



Equipment Maintenance Database

University of Miami
Marine Technology Group

Topics

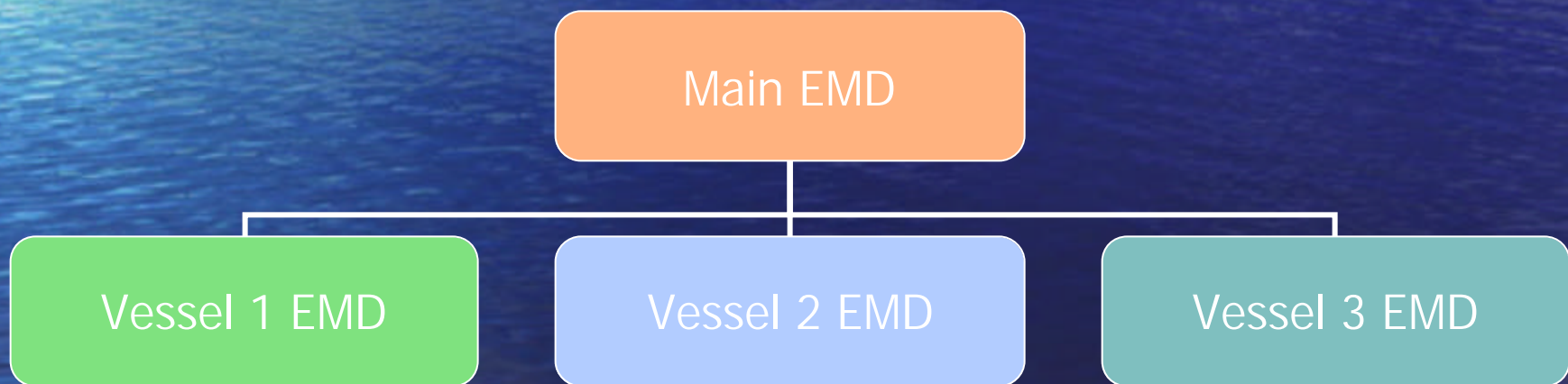
- What is an Equipment Maintenance Database?
- Structure and components
- Implementation and Operations
- Projected future development

What is Equipment Maintenance Database?

- EMD is a collection of several databases which organize and improve day-to-day operations of Marine Technology Group.
- EMD targets the following areas of operations:
 - Inventory
 - Schedules
 - Knowledge exchange
 - Instrument historical records
 - Various reports

Structure and Components

- The EMD consist of two types of Databases:
 - Main database
 - Vessel database

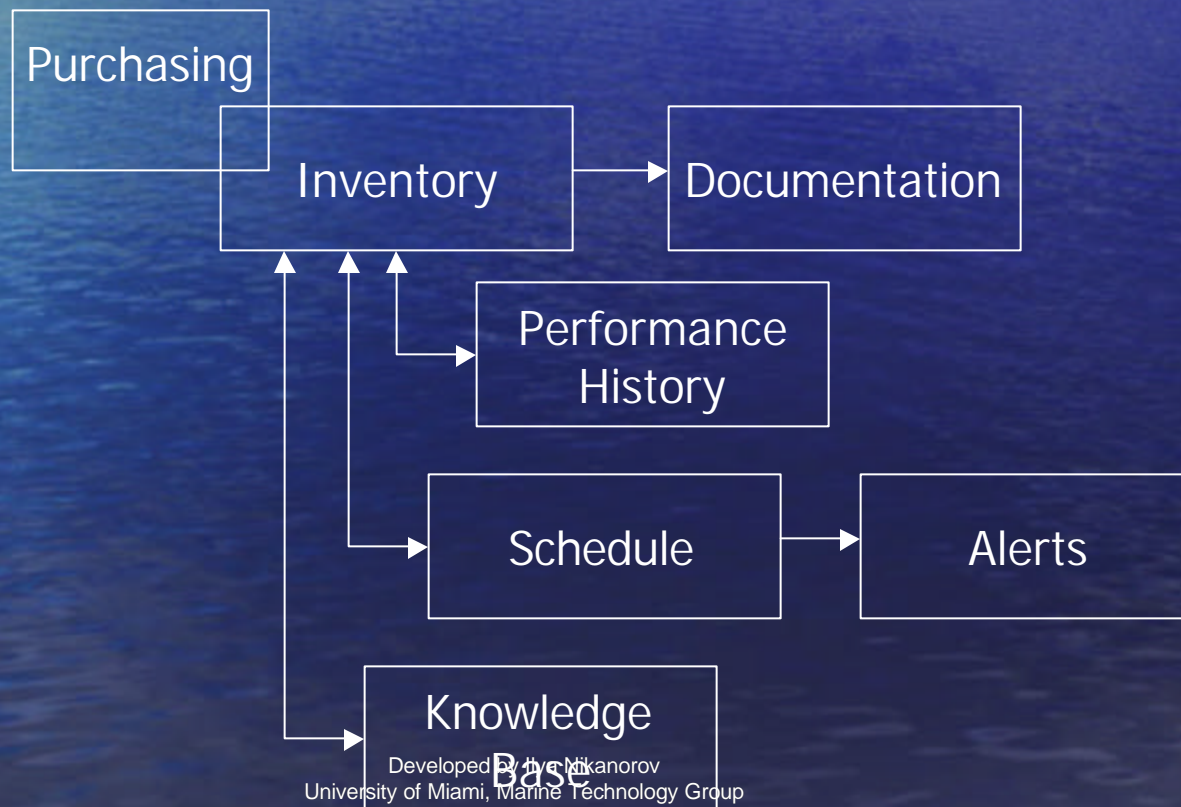


Structure and Components

- Main Database
 - Located on shore and has most functions available to the users
 - Delivers inventory information
 - Provides schedule control system
 - Stores instrument historical data

