ICS Engineering Manual

for an Inventory System with JIRA and EPICS

	Name (Role/Title)
Author	Jeong Han Lee (han.lee@esss.se)
Reviewer	TBD
Owner	ICS
Approver	ICS

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1 Overview

re are infinite ways to develop and maintain an inventory system. However, this inventory is the unique and **temporary** solution for the ICS Lab, especially, where the author works at. This inventory system is designed to minimize our time when we register an item to the existent JIRA ICS HW&I group inventory task. Therefore, it does **NOT** provide any fancy and beautiful ways to interact with users, BUT provide the minimal tool to monitor and track any equipment in ICS, ESS, and any IK partner. And the system only provide the following features :

- Do stock an item to JIRA, and do Add-and-Print its barcodes.
- Do stock an item to JIRA, and do Add-and-Print its barcodes.
- Delete an item from JIRA.
- Print the existent (created) label (in case, the printer doesn't work properly)

Figure 1 CS-Studio User Interface Screen Examples.

1.1 Inventory Workflow

1.1.1 How to stock an item at the first time to JIRA

The mandatory steps are defined the following procedures :

Scan the Serial Number on the equipment with the Xenon 190x barcode scanner.

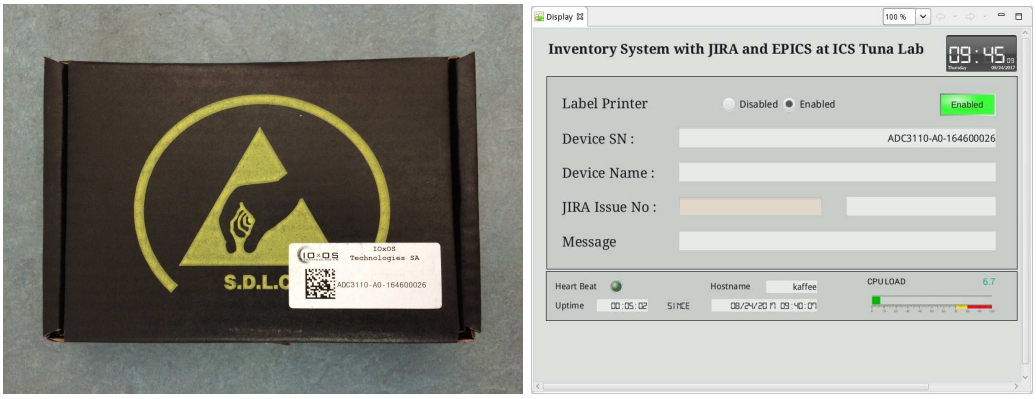

Figure 2 User Interface Screen Example after the serial number scan.

Scan one of 3.3 Model Codes in the manual with the Xenon 190x scanner.

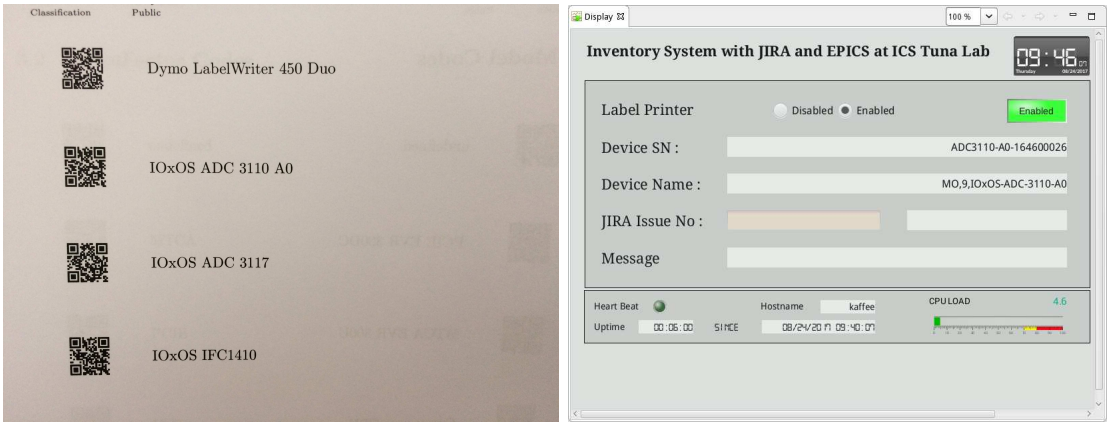

Figure 3 User Interface Screen Example after the Model Name scan.

