



**PRAESES**<sup>™</sup>  
*Business Technologies*  
*Process Re-engineering and Software Development*

# Mobile Deadweight Survey Brief

75<sup>th</sup> SAWE International Conference on Mass Properties  
Engineering

May 21-26, 2016

Presented by: Jeb Baugh, Senior Project Manager

# About Praeses

- 29 Year-Old, Family-owned Technology Company
- 100+ Employees – Developers, Project Managers, Engineers & Solutions Architects
- 100% development done in the U.S. with satellite offices in Austin, TX, New Orleans, LA, Magnolia, AR, and Minneapolis, MN
- Composed of three lines of business: Jurisdiction Online, Correctional Services Division, Business Technologies
- Pronunciation: “**Pray**-sis”



# Praeses Business Technologies

## **Industry-focused Development:**

- US Gov't, Navy, Air Force, DoD
- Large manufacturers and ship builders
- Healthcare
- Energy (oil & gas)
- Startups and Small Business
- Insurance

## **Mobile Development:**

- PocketRx - #1 mobile independent pharmacy app
- Logistics
- Insurance

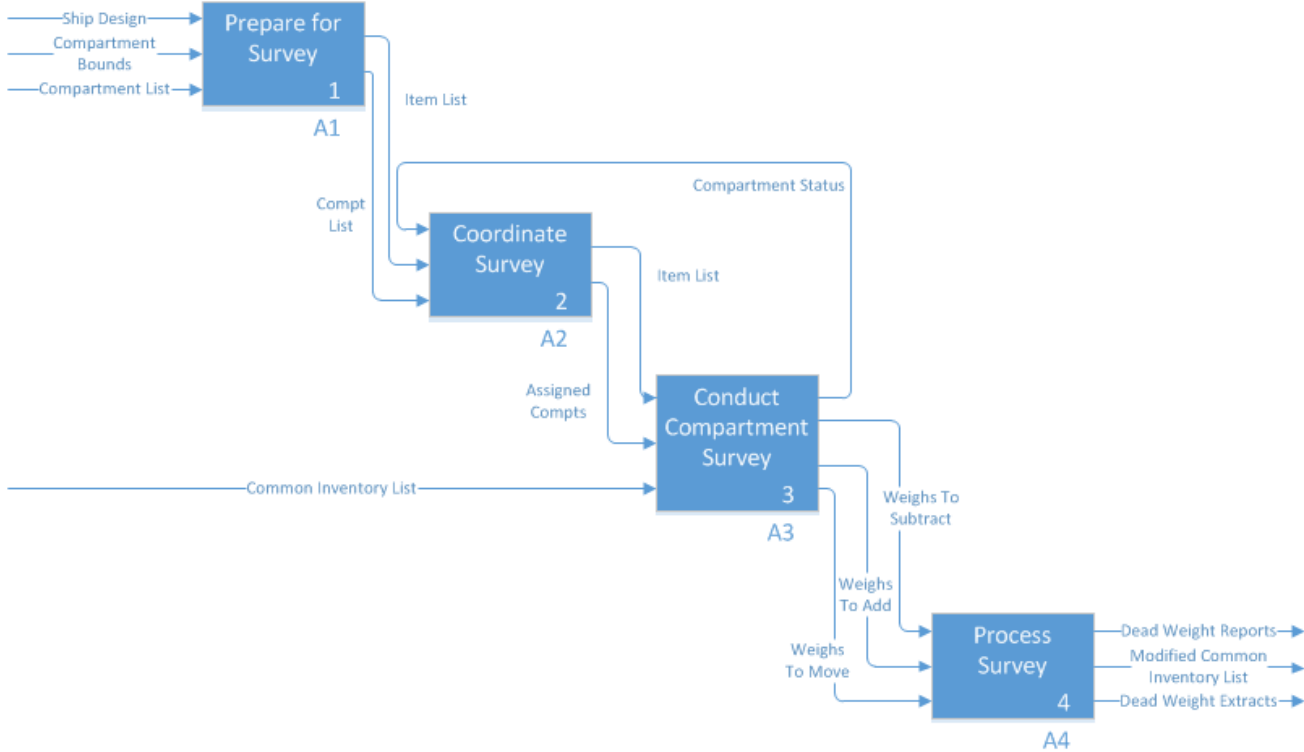
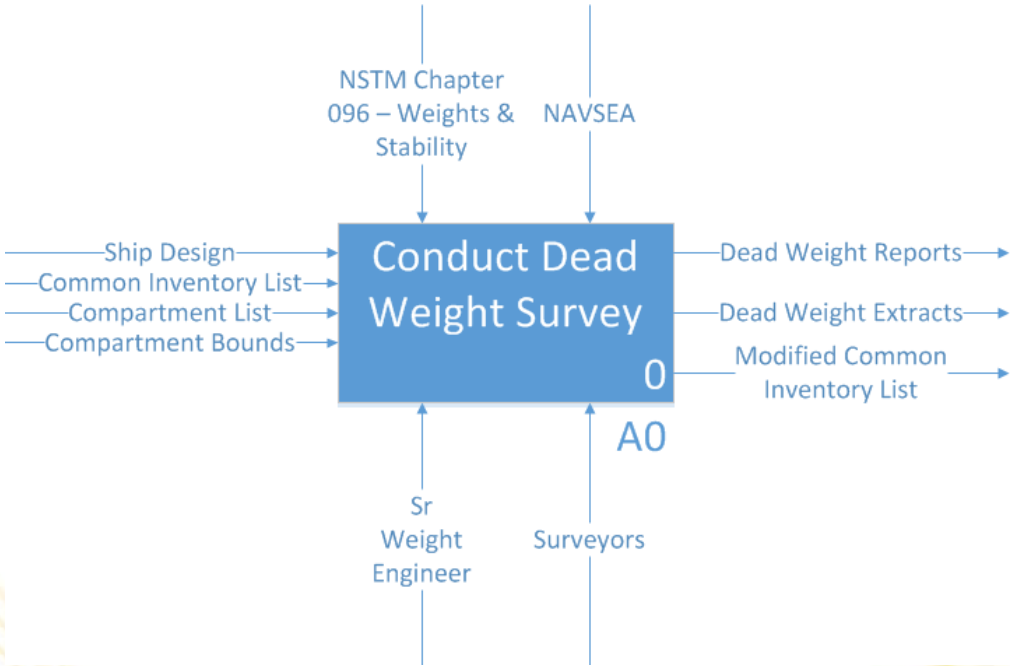
# Why the deadweight survey?