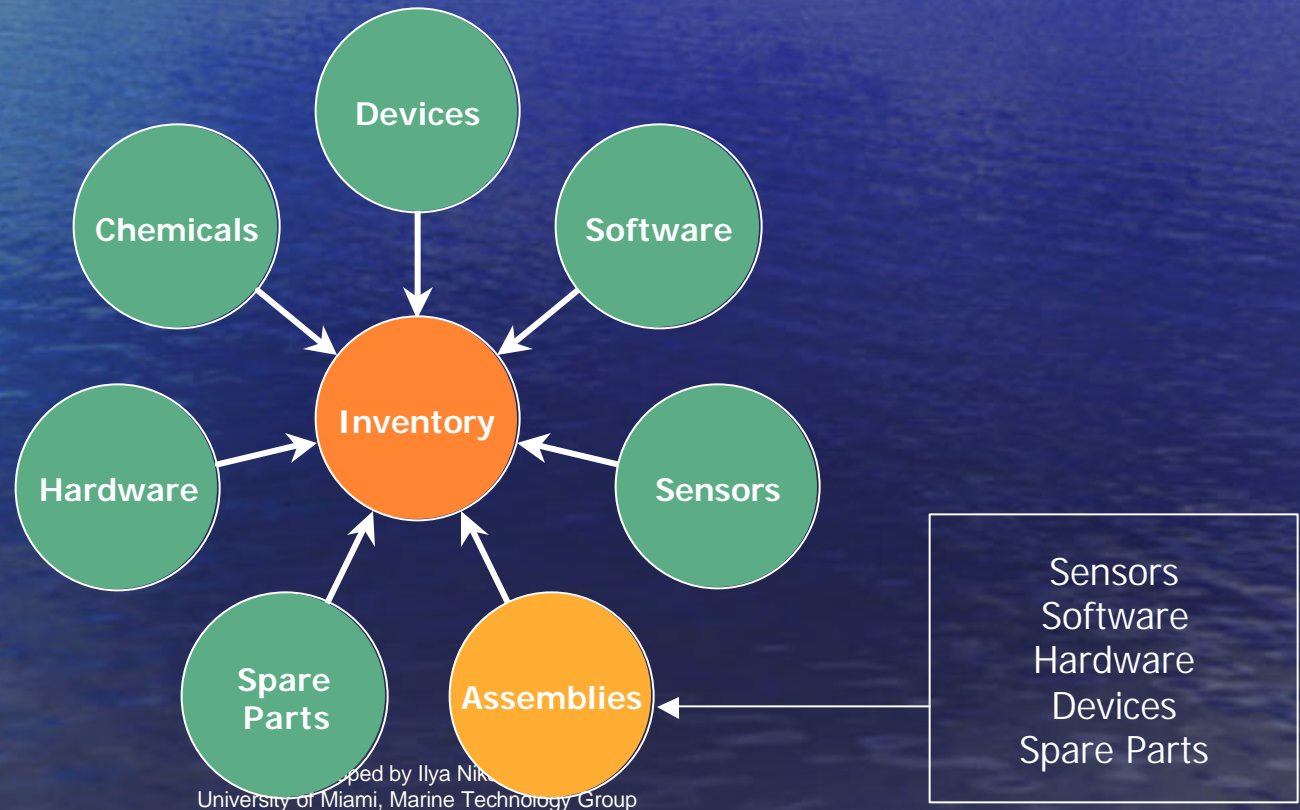
Structure and Components

- Main Database - Layout



Structure and Components

- Main Database - Inventory





Inventory Search

Any Type

Any Location

New:

Sensor

Sensor Calibration

Calibrated	(11)
Expire in 20 days	(0)
Expired	(9)
Undefined	(45)

Total: (65)

Inventory By Location

<Not Specified>	(8)
MTG Miami Office	(2)
MTGHBOI Office	(37)
MTGHBOI Software	(1)
Not found	(1)
RVSJ	(13)
RVWS	(8)

Total: (70)

Inventory By Type

Assemblies	(3)
Sensors	(66)
Software	(1)

Total: (70)

Inventory

Search **New Inventory** Manufacturers Sensor Types Vendors

✓

UM ID:

Serial #:

Calibration Date:

Manufacturer:

Sensor Type:

Model:

Vendor:

Location:

Sub Location 1:

Sub Location 2:

Notes:

Purchase Order #:

Account #:

Order #:

Date Ordered:

Date Received:


Cost:

Status: On order

Sub-Object Code:

Picture:

Structure and Components



Home Inventory Documents Performance History Knowledge Base

Inventory Search

Any Type
Any Location
Search

New:
Sensor

Sensor Calibration

Calibrated	(11)
Expire in 20 days	(0)
Expired	(9)
Undefined	(45)
Total:	(65)

Inventory

Search View Edit Performance History Knowledge Base

Inventory Type: Sensor
MTG ID: 90
Calibration Date: 4/22/2004
Next Calibration Date: 4/17/2005
Manufacturer: Sea-Bird Electronics
Model: SBE 4C
Serial #: 041876
Vendor: Sea-Bird Electronics
Status: Received
Location: MTGHBOI Office
Notes: Part # 90270

Structure and Components



Home Inventory Documents Performance History Knowledge Base

Inventory Search

4c

Any Type

Any Location

New:

Sensor

Sensor Calibration

Calibrated	(11)
Expire in 20 days	(0)
Expired	(9)
Undefined	(45)
Total:	(65)

Inventory

Search

17 result(s) found.

