



ENSEMBLE

EUROPEAN COMMISSION

HORIZON 2020
H2020-ART-2016-2017/H2020-ART-2017-Two-Stages
GA No. 769115

ENSEMBLE

ENabling SafE Multi-Brand pLatooning for Europe

Deliverable No.	D6.8	
Deliverable Title	MoU: Memorandum of Understanding	
Dissemination level	Public	
Written By	Frans Daems, Ertico	27-03-2022
	Odile Arbeit de Chalendar, Univ Gustave Eiffel	
Checked by	Milica Zizic, Ertico	29-03-2022
Approved by	Marika Hoedemaeker, TNO	31-03-2022

StatusFinal, SUBMITTED, UNDER APPROVAL BY EC

Please refer to this document as:

Daems, F. & Arbeit de Chalendar, O. (2022). *MoU Memorandum of Understanding*. D6.8 of H2020 project ENSEMBLE, (www.platooningensemble.eu)

Disclaimer:

ENSEMBLE is co-funded by the European Commission, DG Research and Innovation, in the HORIZON 2020 Programme. The contents of this publication is the sole responsibility of the project partners involved in the present activity and do not necessarily represent the view of the European Commission and its services nor of any of the other consortium partners.

TABLE OF CONTENTS

Revision history	5
1. EXECUTIVE SUMMARY	8
1.1. Context	8
1.2. Project scope	8
1.3. Abstract of this Deliverable	8
2. INTRODUCTION	9
2.1. Background	9
2.1.1. ENSEMBLE community engagement	9
2.1.2. ETPC inputs	10
2.2. Aim	11
2.3. Structure of this report	11
3. FOLLOWED PROCESS AND METHODOLOGY	12
3.1. The starting point	12
3.2. Kick-off at ETPC meeting	12
3.3. Initial Process followed	12
3.4. Applied methodology	12
3.5. Service dominant business radar methodology	13
4. INTERVIEWS	15
4.1. ACEA	15
4.2. CEDR	15
4.3. CLEPA	15
4.4. IRU	15
5. EVALUATION OF THE INTERVIEWS	16
6. FIRST JOINED AMBASSADORS' MEETING 26/1/2022	17
7. FURTHER STEPS FOLLOWED TO COME TO THE SIGNATURE	18
8. ANALYSIS AND PROGRESSION ON THE MOU	19
8.1. Further progression options on the MOU	19
9. CONCLUSION	20
9.1. On the followed MOU process	20
9.2. On the achieved MOU state	20



10. BIBLIOGRAPHY

21

Revision history

Version	Date	Author	Summary of changes	Status
1.0	02-02-2022	ir Frank Daems ERTICO	First outline	Prepared
2.0	28-03-2022	Odile Arbeit de Chalendar	Completed	For review
3.0	31-03-2022	Marika Hoedemaeker	Coordinator review	Approved



FIGURES

Figure 1 Generic radar for co-creation

14

TABLES

No table of figures entries found.



1. EXECUTIVE SUMMARY

1.1. Context

Platooning technology has made significant advances in the last decade, but to achieve the next step towards deployment of truck platooning, an integral multi-brand approach is required. Aiming for Europe-wide deployment of platooning, 'multi-brand' solutions are paramount. It is the ambition of ENSEMBLE to realise pre-standards for interoperability between trucks, platoons, and logistics solution providers, to speed up actual market take-up of (sub)system development and implementation and to enable harmonization of legal frameworks in the member states.

1.2. Project scope

The main goal of the ENSEMBLE project is to pave the way for the adoption of multi-brand truck platooning in Europe in order to improve fuel economy, traffic safety and throughput. This has been demonstrated by driving up to seven differently branded trucks in one (or more) platoon(s) under real-world traffic conditions across national borders. During the years, the project goals were:

Year 1: setting the specifications and developing a reference design with acceptance criteria.

Year 2 and 3: implementing this reference design on the OEM's trucks as well as performing impact assessments with several criteria.

