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Welcome to Cal Maritime



Friends and Colleagues,

Welcome to our inaugural e-Navigation Underway North America conference! This gathering of maritime practitioners and educators marks a first effort at exploring how international and national policies, emerging technologies, industry practices and educational methodologies must work in partnership to sustain safe, reliable navigation across the globe. We welcome your active participation in this important summit.

Our fantastic Cal Maritime staff is ready to assist you should any need arise. Not only will they help you with conference-related questions, they will also provide information and assistance on the many attractions here in the San Francisco Bay Area. From the Golden Gate Bridge to award -winning vineyards in Napa, you will have opportunities to enjoy the very best of Northern California.

We are so pleased that you have joined us. Enjoy our conference and your exploration of this wonderful region we call home.

Warm regards,

RADM Thomas A. Cropper, United States Maritime Service (USMS) President



Welcome to e-Navigation Underway 2014 (North America). This is the inaugural regional conference in the e-Navigation Underway series of conferences organized by the Danish Maritime Administration and IALA. It represents the beginning of discussions on how to internationalize the planned implementation of e-Navigation in North America. Many facets of e-Navigation implementation, such as proposed regulatory changes, Sea Traffic Management testbeds, prototype navigation and communications equipment, Marine Spatial Planning, and Maritime Education and Training (MET) effects will be introduced and debated by the world's leading experts in these topics.

The Cal Maritime Department of Marine Transportation has been directly involved with the study of e-Navigation development since 2009 through funded research grants from the International Association of Maritime Universities (IAMU) and through participation in conferences like this one. I am proud to say that Cal Maritime has been a leading institution in the exploration of the MET transformation necessary to train future e-navigators, which is why Cal Maritime was invited to host this conference.



I hope you will find e-Navigation Underway 2014 (North America) to be interesting, informative, and maybe even provocative. Please do not hesitate to let me or any of our dedicated conference staff know how we could make your next two days here at Cal Maritime more satisfying.

Captain Samuel R. Pecota, Conference Chair



Day 1 - Thursday 3 April

Time		Location
0700 & 0730	Buses depart from hotel to campus	Courtyard Marriott
0730 - 0830	Continental Breakfast	Dining Center, 2nd Deck
0730 - 0830	Conference Registration	Rizza Auditorium Lobby
	Conference Opening	
0830 - 0845	e-Navigation and the Future – Why we are here Captain Samuel R. Pecota Conference Chair, California Maritime Academy	Rizza Auditorium
0845 - 0900	Welcome to Cal Maritime RADM Thomas A. Cropper, USMS President, California Maritime Academy	Rizza Auditorium
0900 - 0905	Spouses depart for San Francisco	Parking Lot A
	Plenary Session 1 – Governmental Overview	
0905 - 0920	e-Navigation 101 Dr. Lee Alexander University of New Hampshire	Rizza Auditorium
0920 - 0940	IMO Update Mr. John Erik Hagen Norwegian Coastal Administration	Rizza Auditorium
0940 - 1000	U.S. e-Navigation Planning Mr. J. Michael Sollosi United States Coast Guard (USCG) Office of Navigation Systems	Rizza Auditorium
1000 - 1030	Coffee Break	Rizza Lobby
1030 - 1050	National Ocean Policy & Regional Marine Planning: West Coast Update Mr. John Hansen NOAA Fisheries	Rizza Auditorium
1050 - 1110	Canadian e-Navigation Planning Mr. Daniel Breton Director of Marine Navigation, Canadian Coast Guard	Rizza Auditorium
1110 - 1130	e-Navigation Implementation Strategy of the Korean Government Mr. An Kwang Ministry of Oceans and Fisheries, Republic of Korea	Rizza Auditorium

Day 1 - Thursday 3 April (continued)



Time		Location
1130 - 1200	Moderated Panel Discussion Ms. Helen Brohl, Moderator Director, Committee on the Marine Transportation System, U.S. Department of Transportation (DOT)	Rizza Auditorium
1200 - 1330	LUNCH	Dining Center, 2nd Deck
	Coastal State Involvement in Waterway Management Luncheon Speaker: Captain Thomas M. Cullen, Jr. Director, California Office of Oil Spill Prevention and F	Response
	Plenary Session 2 – Waterway Management and Environmental Stewardship	
1330 - 1345	Introduction to Session Mr. David Patraiko, Session Moderator Director of Projects, The Nautical Institute	Rizza Auditorium
1345 - 1410	Management in Crowded Waterways Captain Douglas Grubbs Crescent River Pilots	Rizza Auditorium
1410 - 1430	San Francisco Bay: an E-Navigation Prototype Laboratory CDR Jason Tama USCG Sector San Francisco	Rizza Auditorium
1430 - 1500	Coffee Break	Rizza Lobby
1500 - 1520	ACCSEAS: The Future of e-Navigation in the North Sea Region Mr. Alwyn Williams ACCSEAS Project Manager	Rizza Auditorium
1520 - 1550	Mona Lisa 2.0 – Sea Traffic Management Captain Ulf Svedberg Swedish Maritime Administration	Rizza Auditorium
1550 - 1630	Moderated Panel Discussion Mr. David Patraiko, Moderator	Rizza Auditorium
1530 - 1600	Spouses return from San Francisco	Hotel/Campus
1630 - 1730	Cal Maritime Simulations Open House Transas USA, Kongsberg, Sponsors	Simulation Center Tech Center TS Golden Bear



Day 1 - Thursday 3 April (continued)

Time			Location
1645	Buses depart for hotel		Parking Lot A
1745	Buses return to campus		Courtyard Marriott
1800 - 1900	Cocktail Reception		Dining Ctr. Mezzanine
1900 - 2100	CONFERENCE DINNER Dinner Speaker: Mr. Michael Carthew President, Chevron Shipping		Dining Center, 2nd Deck
	Music provided by e-Nav C Cocktail Music Easy Listening/Pop Music Duo Ted Fong, Electric Piano. Nina Fong, Vocalist.	Chamber Ensemble Dinner Music Light Classical Music Trio, Marion Umgelter, Flute Nikki Nicola, Clarinet;Ted Fong, Cello	
2115	Buses depart for hotel		Parking Lot A

Day 2 - Friday 4 April

Time		Location
0700 & 0730	Buses depart from hotel to campus	Courtyard Marriott
0715 - 0730	Observe cadet morning formation	Quad
0730 - 0830	Continental Breakfast	Dining Center, 2nd Deck
	Friday Opening Plenary Session	
0830 - 0840	Administrative Announcements Captain Samuel R. Pecota Conference Chair, California Maritime Academy	Rizza Auditorium
	Session 3 - The Human Machine Interface	
0840 - 0850	Introduction to Session Dr. Lee Alexander, Session Moderator	Rizza Auditorium
0850 - 0910	Human Perceptions Dr. Margareta Lützhöft University of Tasmania	Rizza Auditorium
0910 - 0930	Situational Centric Displays - Increased Information through HDC Displays Mr. Michael Bergmann President, CIRM	Rizza Auditorium

Day 2 - Friday 4 April (continued)



