AIS for Maritime Vessel

(Automatic Identification System)

AIS for Maritime Vessel

(Automatic Identification System)

Presented by:
Engr. Febus Reidj G. Cruz
School of Electrical Electronics and Computer Engineering
MAPUA University

@ Intelligent Transportation Systems (ITS) Forum,
D.M. Consunji Theater, Institute of Civil Engineering,
University of the Philippines, Diliman, Quezon City,
October 25, 2019

Philippines
is a maritime country

archipelago 7,641 islands	7:1 water to land	2.2 M km^2 water area

1 ocean	9 seas	9 gulfs	22 straits

AIS for Maritime Vessel © 2019

A view of Philippines' marine traffic

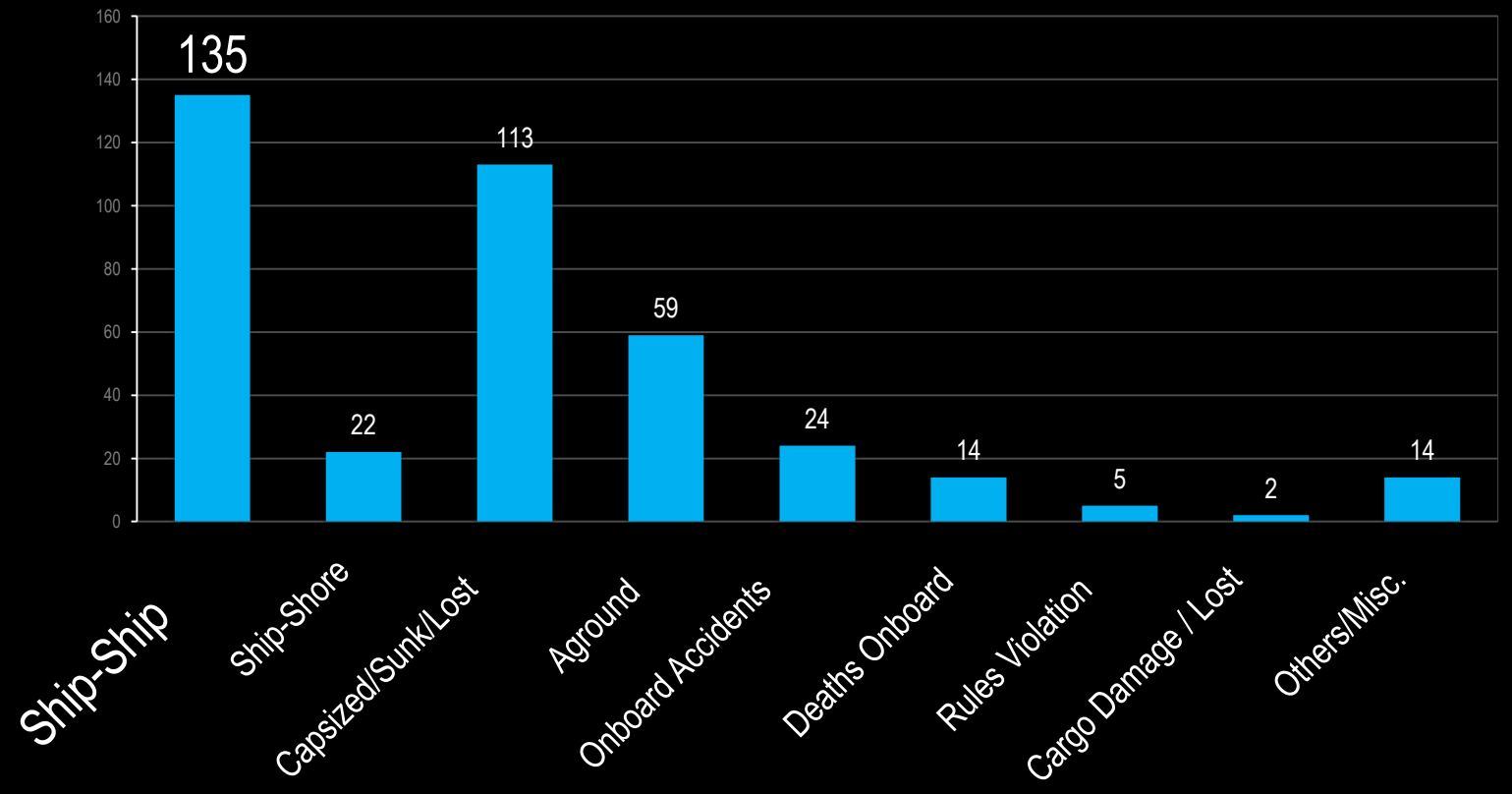
AIS for Maritime Vessel © 2019

Incident of marine disaster

Lack of **safety standard**

 © 2019

Marine Accidents 1972-2010



PHILIPPINES

Chinese vessel sinks Philippine boat in West PH Sea 'collision'

(5th UPDATE) 'We condemn in the strongest terms the cowardly action of the Chinese fishing vessel and its crew for abandoning the Filipino crew. Th expected action from a responsible and friendly people,' says Defense Secretary Delfin Lorenzana

[1] Inquirer Archives (2010), Sulpicio Lines Inc. Sea Accidents. Source: LLOYD'S MIU
[2] Philippine Coast Guard (2010), Major Maritime Accidents - 2000-2009, pages 1-6
[3] Philippine Daily Inquirer (2009), List of deadliest ferry accidents in RP, (First Posted 03:49:00 09/07/2009)

