



# *Naval Meteorology and Oceanography Command (NAVMETOCOM)*

*Rear Admiral John A. Okon*



## *International Training Programs*

*August 2017*

*This brief is UNCLASSIFIED  
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# Naval Oceanography Mission



Provide environmental information that ensures Naval and Joint forces:

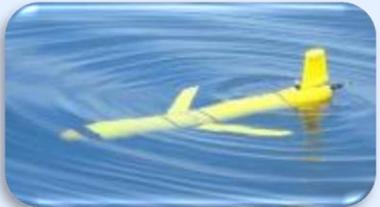
- Operate more safely and effectively
- Make better decisions



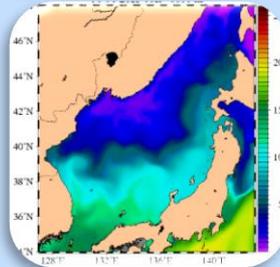
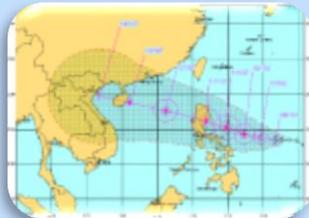


# Why METOC Training is Important

## Ensuring Fleet Safety and Mission Effectiveness



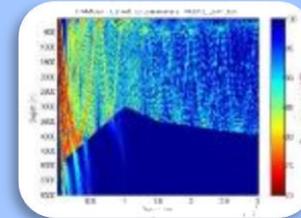
**DATA**  
(Collection)



**FOR TRAINING  
PURPOSES ONLY**

**SUBWEAX**

**PROCESSING**  
(Prediction)



**IMPACT**  
(Exploitation)



**DECISION**  
(Dissemination)



# Hydrographic Training Programs



- **International Hydrographic Management and Engineering Program (IHMEP)**
  - International Hydrographic Organization (IHO) “**Cat B**”
  - Administered by NMOPDC
- **International Hydrographic Science Applications Program (IHSAP)**
  - International Hydrographic Organization (IHO) “**Cat A**”
  - Administered by the University of Southern Mississippi
- **Navy Mobile Training Team (NMTT)**
  - Tailored, formalized technical training
  - Targeted for host nations and coalition partners



# Hydrographic Training Programs



## International Hydrographic Management and Engineering Program (IHMEP)

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# IHMEP



- Longest running hydrographic training course in the US.
- The program provides students with a working knowledge of hydrography
- 26 Weeks Lecture/Hands-On Training
- IHO/FIG Category B Certified (2011)
- Graduates receive academic certificate
- Classes at NAVMETOCPRODEVLEN in Gulfport



# History of IHMEP



- **1957 – 1977** - Allied Training Program for Officers and Civilians for Hydrographic Engineering: NAVOCEANO conducted a 48-week hydrographic engineering course for international students.
- **1978** - Renamed to Foreign Officer Training Program for Hydrographic Surveying/Coastal Oceanography.
- **1981** - Program was incorporated into the two-year graduate program at Naval Postgraduate School.
- **1984** - Oceanographer of the Navy authorizes NAVOCEANO to conduct a 26-week practical and comprehensive hydrographic training program for international students.
- **1989** - IHO/FIG certification at the CAT B level was granted.
- **1986 – 2013** - IHMEP has graduated 255 students from 42 countries.
-



# IHMEP Schedule



- Modules:

- Computer Science
- Math
- Physics
- Nautical Science
- Meteorology
- Oceanography
- Marine Geology
- Law of the Sea
- Geodesy
- Positioning
- Tides
- Acoustics
- Single Beam Echosounder
- Multibeam Echosounder
- Side Scan Sonar
- Data Collection
- Data Processing & Analysis
- Nautical Cartography
- Project Specs
- Survey
- Data Visualization & ROS



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# IHMEP International Participants