Time		Location
0930 - 1000	Coffee Break	Rizza Lobby
1000 - 1020	Moving Forward with e-Navigation – RTCM's View Captain Joseph F. Ryan	Rizza Auditorium
1020 - 1040	Display Options for Head-Up Information Dr. Eric Holder Fraunhofer FKIE	Rizza Auditorium
1040 - 1130	Moderated Panel Discussion Dr. Lee Alexander, Moderator	Rizza Auditorium
	Session 4 – Training and Education	
1130 - 1140	Introduction to Session Captain Steven Browne, Moderator Professor, California Maritime Academy	Rizza Auditorium
1140 - 1200	Cadet View of e-Navigation Cadet Madeleine Wolczko California Maritime Academy	Rizza Auditorium
1200 - 1330	LUNCH	Dining Center, 2nd Deck
	Session 5 – e-Navigation Technology	
0840 – 0850	Introduction to Session Captain William Burns, USCG, Session Moderator Commanding Officer, NAVCEN	Peachman Lecture Hall
0850 - 0910	e-Navigation Infrastructure: Communications and the Maritime Cloud Mr. David Andersen Camre Danish Maritime Authority	Peachman Lecture Hall
0910 - 0930	Making Everything Work Together - Building the Maritime Internet of Things Mr. Geir Fagerhus MARSEC-XL	Peachman Lecture Hall
0930 - 1000	Coffee Break	Tech Center Courtyard
1000 - 1020	Software Quality Assurance Guidelines for e-Navigation Systems Dr. Seojeong Lee Korean Maritime and Ocean University	Peachman Lecture Hall



Day 2 - Friday 4 April (continued)

Time		Location
1020 - 1040	A German e-Navigation Testbed: Putting IMO Solution S-4 to the Test Mr. Florian Motz Fraunhofer FKIE	Peachman Lecture Hall
1040 - 1100	GPS/GNSS Backup with Automatic Radar Positioning Mr. Helmut Lanziner Russell Technologies	Peachman Lecture Hall
1100 - 1120	Simulated Procedure for Sea Watch Service as an e-Navigation Application Mr. Reinhard Mueller German Institute of Navigation (DGON)	Peachman Lecture Hall
1120 - 1200	Moderated Panel Discussion Captain William Burns, Moderator	Peachman Lecture Hall
1200 - 1330	LUNCH	Dining Center, 2nd Deck
	e-Navigation and Risk Management: The Insurance Industry Perspective Luncheon Speaker: Captain Jorge Pecci AIG Property Casualty	
	Session 4 – Training and Education (continued)	
1330 - 1350	Preparing for e-Navigation: Changing the Teaching Paradigm Dr. Steve Price Maritime Training, Research and Project Support	Rizza Auditorium
1350 - 1410	Making e-Commanders out of e-Navigators RADM Nigel Greenwood Royal Canadian Navy (Ret)	Rizza Auditorium
1410 - 1430	The e-Navigation System: How Much Does the Mariner Need to Know? Captain Yashwant Chhabra Anglo-Eastern Ship Management	Rizza Auditorium
1430 - 1500	Moderated Panel Discussion Captain Steve Browne, Moderator	Rizza Auditorium

Day 2 - Friday 4 April (continued)



Time		Location
	Session 6 – Other e-Navigation Issues	
1330 - 1340	Introduction to Session Captain Scott Powell, Moderator Assistant Professor, California Maritime Academy	Peachman Lecture Hall
1340 - 1400	Over-reliance on e-Navigation and Case Studies from Investigations Mr. Ralph Bruni Lead Casualty Investigator, RTI	Peachman Lecture Hall
1400 - 1420	Situational Awareness: Requisite for e-Navigation Dr. Michael Hertz Progeny Systems, USA	Peachman Lecture Hall
1420 - 1440	AIS Class E – Supporting the Recreational Boating Community over Wireless Internet Mr. Charles Benton, President TSI Systems, Inc.	Peachman Lecture Hall
1440 - 1500	Moderated Panel Discussion Captain Scott Powell, Moderator	Peachman Lecture Hall
1500 - 1530	Coffee Break	Rizza Lobby
	Closing Plenary Session – Wrap up and Conference Communiqué	
	Session Moderator – Mr. J. Michael Sollosi USCG Office of Navigation Systems	
1530 - 1615	Other session moderators present outcomes from previous sessions followed by open discussion from the floor.	Rizza Auditorium
1615 - 1630	Concluding Remarks Captain Samuel R. Pecota, Conference Chair	
	Conference Closing	
1700	Buses depart for hotel	Parking Lot A



Time Location

0900 Buses depart for Napa Valley Winery Tour Courtyard Marriott

1600 Buses return to hotel Courtyard Marriott

Speaker and Moderator Bios



Lee Alexander - Lee Alexander is a Research Affiliate Professor at the Center for Coastal and Ocean Mapping at the University of New Hampshire, and an Adjunct Professor at Memorial University, St. Johns, Newfoundland. Previously, Dr. Alexander was a Visiting Scientist on Electronic Charts with the Canadian Hydrographic Service in Ottawa. Prior to working in Canada, Dr. Alexander was the Program Manager for Integrated Navigation Systems at the U.S. Coast Guard Research and Development Center in Groton, Connecticut. Dr. Alexander serves on international committees involved with maritime navigation standards development, including the International Maritime Organization (IMO), International Hydrographic Organization (IHO), International Electrotechnical Commission (IEC), and North Atlantic Treaty Organization (NATO), and International Association of Lighthouse Authorities (IALA). An internationally recognized expert with

over 40 years of technical and operational experience in shipboard navigation systems, Dr. Alexander has published over 150 papers on electronic chart and vessel navigation-related technologies He holds an M.S. in Environmental Resources from the University of New Hampshire and a Ph.D. in Natural Resource Management from Yale University. He is a Captain (Retired) in the U.S. Navy Reserve.



An Kwang - Mr. An began his public career in 1994 and has been working for 20 years in the Korean Ministry of Oceans and Fisheries (MOF). He gained his expertise in maritime policy-making with support of accumulated academic background as well as extensive hands-on experience in the field of maritime safety. He graduated from Korea Maritime University in 1990 and received his M.S in Maritime Affairs from World Maritime University, Sweden in 2011. He wrote various research papers including "Overview of Maritime Traffic Control System," "International Trends for Utilization of Maritime Radio Communication Systems," "A National Monitoring System for Maritime Safety and Security in Korea" and "A Study on Prospects for the Evolution of Maritime Traffic Management Systems Taking Into Account e-Navigation." He served for 8 years as Port State Control (PSC) officer and carried out a variety of government-initiative projects to establish rules and standards for ship safety and to develop vessel-safety-related

technologies such as GICOMS (General Information Center on Maritime Safety and Security). Currently, he is a deputy director for Maritime Industry and Technology Division, MOF and leads the project team responsible for the development and implementation of the e-Navigation strategy of Korea.



Chuck Benton - Chuck Benton is the founder and CTO of Technology Systems, Inc., a leading small business in the development of innovative software based systems for security related applications. Chuck started out in the flight simulator business, and in 1981 started writing computer games, including 'Frogger' and what became the 'Leisure Suit Larry' series. In 1987, Chuck was lured back into the simulation business by the Defense Advanced Research Projects Agency, at which time he formed Technology Systems, Inc. a pioneering group within the networked simulation industry. His team developed the first globally deployed Voice over Internet Protocol (VoIP) system, and many other now commonplace designs that were based upon emerging network capabilities. Chuck's patents include several in the area of Augmented Reality, and have spawned new products that are used within the US military. Chuck's system integration background,



coupled with experience in navigation as an aircraft pilot and USCG licensed Master has led to his most recent focus, the application of emerging smart-phone capabilities to enhance safety and situational awareness in domains including vessel operations and small team tactical operations.

