

NTSB Cruise Ship Safety Forum

Electronic Mustering Systems



Allure of the Seas

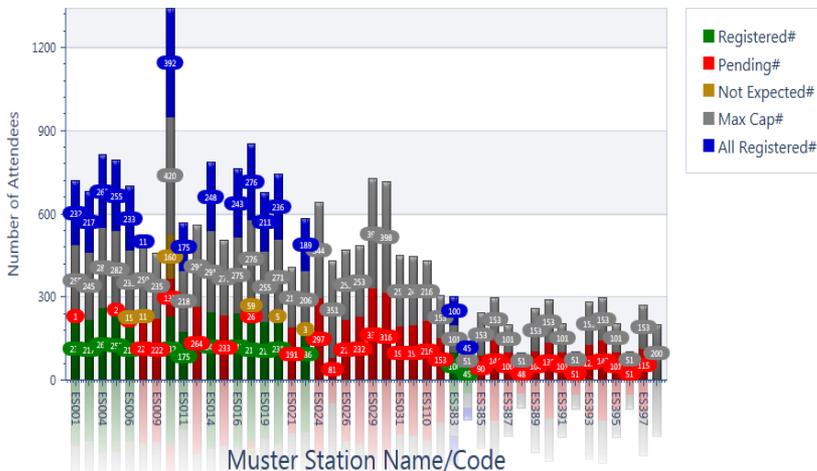
Friday 07 March 2014

11:01 PM

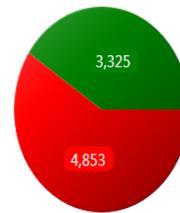
Mustering Active

General Assembly | Abandon Ship | VZone - Assembly | VZone - Abandon | Mobile Device

Total By Muster Station



Overall Count



40.66% accounted For



Hernan Zini

Fleet Captain

Royal Caribbean Cruises

NTSB Cruise Ship Safety Forum

March 25/26 2014

Traditional Mustering

A large printed table with multiple columns and rows of text, representing a guest and crew muster station manifest.

Guest and crew muster station manifests are printed immediately when an emergency occurs



Guest muster station manifests are kept in or near the Cruise Directors Office and distributed to muster station leaders during an emergency



One manifest is used at each station to call cabin numbers and/or names (impractical to correlate multiple manifests for the same muster station)



The muster station control team visits the muster stations and reports on progress to the Asst. Cruise Director



The Asst. Cruise Director gives updates to the Hotel Director who sends assistance where needed



The Hotel Director conveys the information to the Bridge via phone or radio

Use of Technology for Evacuation



- Larger cruise vessels created the need to use of technology to improve safety procedures.
- Assembly station accountability system for reliable and instant passenger count
- Video broadcasting capability from bridge to large screens at assembly stations for effective communication
- Comprehensive digital surveillance system for enhanced monitoring of evacuation, over 1300 CCTV cameras



eMustering



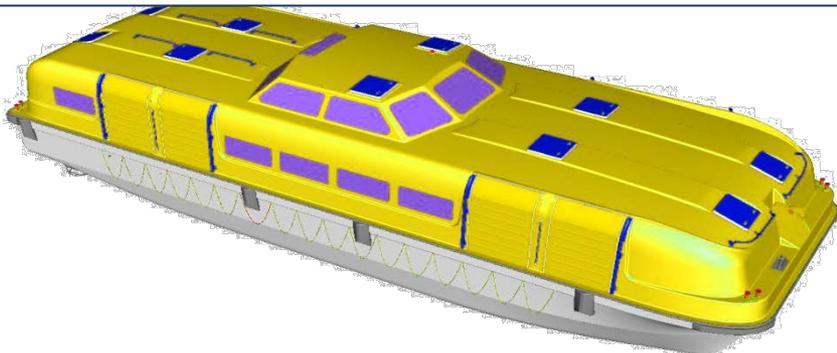
Manifest uploaded to Server. PDA's uploaded from server as Guest/Crew Checks- in via WiFi or LAN.

Guest/Crew become active in PDA Only when Gangway Module sets "On Ship".

On Ship Guests Mustered at Assembly Stations

Allows Dashboard view at all Control Stations, Safety Command Centre, Evacuation Control Centre, Assembly Station Control Centre, Engine Control Room.

Abandon Mode allows any Guest to be embarked in any Survival Craft and manifested for that craft.



