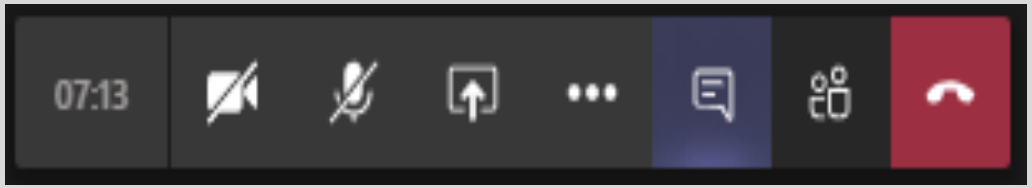
WELCOME TO TODAYS WEBINAR FROM

ARCOMA

WORLD CLASS DIGITAL X-RAY SYSTEMS

The presentation will soon begin. Please prepare by disabling your camera and microphone:

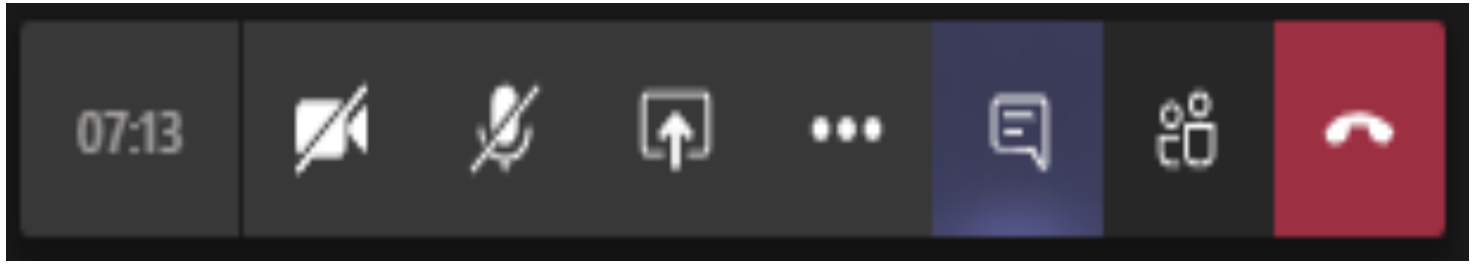


VIDEO OFF

MUTE

THE PRACTICAL STUFF:

- VIDEO – OFF
- MICROPHONE – OFF
- QUESTIONS – USE CHAT



VIDEO OFF

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CHAT

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PREMIUM DIGITAL X-RAY SYSTEMS

AGENDA

- What differs in Aceso and Aceso+ and what do they have in common?
- Overview of system components and how they communicate
- How to navigate our documentation and schematics
- Q&A

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PREMIUM DIGITAL X-RAY SYSTEMS

WHO AM I?

ERIK SÄLL
ARCOMA ACADEMY MANAGER

- 15 years of experience with medical x-ray equipment
- Hands on technical background (service/installation/troubleshooting)
- Focusing majority of time on training and knowledge transferring activities

WHAT DIFFERS BETWEEN ACESO+ AND ACESO?

WEBINAR

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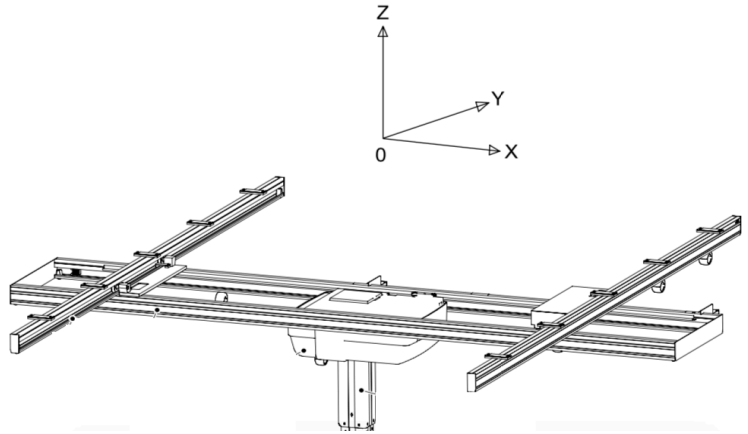
PREMIUM DIGITAL X-RAY SYSTEMS

Aceso+

Arcoma product name = Precision

Most advanced positioning system provided by Arcoma:

- Fully automated system
  with motorized movements in X, Y, Z, and A, B directions
- Configurable autopositions with various mode functionalities
- Stitching available towards Wallstand and Table



- External service software for calibration

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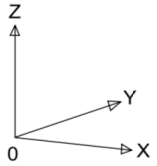
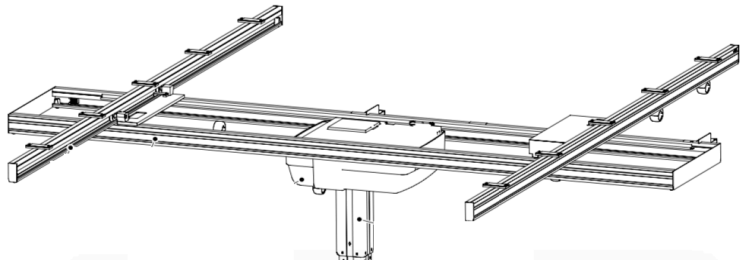
PREMIUM DIGITAL X-RAY SYSTEMS

Aceso

Arcoma product name = Intuition





Basic positioning system provided by Arcoma:

- Motorized movements in Z directions only
- Autotracking functionality
- Stitching available towards Wallstand
- Two table types available
- Integrated service software for calibration

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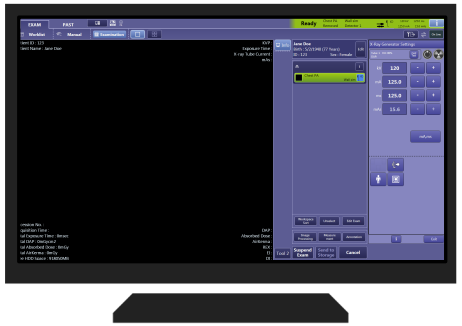
CMP200 Generator

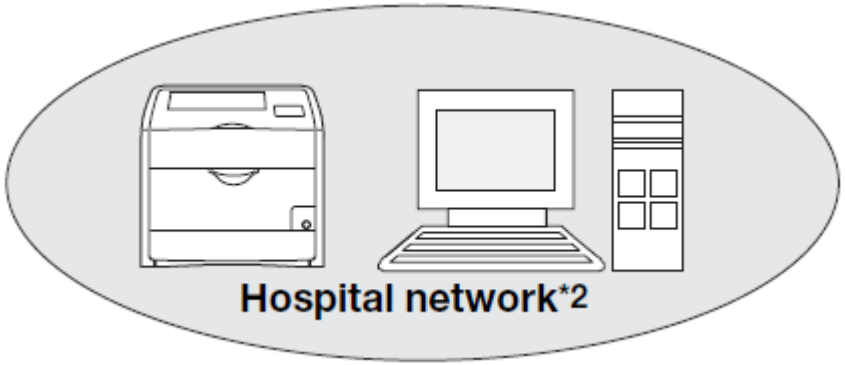
Positioning system with tube screen (Intuition or Precision)

CXDI Control Software NE



Overwrap software

CXDI detectors

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STOP
WARNING: THIS X-RAY UNIT MAY BE DANGEROUS TO PATIENT AND OPERATOR UNLESS SAFE EXPOSURE FACTORS, OPERATING INSTRUCTIONS AND MAINTENANCE SCHEDULES ARE OBSERVED.

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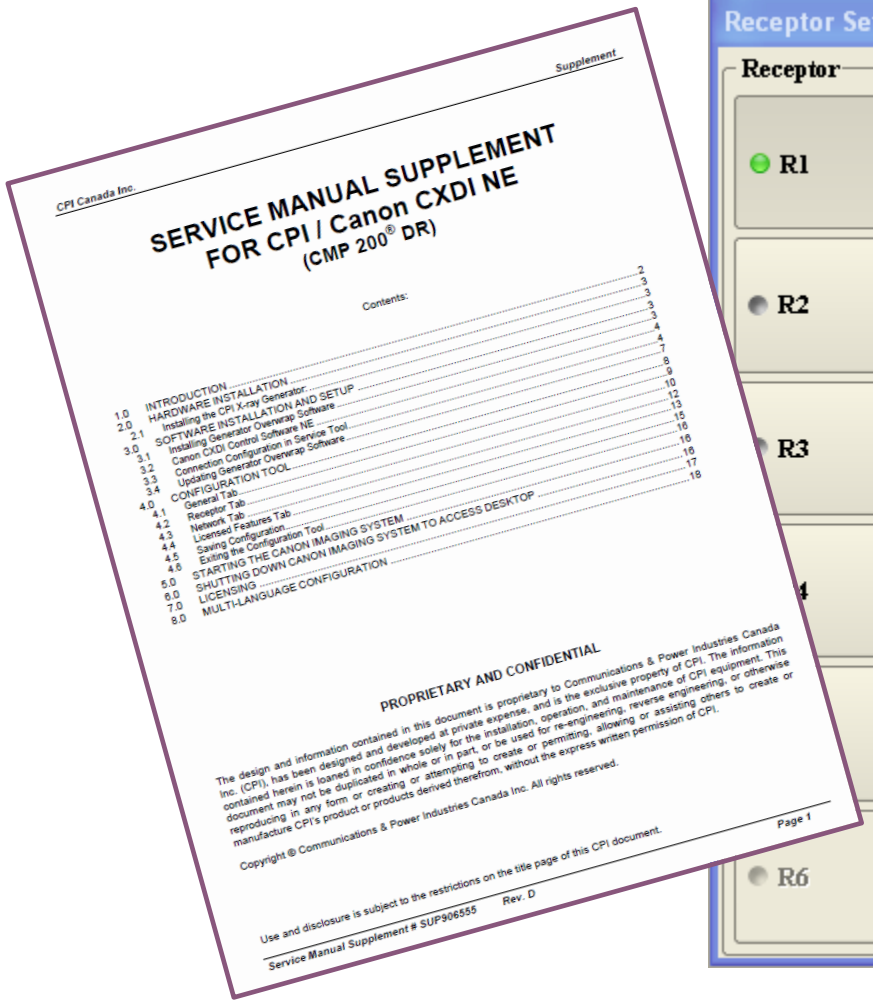

CPI Canada Inc.