Michael Bergmann - Mr. Bergmann began his career with Jeppesen in January 1990 as a Software Engineer. In 2007, as the Director Maritime Industry, Affairs and Services, he focused on working with governments, governmental organizations and industry to change the market in support of advanced navigation and efficiency. He holds an observer status for RTCA, Inc. (former Radio Technical Commission for Aeronautics) at the IHO (International Hydrographic Organization). He is an observer at IMO (International Maritime Organization) and a member of the IMO e-Navigation sub-committee and correspondence group. In 2010 Mr. Bergmann was appointed to the Board of Directors at CIRM (Comité International Radio-Maritime, The International Association for Marine Electronics Companies) and in April 2013 was elected President of CIRM. He is also a member of SNAME. Mr. Bergmann holds a Master's Degree of Business Administration from University of Liverpool, UK, as well as a Master's Degree of educational theory,



theology, psychology, sociology and others from the Catholic University of Applied Science in Mainz, Germany. He is the author of various publications in international maritime press and maritime specialized books.

Daniel Breton - Mr. Breton joined the Canadian Coast Guard in 2007 where he became responsible for nationwide client consultations on the services provided by the Canadian Coast Guard, in addition to being in charge of key transformational projects in the fields of Search and Rescue and Aids to Navigation. In 2008, he was appointed Director of Marine Navigation where he oversees the nationwide policies and management frameworks for the Coast Guard Icebreaking, Waterways Management, and Aids to Navigation programs. Mr. Breton also champions the implementation of the e-Navigation concept in Canada and is the Canadian Councilor at the International Association of Marine Aids and Lighthouse Authorities.







Helen Brohl · Helen A. Brohl was appointed as the first Director of the U.S. Committee on the Marine Transportation System (CMTS) in July 2006, and manages the CMTS partnership that joins over 25 Federal agencies to address U.S. waterways, ports and intermodal connections. Before joining the CMTS, Ms. Brohl was the Executive Director of the U.S. Great Lakes Shipping Association where she worked with NOAA and Congress to build the Great Lakes Water Level Observation Network. She also previously served for six years as the President of the National Association of Maritime Organizations and four years as the national coordinator for the Marine Navigation Safety Coalition. Ms. Brohl has a coastal geology degree from Florida Atlantic University in Boca Raton, Florida and her M.S. in Great Lakes Land and Water Use Policy from Ohio State University in Columbus, Ohio. She is currently an alumni mentor with the John Glenn School of Public Affairs and sits on the board of the Women's Aquatic Network which she co-founded almost years ago.



Steven Browne - Mr. Browne earned Bachelor of Arts in Computer Studies and Master of Engineering Management degrees from Northwestern University in Evanston, Illinois. Upon graduation, he was commissioned as a surface warfare officer of the United States Navy. After eight years of naval service, he transitioned to the United States Merchant Marine, and served, ultimately, as Master of the passenger ship MV Doulos. Currently, he serves as Professor of Marine Transportation at the California Maritime Academy in Vallejo, CA. He is the author of Nautical Rules of the Road, 4th edition and numerous scholarly papers.



Ralph Bruni – Mr. Bruni is a Master Mariner and marine safety and accident investigation specialist with over thirty years of marine and seagoing experience. He serves as RTI Forensics' Lead Marine Casualty Investigator. Mr. Bruni brings two years of shipyard experience, ten years at sea in the merchant marine and over twenty years of marine surveying and casualty investigation experience to a wide range of marine transportation issues. Mr. Bruni specializes in risk mitigation and in conducting and managing complex maritime investigations. He is expert in the evaluation and analysis of technical documents for investigative and safety authorities such as underwriters, classification societies, P&I clubs, vessel and cargo owners, shipyards, salvors, and terminal operators. His expertise includes conducting damage surveys, appraising losses, investigating claims, approving repair estimates, and assisting in planning various marine ventures for clients. His wide range of experience in marine transportation encompasses

merchant vessels, tugs and barges, both deep sea and riverine, main engine, hull and shipyard repairs. He is fluent in German.



William Burns - Captain Burns assumed his duties as Commanding Officer, Coast Guard Navigation Center in May 2012. Under his leadership, the Navigation Center provides nationwide GPS augmentation signals, tracks vessel movements for enhanced maritime domain awareness, manages marine safety information, publishes maritime advisories, manages the Coast Guard's electronic chart portfolio, and coordinates investigation of GPS outage reports. He previously served as the Director of the Emerging Policy Staff (CG-DCO-X) and the Senior Arctic Policy Advisor at Coast Guard Headquarters in Washington, D.C. Captain Burns has also served at the Pentagon as the Coast Guard Port Security Unit liaison officer and as an expeditionary warfare requirements officer in the Chief of Naval Operations' Expeditionary Warfare Division (OPNAV N857). He earned a B.S. in Mathematics and Computer Science from the Coast Guard Academy and an M.S. in Information Systems from George Mason University. His personal decorations include the Meritorious Service Medal, the Coast Guard Commendation Medal, the Coast Guard Achievement Medal, and the Commandant's Letter of Commendation.



Michael L. Carthew - Mr. Carthew is president of Chevron Shipping Company – a position he assumed September 1, 2001. Chevron Shipping is the global marine transportation subsidiary of Chevron Corp. In this capacity, he is responsible for shipping crude oil and petroleum products worldwide. A native of Johnstown, Pa., Carthew graduated from the U.S. Merchant Marine Academy at Kings Points, N.Y., with a bachelor's degree in marine transportation. He obtained a master's degree in business administration from Duquesne University in Pittsburgh, Pa. Carthew serves on the board of directors on several industry organizations including the Oil Companies International Marine Forum, the American Bureau of Shipping and the U.S. Coast Guard Foundation.



David Andersen Camre - Mr. Camre is a software developer (M.S. Computer Science) working for the Danish Maritime Authority. He started working for the DMA at the early stages of e-Navigation on the EfficienSea Project, and has been part of the technological development within the DMA for the last 3 years. He has been greatly involved with the ECDIS-like EPD system and the Maritime Cloud through both the ACCSEAS project and the Mona Lisa project for the Danish Maritime Authority. His current focuses are route exchange, route optimization and algorithmic work on route safety.



Yashwant Chhabra - Mr. Chhabra is currently Manager - Training Standards with Anglo-Eastern Ship Management Ltd. in Mumbai, India, and is a Fellow of The Company of Master Mariners of India, and an Associate Fellow of The Nautical Institute. He has been involved in maritime training of all levels of sea-going staff and shore staff, serving as Head of Wallem Maritime Training Centre since its inception in 1994 till 2004, and was senior faculty at Samundra Institute of Maritime Studies 2004 to 2005. Mr. Chhabra held several senior management positions, worked as an internal auditor, did independent consulting and served as a sailing master. In February 2010 he resumed working ashore with Anglo Eastern Ship Management Ltd. Hong Kong as Senior QHSE superintendent. Mr. Chhabra authored Collision Avoidance – Principles and Practice published in 2008 and A Mariner's Guide to Preventing Collisions in 2011.







