Adapting driver behaviour for lower emissions

MODALES D7.4: Final Dissemination, Communication and Awareness Report

WORK PACKAGE	WP7: Awareness, communication and dissemination
TASK	T7.2 Dissemination plan, procedures and strategies
AUTHORS	Céline Lefort (main author), Andrew Winder – ERTICO, Justyna Beckmann – FIA, Ted Zotos, Chloe Whyte, Holger Loewendorf – IRU, Ying Li – DYNNOTEQ
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1.0	05/06/2023	Andrew Winder	Final quality check and submitted version

Legal disclaimer

Table of contents

Index of figures

Index of tables

List of abbreviations and acronyms

MODALES partner abbreviations

Abbreviation	Meaning
ACASA	Automòbil Club Assistència SA
BREMBO	Freni Brembo SpA
BRIDG	Bridgestone Europe NV/SA
CEREMA	Centre d'études et d'expertise sur les risques, l'environnement, la mobilité et l'aménagement
CERTH	Centre for Research and Technology Hellas / Ethniko Kentro Erevnas kai Technologikis Anaptyxis
DYNN	Dynnoteq Ltd.
ERTICO	ERTICO – ITS Europe (project coordinator)
FIA	Fédération Internationale de l'Automobile
IRU	International Road Transport Union
LEEDS	University of Leeds
LIST	Luxembourg Institute of Science and Technology
MICH	Manufacture Française des Pneumatiques Michelin
NST	Nanjing Sample Technology (International partner in China)
OKAN	İstanbul Okan Üniversitesi
PROV	Proventia Oy
SEU	Southeast University, Nanjing (International partner in China)
SPARK	Spark Legal and Policy Consulting (EU) BVBA
VTT	Technical Research Centre of Finland Ltd / Teknologian Tutkimuskeskus VTT Oy

General abbreviations and acronyms

Abbreviation	Meaning
CINEA	European Climate, Infrastructure and Environment Executive Agency (agency of the European Commission)
EC	European Commission
EOBD	European On-Board Diagnostics
EU	European Union
EV	Electric Vehicle
GDPR	General Data Protection Regulation
HDV	Heavy Duty Vehicle
ICT	Information and Communication Technologies
IPR	Intellectual Property Rights
KPI	Key Performance Indicator
LDV	Light Duty Vehicle

Abbreviation	Meaning
NRMM	Non-Road Mobile Machinery
OBD	On-Board Diagnostics
OEM	Original Equipment Manufacturer
URL	Uniform Resource Locator
WP	Work Package

Executive Summary

This Deliverable (D7.4) summarises the third and fourth years of communication and dissemination activities for MODALES and also updates the original Dissemination, Communication and Awareness Plan (D7.1) which was produced close to the beginning of the project with the objective of achieving maximum impact among the different stakeholder types.

The Dissemination, Communication and Awareness Plan has been updated annually, in Month 12 (as D7.2), in Month 24 (as D7.3), and the current D7.4 Final Dissemination, Communication and Awareness Report in Month 45. The dissemination actions have also been included in the project's annual reporting.

The main elements of the dissemination process have been:

- The Dissemination Strategy, including MODALES dissemination objectives target groups and key messages to provide consortium partners with a set of useful guidelines to plan and perform dissemination activities, with the final aim to ensure a correct process for the dissemination of project results;
- Communication tools and techniques, including development of the visual identity and branding of the project, the project website as main dissemination tool and other materials;
- Media, press relations and articles;
- Conferences and events, including the MODALES Final Conference;
- Key Performance Indicators (KPIs) for the MODALES dissemination and communication strategy as well as a reporting process.

In addition, an Awareness Campaign was included as a specific task in this Work Package, aimed at end users (drivers of cars, light and heavy commercial vehicles) but also as a tool for motoring organisations, public authorities, driving schools, fleet operators, etc.

This document provides an update and final report of the project's Dissemination Strategy, activities and communication tools in Years 3 and 4 of MODALES. Completed actions include the update of the website's library section, including public deliverables, publications, and press clippings, as well as regular news and events articles, the publication of the MODALES factsheets with the final results in each key area, and the organisation of the MODALES Final Conference.

Between the end of 2021 and mid-2023, MODALES fulfilled its requirements in terms of dissemination and communication, reaching most of its final KPIs despite the effect of the COVID-19 pandemic, which made it difficult to organise or attend physical meetings and events in 2020 and 2021. The project had the opportunity to be presented at numerous physical events since the ITS World Congress in October 2021, which was the first face-to-face event since the outbreak of the COVID-19 pandemic.

This plan was a living document that has been updated annually (a total of three issues during the project). This is the fourth and final dissemination activities report of the project. This deliverable has been updated after more than a year from the last update due to the extension of the project.

1. Introduction

1.1. Project overview

The MODALES project worked towards solutions to reduce air pollution from all types of on-road vehicles by encouraging the adoption of low-emission driving behaviour and proper maintenance choices. The focus was on Internal Combustion Engine (petrol and diesel) vehicles, providing practical "quick wins" for older vehicles. Although electric vehicles (EVs) were not within the scope of the project, several of the outcomes relating to user behaviour are also valid for EVs, or can be adapted for them.

MODALES pursued a user-centric approach to address all the challenges which on the one hand enhance low-emission practices and on the other hand suppress high-emission behaviour by researching, developing and testing a number of innovative and complementary solutions in four key areas (driver, retrofits, EOBD and inspection) in order to reduce vehicle emissions from three main sources: powertrain (exhaust), brakes and tyres.

MODALES aimed to modify user (driver) behaviour via dedicated training including a driver assistance app and awareness campaigns in order to support effective air quality improvement plans and enforcement strategies to be developed by local and national authorities.

To achieve this goal, MODALES researched, developed and tested 13 Innovation Solutions, in order to substantially reduce vehicle emissions from the main sources given above, for passenger cars, light and heavy duty commercial vehicles (LDV, HDV) and Non-Road Mobile Machinery (NRMM).

As an International Cooperation project, MODALES included cooperation with China, with two International Partners in the city of Nanjing participating in many of the tasks.

The main activities of MODALES were:

- Measurement of real-world vehicle emissions and driving behaviour to produce accurate correlation between them using advanced mathematical and statistical techniques;
- Exploration of the most advanced technologies for retrofits designed to substantially reduce powertrain emissions from all types of vehicles and to validate their effectiveness under different real-world traffic and environment conditions, and by various drivers;
- Undertaking an in-depth analysis of OBDs, periodic inspection and legal issues on tampering in Europe to help regulatory authorities put in place effective anti-tampering legislation, and to help owners properly maintain their vehicles;
- Conducting large-scale user trials in Europe and China, supported by awareness campaigns, to enhance public engagement and help drivers better understand the impact of their driving and maintenance behaviours in all situations.

1.2. Scope

1.2.1. MODALES WP7 on Awareness, Communication and Dissemination

This deliverable is part of Work Package 7 on Awareness, Communication and Dissemination. WP7 is broken down into four tasks:

- T7.1: Dissemination plan, procedures and strategies;

- T7.2: Communication tools;
- T7.3: Awareness campaigns;
- T7.4: Technical dissemination (including events).

1.2.2. Scope and intended audience of this deliverable

The present deliverable is an update of D7.3 "Dissemination, Communication and Awareness Plan and Report (end of Year 2)" which was submitted at Month 24 of MODALES (August 2021). The purpose of this document is to report on the final progress of MODALES' dissemination actions and tools from September 2021 to the end of the project in May 2023.

MODALES' Communications Plan has been reported and updated once a year based on an evaluation of the strategy's effectiveness, with changes made accordingly and communicated to the consortium. A summary has also been included in the periodic reports submitted to the European Commission. This deliverable, D7.4, is the final WP7 deliverable and supersedes the previous updates of the Communications Plan.

D7.4 provides measurable targets and outcomes of the MODALES dissemination, communication and awareness strategy adjusted to the end of the project. Figure 1 below shows how this deliverable fits in the project and highlights related deliverables which will take into account the content of this one.

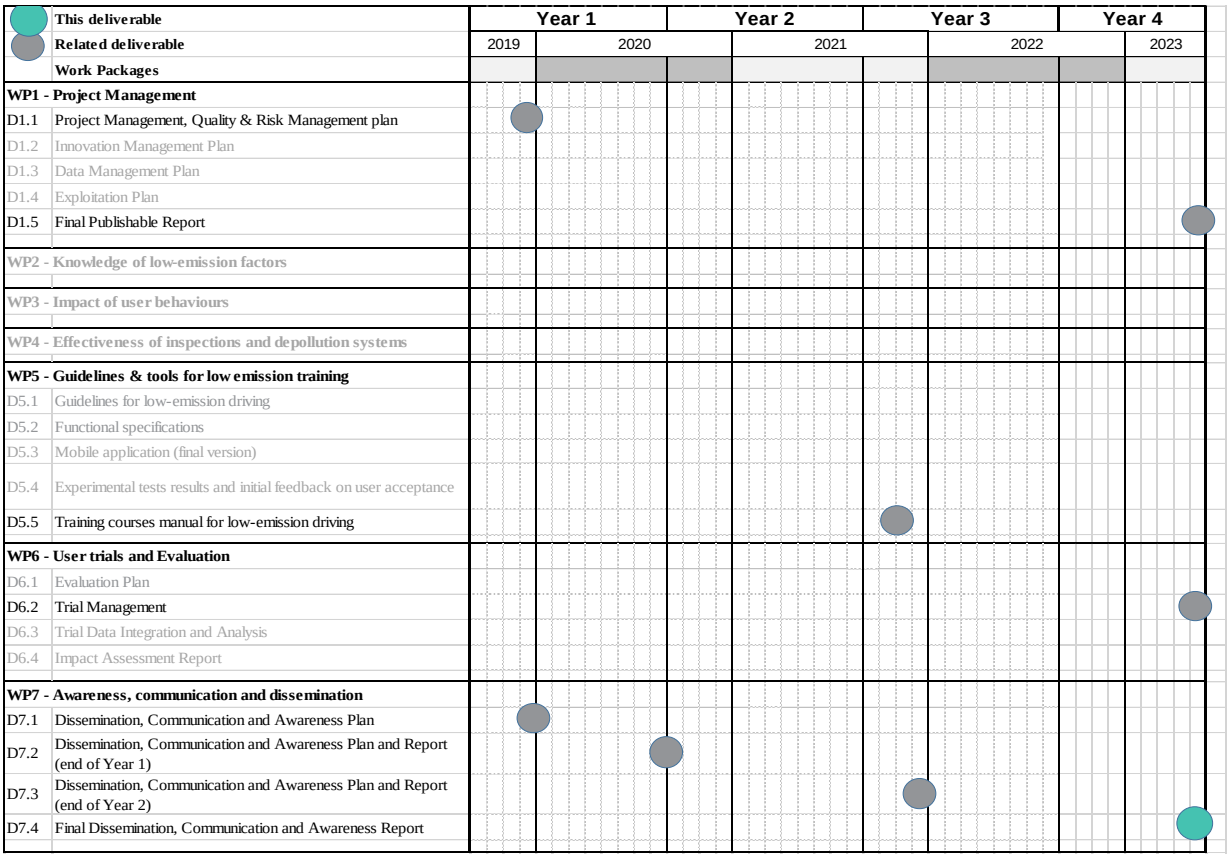


Figure 1: D7.4 context of related MODALES deliverables

This figure takes into account the nine-month extension to the project granted by CINEA, as a result of delays to certain activities mostly related to COVID restrictions. Hence the MODALES end date is 31 May 2023 instead the originally planned 31 September 2022.