Supplement

SERVICE MANUAL SUPPLEMENT FOR CPI / Canon CXDI NE (CMP 200® DR)

Contents:

1.0 INTRODUCTION 2
2.0 HARDWARE INSTALLATION 3
2.1 Installing the CPI X-ray Generator 3
3.0 SOFTWARE INSTALLATION AND SETUP 3
3.1 Installing Generator Overwrap Software 3
3.2 Canon CXDI Control Software NE 4
3.3 Connection Configuration in Service Tool 4
3.4 Updating Generator Overwrap Software 7
4.0 CONFIGURATION TOOL 8
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4.2 Receptor Tab 10
4.3 Network Tab 12
4.4 Licensed Features Tab 13
4.5 Saving Configuration 15
4.6 Exiting the Configuration Tool 16
5.0 STARTING THE CANON IMAGING SYSTEM 16
6.0 SHUTTING DOWN CANON IMAGING SYSTEM TO ACCESS DESKTOP 16
7.0 LICENSING 17
8.0 MULTI-LANGUAGE CONFIGURATION 18

PROPRIETARY AND CONFIDENTIAL

Receptor Setup

Receptor

R1

R2

R3

R6

Receptor Properties | AEC | Receptor Defaults | Inputs | Outputs

General

Receptor Enable

Tomo

Serial

Fluoro

Auto Focus

Memory

Off

On

Default

Tubes

Tube 1

Tube 2

Values

Tomo Back-up Time (ms): 2500

Last Image Hold (ms): 40

Fluoro Hangover (s): 30

Interface Options: 27

Rad Hangover (s): 0

Functional Options: 0

Operations

Apply

Refresh

Exit

Close

Help

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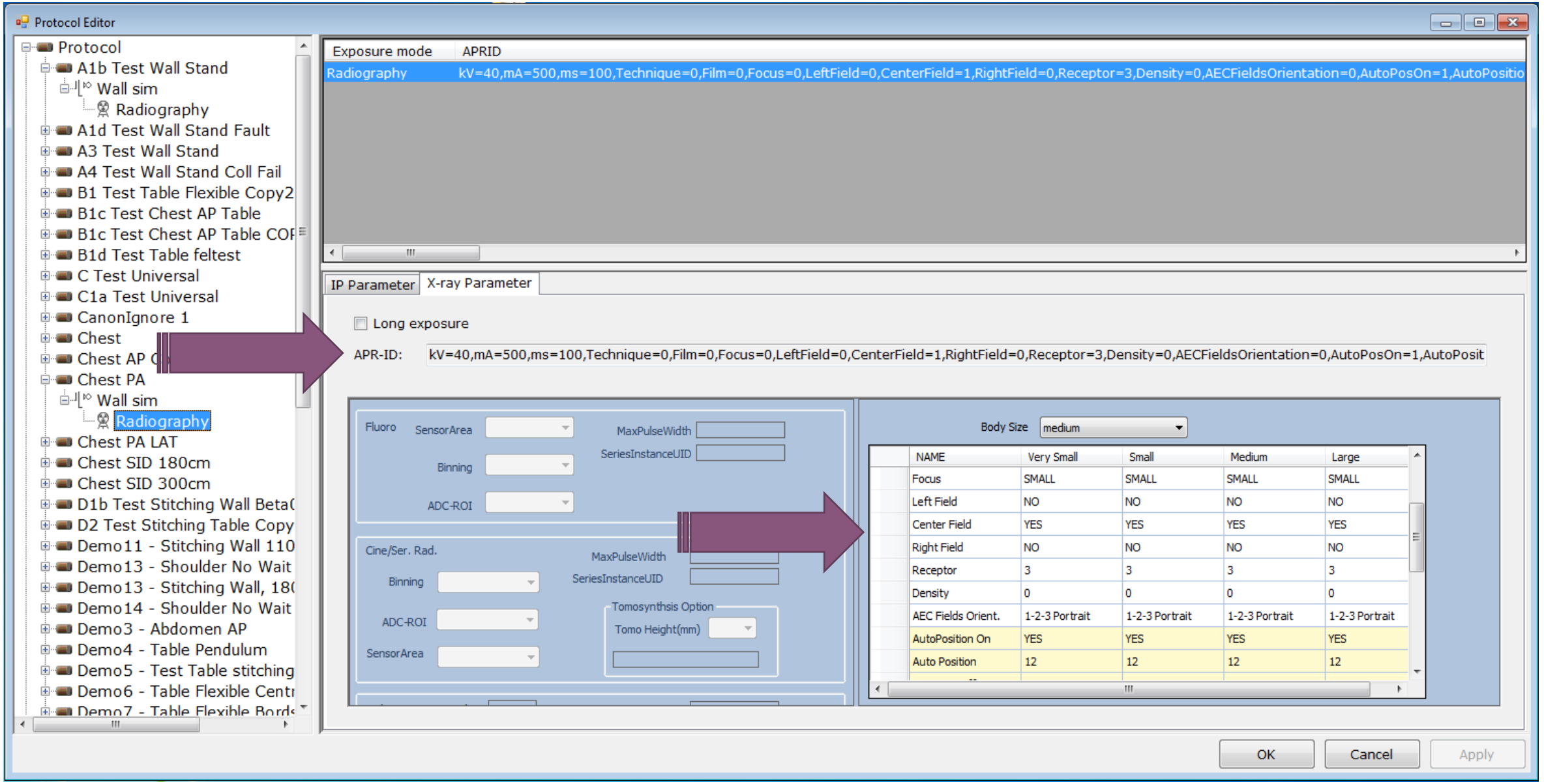
Protocol Editor
Protocol
A1b Test Wall Stand
Wall sim
Radiography
A1d Test Wall Stand Fault
A3 Test Wall Stand
A4 Test Wall Stand Coll Fail
B1 Test Table Flexible Copy2
B1c Test Chest AP Table
B1c Test Chest AP Table COF
B1d Test Table feltest
C Test Universal
C1a Test Universal
CanonIgnore 1
Chest
Chest AP C
Chest PA
Wall sim
Radiography
Chest PA LAT
Chest SID 180cm
Chest SID 300cm
D1b Test Stitching Wall Beta(
D2 Test Stitching Table Copy
Demo11 - Stitching Wall 110
Demo13 - Shoulder No Wait
Demo13 - Stitching Wall, 18(
Demo14 - Shoulder No Wait
Demo3 - Abdomen AP
Demo4 - Table Pendulum
Demo5 - Test Table stitching
Demo6 - Table Flexible Centr
Demo7 - Table Flexible Bords
Exposure mode
APRID
Radiography
kV=40,mA=500,ms=100,Technique=0,Film=0,Focus=0,LeftField=0,CenterField=1,RightField=0,Receptor=3,Density=0,AECFieldsOrientation=0,AutoPosOn=1,AutoPositio
IP Parameter
X-ray Parameter
Long exposure
APR-ID:
kV=40,mA=500,ms=100,Technique=0,Film=0,Focus=0,LeftField=0,CenterField=1,RightField=0,Receptor=3,Density=0,AECFieldsOrientation=0,AutoPosOn=1,AutoPosit
Fluoro
SensorArea
Binning
ADC-ROI
MaxPulseWidth
SeriesInstanceUID
Cine/Ser. Rad.
Binning
ADC-ROI
SensorArea
MaxPulseWidth
SeriesInstanceUID
Tomosynthsis Option
Tomo Height(mm)
Body Size
medium
NAME
Very Small
Small
Medium
Large
Focus
SMALL
SMALL
SMALL
SMALL
Left Field
NO
NO
NO
NO
Center Field
YES
YES
YES
YES
Right Field
NO
NO
NO
NO
Receptor
3
3
3
3
Density
0
0
0
0
AEC Fields Orient.
1-2-3 Portrait
1-2-3 Portrait
1-2-3 Portrait
1-2-3 Portrait
AutoPosition On
YES
YES
YES
YES
Auto Position
12
12
12
12
OK
Cancel
Apply

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PREMIUM DIGITAL X-RAY SYSTEMS

Which system do you work with? Aceso+ or Aceso?

