February-March 2026

Chair of C4FF cordinated the panel discussion on Future of Fuel Use organised by IMarEST Midlands. The panel discussions attracted some 50 participants and based on its success a new panel discussion is planned for May 2027. Professor Covington (Warwick University) and Professor Ziarati (C4FF) will joining the IMarEST Midlands event making presentation of importance of monitoring air quality in all organisation and in confined spaces in ships.

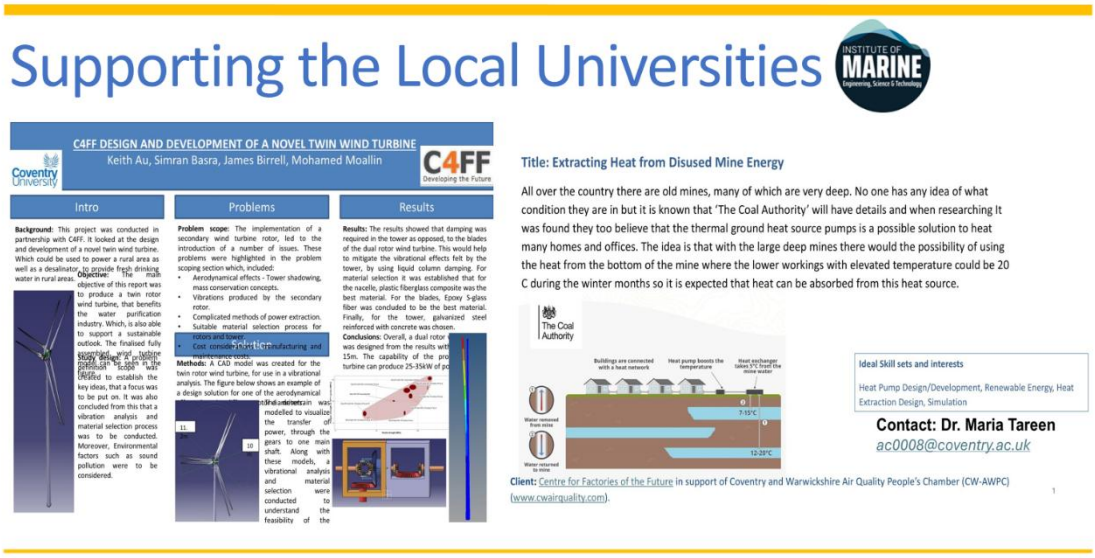
Visit to Finland

As part of the EU Erasmus+ funded OPTIMISM project, the partners met on board of the Finland's new ferry icebreaker (Wasaline) in Vaasa. The visit entailed several meetings and presentation to Wasaline crews as well as a visit to Wartsila in Vaasa. Wartsila also made the presention on their latest work to the visiting party.

Visit to and discussions with Warsila and meeting on board the new Wasaline ferry icebreaker.

CU Student Projects

C4FF with support from IMarEST continues supporting student projects. The last meeting took place at Covetnry University (CU) in February 2026. Sample of C4FF joint projects with CU is show below.



New MariFuture Books

Following the success of Green Ship - Maritime Energy Management System Book and Training the Trainees and Trainers in COLREGs Book a new book was published by MariFuture entitled: Enhancing Maritime Safety through Knowledge and Innovation. All books have their own self-assessment booklet but what makes the maritime safety book even more innovative is its confidence testing metholology which makes it impossible for the test takers guess the multichoice questions' answers – See https://marifuture.org/Publications/Books/OPTIMISM_Workbook.pdf

The OPTIMISM last meeting took place in February 2026 to finalised the training progamme on maritime safety. It is with great pleasure that the IMarEST accredited the programme and awarded it IMarEST CPD Recognition Certificate. The programme has been awarded official recognition as contributing to the Continuing Professional Development requirements to maintain professional registration for a period of three years from 11th March 2026 to 10th March 2029. The course is provided by – Centre for Factories of the Future (C4FF) and its partners in UPC in Spain, MUS in Poland, Finland by Crestcat OY, and IDEC in Greece in the first instance.

INSTITUTE OF MARINE
Engineering, Science & Technology

CPD Recognition Certificate

OPTIMISM

Provided by – *Centre for Factories of the Future (C4FF)*

The above course has been awarded official recognition as contributing to the Continuing Professional Development requirements to maintain professional registration for a period of three years from 11th March 2026 to 10th March 2029.

President

Secretary

Dated 18th March 2026

The Institute of Marine Engineering, Science and Technology
Founded 1889, Incorporated by Royal Charter 1933

Plans for OPTIMISM

The next face-to-face meeting and the final conference will take place in Barcelona, Spain between 26-29 May 2026. The project is expected to be concluded in August 2026.