Decision Support for Assembly Stations



Allure of the Seas

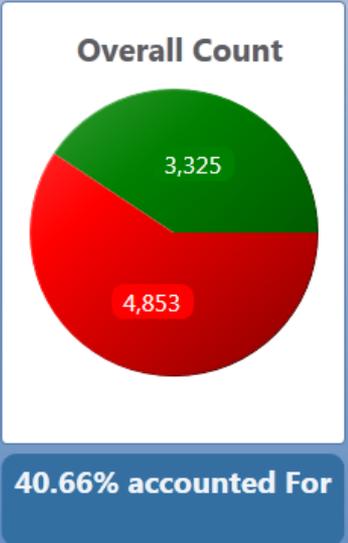
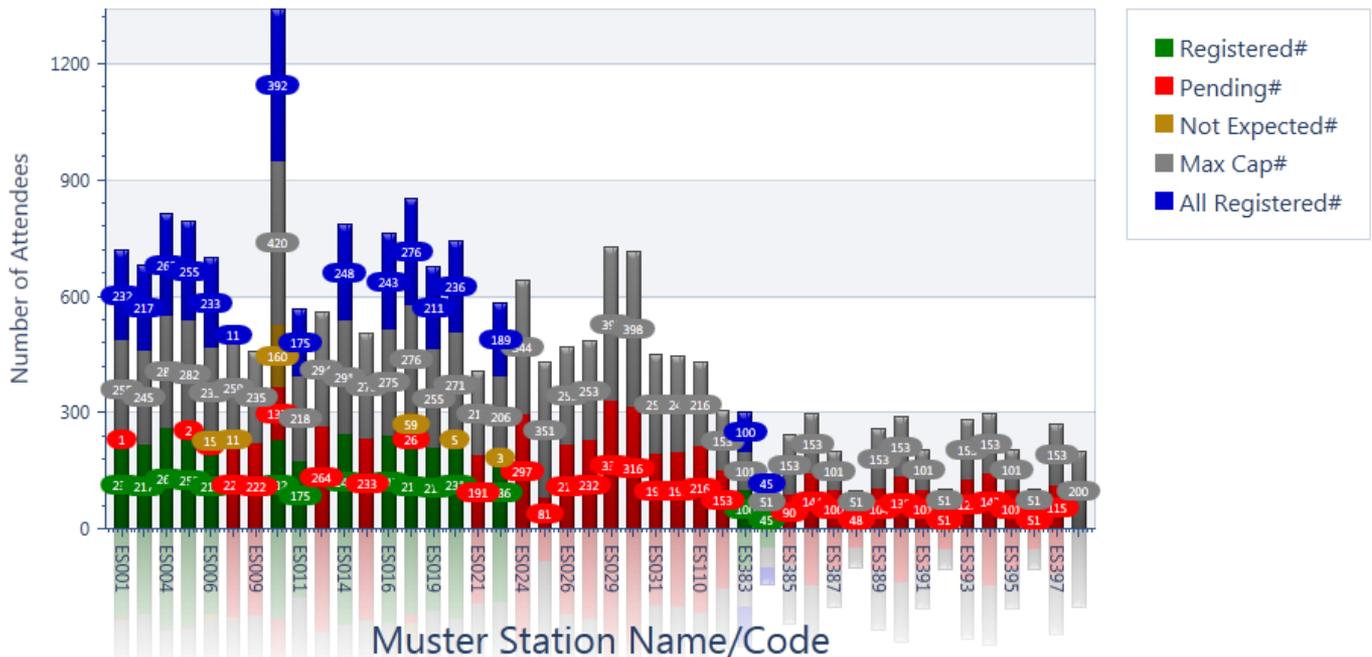
Friday 07 March 2014

11:01 PM

Mustering Active

- General Assembly
- Abandon Ship
- VZone - Assembly
- VZone - Abandon
- Mobile Device

Total By Muster Station



Click on any Bar or Pie Chart to Display Information on "Pending," "Registered". Allows "Unexpected" (Daily Visitors) to be Mustered at any Assembly Station.

Decision Support for Vertical Main Fire Zone Accounting.



