

RFID
JOURNAL
LIVE!

20 **YRS**
2003 - 2022

MAY 17 - 19, 2022
MANDALAY BAY | LAS VEGAS, NV

Harvard Automates Asset Tracking and Reduces Inventory Time with RFID

Jeff DiCiaccio

Director of Strategic Procurement



HARVARD
MEDICAL SCHOOL

Background:

- Harvard University established - 1636
- Harvard Medical School est.- 1782 (1906)
- Graduate School – MD, PhD, & Master
- Located in Boston – HSDM, HSPH, & Wyss



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Background:

- 18 buildings, 2 million sq. ft.
- \$ 750 million operating expenses
- \$ 300 million Research grants and contracts (sponsored)

Sponsored Funding Definition:

Sponsored – value and quantity

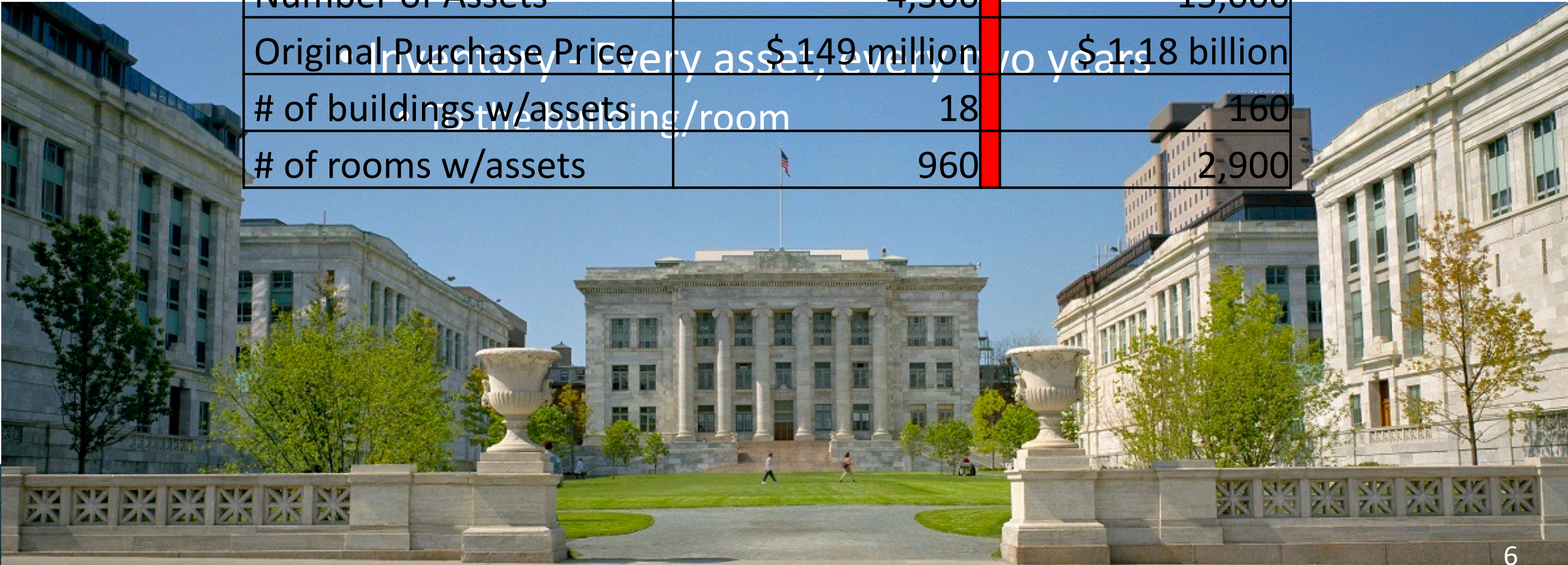
HU - \$ 177 million & 5,700 = 34%

HMS - \$ 59 million & 1,800 = 42%



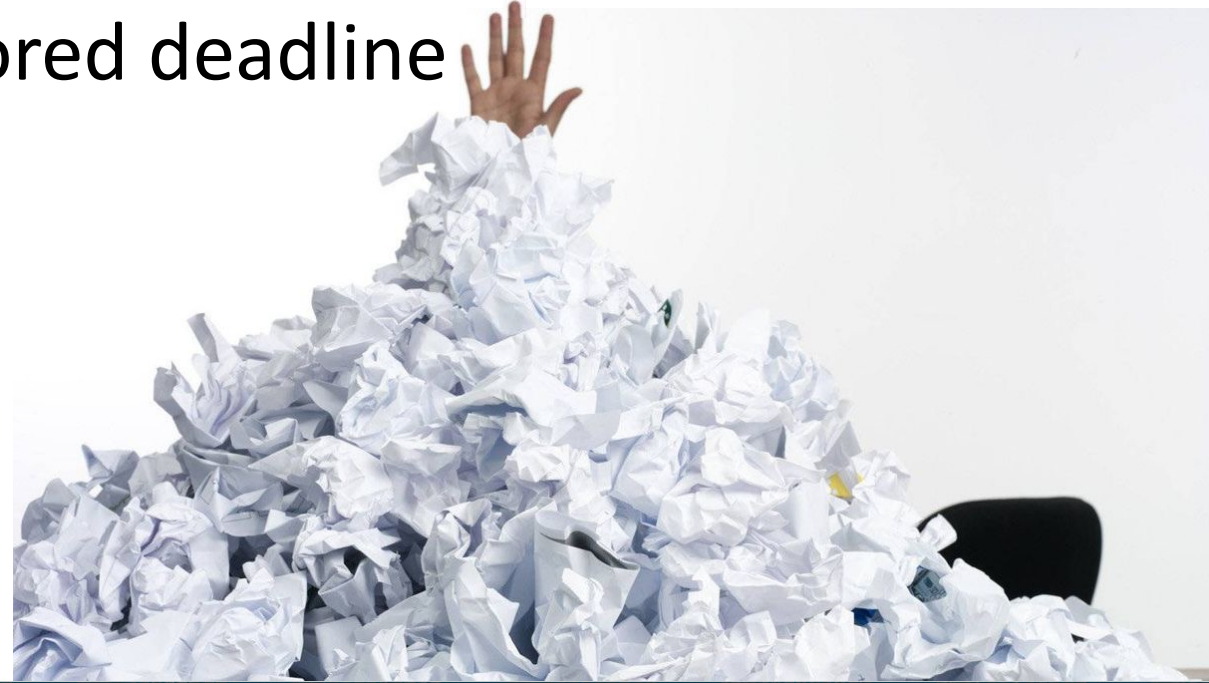
Asset - is \geq \$5k w/ 3 + years

Harvard Asset Statistics:	Harvard Medical School	Harvard
Number of Assets	4,300	15,000
Original Purchase Price	\$ 149 million	\$ 1.18 billion
# of buildings w/assets	18	160
# of rooms w/assets	960	2,900



How did a Procurement person ...?

- Asset manager left 2 weeks
- CFO “All Hands on Deck”
- *10 People - not trained, no consistency, & not day job*
- 254 Sponsored & 809 Non-sponsored deadline
- **Voluntold** – August 2016