Figure 1 - OPTIMISM Workshop in Sweden held in March 2026

Supporting Schools with STEM Projects

C4FF with support from IMarEST Midlands works with several schools and universities as well conducting research for local communities especially in monitoring air quality. As a result of these activities several meetings have place with local MPs and in the Parliament. Photos of some these activities are shown below

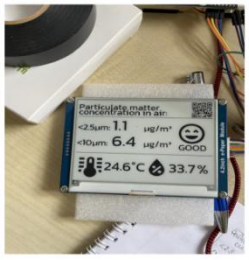
Working with Schools

Working with Secondary Schools

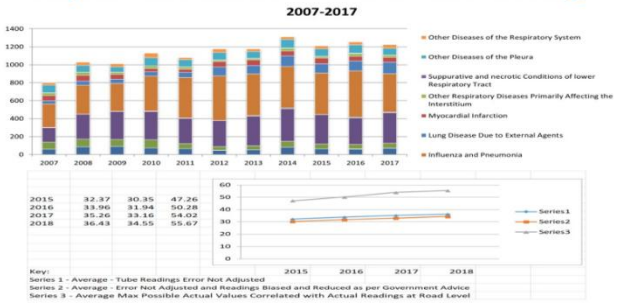
School Competition Certification

Working for Secondary Schools

Air Quality Sensor – Secondary Student Project

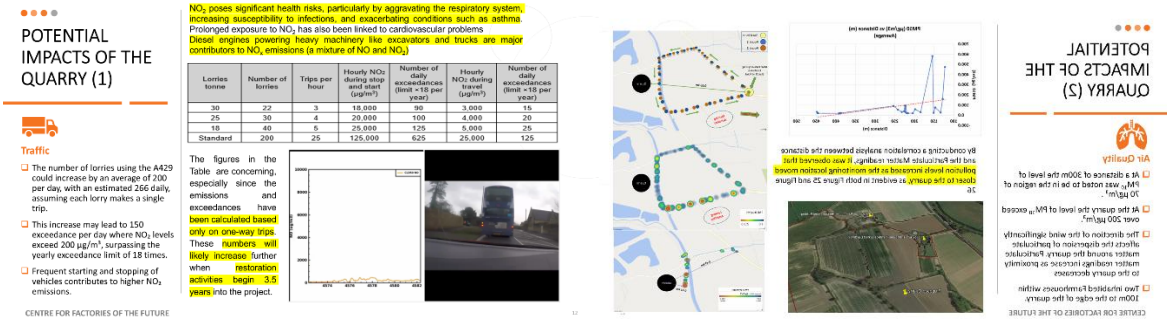


Hospital Admissions vs Diffusion Tube Readings



The support to local communities varies and takes place in several areas such as:

Conducting an investigation in Barford; Westwood Business Park, Balsall Common, Developing Air Quality Sensors, Preparing School Competitions and Developing STEM Activities. An example of the work viz., in Barford is presented below.



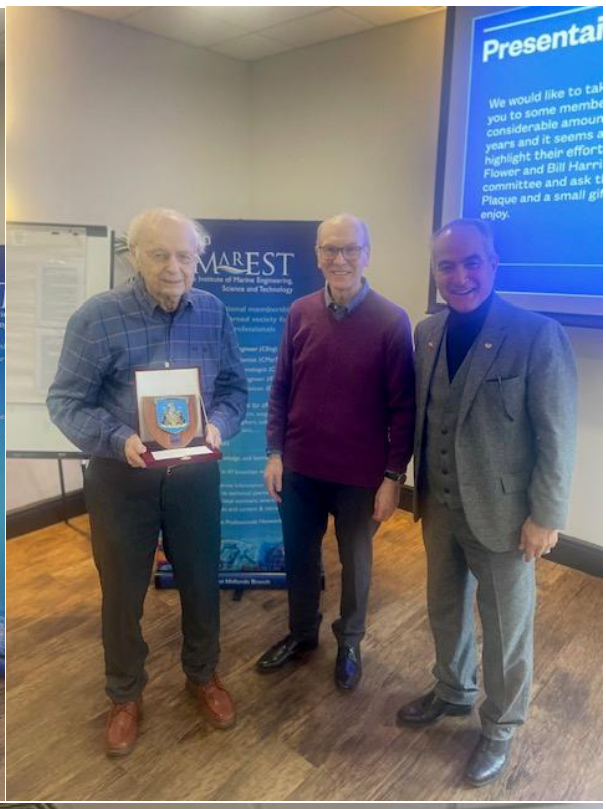
Professor Reza Ziarati and Amir Sedigh taking air quality measurement next to the Government's air quality monitoring station in Coventry – March 2026.

