



Brexit

C4FF's intelligent forecaster was the first AI system to predict the outcome of the referendum viz., 52% leave and 48% remain, several months before the referendum. The predictions are recorded in several MariFuture articles – See Development Paper in MariFuture website (see the article published on 9/6/2016 - http://www.marifuture.org/Publications/Articles/Brexit_Report_III.pdf). MariFuture and their European partners would wish the EU R&D, Education and innovation initiatives to continue. We hope the UK make the right choice deciding to continue its productive collaborations in these areas for many years to come.

Year of Efficient Ship

MariFuture will continue the 'Year of Efficient Ship' throughout 2019 due to the importance of the subject to make our members and partners aware of the impact of toxic pollutants from shipping; and the means available to us to reduce the level and amount of the emissions from ship to minimum. To this end, we will be continuing our publication of a development paper on the subject of ship energy management in the coming months.

IMO has given the MariEMS team an opportunity to make presentation at the HTW6 on 29th April 2019. Capt. Zak (Solent University) and Professor Ziarati (C4FF, General Coordinator of MariFuture) will jointly present the MariEMS Courses for ship energy management trainees and trainers to the participant at the meeting.

Recent Developments

The final conference and partner meeting of ACTS Plus project took place at Solent University on 7-8th March 2019. The project is funding period is expected to be concluded on 31st March 2019. The project despite several challenges has achieved all is intended intellectual outputs with flying colours. Thanks to most of the partners for an outstanding work. The project will commence its post-funding period April 2019-March 2020.

MariFuture would wish to thank Solent University for their hospitality and support during the conference and in arranging the partner meeting. The new simulator facilities at the University is amongst the best in the world and the ACTS Plus Advanced eCOLREGS (www.advance.ecolregs.com) will be implemented at the university when the simulator system is operational. The new simulator centre will opening in April and Professor Ziarati (C4FF/MariFuture) has been invited to attend the opening ceremony.

A new paper is being prepared for submission to the International Maritime Lecturers Association Conference in Georgia in October 2019.



Photo 1: ACTS+ partners prepare for the final conference.



Photo 2 – From left to Right Professor Ziarati (C4FF), Captain Jae Jones (Marine Accident Investigation Branch, UK), Captain Kunal (Solent University) and a Guest at the Final Conference



Photo 3: Tomaz Gregoric from Slovenia presenting the ACTs+ eLearning platform to the participants at the final conference.



Photo 4: Partners meeting Capt. Mohammad Shafiq, Head of the New Ship Simulation Centre, Solent University.



Photo 5: Partner visits the centre's Crown Jewel 360 degrees full mission ship simulator.

New Projects

Several project proposals were submitted to the EU's Erasmus+ programme for funding. There five proposal supported by C4FF/MariFuture, these are as follows:

GreenShip – This is a project to reduce the level of harmless ship pollutions and manage ship energy more efficiently. The partners are: Centre for Factories of the Future Limited, Satakunnan Ammattikorkeakoulu Oy, Spinaker Proizvodnja Trgovina In Trzenje Doo, Aintek Symvouloi Epicheiriseon Efarmoges Ypsilis Technologias Ekpaidefsi Anonymi Etaireia, CETENA S.p.A. Centro per gli Studi di Tecnica Navale.

IBRM – In to improve the current arrangements for Bridge Resource Management. The Partners in the project are: Centre for Factories of the Future Limited, Universitat Politecnica De Catalunya, Spinaker Proizvodnja Trgovina In Trzenje Doo, Aintek Symvouloi Epicheiriseon



Efarmoges Ypsilis Technologias Ekpaidefsi Anonymi Etaireia, Sea Teach S.L., Nikola Yonkov Vaptsarov Naval Academy, Satakunnan Ammattikorkeakoulu Oy.

