

# 2023 RTCM ANNUAL ASSEMBLY & CONFERENCE



*The Future of Maritime  
Communications and Navigation*

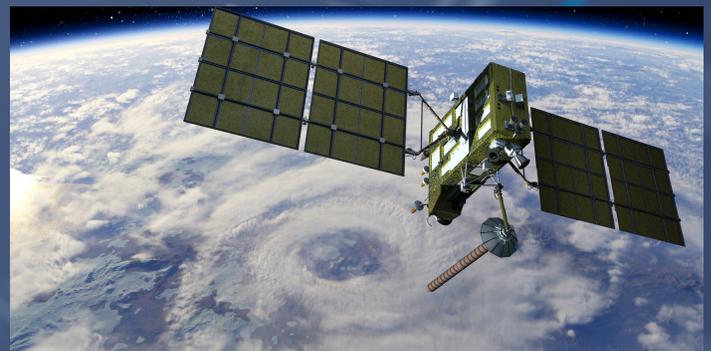
**JUNE 13-16, 2023 • HYATT REGENCY  
RIVERFRONT**

225 East Coastline Dr Jacksonville, FL US



# THE FUTURE OF MARITIME COMMUNICATIONS AND NAVIGATION

The theme for this year's Assembly is: The Future of Maritime Communications and Navigation. The program includes timely and insightful presentations by leading technical authorities, key government professionals, and notable industry representatives engaged in the development and management of maritime electronic systems. Sessions will cover developments in satellite and terrestrial maritime communications, shipboard and shoreside electronics, autonomous systems as well as relevant technical standards and policy issues.





The RTCM main program will start Tuesday morning, June 13th with a two-day technical program, an evening reception, and plans for a river outing. Each day and evening, there will be ample time to engage and interact with our speakers, other participating professionals, and representatives from many of RTCM's 140 member organizations.

Additionally, RTCM will host a meeting of the Global Maritime Distress and Safety System (GMDSS) Task Force on Thursday, June 15th and is preparing to host the 406 MHz Beacon Manufacturers Workshop with presentations by Cospas-Sarsat, NOAA, the USCG and other experts on Friday, June 16th. Stay the week and take advantage of the opportunity to receive the latest news related to the GMDSS, EPIRBs, PLBs, and the U.S. SARSAT program. RTCM Special Committee meetings on Electronic Charting, AIS, and Shipboard Navigation Display will be held on Thursday and Friday for members and invited guests.

RTCM Special Committees meet regularly throughout the year and this annual event presents an excellent opportunity to learn about relevant technical and policy topics in radio and satellite communications and electronic navigation systems. There are opportunities to share your experience, interact with key decision-makers in the maritime community and help shape the future of maritime communications and navigation systems. For more details about RTCM please visit our [homepage](http://www.rtcmm.org) or contact us at [info@rtcmm.org](mailto:info@rtcmm.org).