Thomas A. Cropper - Rear Admiral Thomas A. Cropper is the 14th president of The California Maritime Academy, one of the 23 campuses in the California State University system. He began his presidency on July 1, 2012 after a 31-year career in the United States Navy. Cropper is a graduate of Iowa State University with a degree in engineering operations and received his commission from the Naval Reserve Officer Training Corps program in 1981. He was designated a naval aviator in 1982, followed by operational assignments with 3 aircraft carrier-based jet squadrons. Cropper graduated with distinction from the U.S. Naval War College earning a master's degree in National Security and Strategic Studies. He holds additional master's degrees from the University of Tennessee (Aviation Systems) and the Catholic University of America (World Politics). He is the recipient of the Michael Ripley Award as Naval Test Pilot School Instructor of the Year, and was also selected as the U.S. Atlantic Fleet Pilot of the Year. His awards include the Defense Superior Service Medal, the Legion of Merit, the Meritorious Service Medal, and various service and campaign awards.



Thomas N. Cullen, Jr. - Thomas Cullen was appointed by Governor Jerry Brown as the Administrator of the California Office of Spill Prevention & Response (OSPR) in June 2012. Captain Cullen directs a team of scientists, environmental specialists, game wardens, and support personnel in protecting and preserving 3,427 miles of shoreline and 7,734 square miles of State waters from oil and other deleterious substances as well as invasive, non-indigenous marine species. Captain Cullen served in the United States Coast Guard for 31 years, retiring with the rank of Captain. From 2008 to 2010 he served as Deputy Commander of Coast Guard Sector San Francisco, CA. Prior to his tour at Sector SF, he served as the first Chief of Response of the Eleventh Coast Guard District. Captain Cullen received his commission and a B.S. degree in Ocean Engineering from the Coast Guard Academy and a Master's degree in Industrial Administration from the Krannert Graduate School of Management at Purdue University. He is also a certified Project Management Professional (PMP) and a licensed Airline Transport Pilot (ATP).



Geir Fagerhus - Mr. Fagerhus is a commercial mariner graduated from Chalmers University, Sweden. He holds a combined Master's Degree in Physics and Computing Science from Glasgow University, and has completed the International Management of Technology professional training program at Chalmers University in collaboration with Harvard Business School. Prior to co-founding MARSEC-XL in 2007, he was the initiator and Managing Director of Carnegie Mellon University's Software Engineering Institute Europe located in Frankfurt, Germany. He is a senior executive experienced in managing technology transfer between academia, research institutions and industry. Mr. Fagerhus is currently CEO of MARSEC-XL, the Marine Software Engineering Center of Excellence.



Nigel Greenwood - Nigel Greenwood was born in London, UK and brought up in Powell River, BC. RADM Greenwood attended Royal Roads Military College, earning a BSc in Physics and Oceanography in 1979. Following this he joined the Canadian fleet and commanded naval units at ship, base, fleet and regional formation levels, as well as serving as the Deputy Commander of the RCN. His last appointment was as the Commander Maritime Forces Pacific, responsible for all maritime defense and operations on Canada's west coast. RADM Greenwood is a graduate of King's College London and the Royal College of Defense Studies (MA in International Relations), and also the Executive Course of the Asia-Pacific Center for Security Studies in Honolulu. He is a certified Master Mariner, a Fellow of the Royal Institute of Navigation and Member of the Nautical Institute. Over a 37-year career specializing in navigation, air-control, and anti-submarine warfare, RADM Greenwood has experienced firsthand the incredible revolution of navigational technology of the late 20th century, ranging from magnetic compasses, haversines, sextants and plot-tables to



Naval Tactical Data Systems, ARPA, GPS and ECDIS. In retirement he works as a maritime consultant and is a part-time mentor/simulator-operator at the RCN's Naval Officers Training Centre, where he continues to learn what it is to be an e-Navigator.

Douglas J. Grubbs - A commissioned River Port Pilot with the Crescent River Port Pilots Association in New Orleans from 1970 – 2010 (ret. January 2011), Capt. Douglas J. Grubbs was the principal architect of the New Orleans Vessel Traffic Safety System (VTS) and Vessel Traffic Center (VTC). Capt. Grubbs's career has focused on development and implementation of an effective, universal Automatic Information System/Vessel Traffic System (AIS/VTS). He is an active member of various AIS support organizations, including the International Association of Lighthouse Authorities and the Radio Technical Committee for Maritime Services. He also participates in the AIS technical training system development with the Lockheed-Martin AIS/VTS systems, SAAB Transponders, Ross Electronics AIS systems, Offshore ECDIS systems and ICAN, Inc. software. Immediately following Hurricane Katrina, Capt. Grubbs was instrumental in effecting 24-hour navigational ability when all Aids to Navigation and VTS components were out of commission due to the catastrophe, and assisted NOAA in the survey and identification of wrecks, immediately noted on AIS digital charts.



John Erik Hagen - John Erik Hagen has been Regional Director for the Norwegian Coastal Administration's Region Western Norway for 23 years. He pursued a tenyear career in the Norwegian Navy, attending officers' training school and later the Norwegian Defence College. During his military career he also achieved a University Degree in Law, Social Science, Economics and Business Administration. After his naval career he spent several years in managing positions in the offshore industry and transportation services and was acting Director General for the Norwegian Coastal Administration on behalf of the Royal Norwegian Ministry of Fisheries and Coastal Affairs. Until recently, he was also the Norwegian delegation's Chairman of the Working Group established by the Royal Norwegian Ministry of Fisheries and Coastal Affairs and the Ministry of Transport of the Russian Federation, for cooperation between the Russian Federation and Norway on maritime safety in the Barents area. Mr. Hagen is Coordinator of the IMO Correspondence Group on e-Navigation and serves on many national and international boards and advisory boards.







John Hansen - Mr. Hansen currently coordinates West Coast Regional Marine Planning on behalf of NOAA, supporting marine planning efforts as outlined in President Obama's National Ocean Policy and supported by the National Ocean Council. He coordinates with federal, tribal and state marine planning partners, with the eventual goal of formalizing a new regional planning entity for the West Coast that will engage with a broad range of audiences. Previously, he worked for the State of Washington on aquatic lands management and policy, and coordinated the West Coast Ecosystem-Based Management Network, a 501c3 organization that supported innovative ocean and coastal management approaches at the local level. Mr. Hansen received his B.S. in Aquatic Biology from the University of California at Santa Barbara, and his Master's of Marine Affairs from the University of Washington.



Michael Hertz - Dr. Hertz graduated with a Ph.D. in Systems Engineering from the University of Virginia. His academic research focused on collaboration, distributed decision-making, group decision support systems (GDSS), and Multi-attribute and Multi-object decision making (MADM and MODM). Additionally he focused on human error and how groups attribute fault during ambiguous failure events. Dr. Hertz has worked for Progeny Systems for 10 years as a System Engineer and Program Manager and has led system-level design and implementation of large Navy Programs of Record, and oversaw development and systems engineering efforts of several enterprise decisions support applications. Currently, Dr. Hertz is investigating the predictive capability of psychophysiological metrics in the performance of cognitively complex tasks. The goal is to provide individuals and supervisors with actionable information as to cognitive load, situational awareness, fatigue and attention. Once armed with this information, mitigating steps can be undertaken to relieve overburdened people, or to combat issues associated with boredom.



