



## Progress Report

As reported in the previous news, due to Covid-19 there will be bi-monthly news until further notice. Any news up-dates will be implemented as and when necessary during February and March 2021.

The problems associated with Corona Virus continue to have an impact on C4FF work including its charitable networks and business units. Some of the EU and Eureka projects are progressing in general but some EU funded projects are being either re-scheduled or extended. This situation if continued may impact other projects and activities. We hope these surreal times will come to an end and that we can continue to work on all projects as planned soon.

### Key Announcements

C4FF's University Centre (Garden City) supported the development of two new courses in Technological Innovations and Research Methods. The courses were submitted to the Institution of Marine Engineering, Science and Technology (IMarEST0. Both courses have now received recognition as IMarEST CPD courses. C4FF is also in the process of finalizing the development of an e-course in mentoring. With support from IMarEST the course is now being evaluated and is expected to be submitted as a recognized CPD course in the near future. In parallel, a course in improving mental health at sea and eradicating bullying is being developed with several partner organisations in the EU.





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### Prometheas Multiplier Event in Finland

It was reported that the two-day multiplier event run in Finland by Prometheas project partners was successful. C4FF made the first key presentation at this event. The programme of the event was as follows:

**Prometheas, Rauma 9-11<sup>th</sup> December, 2020 Short-term joint staff training events (all times Finnish)**

<https://sub.samk.fi/projects/prometheas/>

<https://hill.webex.com/meet/hekoivi>

### **We 9.12.2020 Mental Health of Seafarers**

10.00 – 10.10 Welcome; Mariusz, Heikki

10.10-10.30 Prometheas e-course outline and depository of learning material and proposed assessment system – Professor Dr. Reza Ziarati (C4FF) on behalf of Partnership

10.30-10.40 Prometheas e-course platform, development so far – Tomasz Gregoric on behalf of partnership

10.40 – 11.00 Short presentation by partners and latest developments

11.00 – 12.00 Lecture, basic concepts of mental health, Ms Minna Kahala

12.30 – 14.00 Samk/Seagull presents Seafarers' mental health and wellbeing video, self-assessment and evaluation of the usability in Prometheas on-line material (Permission OK). Capt. Heikki Koivisto

14.00 – 15.00 Lecture, mental disorders Ms. Minna Kamala, cases, self-assessment tool/questionnaire

15.00 – 16.00 Lecture, expertise by experience (video, link to be shared to registered participants before hand), material evaluation

16.00 – 16.30 Evaluation and wrap up of the day

### **Th 10.12.2020 E-learning delivery of the course**

10.00 – 11.30 case study P & I Club ALANDIA material, other new material available

12.00 – 13.00 Scenario 1 (material evaluation: Evaluation using self-assessment tool; PARTNER

13.00 – 14:00 Scenario 2 & 3, material evaluation:



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14:15 – 15:30 Mental health and shipping, evaluation using self-assessment tool, **this will take place in simulator by interviewing pilot, captain, young officer deck/engine** (link to be shared to registered participants later due to Corona meeting limitations)

### **Fr 11.12.20 Self-assessment tool for mental health and mobile app**

10.00 – 11.00 Scenario 4, material evaluation: can this be used?

11.00 – 12.00 Videos to discuss

PARTNERS TO WATCH VIDEOS BEFORE HAND

12:30 – 14:00 Overview of the produced material, discussion about usability, future plan

14.00 – 15.00 Wrap up and end of the course

### **15:00 – 17:00 Partner meeting**

### **IMechE Mental Health and Well-being**

The Chair of C4FF is also the Chair of the IMechE for the Midlands Region and helped to arrange a workshop on Mental Health and Wellbeing on 5<sup>th</sup> January 2021. As well as the discussion on PROMETHEAS (not a spelling error of PROMETHEUS) project and its findings so far, a new concept was introduced by IMechE New Zealand on key drivers of stress and how we manage it from a neurological point of view. The concept derives from the Model of Balancing Emotions developed by Paul Gilbert (2020). His research has found that people switch between three systems – Threat, Drive and Soothe. The concept proposes Skills for Managing Threat, Skills for Managing Drive and Skills for Managing Soothe. More on this at the next meeting of Prometheas Friday 20<sup>th</sup> February 2021.