**THE FUTURE OF MARITIME  
COMMUNICATIONS AND NAVIGATION**

# 2023 RTCM ASSEMBLY & CONFERENCE

## SCHEDULE



### TUESDAY - JUNE 13, 2023

**RTCM CONFERENCE SESSIONS**

9:30 - 17:00 EDT  
**RIVER TERRACE 1**

**RTCM ASSEMBLY**  
*RTCM MEMBERS ONLY*

17:00 - 17:15 EDT  
**RIVER TERRACE 1**

**RECEPTION**

17:30 - 19:30 EDT  
**MATHEWS**

### WEDNESDAY - JUNE 14, 2023

**SC110 COSPAS-SARSAT JC REPORT  
REVIEW**

7:00 - 11:00 EDT  
**RIVER TERRACE 2**

**RTCM CONFERENCE SESSIONS**

9:00 - 17:00 EDT  
**RIVER TERRACE 1**

**RIVER TAXI CRUISE**

18:00 - 19:00 EDT  
**RIVER TERRACE 1**

### THURSDAY - JUNE 15, 2023

**GMDSS TASK FORCE MEETING**

9:00 - 12:15 EDT  
**RIVER TERRACE 1**

**SC110 MEETING**

13:15 - 17:30 EDT  
**RIVER TERRACE 2**

**SC109 MEETING**

13:30 - 17:00 EDT  
**RIVER TERRACE 1**

**MMSI WORKGROUP**

13:30 - 17:00 EDT  
**CITY TERRACE 12**

### FRIDAY - JUNE 16, 2023

**SC 121/129 JOINT SPECIAL SESSION  
MEETING**

8:30 - 14:30 EDT  
**RIVER TERRACE 2**

**BEACON MANUFACTURERS  
WORKSHOP**

9:00 - 16:30 EDT  
**RIVER TERRACE 1**



*RTCM - the Beacon for Maritime Communications and Navigation!*



# DAY 1 AGENDA

## 2023 RTCM ASSEMBLY & CONFERENCE

### DAY 1 REGISTRATION 8:30-9:30 AM

#### SESSION 1: CONFERENCE OPENING – 9:30 AM

10:30 - 10:45 AM BREAK

##### **Welcome and Introduction to the 2023 RTCM Assembly & Conference**

Ed Wendlandt, President, RTCM

Chris Hoffman, Chairman of the Board, RTCM

##### **Maritime Communications: From Here to Where?**

Steven Lett, Head of Secretariat, International Cospas-Sarsat Programme

##### **Operational Overview Sector Jacksonville**

CAPT Janet Espino-Young, Commander, Sector Jacksonville

##### **Honors and Awards**

Ed Wendlandt, President, RTCM

Chris Hoffman, Chairman of the Board, RTCM

#### SESSION 2: Future of Maritime Communications – 10:45 AM

12:15 - 1:45 PM LUNCH

##### **Concepts in Future Safety Systems - Iridium**

Kyle Hurst, Director Maritime Safety and Security Services, Iridium

##### **The Need to Authenticate AIS, VDES and Other Maritime Communications**

Gareth Wimpenny, Research & Innovation Engineer, General Lighthouse Authorities of the UK & Ireland

##### **Sternula's Vision on VDES and eNavigation**

Stefan Pielmeier, CTO, Sternula AS, Denmark

##### **Increasing Digital Utilization of the Maritime VHF Band**

Ross Norsworthy, Subject Matter Expert on Maritime Radiocommunications and Radionavigation, President, REC, Inc.

#### SESSION 3: Autonomous Shipping – 1:45 PM

3:05 - 3:20 PM BREAK

##### **Digital Twins of Our Waterways**

Geoff Douglass, CEO, Mythos AI

##### **Deploying Solutions for Remote AI and Autonomy**

Matthew Drahzal, Offering and Product Management, IBM

##### **Regulatory Update on Maritime Autonomous Surface Ships**

CAPT Dan Cost, Chief, Office of Design and Engineering Standards, U.S. Coast Guard Headquarters

#### SESSION 4: Green Seas – 3:20 PM

##### **Voyage Optimization, A Route to Decarbonization**

Paul Welling, Product Sales Manager, Fleet Optimization, Wartsila Voyage

##### **Right Whale Monitoring and Vessel Collision Management**

Clay George, Southeast Large Whale Recovery Program Coordinator, NOAA Fisheries

##### **Tracking Sharks, Manatees, and Marine Science: at OCEARCH/Manatee Work/Marine Science Research Institute**

Dr. Bryan Franks, Associate Professor, Jacksonville University

Dr. Gerry Pinto, Associate Research Scientist, Marine Science Research Institute, Jacksonville University

Dr. Quinton White, Executive Director, Marine Science Research Institute, Jacksonville University

##### **Marine Forecast Products/Services from the National Hurricane Center**

Chris Landsea, Special Assistant to the Director NOAA's Ocean Prediction Center, National Hurricane Center

#### RTCM BUSINESS MEETING: – 5:00 PM

EVENING RECEPTION - 5:30 - 7:30 PM

*RTCM Members*

# RTCM CONFERENCE PROGRAM - DAY 1

TUESDAY, JUNE 13, 2023

Registration 8:30 AM - 9:30 AM



## SESSION 1: 9:30 AM - 10:30 AM (EDT) 2023 RTCM ANNUAL ASSEMBLY & CONFERENCE OPENING SESSION

### WELCOME & OPENING REMARKS

*CHRIS HOFFMAN | RTCM*



*ED WENDLANDT | RTCM*



### MARITIME COMMUNICATIONS: FROM HERE TO WHERE?

*MR. STEVEN LETT | HEAD OF SECRETARIAT, INTERNATIONAL COSPAS-SARSAT PROGRAMME*



The future is now. For better or worse, we are increasingly being absorbed by technology in every aspect of our lives. RTCM often has been not only the standards-setter, but also the trend-setter. What can we say about the trends for the future?