MariLANG Plus – This is the follow on from the successful and highly graded (93%) recent project to improve communications at sea and keep the accidents to a minimum by reducing linguistic and communication errors. The following organisations/countries are partners in the project: Centre for Factories of the Future Limited, Pete Sharma Associates Ltd, Nikola Yonkov Vaptsarov Naval Academy, Mathesis For Future Citizens PC, Spinaker Proizvodnja Trgovina In Trzenje Doo, Aintek Symvouloi Epicheiriseon Efarmoges Ypsilis Technologias Ekpaidefsi Anonymi Etaireia.

PoliUniBus – This is a new project assisting the policy makers to bring practices that can bring academia and business closer together. The partners are: Centre for Factories of the Future Limited, Lappeenranta-Lahden Teknillinen Yliopisto LUT, Oy Merinova Ab, Actuate Inovasyon Ve Bilisim Teknolojileri Ticaret A.S., Universidade Do Porto.

Prometheus – A project to help seafarers enjoy mental health. The partners in the project are: Centre for Factories of the Future Limited, SAMK, SPINAKER.SI, IDEC, Maritime University of Szczecin, University of Cadiz.

Several other project proposals are being considered for future developments.

Supporting STEM at Schools

Visit was made to Kingsley Primary and Secondary Schools in Leamington, Warwickshire. The purpose of the visit was to consider establishing a pilot Imagineering Club and as this can integrate with the schools own STEM/STEAM efforts. Professor Bob Shanks (Imagineering Coordinator) and Professor Reza Ziarati (C4FF Chairman) visited the schools and had discussions with key members of staff involving STEM/STEAM.



Photo 6 - Visit to Kingsley School, from right to left Mrs Bennett, Professor Ziarati, Ms Prosser, & Professor Shanks.

Collaboration with Warwickshire College Group

Following the BAU representatives attendance at the Games Conference organised by our partner, Warwickshire College Group on 31 January 2019 arrangements are in place to continue with the planned development of several initiatives. C4FF has already started to support WCG in teaching of computing modules and further support is being discussed.

BAU UK

C4FF is involved with the BAU TR strategic planning for BAU UK. The intention is to help BAU UK to become an independent university in the UK with its own degree powers. The strategic planning is expected to be concluded at the end of this month. There will be more on this exciting news in the future editions of MariFuture News.



Photo 7: WCG Games Conference

Professor Ziarati, the General Coordinator of MariFuture, has agreed to give a Lecture on 10th April 2019 to be held at Warwick University on the topic of ship emission and regulatory environmental developments. The lecture will be given as part of the IMarEST Midlands Branch inviting also all members from other Engineering institutions. More on the lecture in March 2019 News.

#Mentor4WBL@EU project

The #Mentor4WBL@EU Project was designed after the European Council prompted the EU Member States to increase "substantially the number of apprenticeships and traineeships to ensure that they represent real opportunities for young people, in cooperation with social partners and where possible integrated into education programmes". In addition, according to the newly adopted "European Framework for Quality and Effective Apprenticeships" (October 2017), European Commission identifies 14 key criteria that Member States and stakeholders should use to develop quality and effective apprenticeships. Among the specific criteria, is made a concrete reference on the necessity to exist a specific procedure for teachers, trainers and in company mentors to "update their skills and competences in order to train apprentices according to the latest teaching and training methods and labour market needs". In-company WBL mentors are in the core of quality WBL. However, in most European



countries, they lack standardized support and guidance which will set the expectations and boundaries clarifying and ensuring their successful contribution in the learning process. Based on the above and the identification of the WBL needs and gaps by NetWBL, there is a significant need for the development of standards and qualifications that would identify certain knowledge, skills and competences. They should also provide adequate assessment that will lead to valid certification and ensure quality in-company WBL mentorship in enterprises providing apprenticeships and internships. More information about the project will be available on the project website when it is published.