MaritimeUK has organised a Mental Health workshop on 2<sup>nd</sup> March 2021. C4FF will be attending this workshop and making contribution to it reporting on Prometheas findings so far.

### **Formation of new Mental Health special interest group**

C4FF have been involved in helping to set up a mental health group with LR, IMarEST, HSE, MCA, MaritimeUK, ISWAN and several others to find ways to share knowledge and experiences in mental health topic areas. The group is keen to organise workshops/conferences and seek support in setting up a formal SIG in this connection. More on this in the next MariFuture News.

### **Message from Bulgaria**

To: ACTs plus partner – teams from Solent University, CF4FF, University of Rijeka, Bahcesehir University, Sea Teach and Spinaker

Dear Katie, Emma, Reza, Himadri, Djani, Anna, Erol, Silja, Mike and Tomaz,



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After several times of rescheduling due to Covid-19, on the 29<sup>th</sup> October 2020 the annual prizes “Varna”, awarded by the Municipality of Varna to the most successful projects and prominent achievements in the area of science and higher education, accomplished by universities on the territory of Varna has been announced. The collective prize in the area of humanitarian sciences has been awarded to the NVNA ACTs plus team.

The status of the prize dictates that only personnel working in Universities on the territory of Varna can be awarded. However, we have officially announced and we shall consider this prize to the International team that worked and completed the ACTs and ACTs plus projects. For this reason, we will keep the medal and the certificate, together with a photo of our joint team (I will choose one, taken in Varna in October 2017) in an appropriate place in NVNA. Also, the name of the project coordinator Solent University is clearly displayed on the diploma.

The prize goes with an amount of 1000 euros. Since we didn't come to a clear solution how to spend the money, we accept good suggestions from you if you have any. Please keep in mind that celebration parties are not accepted as eligible costs 😊

On behalf of the NVNA team: Dimitar, Ivo, Nikolai, Jordan, Milen, Daniela and Grafiela I would like to thank you all for the joint work, the excellent cooperation and your friendship – all these has led us to complete a very successful project. And the results of our joint work have been noticed and highly appreciated by the Municipality of our city. We all remain with pride and honor after six years of work (and entertainment 😊)





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Thank you from all NVNA team.

ACTs project has been selected by the Croatian National Agency for Mobility and EU Programs, Department of Vocational Education and Training as the best example of good practice of the Republic of Croatia on digital skills (European Digital Skills Awards 2016).

### Mentor Project Final Conference

The final conference of Mentor Project took place on 18<sup>th</sup> January 2021



[Mentor4WBL@EU](#)

### On-line Final Conference

Monday 18/02/2021, 16:00p.m -18:00 p.m.(Central Europe Time)

#### *Draft Agenda*

16:00-16:15 Welcome Speech & Presentation of #Mentor4WBL@EU project by Mr Vassilis Siomadis, Project Manager





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16:15-16:30 Presentation of the Course & Syllabus design for apprenticeship and internship in-company WBL mentors (IO1 & IO2) by Ms Jennie kallergi, DIEK AIGALEO

16:30-16:40 Presentation of Certification scheme for workplace mentors (IO3) by Mr Didier Blanc, EFCoCert

16:40 – 16:50 Presentation of the Assessment Development for apprenticeship and internship in-company WBL mentors (IO4) by Professor Reza Ziarati, C4FF

16:50 – 17:00 Presentation of the E-Course Development for apprenticeship and internship in-company WBL mentors (IO5) by Professor Yaman Omer ERZURUMLU, BAHCESEHIR UNIVERSITY

17:00-17:15 Presentation of the IT competence certification platform and the results of the pilot test phase (IO6 & IO7) by Ms Florence Le Lann, Viasyst

17:15-17:30 Presentation of the Exploitation Report by Ms Maria Bartsoka, Head of Unit, IVET Directorate, OAED

17:30-17:50 Q&A

17:50-18:00 Conclusions & Closure

Moderator: Vassilis Siomadis

Official Language of the Event: English



The Partners also had a meeting to prepare for the Conference and also a meeting after to discuss post-funding issues.

### Latest Events

The GreenShip Partner meeting and multiplier event plan to take place on 9-10<sup>th</sup> September 2020 in Finland could not go ahead due to COVID-19 related restrictions.