### SECTOR JACKSONVILLE OVERVIEW

*CAPT JANET ESPINO-YOUNG | U.S. COAST GUARD, COMMANDER, SECTOR JACKSONVILLE*

Overview of Coast Guard Sector Jacksonville Operations



### AWARDS & RECOGNITION

*CHRIS HOFFMAN & ED WENDLANDT | RTCM*

**10:30 AM - 10:45 AM - BREAK**



## SESSION 2: 10:45 AM - 12:15 PM (EDT) FUTURE OF MARITIME COMMUNICATIONS

*Moderator: Johnny Schultz*

### CONCEPTS IN FUTURE SAFETY SYSTEMS - IRIDIUM

*KYLE HURST | IRIDIUM*



### THE NEED TO AUTHENTICATE AIS, VDES AND OTHER MARITIME COMMUNICATIONS

*GARETH WIMPENNY | GENERAL LIGHTHOUSE AUTHORITIES OF THE UK & IRELAND*



Our dependence on data communications is growing, yet the technical abilities and hardware needed to spoof them are becoming cheaper and more widely available. Despite this, maritime data communications (including communications relating to safe navigation) are frequently sent without means of authentication, making them vulnerable to spoofing. These communications need to be secured if they are to remain safe into the future. We therefore present a backwards compatible means of authenticating AIS and VDES communications, further showing the 'live' broadcast of an authenticated AIS Virtual Aid to Navigation.

### STERNULA'S VISION ON VDES AND ENAVIGATION

*STEFAN PIELMEIER | STERNULA AS, DENMARK*



The new VDE channels give us a harmonized channel for world wide maritime digital communications approximately ~15 dB better speed than AIS. This allows for a range of new digital maritime applications in international and national/local shipping. However, how the new channels are used, also needs to be harmonized. The MCC works on a proposal for a new "Maritime Messaging Service" Standard, describing an infrastructure that spans from shore to ship, service to consumer, how secure maritime services can be transported to and from ships through all technical means we know of today, such that service providers and ship owners can choose the options based on their needs, regulations and opportunities, such as VDE-TER, VDE-SAT but also IP based transports; independent of the transport, the security and the best possible way of arrival are attempted by the system. Digital formats should be S-100, but can be any other format; SECOM as service interface is in the roadmap of being supported.

**12:15 PM - 1:45 PM - LUNCH**

*Click on Speaker picture to link to their Speaker Bio Information*



## Increasing Digital Utilization of the Maritime VHF Band

**ROSS NORSWORTHY | PRESIDENT, REC, INC.**



The VHF maritime frequency band 156-162 MHz is evolving to accommodate digital systems, starting with digital selective calling (DSC), automatic identification systems (AIS), application specific messages (ASM), VHF data exchange system (VDES), and the planned new digital voice communications (DVC) to be considered at the World Radiocommunications Conference 2023 (WRC-23) as a new agenda item proposal for WRC-27.

**SESSION 3: 1:45 PM - 3:05 PM (EDT)**

## **AUTONOMOUS SHIPPING**

**Moderator: Mike Trent**

## DIGITAL TWINS OF OUR WATERWAYS

**GEOFF DOUGLASS | MYTHOS AI**



Geoff is going to speak about his belief that digital twins of our waterways and self-driving are the foundations of resilient ports, required for sustainable waterborne supply chains and the key to scaling the industry.

## DEPLOYING SOLUTIONS FOR REMOTE AI AND AUTONOMY

**MATTHEW DRAHZAL | IBM**



In this session we will discuss the deployment of AI based solutions, from a System perspective, to help make a smart crew smarter and safer. We will discuss ethics, training data, inference, and reliable systems deployment. Logistics and worldwide support considerations will also be discussed.

## REGULATORY UPDATE ON MARITIME AUTONOMOUS SURFACE SHIPS

**CAPT DAN COST | U.S. COAST GUARD HEADQUARTERS**



CAPT Cost will provide an update on the Coast Guard's efforts concerning MASS. The update will include examples of the types of operations we are seeing now, the latest on IMO efforts concerning MASS and the Coast Guard's domestic policy efforts.