Both case in below, the created labels are attached in the JIRA issue.

1. Scan Enable Label Printing after JIRA action if one wants to print labels (Default)
2. Scan Disable Label Printing after JIRA action if one wants not print labels

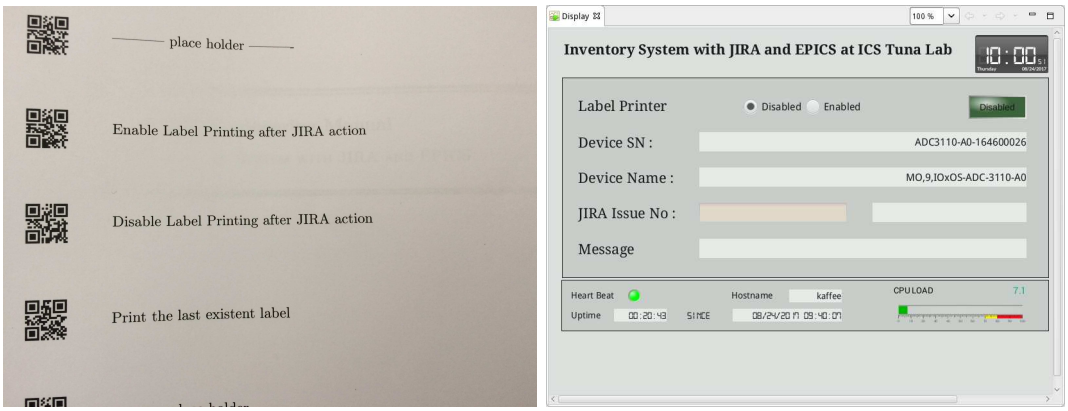

Figure 4 User Interface Screen Example for Enable and Disable Labels

Scan Create an JIRA issue in the manual

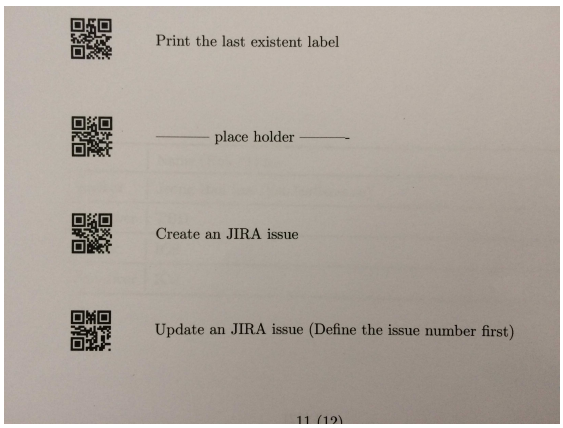

Figure 5 User Interface Screen Example after the Create an JIRA scan.

Attach two barcodes in the reserved box, an equipment, or both.

Figure 6 Equipment with labels. The small one should be trimmed properly.

1.1.2 How to add and print barcodes for an Item which has registered in JIRA

1. Define the TAG number which one wants to delete it via CS-Studio User Interface or caput
   `caput ICSLAB:IssueNumber TAG-XXX`
2. Scan the Serial Number on the equipment with the Xenon 190x barcode scanner.
3. Scan Model Name in the manual with the Xenon 190x scanner.
4. Both case in below, the updated labels are attached in the JIRA issue.
   a) Scan Enable Label Printing after JIRA action if one wants to print the updated label (Default)
   b) Scan Disable Label Printing after JIRA action if one wants not print the updated label
5. Scan Update an JIRA issue in the engineering manual

1.1.3 How to delete the existent Item

1. Define the TAG number which one wants to delete it via CS-Studio User Interface or caput
   `caput ICSLAB:IssueNumber TAG-XXX`
2. Scan Delete an JIRA issue Barcode in the manual with the Xenon 190x barcode scanner.