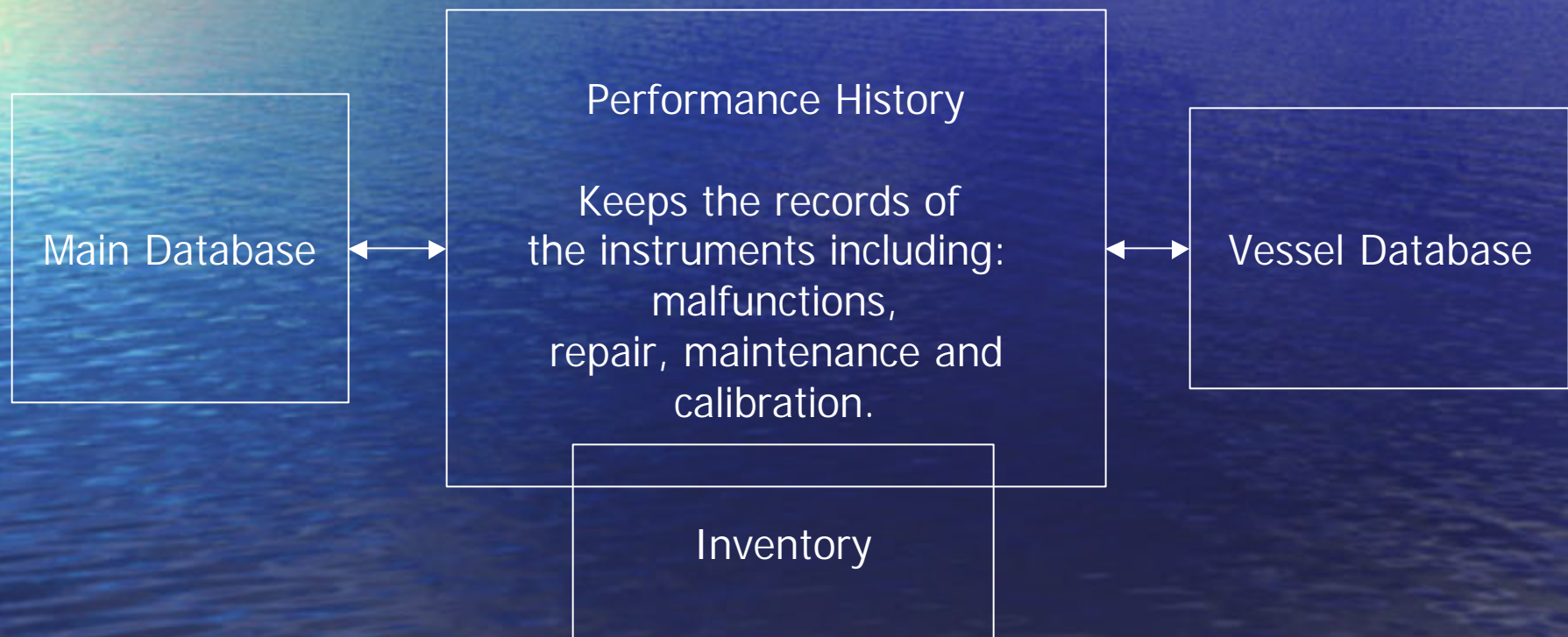
 [52] Sensor **Manufacturer:** [Sea-Bird Electronics](#)
Type: Conductivity **Model:** SBE 4C **Location:** MTGHBO1 Office
Serial: 1847 **Vendor:** Sea-Bird Electronics

 [53] Sensor **Manufacturer:** [Sea-Bird Electronics](#)
Type: Conductivity **Model:** SBE 4C **Location:** MTGHBO1 Office
Serial: 1851 **Vendor:** Sea-Bird Electronics

 [54] Sensor **Manufacturer:** [Sea-Bird Electronics](#)
Type: Conductivity **Model:** SBE 4C
Serial: 1876 **Vendor:** Sea-Bird Electronics