- Atomic process
- Heavily paper dependent
- Multiple data touchpoints (double and triple data entry)
- Able to leverage ShipWeight data
- Limited scope and budget through NSRP Panel Project
  - NSRP is co-funded by the U.S. Shipbuilding Industry and U.S. Navy

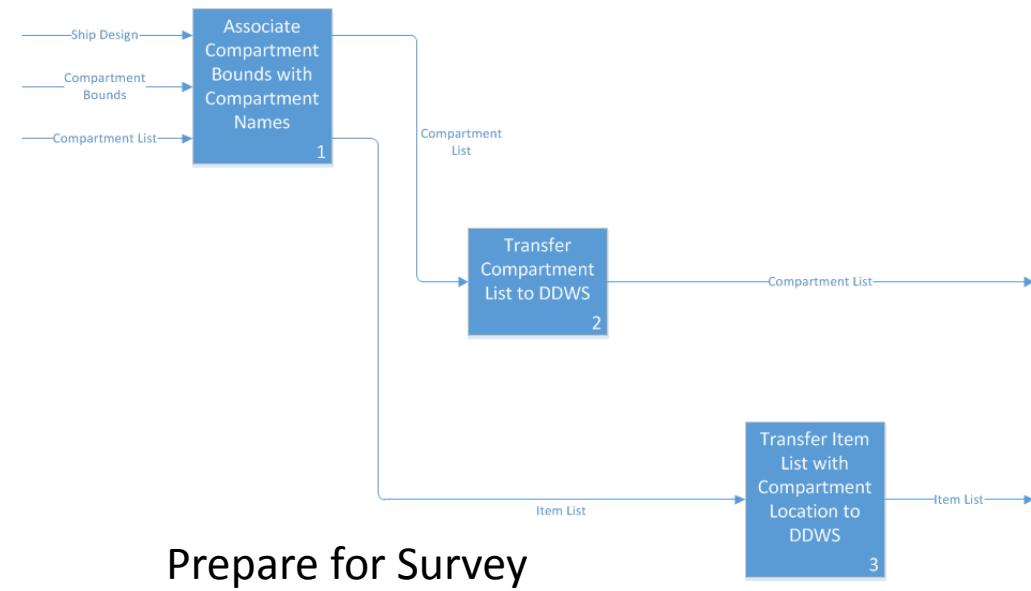
# Mobile Deadweight Survey tool

- Project goal is to develop a live condition of the vessel during the deadweight survey using a digital device (iPad Air 2)
- We will use Load Weight Report from ShipWeight to:
  - View data by compartment
  - Select compartment
  - List of equipment, stores, etc.
  - Check for correct presence/location
  - Revise location, if necessary
  - Record Dry/Wet conditions
- Upload installation info to the ShipWeight database