The dissemination level of D7.4 is public and can therefore be shared outside the project consortium.

1.2.3. Report structure

This deliverable is composed of the following sections:

- A recap of MODALES' Dissemination Strategy, including MODALES dissemination objectives and key messages (Chapter 2).
- Fulfilment of this strategy, with focus on the realisation of the objectives outlined in D7.3 and achievements after Years 3 and 4 of the project (Chapter 3). This includes media, press relations and articles, dissemination materials, Awareness Campaign, and events (including the MODALES Final Conference) in which MODALES participated.
- Monitoring and reporting (Chapter 4) reports Key Performance Indicators for the MODALES dissemination and communication strategy with achieved KPIs after Years 3 and 4, as well as the reporting process.
- Chapter 5 on Conclusions summarises the main outcomes of the deliverable and provide insights on the future use of the MODALES findings and communication and dissemination materials.

2. Dissemination Strategy

2.1. Objectives

The objective of this task was to establish an effective and efficient Dissemination Strategy and communication plan for the MODALES project. Key elements include: articulation of the project identity (branding); identification of target audiences; specification of channels for connecting with audiences (events and media platforms); cross-integration of dissemination output (print, electronic and face-to-face).

All dissemination activities followed the Dissemination Strategy plan. In addition, dissemination activities also included publication of project results in conference proceedings and peer-reviewed scientific journals throughout various phases of the project, in compliance with the open research and access strategy.

The **principal objectives** of the MODALES Dissemination Strategy were to:

- Disseminate the project's results to the widest audience possible, engage scientific, technical, business, institutional and governmental audiences from the EU and globally and encourage feedback.
- Build relationships, through networking with existing related projects, initiatives and services, to share knowledge and spread good practice through coordination/clustering activities. In particular, this will include liaison with entities (projects, platforms, organisations) linked to MODALES partners, such as the ERTICO Partnership, FIA, IRU, university and research networks.
- Create interesting information that can be disseminated through social media networks and results in positive media coverage for the project at national, European, Chinese and global level.

2.2. Approach

2.2.1. Dissemination and awareness activities

The Dissemination, Communication and Awareness plan has been updated approximately annually and the dissemination actions are also included in annual reporting. In particular, the dissemination actions included the following elements:

- Organisation of project specific events and demonstrations at national and European level, seeking attendance by all relevant stakeholders' groups.
- Active participation in key relevant international and European conferences and industry exhibition fairs.
- Organisation of public awareness campaigns targeting a wide range of driver types (private and professional, cars, HDVs and NRMM).
- Individual presentations/discussions with major public and private stakeholders, and round tables, and participation in Concertation Events and Working Groups.
- Scientific and industry wise publications and presentations in relevant journals/press.

The online dissemination material will remain accessible on the MODALES website for three years after the end of the project and it will continue to be updated after the end of the project. MODALES

organised its own demonstration events but also participated in other key relevant events, to diffuse its results.

2.2.2. Communication activities

Communication activities included:

- The creation of a coherent and consistent identity for MODALES project, supported by e.g. logo, leaflets/flyers, a roll-up banner, video and a standard project PowerPoint presentation;
- The creation and maintenance of a regularly updated modern website relevant to the target audiences, and the creation of a social media presence on LinkedIn and Twitter, in connection with all events in which MODALES participates.

2.3. Management

Communication groups within the consortium, led by the Project Coordinator and the Dissemination and Communication Manager as well as the WP7 task leaders, have been created to discuss communication and dissemination activities and opportunities. Regular conference calls for Work Packages and Activity Leaders have been established throughout the project in order to coordinate the workflow.

2.3.1. Roles and responsibilities

ERTICO leads overall communication and dissemination activities as Communication and Dissemination Manager. ERTICO also acts as Work Package leader and oversees activities while Activity partner FIA assists in the management of the relevant Work Package's activities.

FIA leads Task 7.3 (Awareness Campaign), which began in the second half of the project, and involved some of their member organisations in Europe, including France, Italy, Germany, Luxembourg, Austria, Spain and Switzerland.

ERTICO leads Tasks 7.1, 7.2 and 7.4, and participates in Task 7.3 with respect to joint development of media and other tools for both awareness and general dissemination.

Almost all consortium members had budget allocated for dissemination and communication and therefore contributed with the drafting of articles for the website, provision of useful and relevant website content such as infographics, studies and reports, participation in events, and translations for the app and awareness material.

Partners contributed with news articles for the website, event information for the event calendar and other dissemination and communication tools when required.

2.4. Timing of dissemination activities

MODALES WP7 included the following milestones (see Table 1) and deliverables (see Table 2).

Table 1: MODALES WP7 Milestones

Milestone	Milestone title	Partner	Due date	Date delivered
MS21	Website ready	ERTICO	Month 3	Month 3
MS22	Project brochure ready	ERTICO	Month 4	Month 5
MS23	Stakeholder Forum created	ERTICO	Month 5	Month 3
MS24	First Awareness campaign	FIA	Month 31	Month 31

Milestone	Milestone title	Partner	Due date	Date delivered
MS25	Mid-term technical event	ERTICO	Month 19	Month 21
MS26	Final project brochure ready	ERTICO	Month 44	Month 45
MS27	MODALES Final Event	ERTICO	Month 45	Month 45

Table 2: MODALES WP7 Deliverables list

Deliverable number	Deliverable title	Lead partner	Due date	Date delivered
D7.1	Dissemination, Communication and Awareness Plan	ERTICO	Month 3	Month 3
D7.2	Dissemination, Communication and Awareness Plan (end of Y1)	ERTICO	Month 12	Month 13
D7.3	Dissemination, Communication and Awareness Plan (end of Y2)	ERTICO	Month 24	Month 28
D7.4	Dissemination, Communication and Awareness Plan (end of Y3)	ERTICO	Month 45	Month 45 (this report)

2.4.1. Technical dissemination

All activities under Task 7.4 "Technical Dissemination", such as scientific publications, published materials, demonstration results, mid-term conference and final event proceedings, Stakeholder Forum and cooperation with other project and initiatives must grant open access to their results.

In particular, each beneficiary involved has ensured open access (free of charge online access for any user) to all peer-reviewed scientific publications relating to its results.

An index of the scientific publications, together with the project dissemination material (poster, brochure) and Public Deliverables is maintained and publicly accessible on the project web site (under the "Library-Publications" section).

The project also has a requirement to liaise and exchange information with related project, in particular one in the same call. This was done via participation in other project's events and joint sessions at conferences.

3. Fulfilment of the Dissemination Strategy

The following objectives (from D7.1, D7.2, D7.3, and also summarised in the previous chapter) have successfully been achieved during Years 3 and 4 of the project:

- Articulation of the project identity (branding);
- Identification of target audiences;
- Specification of channels for connecting with audiences (events and media platforms);
- Cross-integration of dissemination output (print, electronic and face-to-face);
- Organisation and management of the MODALES Mid-term technical event (online) and the MODALES Final Conference (physical event in Brussels).

3.1. Management of dissemination and communication

During Years 3 and 4 of the project, MODALES was able to fulfil the following objectives outlined in D7.3:

- **Establishing a communication group within the consortium** via the official LinkedIn group, SharePoint and periodic consortium calls.
- **Collecting news from the project's consortium** for MODALES' website, as shown in the Press Clippings section[1] and the nine articles featuring MODALES members in the News section[2].
- **Collecting input from the consortium for an event calendar and other dissemination and communication tools.** This has been done via the MODALES Dissemination Register which is regularly updated on the project's internal SharePoint platform.

All partners report their project-related dissemination and communication activities on the Dissemination Register, an Excel sheet created for monitoring and reporting, including information on the event they attended and those they are planning to attend.

3.2. Technical dissemination and events

MODALES has worked towards several goals for the technical dissemination of its results.

3.2.1. Engaging with external stakeholders

The first goal was: **Engage with scientific, technical, business, institutional and governmental audiences from the EU and globally, and encouraging feedback. Build relationships through networking with existing related projects, initiatives and services, to share knowledge and spread good practice through coordination/clustering activities.**

To continue its work in advancing the understanding of the correlation between user behaviour and vehicle emissions, MODALES launched a survey[3] as part of Task 2.5 (Legal issues on tampering) to collect data from stakeholders in relation to vehicle tampering. This survey, designed by partner Spark Legal and Policy Consulting (SPARK), was addressed to all smart mobility stakeholders, in particular

[1] https://modales-project.eu/press-clippings
[2] https://modales-project.eu/category/news/
[3] https://modales-project.eu/have-your-say-on-vehicle-tampering-with-modales

manufacturers, type approval authorities, technical services, inspections and national initiatives. The results of this survey are presented in Deliverable D2.3. Following up on this survey, MODALES launched another survey[4] on legal recommendations regarding vehicle tampering to collect feedback from stakeholders in this field on the recommendations drafted by SPARK. In addition, MODALES participated and engaged with stakeholders from the European Tyre & Road Wear Platform (TRWP), Eurobrake, ERTRAC, and the EU projects uCARe[5], CARES[6], DIAS[7], NEMO[8], Down to Ten[9] and SUREAL-23[10].

