ECG The Association of European Vehicle Logistics

Maritime & Ports Working Group

Webinar, 6 July 2021

14:00-15:30 CEST

General introduction to the meeting

Oliver Fuhljahn, Rhenus Cuxport

Chairman of the M&P WG

Agenda

- Approval of the minutes from the last meeting
- Handling AFVs in maritime transport: **Mike Sturgeon**, ECG
- Energy Efficiency Existing Ship Index (EEXI): **Dario Bocchetti**, Grimaldi
- Emissions reporting: **Andreea Serbu**, ECG
- Coffee break – Networking
- Port of Sète introduction: **Arnaud Rieutort**, Port of Sète
  - Dates for meeting at Port of Sète in November
- Update on ECG activities: **Mike Sturgeon**, ECG
- Round table
  - COVID
  - Semiconductors shortage
  - Crew change crisis
- Update on next meeting: **Serena Scognamiglio**, ECG
- 15:30 Meeting close
- **15:30 – 16:00 Networking**

Approval of the minutes from the last meeting on 22 April 2021

Handling AFVs in Maritime Transport

Mike Sturgeon

Background

- ECG Members and some OEMs expressed the need for guidelines
- Amongst the main perceived issues: fire risk (prevention and extinguishing)
- LASH FIRE
  - 4-year project
  - 2019 – 2023
  - regulatory proposals will be assessed and validated according to the IMO Formal Safety Assessment methodology

Actions

- **EUROPEAN COMMISSION**
  DIRECTORATE-GENERAL FOR MOBILITY AND TRANSPORT
  Directorate D – WATERBORNE - D.2 - Maritime safety
  Passenger Ship Safety Expert Sub-group

- **EMSA (European Maritime Safety Agency)**
  - "APVs" Guidance WG
  - Different stakeholders
  - ECG participates in the WG

Objectives

Short term

- European regulatory framework

Long term

- International regulatory framework IMO SOLAS
  - Can only be updated in 2028

APVs Informal WG update – 27 April

Topics discussed:

- The Guidelines will be separated in separate parts between Ro-Pax and non-Ro-Pax ships.
- For the 1st version of the guidelines the focus should be on the issues of higher priority:
  - Charging of EVs;
  - Identification of drivetrain in combination with specific measures;
  - Firefighting
  - Risk assessment
- It would be beneficial to get more direct input from researchers:
  - RISE presentation
  - Research papers to be shared on Teams

RISE Presentation – EVs myth busting

- Lithium-ion batteries should be extinguished with a Class D (metal)fire – extinguisher: **WRONG!**
  - **Rechargeable Li-on can be suppressed with water.**
- Thermal runaway in a vehicle can be extinguished with a massive amount of water: **WRONG!**
  - **An initiated thermal runaway cannot be extinguished.**
- You risk electrocution if you attempt to extinguish a battery fire with water: **WRONG!**
  - **Cut the power or disconnect the cable if vehicle is charging.**
- The Battery Management System removes the risk of thermal runaway: **WRONG!**
  - **The BMS typically measures voltage at cell level, total voltage and current, temperature at module level.**

RISE Presentation – Gas Powered Vehicles

CNG tank tests

- CNG tanks are according to UNECE R.110 tested against 1.65 m long fire
- Thermally activated Pressure Relief Device (TPRD) should release all content at 110 °C ± 10 °C => Jetflame
- There's a concern whether a local fire can cause a pressure vessel explosion?

Result for steel tanks

Test	Tank	Initial CNG pressure (bar)	Fire	Outcome of cylinder
1	Steel (blue)	170	Narrow pan	Jet flame from TPRD valve
3	Steel (red)	85	Small pan	Jet flame from TPRD valve
5	Steel (red)	165	Small pan	Jet flame from TPRD valve
7	Steel (red)	170	Small pan	Jet flame from TPRD valve

Result Composite tanks

Test	Tank	Initial CNG pressure (bar)	Fire	Outcome of cylinder
2	Composite	150	Wide pan	Jet flame. Vapour cloud explosion after rifle shooting (no pressure measurements)
4	Composite	50	Small pan	Jet flame from TPRD valve
6	Composite	95	Small pan	Fire runs out of fuel. Tank is punctured by rifle shooting
8	Composite	150	Two small pans	Pressure vessel explosion

The full RISE presentation and relative YouTube video will be circulated to those who are interested!

VOLKSWAGEN

Effectiveness of the CO2 fixed firefighting system on vessels for fire containment of inflamed electric vehicles

Dear Sir or Madam,

since the automobile industry is moving towards more sustainability and increased the production of electric vehicles, the worldwide transportation expands as well.
Therefore it is necessary to also dispute the topic of fire protection further. For this the entire logistic chain from the end of production up to the delivery to the customer has to be considered.

According to our understanding there were uncertainties regarding the transport of electric vehicles on ocean-going vessels due to the different fire behaviours of electric vehicles compared to conventional vehicles.
The argumentation for these were reports and opinions of experts stating that CO_2 is not a suitable fire extinguishing agent for inflamed electric vehicles, since the thermal runaway of a battery cannot be stopped.
However, CO_2 is used on the majority of the seagoing vessels as an extinguishing agent of the fixed firefighting system.

Since there have been no further studies on this topic, we conducted examinations to obtain information.

Our thesis was that – despite a further thermal runaway - CO_2 douses the solid-substance fire and prevent the spread of fire.

These experiments were independently and scientifically monitored.

It was proven for this experiment that solid-substance fires can be extinguished by the use of CO_2 and a spread of fire could be prevented. The thermal runaway had no negative effect on the adjacent vehicles.

Hence from our point of view electric vehicles do not represent an increased risk in transportation under the conditions shown in the experiment. Therefore we would kindly ask you to re-evaluate the suitability of the CO_2 extinguishing technology already installed on vessels in the event of fire of vehicles with battery-electric drivetrain.
If you have any further questions concerning this topic, please do not hesitate to contact us.