**3:05 PM - 3:20 - BREAK**



**SESSION 4: 3:20 PM - 5:00 PM (EDT)**

**GREEN SEAS**

*Moderator: Ed Wendlandt*

**VOYAGE OPTIMIZATION, A ROUTE TO DECARBONIZATION**

**PAUL WELLING | WARTSILA VOYAGE**



Estimates show that 90% of data generated onboard the ship never leaves the deck, which means operators lose invaluable insight and analytics that can improve performance and efficiency every day. At Wärtsilä Voyage, we firmly believe that this data, and digitally connected operations, is key to unlocking optimal efficiency and sustainability.

The underlying idea behind our Fleet Optimisation Solutions is, therefore, focused on connecting the digital dots between navigational data, operational processes, fuel efficiency and reducing environmental impact.

**RIGHT WHALE MONITORING AND VESSEL COLLISION MANAGEMENT**

**CLAY GEORGE | NOAA FISHERIES**



Endangered North Atlantic right whales inhabit waters along the Atlantic coast of the U.S. and Canada, where they are exposed to a wide range of human threats. Mr. George will provide an overview of ongoing efforts to monitor right whales and manage risk from vessel collisions, which is a leading cause of whale mortality.

**TRACKING SHARKS, MANATEES, AND MARINE SCIENCE: AT OCEARCH/MANATEE WORK/MARINE SCIENCE RESEARCH INSTITUTE JACKSONVILLE UNIVERSITY**

**DR. BRYAN FRANKS**

**DR. GERRY PINTO**

**DR. QUINTON WHITE**



Jacksonville University Marine Science Research Insitutie has a long history of monitoring manatee populations for the purpose of Implementing a State and Federally approved Manatee Protection Plan. In 2017, JU MSRI partnered with OCEARCH in their Great White Shark tracking effort to understand the life history of sharks. Recently, JU and OCEARCH have joined with the City of Jacksonville to construct a dock at Mayport Florida to serve the OCEARCH ship. Drs. White, Pinto and Franks will provide a overview of cutting edge, relevant marine science research conducted through the JU Marine Science Research Institute. This will include using satellite and acoustic technology to track shark movements, manatee population monitoring using plane surveys, and monitoring the health of the St Johns River using various technologies. Join us as we explain and explore what we have done and we are going in the future.



# RTCM CONFERENCE PROGRAM - DAY 1



## MARINE FORECAST PRODUCTS/SERVICES FROM THE NATIONAL HURRICANE CENTER



*CHRIS LANDSEA | NATIONAL HURRICANE CENTER*

The National Hurricane Center's (NHC's) Tropical Analysis and Forecasting Branch (TAFB) forecasts winds and waves and issues marine Warnings year-round for 10,000,000 square nautical miles over the tropical North Atlantic Ocean, the Gulf of Mexico, the Caribbean Sea, and tropical Northeast Pacific Ocean. These marine warnings account for tropical storms and hurricanes as well as winter storms, trade wind gales, and severe gap-wind events. Our team of 18 full-time federal employees issue these products under the auspices of both NWS and the International Maritime Organization, year-round 24 hours a day. TAFB has developed robust Impact-based Decision Support Services in the last few years to become a trusted core governmental partner to the U.S. Coast Guard in support of their life-saving mission.

**SPECIAL SESSION - 5:00 PM - 5:15 PM**  
**RTCM BUSINESS MEETING**  
*Moderator: Chris Hoffman / Ed Wendlandt*

### RTCM BUSINESS MEETING

RTCM MEMBERS



**RECEPTION - RIVER TERRACE**  
**5:30 PM - 7:30 PM**



*Click on Speaker picture to link to their Speaker Bio Information*

# DAY 2 AGENDA

## 2023 RTCM ASSEMBLY & CONFERENCE

### DAY 2 REGISTRATION 8:30-9:00 AM

#### **SESSION 5: Navigation Outlook – 9:00 AM**

*11:00 - 11:15 AM BREAK*

##### **IHO S-100 Developments and UK Hydrographic Office Testing**

Thomas Mellor, Head of Technical Partnerships, UK Hydrographic Office

##### **NOAA's Precision Marine Navigation Program**

Darren Wright, Precision Marine Navigation Program Manager, NOAA / Office of Coast Survey

##### **The Future of DGNSS**

Robert Snow, RTCM SC104 Chair, RTCM, Trimble (retired)