The first partner meeting of the project took place in Athens on 2-4 December 2018 hosted by IME GSEVEE. Professor Reza Ziarati and Joanna Niedzwiedz from C4FF attended this meeting. The partners discussed about the initial requirements of the project as well as drafted a plan on how to proceed with all intellectual outputs (IOs), not just the initial ones. The core partners of the project are: IME GSEVEE (Greece), EFCoCert (Switzerland), ViaSyst (Switzerland), C4FF (United Kingdom), BAHUN (Turkey). All partners were very eager to start the project with IO1 - Course design for apprenticeship and internship in-company WBL mentors. Provisional dates were set for all future partner meetings and this meeting concluded with the partners enthusiastic to start the project. Professor Ziarati and Joanna Niedzwiedz along with the rest of the partners got to enjoy the famous Greek hospitality when the lead partner took them to traditional Greek restaurant.

The next meeting of Mentor will be taking in Kenilworth, 10-11th April 2019. The first workshop of the project will be held on 10th April 2019 at Warwick University. C4FF has agreed to coordinate the meetings during the two-day event and take a lead in the workshop.



#Mentor4WBL@EU project Meeting, Athens "4th December 2018



Since the last meeting of UniBus project which took place at C4FF, Kenilworth, UK, on 1-2 November 2018, the partners have made good progress on IO4 UniBus Cloud Platform.



UniBus Project Partner meeting in Kenilworth



UniBus Project Partner meeting at C4FF, Kenilworth

The partners have produced the initial draft of UniBus Platform and its services and now finalising the architectural design to develop the cloud platform. This cloud platform is based



on S-o-Architecture and will support the services proposed in UniBus Concept. The architecture provides horizontal services (knowledge search engine, data persistence, etc) and vertical services (collaboration project management: service to support definition of project challenges by companies, to help selection of challenges by HEIs, to support the search of finance etc). These services will also be designed during this task. The behaviour and architecture of the cloud platform is modelled on the Service-Oriented Modelling Framework (SOMF), and the result of this activity will be included as part of the design documentation led by C4FF.

The partners have developed an initial version of early prototype of the cloud platform, coordinated by C4FF. The prototype is in the form of user-interface functional sketches, to help investigate and refine acceptance and interconnections among services in terms of required data.

SIG (Special Interest Group) on Particulate Matter Filtration Flows in Automotive and Marine Applications

C4FF, the parent company of MariFuture, is now an official member of SIG (Special Interest Group) on Particulate Matter Filtration Flows in Automotive and Marine Applications which is run by UK Fluids Network. The group's activities involve, but are not limited to: • organising 2 meetings a year • development of resources for UK Fluids Network and wider community (knowledge base, guides to PM regulations, resources on modelling filtration flows, UK research facility and capacity database, instructional videos, tutorials) • creating a collaboration networks and engaging both academic and industry in particulate matter flow research • defining targets and building consortia for funding bids. For more details of SIG, please [click here](#).

The SIG met on 20th September, 2018 at Newcastle University. Professor Reza Ziarati, founder of MariFuture gave a speech at the event. The title of the lecture was “Recent Developments in Ship Energy Efficiency - Design & Operations”. Subsequent to the meeting an Skype meeting was arranged to discuss a proposal for collaboration among several SIG members. More on the outcome of these discussion in the New Year editions of MariFuture News.

The next SIG meeting is held at Birmingham University 25th February 2019 C4FF has agreed to attend the event.

ACTS Plus



The final meeting and conference of the project took place on 7-8 March 2019. The project is expected to end on 31st March 2019.

The Previous meeting of this EU funded project took place in Ljubljana, Slovenia on 14-16 September 2018. The final meeting is expected in March 2019 in Southampton, UK.

The first partner meeting for this approved project took place on 17-19 November 2016 in Istanbul. The second meeting took place on 30-31 March 2017 in Croatia. The third meeting took place in Varna, Bulgaria on 11-12 October 2017 at the same time as the IAMU conference. The fourth meeting of the partners was held on 18-19 April 2018 in Mallorca, Spain. The next meeting is scheduled for 13-14 September 2018 in Slovenia. Arrangements for the project Final Conference are being discussed with industry leaders. The conference is scheduled for March 2019.