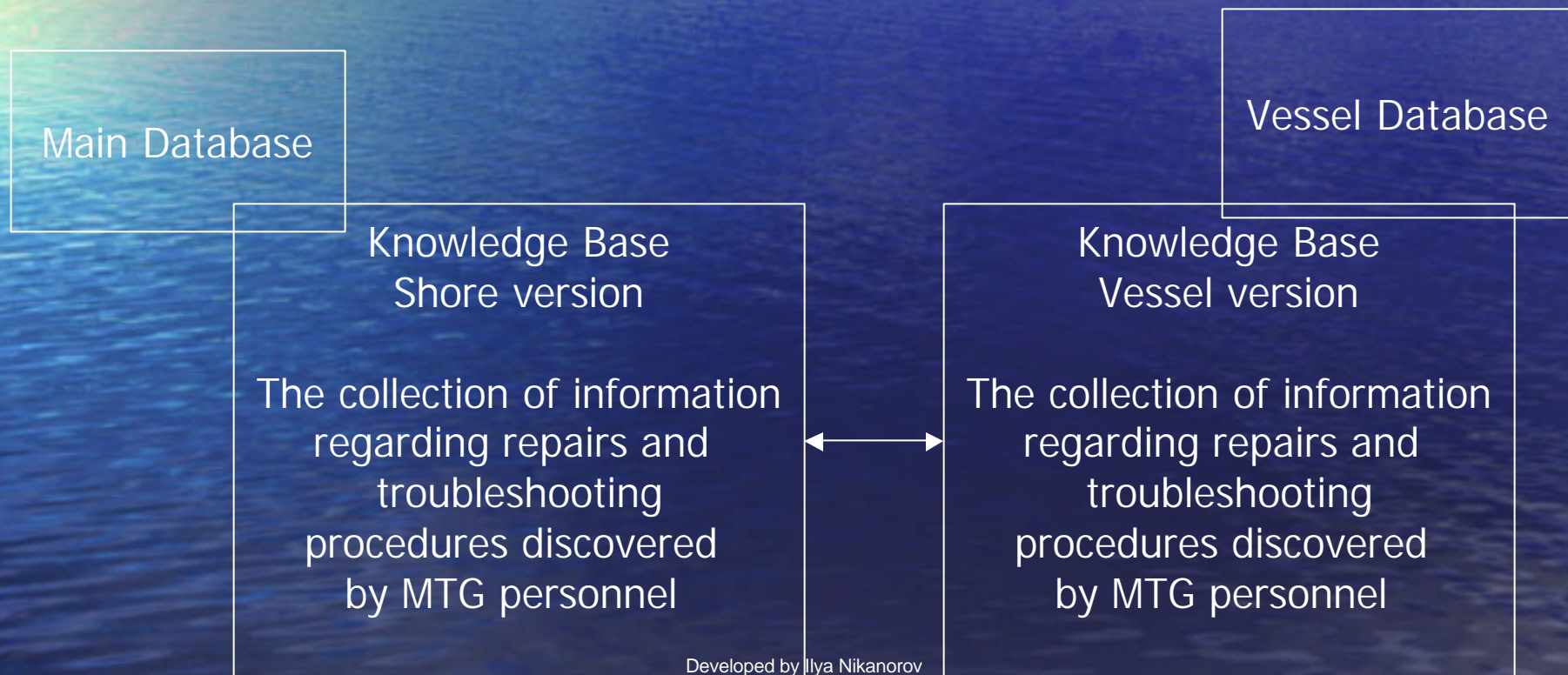
Structure and Components

- Main Database - Performance History



Structure and Components

- Main Database - Knowledge Base



Structure and Components

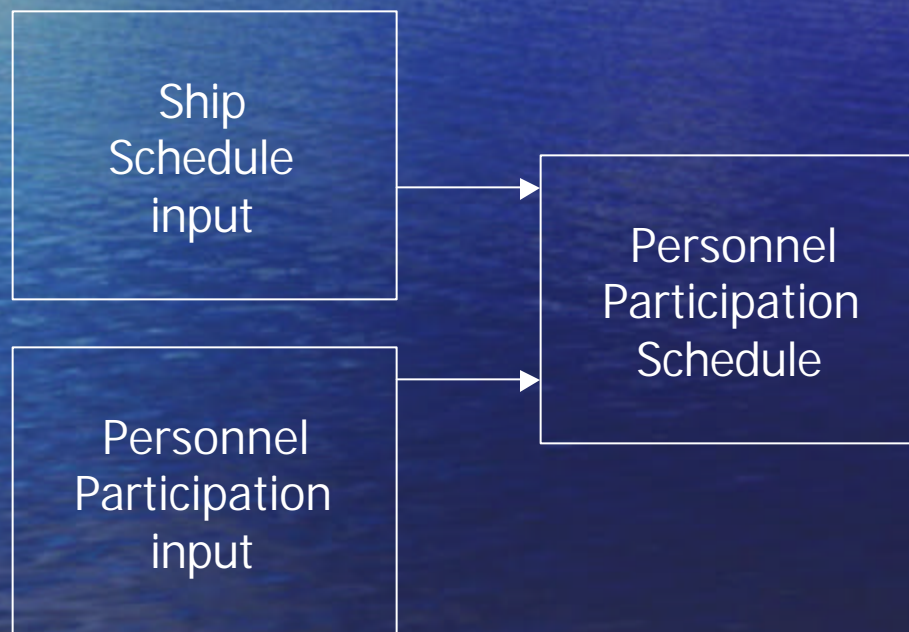
- Main Database - Knowledge Base



The screenshot displays a web application interface for a Knowledge Base. At the top, there is a navigation menu with links for Home, Inventory, Documents, Performance History, and Knowledge Base. The Knowledge Base section is active, showing a search and new entry interface. On the left, there is a 'KB Search' panel with a search input field, a dropdown menu set to 'Any Type', and a 'Search' button. The main 'Knowledge Base' panel has a 'Search' and 'New' button at the top. Below these are several form fields: 'InventoryType' (a dropdown menu with 'Sensor' selected), 'Manufacturer', 'Sensor Type', and 'Model' (all dropdown menus), and 'Description', 'Procedures', 'Solutions', 'Prevention', and 'Notes' (all text input areas). Each of these text input areas has a small blue square icon with a downward arrow on its right side.