##### **Prototyping New Machine Learning Tools for Maritime Operations, and US Leadership in a Critical Field**

Dr. Steven Meyers, Research Scientist, University of South Florida

#### **SESSION 6: Maritime Mobile Service Identities Panel – 11:15 AM**

*12:30 - 2:00 PM LUNCH*

**Joe Hersey**, SC137 Chair, JOECEL Engineering and Consulting, LLC

**Katie Knox**, Industry Analyst, Federal Communications Commission, Wireless Telecommunications Bureau

**Gene Danko**, MMSI Coordinator, United States Power Squadrons

**Judy Johnson**, CFO, Shine Micro, Inc.

**Ray Novak** Sr. Sales Manager – Amateur, Aviation, and Marine Products, Icom America, Inc.

**David Kennedy**, Boat US

**Ed Thiedeman**, C5I SAR Systems Specialist, Sponsor's Representative / COR, U.S. Coast Guard Headquarters

#### **SESSION 7: Reports of Standards and Regulatory Organizations – 2:00 PM**

*3:20 - 3:35 PM BREAK*

##### **MT21, IEC 60533 Update**

Jan-Kees Van Der Ven, Convenor, IEC TC18-MT21, RH Marine Netherlands

##### **IEC and CIRM Update**

Mike Richards, Technical Officer, CIRM

##### **NMEA Standards - Meeting Tomorrows Needs Today**

Lee Luft, Marine Information Systems Specialist, U.S. Coast Guard

##### **RTCM Update**

Ed Wendlandt, President, RTCM

#### **SESSION 8: U.S. Government Agency Reports – 3:35 PM**

##### **CMTS Report**

Brian Tetreault, Program Manager for the Marine Transportation System (MTS), USACE

##### **Improving Marine Safety**

Captain Morgan Turrell, Director of Marine Safety, National Transportation Safety Board

##### **NGA's Maritime Safety Information Modernization**

Don Meyer, Senior Watch Officer, National Geospatial-Intelligence Agency (NGA)

##### **FCC Report**

Ghassan Khalek, Senior Engineer, Maritime Specialist, FCC Wireless Bureau

#### **CLOSING REMARKS: – 4:50 PM**

**RIVER BOAT TAXI CRUISE - 6:00 - 7:00 PM**

# RTCM CONFERENCE PROGRAM - DAY 2

WEDNESDAY, JUNE 14, 2023

Registration 8:30 AM - 9:00 AM



**SESSION 5: 9:00 AM - 11:00 AM (EDT)**

## **NAVIGATION OUTLOOK**

*Moderator: Jorge Arroyo*

### **IHO S-100 DEVELOPMENTS AND UK HYDROGRAPHIC OFFICE TESTING**

**THOMAS MELLOR | UK HYDROGRAPHIC OFFICE**

In November 2022 the IMO Maritime Safety Committee adopted an MSC resolution on Performance standards for electronic chart display and information systems (ECDIS), which revises resolution MSC.232(82) and introduces a phased implementation of the new IHO S-100 product specifications for ECDIS as from 1 January 2026. IHO S-100 will pave the way for a new generation of digital data product for use in S-100 ECDIS. The combination of new navigational system hardware and data will bring many significant user benefits, such as dynamic under keel clearances. To ensure these new navigational products meet the expectations of users UKHO are actively involved with industry testing and trialing.



### **NOAA'S PRECISION MARINE NAVIGATION PROGRAM**

**DARREN WRIGHT | NOAA / OFFICE OF COAST SURVEY**

NOAA defines Precision Marine Navigation (PMN) as the ability of a vessel to safely and efficiently navigate and operate in close proximity to other vessels, the seafloor, bridges, narrow channels, or other marine hazards. NOAA is developing a PMN program to foster a safer, more efficient, and more sustainable marine transportation system by developing marine navigation data products and services that can aid mariners at every step of the navigation process. NOAA's PMN program aims to make NOAA's weather, oceanographic, and bathymetric data more accessible. The collective value of NOAA datasets is significantly greater than when they are disseminated separately or are not easily discovered. The PMN program is building out the information infrastructure that enables the full use of this data for navigation purposes.



*Click on Speaker picture to link to their Speaker Bio Information*



## THE FUTURE OF DGNS

**ROBERT SNOW | RTCM SC104 CHAIR**



RTCM SC104 developed the first standard for differential GPS in the early 1980s. Since then other countries have introduced their own Global Navigation Satellite Systems (GNSS), including Russia's GLONASS, European Union's Galileo, China's BeiDou, Japan's QZSS and India's NavIC. The latest RTCM standard v3.4 for DGNS includes correction messages for all of these systems. The presentation will discuss these systems as well as the next-generation correction systems based on State Space Representation (SSR).