3.2.2. Creating information for positive media coverage

The second goal identified was: **Create interesting information that can be disseminated through social media networks and results in positive media coverage for the project at national, European, Chinese and global level.**

From the first year of the project, MODALES had positive media coverage on social media networks and at European media level (for social media networks, see Section 3.4: Social media. For media coverage, please consult Section 3.6: Press relations and news articles). An outreach to the Chinese and international audience did not take place in the first year of the project, as there were still ongoing internal discussions regarding the funding for the Chinese partners, which was resolved in Year 2 with a Contract Amendment. Nevertheless, Southeast University in Nanjing contributed to two dissemination actions: co-author of one journal paper and one submission for a conference paper during this year, before officially joining the project.

Over the remainder of the project, MODALES collected positive results in terms of media coverage, including social media. The website was updated with different project news and member interviews, which fed into social media posts.

3.2.3. Conference proceedings and peer-reviewed scientific journals

The third goal for technical dissemination was: **Submit publications of project results in conference proceedings and peer-reviewed scientific journals.**

During the period of the project, 17 scientific publications have been submitted and accepted (see Table 3). In addition, at least two further publications are expected beyond the project end date.

[4] https://modales-project.eu/modales-needs-your-opinion-on-legal-recommendations-regarding-vehicle-tampering/
[5] https://www.project-ucare.eu
[6] https://cares-project.eu
[7] https://dias-project.com
[8] https://nemo-cities.eu
[9] http://www.downtoten.com
[10] http://sureal-23.cperi.certh.gr

Table 3: Peer-reviewed scientific publications incorporating MODALES project results

Title	Authors	Partners involved	Journal
Fuel economy and exhaust emissions of a diesel vehicle under real traffic conditions	Jianbing Gao, Haibo Chen, Kaushali Dave, Junyan Chen, Dongyao Jia	LEEDS	Energy Science & Engineering (Gold access)
Analysis of Driving behaviours of truck drivers using motorway tests	Jianbing Gao, Haibo Chen, Kaushali Dave, Junyan Chen, Ying Li, Tiezhu Li, Biao Liang	LEEDS, DYNN, SEU	Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering (Green access)
The effect of after-treatment techniques on the correlations between driving behaviours and NOx emissions of passenger cars	Jianbing Gao, Haibo Chen, Ye Liu	LEEDS	Journal of Cleaner Production
Evaluation of the oxidative reactivity and electrical properties of soot particles	Ye Liu, Chonglin Song, Gang Lv, Wei Zhang, Haibo Chen	LEEDS	Carbon
Comparative analysis of non-exhaust airborne particles from electric and internal combustion engine vehicles	Ye Liu, Haibo Chen, Jianbing GaoJ, Ying Li, Kaushali Dave, Junyan Chen, Matteo Federici, Guido Perricone	LEEDS, DYNN, BREMBO	Journal of Hazardous Materials
Thermally induced variations in the nanostructure and reactivity of soot particles emitted from a diesel engine	Ye Liu, C Fan, X Wang, F Liu, Haibo Chen	LEEDS	Chemosphere
Comparison of NOx and PN emissions between Euro 6 petrol and diesel passenger cars under real-world driving conditions	Jianbing Gao, Haibo Chen, Ye Liu, Juhani Laurikko, Ying Li, T Li & R Tu	LEEDS, VTT, DYNN	Science of the Total Environment
A Survey of In-Vehicle Monitoring Solutions for Low-Emission Driving	Sébastien Faye, Neamah Al-Naffakh, Uwe Roth, Christian Moll, Dimitris Margaritis	LIST, CERTH	ACM Computing Surveys
Impacts of De-NOx system layouts of a diesel passenger car on exhaust emission factors and monetary penalty	Jianbing Gao, Haibo Chen, Ye Liu, Ying Li	LEEDS, DYNN	Energy Science & Engineering
The effect of nonlinear charging function and line change constraints on electric bus scheduling	A Zhang, T Li, R Tu, C Dong, H Chen, J Gao, Y Liu	LEEDS	Promet – Traffic & Transportation
Driving behavior oriented torque demand regulation for electric vehicles with single pedal driving	Y Zhang, Y Huang, H Chen, X Na, Z Chen, Y Liu	LEEDS	Energy

Title	Authors	Partners involved	Journal
"Monetary values of exhaust and non-exhaust emissions emitted from conventional and electric vehicles	Y Liu, H Chen H et al	LEEDS	Journal of Cleaner Production (Elsevier)
Comparisons of NOx, PM, and PN emissions from Euro-6 compliant petrol and diesel passenger cars under real-world driving conditions	Jianbing Gao, Haibo Chen, Ye Liu et al	LEEDS	Science of the Total Environment
An Enhanced Predictive Cruise Control System Design with Data-driven Traffic Prediction	Dongyao Jia, Haibo Chen, Zuduo Zheng, David Watling, Richard Connors, Ying Li	LEEDS, DYNN	IEEE Transactions on ITS
PM10 prediction for brake wear of passenger car during different test driving cycles	Ye Liu, Haibo Chen, Chuhan Yin, Matteo Federici, Guido Perricone, Ying Li, Dimitris Margaritis, Yang Shen, Junhua Guo, Tangjian Wei	LEEDS, BREMBO, DYNN, CERTH	Chemosphere (Elsevier)
Impact of vehicle type, tyre feature and driving behaviour on tyre wear under real-world driving conditions	Ye Liu, Haibo Chen, Sijin Wu, Jianbing Gao, Ying Li, Zihao An, Baohua Mao, Ran Tu, Tiezhu Li	LEEDS, DYNN, SEU	Science of the Total Environment (Elsevier)
Brake wear induced PM10 emissions during the world harmonised light-duty vehicle test procedure-brake cycle	Ye Liu, Sijin Wu, Haibo Chen, Matteo Federici, Guido Perricone, Ying Li, Gang Lv, Said Munir, Zhiwen Luo, Baohua Mao	LEEDS, BREMBO, DYNN	Journal of Cleaner Production (Elsevier)

Ten technical papers at conferences (physical and online) were also accepted, as follows (Table 4):

Table 4: Technical papers presented at Conferences

Title	Authors	Partners involved	Conference
An approach for scaling up vehicle fuel and exhaust emission reduction across European motorways	Jianbing Gao; Haibo Chen; Kaushali Dave; Junyan Chen; Jo-Ann Pattinson	LEEDS	ITS European Congress (online), November 2020
Estimating Emissions from Non-road Construction Machineries and Its Uncertainty Analysis: A Case Study in Nanjing, China	Tiezhu Li, Chunsheng Meng, Ran Tu, Yisong Xie, Fangjian Xie, Feng Yang, Haibo Chen, Ying Li, Jianbing Gao	SEU, LEEDS, DYNN	TAP Conference (Graz and online), March 2021
A New Simulation Approach of Estimating the Real-World Vehicle Performance	Jianbing Gao, Haibo Chen, Junyan Chen, Kaushali Dave	LEEDS	SAE WCX digital summit (online), April 2021

Title	Authors	Partners involved	Conference
An exact algorithm for efficient online optimization of HGV path, speed profile and stops for minimising fuel consumption and emissions under time-varying conditions	Richard Connors, David Watling, Haibo Chen	LEEDS	hEART conference (Lyon and online), April 2021.
Low-Emission Driving Assistants: Experience from MODALES	Ramiro Camino, Sébastien Faye, Nikos Dimokas, Dimitris Margaritis	LIST, CERTH	ITS European Congress (Toulouse), May 2022
Influence of the driving behaviour on the non-exhaust brake emission	Matteo Federici, Mara Leonardi, Andrea Bonfanti, Guido Perricone	BREMBO	Eurobrake (online), May 2022
Integrative Emissions and Health-Based Scoring Algorithm Development for Driving Style Optimization	Engin Özatay, Orhan Alankuş	OKAN	ITS European Congress (Lisbon), May 2023
Information System for Vehicle Anti-tampering based on OBD Data	Nikos Dimokas, Dimitris Margaritis, Andrew Winder	CERTH, ERTICO	ITS European Congress (Lisbon), May 2023
Multi-objective speed profile optimisation considering fuel and NOx	Zhiyuan Lin	LEEDS	ITS European Congress (Lisbon), May 2023[11]
Recognition of Low-energy Consumption Driving Behavior of Electric Bus based on Machine Learning	T. Liu, Q. Han, T. Li, Haibo Chen, Ying Li, J. Sun	SEU, LEEDS, DYNN	23rd COTA (Chinese Overseas Transportation Association) International Conference of Transportation Professionals (Beijing), July 2023[12]

3.2.4. MODALES participation in other external events and inter-project liaison

In addition to the technical and scientific papers listed above, MODALES has presented at the following 16 external events (physical or live online):

- European TRWP (Tyre and Road Wear Particles) Platform in Brussels, February 2020 (BRIDGESTONE & ERTICO)
- Interdisciplinary online congress on driver training, Greece, May 2020 (CERTH)
- Effie Mobility Online event, Spain, November 2020 (ERTICO)
- ITS Spain Congress in Madrid, July 2021 (ACASA)
- Summer School in Nanjing, China, July 2021 (DYNN, SEU)

[11] Paper accepted and published in Congress proceedings, but not physically presented at the event
[12] Conference upcoming at the time of writing this report, but the paper has been accepted

- ITS World Congress in Hamburg, October 2021: Special Interest Session “Intelligent systems to help drivers and road authorities reduce pollutant emissions: Beyond eco-driving” (ERTICO, LEEDS) and project panel/screen at ERTICO stand (see Figures 2 and 3)
- EU H2020 Road Transport Research Results (RTR) Conference in Brussels, March 2022 (ERTICO)
- ITS European Congress in Toulouse, May-June 2022: Special Interest Session “How can green driving solutions contribute to Clean Air Policies?” (ERTICO, LIST, CEREMA) and project panel/screen at ERTICO stand (see Figures 4 and 5)
- Eurobrake (online), May 2022 (BREMBO)
- Summer School in Nanjing, China, July-August 2022 (DYNN, SEU)
- Conference on Sustainable Urban Mobility (CSUM), Skiathos, Greece, August-September 2022 (CERTH)
- International final of FIA Region I Best Young Driver Contests in Madrid, October 2022 (FIA)
- DIAS project Final Event in Brussels, October 2022 (ERTICO, SPARK)
- Transport Research Arena in Lisbon, November 2022: Invited Session “Reduction of transport impact on air quality” (ERTICO)
- EU Road Transport Research Results (RTR) Conference in Brussels, February 2023 (ERTICO)
- ITS European Congress in Lisbon, May 2023: Special Interest Session “ITS to mitigate climate change and reduce pollution: Impacts and quick wins” (ERTICO) and project panel/screen at ERTICO stand (see Figures 6 and 7).