**All Funded projects visits have been rescheduled and will now take place virtually until further notice.**

### Other events

#### Air Quality latest Joint Proposed Project with Coventry University

1. Investigation into the Global State of Air Quality Monitoring and Measurement, Informing the Centre for Factories of the Future for the Design and Manufacture of a Mobile Air Quality Monitoring Unit. It would be good to form a new team to continue with this project. Samuel and his team did an excellent job last year. His participation in the Blue Sky Seminar

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was also commendable. We would like to nominate him for a C4FF prize to be presented at the next Midland Engineering Dinner event. Participants of the IMechE Design prize would all receive a complimentary dinner ticket, paid for by C4FF) to the next Midland Engineering Dinner as was the case last year.

2. Investigation into the Low-Cost Air Quality Monitoring and Measurement Systems, Informing the Centre for Factories of the Future of Their Accuracy and Precision in Comparison with the Standard Systems Used by the UK Government.

There are two other projects:

3. The project is expected to tackle the climate change actions at the core. Cleaner air necessitates the use of ever increasing greener energy for all key related sectors and industries such energy transformation, transport, agriculture and food as well as manufacturing and built environment (Ziarati, 2010b)<sup>[1]</sup>. Education also plays a major part and hence involving local universities and schools in an important consideration in this proposal.

The project primarily concerns the measuring and monitoring pollutants indoors such as offices, schools and at homes as well as in inside the cars, trucks and buses but the intention is also to use dual air quality sensors for measuring pollutant levels in several pilot outdoor sites such as outside schools with a view to measure and monitor the air quality and find ways to mitigate the adverse impact of poor air quality on our health, both inside and outside. Through stem activities the project will be promoted at primary and secondary schools through the existing networks ([www.inspire-group.org](http://www.inspire-group.org)).

The sensors that will be used will be as accurate and precise as DEFRA ones but a lot cheaper. These sensors are developed by a group of highly competent organisations and individuals and tested in cities such as Oxford. One would be installed next to a DEFRA air quality monitoring station in Coventry for comparison and calibration purposes and two or more in indoor pilot sites. In parallel a set of sensors developed as part of an STEM activity by 16+ students will be installed alongside the more accurate sensor and DEFRA's for comparison purposes and for providing an R&D support to the STEM project for its further development.

While measurements are taking place, the system installed will be configured to a cloud environment and using Artificial Intelligence (AI) and by applying predictive techniques, trends and patterns will be studied. C4FF has established that there is correlation among several key pollutants. The proposed system will be able to capture any data available to populate the air quality grid over a city or an area and predict pollution levels indoor and outdoor and provide feedback on actions that could reduce the level of one or more pollutants.

4. Design and Development of Novel Twin Wind Turbines

The Dual rotor wind turbine will have two rotors, one at the front and one at the rear of the wind turbine. It is expected to offer a higher efficiency and therefore a way forward in renewable energy transformation. In a recent C4FF study states that dual rotor wind

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<sup>[1]</sup> [http://www.marifuture.org/Publications/Articles/RZ\\_Air\\_Quality\\_2020\\_Article.pdf](http://www.marifuture.org/Publications/Articles/RZ_Air_Quality_2020_Article.pdf)



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turbines are superior to single rotor wind turbines and these scientific researchers prove that dual rotor wind turbines can generate 50% more energy (in kWh) in a year. The difference is a remarkable. Since dual rotor wind turbines are fairly new subject there are not any commercial dual rotor wind turbine in the market. The subject is still at the academic level. Bringing the subject of dual rotor wind turbines from academic level to industry level is a challenge and it promises a great deal to offer. This project proposes design of a dual rotor wind turbine, made and tested at Coventry University with C4FF support. In the literature there are several different dual rotor wind turbine configurations. In this project we propose to design and make a mobile 30 kW counter rotating wind turbine. The application for such a device is substantial and can be installed to provide electricity in rural areas worldwide.

### Coventry University Students Project

Three groups of students have been formed to work on the twin blades wind turbine initiated by C4FF. Professor Reza, C4FF Chair has agreed to be the industrial supervisor on this project. the first meeting of the project group started on 1 February 2021 and the next meeting is scheduled on Friday 12<sup>th</sup> February 2021.