Eric Holder – Dr. Eric Holder is a Human Factors scientist working at the Fraunhofer Institute for Communication, Information Processing and Ergonomics (FKIE) where he is responsible for the development and conduct of human factors research programs and projects. Dr. Holder received his Ph.D. in experimental psychology from Texas Tech University. He specializes in applying human factors methodologies throughout the research and design life-cycle. Dr. Holder's research experience spans the civil and military domains with an emphasis on transportation research and information sharing systems. Example projects include: the design, test, and evaluation of e-Navigation technologies and training for maritime operations, participation in the CyClaDes project to promote the increased impact of the human element in shipping across the design and operational lifecycle; Dr. Holder is a leading expert in the design of computer-aided navigation displays and way-finding tools and has contributed to the development of advanced systems for use in ships and aircraft.



Helmut Lanziner – Mr. Lanziner has a broad range of experience in marine navigation and positioning with vessels ranging from drill ships to icebreakers and submarines. With over 40 years of practical knowledge in sensor integration related to electronic chart technology, he is recognized by industry and government alike. He is the founder of Offshore Systems Ltd. (OSL), which pioneered the first electronic chart system in 1979 for use on ice-breaking supply vessels in support of drilling operations in the Canadian Beaufort Sea. Under his direction for 21 years, the company developed PINS, followed by the ECPINS electronic charting product. Eventually, OSL supplied fleet-wide Navy acquisitions of ECPINS to a number of countries, including Canada, UK and Australia. In 1989, the Canadian Coast Guard invited him to join the Canadian Delegation to IMO on electronic chart-related standards issues, on which he served for over 12 years. Mr. Lanziner was also an active member of working groups on IEC Technical Committee 80 related to ECDIS, Radar, AIS and INS, as well as taking part in working groups of IHO and RTCM. At Russell Technologies Inc., his area of interest is the practical

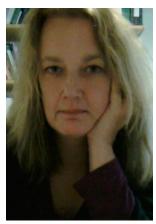


and effective application of backup capabilities to GPS/GNSS, in particular with the use of marine radar.

Seojeong Lee- Dr. Lee works for Korea Maritime and Ocean University as an Associate Professor. Her research interests are software engineering and software quality issues related to e-navigation systems. She received her Ph.D. from Sookmyung Women's University of South Korea in 1998 with the theme of software development methodology. In 2003 she accomplished a special program of software quality at Carnegie Mellon University (U.S.). Since 2008, she has participated in the IMO NAV sub-committee and IALA e-NAV committee. Based on her background in the software field, she suggested the Software Quality Assurance (SQA) issue to IMO NAV sub-committee in 2012. Since then, she has developed the SQA guidelines with distinguished volunteers.



Margareta Lützhöft - Margareta Lützhöft is a master mariner, trained at Kalmar Maritime Academy in Sweden, and sailed for 13 years in Swedish ships. After leaving the sea, she studied for a Bachelor's degree in Cognitive Science and a Master's in Computer Science. In December 2004 she received a Ph.D. in Human-Machine Interaction. Between 2006 and 2013 she worked as Associate Professor at Chalmers University of Technology, leading the research in the Maritime Human Factors research group at the Department of Shipping and Marine Technology, within the Lighthouse competence center. Presently she is holding a position as Professor of Nautical studies at the Australian Maritime College. Her research interests include human-centered design, the effects of new technology and resilience engineering.







Florian Motz - Florian Motz is a Senior Scientist and project manager in the Fraunhofer Institute for Communication, Information Processing and Ergonomics FKIE. Since 1999 he has been responsible for projects related to the display and integration of navigational information on ship bridges. Today he serves on several international committees and working groups including the IMO Sub-Committee on Safety of Navigation. He coordinated the IMO correspondence groups for the development of performance standards for the harmonized presentation of navigational information on ship bridges, for integrated navigation systems (INS) and integrated bridge systems (IBS). He coordinates a national e-navigation demonstration project initiated by the Federal Ministry of Transport and Digital Infrastructure. Mr. Motz has a M.S. in Mechanical Engineering from the Technical University of Aachen, Germany.



Reinhard Mueller - Prof. Reinhard Mueller works for the Hochschule Wismar - University of Technology, Business and Design as a Professor for navigation. In 1975 he received and extended his nautical unlimited license at sea for over ten years. In 1984 he received his Ph.D. in Engineering. His research domain is focused on applied application in ship navigation related to assistance systems for co-ordination of vessel traffic, information handling/exchange and maneuvering assistance in narrow waters. He is head of the shipping commission organized in the German Institute of Navigation (DGON), and is a member of the executive board of the Schiffahrtsinstitut Warnemuende research institute within Wismar University.



David Patraiko - David Patraiko is the Director of Projects for The Nautical Institute, and coordinates its Technical and Professional Development Committees. The Nautical Institute is the recognized international professional body for qualified mariners and others with an interest in nautical science. Mr. Patraiko has led research and produced many papers and articles on training, electronic navigation, the associated 'Human Element' effects created by technology, and Marine Spatial Planning. He is currently involved with the international debate on e-Navigation and is Chairman of the IALA e-Navigation working group for Strategy and Operations. Mr. Patraiko chaired the Industry ECDIS Training Group, and is Chairman of the Green Awards Board of Experts. A graduate of the Massachusetts Maritime Academy (US), he sailed on a variety of international vessels in his twelve years in the Merchant Navy (1985 – 1997). He holds an Unlimited Master Mariners license, and was awarded an MBA degree from Henley Management College (UK).



Jorge Pecci - Mr. Pecci began his career in insurance with AIG in 1993, where he worked in a variety of property and marine claims-related positions. In 2009, Mr. Pecci was named executive vice president and chief operating officer of global marine, overseeing the global marine operations for Chartis (AIG) International. In 2011, Mr. Pecci was appointed executive vice president and head of growth economies for global marine in charge of Asia Pacific, Latin America and Middle East, maintaining executive responsibilities for the global marine loss control engineering services. Today, he is the Americas Marine Executive for AIG .Mr. Pecci holds a Master's in maritime law from the Metropolitan University of London/Lloyd's Maritime Academy (UK), a post graduate Diploma in Marine Surveying (DipMarSur) from the University of Greenwich (UK) and a major in maritime transportation & deck officer license from the World Maritime University (Argentine branch). Before



his career in insurance he served at sea in the Merchant Marine for over 10 years ending his oceangoing career as a Master Mariner.

Sam Pecota - Sam Pecota, a 1980 graduate of the United States Merchant Marine Academy at Kings Point, NY, spent twenty years at sea, predominantly in the hopper dredging industry. He obtained his unlimited master mariner's license in 1984 and served as master of the 20,000-ton hopper dredge Stuyvesant from 1989-2000. He joined the faculty at the California Maritime Academy as a lecturer in 2001. He received an M.A. in Transportation Management from American Military University in 2005. He is author of the textbook Radar Observer Manual (6th Ed., 2006) and numerous technical papers on e-Navigation delivered at several international conferences. He currently serves as Director of Simulation, Professor of Marine Transportation, and Relief Master of the Training Ship Golden Bear.