## PROTOTYPING NEW MACHINE LEARNING TOOLS FOR MARITIME OPERATIONS, AND US LEADERSHIP IN A CRITICAL FIELD

**DR. STEVEN MEYERS | UNIVERSITY OF SOUTH FLORIDA**



Machine learning and artificial intelligence promise to increase safety and efficiency in all aspects of maritime operations, but many fundamental hurdles remain. Small prototype applications help develop the foundation for future development. Two such prototypes are described, one related to near-shore prediction of navigation windows, the other to vessel classification using the AIS. Additionally, research leadership in the AI maritime field is found to be in Europe and China, with the US a distant third.

**11:00 AM - 11:15 AM - BREAK**



**Click on Speaker picture to link to their Speaker Bio Information**



**SESSION 6: 11:15 AM - 12:30 PM (EDT)**  
**MARITIME MOBILE SERVICE IDENTITIES PANEL**

*Moderator: Ghassan Khalek*

**MMSI PANEL**

**JOE HERSEY | JOECAL ENGINEERING AND CONSULTING, LLC**



This Maritime Mobile Service Identity (MMSI) panel consisting of MMSI registrants, government agencies and affected industry will discuss progress made and difficulties remaining registering DSC and AIS identities vital to search and rescue. What exactly is the seller or buyer of a used MMSI-enabled radio or radio-equipped boat expected to do? What is a SAR watchstander expected to do when flawed registration causes a distress alert to be unidentifiable?

**KATIE KNOX | FEDERAL COMMUNICATIONS COMMISSION, WIRELESS TELECOMMUNICATIONS BUREAU**



**GENE DANKO | POWER SQUADRON**



**JUDY JOHNSON | SHINE MICRO**



**RAY NOVAK | ICOM AMERICA, INC**



**DAVID KENNEDY | BOAT USA**



**ED THIEDEMAN | U.S. COAST GUARD**



**12:30 PM - 2:00 PM - LUNCH**



**SESSION 7: 2:00 PM - 3:20 PM (EDT)**  
**REPORTS OF STANDARDS AND REGULATORY ORGANIZATIONS**

*Moderator: Chris Hoffman*

**MT21, IEC 60533 UPDATE**

**JAN-KEES VAN DER VEN | IEC TC18-MT21**

Currently, the revision of IEC 60533, titled 'Electrical and electronic installations in ships - Electromagnetic compatibility (EMC) - Ships with a metallic hull,' is underway. The primary modification being implemented involves a shift from a rule-based equipment approach to a more comprehensive risk-based and goal-oriented system approach. This presentation will address several challenges encountered throughout this transformative process.



**IEC AND CIRM UPDATE**

**MIKE RICHARDS | CIRM**

A presentation providing an update of the work being undertaken at IEC, ISO and CIRM.



**NMEA STANDARDS - MEETING TOMORROWS NEEDS TODAY**

**LEE LUFT | U.S. COAST GUARD**

This standards brief will provide technical updates on the three NMEA Digital Interface Standards- NMEA 0183, NMEA 2000, NMEA OneNet. Areas covered will include AIS, DSC, GNSS and Radar protocols, with the GNSS work resulting in a new version 4.30 of NMEA 0183. The NMEA 2000 CAN based standard will support these GNSS updates from NMEA 0183, along with support for Electric Propulsion, lithium battery management, Bridge Lighting and HVAC messages. The NMEA OneNet Standard OneNet standard is completing the beta test of the OneNet certification tool, which tests manufacturer implementation of the standard.



**RTCM UPDATE**

**ED WENDLANDT | RTCM**

An update of RTCM's activity related to radiocommunications and navigation systems, including highlights of Special Committee (SC) meetings and progress, RTCM Standards development, liaison actions, and plans for future work. The most active SCs are working on significant issues in the areas of Digital Selective Calling, Differential GNSS Service, 406 Mhz Emergency Beacons, Electronic Charting Technology, Maritime Survivor Locating Devices, AIS and Digital Messaging with a focus on Mobile Aids to Navigation and AIS on fishnet marker buoys, the Portrayal of Navigation-Related Information on Shipboard Displays, Integrity for High Accuracy GNSS-Based Applications, the Radio Layer for Real-Time DGNS Applications and EMC for LED Devices and other Unintentional Emitters Located Near Shipboard Antennas.