Figure 2: MODALES stand at the ITS World Congress 2021, Hamburg

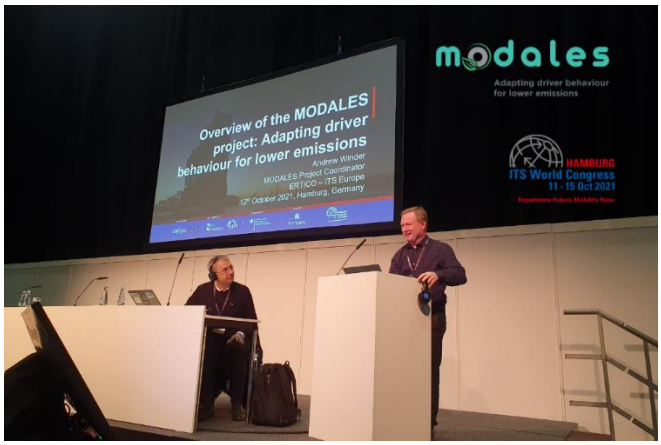


Figure 3: MODALES Special Interest Session at the ITS World Congress 2021, Hamburg

Figure 4: MODALES stand at the ITS European Congress 2022, Toulouse

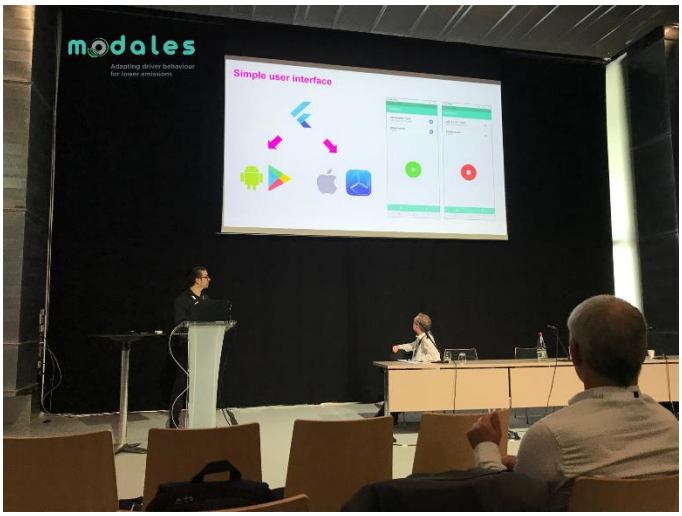


Figure 5: MODALES Special Interest Session at the ITS European Congress 2022, Toulouse

Figure 6: MODALES stand at the ITS European Congress 2023, Lisbon

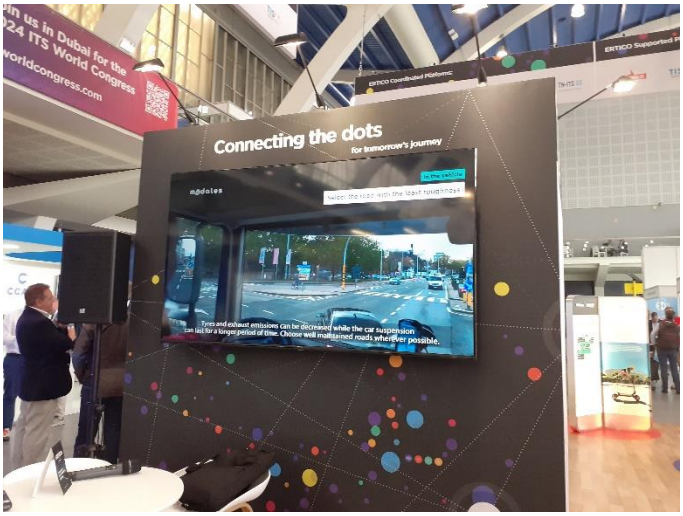


Figure 7: MODALES training video being shown in the Exhibition area of the ITS European Congress 2023, Lisbon

MODALES has initiated bilateral contact (by email and/or online meetings) with:

- The uCARe, DIAS and CARES projects from the same call, as well as shared sessions with the projects AVIATOR, SCIPPER, NEMO, TUBE and PHOENICE;
- Informing the Energy and Environment Working Group of ERTRAC;

- Discussions with companies like Heineken N.V. (headquarters) and Heineken Italia and Romania, Nestlé Greece (logistics), Arriva (public transport), Fotech (technology start-up) and ITMO University in Saint Petersburg.

3.2.5. MODALES Mid-term Conference

One of the main two key MODALES technical dissemination events identified is the **Mid-term Conference**.

This conference took place online during Year 2, on 28 May 2021 and reported on the project's current progress and outcomes to date, as well as expected final outcomes.

This Mid-term Webinar gathered 46 attendees, reaching the KPI set for year 2 of 45 or more stakeholders attending MODALES events in Europe. The event was summarised in a report, made available publicly on the MODALES website and social media channels, together with the recording of the event and the presentations[13].

The event was promoted with a set of materials that were shared among the consortium, to allow a wider outreach. A promotional package was sent with regular updates to the MODALES consortium. The promotional material included an agenda, an infographic, an article, an email signature and visual banners for different social media channels, such as Facebook, LinkedIn and Twitter. Thanks to this strategy, the MODALES mid-term event was mentioned in various external channels, both from members and other stakeholders (see for instance Figure 8).

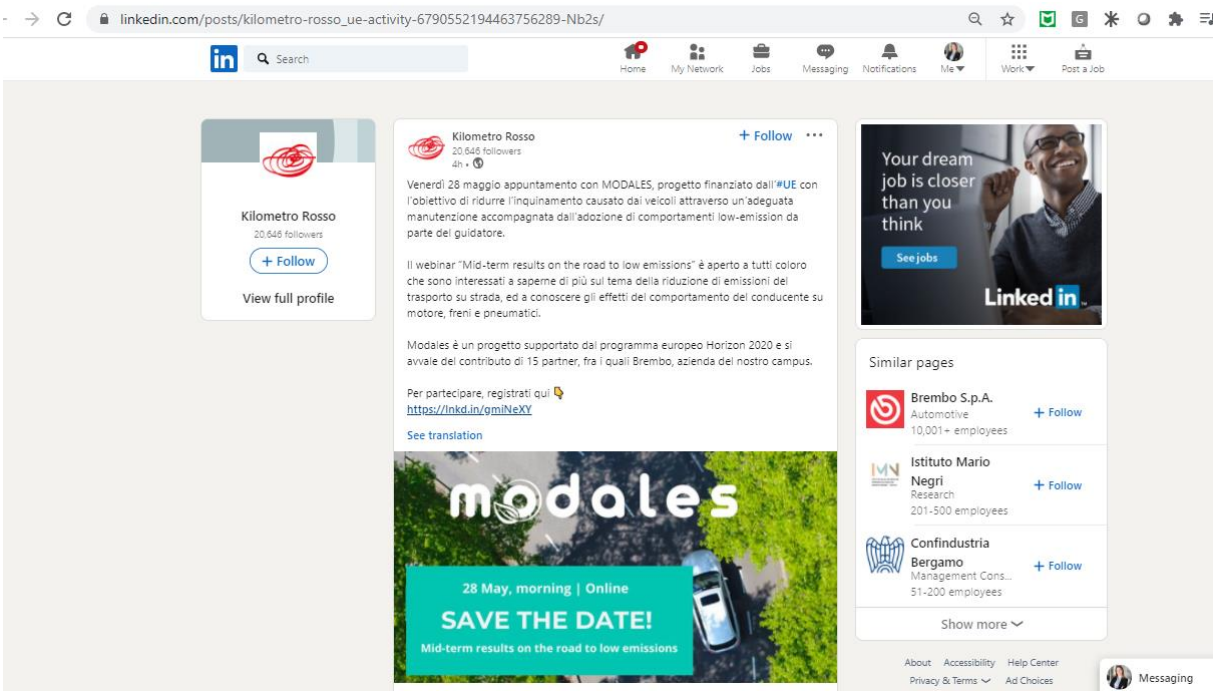


Figure 8: MODALES mid-term event advertised on external consortium channels

[13] Report and presentations available at https://modales-project.eu/modales-reveals-its-latest-strategy-on-how-to-lower-driving-related-emissions

3.2.6. MODALES Final Conference

The second key MODALES technical dissemination event identified is the project's **Final Conference**.

This was the last event organised directly by the project to promote the results, recommendations, and achievements of MODALES. The project partners presented the four focus areas addressed by the project (namely driver behaviour, retrofits, On-Board Diagnostics (OBD) and inspection) and discussed the results obtained.

The Final Conference took place on 12 May 2023 in Brussels. This was mainly an in-person event and was promoted as such. However, some consortium partners who were not able to travel to Brussels were given the opportunity to attend the event online. The Conference gathered almost 40 attendees in total, both online and in person. This number is below the KPI set for the final event of the project of 70 attendees due to timing and budget limitations, which restricted the choice of the location for this event, and also the specialised nature of the project, whereby people are unlikely to travel long distances for such a one-day project event. The event took place at the ERTICO Office in Brussels, as it was the most easily accessible option for external stakeholders, partners and the European Commission.

The MODALES Conference was promoted and disseminated widely through the MODALES website and LinkedIn group, as well as through the partners' own channels to increase the outreach (see Figures 9 and 10 for some examples). A save-the-date banner was first promoted and shared with the consortium to raise awareness of the event. An article with the draft agenda of the event and practical information was then published on the MODALES website. The event was also mentioned by external social media channels (see Figure 11 for an example).

The Final Conference was attended by stakeholders outside the project consortium, including representatives from the European Commission/CINEA, the City of Brussels, the Chinese Mission to the EU, Skynet, EUROLAB – QAK, and Euro NCAP.