1.1.4 Print the existent labels

In case, there is the printer issue, for example, print only one of two labels, not responding, and so on.

1. Please check the printer status at http://localhost:631/ and resolve it. Note that one should know the basic CUPS configuration.

2. Print the existent label by scanning the barcode (Print the last existent label) in the manual. Note that this action will print only the recent created labels.

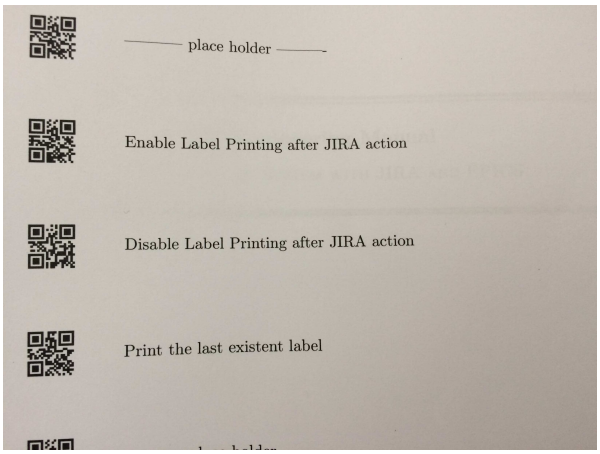

Figure 7 Bar code in the manual for the Print the Existent Label.

1.2 Components

1.2.1 Hardware

- Honeywell Xenon 1900g (Wire) or 1902g (Wireless) Barcode scanner
- DYMO LabelWriter 450 Duo

1.2.2 Software

- Linux OS (tested with Debian 8)
- EPICS IOC https://github.com/jeonghanlee/hw-xenon1900
- JIRA https://jira.esss.lu.se/projects/TAG/summary
- DYMO LabelWriter 450 Duo CUP Driver
  http://www.dymo.com/en-US/dymo-label-sdk-and-cups-drivers-for-linux-dymo-label-sdk-cups-linux-p--1

1.3 Troubleshooting

2 Honeywell Xenon Scanners 1900 and 1902g

Note that there are different procedure to setup Xenon 1900 corded scanner and Xenon 1902g cordless scanner. Please consult each manual in detail.

2.1 Basic Configuration

Figure 8 Default Settings.

Figure 9 USB Serial Setting.

Figure 10 Silent Mode for Corded Scanner.

Figure 11 Silent Mode for Cordless Scanner.

3 Predefined Bar Codes

3.1 Vendor Codes

undefined

ess

mrf

ioxos

moxa

nat

concurrent

schroff

struck

caen

raritan

dymo

Honeywell

3.2 FormFactor Codes

undefined

MTCA

PCIE

VME

FMC

3.3 Model Codes

undefined

PCIE EVR 300DC

MTCA EVR 300U

Concurrent CPU

MTCA 3U Crate

NAT Power Module

NAT MCH PHYS

Barcode Scanner Xenon 190x

Dymo LabelWriter 450 Duo

IOxOS ADC 3110 A0

IOxOS ADC 3117

IOxOS IFC1410

IOxOS IFC1420

MRF VME-EVG-230

MRF VME-FOUT-12

4 Action Bar Codes

Clear all scanned PVs

——— place holder ———-

Enable Label Printing after JIRA action

Disable Label Printing after JIRA action

Print the last existent label

——— place holder ———-

Create an JIRA issue

Update an JIRA issue (Define the issue number first)

Delete an JIRA issue (Define the issue number first)

5 Outlook

The system has the limited functionality for the usage of ICS Tuna Lab, since I would like to save at least 5 mins while stocking an equipment into the existent JIRA project. With the current implementation, it actually save my time a lot, so I can work more valuable subjects than tedious and time-consuming open-read-write-print activities when I have 50 boxes of an equipment. This system fulfilled already what I would like to achieve, i.e., saving 5 mins per an equipment. Therefore, I ended this development.

However, it may be the good starting point if one want to implement this system with any relational database, which is more flexible than the restricted JIRA project, which I don't have any permission to modify their structure. Please contact me through han.lee@esss.se if one has any comments on this system.