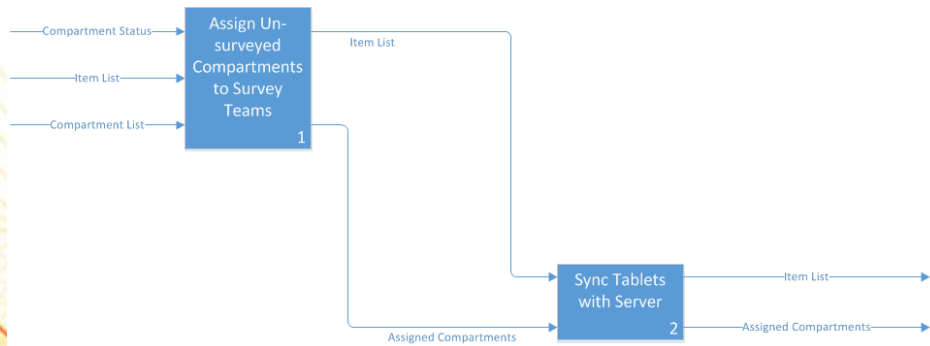
# TO BE Activity Models



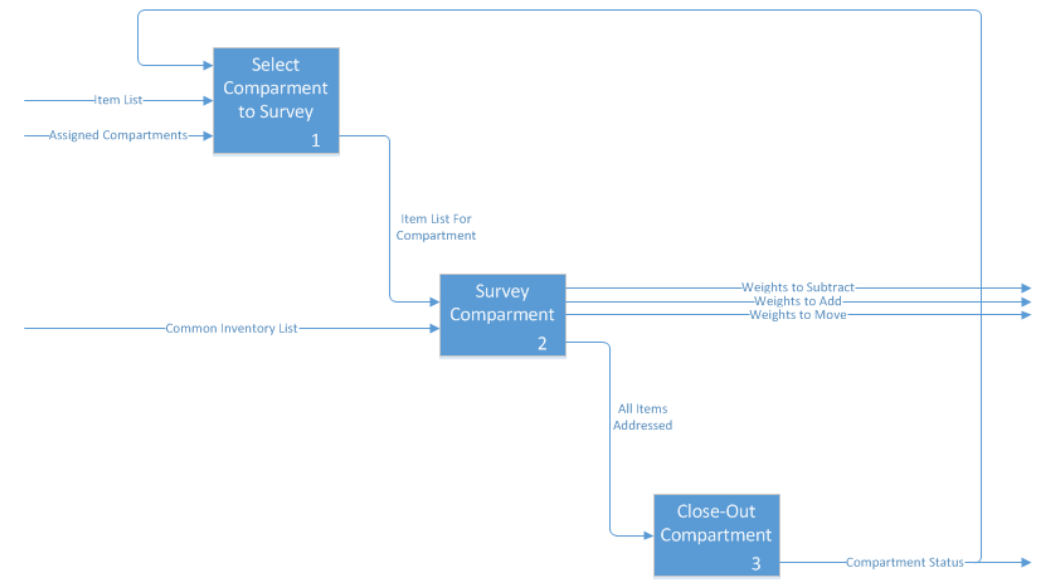
# TO BE Activity Models



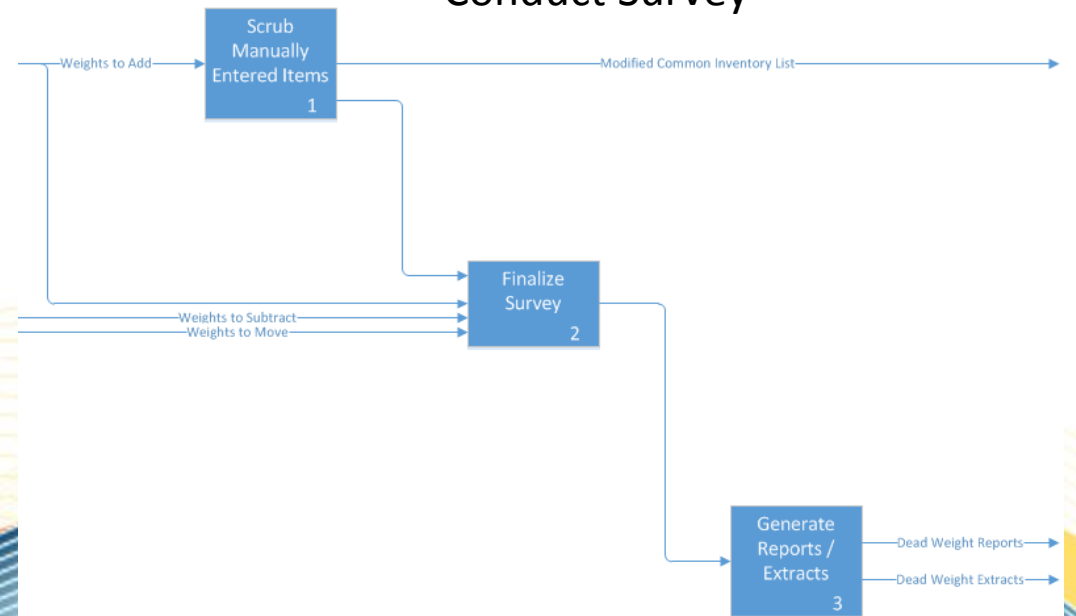
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## Coordinate Survey