Supporting IMarEST Lecture Programme and initiatives

C4FF supports several Engineering Institution. The Chair of C4FF, Professor Reza Ziarati, is currently the Chair of IMarEST Midlands Branch and presented his annual report at Holiday Inn, Kenilworth on 28th February 2026. The key points in his report are outlined below.

In the recent IMarEST meeting financial supported was given to several schools working on IMarEST/C4FF STEM activities/projects. Some of the photos are given below:


Join
IMAREST


Presentai
IMAREST


Thank you for listening!
Join


Presentations -
Working with Secondary S


Presentations - Schools Projects
Working with Secondary Schools


Presentations - Schools Projects
Working with Secondary Schools
The Competition has been developed by C4FF with the IMechE.
The Competitions are held to encourage students towards science and technical outcomes.
They consist of two parts, firstly a set of True/False questions and secondly a Report type essay on a specific area like Air Quality.
This links up with the building of Air Quality Monitors.
Join


Presentations - Schools Projects
Presentations - Warwick Submarine
Thank you for listening!
Presentations - Branch Liaison
Introduction to Warwick Submarine
AGM 2025/26
Thank you for listening!
Presentations - Schools Projects
Working with Secondary Schools
Presentations - Schools Projects
Working with Secondary Schools
AGM Welcome, Apologies, Minutes of 2025
Join IMarEST

Chairman Annual Report 2025-26

- **Lectures and Seminar - all Hybrid**
- **My Journey to a Greener Home,** P. Burrows, IEng, MIMarEST, 29th Jan. 2025 - Attendance 13 IP.
- **Autonomous Driving and Navigation Systems,** Asst. Prof. D. Croft, PhD. 29th Jan. 2025 - Attendance 18 IP.
- **Implementation of the Revised IMO Safety management Codes**, Prof. R. Ziarati, CEng, FIMarEST, FI MechE, FIET. 29th of January 2025 - Attendance 15 IP
- **Hybrid Propulsion Systems for Inshore Vessels**", E. Bari, CEO, ECOMAR – 10th April 2025 Attendance 23 IP.
- **Full Electric or Hybrid Electric Power and Propulsion Systems – Technologies and Principles of Operation**, Dr M. Benatmane, BSc (Hons), PhD, C Eng, FIMarEST, FIET, 15th Oct. 2025 - Attendance 9 IP
- **Experience with LNG as a Marine Engine Fuel**", led by Prof. R. Ziarati, panel members/speakers: A. Campion, C Eng, FIMarEST and Hamon Yaman Yalcin, I Eng, MIMarEST, held on line on the 19th of November 2025. On line attendance 43.
- **A visit to Carnival is being arranged for 2026-27.**

C4FF has agreed to provide information on the following initiatives to IMarEST Midlands with a view to prepare future lectures.

1. BlueMIND: Immersive Mental Health Innovation for Seafarers
2. MARICOM - Maritime Communication and AI
3. ENCLOSE-VR - Immersive Training for Enclosed Space Safety in Maritime Operations
4. SUDEMAR - Sustainable Development of the European Maritime Sector
5. CyberSEA - Increasing cyber security at sea through Online training
6. OPTIMISM - A competence-based training programme for ISM Code and its Safety Management System

New Projects

A new project has commenced as a result of Coventry University request to measure DFAS in two landfills. C4FF Chair contacted the Warwickshire District Council and Coventry City Council to seek support for this project. DFAS is a very serious pollutant and the proposed work is expected to help reduce the DFAS emissions.


Visit to Coventry City Council, from left to right, Mr Amir Sedigh (CU), Cllr. Mattie Heaven, Amy Baumont (CU) and Professor Reza Ziarati (C4FF). the photo on the right includes Ivan Kourtchev, the DFAS project leader (CU)

C4FF Progresses Multiple Innovation Projects Across AI, Safety, Agriculture and Manufacturing

The Centre for Factories of the Future (C4FF) has reached several important milestones across UK and European innovation programmes, reflecting its growing role in applied AI, safety-critical systems, and sustainable industrial technologies.

CSAMGuard+ Advances to Project Set-Up

C4FF has also progressed into project set-up under the Eureka Collaborative R&D: Eureka Clusters 2024/25 programme for the CSAMGuard+ project.