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Yours sincerely,

i. V. O. Bronder

i. V. J. Mösli

VOLKSWAGEN & EMSA WG

- **ECG** contacted captain **Captain Stadtaus** and has now connected him with **EMSA** who will involve him in the working group

- Next meeting will be in September

Energy Efficiency Existing Ship Index (EEXI)

Dario Bocchetti, Grimaldi

GRIMALDI GROUP

ENERGY EFFICIENCY EXISTING SHIP INDEX

DARIO BOCCHETTI – GRIMALDI GROUP

06 JULY 2021

TECHNICAL MEASURES
Energy Efficiency Existing Ship Index (EEXI)

EEXI has been approved for **all** existing ships necessary to maintain licence to operate

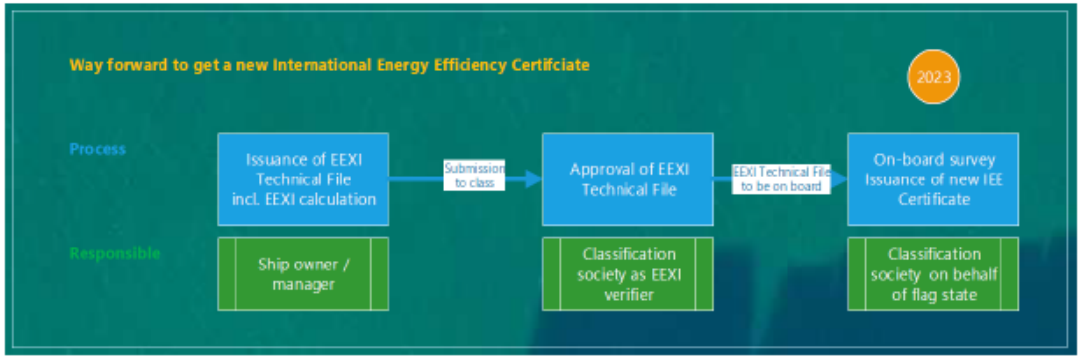
$$\text{Attained EEXI} \leq \text{Required EEXI} = (1\text{-}Y/100) \times \text{EEDI Reference line value}$$

EEXI value achieved by an individual ship

max. EEXI allowed for the specific ship type and size

Ship type	Reduction factor (Y)	Equivalent to Required EEDI Phase
Ro-ro cargo ship	5	1
Ro-ro cargo ship (vehicle carrier)	15	2
Ro-ro passenger ship	5	1

- The date of entry into force has been decided at MEPC 76 (10-17 June 2021), 1 November 2022;
- To be verified at the first annual, intermediate or renewal IAPP survey after 1 January 2023;
- The formula of Attained EEXI is similar to the one used for the attained EEDI and it has been finalized at MEPC 76 in June 2021;
- Such index EEXI is = EEDI per ships in service;



Attained EEXI Calculation
key decisions regarding EEXI Guidelines

main engine(s) CO2 + aux. engines CO2 + (CO2 Shaft motor − AE eff. devices) − ME efficiency technology

$$\frac{\left(\prod_{j=1}^{n} f_j\right)\left(\sum_{i=1}^{nME} P_{ME(i)} \cdot C_{FME(i)} \cdot SFC_{ME(i)}\right) + \left(P_{AE} \cdot C_{FAE} \cdot SFC_{AE}*\right) + \left(\left(\prod_{j=1}^{n} f_j \cdot \sum_{i=1}^{nPTI} P_{PTI(i)} - \sum_{i=1}^{neff} f_{eff(i)} \cdot P_{AEeff(i)}\right) C_{FAE} \cdot SFC_{AE}\right) - \left(\sum_{i=1}^{neff} f_{eff(i)} \cdot P_{eff(i)} \cdot C_{FME} \cdot SFC_{ME}**\right)}{f_i \cdot f_c \cdot f_i \cdot Capacity \cdot f_w \cdot V_{ref} \cdot f_m}$$

- MEPC 76 adopted the following EEXI Guidelines:

  - Guidelines on method of calculation of the attained Energy Efficiency Existing Ship Index (EEXI);

  - Guidelines on survey and certification of the Energy Efficiency Existing Ship Index (EEXI);

  - Guidelines on the shaft/engine power limitation system to comply with EEXI requirements.

- Key decisions:

  - in case an EPL is installed, the engine power in the EEXI calculation (PME) should be 83% of MCR_{lim} or 75% of MCR, whichever is lower;

  - additional capacity correction factor for ro-ro cargo ship (vehicle carrier);

  - numerical calculations as an alternative to tank tests for Vref calculation.

↓

In service speed measurements will be further discussed and may be included at later stage

EEXI Calculation

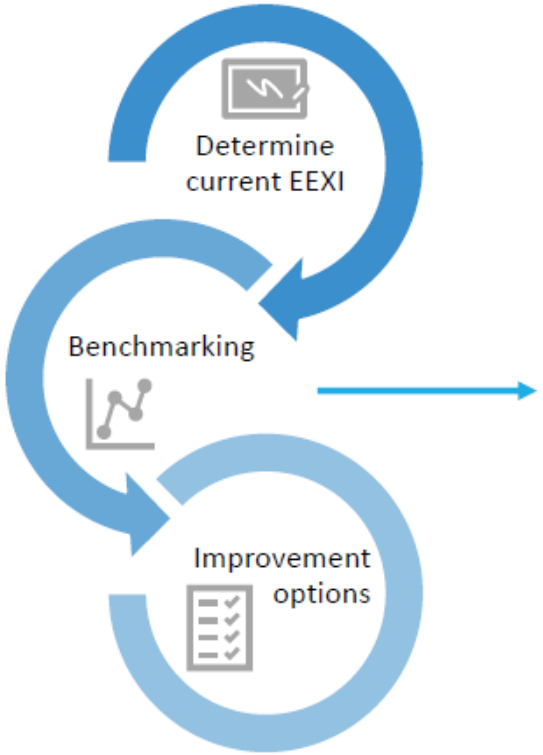
EEXI focus for Vehicle carrier

- MEPC 76 adopted the following :