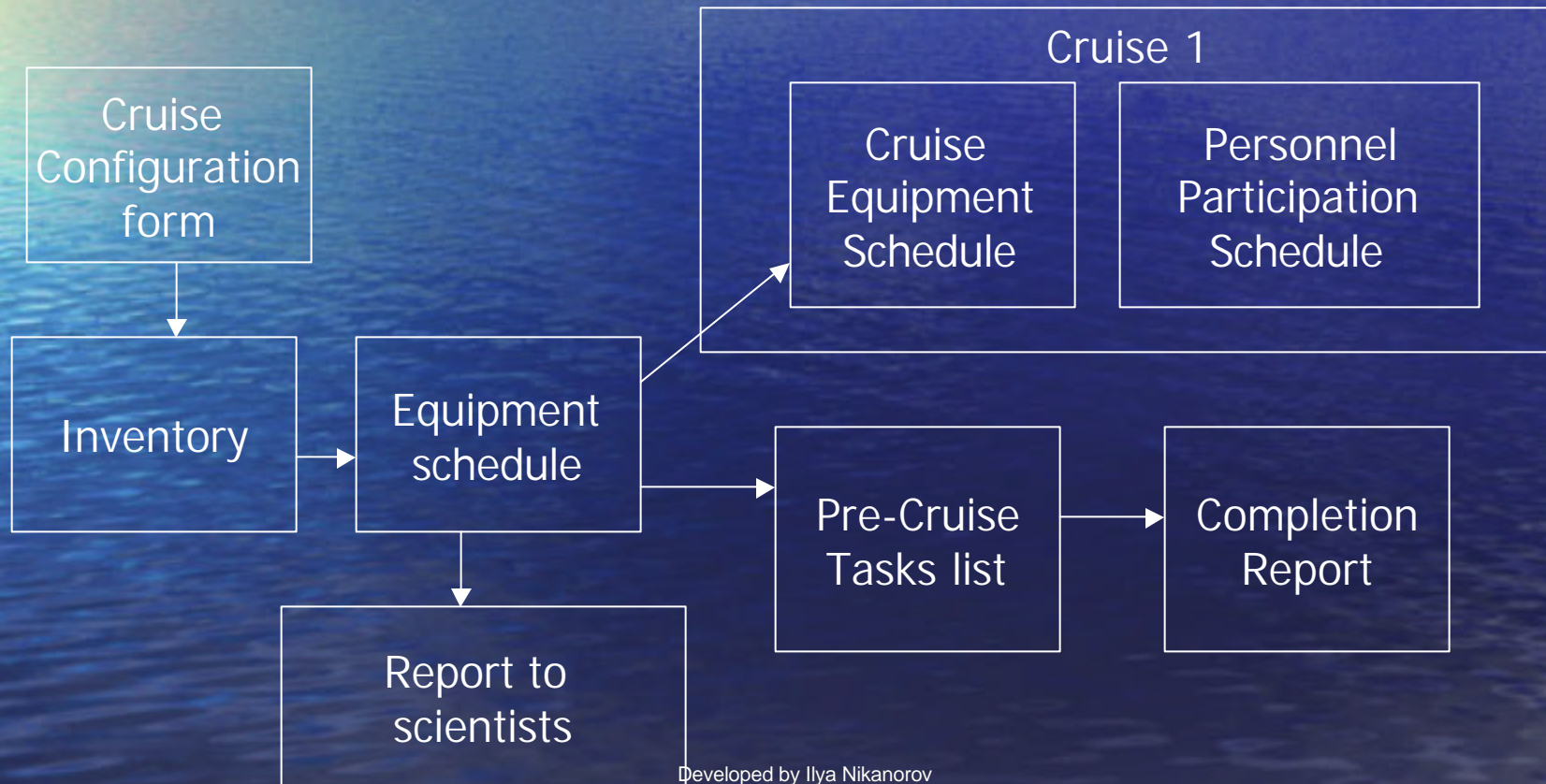
Structure and Components

- Main Database - Personnel Schedule



Structure and Components

- Main Database - equipment schedule



Structure and Components

- Main Database – schedule report

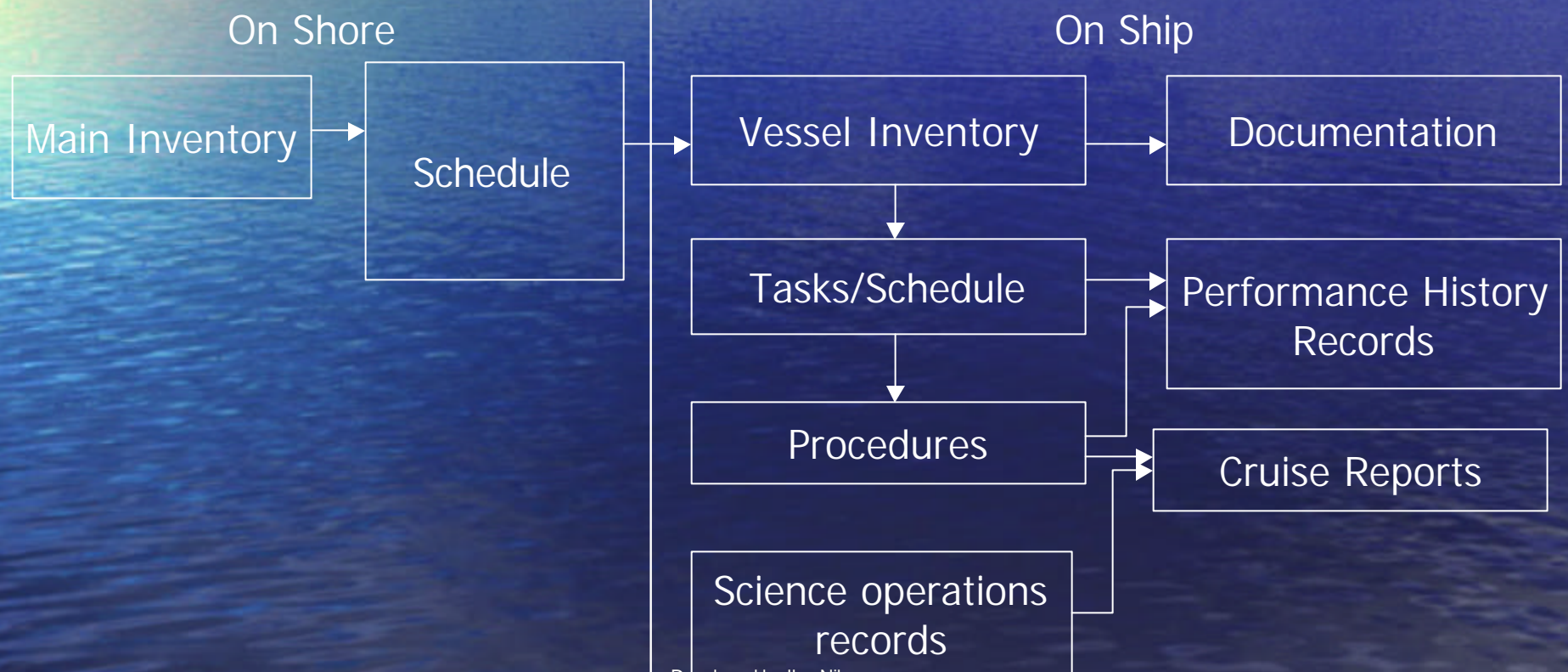
Year											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cruise 1						Cruise 3					
Cruise Equipment Schedule	Personnel Participation Schedule					Ship 1	Cruise Equipment Schedule		Personnel Participation Schedule		
		Cruise 2									
		Cruise Equipment Schedule		Personnel Participation Schedule	Ship 2						

Structure and Components

- Vessel Database
 - Located on each ship
 - Provides information about inventory
 - Controls completion of cruise schedule
 - Provides record collection functions
 - Provides report generation functions