CSAMGuard+ addresses the growing challenge of detecting and preventing the spread of Child Sexual Abuse Material across digital platforms. The project focuses on developing an AI-driven, privacy-compliant solution capable of operating across encrypted, private, and public digital environments. The system combines content analysis, metadata intelligence, behavioural modelling, and biometric recognition to support real-time detection while respecting legal and ethical constraints.

The consortium brings together research organisations, technology providers, regulators, NGOs, and law enforcement bodies, ensuring that the solution is grounded in operational reality and aligned with international child protection frameworks.

FERIDE Enters Project Set-Up Phase

A second Eureka Clusters project involving C4FF, FERIDE (FERtigation Irrigation DEcisive Farming), has also moved into project set-up.

FERIDE responds to increasing pressures on agriculture from water scarcity, rising input costs, and climate uncertainty. The project focuses on precision irrigation and precision fertigation, using real-time environmental data to optimise water and nutrient delivery. The goal is to

improve crop productivity, reduce resource waste, and lower energy and fertiliser use while supporting sustainable farming practices.

The project establishes a European-scale collaboration between farmers, agronomists, technology providers, and researchers to support data-driven decision making in agriculture.

Lean Optimal: Feasibility Study Under Development

Alongside funded projects, C4FF is progressing Lean Optimal, a feasibility study exploring whether small and medium-sized manufacturers can reduce waste, rework, and excess energy use using simple, affordable predictive tools based on existing shop-floor data.

Lean Optimal focuses on early detection of process drift using routine production and machine data, without requiring new sensors or complex system integration. A key element of the study is understanding how operators and supervisors respond to early warnings and recommendations, ensuring that any future solution fits real shop-floor practices. Lean Optimal is currently at feasibility stage and is not yet funded.

Looking Ahead

These developments highlight C4FF's continued focus on applied research with real industrial and societal impact. From agentic AI in manufacturing, to digital child safety, precision agriculture, and SME sustainability, C4FF is strengthening its position as a delivery-focused partner across UK and European innovation programmes.

Further updates will be shared as these projects move forward.

CyberSEA Project Meeting 4 Confirms Readiness for Platform Testing Phase

CyberSEA Project Meeting 4 was held on 11–12 December 2025 at Berlin School of Business and Innovation GmbH, located at Karl Marx Strasse 97–99, Berlin.

The meeting brought together project partners to review overall progress and confirm readiness for the next phase of implementation. Discussions focused on the technical development of the CyberSEA learning platform, coordination across partner countries, and alignment with the project's objectives on strengthening maritime cybersecurity skills and awareness.

A key outcome of the meeting was agreement to commence testing of the CyberSEA learning platform and hub from 1 February 2026. Testing will take place across multiple partner countries, including Sweden, Greece, Spain, Germany, Slovenia, Finland, Romania, and Poland.

This testing phase will enable structured validation of the platform, systematic collection of user feedback, and targeted refinements to ensure the learning environment meets the needs of maritime stakeholders. The process will support the wider CyberSEA goal of building practical, scalable cybersecurity capacity within the maritime sector.

Further updates will be shared as the platform moves through testing and refinement stages.

OPTIMISM Project Advances Toward Final Conference

The OPTIMISM project continues to progress toward its final phase, following the M5 Partner Meeting in Finland, hosted by CRESCAT. The meeting focused on a full review of project activities and outputs, confirming delivery status across all work packages and agreeing plans for the final dissemination phase. Partners also aligned on the structure and content of the final conference.

Looking ahead, the M6 Partner Meeting and Final Conference will take place in May in Barcelona, hosted by Universitat Politècnica de Catalunya. This event will mark the formal conclusion of the project, with dissemination of all results and consolidated feedback gathered from target groups across the maritime sector. The conference will serve as the main platform for sharing project outcomes with industry, training providers, regulators, and academic stakeholders.

C4FF Chair Attends Quarry Inquiry on Planning and Proximity to Communities

On 16 December 2025, Professor Reza Ziarati, Chair of the Centre for Factories of the Future (C4FF), attended the Quarry Inquiry held at the Grand Committee Room.

The inquiry focused on the current regulatory framework governing the development of quarries in close proximity to cities and towns. Discussions examined the adequacy of existing planning controls, environmental safeguards, and the balance between construction material demand, public health, and community impact.

Professor Ziarati's attendance reflects C4FF's continued engagement with policy-level discussions on industrial development, environmental responsibility, and urban resilience. The inquiry provided an important forum for scrutinising how regulations are applied in practice and whether they remain fit for purpose as population density around industrial sites increases.

C4FF will continue to monitor developments arising from the inquiry and contribute to evidence-based discussions on sustainable industrial planning and environmental protection.