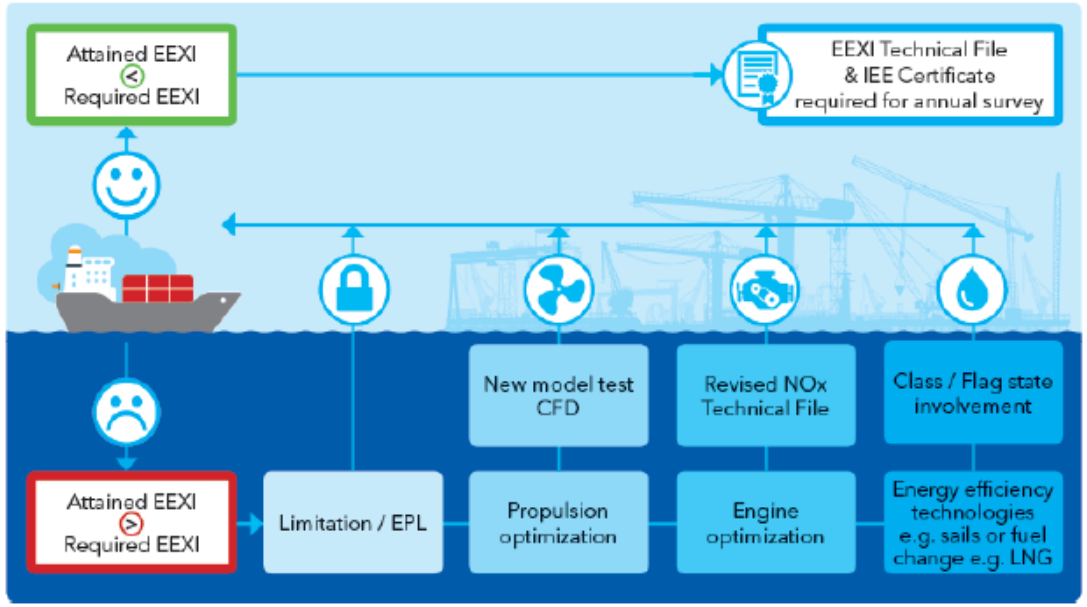
  - additional capacity correction factor for ro-ro cargo ship (vehicle carrier) (MEPC76/7/35)

$$f_{c,VEHICLE} = \left(\frac{(DWT/GT)}{0.35}\right)^{-0,8} \quad for \quad \frac{DWT}{GT} < 0.35$$

EEXI Assessment & Verification
for both EEDI-certified ships and Pre-EEDI ships



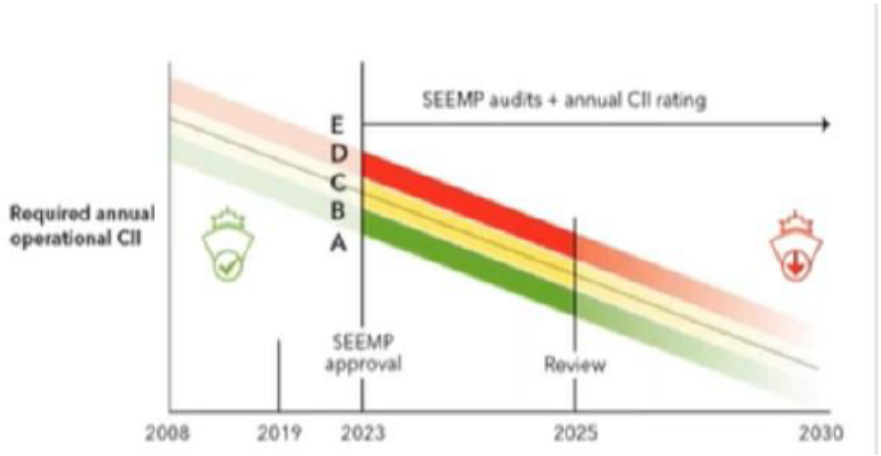
Understanding where vessel's attained EEXI is compared to the reference line and the required EEXI, can help to determine the roadmap and timeline for possible future Improvement options.



CII
Carbon Intensity Indicator

CII has been approved for **all** ships with GT > 5000

$$\text{Annual Attained CII} = \frac{CO2\ emissions}{transport\ work} \leq \text{Required CII} = (1\text{-}Y/100) \times \text{CII Reference line value}$$



- During MEPC 76 (10-17 June 2021), technical guidelines for CII were adopted;
- Transport work will be calculated using the indexes:
  - AER = DWT x distance for roro cargo ships
  - cgDIST = GT x distance for for cruise, roro-cargo ships (vehicle carriers) and ro-ro passenger ships
- Key decision was the establishment of reduction factors for the CII and rating boundaries; Ships rated D for 3 consecutive years by 2025, or just one E rating, will need corrective action to be included in SEEMP

Year	Reduction from 2019 reference line (Y)
2023	5%
2024	7%
2025	9%
2026	11%
2027 – 2030	To be decided

Emissions reporting

Andreea Serbu, ECG

Standardisation of emissions reporting in FVL

- Main topic of the Sustainability WG since the end of 2019 - Chaired by Mats Eriksson (Axess Logistics) & Vincent Benoit (Stellantis)
- Strategic objective of ECG for 2021

https://ecgassociation.eu/activities/roadmap-2021/

At the latest meeting in April…

Standardisation of emissions reporting in FVL is needed for all modes of transport

For Ro-Ro shipping Clean Cargo is the only potential solution

- **ECG cannot fully support Clean Cargo until**
  - The methodology works for all vessel types
  - All (or at least most) OEMs support it

ECG is in contact with Clean Cargo representatives and hopes that they will be able to solve internal issues and produce a methodology which works for all Members

Updates

- Clean Cargo confirmed at the end of May they will continue working on the methodology and try to get most of the OEMs on board

Aug. 2021

- ECG is looking at EcoTransIT as a potential solution:
  - GLEC compliant and developed by scientific neutral institutes
  - It is already used by some ECG Members
  - They do not have a methodology for Ro-Ro but they are willing to develop it

https://www.ecotransit.org/en/

Next steps?