The ACTS Plus paper prepared by Professor Ziarati and partners was presented at IAMU by Professor Ziarati, Capt. Mohavic (UoR) and Capt. King (SSU) after the keynote speech by the Rector of NVNA. As stated earlier a new paper is being prepared by the ACTS Plus Partners. The abstract drafted by C4FF and Spinaker with support from several partners was submitted and accepted by the editorial committee of IMLA. Croatian Partner, UoR, have agreed to produce the core of a scenario for the paper in the next few weeks. The paper would then be finalised with support from all nominated authors/partners. This second paper is expected to be presented at the next IMLA Conference in Philippines in October 2018.

The ACTS Plus project, ACTS Plus is based on the Pareto analysis carried out as a part of the recently concluded ACTs project. The Pareto analysis showed that some of the COLREGs rules are more complicated than others and that there are situations where a number of rules apply. The paper argues the importance of continuing the ACTs project both according to the plans for its post-funding period and also by preparing a new proposal for EU funding (ACTS Plus). It is worth pointing out that as a result of the new paper a proposal was prepared by some the partners and submitted to the UK national agency.

This ACTS Plus project is led by Southampton Solent University (SSU) and coordinated by C4FF. The project started officially on 1st October 2016 and is expected to be concluded in March 2019.

University Centre Garden City

A strategic committee has been established to review the arrangement for the New University and proposed a plan for future developments.

As reported in previous News the Centre Garden City was launched in June 2018. Once again congratulations to all who supported the creation of the Bahcesehir University UK



www.bahecesehir.ac.uk. Several new programmes have been developed and will be introduced in the next few months. The University will operate under the University Centre Garden City underpinned by all the group's academic and industrial units. Special thanks to the management and staff members of the Centre for Factories of the Future (C4FF) and MarEdu Partnership (MarEdu). Seeking approval from the UK Government to be allowed to use the title of the 'University' and registering the University with Companies House together with obtaining the 'ac.uk' required a concentrated effort for the core project team by the founding bodies. The new University will be based in the UK. C4FF and MarEdu are both registered UK legal entities (one a limited company and the other a partnership) with many years of designing and running joint degrees including MPhil/PhDs. The respective websites can be found at www.c4ff.co.uk & www.maredu.co.uk. The University will operate through its academic partners and at its newly established business centre, Berkeley House, in Kenilworth, the heart of England, during its initial development phases. Its first Foundation Degree will be offered through the Warwickshire College Group and the Degree top-up through De Montfort University, starting in October 2019.

The long term aim of the new University is to establish a series of novel Engineering and Management programmes in collaboration with its partners in UK, Europe and worldwide.

In order to support the long-term aim of the new University, Bahcesehir University and C4FF have signed collaboration agreements with several UK colleges and universities to implement joint degree programmes and research projects; in particular Bahcesehir University supported by the C4FF signed an MoU with De Montfort University; and C4FF has signed with a group of colleges and universities in the UK and elsewhere in Europe. Furthermore, C4FF intends to continue its top-up degree programme and MPhil/PhD with De Montfort University. As such, in the coming years the new University intends to be involved in the development and implementation of several degree programmes and taking responsibility for their own quality assurance and monitoring. The new University will also be involved in the fundraising, networking and planning in order to establish first a small centre and ultimately a full University campus jointly with C4FF and MarEdu in the UK.

C4FF was initiated by our Chairman, Professor Ziarati in 1981, which became a UK Government initiative early in the 1980s and later nominated as one of the 10 UK's innovative projects in the EU's network of innovative projects EUROTECNET in 1984. The EUROTECNET formally ended in 1996 when C4FF opted to become a limited education and research company. The following files give the sample earlier collaboration with DfEE [http://www.c4ff.co.uk/References/DFEE Reference.pdf](http://www.c4ff.co.uk/References/DFEE%20Reference.pdf) and sample DfEE publication on C4FF's work in EUROTECNET (<http://www.c4ff.co.uk/History.aspx>).