IMarEST Midlands AGM to Be Held in Kenilworth on 28 February 2026

The Institute of Marine Engineering, Science and Technology (IMarEST) Midlands Branch will hold its Annual General Meeting (AGM) on Saturday 28 February 2026, with members invited to attend either in person or online.

The AGM will take place at the Holiday Inn Kenilworth, located at 212 Abbey End, Kenilworth, CV8 1ED. Arrival is from 12:00 midday, with the meeting also streamed live via Zoom to enable participation by members unable to travel.

The AGM itself will last approximately 30 minutes and will cover branch activities and finances from the past 12 months, outline future plans, and include voting on committee positions. Questions from members will follow. The branch has highlighted that new committee members are needed, as upcoming retirements will otherwise affect the branch's ability to continue. Committee meetings are primarily held online, with one in-person meeting per year where possible.

Following the AGM, attendees will be able to take part in a series of short presentations, including updates on the Warwick Submarine Project and The Ocean Cleanup initiative. These presentations will illustrate how branch funds are used to support projects benefiting future engineers, scientists, and technicians. A short presentation from Jo Lewis of Head Office on Connect will also be included.

The event will conclude with a networking buffet at approximately 13:30, providing an opportunity for members to connect and exchange ideas.

Members considering attendance, either in person or online, are asked to register in advance by contacting Mr P. Burrows via email at imarestmidlands@icloud.com, providing their name and details of any accompanying guests. Registration is essential to assess viability and make appropriate arrangements.

IMarEST Midland's Branch.

Chairman : Dr. R Ziarati BSc C Eng FIMarEST

Secretary : W.B.Harris BSc C Eng MIMarEST

Treasurer : P Burrows I Eng MIMarEST

AGM, Presentations & Networking, Buffet.

Date : 28th Feb 2026 Time : Arrival from12.00 am.

Venue : The Kenilworth Holiday Inn, 212 Abbey End, Kenilworth, CV8 1ED

Annual General Meeting

A Number of Presentations, including the

Warwick Submarine project. And Ocean Clean Up

Description of Event,

The AGM will last approximately 30 minutes where the last 12 months branch activities and finance will be covered and future plans followed by voting on the committee. Questions will then be taken.

Following this a number of short presentations will be made with accompanying videos on subjects to illustrate where the branch provides funds for projects to support future Engineers, Scientists and Technicians. Also a short video supporting The Ocean Clean Up Project. Also a short presentation from Jo lewis of H.O. on Connect.

Finally a Buffet will be provided (@13.30 hrs) to allow members to network and chat. We are hoping that this will attract more members to attend. As we are providing a Buffet we will need to know who is attending please. For those Branch members who are unable to attend and would like to attend the AGM on-line please email me in advance for Zoom details, marking email AGM Zoom please. Email see below

REGISTRATION REQUEST NOTICE

If you're considering attending the the Lecture.

Please contact Mr.P Burrows by eMail :- imarestmidlands@icloud.com

giving your name & any one accompanying you

This is essential to assess viability and make arrangements

C4FF Releases New GreenShip and Navigation Publications

C4FF has published a new GreenShip book, building on more than a decade of EU-funded work in maritime energy management, pollution reduction, and competence-based training. The publication draws on experience from major initiatives including UniMET, ACTS and ACTS Plus, and the Maritime Energy Management System (MariEMS). It supports IMO Train the Trainer

programmes and focuses on practical approaches to improving energy efficiency and reducing environmental impact across a ship's operational life. The book also reflects C4FF's ongoing work on future-facing technologies such as digital twins for ship engines, aimed at enabling flexible fuel use and lower emissions over the long service life of vessels.

C4FF has also released a new Navigation and COLREGs training book, developed from the ACTs and ACTs Plus Erasmus+ projects. The publication addresses one of the most persistent causes of maritime accidents: human error and misinterpretation of the Collision Regulations. It presents a structured methodology for teaching and applying the COLREGs, particularly in complex multi-ship encounters where multiple rules apply simultaneously. The book translates research findings into practical training material, supported by scenarios, visuals, and interactive learning resources, with the aim of strengthening navigational decision-making and reducing collision risk at sea.

OPTIMISM Research Papers Submitted to MT'26 on Human Factors, Safety and Environmental Protection

As part of its ongoing dissemination activities, the OPTIMISM project has submitted two research papers to MT'26, focusing on safety and maritime environmental protection with particular emphasis on human factors and management performance.