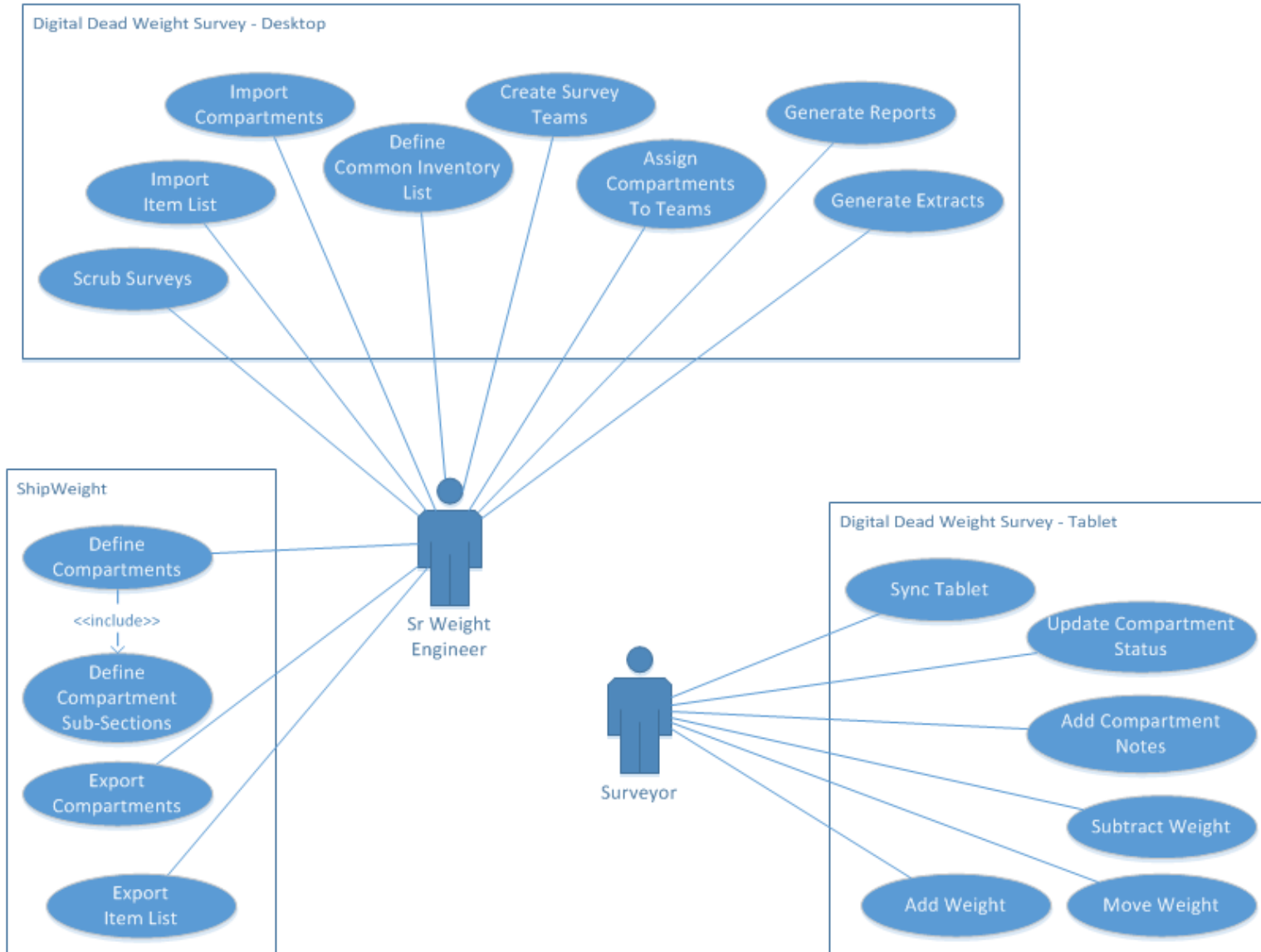
## Conduct Survey



## Process Survey

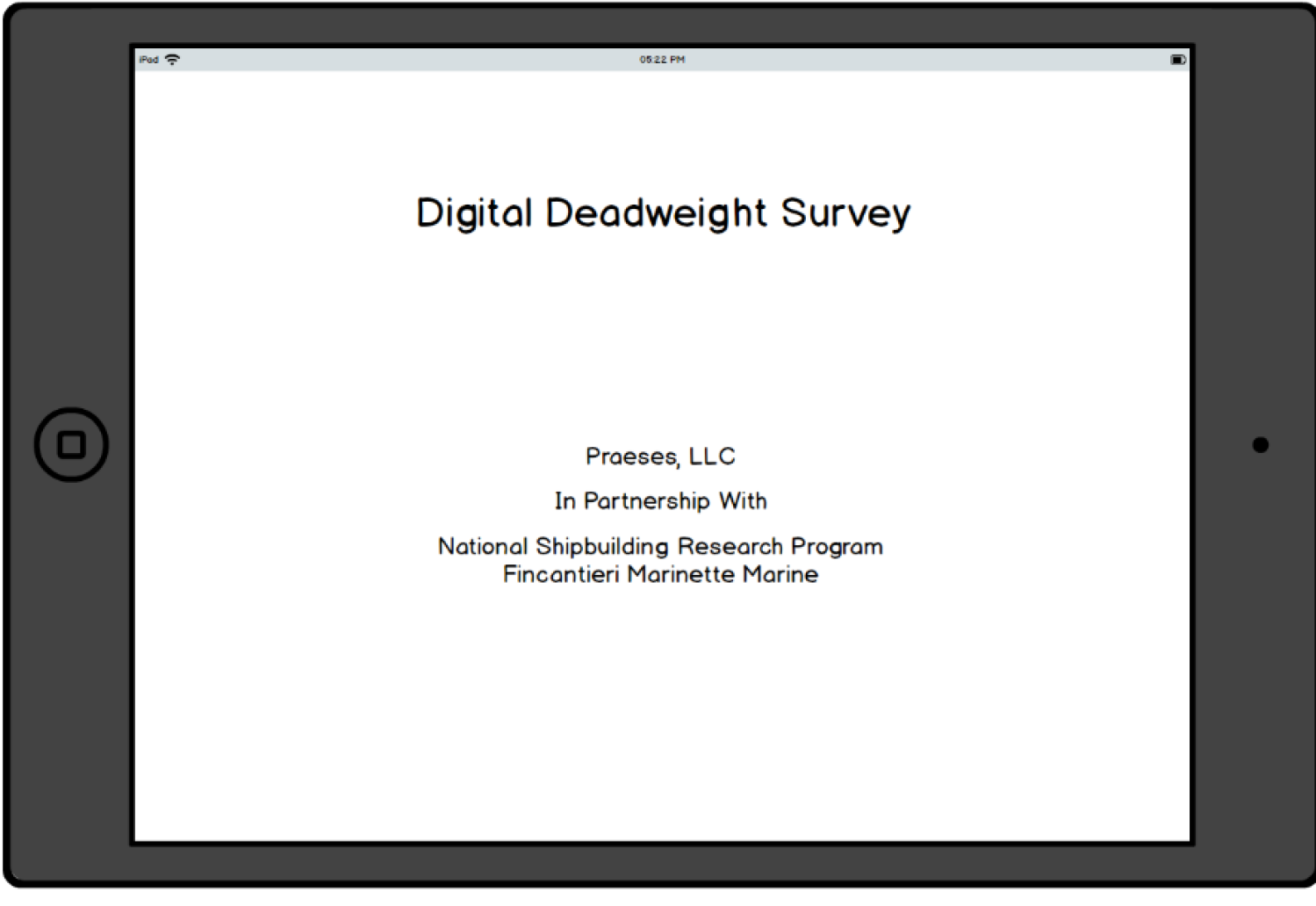
# Use Case Diagram

- Defines actors (personas)
- Lists actions
- Identifies which system the action takes
- Provides a basis to design the system