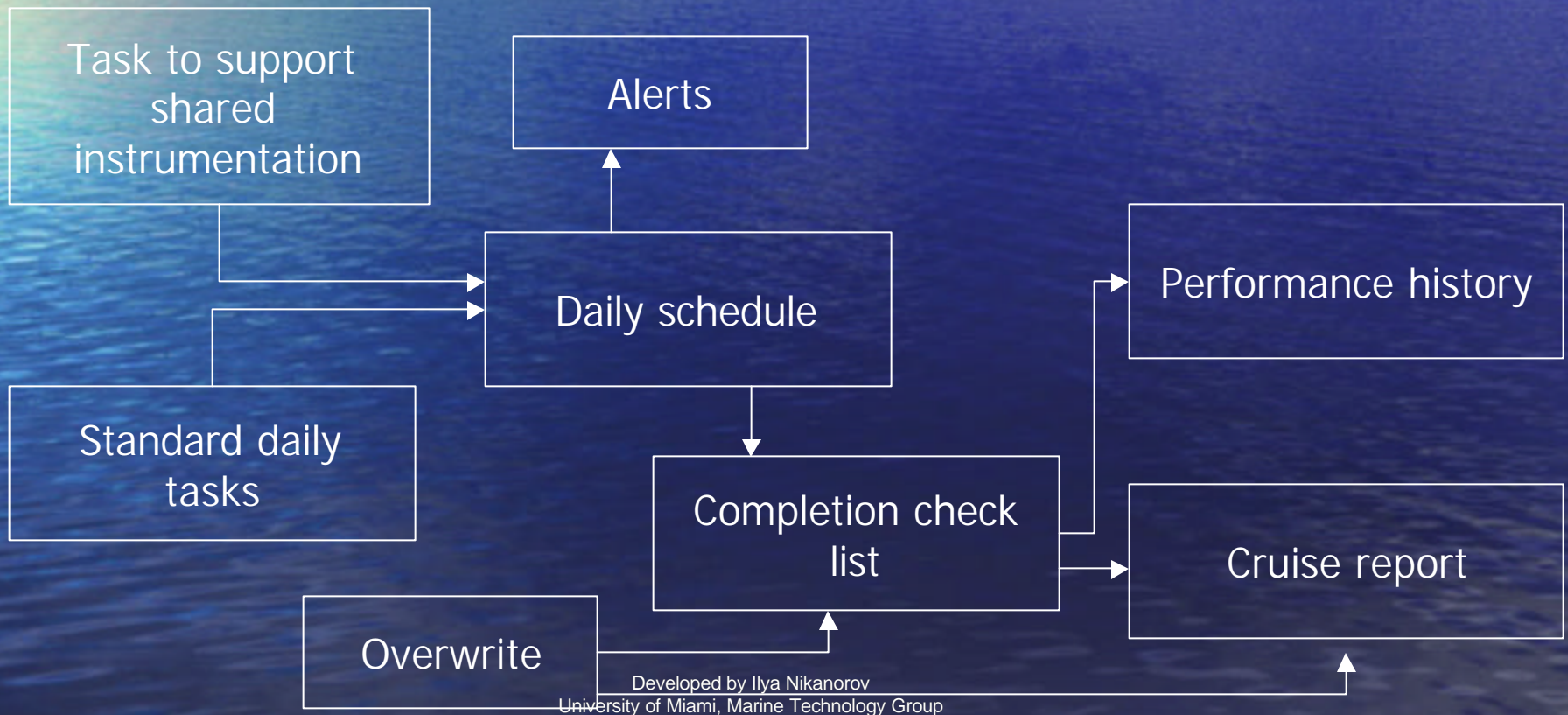
Structure and Components

- Vessel Database - layout



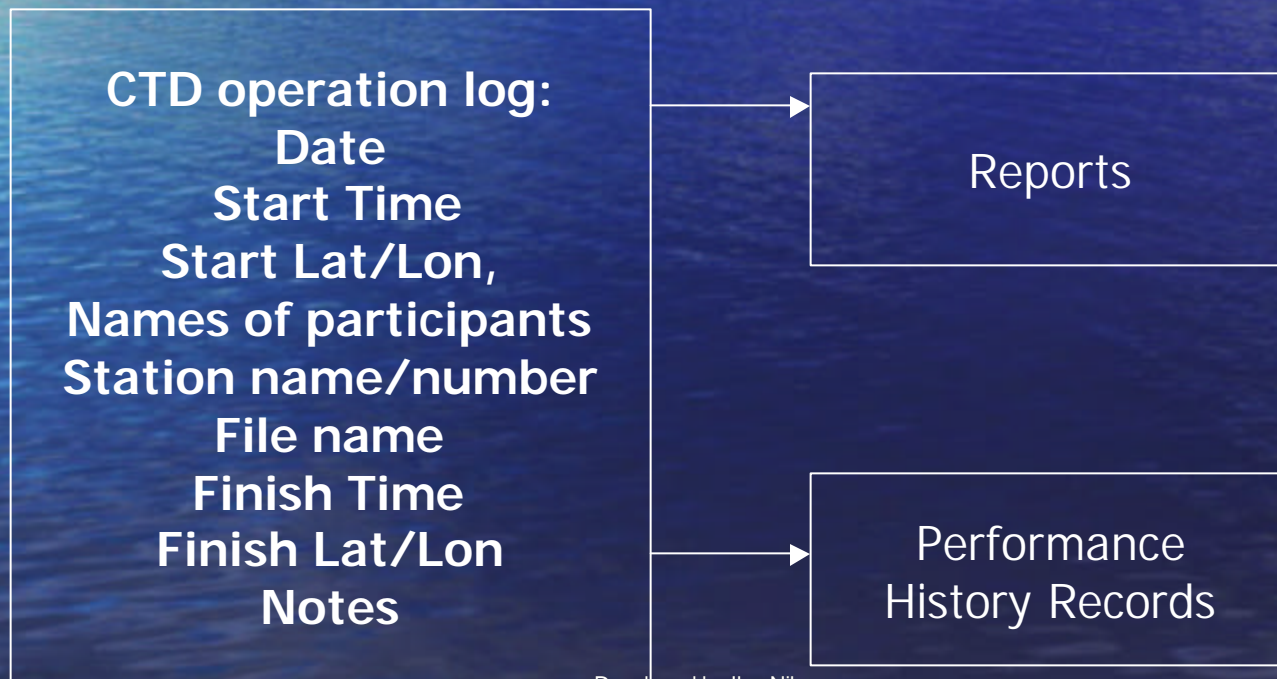
Structure and Components

- Vessel Database - schedule



Structure and Components

- Vessel Database
 - Science operations records

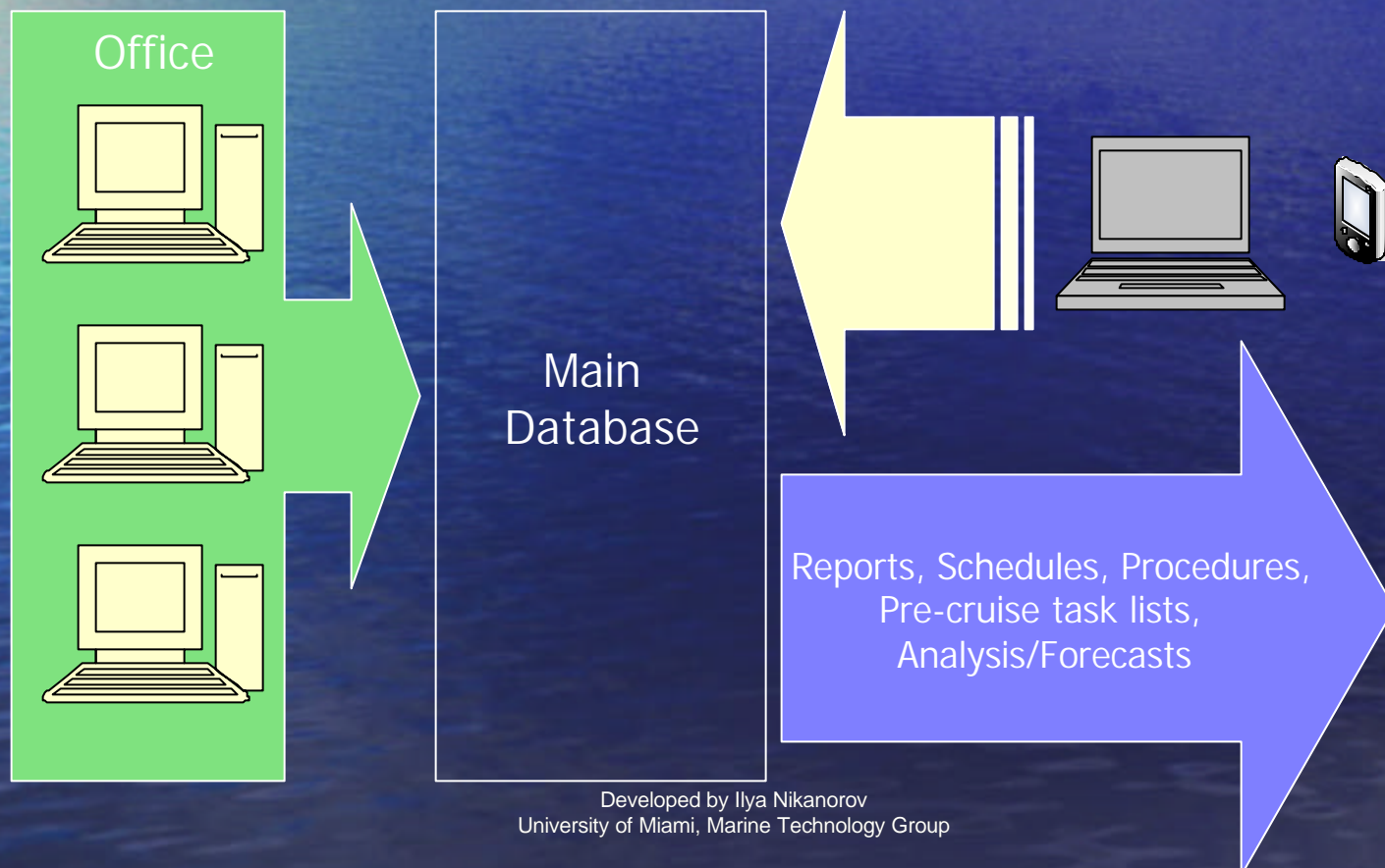


Implementation and Operations

- Database software technology
 - MS SQL Server 2000 as database server
 - Server running MS Windows 2003 Server with MS .NET Framework
 - Dynamic web pages generated using ASP .NET technology
 - Code written in C#
 - HTML output is using cascading style sheets and Java script.