 © 2019

Local AIS for marine vessels

AIS supports safe secure sustainable maritime transport

Imported single unit AIS amounts PHP 250,000

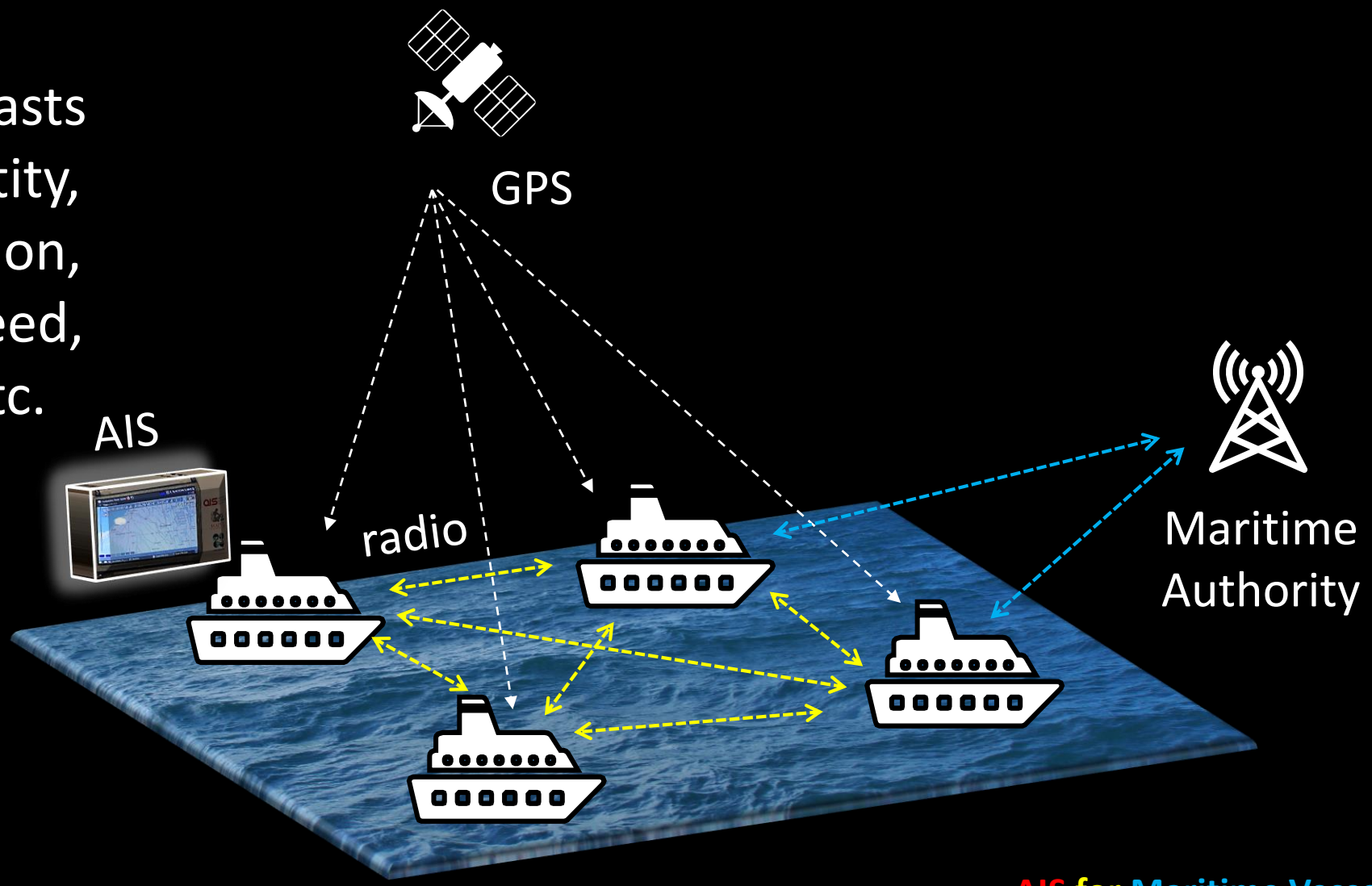
Filipino-made AIS unit

DOST-PCIEERD Project

AIS for Maritime Vessel © 2019

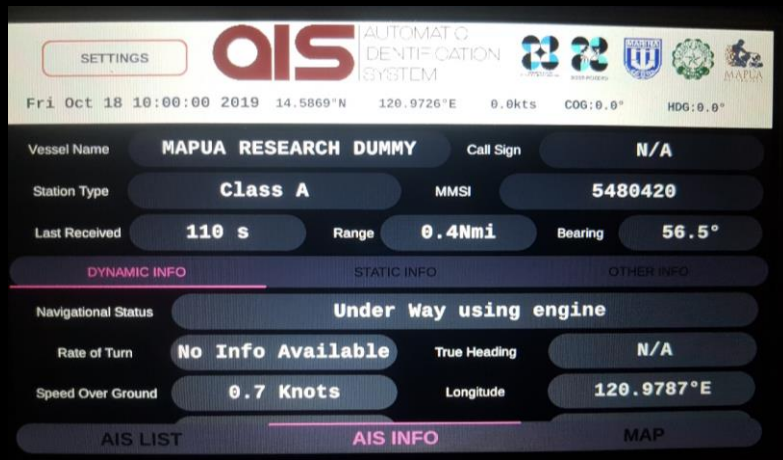
How AIS technology works?

AIS broadcasts ship's identity, type, position, course, speed, heading, etc.



 © 2019

Philippine-made AIS for marine vessels



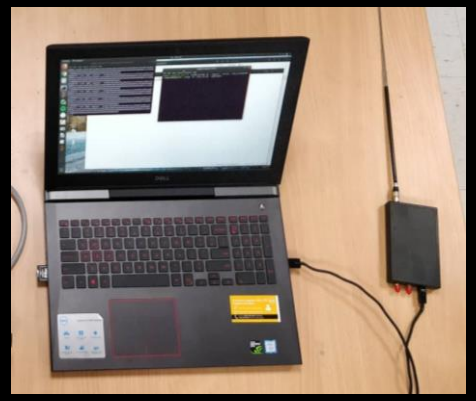
Real-time monitoring & tracking
- Safe voyage
- Collision avoidance
- Search and rescue

Based on IEC Standards
for IMO compliance

IEC – International Electrotechnical Commission
IMO – International Maritime Organization