Albania	Ethiopia	Malaysia	Spain
<b>Argentina</b>	Finland	<b>Mexico</b>	Sri Lanka
Azerbaijan	Gambia	Morocco	Sudan
Bangladesh	Greece	Netherlands	Sweden
<b>Belize</b>	<b>Guatemala</b>	Nigeria	Taiwan
<b>Brazil</b>	Guinea-Bissau	Norway	Thailand
Burma	<b>Guyana</b>	Oman	Tonga
<b>Chile</b>	Iceland	Pakistan	<b>Trinidad &amp; Tobago</b>
<b>Colombia</b>	India	<b>Peru</b>	Tunisia
<b>Cuba</b>	Indonesia	Philippines	Turkey
Croatia	Iran	Poland	UAE
Denmark	Israel	Romania	<b>Uruguay</b>
<b>Dominican Republic</b>	<b>Jamaica</b>	Portugal	<b>Venezuela</b>
<b>Ecuador</b>	Japan	Saudi Arabia	Vietnam
Egypt	Jordan	Senegal	Western Samoa
<b>El Salvador</b>	Kenya	Singapore	
Estonia	Kuwait	South Korea	

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# IHMEP Distinguished Grads



- *VADM Alexander Maratos – former President of IHB Directing Committee*
- ***RADM Juan Manuel Soltau, Executive Director, Colombian Ocean Commission***
- *First Admiral Dato Pahlawan Zaim bin Hassan, Director General, Royal Malaysian Hydrographic Center*
- *First Admiral Dede Yuliadi, Director General, DISHIDROS*
  
- *CAPT Rachid Essoussi – Director, Tunisian Navy Hydrographic Center*
- ***CAPT Hugo Mario Gorziglia – former Director SHOA & IHB, Chile***
- ***CAPT Rafael Ricardo Torres Parra, MSc, PhD, Director, CIOH, Colombia***
- ***CAPT (Ret.) Carlos Tejada, Colombia***
  
- ***CDR Raymond Severino– former Director, Dominican Republic ICM***
- *CDR Youssef Tber – former Director, Royal Moroccan Navy Hydrographic Service (SHOMAR)*
- *CDR Marlon Roa – Head of the Philippine Navy Ocean Littoral Affairs Group*
- 
- ***Mr. David Neale - Deputy Director, Trinidad & Tobago Port Authority***
- *Mr. Hilmar Helgason- Head of Icelandic Hydrographic Service*
- *Mr. Robert Jensen – retired, former Head of Icelandic Hydrographic Service*

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# Admission Standards



- Candidates successfully completed college-level differential calculus, trigonometry and physics.
- Knowledge & experience in maritime navigation (manual & electronic).
- Achieve at least 70% English comprehension level.



# Facilities



## *Naval Oceanographic Office Boat Operations Branch*

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# IHMEP Field Experience



Source: NAVMETOPRODEVCCEN

## *Field Work*



Source: NAVMETOPRODEVCCEN

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# IHMEP Field Experience



Source: NAVMETOPRODEVGEN



Source: NAVMETOPRODEVGEN

*Installing a Multibeam  
Echosounder*

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# IHMEP Field Experience



Source: NAVMETOPRODEVEN

## *Multibeam Data Collection*



Source: NAVMETOPRODEVEN

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# IHMEP Friendships



Source: NAVMETOPRODEVEN

## *Field Studies Program*



Source: NAVMETOPRODEVEN

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# Hydrographic Training Programs



## International Hydrographic Science Applications Program (IHSAP)

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# *IHSAP Mission and Purpose*

- The purpose of the Master of Science program in Hydrographic Science is to provide students with technical and practical expertise in advanced hydrographic methods and standards that will enable them to assume leadership roles in using modern techniques in academic , government, military, and private organizations engaged in hydrographic activities.*



# IHSAP Overview

- Designed to meet FIG/IHO/ICA Standards of Competence for Hydrographic Surveyors (S-5).
- Sponsored students follow the one-year track: 2 semesters of classroom instruction; 1 semester of application; 50 weeks of study.
- Un-sponsored students can choose the two-year track and conduct research with the Hydrographic Science Research Center that covers tuition and provides a stipend.
- In both options the degree awarded is a non-thesis Master of Science in Hydrographic Science.
- PhD hydrographic program available as an emphasis area under Marine Science.