- ECG will continue discussions with both Clean Cargo and EcoTransIT
- Any updates will be communicated in due course

Port of Sète introduction

Arnaud Rieutort, Port of Sète

La Région Occitanie Pyrénées - Méditerranée

Port de Sète Sud de France

Port of Sète

Maritime & Ports Working Group

06 JULY 2021

LOCATION

- 2nd deepsea port in the French Med *(13,5m draft)*
- 1st Port for passenger traffic with Morocco
- 2nd decentralized port in France *(after Calais)*
- Intermodal connections to Northern Europe / rail and inland waterways

MARITIME GATEWAY TO OCCITANIE

2nd largest region in France

PORT CARGO FLOWS

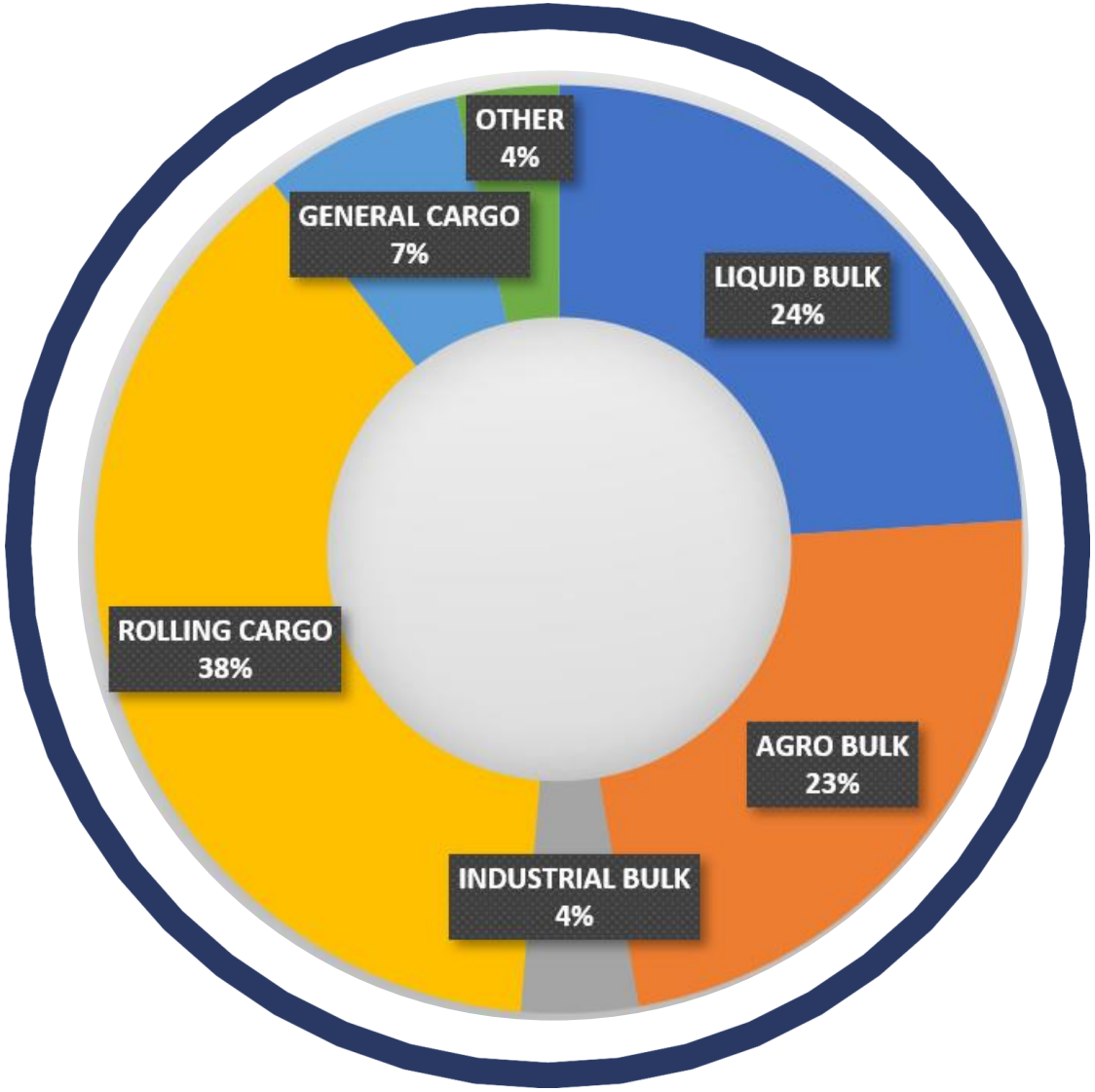
4.2 M
tons (-10% in 2020)

260,000
Pax per year

1,000
vessels per year

300
block trains

149
barges



REGULAR LINES

DFDS

Weekly ports :
Yalova
Agent : DFDS

GNV

Weekly ports :
Tangiers-Med, Nador
Agent : Feron, GNV

AGL

Weekly ports :
Sète - Algiers- Nouakchott
Agent : AGL

GRIMALDI

Monthly ports : Genoa, Livorno, Salerno, Casablanca, Dakar, Abidjan, Lomé, Cotonou, Lagos, Douala, Tema
Agent : Navitrans

NEPTUNES

Ports desservis :
Borusan, Constanza
Agent : Marmedsa

BALEARIA

Weekly ports :
Nador
Agent :Delom

PORT FACILITIES

5 docks (8mup to 13,5m draft)

5 km of berthing lines

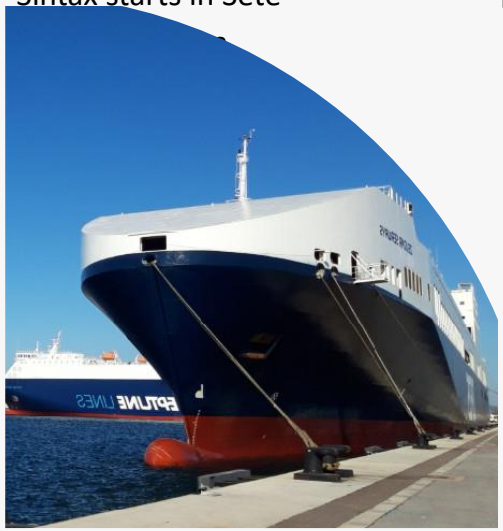
16 additional ha of logistics areas

TIMELINE/CAR TRAFFICS

2007

Transfert State-Region

Sintax starts in Sète



2015

Quay H delivery

New traffics with Ford
(+ 30,000 veh)