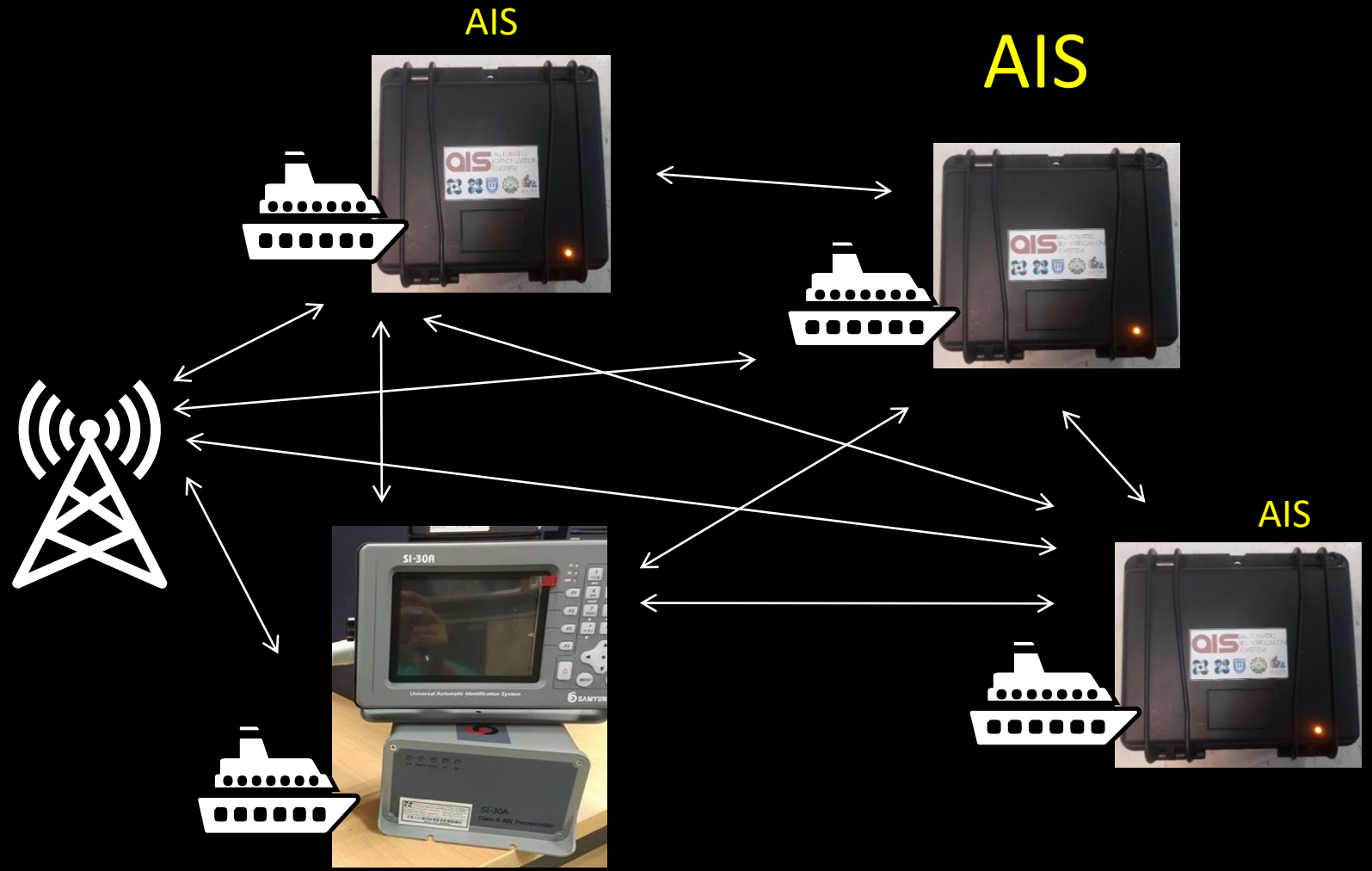
 © 2019

Our AIS System



Maritime Authority

Ship Monitoring & Tracking



AIS for Maritime Vessel

© 2019

Our AIS Product Features

Nearby Vessel Alert

User Interface

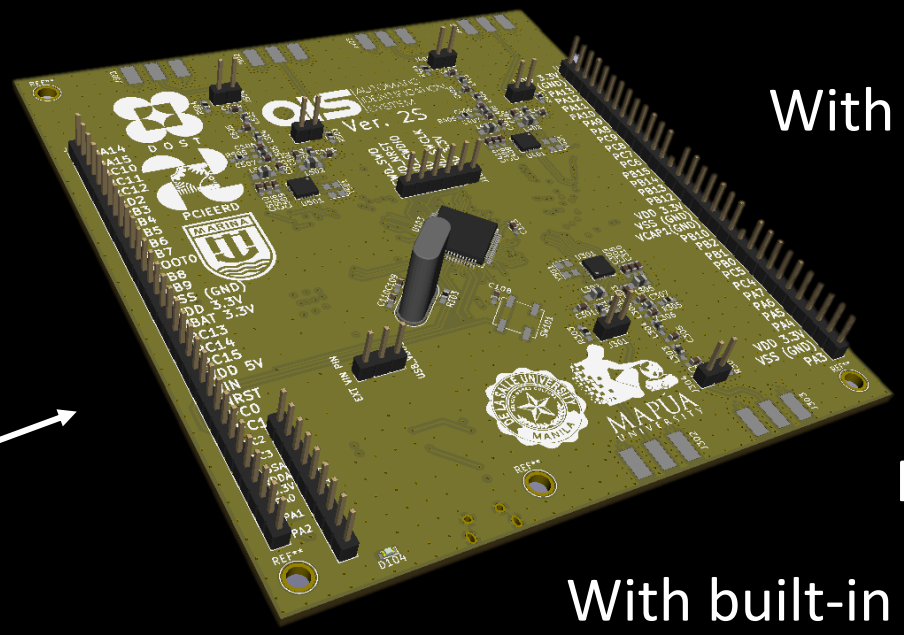
Class B AIS

Waterproof hard case

 © 2019

Our AIS System Features