The first paper, *Safety and Maritime Environment Protection with Special Reference to Human Factors I: Learning from ISM Code Audits and PSC Inspections*, examines how effectively the International Safety Management (ISM) Code is implemented across the shipping industry. Drawing on audit data from classification societies, Port State Control inspections, accident investigation reports, stakeholder surveys, focus groups, and case studies, the paper moves beyond assumption-based critiques. Its central conclusion is that the ISM Code itself is not inherently flawed. Instead, safety and environmental protection are undermined by poor implementation, driven largely by management failures, weak safety culture, and limited understanding of quality systems. These deficiencies directly affect shipboard safety and environmental performance.

The second paper, *Safety and Maritime Environment Protection with Special Reference to Human Factors II: Learning from Accidents*, builds on this analysis by focusing on maritime accident investigation reports. It explores what accidents reveal about failures in operational control, Safety Management Systems, and organisational decision-making. The paper highlights persistent limitations in accident investigations, including inconsistent quality, weak evidence trails, and insufficient causal explanation, all of which reduce the effectiveness of corrective actions.

A key contribution of the second paper is a structured approach to separating company-level failures rooted in management control and quality assurance from crew-level failures occurring during operations. This distinction supports clearer accountability and enables more targeted prevention strategies, particularly in relation to management responsibility and manning-related issues.

Together, these papers reinforce OPTIMISM's evidence-based approach to improving maritime safety and environmental protection by addressing human and organisational factors at their root, rather than treating accidents and non-compliance as isolated operational issues.

This year the International Maritime Human Factor Symposium will take place in Glasgow, 3-5 December 2025. Professor Dr Reza Ziarati, the Chair of C4FF will be speaking at the symposium on how to improve safety at sea and in ports, and how best to strengthen marine environment protection which is in line with IMHFS' mission to address the knowledge and skill gaps within human factors, supporting the maritime industry to become a safer and more efficient.

The IMHFS is an annual event that brings together academia, industry, and regulatory bodies to enhance maritime safety and operational efficiency. It emphasises the crucial role of Human Factors in risk management and safety and promotes research and establishing best practices to minimise accidents at sea and in ports.

For more information and registration refer to: https://imhfs.com/

OPTIMISM Newsletter

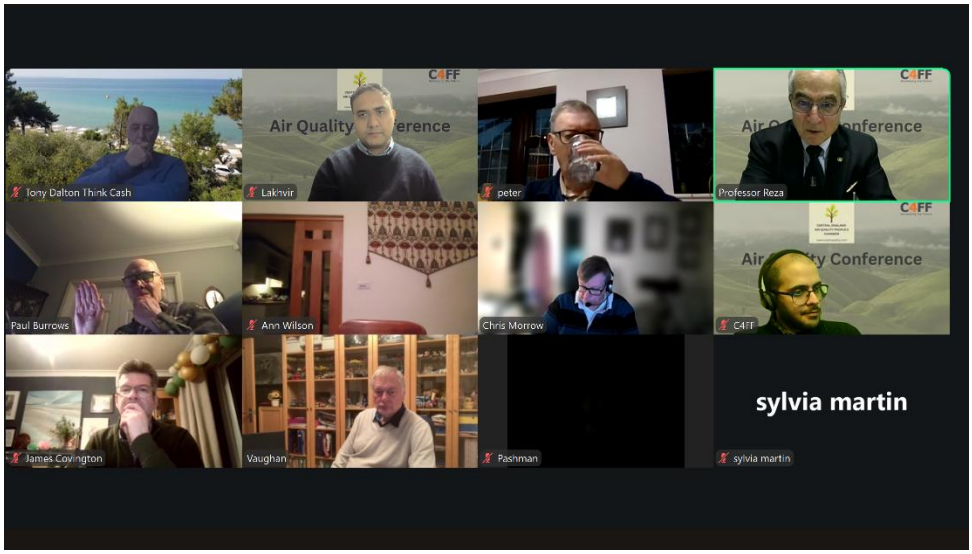
Air Quality People's Chamber – Virtual Meeting

The CE Air Quality People's Chamber Committee met on 21 November 2025 at Berkeley House, Kenilworth, to review key environmental and planning developments across the region.

Members discussed recent updates from local councils, the impacts of new fertiliser use by farmers, and the latest developments at Barford Quarry. The committee also reviewed plans for the new Centre for Air Quality Measurement and Monitoring, aimed at strengthening regional data capabilities.

Further discussions covered Coventry's population growth and student accommodation pressures, as well as wider housing statistics. Updates were also provided on the cycleway project, emerging Research Council funding opportunities, and recent STEM activities led by engineering institutions.

The meeting concluded with Any Other Business and agreement to schedule the next session.