# IHSAP Overview



- Created as partnership between CNMOC, NAVO, and The University of Southern Mississippi
- NAVMETOCPRODEVGEN took over int'l aspect of the program in OCT 2012
- IHO/FIG Category A Hydrographic Program
- Highly intensive one year program non-thesis (August-July)



# IHSAP Overview



- Bachelor of Science degree or equivalent degree is required. Student must be proficient in mathematics, physics, and computer science
- Student must meet university's requirements for a graduate degree
- Upon completion, students obtain a Master of Science in Hydrographic Science



# IHSAP USM Hydro Faculty

- Dr. Stephan Howden, Associate Professor (HYD 600, HYD 612)
- Dr. David Wells, Contract Professor (MAR 668, HYD 604, HYD 605)
- Dr. Dmitri Nechaev, Associate Professor (HYD 620)
- Dr. Kevin Briggs, Adjunct Professor (HYD 607)
- RDML (ret) Ken Barbor, Director HSRC & Instructor (HYD 609)
- Mr. Maxim van Norden, Coordinator & Instructor (HYD 603, HYD 606, HYD 608, HYD 610, HYD 611)

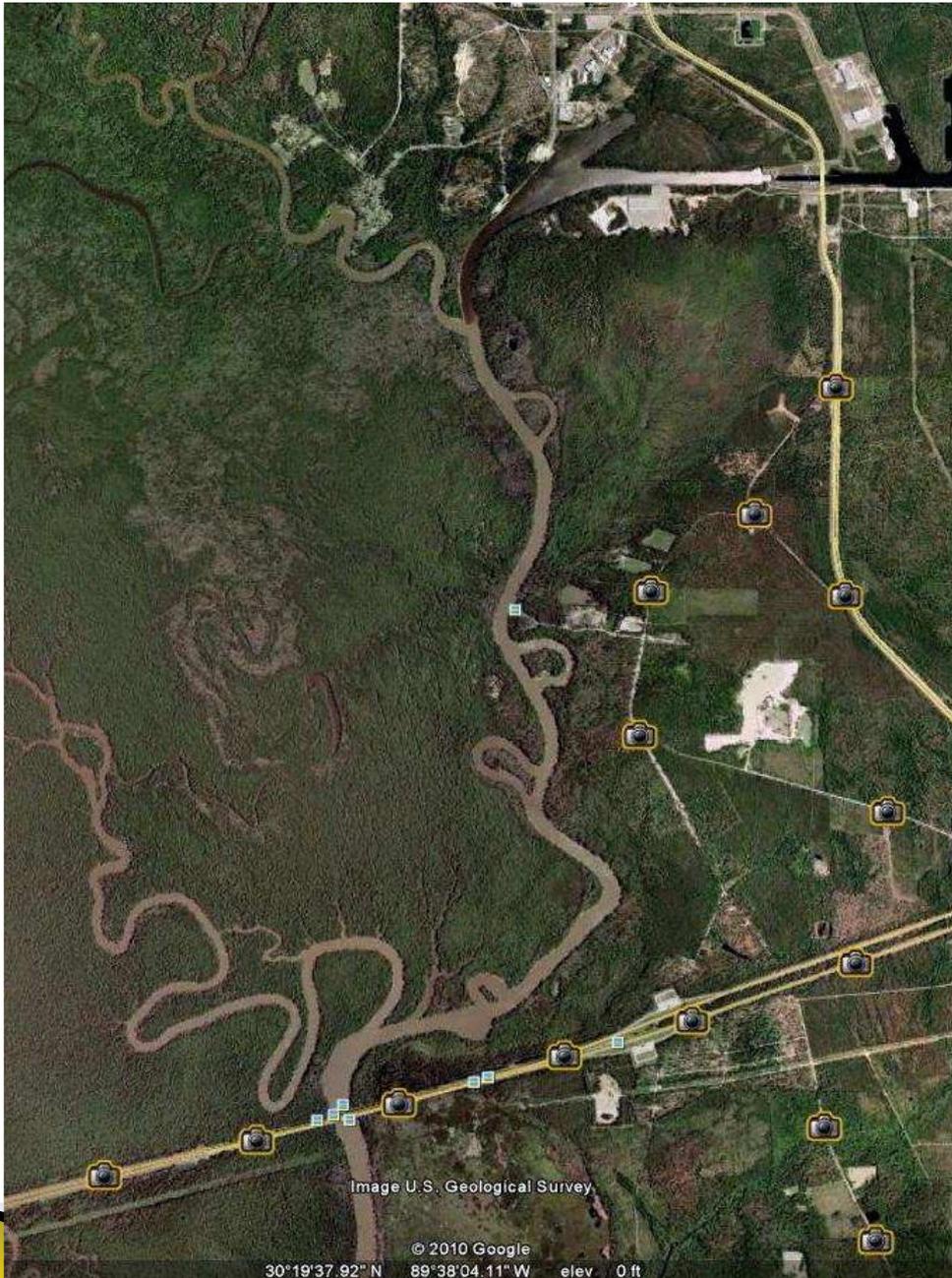


# IHSAP International Students 2000 - 2017



- Australia
- Bahrain
- Bangladesh
- Canada
- Ecuador
- Egypt
- Fiji
- Gambia
- India
- Jamaica
- Malaysia
- Mauritius
- Mexico
- Montenegro
- Netherlands
- Nigeria
- Peru
- Philippines
- Romania
- Saudi Arabia
- Slovenia
- Sweden
- Taiwan
- Thailand
- Tonga
- Trinidad & Tobago
- Tunisia
- Turkey
- Uganda
- United Kingdom