Printed Circuit Board with
Controller and Radio Chips



With built-in GPS module

Port for GPS antenna

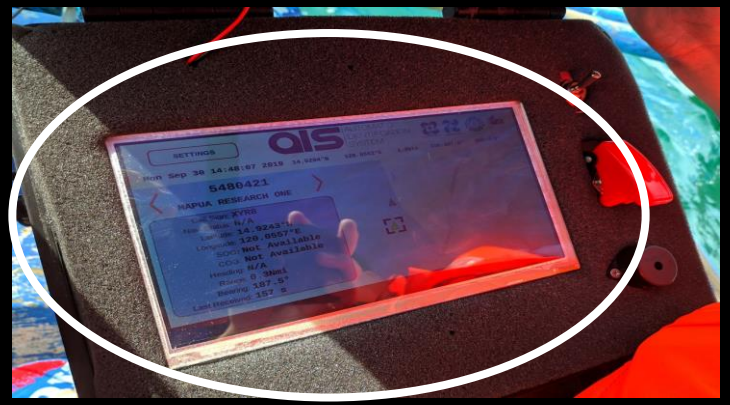
Port for Transceiver antenna

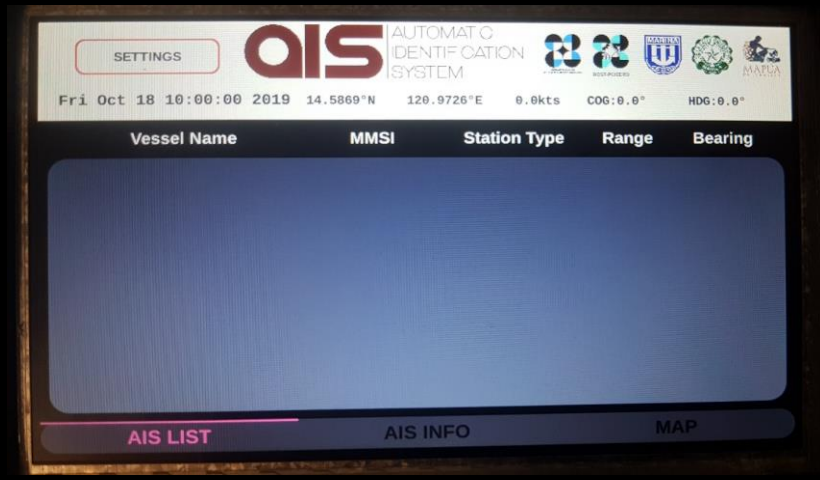
Port for Display

With built-in power supply module
(12 V battery or 5 V power bank)