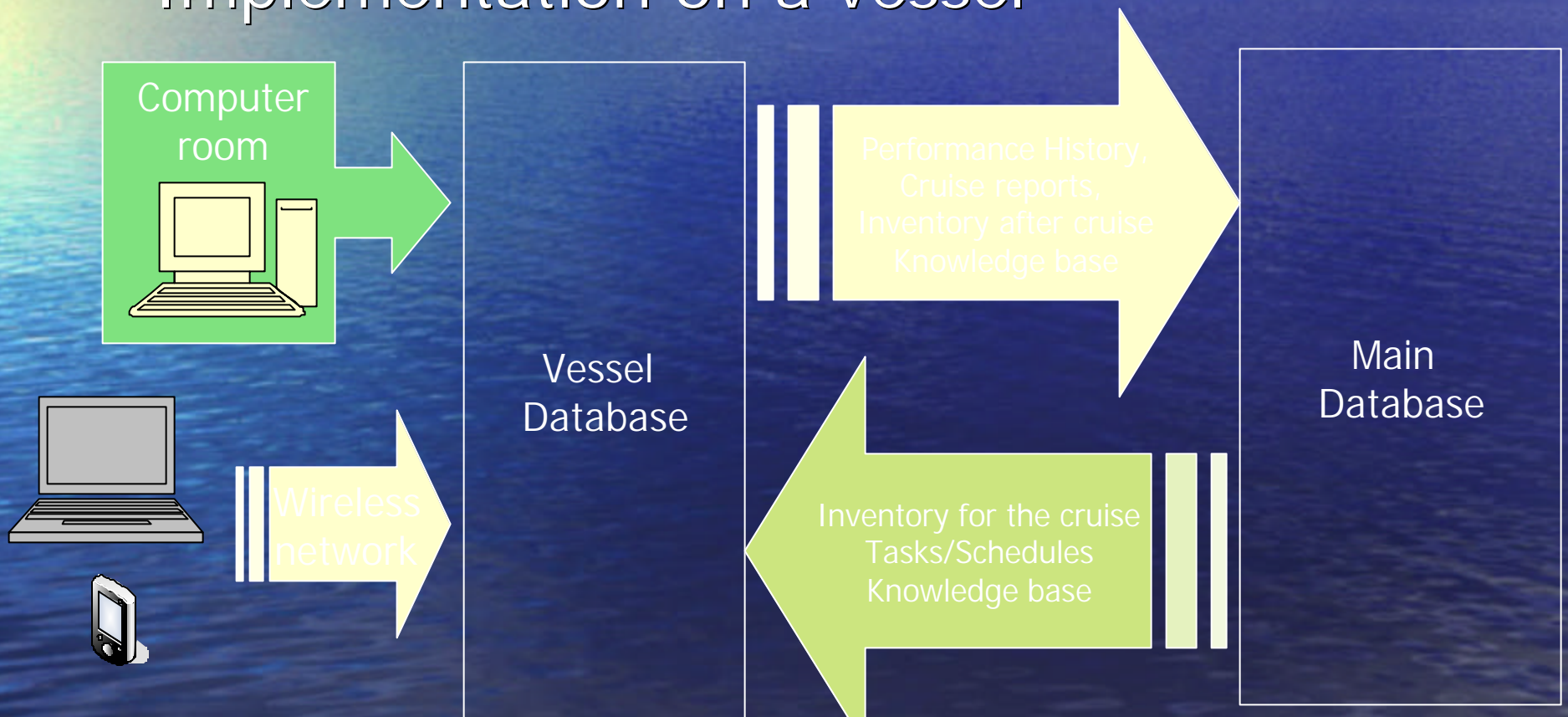
Implementation and Operations

- Implementation on shore



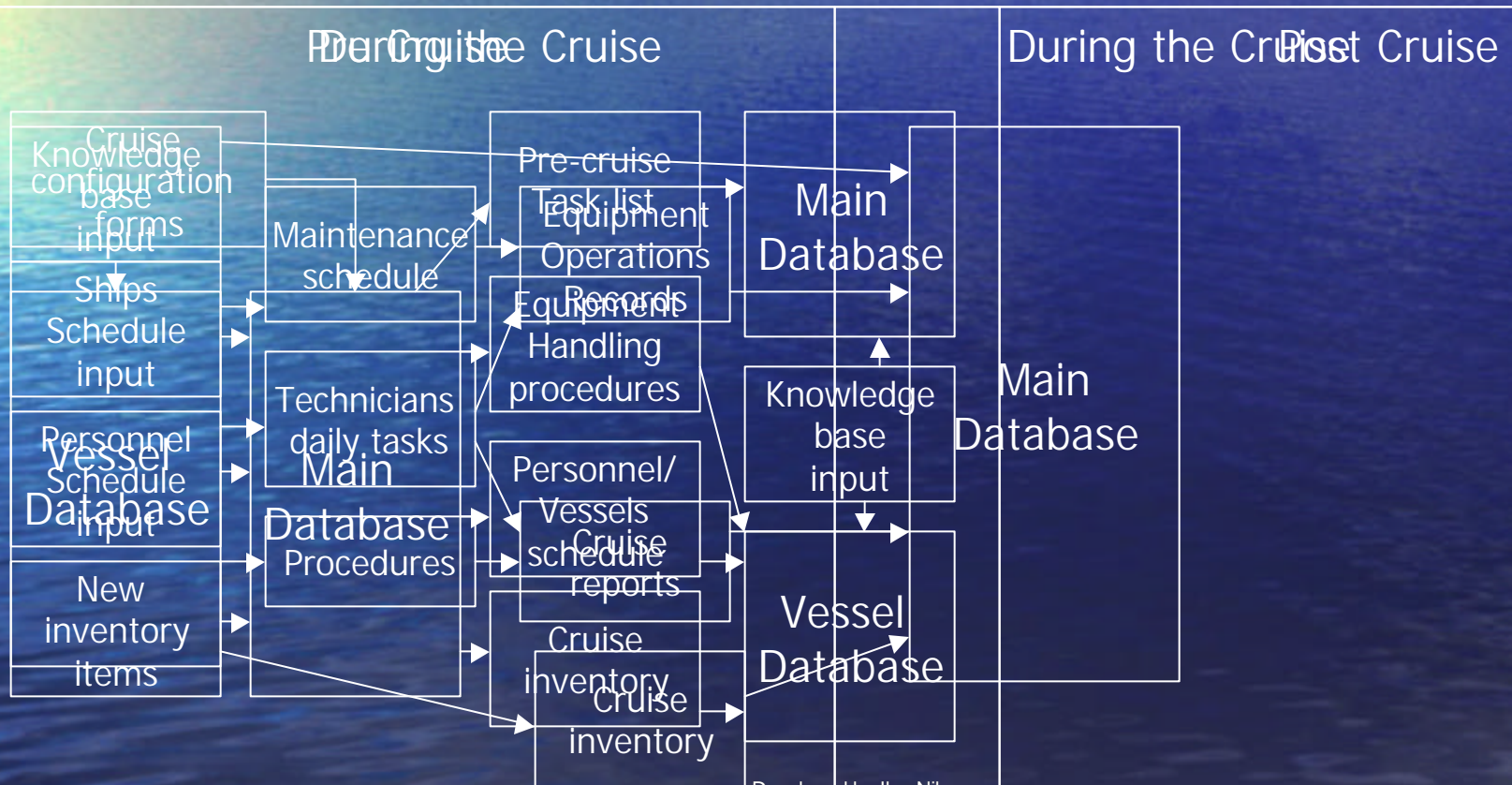
Implementation and Operations

- Implementation on a vessel



Implementation and Operations

- Overall operations



Future Development

- Project control system
- Procedures development system
- Financial database
- Data comparing system
- Analysis tools

Equipment Maintenance Database

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