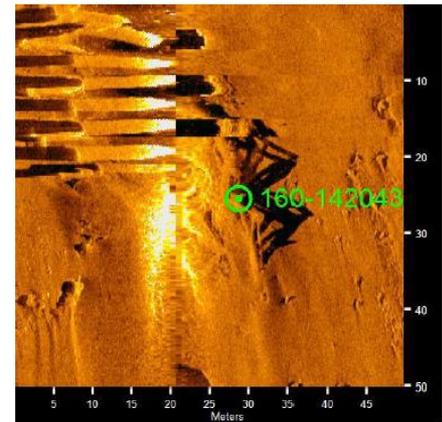
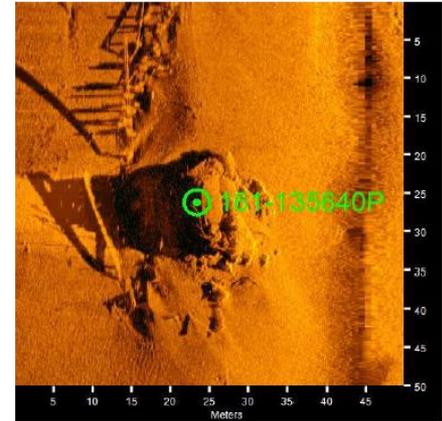
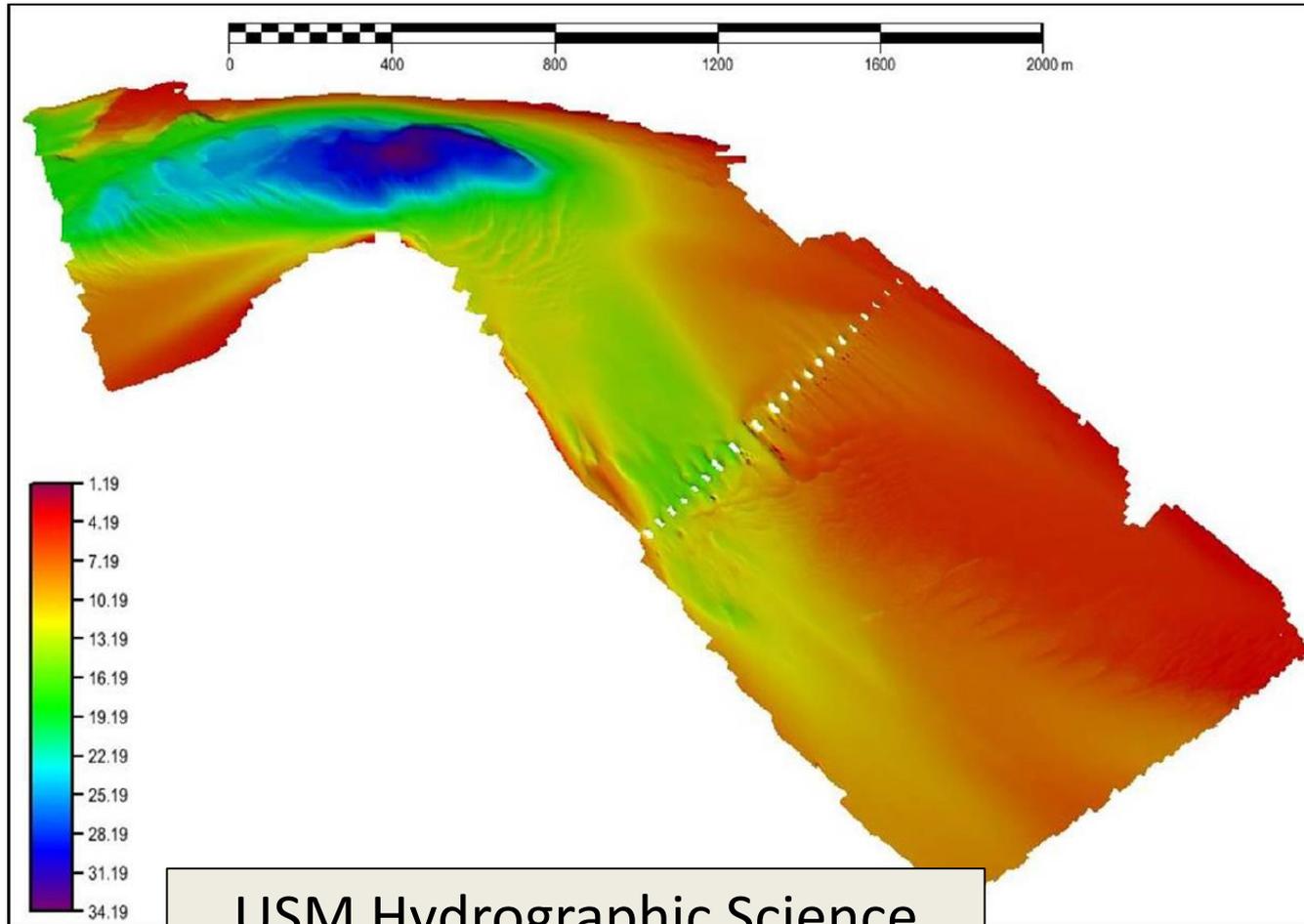
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Practical Exercise  
Operating Area  
Pearl River  
Stennis to I-10

# Nautical Charting

## Bathymetric Surface & Targets



USM Hydrographic Science  
Class 2015, Rigolets Team



# Hydrographic Training Programs



## Navy Mobile Training Team (NMTT)

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# NMTT

- Provides tailored, formal and on-the-job training to USA partners and allies
- NMTT instructors and Subject Matter Experts (SME) are highly qualified personnel with education and experience in the subjects they teach



# How to Apply?

- *Candidate's organization sends Letter of Request to in-country Office of Defense Cooperation or to U.S. Naval Attaché at U.S. Embassy.*
- *Course is identified by Military Articles and Service Listing (MASL) under title Hydrographic Management and Engineering Program (CAT B) and MASL number P-169208 or course ID S-8G-0500.*
- *Course is identified by Military Articles and Service Listing (MASL) International Hydrographic Science and Application Program (CAT A) and MASL number P-169265.*
- *Course is identified by Military Articles and Service Listing (MASL) under title Navy Mobile Training Team (NMTT) and MASL number P-309027*
- *Funding covered through different programs.*