2017
Sintax take over by CAT

2019

Record year

212 maritime calls with additional calls with Corsina Linea (Rental veh)

2021

Extension

18 additional hectares for automotive flows

AUTOMOTIVE PORT FACILITIES

22

HECTARES
SECURED AREA
24/7

5,000

M² WORKSHOP

8,000

VEHICULES
STORAGE CAPACITY

76,500

IMPORTED CARS IN
2020

17,300

PREPARED CARS

16,000

VEHICULES
STORAGE CAPACITY
IN THE FUTURE

AUTOMOTIVE PORT FACILITIES

22 ha in 2020
36 ha in 2023

AUTOMOTIVE PORT FACILITIES

PROJECTS OVERVIEWS

- Extension Ziffmar : + 18 ha : 2022
- New Multimodal Platform 6 ha : 2021
- Cold Ironing : 2023
- Future quay I : 2024
- New Maritime Station : 2024

CAR CARRIER LINES

Stevedore : Société Portuaire Sétoise
Maritime calls :
-2019 : 212 calls
-2020 : 114 calls
-2021 : 58 calls

EUKOR - HYUNDAI

EUKOR - Mornig Calm
Capacité : 6500 véhs

NEPTUNE LINES - FORD & RENAULT

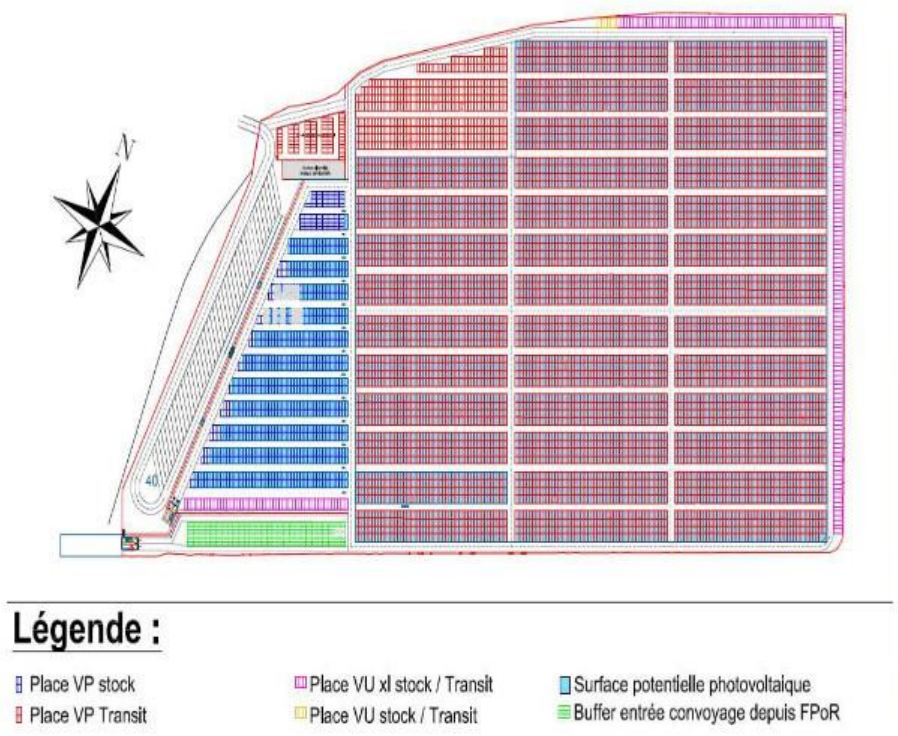

NEPTUNE – Lake Taupo
Capacité : 4900 véhs

NEW MULTIMODAL PLATFORM

6 ha to handle block trains
Delivery : Sept 2021
Investments : 10 ME

NEW EXTENSION

18 additional hectares
8,000 slots available with photovoltaic pannels
Electrical plugs
Investments : 6 ME



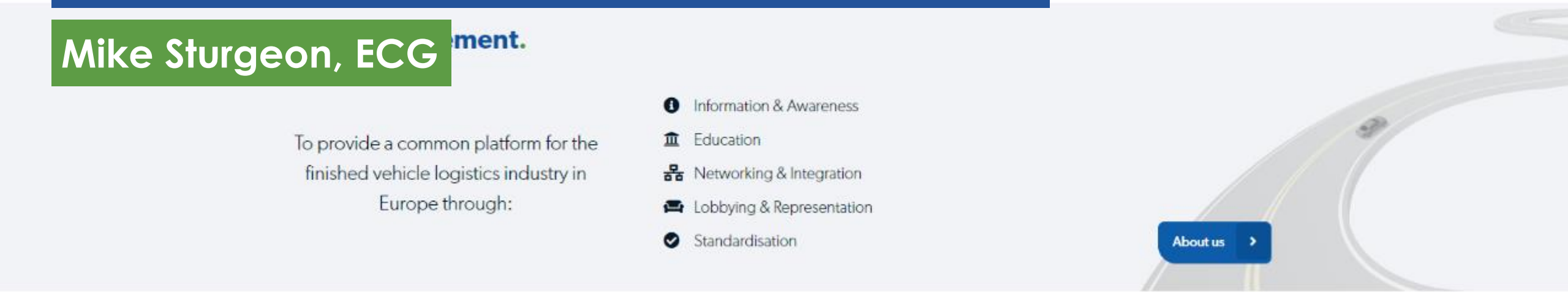
La Région Occitanie Pyrénées - Méditerranée

Port de Sète Sud de France

Thank you and save the date for the next physical meeting in Sète.