Scott Powell - Mr. Powell (Master Mariner, First Class Pilot, MNI, MRIN) graduated from the Northwestern Michigan College/Great Lakes Maritime Academy (GLMA) with an A.A.S. in Marine Technology, and holds a B.S. in Business Administration from Ferris State University, and an M.S. in International Transportation Management from SUNY Maritime College. In addition to an Unlimited Ocean Master's license, he holds First Class Pilotage for the Great Lakes (USA). He gained extensive experience using ECDIS/ECS technology in pilotage waters while sailing as a First Class Pilot on the Great Lakes from 1998 to 2008. He also taught part time at GLMA before joining the Marine Transportation Department at California Maritime Academy (CMA) in 2009 as an Assistant Professor. During his time at CMA, he has been involved in maritime pedagogy research with interests in e-Navigation, simulation, and Bridge Resource Management. He has also developed and delivered ECDIS training courses for varied audiences ranging from cadets through maritime pilots for CMA. He is the 2012 recipient of the Faculty Innovation in Technology award given by the California State Student Association.







Stephen Price - Dr. Price holds a Ph.D. in Marine Navigation from John Moores University Liverpool, with his 1992 thesis in Electronic Charting and Information Systems on Integrated Bridges. Since then he has had diverse experience as a Naval Reserve Officer specializing in precise traditional and electronic navigation, an academic tutor for MSc courses in navigation technology, a navigation instructor and a private yacht skipper. He has published in the Nautical Institute's Seaways and also in the joint Royal Institute of Navigation-Nautical Institute's circular The Navigator.



Joseph F. Ryan - Captain Joe Ryan graduated from the U.S. Coast Guard Academy and is a veteran Coast Guard and Merchant Marine officer. Since 1999, Joe has been an Independent Consultant to the maritime industry, supporting and advising government agencies and commercial clients as a Subject Matter Expert in the application of computer and information technology to marine navigation, most notably with respect to electronic charting technology, the presentation of navigation-related information on the bridge of a ship, and the interfacing and integration of navigational systems and equipment, including the AIS. Joe has been a member of the Radio Technical Commission for Maritime Services since 1995 and a member of its Board of Directors since 2004. He chairs the Board's e-Navigation Steering Committee as well as Special Committee 121 on AIS and Digital Messaging, and Special Committee 129 on the Portrayal of Navigation-Related Information on Shipboard Displays. He is also a member of the American Nation-

al Standards Institute and its U.S. National Committee's Technical Advisory Groups for the International Electrotechnical Commission's Technical Committee 80 on Maritime Radionavigation Equipment and Systems, and the International Organization for Standardization's Technical Committee 8 on Ships and Navigation.



J. Michael Sollosi - Mike Sollosi has served in the United States Coast Guard since 1976 as a commissioned officer and as a civil servant. He is now the Chief of the Office of Navigation Systems in Coast Guard Headquarters. In this capacity, he has responsibility for short range aids to navigation, electronic navigation systems, navigation equipment standards and regulations. He served on the U.S. Delegation to the IMO Safety of Navigation Subcommittee for several years and was the elected Chairman of the Subcommittee for the past five years. Mr. Sollosi has more than 20 years' experience in the operation, administration and management of Vessel Traffic Services, with service ranging from watchstander to program director. He's been an active participant in the work of the International Association of Marine Aids to Navigation and Lighthouse Authorities and recently stepped down after 12 years as the Chairman of the association's VTS Committee.



Ulf Svedberg - Capt. Svedberg is Senior Coordinator, Research and Innovations with the Swedish Maritime Administration (SMA). He first shipped as a sailor in 1967 and worked as deck crew until 1972. After graduating in 1975 from Swedish Nautical University, he attained his Masters license in 1978 and sailed as officer and captain for 15 years on tankers, Ro-Ro, ferries, hydrofoils and cruise ships. After working in Saudi Arabia for three years as cargo/general manager, he joined the Swedish Maritime Administration in 1990 where he spent 18 years as a Pilot and Chief Pilot/Manager in Stockholm. During the last 5 years Capt. Svedberg has focused on research and development at the SMA. He is an IALA WWA expert in e-Navigation.



Jason Tama - Commander Jason Tama has served as U.S. Coast Guard's Sector San Francisco's Prevention Department Head since July 2011. He oversees the 160-person Prevention Department and a diverse array of marine safety operations across Northern California, including vessel and facility inspections, marine casualty investigations, waterways and vessel traffic management, and aids to navigation. Commander Tama is a Marine Safety, Security, and Environmental Protection specialist whose previous assignments include Chief of Waterways Management at Sector Puget Sound, Chief of Vessel Compliance at Marine Safety Office Puget Sound, Naval Architect and Marine Salvage Engineer at the Marine Safety Center. Commander Tama holds a B.S. in Mechanical Engineering from the U.S. Coast Guard Academy, an M.S. in Naval Architecture and Offshore Engineering from the University of California, Berkeley, an MBA from the MIT Sloan School of Management, and is a Marshall Memorial Fellow.



Alwyn Williams - Dr. Alwyn Williams is the ACCSEAS Project Manager, based at the General Lighthouse Authorities of UK and Ireland. He has been involved with radio-navigation research since 1999, covering topics such as Differential GNSS, low-frequency navigation systems and Automatic Identification System (AIS). He was heavily involved with International Electrotechnical Commission (IEC) and IALA with regards to setting international standards for shore-based AIS stations. He is a member of the Institute of Engineering and Technology (IET) and an Associate Member of the Royal Institute of Navigation.



Madeleine Wolczko - Madeleine Wolczko is a third-year marine transportation student at the California Maritime Academy. She grew up on Vashon Island, Washington living on a Force 50 ketch-rigged sailboat. During her childhood, her family sailed through the South Pacific for sixteen months, visiting French Polynesia and New Zealand among other places. Growing up on the Puget Sound and open ocean, she was immersed in the maritime world at a very young age, and chose Cal Maritime as her college preference after high school. Since beginning her education at Cal Maritime, she has sailed with Edison Chouest Offshore and upon graduation, she will be seeking employment working on offshore supply vessels in the Gulf of Mexico.





Useful Information about the Local Area around Cal Maritime

About Vallejo

Vallejo, California is the first permanent home of California's state government and is the 142-year home of the first and most famous naval ship building and repair facility on the west coast. The city of Vallejo's story is connected to General Mariano G. Vallejo's envisioning the promise of the area in 1844. Named after him and twice the site of the state capitol in the 1850s, Vallejo grew into an important shipping and naval center. Legend has it that Mare Island got its name after Gen. Valleio drove a herd of horses across the Carquinez Strait. Vallejo served as home to several Native American tribes including the Coastal Miwoks, the Suisunes and other Patwin tribes. There are three confirmed Native American sites located on Sulphur Springs Mountain above Blue Rock Springs Park. Established in 1854, Mare Island Naval Shipyard was the West Coast's first shipyard. Closed in 1996, Mare Island now stands poised to become an industrial,



commercial and residential centerpiece for the city into the next millennium.