PLEASE TYPE SYSTEM NAME IN CHAT

Aceso+ (Precision)

Aceso (Intuition)

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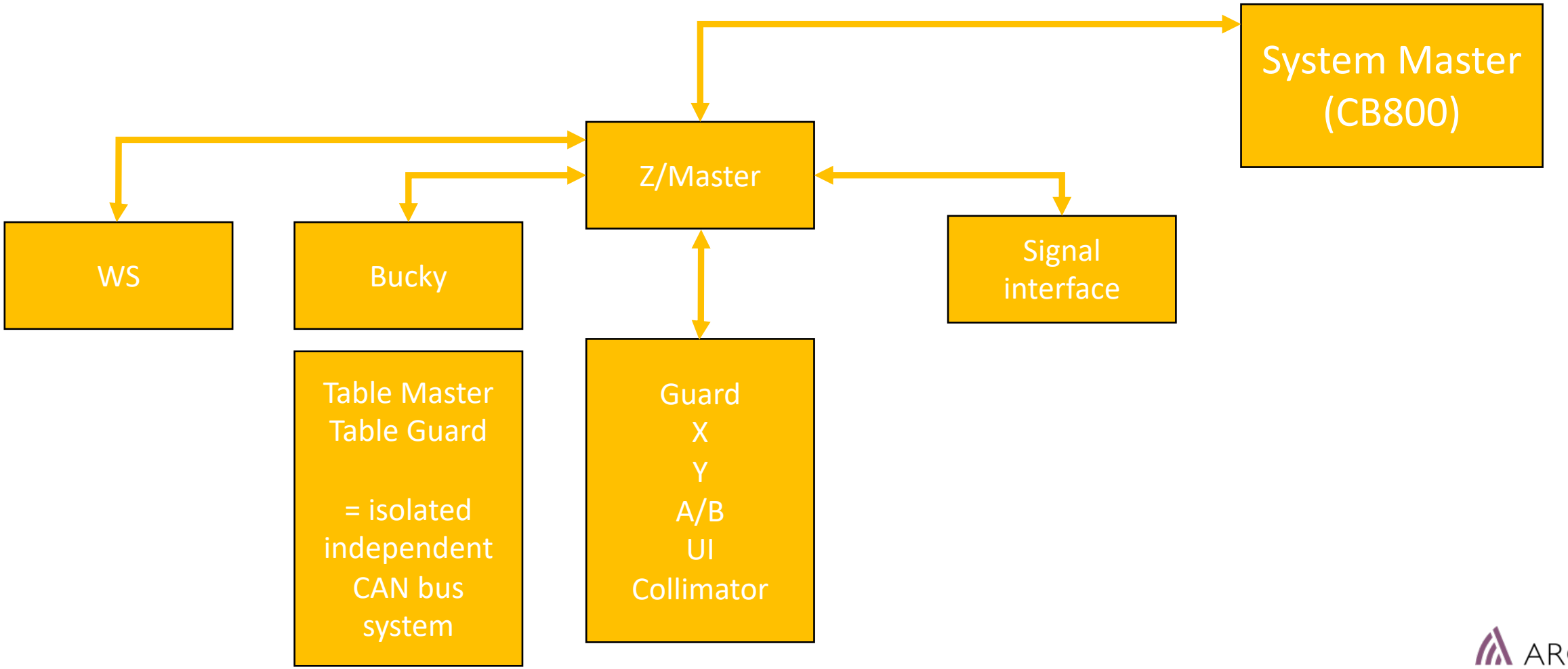
SYSTEM COMPONENTS *Aceso+*

CAN BUS COMMUNICATION



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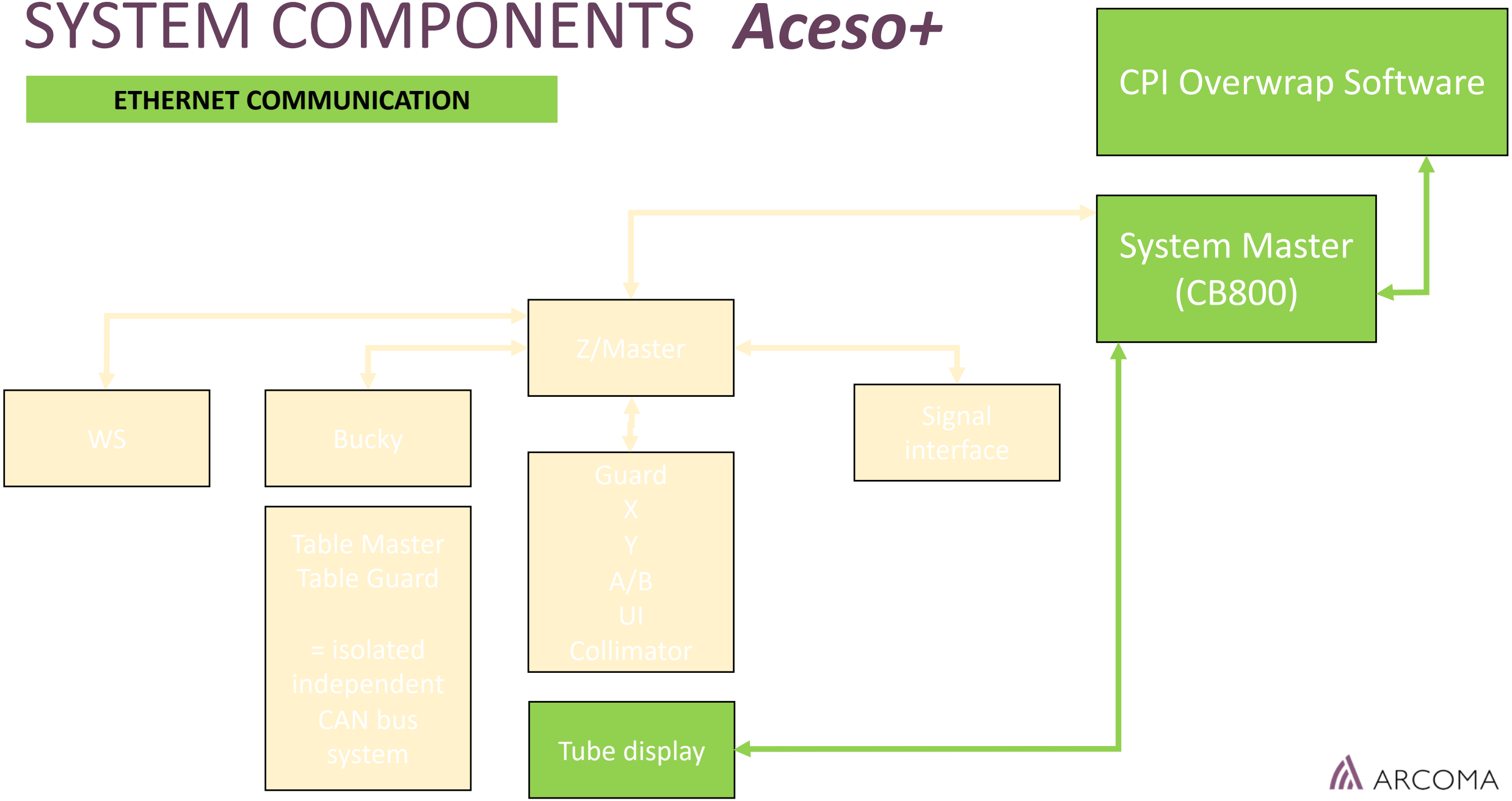
SYSTEM COMPONENTS *Aceso+*

ETHERNET COMMUNICATION



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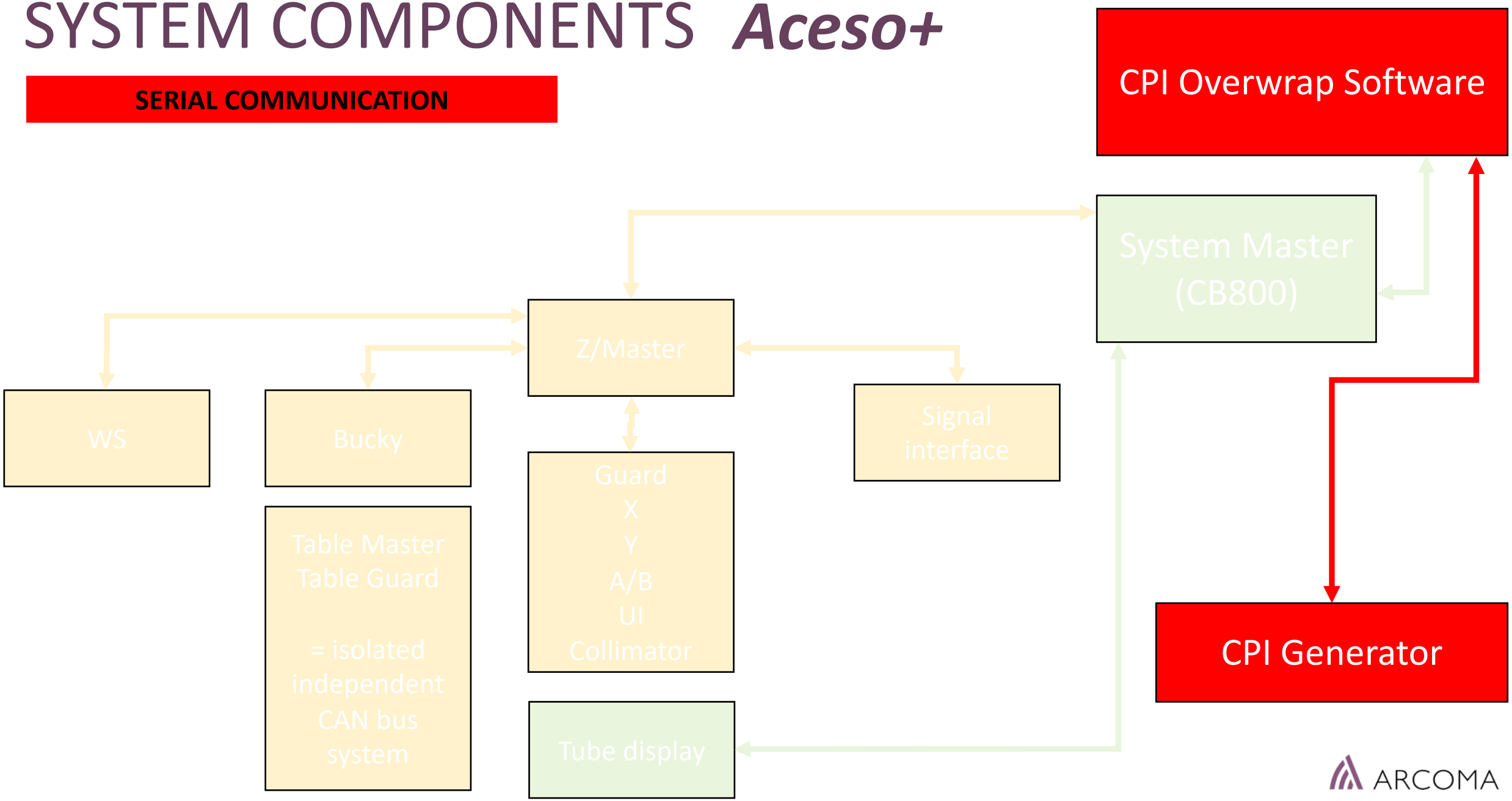
SYSTEM COMPONENTS *Aceso+*