### New Projects

Several new project proposals were prepared and submitted on time. Due to confidentiality of these projects no mention of some of these will be made until C4FF is informed of the results. Two of the proposals are EU related and several countries have agreed to participate in these projects. It is important to note that UK can still participate in EU funded projects until the end of the year.

C4FF with support from Surrey University, Bytronics and Coventry University is preparing an R&D project proposal for the Government's consideration.

### Coventry University students-CWAQPC-C4FF Air Quality Project

The project concerns an investigation into Global state of air quality monitoring and measurement informing the design and manufacture of an Air Quality Measurement Station. There are two groups of students. C4FF and CW-AQPC are seen as the clients. The project is student project and is expected to come up with a specification for design of the measuring station. Both groups recently made a presentation to their academic Supervisor, Professor Paul green and Professor Ziarati. So far both groups have made a good progress.

### The UK Government's Response to C4FF Concerns regarding EUREKA and EU Funded Education and Research Programmes

A letter has been sent to the Prime Minister in response to the letter to C4FF by Mr James Duddridge, MP, Parliamentary Undersecretary of State, BIES, asking him to review the two recently awarded EURKA projects and help C4FF to receive the grants expected. In previous letter to Professor Ziarati, the Minister had assured that Government will be supporting EUREKA approved projects and more funds are being allocated to this novel programme. In an earlier letter he reassured Professor Reza Ziarati that the UK will continue to participate in EU annual





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budgets including 2020. This means that the Government will continue to make contributions and get receipts from EU budget programmes under the normal rules. All EU projects and programmes, including Erasmus+, will be financed as foreseen under the current Multiannual Financial Framework (2014-2020). This provides certainty to all beneficiaries of EU programmes, including UK beneficiaries. They will continue to benefit from EU programmes until their closure. C4FF is waiting to hear from Downing Street.

### **The Government's Response to C4FF on Matters Raised by the Centre about Pollution**

In response to C4FF's efforts in helping to improve air quality, the Department for Environment Food and Rural Affairs, Secretary of State, Rt. Hon. George Eustice replied to Professor Ziarati with assurances that the Government is committed to tackling air pollution UK wide and huge progress has already been made in reducing emissions. Air quality has improved significantly; however, it remains one of the most persistent public health challenges of our time. Our understanding of the range and scale of health effects associated with air pollution is constantly improving and Defra continues to have extensive discussions with the Department of Health and Social Care and the research community on the relationship between air quality and health.

### **Government Recent Efforts – Climate Assembly UK: the Path to Net Zero**

In a letter to Professor Ziarati, the Prime Minister, with regards to the advisory and academic panels working towards zero emissions, states that it is testament to your hard work that so many talented individuals and organisations from across the UK are involved.

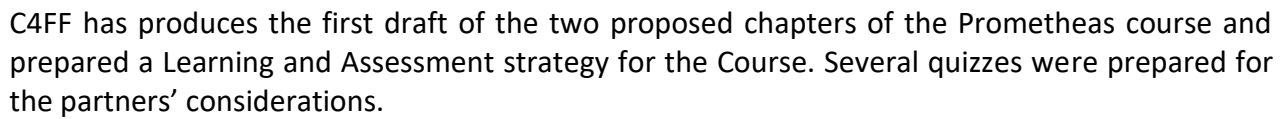
As the UK's first citizens' assembly on climate change prepares to meet for the first time at the end of January, the two panels of stakeholders and researchers helping to ensure the balance and accuracy of the assembly have been announced.

### **Year of Efficient Ship**

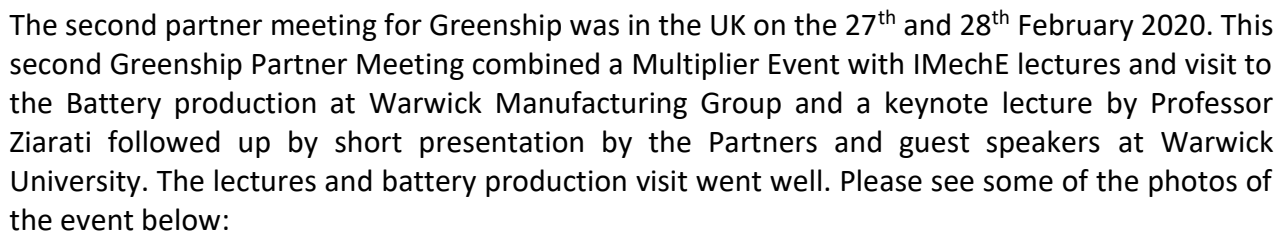
MariFuture has continued with the publication of a Development Paper on efficient ship each month throughout 2019 in support of the 'Year of Efficient Ship' due to the importance of the subject in order to make our members and partners aware of the impact of toxic pollutants from shipping; and the means available to us to reduce the level and amounts of the emissions from ships to a minimum level. In parallel, we will publish the results of our air quality research carried out to investigate the air quality in several cities, towns, and ports focusing mainly in the UK.