All Your Favorite Activities

No other city in the San Francisco Bay Area puts you as close to all your favorite activities as Vallejo. Golf, museums, historic parks and a world-class theme park, Six Flags Discovery Kingdom, are all within our city limits. Just minutes away from our waterfront city you'll find tours of the Jelly Belly Candy Company and Anheuser-Busch Brewery, discount outlet shopping, Sonoma Raceway, the renowned wine regions of the Napa and Sonoma valleys, Angel Island State Park and the landmark city of San Francisco - which can be accessed by a scenic ferry cruise leaving directly from Vallejo. Whether you have a week or just a day, there are always plenty of unique things to see and do in Vallejo and San Francisco's North Bay area.

Please visit www.visitvallejo.com for more information and details on local activities and destinations.

Dining

Buttercup Grill & Bar 3288 Sonoma Blvd 707-643-9030

Cha Am Thai Restaurant 153 Plaza Drive #107 707-648-8066

Earl's Texas Bar-B-Q & Catering 658 Benicia Rd 707-645-8102

Front Room at the Wharf 295 Mare Island Way

Good Day Cafe 314 Georgia St 707-557-4745

Gracie's Restaurant & Catering 1801 Sonoma Blvd 707-552-2254

Grille at Hiddenbrooke Golf Club 1095 Hiddenbrooke Parkway 707-558-0330 Mare Island Cafe (Mare Island Golf Club) 1800 Club Drive 707-562-4653

Mountain Mike's Pizza (near Target Plaza) 972d Admiral Callaghan Lane 707-515-6930

Napa Valley Wine Train 1275 McKinstry Street 707-253-2111

Panama Red Coffee Company 289 Mare Island Way 707-554-2100

Princess Garden 960 Admiral Callaghan Lane 707-643-0808

Sac's Tasty Hot Dogs 2445 Springs Road 707-642-2442

Sand Trap Bar & Grill-Chardonnay Golf Club 2555 Jamison Canyon Road 707-257-1900 The Dead Fish 20050 San Pablo Avenue 510-787-3323

The Dungeness Crab 1530 Sonoma Blvd. 855-732-2722

Vallejo Cafe At Courtyard Vallejo Napa Valley 1000 Fairgrounds Drive 707-644-1200

Zio Fraedo's of Vallejo 23 Harbor Way 707-642-8984



Banks

First Bank

116 Springstowne Center Vallejo, CA 94591 707-554-0390 www.firstbank.com

Union Bank

1178 Admiral Callaghan Lane Vallejo, CA 94591 707-556-8000 www.uboc.com

U.S. Bank

1200 Tennessee Street
Vallejo, CA 94590
707-557-8188
709 Lincoln Rd West (inside Safeway)
707-557-8080
848 Southampton Rd (Benicia)
707-745-4144
ATMs only
• Walgreens Springhill Center
2647 Springs Rd and Rollingwood
• Walgreens
1050 Redwood St. and Broadway

www.usbank.com Bank of America

Vallejo Plaza 3445 Sonoma Blvd 707-746-5200 Springstowne 21 Springstowne Center 707-746-5200 ATMs only

• 200 Georgia Street

• 145 Gateway Plaza Dr. (behind Cold Stone) www.bofa.com

Bank of the West

303 Sacramento at Georgia 707-643-2000 4300 Sonoma Blvd at Park Place 707-649-1100 www.bankofthewest.com

1st Pacific Credit Union

536 Santa Clara St. Vallejo, CA 94590 707-552-4550 www.1stpacific.org

Solano Bank

976 A Admiral Callaghan Lane Vallejo, CA 94590 1-800-888-4682 www.solanobank.com

State Farm Bank

2002 Springs Rd Vallejo, CA 707-644-5225 740 Tuolumne 707-643-1731 www.statefarm.com

Washington Mutual

901 Tennessee St Vallejo, CA 94590 707-645-7600 972 A Admiral Callaghan Lane 707-643-0858 www.wamu.com

Wells Fargo Bank

1702 Tennessee
Vallejo, CA 94589
707-643-8223
Redwood Plaza inside Safeway
774 Admiral Callaghan Lane
707-643-4082
Glen Cove Center inside Safeway
122 Robles Way
707-551-7080
Park Place inside Raley's
4300 Sonoma Blvd
707-556-9263
ATM only
• Springstowne Center, 55 Springs Rd
www.wellsfargo.com

Westamerica Bank

1660 Tennessee Vallejo, CA 94 707-558-1100 www.westamerica.com

Emergency Services

Vallejo Police Department

The Vallejo Police Department, led by Chief Bob Nichelini, has about 110 sworn officers and 27 nonsworn employees. It also has 65 volunteers and cadets.

Specialized programs include the Crime Suppression Unit, Narcotics Team, patrol and drug K-9s, mounted posse and bike patrol.

Emergency: 911

Nonemergency: 648-4321 Public information: 707-651-7147 Investigations: 648-4542

Traffic: 648-4329

Secret Witness: 644-STOP

Vallejo Fire Department

The Vallejo Fire Department has about 102 full-time firefighters and eight stations. The department is led by Chief Paige Meyer.

Emergency: 911

All business calls: 648-4526

Dispatch and nonemergency calls: 648-5293

Fire Prevention: 648-4565

Hospitals

Sutter - Solano Medical Center

300 Hospital Drive Vallejo, CA 94589 707-554-4444 www.suttersolano.org

Kaiser Permanente Hospital

975 Sereno Drive Vallejo, CA 94589 707-651-1000 www.kp.org

Nearby- Trauma Center for Vallejo Area:

Mt. Diablo-John Muir Medical Center

Mt. Diablo Medical Center 2540 East Street Concord, CA General Information 925-682-8200 24 Hour Emergency Services 925-674-2333

John Muir Medical Center

1601 Ygnacio Valley Rd Walnut Creek, CA General Information 925-939-3000 24 Hour Emergency Services 925-939-5800 www.johnmuirmtdiablo.com

Movie Theatre

Century 14 Vallejo

109 Plaza Drive Vallejo, CA 94591 707-648-3456 www.cinemark.com

Shopping Center

Gateway Plaza

114 Plaza Dr Vallejo, CA 94591

Post Offices

The U.S. Postal Service operates several branches in Vallejo. Their locations are listed below.

For information on rates, ZIP codes, and other post office locations, call 1-800-275-8777.

Vallejo Main, 485 Santa Clara St., Vallejo, 94590, 642-3071

Springstowne, 100 Admiral Callaghan Lane, Vallejo, 94591, 558-1834

Amador St (Station A) Branch, 1015 Amador St., 94590, 642-3367



e-Navigation Underway Conference Series

Organized by



DANISH MARITIME AUTHORITY

Our field of responsibility is based on the shipping industry and its framework conditions, the ship and its crew. In addition, we are responsible for aids to navigation in the waters surrounding Denmark and ashore. Our responsibility as a government agency applies both to the merchant fleet and the fishing industry. The Danish Maritime Authority is a government agency under the Ministry of Business and Growth. "The Danish Maritime Authority sets the direction for future quality shipping."



IALA's purpose is to insure that seafarers are provided with effective and harmonized marine Aids to Navigation service worldwide. Established in 1957, it enables marine aids to

navigation authorities, manufacturers, consultants, and, scientific and training institutes from all parts of the world to exchange and compare their experiences, achievements, and technical and operational policies via participation in IALA Technical Committees. IALA's scope and expertise extends to e-Navigation and Vessel Traffic Services.