**3:20 PM - 3:35 - BREAK**

*Click on Speaker picture to link to their Speaker Bio Information*



**SESSION 3:35 PM - 5:00 PM (EDT)**  
**U.S. GOVERNMENT AGENCY REPORTS**

*Moderator: Bob Markle*

**CMTS REPORT**

**BRIAN TETREALT | U.S. ARMY CORPS OF ENGINEERS**



**IMPROVING MARINE SAFETY**

**CAPTAIN MORGAN TURRELL | NATIONAL TRANSPORTATION SAFETY BOARD**



To improve survivability, the NTSB has been advocating for vessel operators to provide personal locator beacons to persons employed aboard vessels on ocean, great lakes and near coastal waters. The presentation will focus on this particular recommendation, as well as informing the audience of other advocacy issues being pursued by the NTSB which would be of interest to the RTCM community.

**NGA'S MARITIME SAFETY INFORMATION MODERNIZATION**

**DON MEYER | NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY (NGA)**



Provide a refresher overview of the World Wide Navigational Warning Service. An overview of NGA's modernization efforts for dissemination of Maritime Safety Information, including the new NGA Maritime Marlin App. Will also discuss the modernization of NGA's Publication 117 - Radio Navigational Aids.

**FCC REPORT**

**GHASSAN KHALEK | FCC WIRELESS BUREAU**



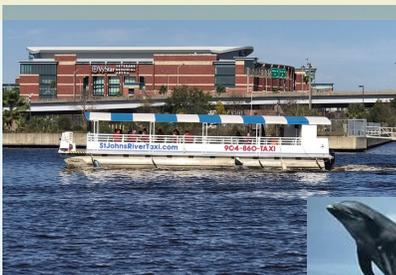
**RIVER TAXI CRUISE**

**6:00 PM - 7:00 PM**

**BOARDING STARTS AT 5:45 | 6:00 PM DEPARTURE**

**LIGHT REFRESHMENTS AVAILABLE**

**DRESS CASUALLY AND BE READY TO ENJOY THE VIEW AND LOOK FOR DOLPHINS!**



*Click on Speaker picture to link to their Speaker Bio Information*

# 2023 RTCM ASSEMBLY & CONFERENCE

## SCHEDULE



### THURSDAY - JUNE 15, 2023

#### **GMDSS TASK FORCE MEETING**

**9:00 - 12:15 EDT**

**RIVER TERRACE 1**

*Click on the above link for more information on this meeting*

#### **SC110: SPECIAL COMMITTEE 110 ON EMERGENCY BEACONS MEETING**

**13:15 - 17:30 EDT**

**RIVER TERRACE 2**

*If you are interested in attending this meeting as a Guest and/or would like more information, please email [info@rtcm.org](mailto:info@rtcm.org).*

#### **SC109: SPECIAL COMMITTEE 109 ON ELECTRONIC CHARTING TECHNOLOGY MEETING**

**13:30 - 17:00 EDT**

**RIVER TERRACE 1**

*If you are interested in attending this meeting as a Guest and/or would like more information, please email [info@rtcm.org](mailto:info@rtcm.org).*

#### **MMSI WORKGROUP**

**13:30 - 17:00 EDT**

**CITY TERRACE 12**

*If you are interested in attending this meeting as a Guest and/or would like more information, please email [info@rtcm.org](mailto:info@rtcm.org).*

### FRIDAY - JUNE 16, 2023

#### **JOINT SPECIAL SESSION MEETING**

**8:30 - 14:30 EDT**

**RIVER TERRACE 2**

- **SC 121: Special Committee 121 on Automatic Identification Systems (AIS) and Digital Messaging**
- **SC129: Special Committee 129 on Portrayal of Navigation-Related Information on Shipboard Displays**

*If you are interested in attending this meeting as a Guest and/or would like more information, please email [info@rtcm.org](mailto:info@rtcm.org).*

#### **BEACON MANUFACTURERS WORKSHOP**

**9:00 - 16:30 EDT**

**RIVER TERRACE 1**

*Click on the above link for more information on this meeting*



**RTCM - the Beacon for Maritime Communications and Navigation!**



**THANK YOU FOR ATTENDING  
THE 2023 RTCM  
ASSEMBLY & CONFERENCE**

**WE LOOK FORWARD TO  
SEEING YOU IN 2024!**