### **Recent EU Funded Projects**

**PROMETHEUS** - This proposal was accepted in mid- August 2019 and concerns the mental well-being of ship crew. The project was expected to start in October 2019. The first meeting of the partners was on the 18-19 November 2019 in Athens and was attended by Katie Parker (Research Officer) and Professor Ziarati. The partners have met on regularly and next meeting is planned for 20 February 2021. Partners have also prepare the first Interim Report and this together will be all the necessary documents including the timesheets were sent to Polish NA. the feedback from the Polish NA has been positive.



**GreenShip** - This an Erasmus+ project started in October 2019 when the details were published in MariFuture. The kick-off meeting took place in Barcelona on 9-11 December 2019. Please see the photos of the meeting in action below:





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Figure 1 and 2 (above) is at Warwick University Lecture Theatre with Professor Ziarati and Captain Heikki.



Figure 3 and 4 is of the Lecture Theatre at Warwick University showing Professor German presenting.





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Figure 5 and 6 (above) is of the partner meetings based at Berkeley House.

The Satakunta University of Applied Sciences (SAMK) has organised an online event on Towards Zero Emissions on Thursday 29 October 2020 at 10.00–13.00. For more information click [here](#)

The GreenShip project is progressing as planned but the third partner meeting in Barcelona had to be cancelled due to the Corona Virus. A meeting was arranged on 25<sup>th</sup> June 2020 to report on the initial work carried out regarding IO 5 followed by IO 6. The postponed second Multiplier meeting which was planned for April 2020 delayed several times to see if a face-to-face event is feasible but due to continued Covid restriction eventually was decided to have it virtually in October 2020.

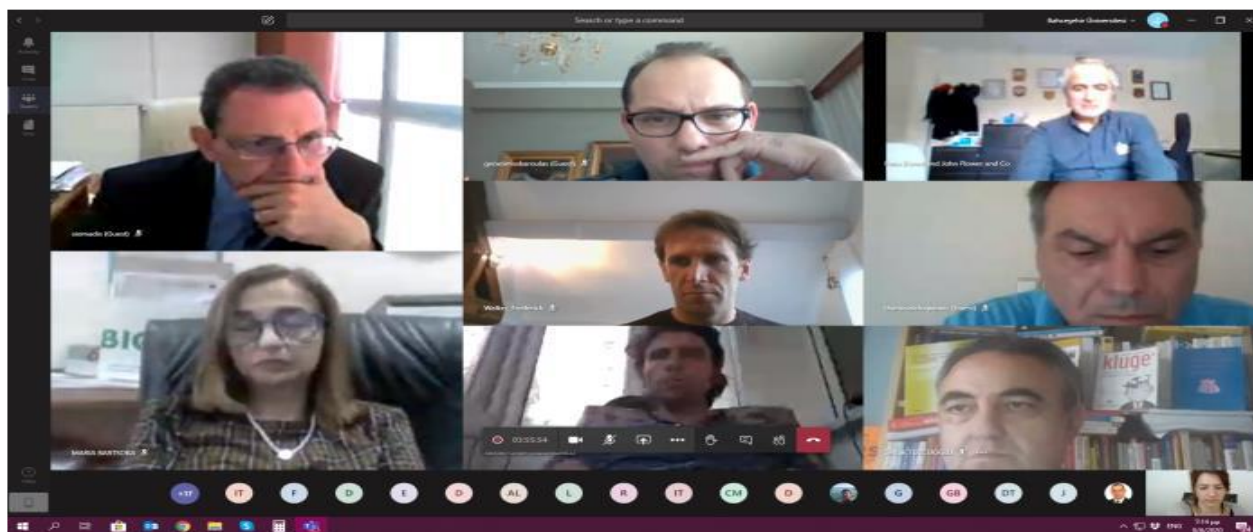
Since the Multiplier event in the UK partners have met on regular basis virtually and recently have been working to prepare the first interim report