A review of our website www.c4ff.co.uk will indicate that we have helped to establish several universities overseas and have been involved with the UK Government acting as Quality Assessors and with several Chartered professional institutions as degree programme accreditors. Our involvement with major awarding bodies such as Pearsons/Edexcel/BTEC goes back to some thirty five years, offering degrees, HNDs and so forth – see for example www.maredu.co.uk and letters of commendation from colleges and universities in 'About Us' in the C4FF's website. We have supported and are supporting British universities in several joint PhD programmes as supervisors or advisors and run joint degree modules with



universities in the UK and elsewhere in Europe. We have initiated and supported several major European/global platforms; see for instance www.marifuture.org and www.manufuture.org. The former is still being coordinated by us. Our Centres have developed many e-learning courses with some given the award of 'Best in Europe' by the EU, and many are accredited by universities or institutions such as IMarEST. We are the initiator of the CDT (now just referred to as DT) A-levels and ran the first CDT teacher training course in the UK with support from the Welsh Office. Our history (<http://www.c4ff.co.uk/History.aspx>) lists the awards given to us and the work we have done with many colleges and universities in the UK. Recently we have established a network of people and organisations supporting STEM in schools (see our website: www.inspire-group.org) and are in the process of establishing a national Centre for it in our newly acquired building in Kenilworth.

Having worked with Turkey in recent years, see our sample partnership with them www.maredu.co.uk, and having helped to establish several institutions including two universities in Turkey (Dogus <http://www.dogus.edu.tr/en/> and Piri Reis <https://www.pirireis.edu.tr/EN>), we have decided to establish a private university in the UK in order to expand on the joint programmes and research projects we currently carrying out in partnership with several universities in the UK, Turkey and elsewhere in Europe and worldwide.

It is worth noting that several organisation and universities have already established an office at the group's Business Centre, Berkeley House, in Kenilworth, and this has led to several funded and prestigious education and research projects. Examples of these projects can be found at www.marifuture.org.

Year of Efficient Ship

The 'Year of Efficient Ship' continues in 2018 due to the importance in making our members and partners aware of the impact of toxic pollutants from shipping and vast array of means available to reduce the amount of and the impact of these harmful emissions. To this end, we will be continuing our publication of a development paper on the subject of ship energy management in the coming months. To support 'The Year of efficient Ship' There were several major events in recent months, notably several keynote speeches given by the MariFuture Founder, Professor Dr Reza Ziarati at the International Propeller Club, Genoa, Italy; at Johnson Matthey Technology Centre, Reading, UK; and the MariEMS' final conference. In April the fourth ACTS Plus partner meetings took place on 22-23 April in Mallorca, Spain and on 24-25 May the third partner meeting for Career Comeback Support Program for Women project met in Poland. The final partner meeting and conference for MariLANG took place on 7-9 July in Elsfleth, Germany.

Several other meetings were held to consolidate the success of acquiring the parcel of land from the Warwick District Council for the C4FF/MarEdu supported new university and for the C4FF's STEM partnership the UK. C4FF's business centre (Berkeley House) has already



allocated another larger parcel of the land to be used for the coordination of the STEM centre and the new University planned activities.

Career Comeback Support Program for Women (CCSP-W)

The project started in September 2016. The partners have met in Istanbul, Kenilworth and Paris. The fourth partner meeting took place in Poland on 24-25 May. The subsequent meeting took place in Paris, France on 18-19 October 2018.

The project is progressing well and is being implemented as outlined in the proposal. The project partners met in Paris, France on 18-19 October 2018 to discuss the progress and plan for future activities. Some of pictures from the Paris meeting are presented below.



Career Comeback Support Program for Women (CCSP-W) France 18-19 October 2018.

As discussed the Paris meeting, the partners have completed the peer review of curriculum and material produced for the web portal. The curriculum is designed to primarily provide the support and confidence that women returnees need to achieve their career goals. The details of the curriculum is discussed with the partners and target group. The proposed structure of the curriculum is in two sections:



- the contemporary business needs for the women returnees (social media skills, resume writing)
- information to facilitate reemployment and/or entrepreneurship (women specific funding, policy for entrepreneurship, etc.)

The curriculum included the guidance and sample learning materials.