Allure of the Seas

Friday 07 March 2014

10:58 PM

Mustering Active

General Assembly

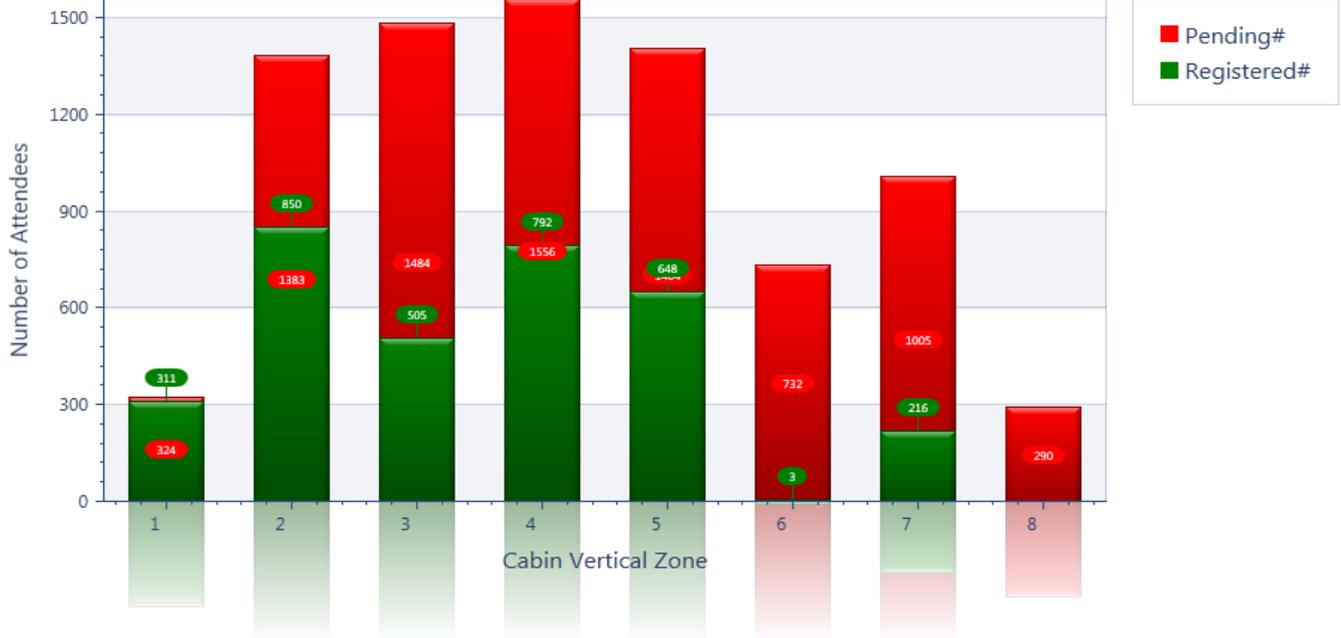
Abandon Ship

VZone - Assembly

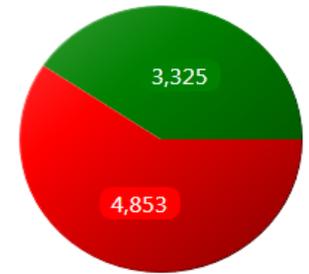
VZone - Abandon

Mobile Device

Total Assembly by Vertical Zone



Overall Count



40.66% accounted For



Evacuation of Specific Main Fire Zones to Assembly Stations, dashboard allows view of Evacuation of Main Fire Zone for Guests and Crew.

PDA : eMustering



In the Total screen you will see people with **“IN”** next to their names, these are people who have been checked in correctly to your Assembly Station. Guests with **“OUT”** are people yet to arrive at your Assembly Station. People with **“IN”** are people from your Assembly Station who have been checked in to an incorrect Assembly Station

ES388 | 0 | 22.02 12:17

General Assembly Mode

Total count

Registered	0
Pending	50
Total	50
Maximum	51

All | Passengers | Crew | Visitors

Icons: Calendar, Accessible, Search, Refresh

ES388 | 0 | 22.02 12:23

General Assembly Mode

Total:

	AFRICA MICHELLE 40684, Crew	OUT
	AIROAIE LAURA 49206, Crew	OUT
	ALLEYNE CARLOS 41717, Crew	OUT
	BHOIR RUPESH 40306, Crew	OUT