Update on ECG Activities

Mike Sturgeon, ECG



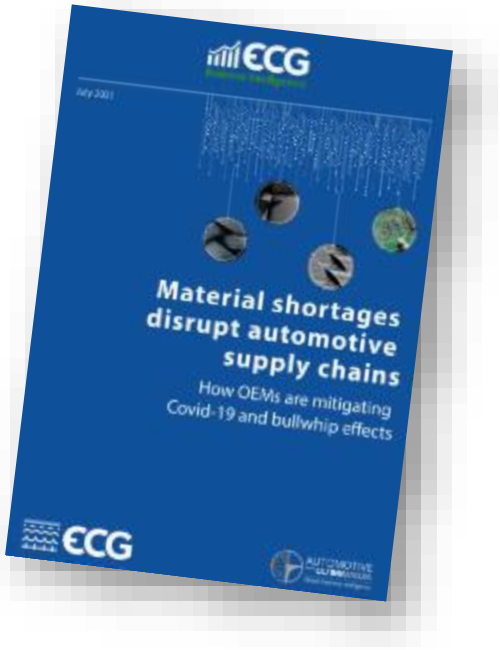
ECG activity update

- ECG Business Intelligence
- Quality
- Digitalisation
- ECG Academy
- ECG Negotiation management course
- ECG Conference 14-15 October 2021

New ECG Business Intelligence report

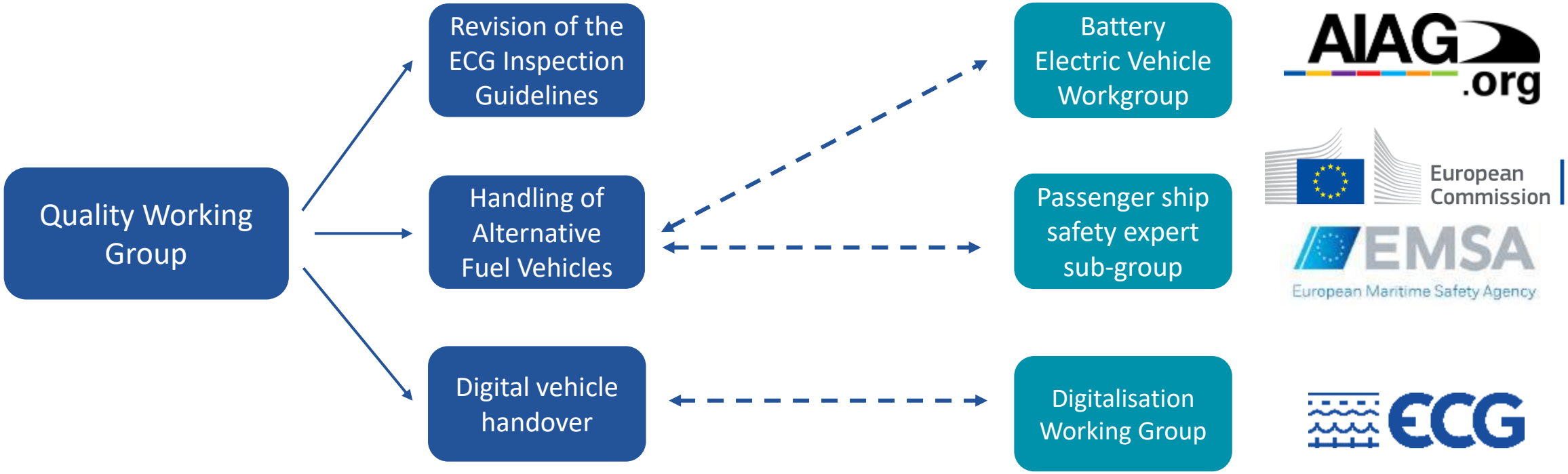
ECG Business Intelligence

- Next report focuses on material supply shortages
- Out now



We would welcome any **ideas** from members for **future topics**!

Quality WG (QWG) structure



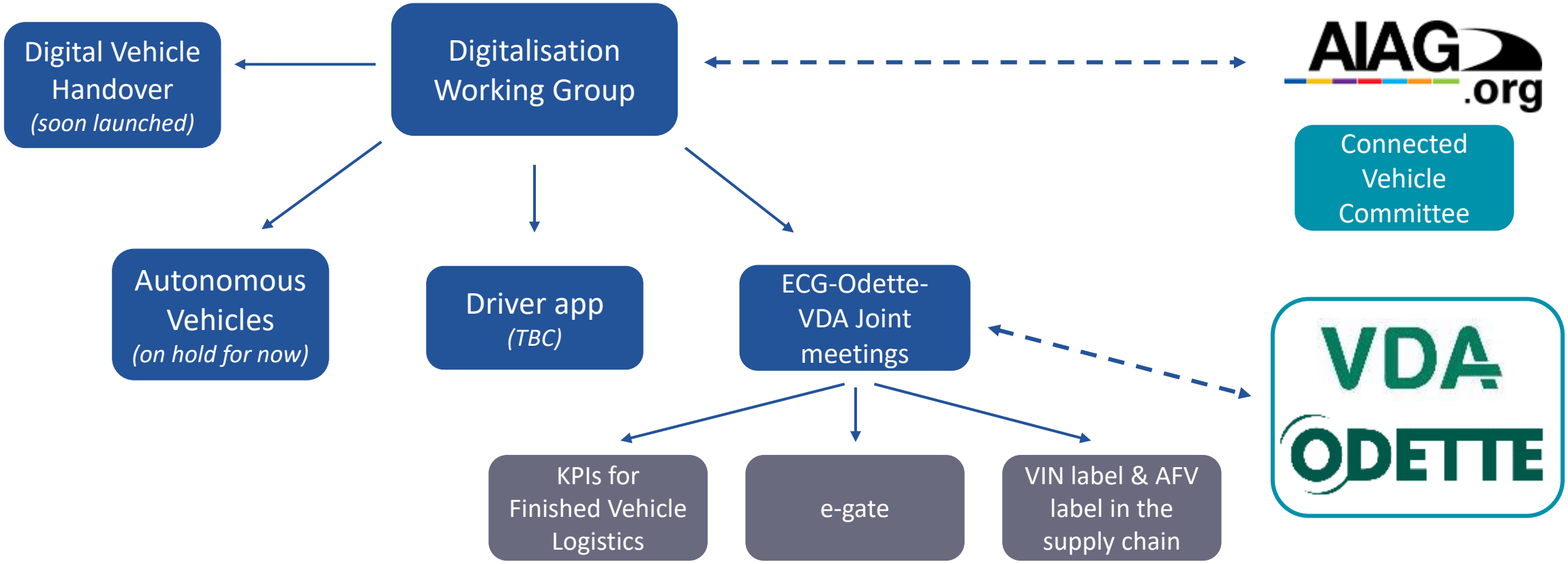
Documents available:

- Operations Quality Manuals and their translations
- Inspection Guidelines
- Full Body Covers in the supply chain
- FVL Transport Damage Reporting (a.k.a. M-22)

Quality Working Group

- Last webinar on 4 May
- Next webinar on 29 September
- Hope to have a physical meeting later this year!
- Current topics include:
  - Electric Vehicles and the possible standardisation of the handling and charging requirements across vehicle brands – *ongoing*
  - Revision of the ECG Inspection Guidelines – *ongoing*
  - Standardisation of the digital vehicle handover procedures (photo-taking and damage scanning applications) – ongoing

Digitalisation WG (DWG) structure



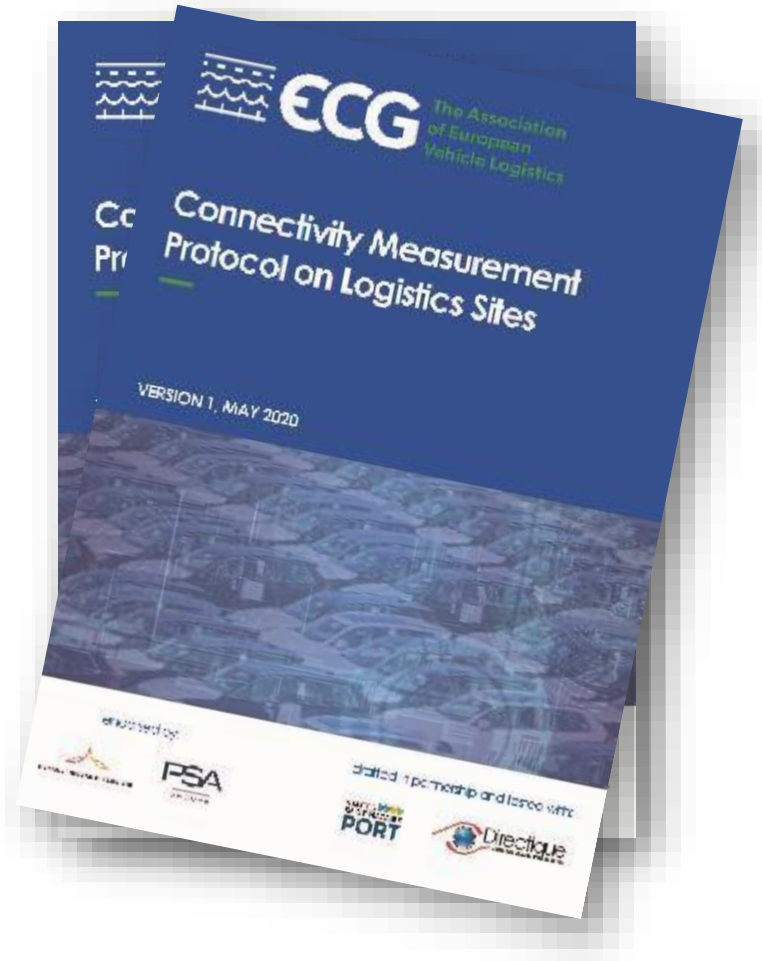
Documents available:

- Digitalisation of Finished Vehicle Logistics
- e-gate
- Connectivity of logistics sites
- VIN labels in vehicle distribution processes

Digitalisation Working Group

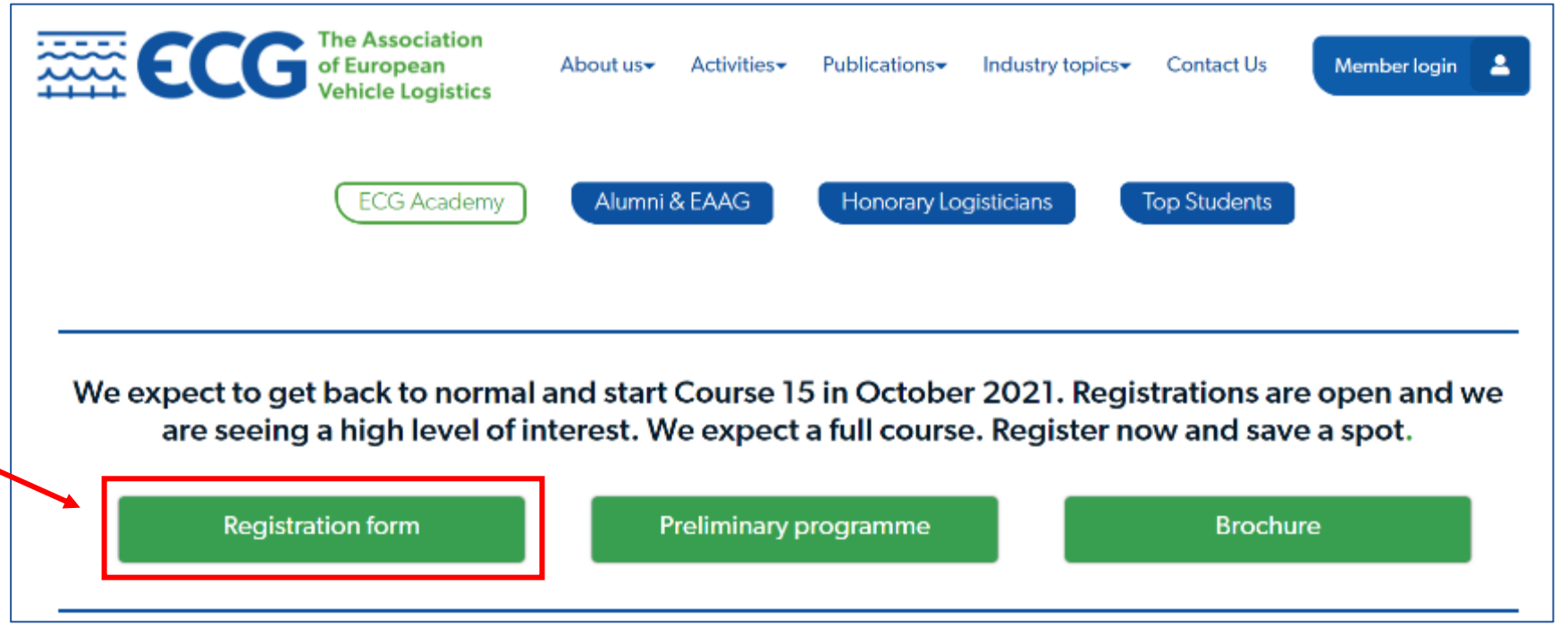
- Joint project with the VDA and Odette on the digitalisation of FVL messages finished in 2020
- **There is a great intent to continue the successful co-operation!**
- New joint topics include VIN labels in the supply chain and KPIs for FVL