After the event, an article[14] was published on the MODALES website to summarise the main discussion points of the event and make the presentations publicly available.

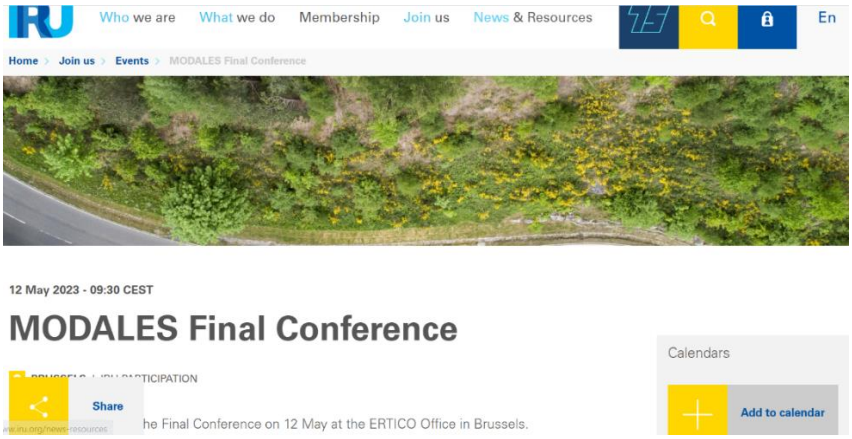


Figure 9: MODALES Final Conference promoted on the IRU website

[14] Summary article of the Final Conference, including presentations, available here: https://modales-project.eu/modales-final-conference-project-wrap-up-marks-a-key-milestone-on-the-road-to-greener-driving/

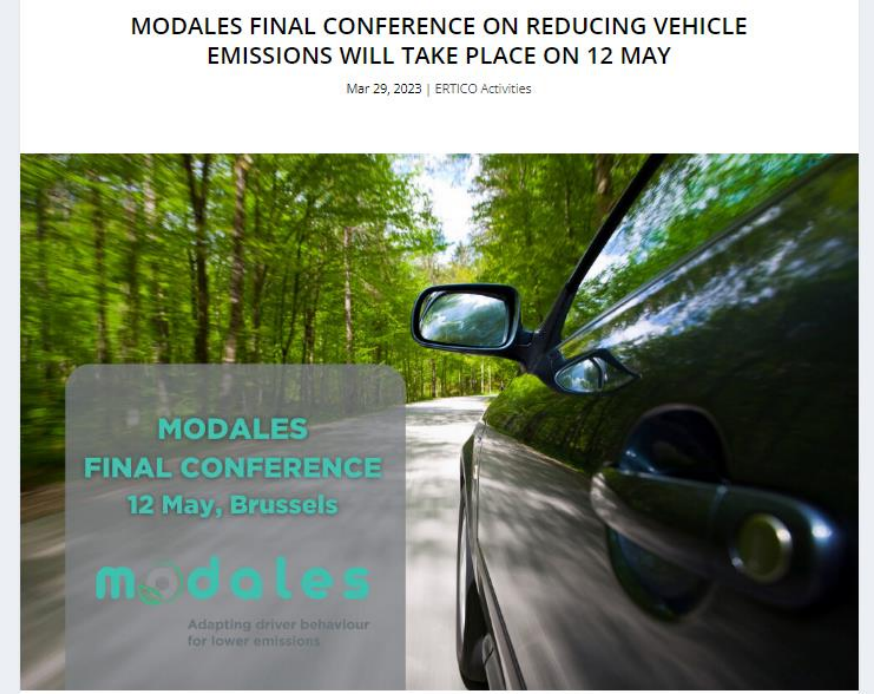


Figure 10: MODALES Final Conference promoted on the ERTICO website

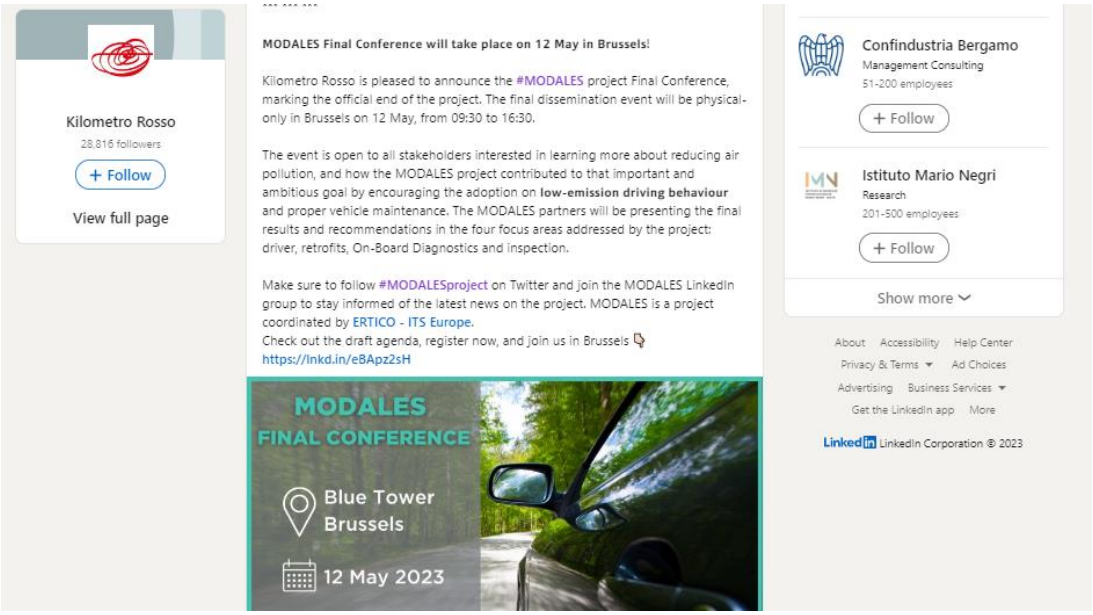


Figure 11: MODALES Final Conference promoted on an external channel

3.3. Website

The MODALES website was launched in November 2019. The website was published on behalf of the MODALES consortium in order to disseminate the project activities and to serve as an interaction platform for project relevant data and information. The website presents the work of the MODALES project partners and stakeholders, as well as latest news and events.

The project website can be found at www.modales-project.eu

3.3.1. Website structure and content

The MODALES website has the following structure and has been regularly updated since its launch:

- Home page (project figures, introduction, videos, news and events, contact form and footer with partner logos - https://modales-project.eu/)
- About (https://modales-project.eu/about/):
    - Project figures (duration, number of partners, etc.)
    - Explanation of MODALES' vision
    - Videos
    - Consortium (logos and description of partners).
- News & Events (https://modales-project.eu/news-events/).
- Pilot sites (with subsections for each of 8 trial sites – photo, description in English (and in some cases also the national language), partners involved, available at https://modales-project.eu/pilot-sites).
- Awareness Campaign (providing the tips before driving, during driving, and on car maintenance in eleven languages, available at https://modales-project.eu/campaign/)
- Library (containing sub-pages with media, deliverables, press clippings and publications):
    - Media (MODALES brochure, press release, summary presentation, logo and branding guidelines, and project videos including the low-emission training videos in different languages), available at https://modales-project.eu/media/)
    - Deliverables (PDFs of public deliverables and short non-confidential executive summaries of confidential deliverables, at https://modales-project.eu/deliverables)
    - Press clippings (MODALES in the media – links with short description, at https://modales-project.eu/press-clippings/)
    - Publications (technical and scientific papers, at https://modales-project.eu/publications/).
- Contact (Contact details and contact form - https://modales-project.eu/contact/).

3.3.2. Website usage

From 8 December 2019, the day on which the website was launched, until 31 August 2020, monthly visits to the MODALES website ranged from 120 to 170, with an average of 150 per month, which matches the KPI for the first year.

The most visited pages were the homepage, the deliverables page, the news and events page, the "about" page and the contact page.

From 1 September 2020 to 31 August 2021, monthly visits to the MODALES website were on average 322 per month, which meets the KPI for the second year of 200 visitors per month (see Figure 12).

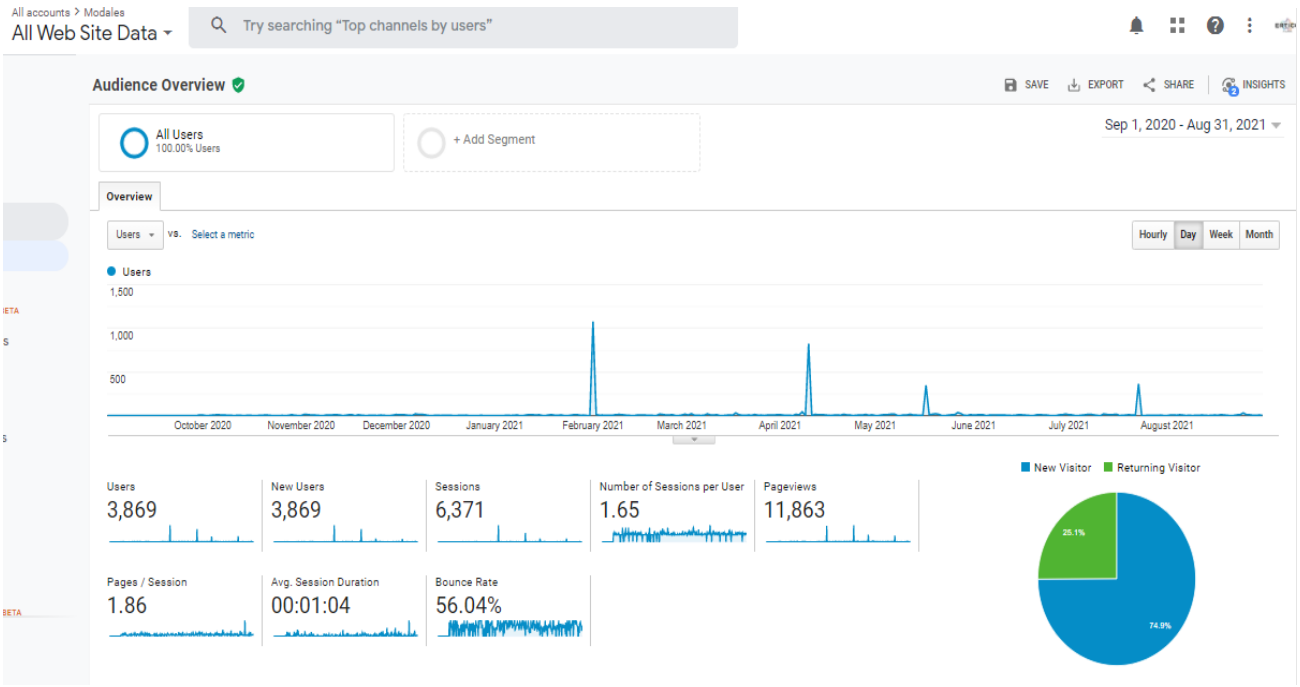


Figure 12: Website visits from 1 September 2020 to 31 August 2021

The most visited pages were the news and events page, followed by the "About" and deliverables page.