Audit of all HU Assets focus on Sponsor Funded

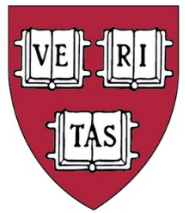
analysis performed by management, it was determined that as of August 2016, 731 out of the 3,690 pieces of equipment with a net book value totaling \$17.9 million had not yet been inventoried within the two year period from the last date of equipment observation.

University Corrective Action Plans:

training, rolling inventory schedules, and technology solutions (RFID)

Make life easier – RFID investigation

- Partnered with 3 schools
- 80% of total
- [Harvard President's Administrative Innovation Fund](#) –
- 2018 Grant application (PAIF) - \$25K



HARVARD
Faculty of Arts and Sciences



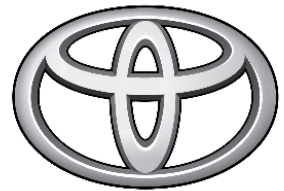
HARVARD
School of Engineering
and Applied Sciences



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Selection Process:

1. RFP – 4 + 4 Vendors
2. Contact 22 references



TOYOTA



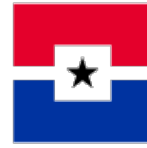
DURACELL®



VCU



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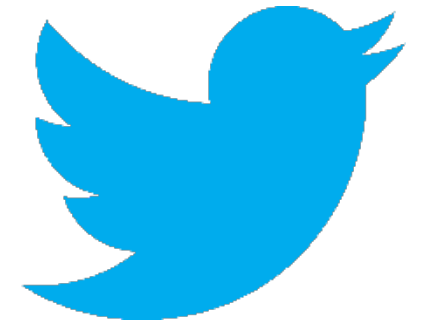
Dallas County
Community College District



CSN
COLLEGE OF
SOUTHERN NEVADA

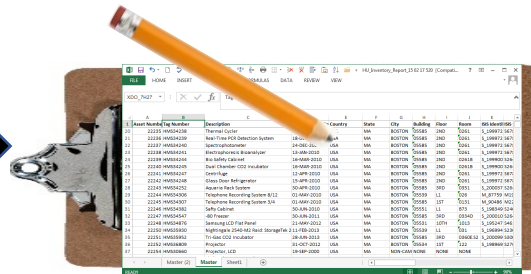


UNT | HEALTH
SCIENCE CENTER



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Oracle Fixed Asset



ADI Upload:

Manuel update:

<div> <div> <div>File</div> <div>Home</div> <div>Insert</div> <div>Page Layout</div> <div>Formulas</div> <div>Data</div> <div>Review</div> <div>View</div> </div> <div> <div> <div>XDO_7H2?</div> <div>Tag Number</div> </div> </div> </div>														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	Asset Number	Tag Number	Description	Date Placed In Service	Country	State	City	Building	Floor	Room	ISS Identifier	ISS		
20	22235	HMS34238	Thermal Cycler	18-DEC-2009	USA	MA	BOSTON	OS585	2ND	0261	S_199972	567		
21	22236	HMS34239	Real-Time PCR Detection System	18-DEC-2009	USA	MA	BOSTON	OS585	2ND	0261	S_199972	567		
22	22237	HMS34240	Spectrophotometer	24-DEC-2009	USA	MA	BOSTON	OS585	2ND	0261	S_199972	567		
23	22238	HMS34241	Electrophoresis Bioanalyzer	13-JAN-2010	USA	MA	BOSTON	OS585	2ND	0261	S_199972	567		
24	22239	HMS34244	Bio-Safety Cabinet	16-MAR-2010	USA	MA	BOSTON	OS585	2ND	0261B	S_199900	526		
25	22240	HMS34245	Dual Chamber CO2 Incubator	16-MAR-2010	USA	MA	BOSTON	OS585	2ND	0261	S_199900	526		
26	22241	HMS34247	Centrifuge	12-APR-2010	USA	MA	BOSTON	OS585	2ND	0261	S_199972	567		
27	22242	HMS34248	Glass Door Refrigerator	15-APR-2010	USA	MA	BOSTON	OS585	2ND	0261	S_199972	567		
28	22243	HMS34252	Aquaria Rack System	30-APR-2010	USA	MA	BOSTON	OS585	3RD	0351	S_200037	526		
29	22244	HMS34206	Telephone Recording System B/12	01-MAY-2010	USA	MA	BOSTON	OS539	1L	0216	M_877929	1415		
30	22245	HMS34307	Telephone Recording System 3/4	01-MAY-2010	USA	MA	BOSTON	OS585	1ST	0131	M_90486	102		
31	22246	HMS34382	Safety Cabinet	30-JUN-2010	USA	MA	BOSTON	OS551	1L	873	S_198349	524		
32	22247	HMS34547	-80 Freezer	30-JUN-2011	USA	MA	BOSTON	OS585	3RD	0334D	S_200010	526		
33	22248	HMS34876	Samsung LCD Flat Panel	21-MAY-2012	USA	MA	BOSTON	OS531	10TH	1013	S_195247	546		
34	22250	HMS35980	Nightingale 12540-M2 Raid StorageE2	11-FEB-2013	USA	MA	BOSTON	OS539	1L	031	S_196994	523		
35	22251	HMS35952	Tri-Gas CO2 Incubator	28-JUN-2013	USA	MA	BOSTON	OS585	3RD	036C62	S_200099	526		
36	22252	HMS36809	Projector	31-01-2012	USA	MA	BOSTON	OS534	1ST	122	S_198699	527		
37	22254	HMS36060	Projector, LCD	19-SEP-2000	USA	MA	NON-CAM	NONE	NONE	NONE				



2 hours to find 50 assets
2.4 minutes/assets
173 hours/HMS assets

RFID Process

Oracle
Fixed Asset



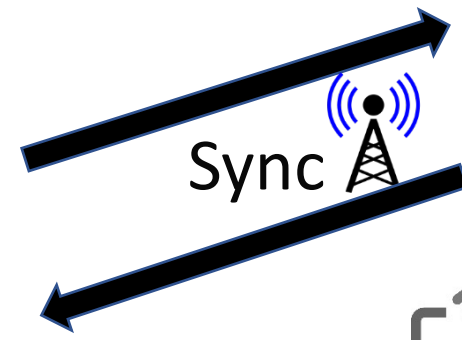
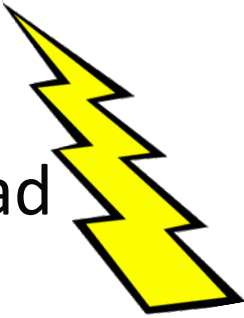
Import

Radiant
Web app



Excel

ADI Upload



Asset Number	Tag Number	Description	Date Placed in Se	Country	State	City	Building	Floor	Room	ISS Identifi	ISS
22235	HMS34238	Thermal Cycler	18-DEC-2009	USA	MA	BOSTON	05585	2ND	0261	S_199972	5671
22236	HMS34239	Real-Time PCR Detection System	18-DEC-2009	USA	MA	BOSTON	05585	2ND	0261	S_199972	5671
22237	HMS34240	Spectrophotometer	24-DEC-2009	USA	MA	BOSTON	05585	2ND	0261	S_199972	5671
22238	HMS34241	Electrophoresis Bioanalyzer	19-JAN-2010	USA	MA	BOSTON	05585	2ND	0261	S_199972	5671
22239	HMS34244	Bio Safety Cabinet	16-MAR-2010	USA	MA	BOSTON	05585	2ND	02618	S_199900	5261
22240	HMS34245	Dual Chamber CO2 Incubator	16-MAR-2010	USA	MA	BOSTON	05585	2ND	02618	S_199900	5261
22241	HMS34247	Centrifuge	12-APR-2010	USA	MA	BOSTON	05585	2ND	0261	S_199972	5671
22242	HMS34248	Glass Door Refrigerator	15-APR-2010	USA	MA	BOSTON	05585	2ND	0261	S_199972	5671
22243	HMS34252	Aquaria Rack System	30-APR-2010	USA	MA	BOSTON	05585	3RD	0351	S_200037	5261
22244	HMS34306	Telephone Recording System 8/12	01-MAY-2010	USA	MA	BOSTON	05539	L1	026	M_87759	M15
22245	HMS34307	Telephone Recording System 5/4	01-MAY-2010	USA	MA	BOSTON	05585	1ST	0131	M_90486	M22
22246	HMS34382	Safety Cabinet	30-JUN-2010	USA	MA	BOSTON	05551	L1	873	S_198349	5244
22247	HMS34547	-80 Freezer	30-JUN-2011	USA	MA	BOSTON	05585	3RD	0334D	S_200010	5261
22248	HMS34876	Samsung LCD Flat Panel	21-MAY-2012	USA	MA	BOSTON	05531	10TH	1013	S_195247	5461
22250	HMS35930	Nightingale 2540-M2 Raid StorageTek	21-FEB-2013	USA	MA	BOSTON	05539	L1	031	S_196994	5231
22251	HMS35952	Tri-Gas CO2 Incubator	28-JUN-2013	USA	MA	BOSTON	05585	3RD	0360E.52	S_200099	5301
22252	HMS36809	Projector	31-OCT-2012	USA	MA	BOSTON	05534	1ST	122	S_198969	5271
22254	HMS30660	Projector, LCD	19-SEP-2000	USA	MA	NON-CAM	NONE	NONE	NONE		