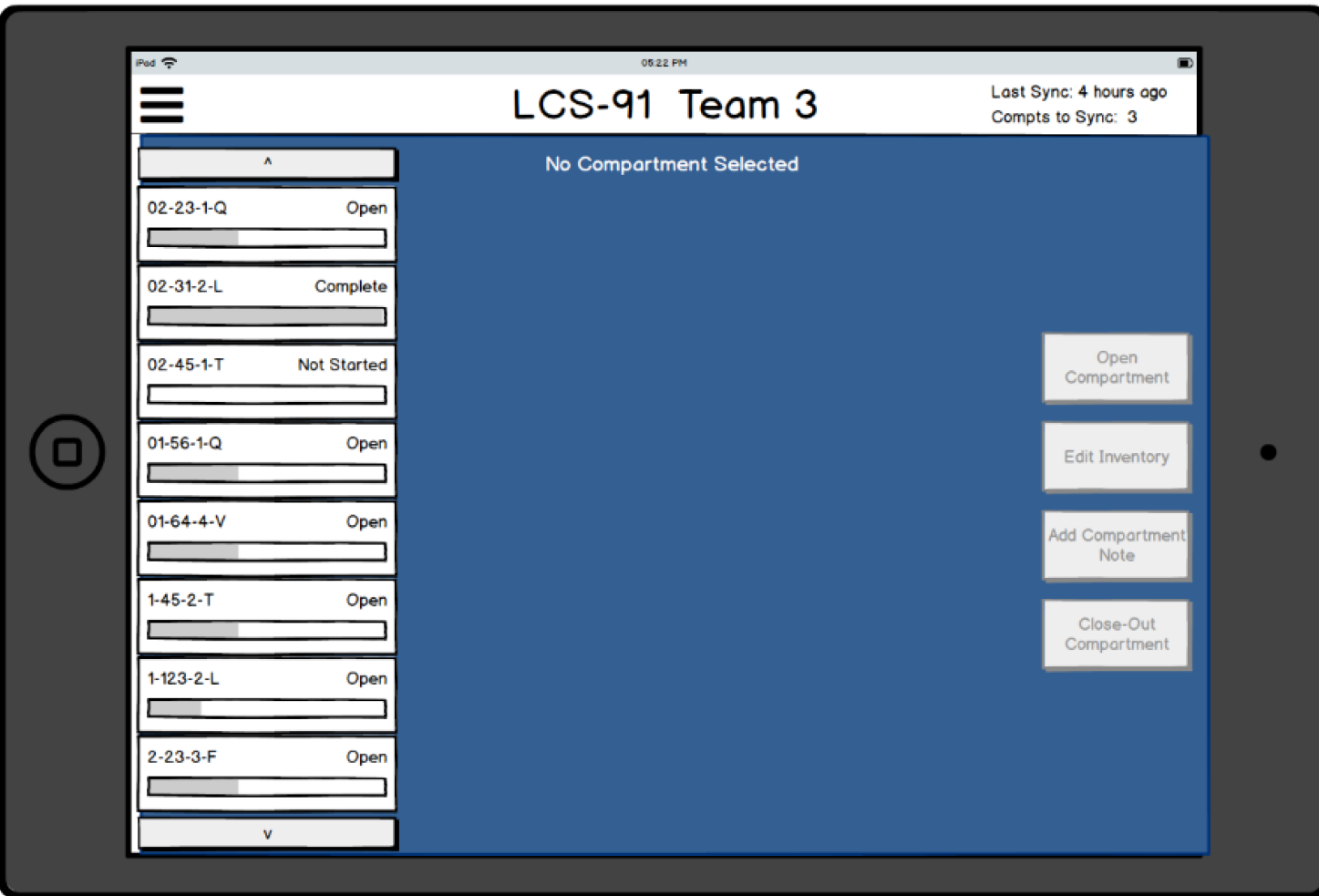
# Preliminary mockups – Splash Screen



A mockup is a low fidelity version of what the application could look like.

The user will see something like this when the app is launched

# Compartments – Home Screen



User is displayed a list of compartments from the ShipWeight import. Will select a compartment to get started.

# Compartment Item Listing

08:22 PM  
LCS-91 Team 3  
Last Sync: 4 hours ago  
Compts to Sync: 3

Item List for Compartment 1-123-2-L

Item Name	Weight	Qty	Lcg	Tcg	Veg	E/S	C/A/M/N
Extinguisher, Fire Z54	25.3 lbs	1 ea	123.7 ft	-6.0 ft	27 ft	E	N
Extinguisher, Fire Z54	25.3 lbs	1 ea	123.7 ft	-9.0 ft	27 ft	E	M
Locker, Hanging	35.0 lbs	1 ea	136.0 ft	-10.8 ft	28 ft	E	C
Locker, Hanging	350 lbs	1 ea	136.0 ft	-8.4 ft	28 ft	E	C
Rack	85.0 lbs	1 ea	132.0 ft	-4.0 ft	26 ft	E	A
Rack	85.0 lbs	1 ea	132.0 ft	-4.0 ft	29.5 ft	E	A
Desk Unit	65.0 lbs	1 ea	136.0 ft	-6.2 ft	27 ft	E	C
Desk Unit	65.0 lbs	1 ea	136.0 ft	-4.0 ft	27 ft	E	C
Chair, Desk	15.0 lbs	1 ea	135.0 ft	-6.2 ft	26 ft	E	C
Chair, Desk	15.0 lbs	1 gal	135.0 ft	-4.0 ft	26 ft	E	C
Bucket, Paint	40.0 lbs	5 gal	129.0 ft	-7.0 ft	26 ft	S	
Covering, Deck	107 lbs	215	130.6 ft	-7.0 ft	25 ft	S	

Notes

Overhead 32.0 ft      Forward 137.8 ft

Port -12.0 ft      Starboard -2.0 ft      Sq Ft 214.5

Deck 25.0 ft      Aft 123.5 ft

Buttons: Open Compartment, Edit Inventory, Add Compartment Note, Close-Out Compartment

User selects a compartment and sees what should be there.