DWG – latest documents



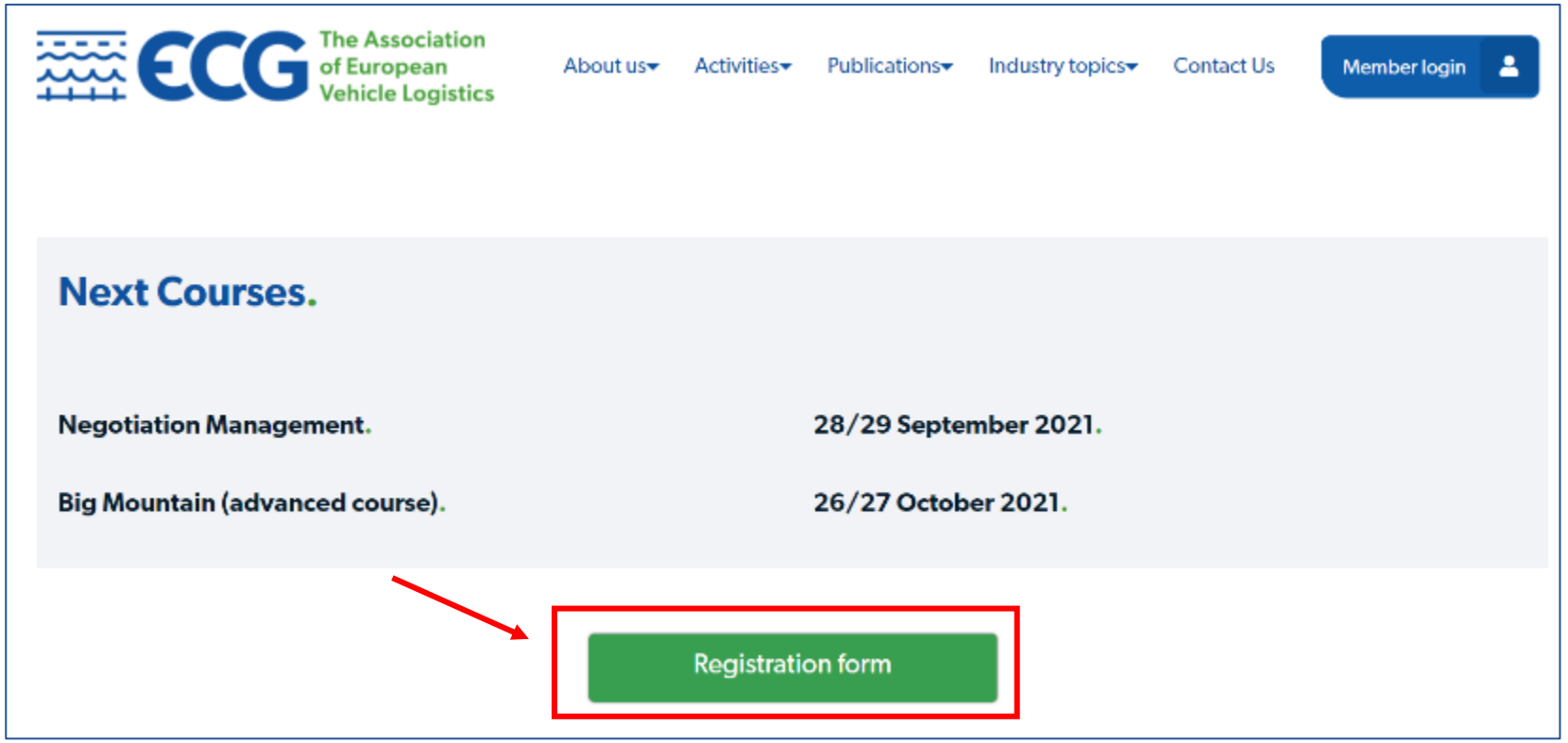
ECG Academy

- Certificate in **Automobile Logistics Management**
- **Course 15** will start in October 2021
- Registrations are open!



ECG Negotiation Management course

- Next course: **28/29 September** 2021
- **Registrations are open**!



Negotiation Academy Potsdam

ECG The Association of European Vehicle Logistics

ECG CONFERENCE
14-15 OCTOBER 2021

REGISTRATIONS ARE OPEN

ECG The Association of European Vehicle Logistics

Round table

COVID

Semiconductors shortage

Crew change crisis

Update on next meeting

- November 2021 – Port of Sète
- **Can we agree a date?**

ECG The Association of European Vehicle Logistics

Thank you!

Any questions?