1.5 hours to find 166 assets -retag
0.5 minute/assets
39 hours/HMS assets



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Reader Selected



Dimensions	Sled	MC9190-Z
Weight	13.4 oz*	34 oz
Length	6.3"	10.8"
Width	3.1"	4.7"
Height	6.8"	7.7"

*iPhone XR 6.8 oz = 20.2 oz



TECHNOLOGY
SOLUTIONS UK LTD
part of **HID**

Old Bar code tag
1.75" x 0.63"



We use - passive RFID style

Edge tag
1.77" x 0.22" x 0.03"



Universal tag (most common)
1.875" x 0.63" x 0.05"



Data Center tag (with hole for cable tie)
1.50" x 0.51" x 0.16"



Not to scale

Timeline

- Expected Timeline
 - Investigation to completion – 7 months
- Reality Timeline
 - Investigation to completion – 18 months



Deployment/Implementation Issues

- Funding \$
- Test environment 
- Departure of Project members
- Covid

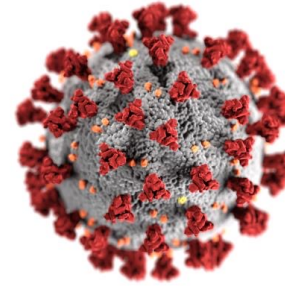
Inventory – 2 yr. cycle

July 2018

New Equipment +270

Retag old equipment

WFH - Mailing tags



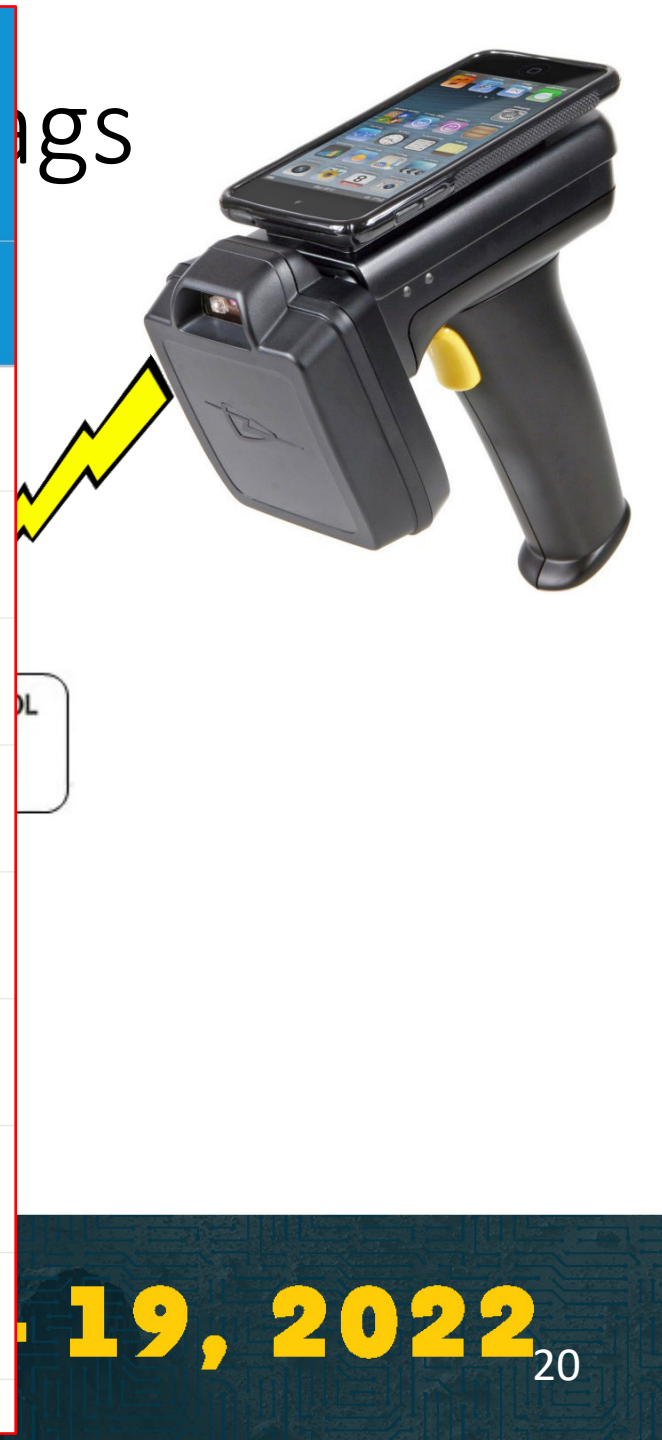
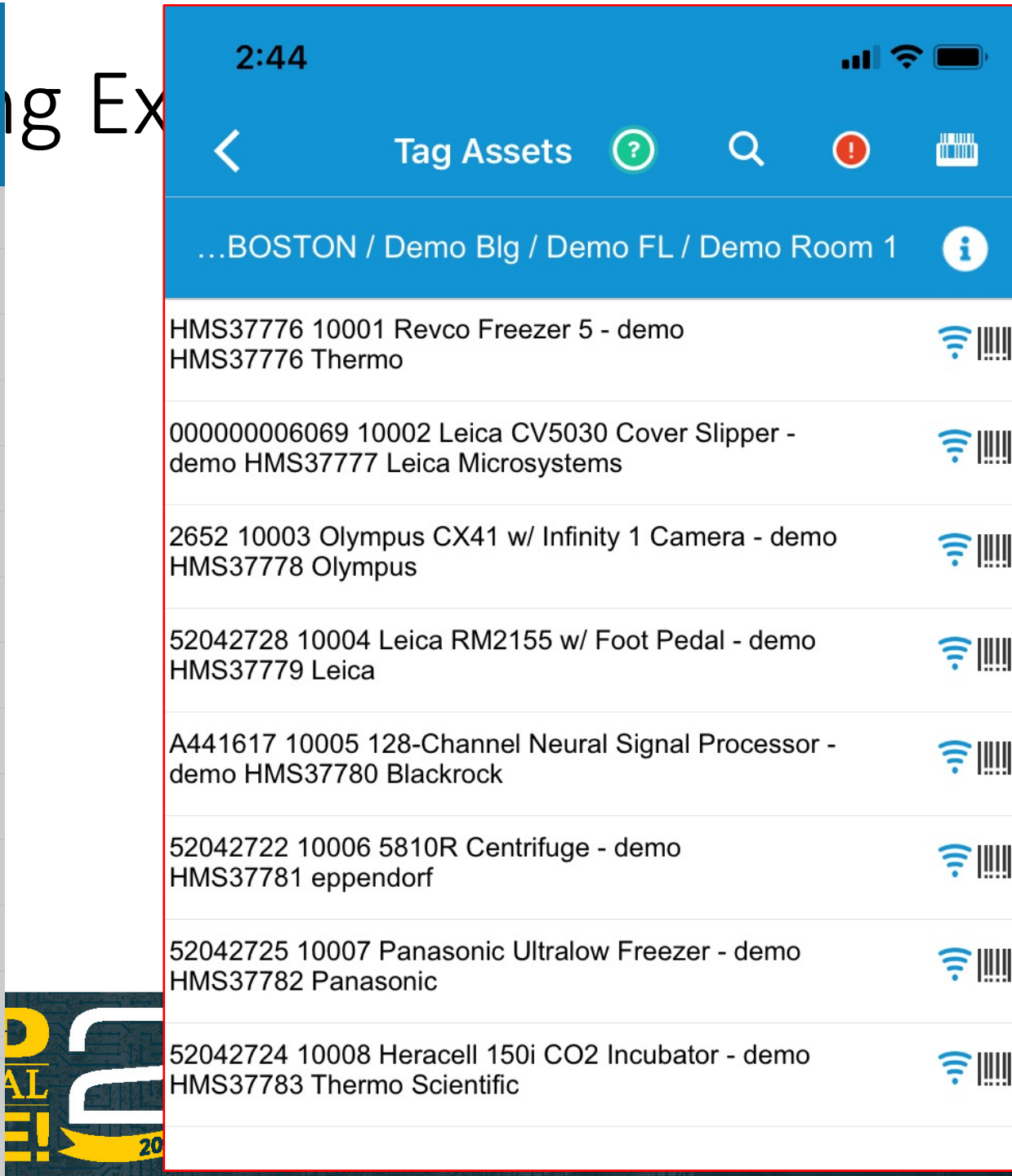
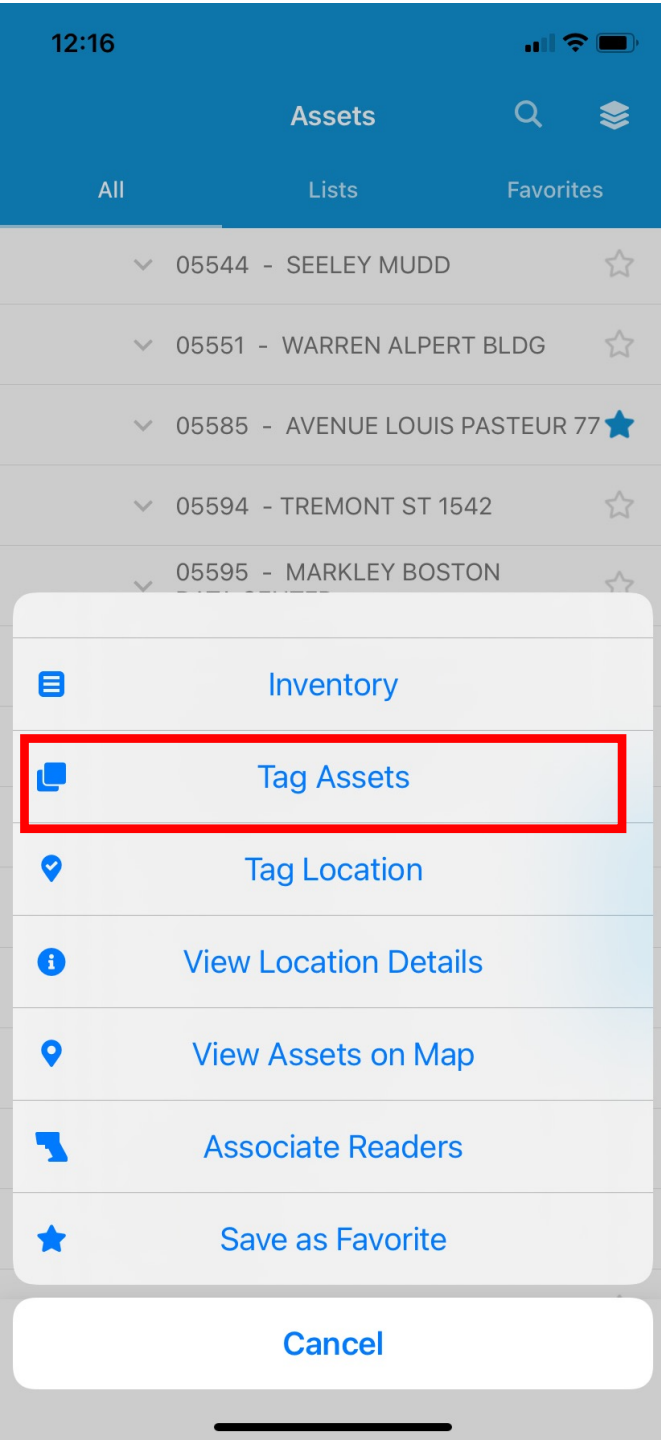
Feds extended - 2021