IMarEST Midlands Hosts Expert Discussion on the Future of Marine Fuels

The Midlands division of the Institute of Marine Engineering, Science & Technology (IMarEST) held an online panel discussion on 19 November 2025, bringing together industry specialists to examine the evolution of marine fuels and the practical challenges of decarbonising deep-sea shipping.

The session, titled *"The Future of Fuels & In-Use Experience,"* ran on Zoom and adopted an open discussion format rather than a formal lecture, encouraging participants to explore real-world engineering insights.

The event was chaired by Professor Reza Ziarati and featured contributions from:

- Alan N. Campion, CEng CMarEng FIMarEST FHEA
- Hasan Yaman Yalcin, MIMarEST, Dual Fuel Engineer

Speakers shared operational experience with lower-carbon fuels, including LNG, and highlighted the technical, safety and environmental considerations involved in transitioning the global fleet toward cleaner propulsion.

Registration was open to the public, and the session drew interest from professionals and students seeking practical perspectives on maritime decarbonisation.

The event underscored the growing role of innovation and applied engineering expertise in steering the shipping industry toward a more sustainable future.

IMarEST Midland's Branch.
Chairman : Dr. R Ziarati BSc C Eng FIMarEST
Secretary : W.B.Harris BSc C Eng MIMarEST
Treasurer : P Burrows I Eng MIMarEST

INSTITUTE OF MARINE

On Line Discussion

Date : 19th Nov 2025 Time : 18:45 for 19:00 Hrs.

Venue : Zoom Details to be announced

A Discussion on future fuels and in use experience

Taking Part are:-

Chair /Moderator - Prof Reza Ziarati

Panel - Alan N. Campion CEng CMarEng FIMarEST FHEA, and Hasan Yaman Yalcin Dual Fuel Engineer, MIMarEST.

Description of Discussion

There is currently a lot of pressure being applied to decarbonize deep-sea shipping which will involve radical engineering solutions that, as yet, may be unavailable: In the meantime reductions in carbon footprint are more easily achieved by the use of alternative, lower carbon, fuels such as LNG. To be able to hear from someone at the "coal face" of any such developments to gain an insight into how these solutions are implemented is a rare privilege. Formatted as a discussion, rather than a Lecture this represents a departure from the normal format, and feedback from members as to how this different approach works would be very welcome.

REGISTRATION REQUEST NOTICE
If you're considering attending the the Lecture.
Please contact Mr.P Burrows by eMail :- imarestmidlands@icloud.com
giving your name & any one accompanying you
This is essential to assess viability and make arrangements

Discussion Overview

The maritime industry is undergoing a significant transformation as it seeks to reduce emissions and adopt more sustainable energy sources. Hybrid systems have advanced rapidly in recent years, offering promising benefits in efficiency and environmental performance. Yet, for deep-sea shipping, traditional energy sources still play a crucial role–and the path toward greener alternatives remains complex.

This session will explore future bridging fuels and the practical realities of operating these systems. Our expert speakers will draw upon both strategic insight and hands-on experience to provide a balanced view of what's happening "at the coal face" of energy transition in shipping. With the challenges of adopting low- and zero-carbon fuels for deep-sea operations and Real-world experiences in fuel management, system integration, and reliability

Participants Resume.

Alan Campion

Starting as an Apprentice Engineer on board Cunard passenger ships, Alan followed a career at sea from Apprentice to becoming Chief Engineer mainly on tankers carrying liquefied
gases (LNG, LPG, NH3 and chemical gases) belonging to British and Norwegian owners. This was followed by 10 years as a Senior Lecturer at Solent University's Warsash facility mainly teaching gas, tanker safety and also engineering subjects. Since retiring from full time teaching Alan has operated his own consultancy, mainly offering support and training to companies new to LNG.
He is currently working with the Society for Gas as a Marine Fuel (SGMF) assisting with the development of competency and training guidelines for Officers and Crew working on board the new generation of ships that are powered by alternative fuels as covered by the IMO IGF code. Alan is also an active Institute Member sitting on a number of Institute and IMO committees.

Hasan Yaman Yalcin

Hasan has recently returned from his latest contract, where he worked as Dual Fuel Engine onboard an LNG powered vessel. Working directly with LNG fuel systems where he says this has been a rewarding experience and he is happy to share his insights with us.

Finding This IMarEST Event on Line

The IMarEST will issue a Zoom link for members to log onto to receive the discussion
Also to Take part using Slido for questions.

Recent Published Papers

C4FF team has been at the forefront of maritime research, recently publishing three significant papers that address the industry's most pressing safety and security challenges. From establishing new frameworks for continuous improvement to pioneering virtual reality training and strengthening cyber defences, this body of work underscores our commitment to creating a safer and more resilient maritime sector.