From 1 September 2021 to 31 May 2023, monthly visits to the MODALES website were on average 269 per month, which meets the KPI for Years 3 and 4 of 250 visitors per month (see Figure 13).

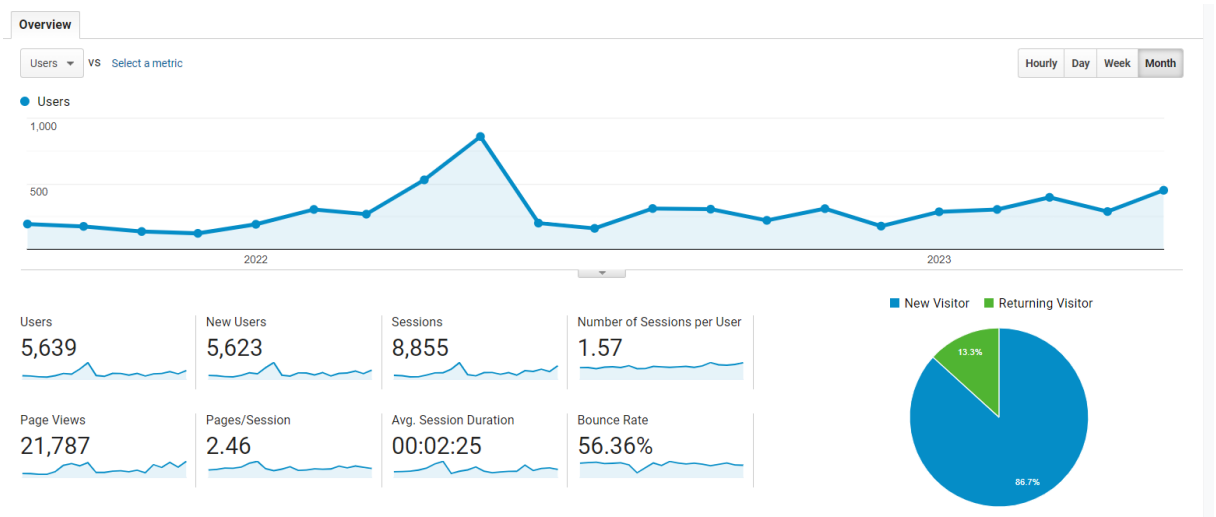


Figure 13: Website visits from 1 September 2021 to 31 May 2023

The most visited pages were the News & Events, "About" page, the English page of the Awareness Campaign ("Check out our simple tips to reduce your driving emissions"), and the deliverables page.

In 2022, a new section of the website was created for the Awareness Campaign of the project, with eleven sub-pages gathering tips to reduce driving emissions in eleven different languages. The English page of this new section of the website was the most visited, followed by the tips in Catalan, German, and Italian.

3.4. Social media

3.4.1. Twitter

Twitter has been used as a channel to promote "live" news, especially related to project events and results. In addition, this channel has been used as reflector of the website's news and news/information by project partners, as shown in the following figures.

It was decided not to create a specific MODALES Twitter channel, as that would risk having limited following for a specialised project (and moreover one which does not have a constant e.g. daily flow of news, but rather every few weeks or monthly). Instead, the consortium used existing channels of project partners[15] and promoted MODALES using the hashtags #MODALES, #MODALES4cleanmobility, #MODALESproject, and #MODALEStips.

The last hashtag, #MODALEStips, was introduced to promote the low-emission driving tips of the project as part of the MODALES Awareness Campaign, which was launched in March 2022. As from Year 2, the hashtag #MODALESproject was mostly used in order to centralise the attention on one branding hashtag and facilitate the tracking and analysis of tweets. Some examples of tweets mentioning the project hashtags can be found in Figures 14 to 17.

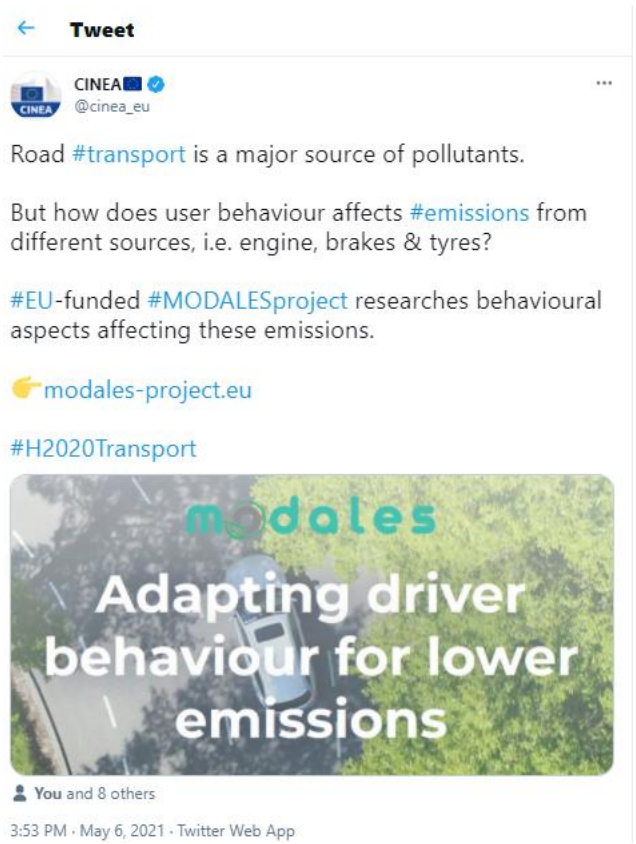


Figure 14: Tweet by CINEA tagging #MODALESproject in 2021

[15] For example ERTICO (@ertico, over 8000 followers), RACC/ACASA (@ClubRACC, over 60 000 followers), IRU (@the_IRU, over 9000 followers), FIA Region 1 (@FIARegionI, over 2000 followers) and LIST (@LIST_Luxembourg, over 4500 followers)

Figure 15: Example of Tweets with #MODALESproject published by project partners and external ITS associations in 2021

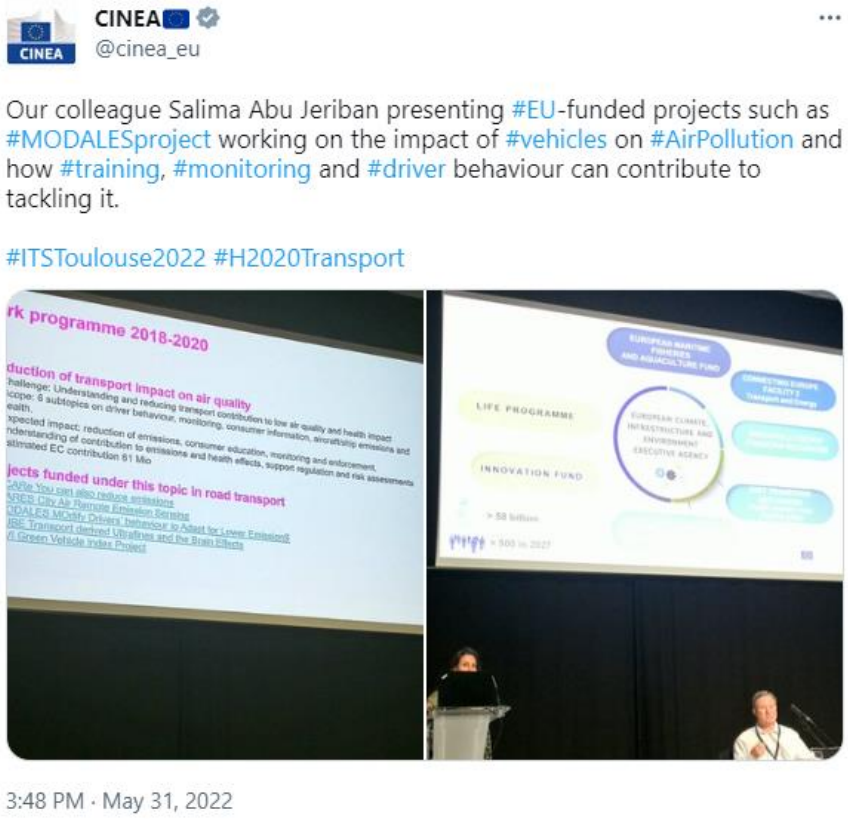


Figure 16: Tweet by CINEA tagging #MODALESproject in 2022

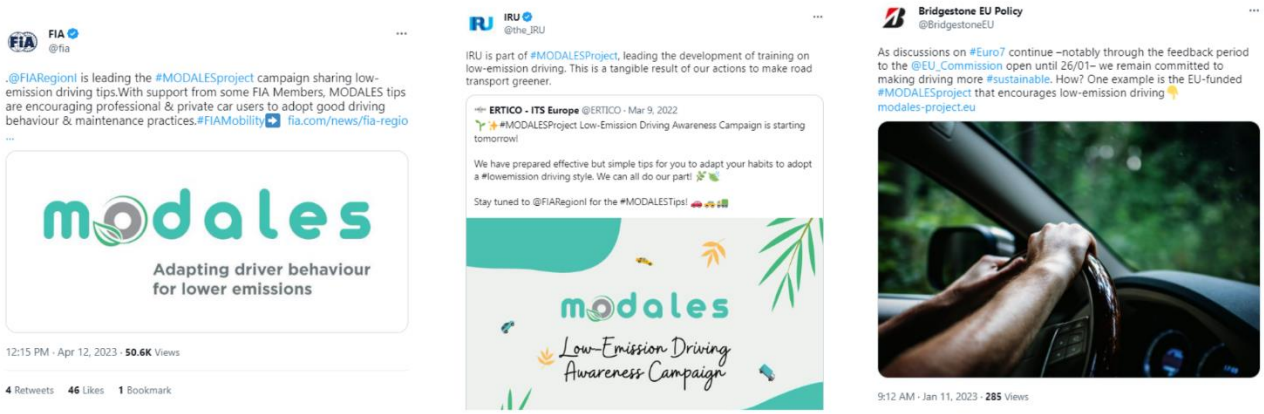


Figure 17: Example of Tweets mentioning #MODALESproject in 2022 and 2023

The MODALES hashtag has performed well during the first year of the project, reaching up to 6530 impressions, 82 engagements and 9 retweets. In Year 2, the MODALES hashtag reached up to 21,300 impressions, 15 engagements and 6 retweets.