Year 4: focus on testing the multi-brand platoons on test tracks and international public roads.

The technical results will be evaluated against the initial requirements. Also, the impact on fuel consumption, drivers and other road users will be established. In the end, all activities within the project aim to accelerate the deployment of multi-brand truck platooning in Europe.

1.3. Abstract of this Deliverable

This deliverable describes the process and the applied methodology to prepare an MOU (Memo of Understanding) between the stakeholders involved in platooning.

The expectation was raised that the MOU proposal would be able to be signed by the stakeholders at the ENSEMBLE final event 17/3/2022. This document provides some analysis on the reason why this did not happen.

Finally, the document will make some recommendations on how a future MOU can still be established and makes recommendations for after project activities.

2. INTRODUCTION

2.1. Background

2.1.1. ENSEMBLE community engagement

The MOU should support a wider community in the concept of truck platooning across Europe. It is the follow up on the Letter of Intent signed by the ENSEMBLE partners and relevant road authorities for the execution of the ENSEMBLE project and its exploitation. (See deliverable D6.7 ENSEMBLE LOI)

The second community engagement is the creation of the MoU, meant to be signed by a large amount of ETPC stakeholders to guarantee the fast adoption of Multi-Brand Truck Platooning technologies, once they are available on the market.

This document tries to give an answer to these expectations, and I welcome the reader to give their vision and feedback on the material presented.

Initially we identify a process of 3 workshops to come to the MOU text agreements:

Workshop 1: Q1 2020:

- a) Information sharing to ensure that everybody gets the same background: Status ENSEMBLE, ENSEMBLE defined platooning levels, Identified Benefits of platooning*
- b) Workshop on the covenant process to follow, expectations, roadblocks, objectives, timing, each parties preparation,*

Workshop 2: Q3 2020:

- a) Recap*
- b) Workshop identified the win-win relation between the involved parties*
- c) Formulation the basis of the first business concept, Intermediate work on the proposal for the win-win business concept (covenant proposal) between all related parties (document).*

Workshop 3: Q4 2020:

- a) Open discussion on the business concept (document created)*
- b) Final remarks, negotiations,*

During the execution, the process was altered, mainly due to COVID pandemic influence. This document will outline the new followed alternative process.



2.1.2. ETPC inputs

The European Truck Platooning Challenge (ETPC) initiative was launched early 2016 ¹under the Dutch Presidency of the EU. A large demo was organised in some EU Member States, with cross-border trips of six mono-brand platoons converging to Rotterdam in the Netherlands (ETPC, 2016). The ETPC opened a long-term vision for the management of heavy goods vehicles on major European corridors. It offers a unique opportunity for manufacturers and OEMs to develop autonomous and intelligent heavy vehicles, and for infrastructure managers to experiment the concept on a large scale, to formulate conditions for its safe and acceptable implementation, particularly for other users and transport companies, and to assess potential benefits. The ETPC promotes cooperation between manufacturers and road authorities. The challenge offers a platform for all partners, industrials, OEMs, logisticians, research institutes and public authorities to strengthen their mutual efforts. The objective is now to allow platoons made up of vehicles of different brands to circulate safely in the EU. An Amsterdam Declaration was signed by the EU Transport Ministers to join their efforts developing autonomous and connected vehicles. A high-level group is continuing this work in relation with ETPC.

The network consists of six supporting associations (steering members): European Automobile Manufacturers' Association (ACEA), Conference of European Road Directors (CEDR), European Association of Automotive Suppliers (CLEPA), Association of European Vehicle and Driver Registration Authorities (EReg), European Shippers' Council (ESC) and International Road Union (IRU). The 6 European OEMs (DAF, Daimler, Iveco, MAN, Scania and Volvo) and research organizations (TNO, University of Amsterdam, Université Gustave Eiffel (UGE) are members, as well as governmental bodies and other stakeholders from the transport sector. The network comprises about 150 people. The ETPC is co-chaired by ERTICO and UGE and is referred as the ETPC management in this document.