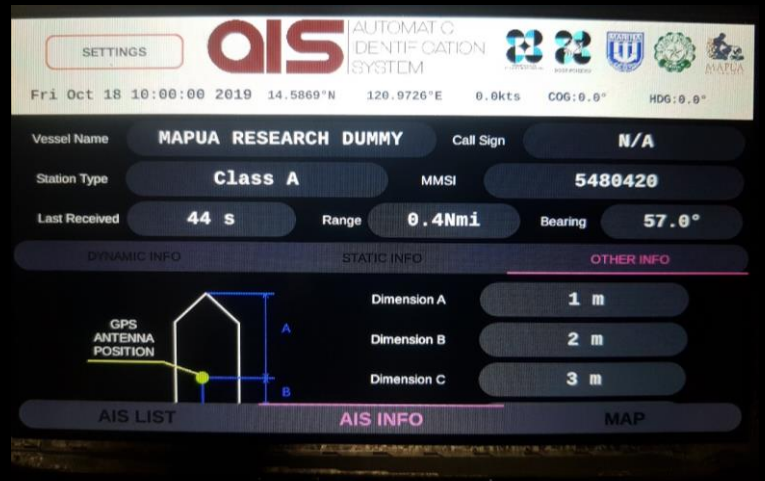
 © 2019

Our AIS User Interface Features





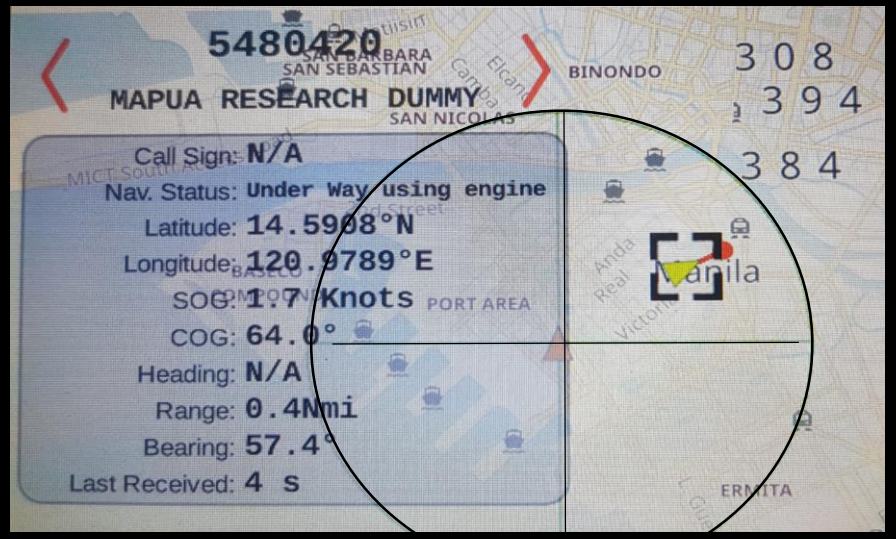
List of Vessels



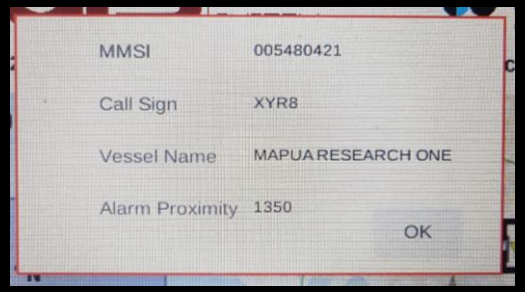
Vessel Information

Map

Our AIS Collision Warning Features

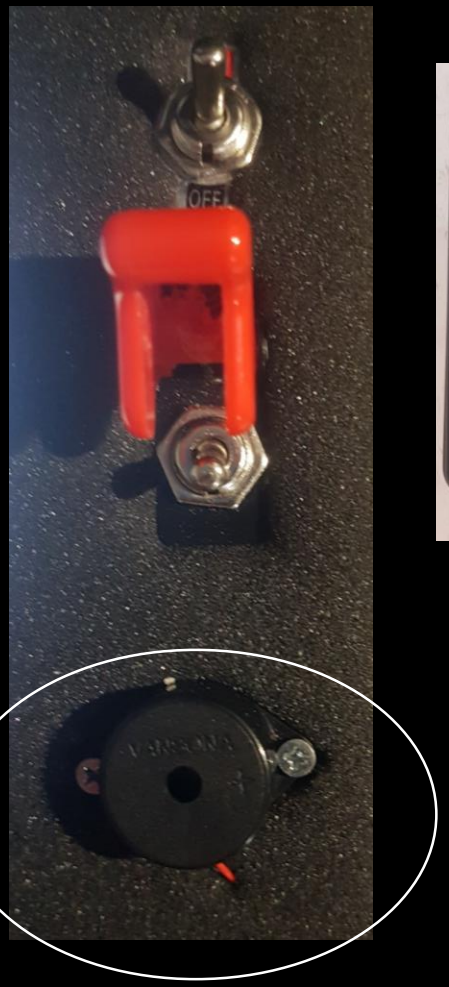


Alarm Proximity Radius



Alarm Proximity Setting

Buzzer



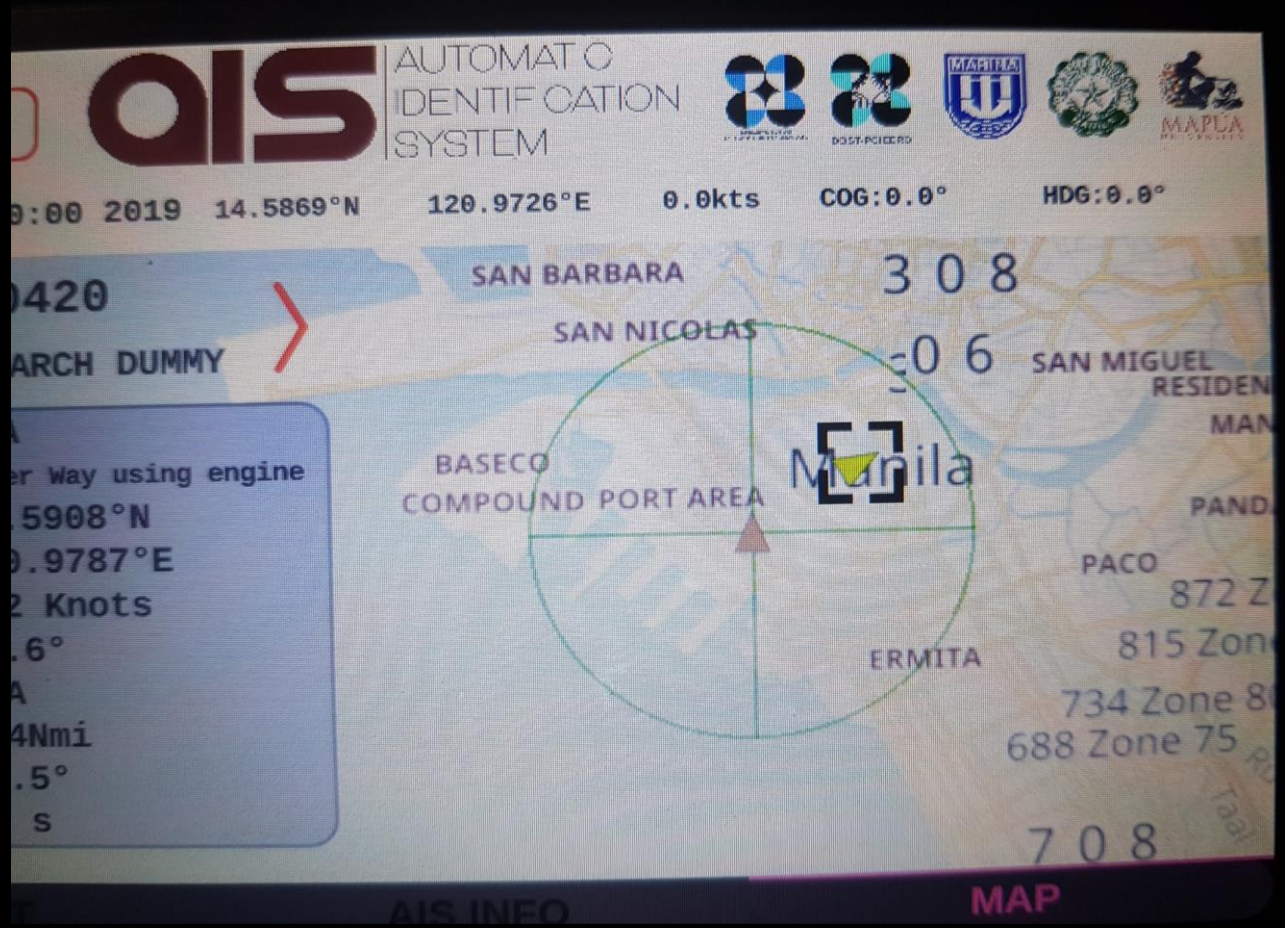
Flashing Light Indicator

 © 2019

Our AIS for Ship Tracking and Monitoring

Nautical Highways

Define area of observation



 © 2019

Philippine-made AIS
for marine vessels

Without vision,
the people will perish…