### Mentor Project

The last partner meeting took place in Lausanne, Switzerland on 25-26 September 2019. The next meeting was due in June 2020. The partner meeting in June 2020 took place on Tuesday, 9<sup>th</sup> June

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2020 followed by the multiplier event. The press release concerning this even was published earlier in this News bulletin. The event was very successful.



### A snapshot of the virtual Mentor Multiplier Event.

Since the virtual multiplier event there has been several virtual partner meetings as well as several meetings with specific partners involved in IO 5. The IO 5 is now concluded and work on IO 6 is continuing.

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 August 2019 marifuture.org News 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 project meeting of Mentor took place in Kenilworth, 10-11th April 2019. The first workshop of the project was held on 10th April 2019 at Warwick University. C4FF coordinated the meetings during the two-day event and take a lead in the workshop.



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There has been regular meeting of partners working on various IOs and as reported earlier the final conference and partner meeting took place online on 18<sup>th</sup> January 2021. The last few week the focus of the project has been on preparing an IPR and business model.

### PoliUniBus

The project is progressing well. Online meetings were held on Thursday, 28th January 2021 and 5<sup>th</sup> of February 2021 to discuss project progress. Dr Lakhvir Singh from C4FF updated the partners about Richard who has left the University of Liverpool (UoL) and the project. C4FF team is in touch with the UoL. UoL has no objection in principle for C4FF to manage the project although a modus operandi has to be agreed and the UKNA blessing is sought.

However, C4FF will clarify with the UoL about contractual details about the project.

C4FF has appointed Professor Reza Ziarati as a Project Manager and Ms Sherida Walker as Assistant to Professor Reza to support the overall management of project until further notice. If all goes as intended a revised budget and how to share UoL work will be prepared by C4FF with support from UoL.

Partners discuss the progress of the Intellectual Outputs (IOs). IO 1 Needs Analysis Report is progressing well and C4FF has sent its report to partners for review and the expectation is that the partners will review their report at the same time and let C4FF have it back by 15 February 2021.

There has been good progress with regard to IO 2 namely, Development of Challenge-led Methodology. Some of the partners have drafted their report and it is expected that all reports will be forwarded to C4FF by 5th March 2021.

It was reported that good progress has been made on IO5. This has helped in making sure what is produced in IOs 1, 3, 4 and 4 are compatible with the developments intended within IO 5 and later with regard to IO 6.





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### DayTiME Project

The DayTiME project second review meeting was held online on 14 January 2021. The meeting was successful and partners received productive feedback from the review team.

During last semester, C4FF team worked on DayTiME Standardisation activities i.e., reviewing existing standards in Digital Twin and predictive maintenance domain. C4FF team participated in number of online discussions during virtual meetings with partners as well as several internal meetings. C4FF played an active role in project dissemination through MariFuture platform by publishing monthly generic project progress reports.

For more information visit project website at: <http://daytimeproject.com/>

### OPTIMUM

The project is progressing well and nearly at its final stages. The partners continued having weekly progress meeting. OPTIMUM - International Workshop was also organised. C4FF continue its support to the project.

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 on-going 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.

For more information visit project website at: <https://www.optimum-itea3.eu/>

### New Papers for major International conferences

A new paper is being prepared one for GreenShip project for presentation at net IAMU in October 2021. C4FF is also preparing a STEM activity (Fan Boat) for introduction in Primary Schools and an assignment based on GreenShip IO 5 finding for secondary 14+ pupils. The new assignment uses the RZ Multiple-choice confidence testing technique which relates to the confidence assessment which removes the guessing dilemma in answering these types of questions in tests and examinations. The technique has played a major role in re-introduction of multiple-choice questions in e-learning applications.

### Cyber Security

New projects are being developed and a meeting with leading IT specialists have been arranged at C4FF. There will be an announcement on the formation of a Cyber Security team in the near future.

Dr Martin Ziarati