SERIAL COMMUNICATION



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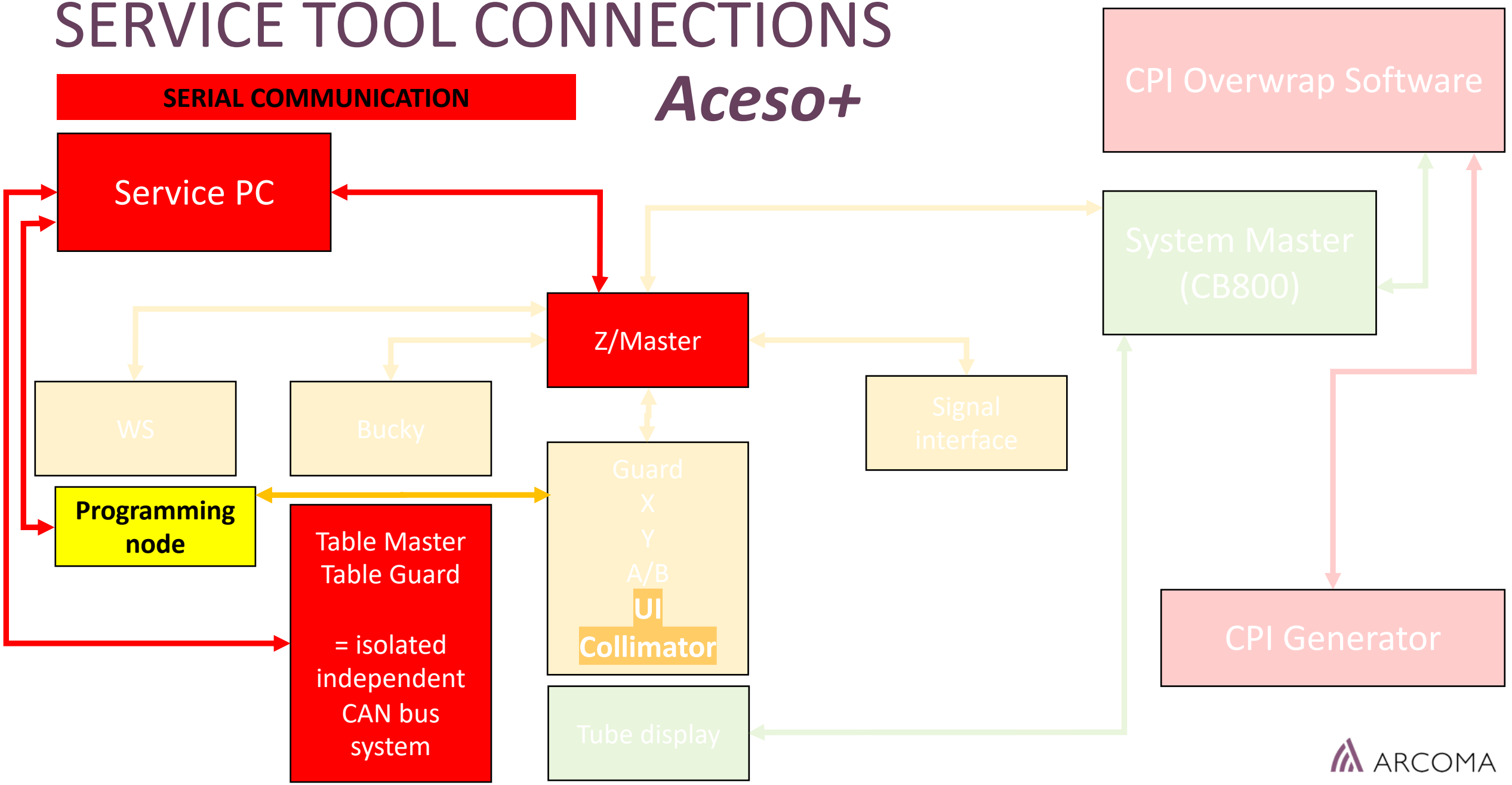
SERVICE TOOL CONNECTIONS

SERIAL COMMUNICATION

Aceso+



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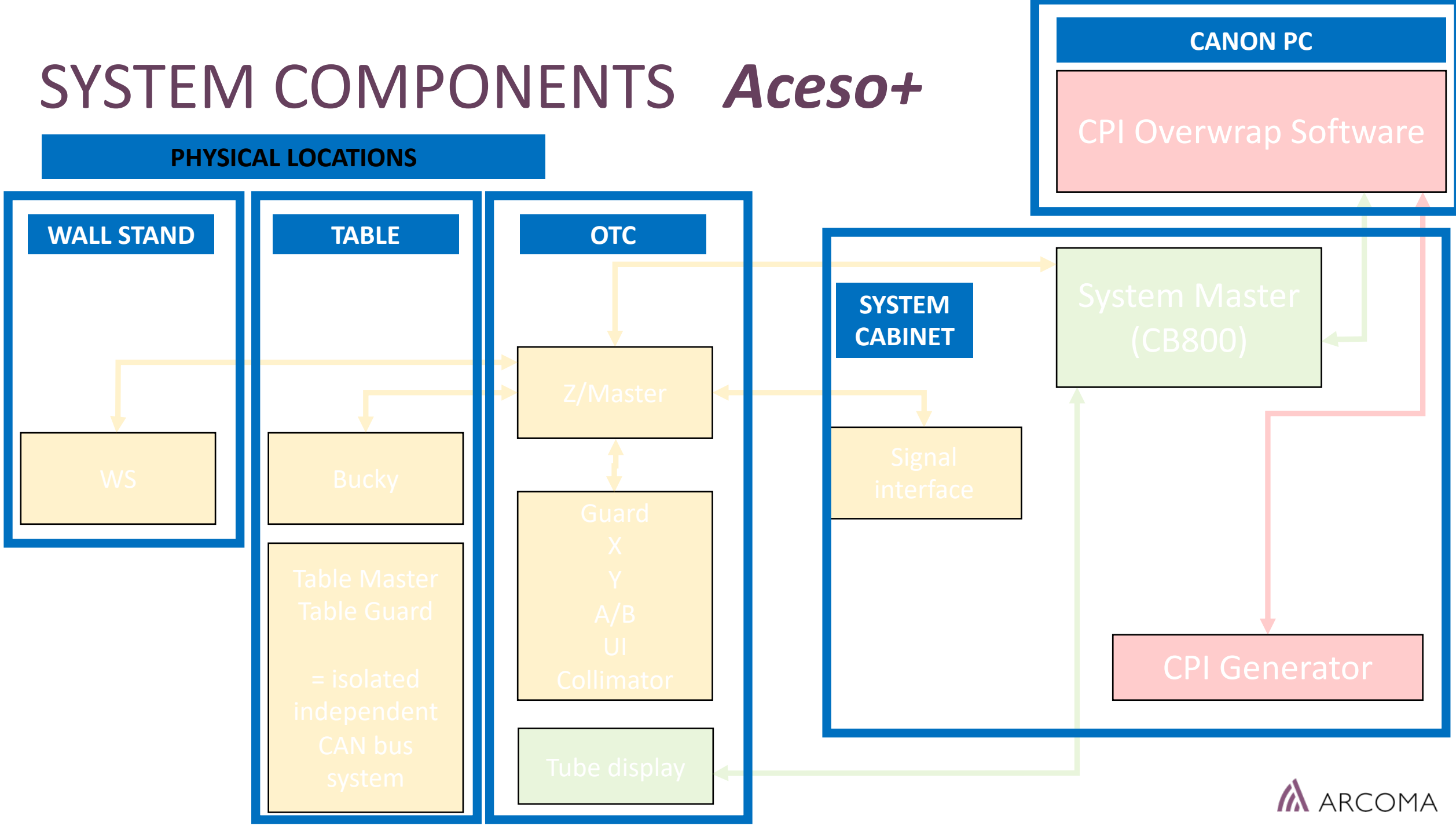
SYSTEM COMPONENTS *Aceso+*