The main objectives of ETPC are further developing missions and roadmap:

- To promote truck platooning to provide safer, more efficient freight transport, creating new jobs and economic growth in the traffic and transport sector.
- Fostering cooperation between states, automotive industry, and other related sectors to deploy commercially viable truck platooning services.
- Providing a platform for cross-stakeholder dialogue, defining the necessary technical, regulatory and organisational framework.
- Ensuring a coherent, continuous and consistent way forward.

¹<https://www.acea.auto/fact/what-is-the-european-truck-platooning-challenge/>;
<https://ertico.partnerwise.be/what-is-truck-platooning/>

ETPC is raising awareness on benefits of potential truck platooning towards the European Parliament in 2017. ETPC is member of the ENSEMBLE project (section WP6.2) supporting the project throughout its member's expertise, representativeness incl. public authorities and expectations, in his capacity of entering in dialogue with the project's members and paves the way be to be able to demonstrate the result of ENSEMBLE expected in 2021.

2.2. Aim

The aim of this document is to report on the process and the methodology followed to engage the ETPC ambassadors to sign the MOU at the final event of the ENSEMBLE project on 17 March 2022.

Finally, it makes recommendations for after project actions.

2.3. Structure of this report

Chapter 3 describes the process that was followed to prepare the MOU. Chapter 4 reports on the several interactions with the stakeholders to gather their inputs and Chapter 5 makes an evaluation of these interviews and applies the business radar analysis methodology to refine and map the 'understanding' between the involved stakeholders. It outlines the process how to come to the first proposed MOU texts. Chapter 6 reports on the first MOU alignment meeting with the stakeholders and the agreement on the process to be followed.

Chapter 7 outlines the evolution in the proposed MOU texts.

Chapter 8 outlines the analyses constraints made by the stakeholders and formulates potential mitigations.

3. FOLLOWED PROCESS AND METHODOLOGY

3.1. The starting point

The MOU was identified in the task T6.2.2 of the original ENSEMBLE H2020 project proposal, as agreed in the project Grand Agreement. The action to come to a renewed MOU is a logical consequence of the ETPC ambassadors' 'agreement' in 2016 on the MOU phrased as part of the Dutch ETPC platooning demonstration. This original MOU from 2016 is available as a copy on demand from the authors.

The MOU is also 'a second step', after the LOI action taken in the ENSEMBLE project, reported by Hajredini (2019) in ENSEMBLE deliverable D6.7.

3.2. Kick-off at ETPC meeting

The MOU action was announced in several ETPC meetings and events. During the ETPC meeting.17/3/2020, a dedicated MOU workshop was organised as a part of the total agenda where the stakeholders (ETPC ambassadors) were invited.

The agenda and report of this meeting are published in (Arbeit de Chalendar & Daems, 2020. ENSEMBLE D6.6).

The main conclusions are repeated here again:

- The meeting did not reveal a practical methodology to get this idea forward.
- The idea was that the ETPC management will contact each of the ETPC founding members to discuss how this process should be organised.

3.3. Initial Process followed

Based on the outcome of the ETPC 17/3/2020 workshop, various attempts were made to contact each of the stakeholders. Due the Covid pandemic start and the focus of each of the stakeholders, immediate meetings were not possible.

It became also clear that eREG and ESC did not respond at all to the invitations. Various attempts were made to involve them, however without success. Finally, the ETPC management decided to leave them out of the process.

UGE and ERTICO prepared a methodology (see next paragraph) that could allow stakeholders to prepare offline and feedback their insights. This preparation was sent to each involved stakeholder (ACEA, CLEPA, IRU and CEDR) and introduced via on-line meetings.