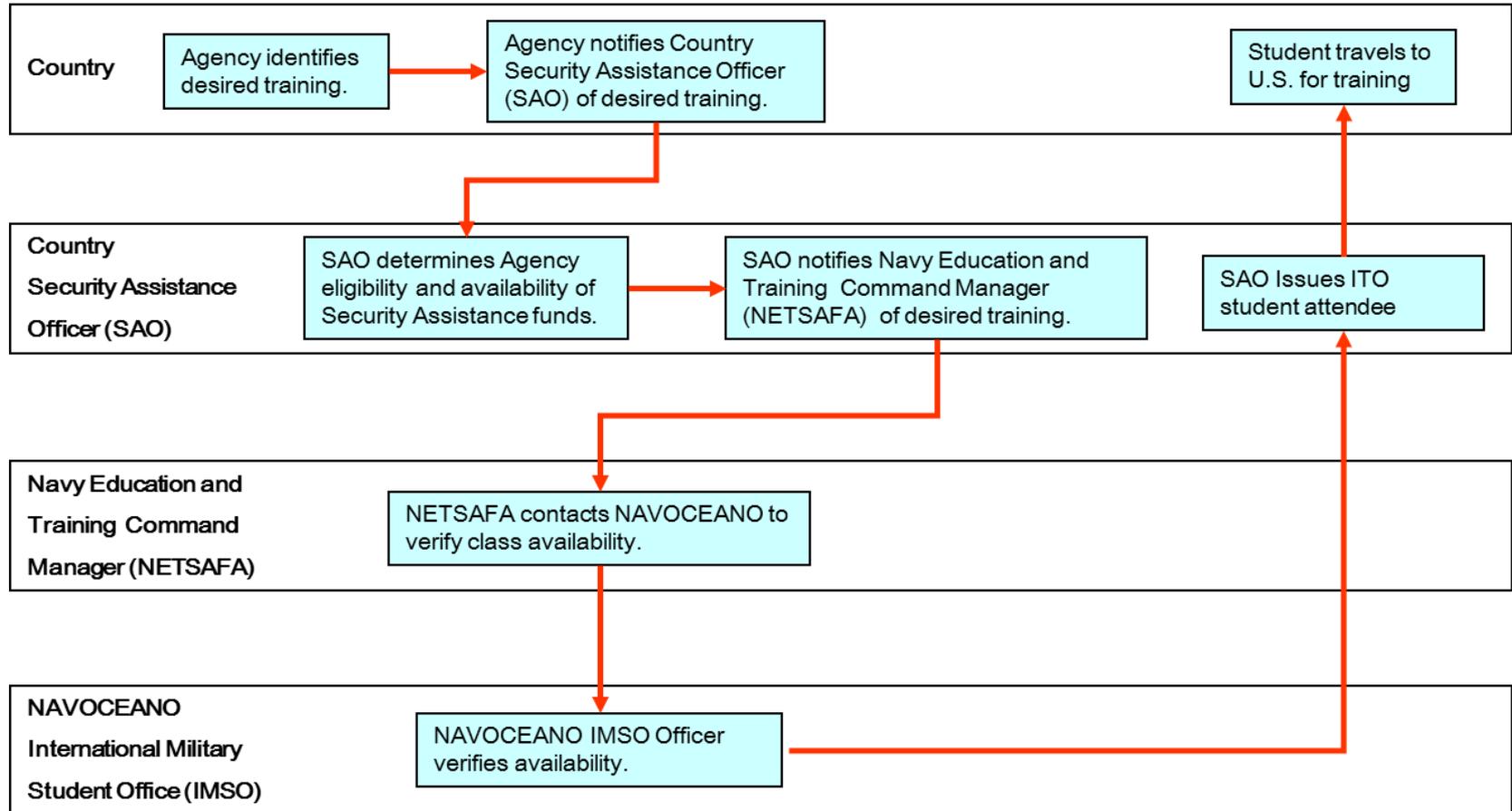


# *Security Assistance Programs*

- *Foreign Military Sales (FMS)*
- *International Military Education and Training (IMET)*
- *Foreign Military Financing Program (FMFP)*
- *Direct Commercial Sales (DCS)*



# Training Process





# Training Program POC

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# *Questions*