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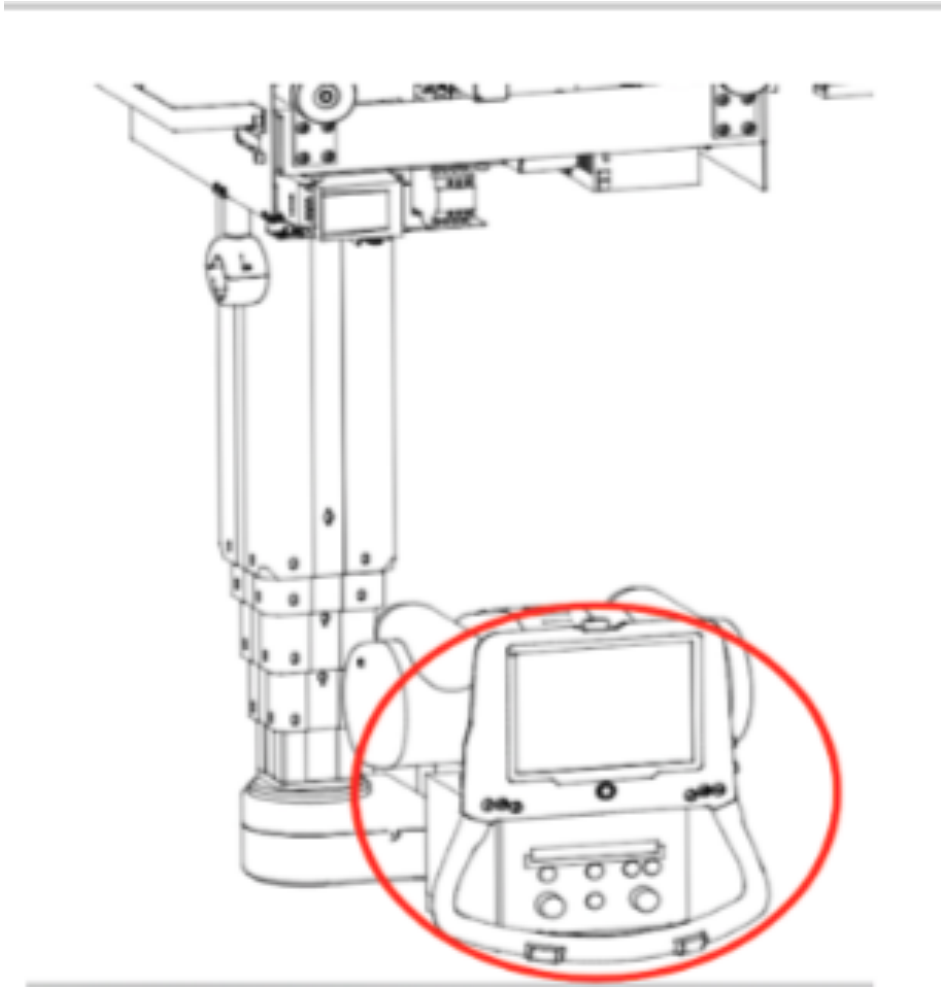
OVERVIEW OF SYSTEM COMPONENTS

CLARIFICATIONS

THE TUBE DISPLAY ASSEMBLY CONTAINS
TWO COMMUNICATION MODULES:

- ETHERNET NODE COMMUNICATING WITH CB800

- CAN BUS NODE COMMUNICATING WITH COLLIMATOR AND Z/MASTER



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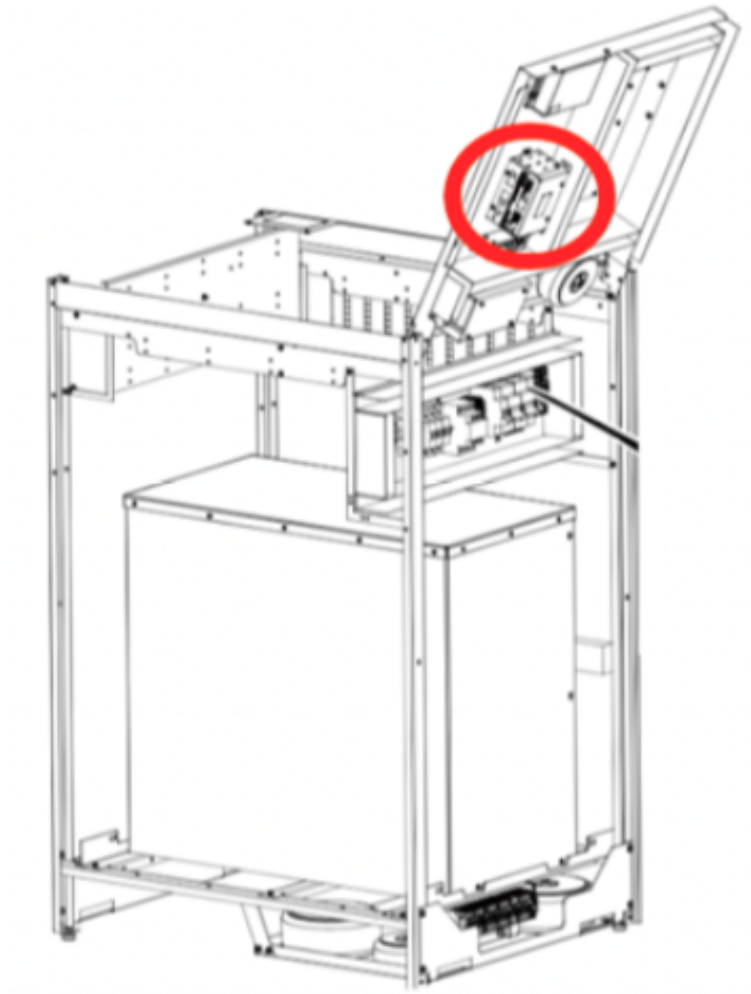
OVERVIEW OF SYSTEM COMPONENTS

CLARIFICATIONS

THE SYSTEM MASTER NODE (CB800)
COMMUNICATES BOTH BY ETHERNET AND CAN BUS:

- ETHERNET COMMUNICATION WITH TUBE DISPLAY AND CANON PC

- CAN BUS COMMUNICATION WITH Z/MASTER IN OTC



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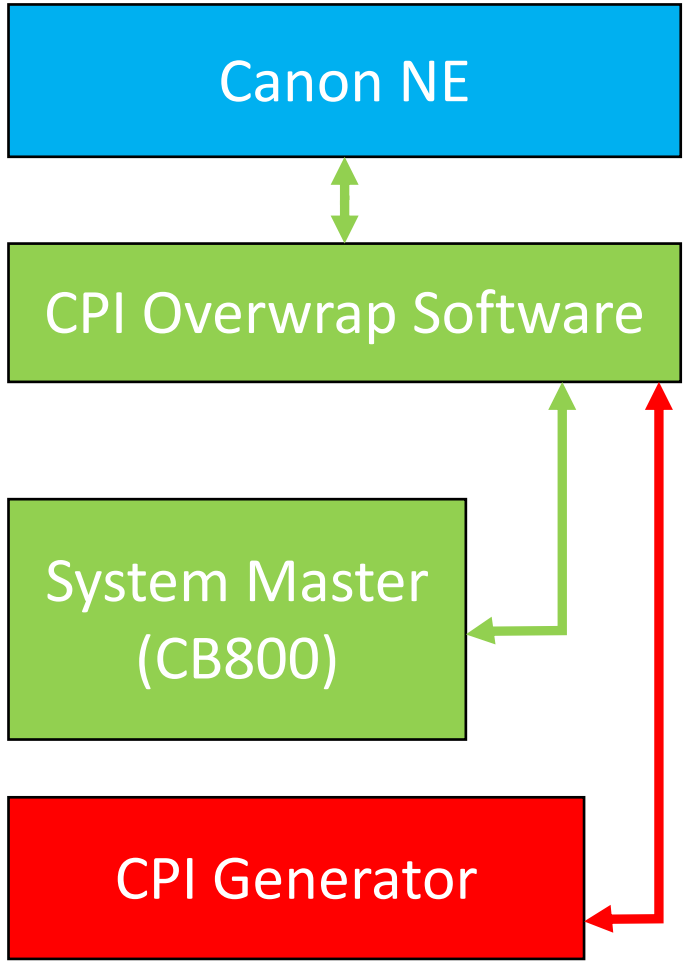
OVERVIEW OF SYSTEM COMPONENTS

COMMUNICATION WITH CANON NE

CPI AND CANON

- CPI Overwrap Software (and also Genware MP – the generator service software) is stored on the Canon PC and communicates with CPI generator
- The CPI Overwrap Software communicates with CANON NE



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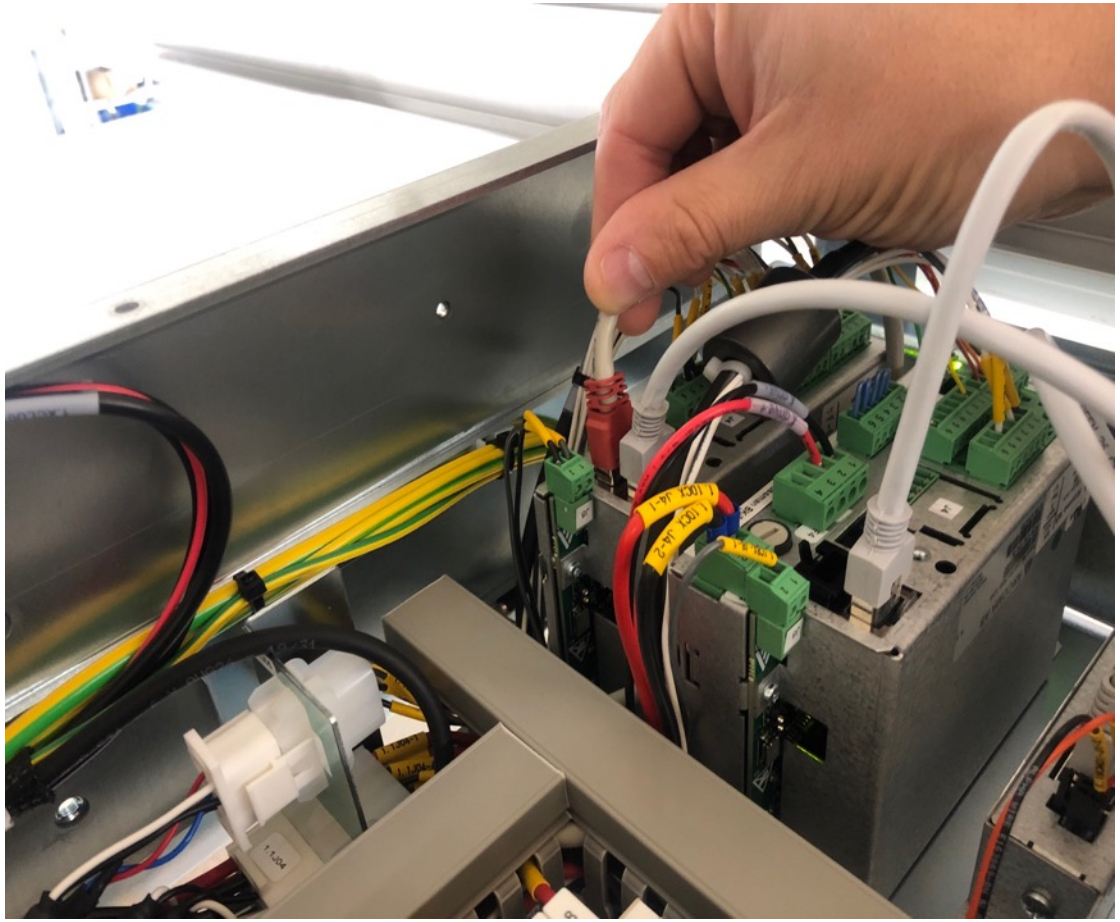
SERVICE SOFTWARE CONNECTION ***Aceso+***
Serial (RS 232)



