EngManual

This is a tentative name to use during the development process, not final name
A solution for Manual Retention, Asset Management, CSA Approval verification and More

Introduction

In January, Bill Jolley (ECE Research Lab Director) contacted me about the need for staff and faculty to manage certain assets. The immediate impetus is that the safety office wants us to ensure all lab equipment meets CSA approval with a CSA sticker or markings – thus requiring an inventory. He suggested we investigate an Engineering-wide solution as this problem affects all departments.

But more broadly, we need to keep manuals and Standard Operating Procedures, and lists of assets that can be used to identify them. Knowing data like manufacturer, model, serial numbers, room location, CSA approval, etc. in an asset inventory is a good idea for insurance purposes (fire, theft), operating purposes, continuity, disputes, etc.

I recall that Paul Figueth generally enquired about similar capabilities last year though we didn't explore the needs at that time, and we just noted we lacked a solution.

In my discussion with Bill, we envisioned using a printable QR code sticker which can be affixed to each asset, and reading it with any phone, tablet, etc. directs the user to the UW Eng Manual repository shown below, even though many manuals may just point to vendors on the Internet.

If the vendor manuals move on the web, we would still have the Manufacturer and Model and other information capable of being used to find the appropriate manuals with a quick web search.

I have built a basic system which appears to meet these goals. Using any Internet phone or tablet, people can scan a smallish label on any device and find basic facts about the device. Or using the web interface (also working on phones, tablets, or computers), find any entered device by searching for one or more parameters including vendor, model, serial number or ID tag.

In this example, one has entered a portion of the manufacturer's name and model and the list is narrowed to applicable devices.

Or if you just enter Cisco or part of it, all Cisco assets would be listed for the user's home department.

Select Manual

Enter one or more fields to narrow search:

Category	
Manufacturer	cisc
Model	234a
Room	
Serial Number	
Owner Userid	

category	CSA	manufacturer	model	room	serialnumber	owneruserid	manualurl	sop
switch	CSA	cisco	234a			martin	https://cisc	

Clicking on the asset brings up more details and links to the SOP and Manual (documentation).

The SOP supports various features including HTML links, coloured text and resizable images. With the support of HTML links, various other useful information can be referenced as needed.

Caption ✖

Asset ID #	1
Category	lab equipment
Manufacturer	cisco
Model	2532
Room	DWE 2513
Serial Number	253413
Manual URL	View Doc https://cisco.com/blah/blah/
S.O.P. URL	Edit Doc
CSA	CSA, ULC

SOP

This is a simple Standard Operating Procedure.....

You can have **various** *text* attributes

or images (which can then be resized)

Clicking on Edit for the SOP brings up an editor.

Editing: SOP for cisco 2532

Save   Cancel

Normal   **B** *I* U   ≣ ≣ ≣ ≣   🖼 🔗 A A̶ ≡

This is a simple Standard Operating Procedure.....

You can have **various** *text* attributes
or images (which can then be resized)

This goes on and on.

And more

Asset Labels

Labels should ideally be plastic or similar backed, not mere paper, as the environmental conditions can be somewhat dirty, and plastic-backed labels can simply be wiped clear.

The cost-effective labels can be printed with a sub-$150 label maker on 25 mm (1 inch) wide label tape. Labels consumables cost about 10 cents per label retail price, or significantly less if bulk purchases are made.

Each label will include the QR code for instant access to the system using phones and tablets, and also the asset ID number printed for (human) manual lookups such as when a phone is not available or appropriate, and a small printed logo image to identify our tags as UW Engineering assets tags rather than a vendor's QR code.

Other options include RFID tags or NFC tags. However, these are both less ideal because they require more expensive readers (and often writers), may involve radio frequency interference with various lab equipment and do not offer the printed number alternative entry solution. In contrast, QRs are simpler.

Bar codes are another option, but they do not perform as well with cell phone cameras (laser scanners work far better but add cost and complexity), and can be confused with UPC labels and other bar codes which litter many devices.

Security Considerations

The system segregates data by department financial code.   Currently, one can generally only view data of departments for which you are employed (applicable to faculty, staff and co-op students).   Others, such as current students and people in other departments have no access. This restriction is to prevent malicious users from "scoping out" expensive assets and their locations for possible theft. (An exception is *sample* data which is used for training purposes, and is available to all.).

Special super accounts can be created for individuals who act on a faculty-wide basis, they have visibility into all areas as required by job function.

Write access is an additional privilege which must be granted by the department. It is expected there will be few writers of information and many readers.

Purchasing prices are not stored presently. Doing so could introduce risks of targeted thefts by searching for expensive item values, it would would also divulge one's effective hardware budget by displaying assets by creation date and price, and could result in complaints.

If prices are required, they could be collected at input time but never divulged except to suitably privileged users. We could also store P.O. numbers if desired. But we should remember that every additional field we add creates more work for staff and increases the barriers to adoption.

Other Thoughts

Knowing which assets are in which locations could help with managing space (indicating labs versus offices) and associated Safety Training requirements – which are both in scope for other projects. The data for all three are stored on the same database server and can be linked together synergistically.

Still Incomplete

There are several aspects of the project which still need to be completed:
- User account management (adding accounts)
- Bulk importing of data (from spreadsheets)
- Bulk export of data (to spreadsheets/CSV)
- Additional data fields which may be useful – up for discussion
    - Training course requirements
    - Purchase or replacement cost
    - P.O. #

- Process for simplified label creation