

Equipment 1: RFD S1

Contact Name ON

Equipment 2: RFD Rel

Contact Name

LENGTH

Retrieval IETP-X-AT - IETP-X-AT

DM Code: S1000DBIKE-AAA-D00-00-00AA-041A-A

1/1 Complete bicycle

9 10 11 1

2 1 8

2 1

7 6 2 5 4 3

0

S1000DBIKE (Test configuration)

S1000DBIKE Bicycle (ASD 2.3) Publication

- Mountain bicycle, Business rules
- Bicycle, Description of how it is made
- Complete bicycle
- Bicycle, Description of function
- Bicycle, Description attributed to crew
- Bicycle, Pre-operation procedures (crew)
- Brake pad seating
- Bicycle, Normal operation procedures (crew)
- Bicycle, Post-operation procedures (crew)
- Bicycle, Other procedures to clean
- Cleaning the bike
- Degreasing the freehub
- Bicycle, Place on test stand
- Bicycle, Standard repair procedures

S1000DBIKE (Test configuration)

S1000DBIKE Bicycle (ASD 2.3) Publication

- Wheel, Description of how it is made
- Inner tube, Remove and install a new item
- Tire, Fill with air
- Tire, Check pressure
- Front wheel, Fault reports and isolation procedures
- Tire, Remove and install a new item
- Rear wheel, Detected fault
- Brake system, Description of how it is made
- Brake system, Manual test
- Brake pads, Clean with rubbing alcohol
- Steering, Description of how it is made
- Stem, Remove procedures
- Stem, Install procedures
- Handlebar, Remove procedures
- Handlebar, Install procedures
- Headset, Description of how it is made
- Headset, Remove procedures
- Headset, Install procedures
- Frame, Description of how it is made
- Horn, Isolated fault

Summary



The Baseline



S1000D gives you plenty of possibilities to implement an easy way of displaying and using Wiring Data.



Satisfied customers



German Air Force

- Eurofighter Typhoon
- Tornado

Austrian Air Force

- Eurofighter Typhoon



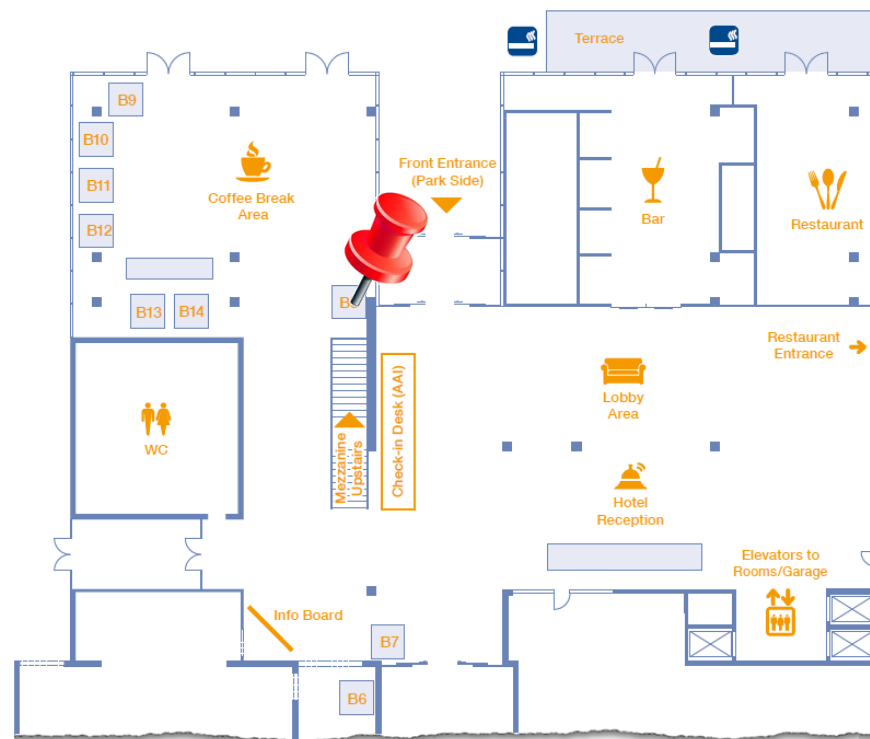
Way ahead



Deploy solution to a tablet device

Thank you

for your attention!
Looking forward to
welcome you at
our booth B8 !



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