CONNECTING SERVICE SOFTWARE:
RS 232 COMMUNICATION

When connecting the Arcoma Service Software we use the already wired RS 232 connection on the Z/Master node

CABLE ROUTED FROM Z/MASTER TO SYSTEM CABINET FOR EASIER CONNECTION

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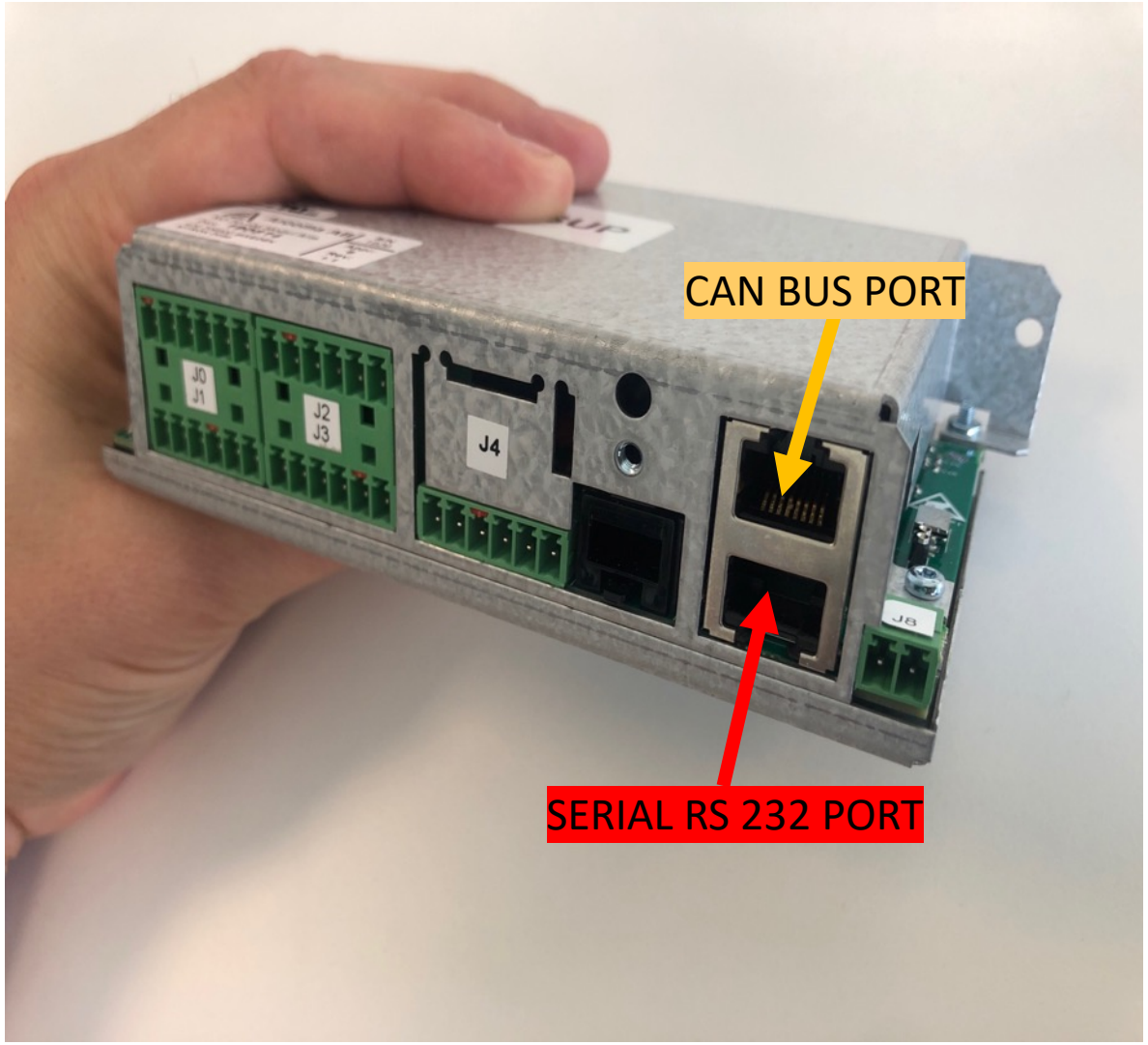
CAN bus / Serial RS 232 ports on CBDC-nodes



CONNECTING SERVICE SOFTWARE:
RS 232 COMMUNCATION

We must always use RS 232 connection port for serial communication with any node

NOTE!
Connecting a serial cable to any CAN bus port will cause permanent damages to node

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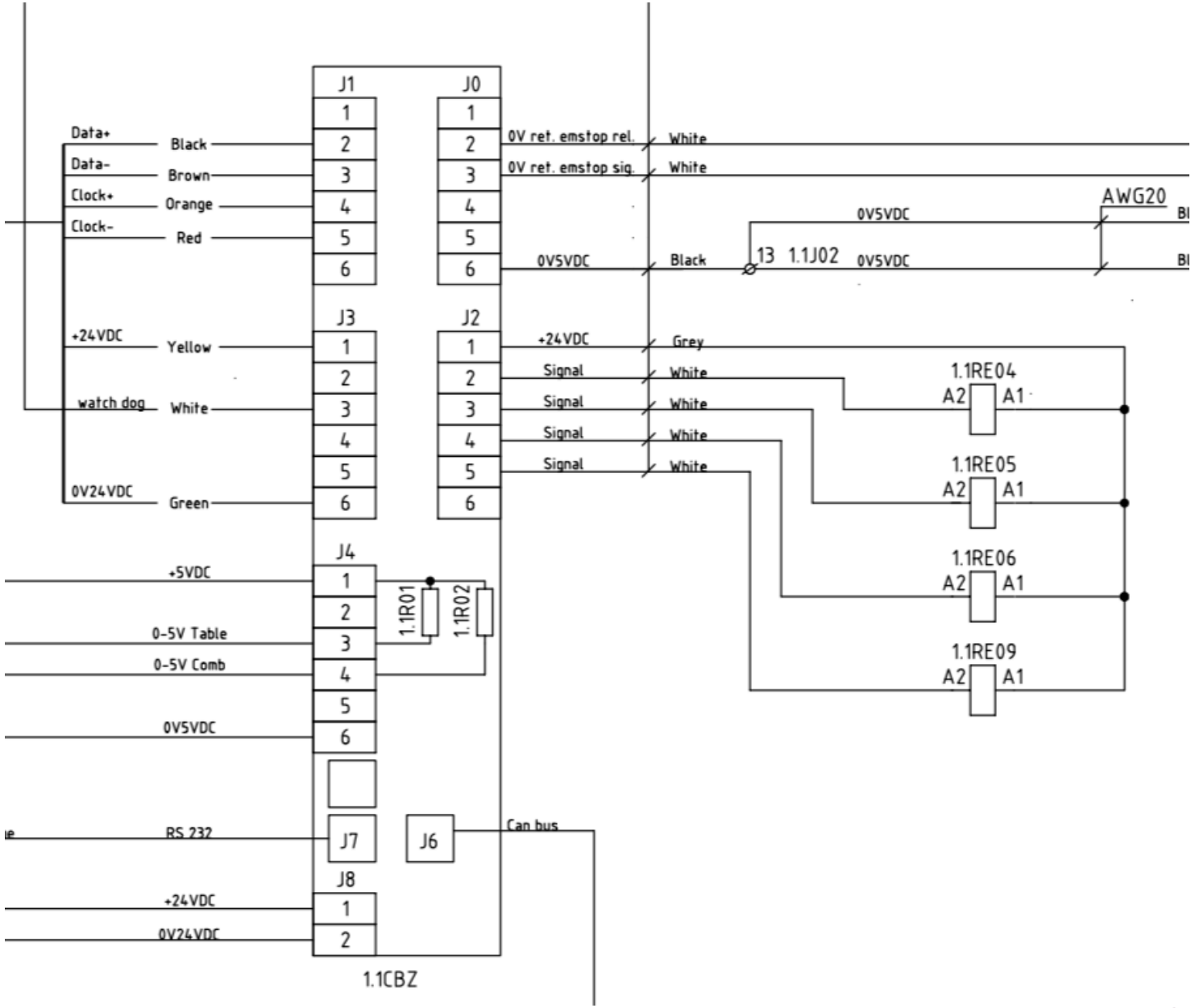
CAN bus nodes