- App Icon/Label – Will return to “Home” screen if selected
- Team – The team that’s loaded onto this tablet
- Compartment – The currently selected compartment, if any
- Compartment Parameters – The Longitudinal, Transverse, and Vertical boundaries for this compartment, along with the calculated square footage of the compartment

# Compartment Items List Screen

iPad 05:22 PM

LCS-91 Team 3 Last Sync: 4 hours ago  
Compts to Sync: 3

Compartment 1-123-2-L

Item	Status
Extinguisher, Fire Z54 L 123.7 : T -6.0 : V 27 Not Addressed	E N
Extinguisher, Fire Z54 L 123.7 : T -6.0 : V 27 Moved	E M
Locker, Hanging L 123.7 : T -6.0 : V 27 Confirmed	E C
Rack L 123.7 : T -6.0 : V 27 To Be Added	E A
Bucket, Paint L 123.7 : T -6.0 : V 27 To Be Subtracted	S
Covering, Deck L 123.7 : T -6.0 : V 27 To Be Subtracted	S
Chair, Desk L 123.7 : T -6.0 : V 27 Confirmed	E C
Desk Unit L 123.7 : T -6.0 : V 27 Confirmed	E C

Category	Value
Overhead	32.0 ft
Forward	137.8 ft
Port	-12.0 ft
Starboard	-2.0 ft
Deck	25.0 ft
Aft	123.5 ft
Sq Ft	214.5

Buttons: Compartment Overview, Add Item, Move, Not Found, Clear Status, Add Item Note, Save Changes

This is a level down from the previous screen.

- Allows the user to work with individual items.
- Items can be added

# Compartment Item Screen

iPad 05:22 PM

LCS-91 Team 3 Last Sync: 4 hours ago Compts to Sync: 3

Compartment 1-123-2-L

Item Name	Weight	Calculated Qty	Expected
Covering, Deck	107.3 lbs	214.5 sq ft	No

Location

L-CG 130.6 ft From Aft (ft): 7.15 From Fwd (ft): 7.15

T-CG -7.0 ft From Port (ft): 5.0 From Stbd (ft): 5.0

V-CG 25.0 ft From Deck (ft): 0.0 From Ovhd (ft): 7.0

Base Unit of Measure: CSqFt - Compartment Sq Ft

Base Qty: 15

Status: To Be Subtracted

Notes

Overhead 32.0 ft Forward 137.8 ft

Port -12.0 ft Starboard -2.0 ft

Deck 25.0 ft Aft 123.5 ft

Sq Ft 214.5

Buttons: Compartment Overview, Confirm, Move, Not Found, Clear Status, Add Item Note, Save Changes

Working with an individual item, user will see item's attributes

- Add notes
- Set status
- Describe location in compartment

# Item statuses

**LCS-91 Team 3** Last Sync: 4 hours ago  
Compte to Sync: 3

Compartment 1-123-2-L

Item Name	Weight	Calculated Qty	Expected
Extinguisher, Fire Z54	253 lbs	1 Ea	Yes

Location

L-CG 123.7 ft From Aft (ft): 0.2 From Fwd (ft): 14.1

T-CG -6.0 ft From Port (ft): 4.0 From Stbd (ft): 8.0

V-CG 27.0 ft From Deck (ft): 2.0 From Ovhd (ft): 5.0

Base Unit of Measure: Ea - Each

Base Qty: 1

Status: **Not Addressed**

Notes

Overhead 32.0 ft Forward 137.8 ft

Deck 25.0 ft Port -12.0 ft Starboard -2.0 ft Aft 123.5 ft

Sq Ft 214.5

Buttons: Compartment Overview, Confirm, Move, Not Found, Clear Status, Add Item Note, Save Changes