Eyes at Sea

AIS \ eyes \

 © 2019

Acknowledgment:

Development of a Local Automatic Identification System (AIS) for Ship Tracking and Monitoring

This project is primarily funded by **DOST-PCIEERD** with Project No. 4393 and year of Project Start 2017.

Let's work together

- Provide AIS devices
- Conduct field tests
- Organize technical trainings
- Setup monitoring & tracking system of maritime vessels

 © 2019

AIS Product Demo/Presentation

PHILMARINE 2019

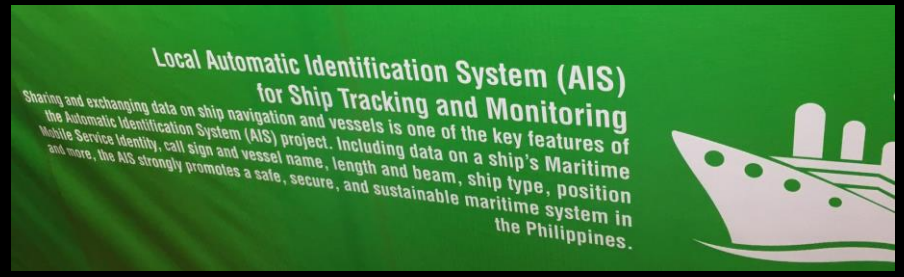
SMX Convention Center Manila, Mall of Asia Complex, Pasay City, Philippines

 © 2019

AIS Product Demo/Presentation

NSTW 2019

World Trade Center, Pasay City, Philippines



 © 2019

Thank you very much.

Mapua University

Co-Project Leader: Engr. Febus Reidj Cruz

Science Research Specialist II: Engr. Jared Christian Nob

Science Research Specialist II : Engr. Bryx William Garcia

Graduate Student Researcher : Engr, Ryan Christopher Gania

Project Assistant III: Alyssa Lois Dolor

Project Staff II: Engr. Alejandro Ballado Jr.

Project Staff II: Engr. Meo Vincent Caya

DOST-PCIEERD

MARINA

PCG

For inquiries, please contact:

Engr. Febus Reidj G. Cruz

frgcruz@mapua.edu.ph