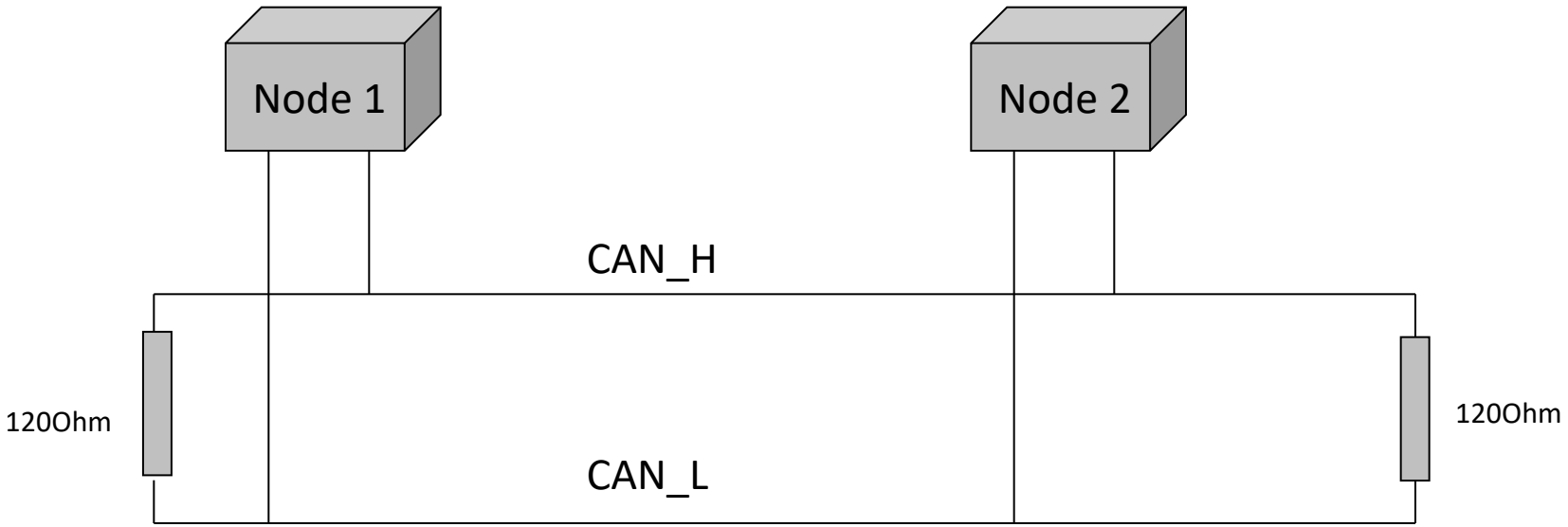
CONSISTENT ELECTRIC DESIGN:

- **DIGITAL I/O = J0, J1, J2, J3**
- **ANALOGUE I/O = J4**
- **CAN BUS PORT = J6**
- **SERIAL PORT = J7**
- **24 VDC POWER = J8**



CAN BUS SYSTEMS IN GENERAL

CLOSED CIRCUIT



ALL NODES ON CAN BUS CIRCUIT NEEDS TO STAY CONNECTED

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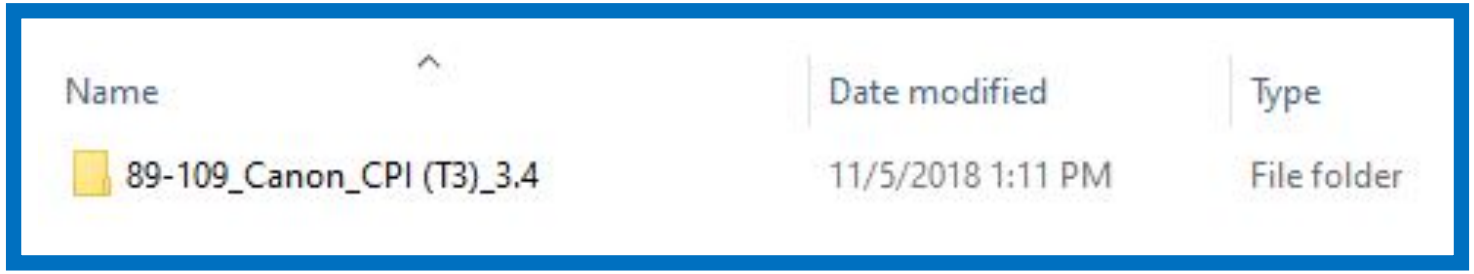
SOFTWARE UPDATING
DOCUMENTATION

SOFTWARE PACKAGES AND DOCUMENTATION

- All software packages have a bundle version number



SOFTWARE DOCUMENTATION: RLN AND UDI

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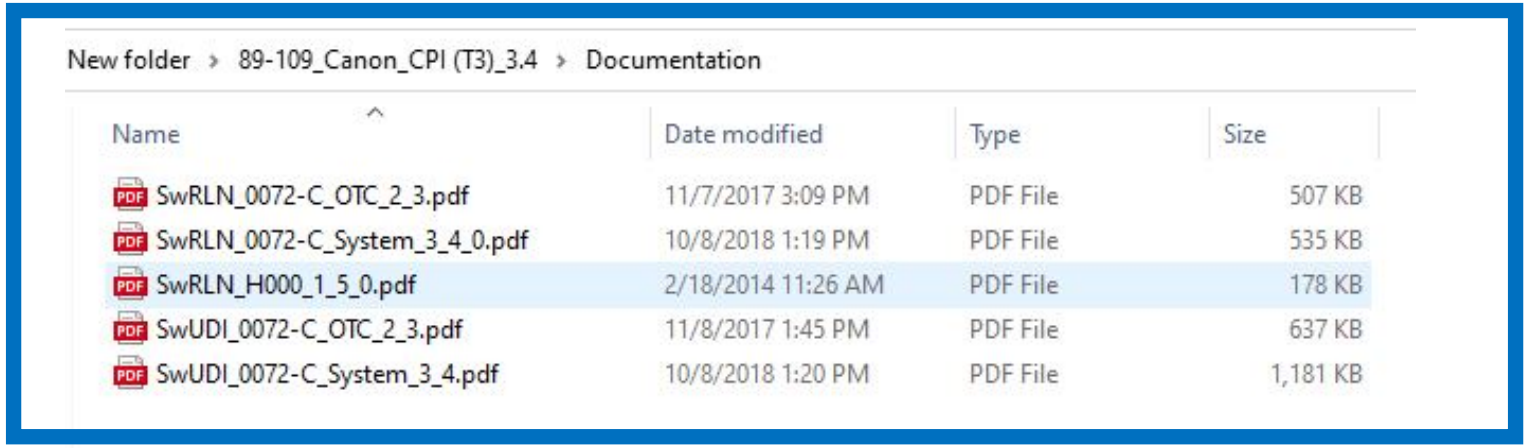
SOFTWARE UPDATING
DOCUMENTATION

RLN AND UDI

All software packages always include two types of critical documents:

- The first one is called RLN
- The second one is called UDI



RLN = RELEASE NOTES

UDI = UPDATE INSTRUCTION

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SOFTWARE UPDATING
DOCUMENTATION

RLN - Release notes

Release notes is used to determine which version of each node belonging to a specific software package.

One for OTC-level
(CAN bus positioning system)

2.3 Update Instructions

See document SwUDI_0072-C_OTC_x_x.pdf

3 RELEASE NOTES

3.1 2.3

3.1.1 Software versions

Master/Z:	2.3.A
UI/Collimator:	1.4.A
Guard:	0.10.R
SI:	2.0.A
X:	1.1.B
Y:	1.1.B
Alpha/Beta:	1.0.A
Bucky:	1.3.A
Wallstand:	1.3.A
SSW:	1.5.A

3.1.2 New functions

3.1.3 Enhancements and Bugfixes

- Enhancements in stitching functionality. Overlap and collimator size can be adjusted.

3.1.4 Parameter changes

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SOFTWARE UPDATING
DOCUMENTATION

RLN – Release notes

And another one for system level (CB800, CPI overwrap)

2.1.2 Software compatibility

0072-C_OTC version 2.3

CANDevice version 1.5

CPI overwrap 3.4.0.0 & 3.6.0.0

2.2 Known Issues

2.3 Update Instructions

See document SwUDI_0072-C_System_x_x.pdf

3 RELEASE NOTES

3.1 3.4

3.1.1 Software versions

SystemMaster: 3.4.A

Display: 3.0.F

3.1.2 New functions

3.1.3 Enhancements and Bugfixes

The handling of preview images is improved.

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SOFTWARE UPDATING *DOCUMENTATION*

UDI – Update Instruction

Same thing with the Update Instructions – there is one for OTC level and another one for system level.

6. Put on power to the board. The diodes on the board shall now follow the sequence:
   - Led 1 starts to blink.
   - Led 1 and 2 starts to blink when USB and file system is detected.
   - Led 1 and 3 starts to blink when the application is programmed.
   - Led 1 and 4 starts to blink when the programming of the board is finished.
7. When the programming is finished, remove the USB-memory stick.
   - The new application starts.