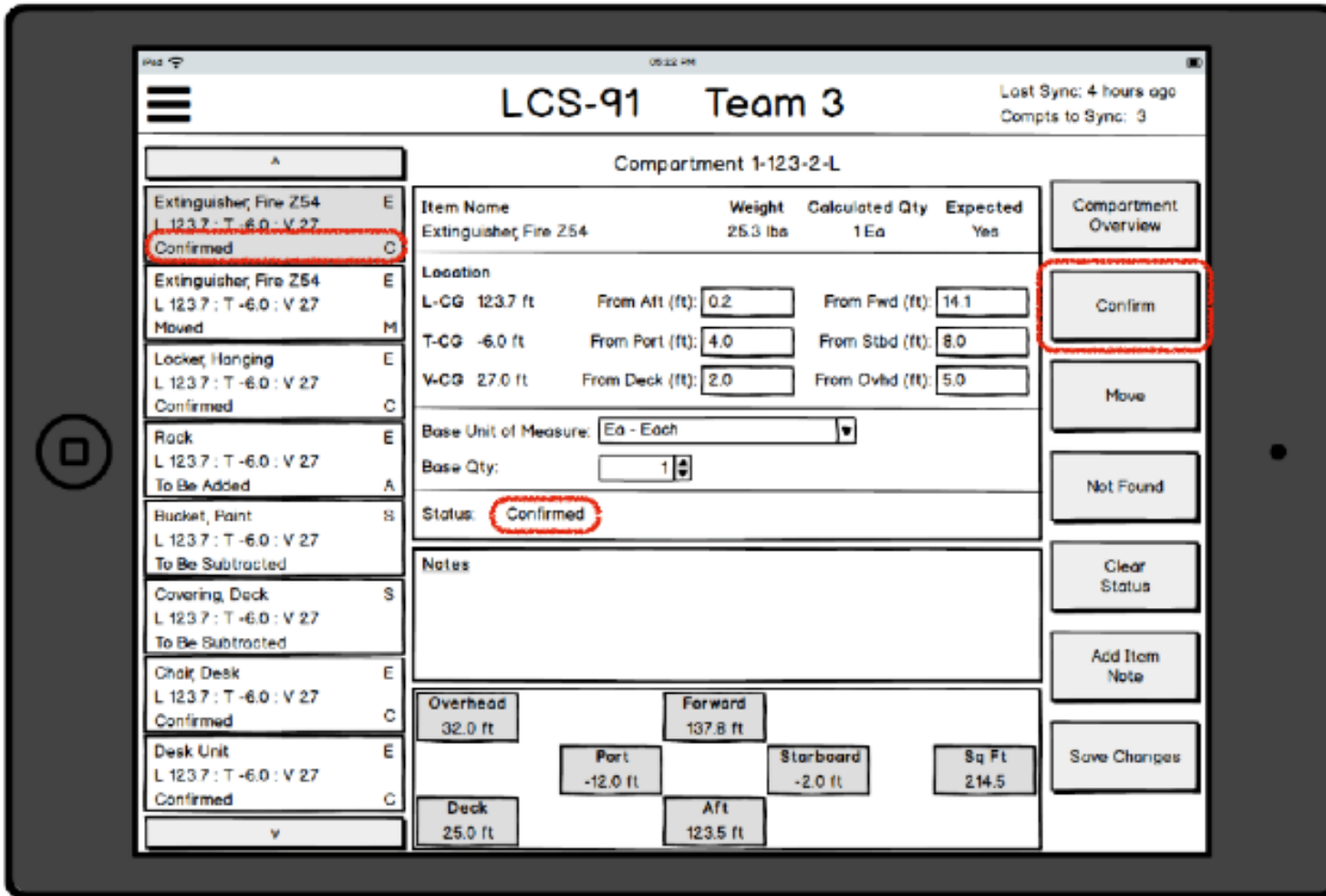
E/S – Flag indicating the item was Expected (specified in ShipWeight) or “To Be Subtracted” (item that won’t be there during normal ship operation)

C/A/M/N – Flag indicating whether an Expected item is:

- Confirmed – Item was found and was located where it was expected to be
- To Be Added – Item was not found, so this is Weight that will be added during normal ship operation
- Moved – Item was found, but in a different location
- Not Addressed – Item hasn’t been addressed by the Survey Team (initial status for all Expected items)

# Item confirmed

The other item statuses follow a similar workflow, using the button on the right side of the screen.



# Syncing

- Users will be able to sync their devices on the network
  - Application will work in a disconnected state
- Synced files will be imported into the ShipWeight sandbox
  - Direct integration is cost prohibitive
  - Not the preferred course of action by yard's IT or engineering
- Items imported back into ShipWeight from the sandbox environment



# NSRP Project Team



- MMC – shipbuilder
- Praeses (lead) – mobility experts
- BAS Engineering – ShipWeight Developer
- DRS – ShipWeight experts
- Gibbs and Cox – SME

<http://www.nsrp.org/project/digital-deadweight-survey-2016-422/>

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