3.4. Applied methodology

Looking at the envisioned outline of an MOU, there are 2 major parts in such a document

1. The part that expresses the position of each of the stakeholders, referred as the 'Where as' part. This part is essential as it informs every of the other stakeholders who the signature party is and what its objectives are to reach via the MOU. It is the basis of a 'common understanding' that each of the parties should build up about the other parties' position and objectives
2. The important part is the MOU text itself that outlines the elements that the parties together like to pursue.

To ensure that stakeholders would agree with a certain MOU text, it is important to understand how they position themselves in the marketplace. This information can be the basis for the 'Where as' part of the MOU. It is also beneficial to create an understanding what efforts a certain stakeholder must perform (as a basis for their cost) and what benefits they gain (as a basis for their return on investment).

The ENSEMBLE economic analysis (Combes et al., 2022, ENSEMBLE D4.3) has shown that for the Platooning Support Function there is currently no favourable direct business case for fleet owners to invest in platooning. In the benchmark scenario based on fuel savings, it is very unlikely to observe a (significant) market uptake for the PSF. Of influence on the market uptake are policy measures like mandating data sharing and an accompanying communication box to enter cities or regions that might employ future 'Urban Vehicle Access Regulation' schemes such as dynamic emission zones.

For the platooning support function the potential benefits (and therefore the business case) is more on a societal level, since it is expected to increase traffic safety, driver comfort (not assessed in the current study) and road capacity.

Economic analysis has also shown that for the Platooning Autonomous Function the business case is much more favourable because of the significant cost savings when the driver can either rest, or can be taken out of the following truck at all. Also fuel costs savings are of influence because of the shorter time gaps between the platooning trucks in the Platooning Autonomous Function.

These benefits do not generate an immediate business case for the stakeholders. But they do generate a societal benefit. An ideal business exploration tool for such a cause, where many stakeholders need to co-operate to realise a societal benefit is the so-called service dominant business radar methodology.

3.5. Service dominant business radar methodology

The generic radar is presented in Figure 1:

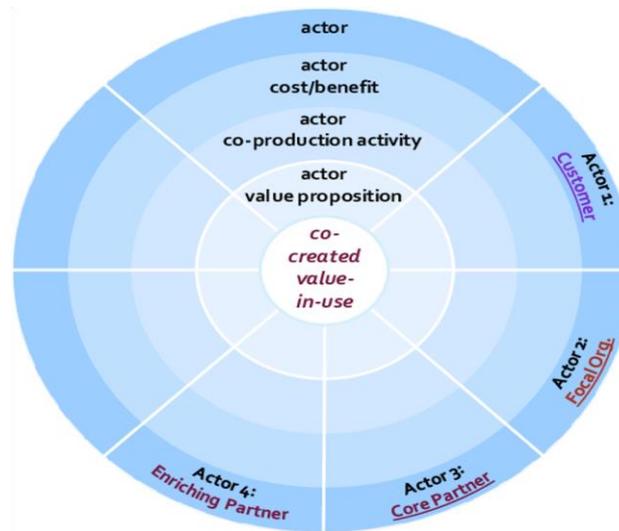


Figure 1 Generic radar for co-creation

The co-created value in the middle of the radar is the societal value that is pursued by the stakeholders. The actor in the most outer ring is in fact the stakeholder that is interviewed. Depending on his inputs we can define the other cells in the outer ring: the 'other stakeholders that act as 'the observed customer for this actor, the focal organisation, the core partner, The enriching partner that they identify, out of their vision.

Once these cells in the outer circle are identified, we ask the actor to identify his opinion about the value, co-production activity, and invoked cost that each actor performs to commonly create the 'value' pursued.

Presenting the resulting radars to each stakeholder, and agreeing on these results, leads to a more in depth 'common understanding, and gives the basis for input for the 'where as' part of the MOU text.

Based upon this tool, a clear slide deck was prepared, disseminated to the stakeholders, and explained via online meetings with the question to prepare their own insides. However, it is not evident that without moderation, the parties are able to perform this process themselves. Therefore, the ETPC management decided to organise individual online interviews, in a less structured way and in a more open dialogue. The aim was to gather all necessary info that allowed us to have our own interpretation and mapping of the information on the radar scheme.