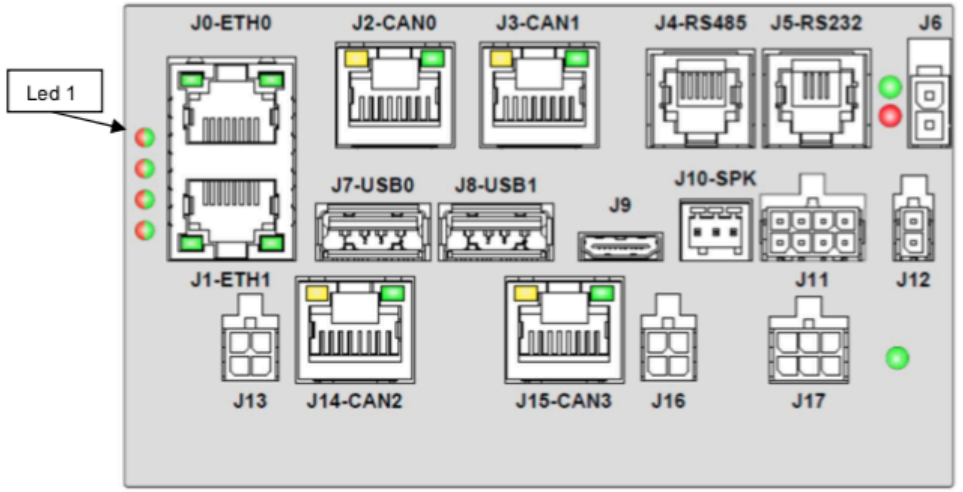

Figure: CB800 ports

4.1 Update Process

To update the software
system:

1. Connect the s
2. Start the servi
3. Under "Edit"
4. Mark all possible setting and save, an example is shown in Figure 1:

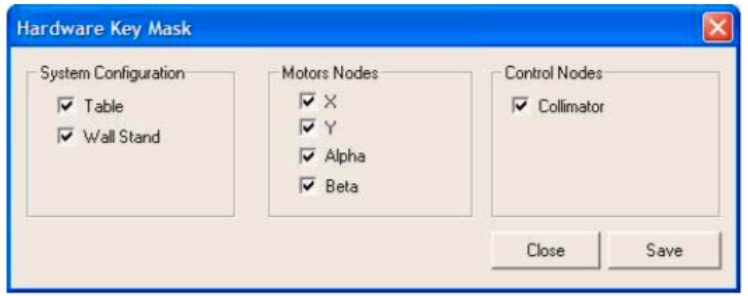

Figure 1: Hardware Key Mask

5. Restart the system.

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SOFTWARE UPDATING
DOCUMENTATION – HOW TO LOAD SW

HOW TO LOAD SOFTWARE

We have created a guidance document explaining the following:

- How to use the RLN and UDI documents
- In which order to read and determine versions
- When and how to save a backup parameter (system config file)
- The difference between upgrading a complete system and replacing a single spare part containing software
- How to load software to both CAN bus and Ethernet nodes

STEP BY STEP GUIDE AVAILABLE ON ARCOMA PARTNER PORTAL

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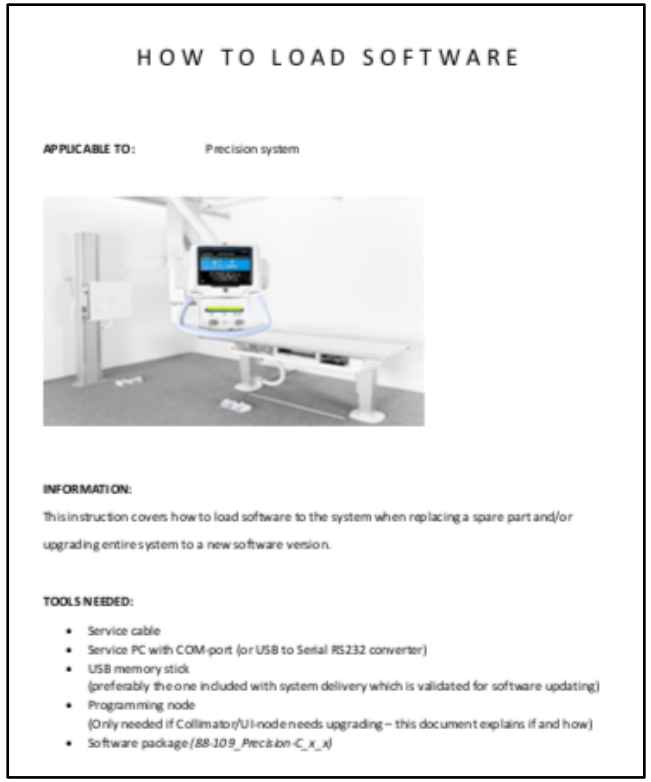
SOFTWARE UPDATING
HOW TO LOAD SOFTWARE

Let’s have a look at the document together:

How to load software



HOW TO LOAD SOFTWARE

APPLICABLE TO: Precision system

INFORMATION:

This instruction covers how to load software to the system when replacing a spare part and/or upgrading entire system to a new software version.

TOOLS NEEDED:

- Service cable
- Service PC with COM-port (or USB to Serial RS232 converter)
- USB memory stick
  (preferably the one included with system delivery which is validated for software updating)
- Programming node
  (Only needed if Collimator/UI-node needs upgrading – this document explains if and how)
- Software package *(88-109_Precision-C_x_x)*

DOWNLOAD HOW TO GUIDE

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SCHEMATICS
HOW TO NAVIGATE

There are 3 different types of schematics:

- SBD = System Block Diagram
- UBD = Unit Block Diagram
- WRD = Wiring Diagram

BLOCK DIAGRAMS AND WIRING DIAGRAMS

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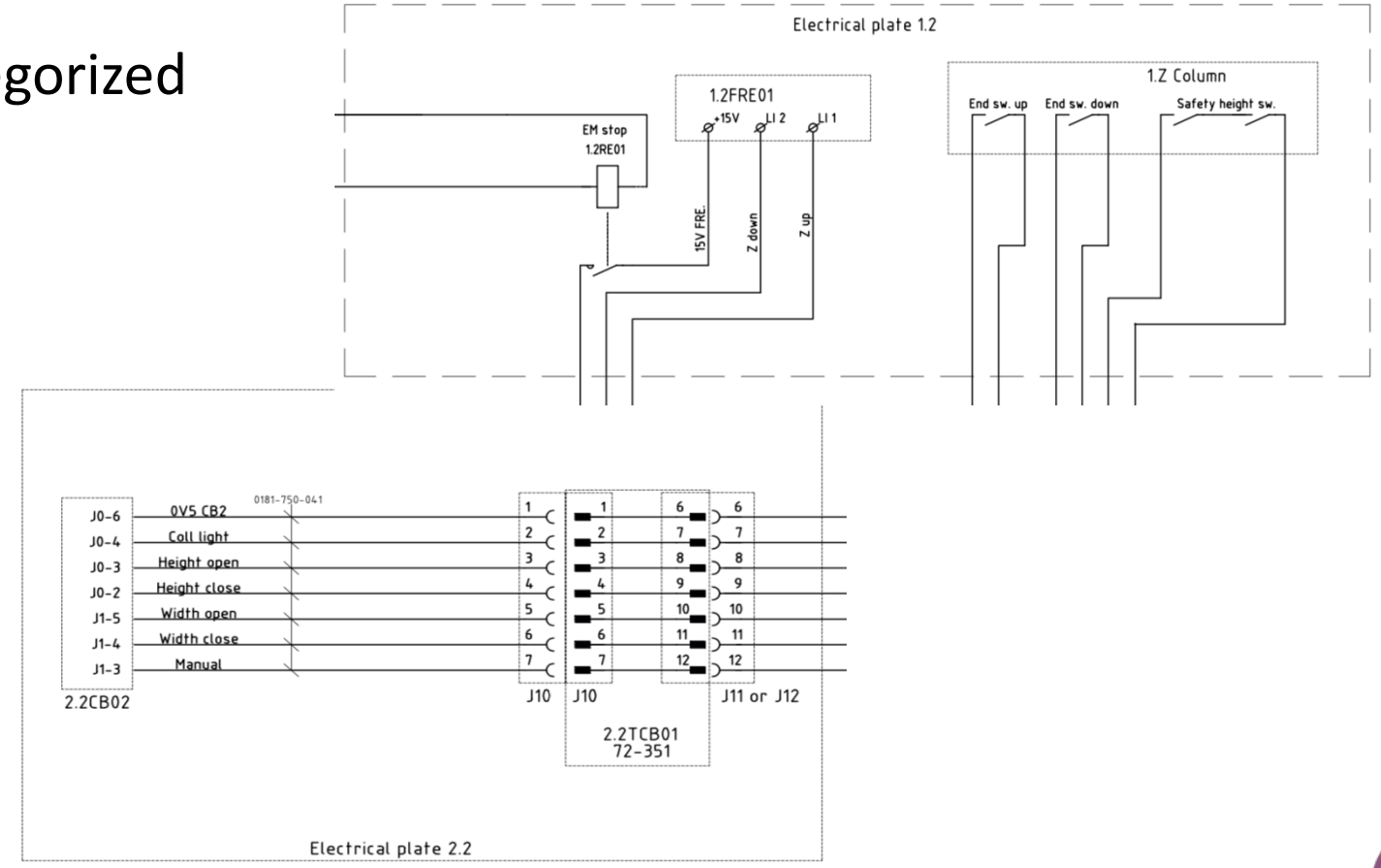
SCHEMATICS
HOW TO NAVIGATE

All cables and wires are categorized with consistent names:

- 1.x = Tube stand
- 2.x = Table
- 3.x = Wallstand
- 4.x = System cabinet
- 5.x = Image system



SCHEMATICS
HOW TO NAVIGATE EASILY

Different schematic types and consistent labeling

- *Let's have a look at them!*

Installation and Service manual

SCHEMATICS AND LABELINGS

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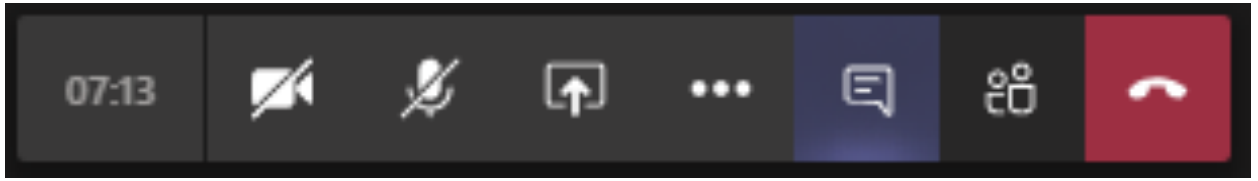
Questions?



Feel free to send us questions later:

erik.sall@arcoma.se or service@arcoma.se

ARCOMA

THANK YOU

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