The first paper, "A Framework for Continuous Improvement of Safety at Sea," addresses a critical gap between simply complying with regulations and being truly "fit for purpose" to handle real-world challenges at sea. Analysis of over 200 accidents, alongside extensive data from ISM audits and Port State Control (PSC) inspections, reveals recurring root causes of incidents, including inadequate risk assessment, poor leadership, and failures in ship maintenance and operations.

To bridge this gap, the paper proposes a new framework for continuous improvement, introducing practical models like the

"Fitness Triangle," which aligns jobs, people, and procedures to ensure operational readiness. The research calls for a shift towards a culture of continuous learning, where lessons from accidents and audits are used to build more effective safety systems.

This paper will be presented at the IAMU 25 Conference held at AMET University in Chennai, India, from 17 to 18 October 2025

The second paper, "Safety at Sea – Training Seafarers on Effective Implementation of the ISM Code," focuses on one of the most persistent dangers in the industry: accidents in confined spaces. Despite regulations, these incidents continue to cause fatalities, highlighting the limitations of conventional training methods.

As part of the EU-funded OPTIMISM project, this research introduces the VR Emergency @ Sea initiative, which uses immersive Virtual Reality (VR) to train seafarers. The program simulates realistic, high-risk scenarios based on actual incidents, such as gas leaks and fires, allowing trainees to practice critical safety procedures in a safe, controlled environment. This experiential approach helps turn procedural knowledge into ingrained, life-saving habits, bridging the gap between theory and practice under pressure.

The third paper, "Strengthening Cyber Resilience at Sea," reveals that the maritime sector significantly lags behind other industries in cybersecurity readiness. From the CyberSEA project, this research proposes a comprehensive cybersecurity framework and specialized training program to address key vulnerabilities and strengthen the industry's digital defences.

The second and the third paper will be presented at the IMLA30 Conference held at Split, Croatia, on 24th of September 2025.

The fourth paper, "OPTIMISM – Online Programme for Training on International Management of ISM Code," presents the development and progress of the EU-funded OPTIMISM project, a major initiative launched to evaluate and strengthen the effectiveness of the International Safety Management (ISM) Code across the global shipping industry.

The paper traces the origins of the ISM Code back to catastrophic maritime accidents, including the 1987 *Herald of Free Enterprise* disaster, and highlights how the Code became mandatory in 1998 to address systemic failures in safety management. With the ISM Code now in force for over 25 years, the OPTIMISM project aims to assess how effectively it has improved maritime safety and what further enhancements are needed.

This paper was presented at the 4th International Conference of Maritime Science & Technology Naše More 2025 – Safety, Innovation, Resilience, held in Dubrovnik, Croatia, on 18–19 September 2025.

The fifth paper, "Project OPTIMISM: Novel Means of Finding Root Causes of Accidents and Incidents at Sea and Port, as Well as Identifying Key Factors for Improved Safety from Ship Audit and Inspection," introduces a new, structured methodology for analysing more than 1000 accident investigation reports to address long-standing weaknesses in how the maritime industry learns from past incidents.

While traditional investigation reports aim to prevent recurrence, they often fail to systematically capture deeper personal, organisational, leadership-related, and cultural contributors including overlooked issues such as mental health or weak safety culture. The paper develops a **new taxonomy** capable of distinguishing whether an accident originates from crew-related factors or company-related deficiencies—an essential separation for effective prevention and management. The work integrates insights from several recent European

projects, providing a practical pathway for improving safety practices, leadership, and operational oversight across the industry.

This paper was **published in TRANSNAV, Volume 19, Number 2, June 2025**.

Please find the papers above using the link below

Published Papers

On-going Projects

OPTIMISM (September 1, 2023 – August 31, 2026): Efforts are underway to prepare reports and abstracts for upcoming conferences. Despite a paper being published at IMLA30. The core content of 6-chapter training course has been developed, and it is in the process of iterative reviews to ensure the effectiveness of both content and the self-assessment.

CyberSea (September 1, 2023 – August 31, 2026): Despite a paper being published at IMLA30 The first periodic report has been submitted. The team is now focused on implementing various challenges that will form the foundation of the course platform for users.

Barford Project (Upcoming): We are delighted to share that our proposal to expand air quality monitoring has been accepted. The project will bring in new sensors, calibrated and validated by our research team, and deployed in key areas of concern such as Barford and sites near quarries. The data collected will help us engage local communities and provide strong evidence for cleaner, healthier environments. This marks an exciting step forward in using innovation to support environmental action.