4. INTERVIEWS

The founders of the European Truck Platooning Challenge, initial signatories of the 2016 MoU have been interviewed one by one to gather their views. The first part of the interviews was related to the appreciation of the results and benefits of the ENSEMBLE project. The second part is to address the way forward of truck-platooning in the perspective of each organisation and as a collective stakeholder representation.

4.1. ACEA

An online presentation and initial discussion 15/7/2021 took place. The methodology of the Service dominant business radar was explained. ACEA wanted to organize a workshop with their members to have them fill in. We have organized several attempts to initiate such a workshop but due to Covid, a physical gathering was not possible. We considered an online gathering not appropriate and difficult, because it misses the necessary interactivity.

4.2. CEDR

The interview with CEDR took place 19 11 2021. CEDR, represented by its Secretary general Steve Phillips is positive about the outcomes of the ENSEMBLE project. CEDR is concerned by truck platooning from the point of view of a road authority organization.

4.3. CLEPA

An online interview with CLEPA took place 11/5/2021.

4.4. IRU

After a few attempts we managed to organise the online interview on 26/11/2022. This important organisation was already involved in the 2016 Truck platooning challenge during the Dutch Presidency. It was considered as a successful operation across boarder but not really an option for IRU's members.

5. EVALUATION OF THE INTERVIEWS

The EPTC management interpreted the results and the reports and mapped their conclusions on the service dominant business radar for each of the stakeholders. The result was later presented in the on line meeting 26/01/2022. (see Chapter 6)

The roles of each stakeholder are well defined by the business radar mapping, as well as the expectations that each actor has versus the other actors. Apart from one actor/stakeholder, frequently mentioned by each of the ETPC stakeholders, was Euro NCAP.

Euro NCAP is seen as a necessary party that needs to be involved in the role of enriching or even 'core partner. An action was set up by the ETPC management to contact Euro NCAP, unfortunately not within the timeframe of the project.

CLECAT (European Association for Forwarding, Transport, Logistics and Customs Services) has been contacted about the ENSEMBLE project but did not answer so far .

The first part of the MOU text a 'whereas' was initially described by CEDR, as a proposal to the other stakeholders. Later on each stakeholder was given the opportunity to fill in their own preferred text in the 'legally structured' version of the MOU.

The focus was set to the main MOU text. In a work session the ETPC management mapped various statements out of the interviews to the main aspects of ENSEMBLE project and platooning benefits.

6. FIRST JOINED AMBASSADORS' MEETING 26/1/2022

A blended meeting was organized bringing together all involved stakeholders. It allowed to expose the summary of the interviews to the group and to clarify some notions and benefits.

The discussion that followed allowed every organization to reformulate the result of the interviews and discuss a draft text of the MoU.

It was agreed that the first part of the MoU should rely on the official scientific results of the project coordinator.

Every organization must have the MoU endorsed by its members. They were therefore invited to reformulate if needed the second part of the draft MoU that was presented.

The methodology and the objective of using the business radar concept was explained. The meeting unanimously approved the approach on the MOU process concept.



7. FURTHER STEPS FOLLOWED TO COME TO THE SIGNATURE

As a result of the meeting on 26/1/2022 various stakeholders proposed updates for the text, a new version was prepared.

The second negotiation took place in the online meeting on 24/2/2022. The new text was presented to the stakeholders CLEPA, ACEA, IRU. CEDR apologised for being absent.

Line per line the text was improved, and at the end of the meeting the present stakeholders confirmed the altered text. The text was further given to ERTICO to embed it in a final legal framework. The 'Where As' part was first proposed by CEDR, and later modified by the relevant stakeholders of each organisation. The final legally framed document was made available (25/2/2022) for final review with a deadline on 10 March 2022.

Several stakeholders had internal discussions with their membership. Based on these discussions following this some partners decided to support the text.