The KPI set in 2019 of 100 posts related to MODALES was almost achieved, with a total number of 81 tweets.

The KPI set for Year 2 of 150 posts related to MODALES was also almost achieved with 126 tweets, mostly citing only #MODALESproject to focus the attention to one unique hashtag. The slightly lower than planned activity was due to fewer live events and the delay to the starting of the on-road trials.

Tweets have featured more animated elements, such as GIFs and ad-hoc short videos. The promotional short video designed for social media channels was disseminated via the ERTICO Twitter account[16] and has been made available to the consortium on MODALES' SharePoint platform.

The KPI set for Years 3 and 4 of 200 posts related to MODALES was reached with a total of 279 tweets citing #MODALESproject and #MODALESTips.

3.4.2. LinkedIn

The MODALES LinkedIn group was established early in the project by the Project Coordinator. The purpose of the group is to share project information and news and to establish a community relevant to the project. The group is accessible via this link: https://www.linkedin.com/groups/12287962/

As of May 2023, the MODALES group accounted 100 members, which almost reaches the KPI of 120 members set for Years 3 and 4 (see Figure 18). The LinkedIn group was advertised through ERTICO's channels and other partners' channels and the project partners also invited their connections on LinkedIn to join the group, which helped increase the number of members. Having a closed group instead of a public page made it more difficult to promote the project activities and posts that were shared in the group and attract a wider audience, as posts in the group were only visible to the members of the group. Some people might also not want to join a group, in which the participants can be identified, and would have perhaps preferred to simply follow a page instead. In addition to the LinkedIn group, project partners also helped promote MODALES through their own personal accounts,

[16] MODALES video dissemination: https://twitter.com/ERTICO/status/1452567400243683334

which helped increase the outreach of the project. For instance, the post illustrated in Figure 19 (relating to a paper presentation at the 2023 ITS European Project) has 1,251 impressions and 50 likes.

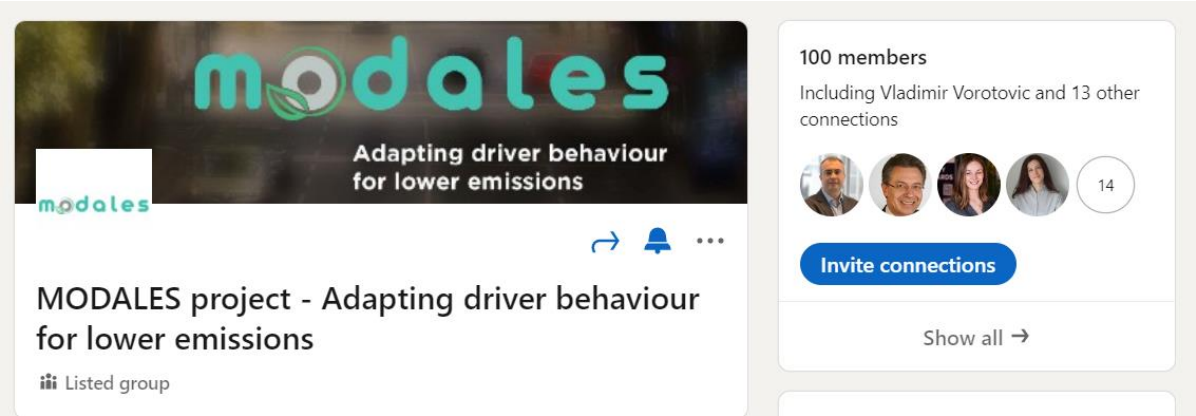


Figure 18: MODALES LinkedIn group members in 2023

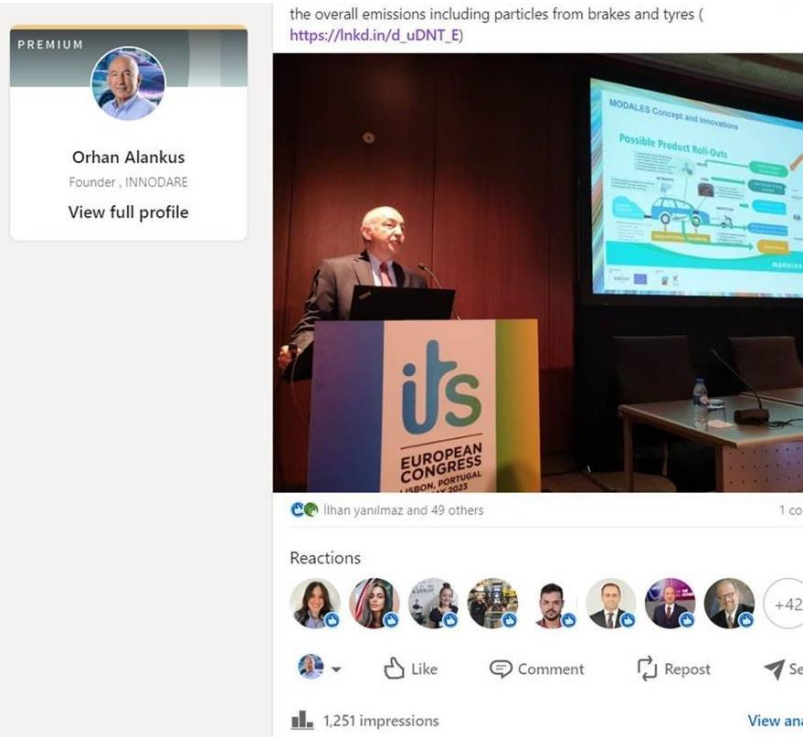


Figure 19: Example of a LinkedIn post posted through the private account of a partner from Okan University

3.5. Dissemination materials

A general project brochure was designed during the first year of the project to raise awareness from MODALES' early stages. The brochure is available on the MODALES website at https://modales-project.eu/media/.

The MODALES final brochure has been produced to mark the end of the project in the form of three results factsheets summarising the four key research areas of the project:

- Driver
- Retrofits
- Periodic Inspections and OBD (two research areas on one sheet due to interlinking between them).

These non-technical summaries, produced at the same time as this deliverable (hence shortly available on the MODALES website), provide a short overview of the main important results in that specific key area in a downloadable PDF document. They also present the partners involved in the project activities linked to the key area and list the deliverables related to this topic area. These will be promoted on social media to highlight the project's results and achievements.

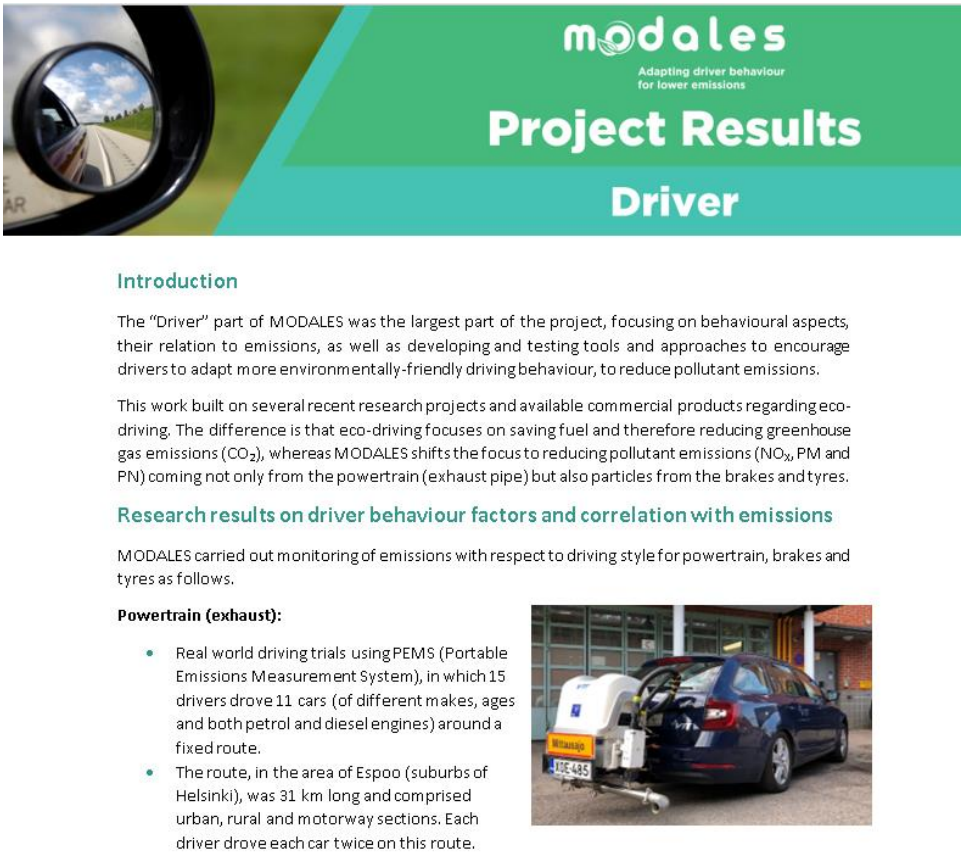


Figure 20: Example of one of the MODALES results factsheets

A roll-up banner was designed and produced (see Figure 21) to be used at various events where MODALES was presented, including the Final Conference.