MariLANG Project

Great news! The evaluation report has now been concluded and project scored 93%. This is a welcoming news for the partners and a recognition of their hard work in bringing the project to a brilliant end.

The final conference took place in August 2018 in Germany. The final report was submitted to German National Agency in October and partners are awaiting the results. A new proposal is being considered to continue with MariLANG project.

The MariLANG project intended to develop a Maritime English training programme based on the EU funded SeaTALK learning materials and the EU funded MarTEL assessments, both of which are compliant with the IMO Maritime English Model (3.17). It is worth mentioning that partners from both SeaTALK and MarTEL were involved in the 2015 revision of the IMO Maritime English Model Course through the International Maritime Lecturers Association (IMLA). The funding of MariLANG is very good news as it will complete the process started with MarTEL establishing a Maritime English assessment system, followed by SeaTALK seeking material for it, in conclusion MariLANG will develop an actual training programme for



Maritime English which will include the three new categories defined in the revised model course: Electro-Technical Officers, GMDSS radio operators, and Personnel providing direct service to passengers in passenger spaces on passenger ships.



Project Day time

The project is still about to start. Some of the partners are waiting to hear from their national agencies.

The project is highly innovative in nature and it has the ambition to innovate beyond the state-of-the-art to help overcome the maturity and usability constraints. DayTiMe will contribute



Smart Contracts templates for predictive maintenance and therefore with a tested basis for securely using partner-developed programs in Industry 4.0 environments. This will make Blockchain technology more usable for Industry 4.0 environments. Any company will be capable to onboard the machine-to-machine (M2M) or Blockchain economy and take advantage of a high-quality end-user experience built around a human-centred design philosophy.

The DayTiMe project will coordinate related standardization activities including IEC 61987, 61360, 62832, 62264 and ISO 13584, 22745. The DayTiMe project will contribute to make use of these innovative standards. Requirements will be derived from the DayTiMe use cases and communicated to the standardization committee. Results from the standardization committee's work will be validated by implementation in DayTiMe. Thus, DayTiMe software results will be among the first ones to benefit from these new standards.

Therefore technical outcomes will be:

- functioning pilots of industrial use cases
- Data acquisition and analytics techniques
- Digital twin models for the respective use cases
- Smart Service and data-driven business model blueprints
- A method toolbox for generalization and diffusion of these outputs in the industry

OPTIMUM

The project is progressing well. The partners had a face-to-face consortium meeting at Universidad Carlos III de Madrid on 22nd and 23rd of October 2018. The next review meeting will be in March 2019. In addition to this, the partners are having regular web conferences to discuss technical and other organisational issues.

The project aims to support innovative concepts for engineering, commissioning, control and supervision of smart manufacturing and material handling. It will be in line with European, National and international initiatives towards digital manufacturing, closely related to ongoing activities in working groups around the German initiative Industry 4.0. Taking the results from ongoing architectural, component and ontology discussions, OPTIMUM's major goals are: improvement of the aspects of distributed control, adaptation of (I)IoT technologies to real industrial needs, enhancement of control and applications by context and location awareness as well as application design and common-model based 3D engineering and supervision.

There are over 20 major industrial partners supporting this project.



OPTIMUM Partner meeting in Madrid, October 2018

MariEMS

The final report was submitted to UK NA at the end of May. Full accreditation documents were submitted to IMarEST. The partners have been notified that both the submission to UK NA and to IMarEST have been successful. The UK NA is expected to review and assess the final report in the next two months. IMarEST has informed the project lead that the documents are being presented to its accreditation committee in the near future. We are expected a positive outcome from both organizations.

The MariEMS final Conference took place in 22nd March 2018 in Istanbul. The event was very successful and it was reported that some 60 people took place in proceedings. The keynote speeches we given by Professor Ziarati, Chairman of C4FF, Mr Markku Mylly, the President of EMSA and Dr Sualp Urkmez, the CEO of Adiks Ship Yard and Furtran.

A summary of all the projects can be found in www.marifuture.org. For further information about MariFuture please refer to the MariFuture website.

Dr Martin Ziarati