April 2022

Resume retag old equipment

Inventory





2:45

Edit Association

Tag Number

HMS37776

RFID Code

Beacon ID

Description

Revco Freezer 5 - demo

Secondary Tag

HMS37776

Serial Number

2:45

Edit Association

Tag Number

52042723

RFID Code

0106A026002AB00052042723

Beacon ID

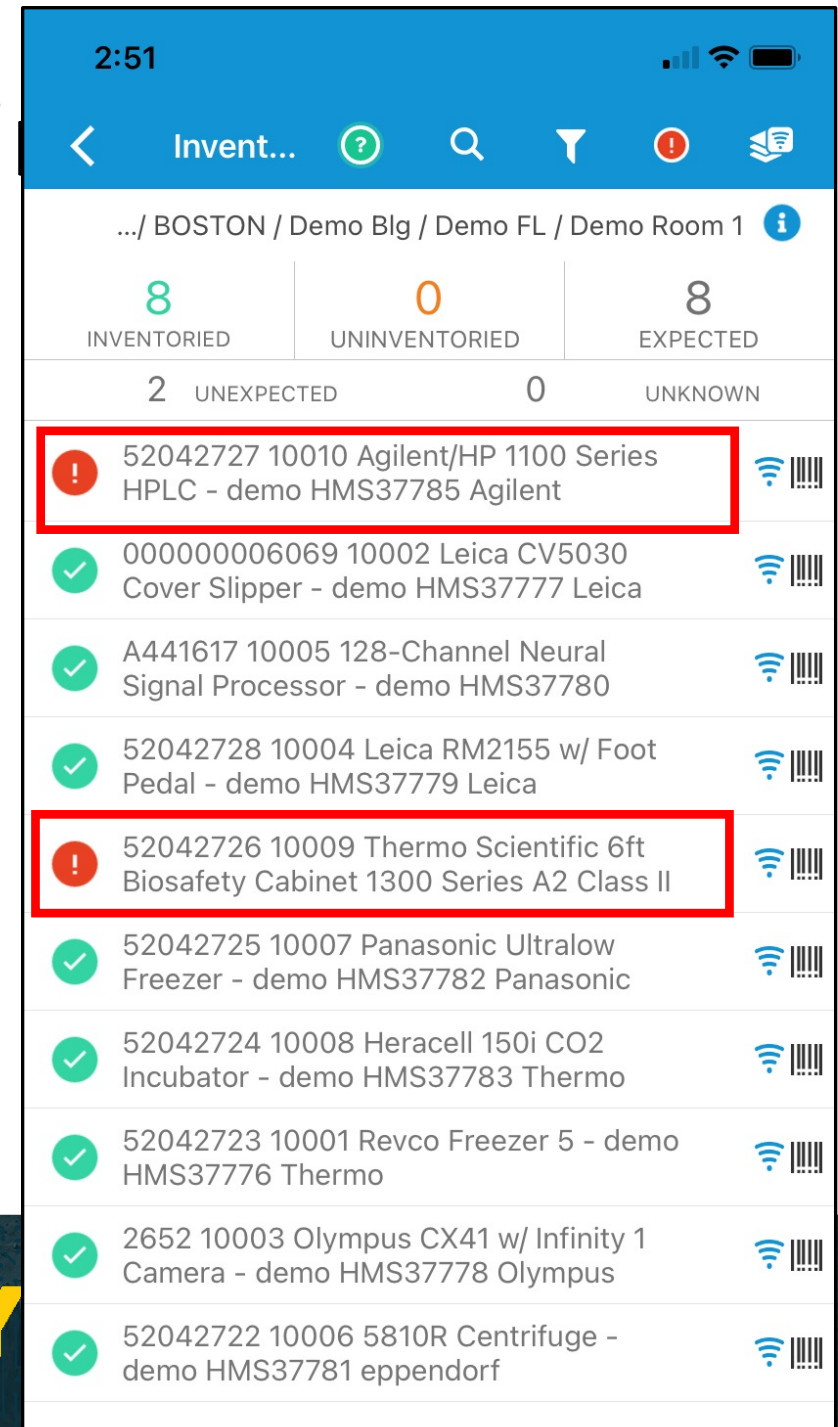
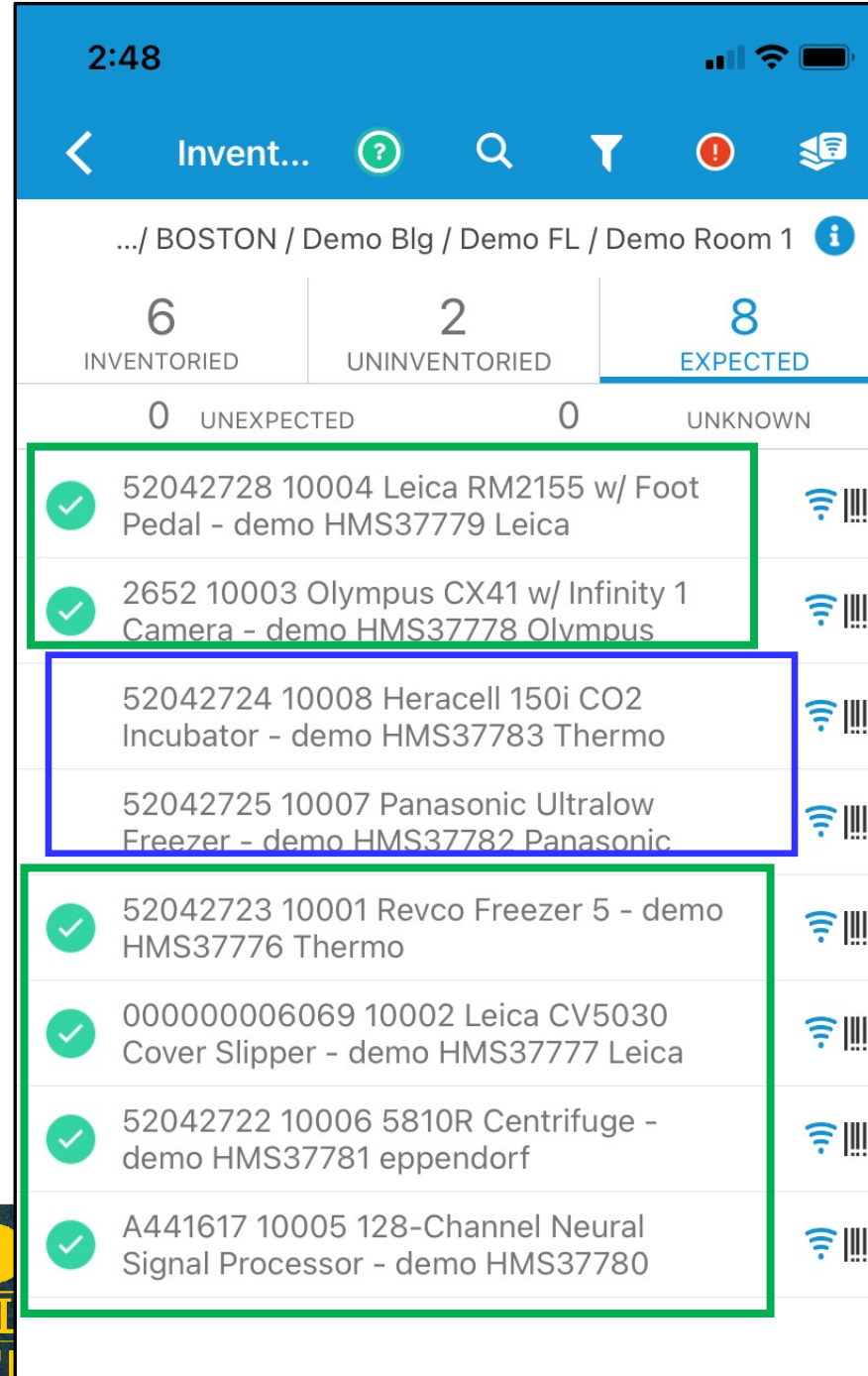
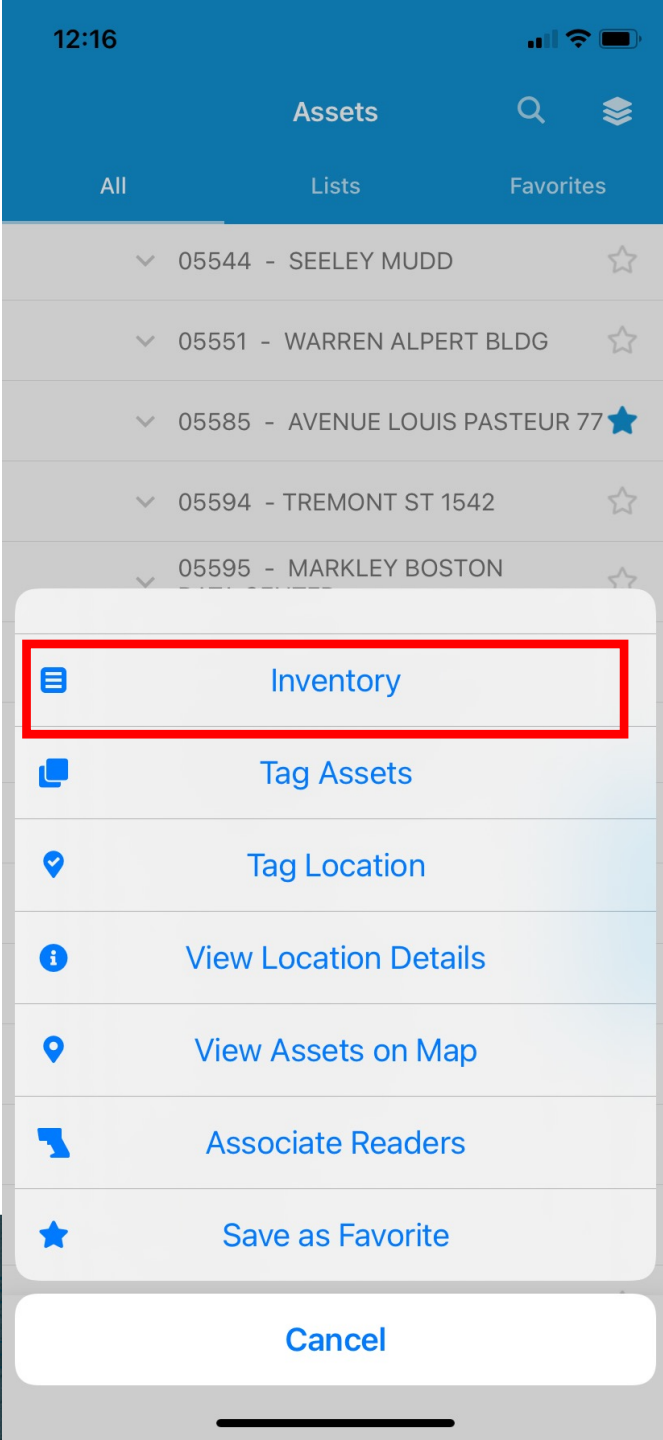
Description