Icons: Calendar, Accessible, Search, Refresh

ES021 | 2 | 27.02 17:29

General Assembly Mode

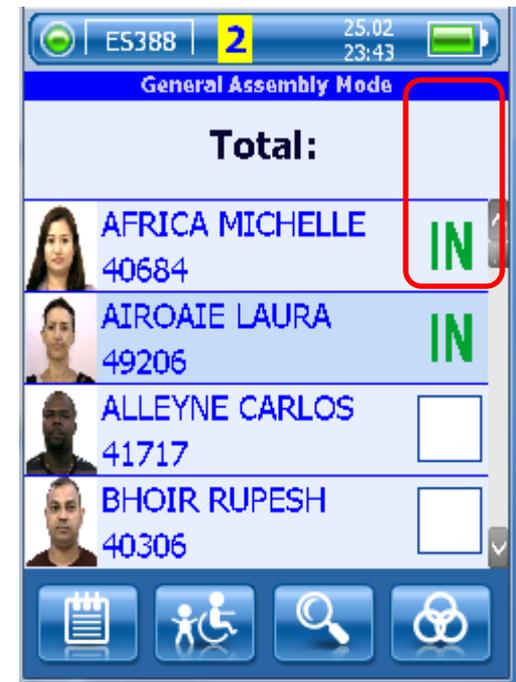
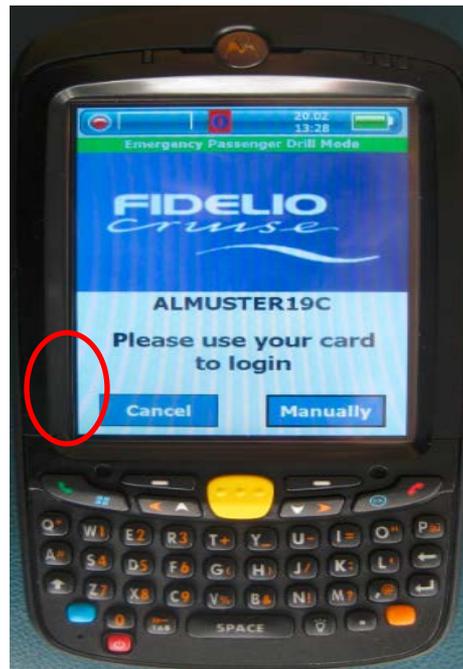
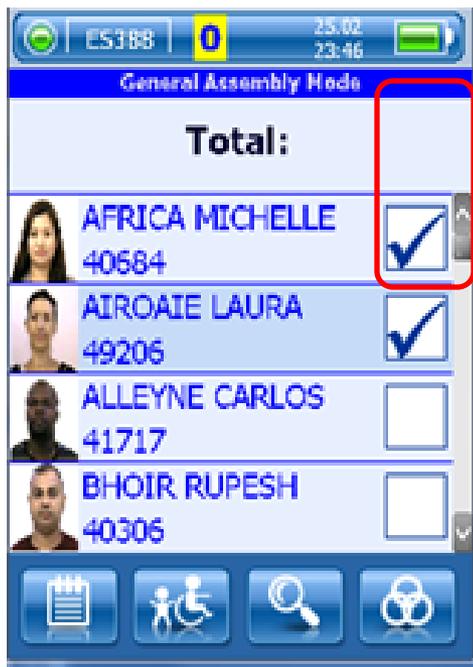
	10229 BERRY SHAUN	<input type="checkbox"/>
	10231 BERRY KANE	<input type="checkbox"/>
	11250 BOHACZAYKO CRI...	IN
	14235 CAREY SR FRANK	IN
	10245 CARROLL DAVID	<input type="checkbox"/>

Icons: Calendar, Accessible, Search, Refresh

PDA : eMustering



Personnel without a Seapass card and are from your Assembly Station can be manually checked in. Place a checkmark next to their name using the stylus once you have located the right person in the Pending screen area. Take care to click on the right name, then click on the green telephone key to confirm your choice and update the Total Count



Search Capabilities



ES388 0 25.02 16:57

General Assembly Mode

Search

Enter cabin or name

smith 

Clear Search

ES388 0 25.02 16:58

General Assembly Mode

No results

More results from other stations

ES388 0 25.02 16:59

General Assembly Mode

	42523, Crew SMITH MARK	<input type="checkbox"/>
	41503, Crew SMITH MARK	<input type="checkbox"/>
	40749, Crew SMITH MICHAEL	<input type="checkbox"/>
	40718, Crew SMITH ORLANDO	<input type="checkbox"/>
	10233 SMITH KRISTOPHER	<input type="checkbox"/>

Recent Upgrades



- Last Check In Override
- In Port Update manifest with Seapass (who is onboard)
- Decision support system for Overcapacity Muster Station
- Full Visibility of people Muster at wrong stations
- Visitors Mustering
- Other Use: Tendering Manifest





Radio Frequency Identification (RFID)

RFID is based on the automatic identification by reading devices of passive transponders embedded in cards issued to every passenger and crew member.

Advantages include

- Faster and more effective passenger and crew handling
- Non-intrusive processing with no need to swipe cards
- Ability to determine direction of travel, ie. Evacuation to Assembly Station or Embarkation to Survival craft.



The use of RFID technology has engendered considerable controversy and even product [boycotts](#) by consumer privacy advocates who have referred to RFID tags as "[spychips](#)".

Careful guidance on this Technology being active in Emergency Situations only will be required to be addressed by Regulatory Bodies.

Thank You !



ES388 0 22.02 12:17

General Assembly Mode

Total count

Registered	0
Pending	50
Total	50
Maximum	51

All Passengers Crew Visitors

Calendar, Access, Search, Settings icons

Pocket_PC ES388 0 22.02 18:43

File Zoom Tools Help

General Assembly Mode

Total:

	NEUFELD TANJA 42200, 010	<input type="checkbox"/>
	PALAJE VICENTE 40679	<input type="checkbox"/>
	PALMER GAIREY ... 40855	<input type="checkbox"/>
	PANJANIA PUTU 40696	<input type="checkbox"/>

Calendar, Access, Search, Settings icons