8. ANALYSIS AND PROGRESSION ON THE MOU

Because of time constraints, the signature event, planned at the final event of ENSEMBLE 17/3/2022, was cancelled. Therefore, the ETPC management did not take any further action, since the time to process the update, the internal review and the consultation by memberships would take much too long to be in time of the final event.

8.1. Further progression options on the MOU

Potentially the ETPC management could perform an after project continued action with the stakeholders, to further progress on negotiations and come to complete final agreed texts.

The ENSEMBLE final event, and especially the panel organised with the stakeholders involved (present parties were EUCAR, CEDR, CLEPA and IRU), revealed that stakeholders are very pleased with the ENSEMBLE project results and progress made. Every party expressed a certain go forward and continued co-operation intention after the project.

An important supportive element that could inspire the stakeholders was announced by Mr Anthony Lagrange, team leader Automated/Connected vehicles and safety DG Grow, during the ENSEMBLE final event 17 March 2022: *“The next logical step for the European Commission now would be to refer to the ENSEMBLE harmonised V2V protocol format, enabling truck platooning. This means an implementation measure of the General Vehicle Safety Regulation 2019/2144, contributed by ENSEMBLE.”*

This statement would require the support from all stakeholders, and can be a motivation to sign a MOU version as a continued co-operation agreement

In order to exploit these opportunities of continued co-operation, this document does not publish the obtained state of the MOU, as it is considered to be still in the negotiation phase.

9. CONCLUSION

9.1. On the followed MOU process

Although the MOU process took off in 2019, due to force majeure, invoked by the COVID pandemic, the original proposed process of consecutive workshops could not be followed. The stakeholders as well, had difficulty to consult and involve their members to assure support for their decisions.

The lack of physical presence of all stakeholders together, as proposed in the original process, hampers a lot the build-up of the mutual understanding and the ability to negotiate. Many of the interactions were held only between the ETPC management and each of the stakeholders individually.

The more scientific approach to use the service dominant radar as an initial mapping of the stakeholders understanding, helped to bring more insight and clarity. It serves as basis for the content of the MOU.

It is very important to understand the internal processes of the stakeholders, how they can represent their membership and take decisions. This process depends on stakeholder and can take quite a while, given the complexity of the topics.

All these observations could have played a role why finally the MOU agreement was not reached and could not be signed during the ENSEMBLE final event.

9.2. On the achieved MOU state

Starting by the initial proposed text as a conclusion of interviews and the radar mapping, proposed by the ETPC management, and the further progress by taking the inputs from the stakeholders, a final text for membership approval was reached by all stakeholders after the second meeting.

Effort was done to also provide it in a legal framework.

Although finally, some stakeholders confirmed that they could not sign, their presence in the panel discussion and their narrative during the ENSEMBLE final event give hope that further steps can be taken to come to a real MOU agreement.

This agreement would support the Commission in its ambition, expressed by Mr Lagrange DG MOVE, in the ENSEMBLE final event:

“The next logical step for the European Commission now would be to refer to the ENSEMBLE harmonised V2V protocol format, enabling truck platooning. This means an implementation measure of the General Vehicle Safety Regulation 2019/2144, contributed by ENSEMBLE.”

10. BIBLIOGRAPHY

Arbeit de Chalendar O. & Daems, F. (2020). V1 ETPC Meeting Records D6.6 of H2020 project ENSEMBLE, (www.platooningensemble.eu).

Combes F., Aboukacem E. M., Bai T., Johansson A., Johansson K. H., Mårtensson J., Vermeulen R., Samsu Koroma, M., Costa, D., Messagie, M. (2022). Analysis of market needs, business models and life-cycle environmental impacts of multi-brand platooning. Deliverable D4.3 of H2020 project ENSEMBLE, (www.platooningensemble.eu)

Hajredini, K (2019). ENSEMBLE Lol. D6.7 of H2020 project ENSEMBLE, (www.platooningensemble.eu)