Revco Freezer 5 - demo

Secondary Tag

HMS37776

Serial Number



2:52

Geiger Counter For

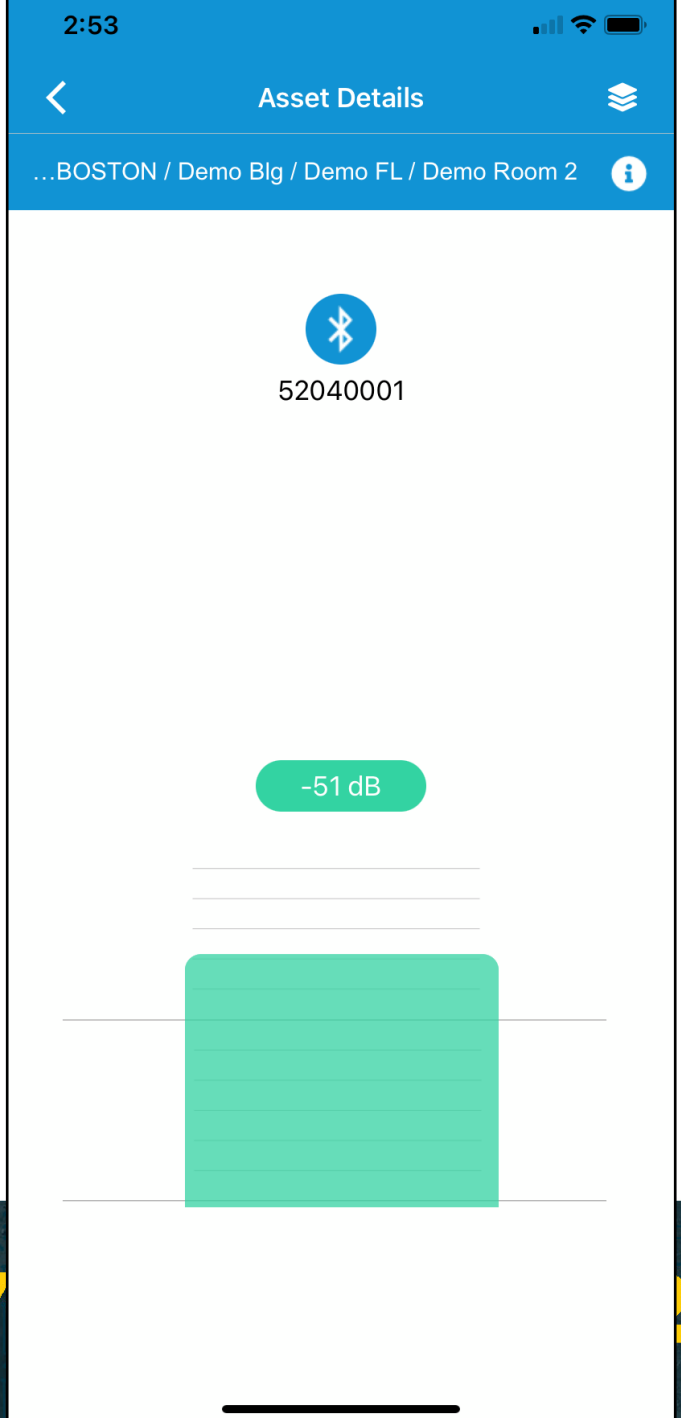
.../ BOSTON / Demo Blg / Demo FL / Demo Room 2

0	4	4
INVENTORIED	UNINVENTORIED	EXPECTED
1	0	UNKNOWN
UNEXPECTED		
52042726 10009 Thermo Scientific 6ft Biosafety Cabinet 1300 Series A2 Class II		
HMS37776D 9991011 Dummy asset to test room addition2 Dummy for testing		
52040001 9999 Recipe Right Non-Stick Cookie Pan - demo HMS39061 Wilton		
52042727 10010 Agilent/HP 1100 Series HPLC - demo HMS37785 Agilent		
52040002 10000 Recipe Right Non-Stick Cookie Pan - demo HMS39057 Wilton		

2:52

Asset Details

Information	Attachments
Tag Number	52040001
RFID Code	0106A026002AB00052040001
Beacon ID	
Physical Location	Demo Room 2
Expected Location	Demo Room 2
Description	Recipe Right Non-Stick Cookie Pan - demo
Asset Number	9999
Secondary Tag	HMS39061
Serial Number	70896 59066
Model Number	33002
Manufacturer	Wilton
Asset Class	Capital Equipment
Date Placed In Service	10/5/2018
Comments	Demo only
Asset Key Org	48112



Return of Investment:

- None – less/more
- Improved spot inventory process
 - lab moves & PI transfers
- Improved data quality
 - elimination of clerical errors
- Compliance with PwC CAP
 - modernize our process
- Less interruptions



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THANK YOU