Conference Sponsors



Transas Group is an international high-technology corporation offering a wide range of solutions for transportation, oil and gas industry, defense, public safety and education. Transas products include integrated onboard and onshore systems, marine and aviation equipment, flight simulators and training devices, safety systems, geo-information systems, unmanned air and floating vehicles, solutions for education. Transas Group is a global leader in marine navigation systems and professional training devices for the commercial fleet.



Kongsberg Gruppen (KONGSBERG) is an international, knowledge-based group that supplies high-technology systems and solutions to customers in the oil and gas industry,

the merchant marine, and the defense and aerospace industries. Kongsberg Maritime delivers products and systems for positioning, navigation and automation to merchant vessels and offshore installations, as well as products and systems for seabed surveying and monitoring, and for fishing vessels and fisheries research.

Supporting Organizations



The Nautical Institute is Nautical an international represen-Institute tative body for maritime professionals. We provide

a wide range of services to enhance the professional standing and knowledge of our members who are drawn from all sectors of the maritime world.



A principal Aim of the International Hydrographic Organization is to ensure that all the world's seas, oceans and navigable waters are surveyed and charted. The

Mission of the IHO is to create a global environment in which States provide adequate and timely hydrographic data, products and services and ensure their widest possible use. The Vision of the IHO is to be the authoritative worldwide hydrographic body which actively engages all coastal and interested States to advance maritime safety and efficiency and which supports the protection and sustainable use of the marine environment.



U.S. Committee on the Marine **Transportation** System is a Federal Cabinet-level,

inter-departmental committee chaired by the Secretary of Transportation. The purpose of the CMTS is to create a partnership of Federal departments and agencies with responsibility for the Marine Transportation System (MTS). The job of the CMTS is to ensure the development and implementation of national MTS policies that are consistent

with national needs and to report to the President its views and recommendations for improving the MTS.



Comité International Radio-Maritime (CIRM) is the princi-

ple international association for marine electronics companies. As a non-profit organization we are dedicated to our members. We have been promoting marine electronics for efficient shipping and the safety of life at sea for over 85 years. CIRM represents the industry in developing international regulations & standards. Our scope of technical interest includes all electronic technology for marine navigation and communication.



The USCG Navigation **Center** operates services and provides information that enhances the safety, security, and efficiency of U.S. waterways and civil

GPS users. The Navigation Center will serve as the U.S. focal point for implementation of e-Navigation.



What do you see when you step onto the bridge of a modern ship or wellequipped boat? Chances are that **RTCM** standards and RTCM activities had

a lot to do with the communication and navigation equipment there. In the United States, the Federal Communications Commission and U.S. Coast Guard use RTCM standards to specify radar systems, Emergency Position Indicating Radio Beacons, and the basic version of Digital Selective Calling radios. RTCM standards are used internationally for Differential Global Navigation Satellite Systems and Electronic Chart Systems. RTCM members participate in the development of international standards for maritime radio communication and electronic navigation systems.





The Chamber of Shipping of Amerresents U.S. based

companies that either own, operate or charter oceangoing tank, container, or dry bulk vessels engaged in both the domestic and international trades and companies that maintain a commercial interest in the operation of such oceangoing vessels. Current members include companies that own or operate U.S. flag or foreign-flag vessels.



Security Network (TSN) was

organizing the San Diego defense/security sector and looking at maritime security, it discovered that San Diego is a major maritime technology center reaching far beyond maritime security. In January 2007, we organized The Maritime Alliance (TMA), formerly the Center for Maritime Systems and Security, to focus on "Promoting Blue Tech & Blue Jobs". The goals of TMA are to organize the San Diego maritime technology community as a formal cluster and to reach out nationally/internationally to promote development/ rapid adoption of innovative maritime technologies and collaborative business opportunities. TMA is administered by The Security Network.



The World Ocean Council (WOC) is an unprecedented international, cross-sectoral industry leadership alliance on "Corporate

Ocean Responsibility". The WOC brings together the diverse ocean business community to collaborate on stewardship of the seas. This unique coalition is working to improve ocean science in support of safe and sustainable operations, educate the public and stakeholders about the role of responsible companies in addressing environmental concerns, more effectively engage in ocean policy and planning, and develop science-based solutions to cross-cutting environmental challenges that cannot be solved by one company or industry, such as: invasive species, ocean noise, marine mammal impacts, marine debris, the Arctic, and others.

Bay Planning Coalition

Bay Planning Coalition is a leader in building coalitions and consensus on the issues facing the Bay-Delta region. We focus on producing positive results for our members through advocacy, monitoring and partnering with other associations who recognize the need for fair and reasonable regulation and sound, integrated planning. Sound planning for resource sustainability requires balancing the needs for economic vitality, job generation, environmental protection, housing, transportation, land use, conservation, water and air quality and recreational uses.



Maritime Information Services of North America (MISNA) is a coalition of non-profit maritime information service organizations dedicated to

providing information, communications and related services to ensure safe, secure, efficient and environmentally sound maritime operations. Established in 1995, MISNA represents the commercial maritime community's shared commitment to proactively address some of the challenges faced by the Coast Guard, Customs and Border Protection, the Maritime Administration and other federal and state agencies and industry partners in a cooperative and cost efficient manner. MISNA membership includes maritime exchanges and associations from throughout the United States, Canada and Europe. These organizations, several of which have been in existence well over 100 years, represent a broad cross section of maritime interests in their respective regions - vessel owners and agents, ports, pilots, towboat companies, stevedores and terminal operators, admiralty lawyers, custom brokers and freight forwarders, ship repair firms, employer associations, insurance agencies, marine surveyors, maritime union and oil spill response organizations, just to name a few. Collectively, over 8,000 private and public maritime businesses, agencies and associations are represented by MISNA members.



CA Fish and Wildlife

The mission of the Office of Spill Prevention and Response (OSPR) is to provide best achievable protection of California's natural resources by preventing,

preparing for, and responding to spills of oil and other deleterious materials. and through restoring and enhancing affected resources. As both a prevention and response organization, the OSPR has the California Department of Fish and Wildlife's public trustee and custodial responsibilities for protecting, managing and restoring the State's fish, wildlife, and plants. It is one of the few State agencies in the nation that has both major pollution response authority and public trustee authority for wildlife and habitat. This mandate ensures that prevention, preparedness, restoration and response will provide the best protection for California's natural resources.

Media Partner



The Maritime Executive publish-

ing company was founded in 1997. Its mission is to provide industry leaders with in-depth analysis of maritime issues and to report the news affecting the global maritime community. The company has three business units: The Maritime Executive Magazine, the Mar-Ex Newsletter, and the MarEx website (www.maritime-executive.com). Through these three platforms The Maritime Executive is able to reach the global maritime audience and, thereby, maximize the intellectual capital of industry executives while creating enormous value for advertisers. The Maritime Executive aims to be the leading source of maritime news, jobs, events, and industry analysis. It intends to do so by enhancing its interactivity through continued investment in today's most advanced technologies. In addition, the organization will continue to provide benchmarked research to executives intellectual capital vital to operating their organizations. Providing free and easily accessible content will encourage growth in readership and create value for advertisers.

Acknowledgments



This conference would not have been possible without the hard work and dedication of the following individuals:

Conference Steering Committee

Sam Pecota
Fred Pot
Bob Moore
David Patraiko
Daniel Breton
Michael Card
Thomas Christiansen
Omar Frits Eriksson

Conference Planning Committee

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