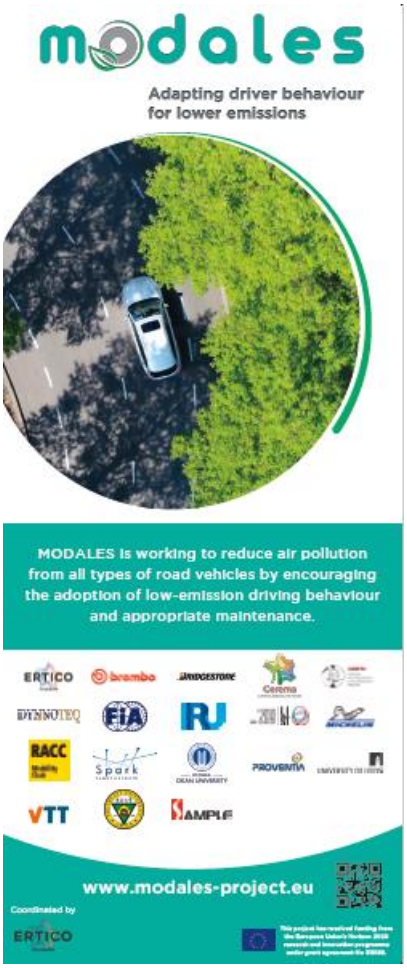


Figure 21: MODALES roll-up banner

For the ITS World Congress in Hamburg in October 2021, printed postcards were created for distribution at the ERTICO stand for ERTICO Partnership projects including MODALES. These follow a common format, including brief project details and a QR code linking to the website for further information. The MODALES postcard is shown in Figure 22 below. This has also been used in subsequent events, as the information on it is limited and remains valid.

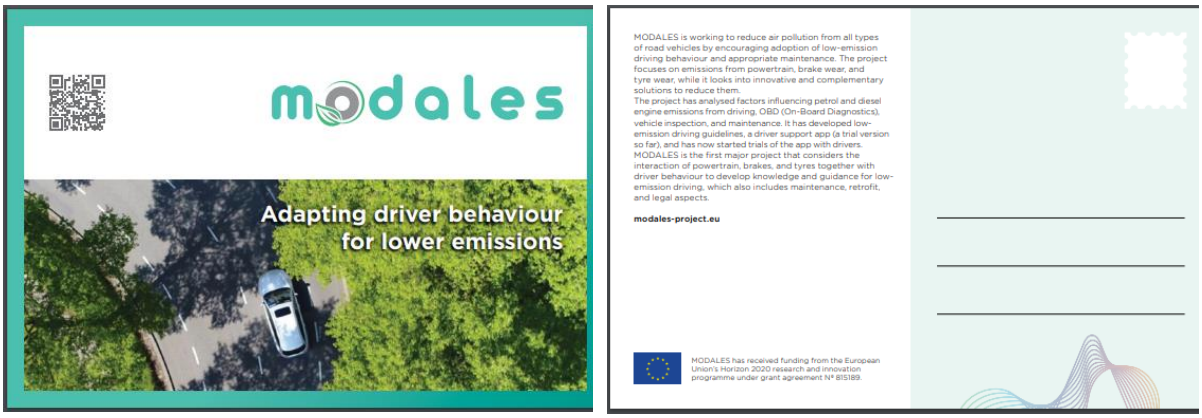


Figure 22: MODALES postcard for the 2021 ITS World Congress

3.6. Press relations and news articles

3.6.1. Press relations

A press release was sent on the occasion of the kick-off of MODALES. This press release was added in Year 2 to the MODALES library media section to facilitate the access to basic project information by the media. The tools used to disseminate the press release was the media monitoring and social listening platform Meltwater[17] and ERTICO's established list of journalists. News, events and results have been promoted via MODALES' website, LinkedIn group and ERTICO Twitter, but also via consortium members' corporate and private accounts, to ensure maximum impact (see for example Figure 23).

Figure 23: MODALES presented and explained on IRU's website

Throughout the project, MODALES has been mentioned and featured in different online journals, as reported on the "Press Clippings" page[18]. Figures 24 and 25 show the effective use of MODALES' press release, in English and translated into French respectively.

[17] https://www.meltwater.com/en
[18] https://modales-project.eu/press-clippings/

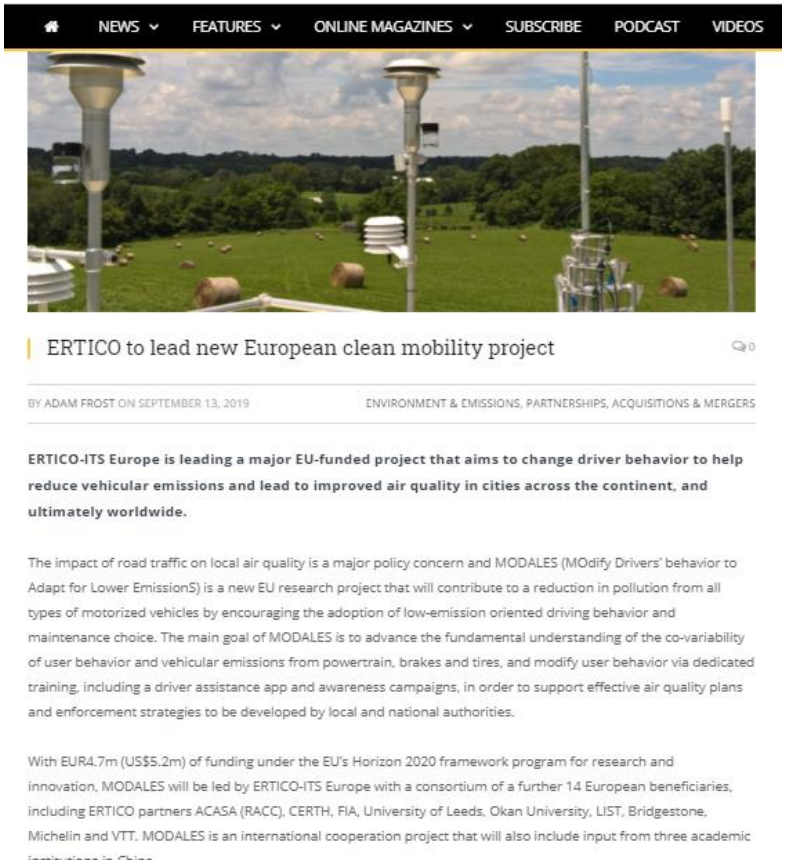


Figure 24: MODALES mentioned in Traffic Technology Today

Figure 25: MODALES mentioned on the website of project partner Cerema (in French)

In addition, MODALES was mentioned on websites not handled by the project's consortium (see for instance Figure 26).

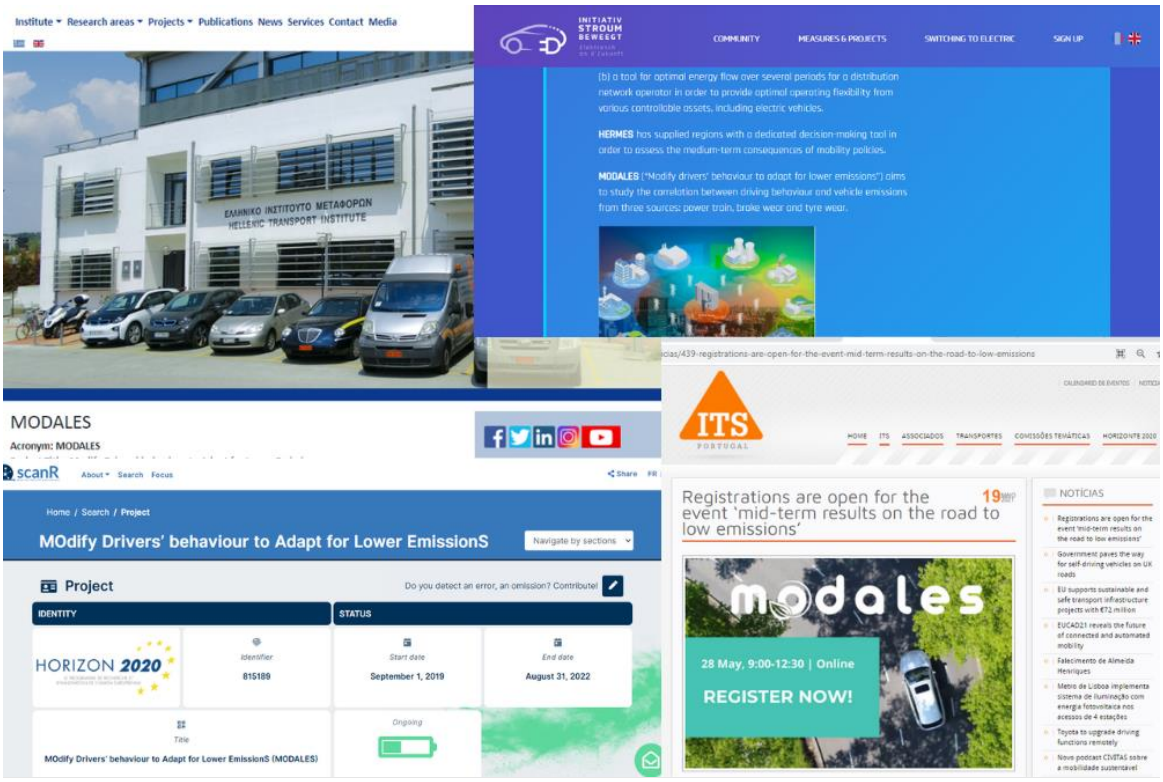


Figure 26: MODALES mentioned on websites external to the project's consortium

3.6.2. News articles

MODALES partners, led by the Communication Manager and the Technical Dissemination Manager, have written news articles for inclusion on the website and other non-scientific publications. Some more in-depth, non-scientific dissemination articles have been prepared for possible inclusion in external media and magazines for a broader reach to specific target groups, including civil society.

Each partner who has written an article, especially if planned for external media, has informed the Communication Manager of articles that will be, or are published, in the media. Articles are recorded in the project's internal dissemination register. For instance, MODALES has been mentioned in IRU's newsletter and web news and FIA Region I included a total of 9 articles on MODALES in its internal newsletter sent to its Members.

Throughout the project, several interviews featuring the project partners were conducted and published on the MODALES website. The aim of this interview series, called "MODALES focus on", is to highlight the specific role of the partners in the project and to provide more details on a specific area of MODALES. The interviews were promoted on social media and on the partners' own websites and/or social media channels. The full list of interview can be found in Table 5 below.

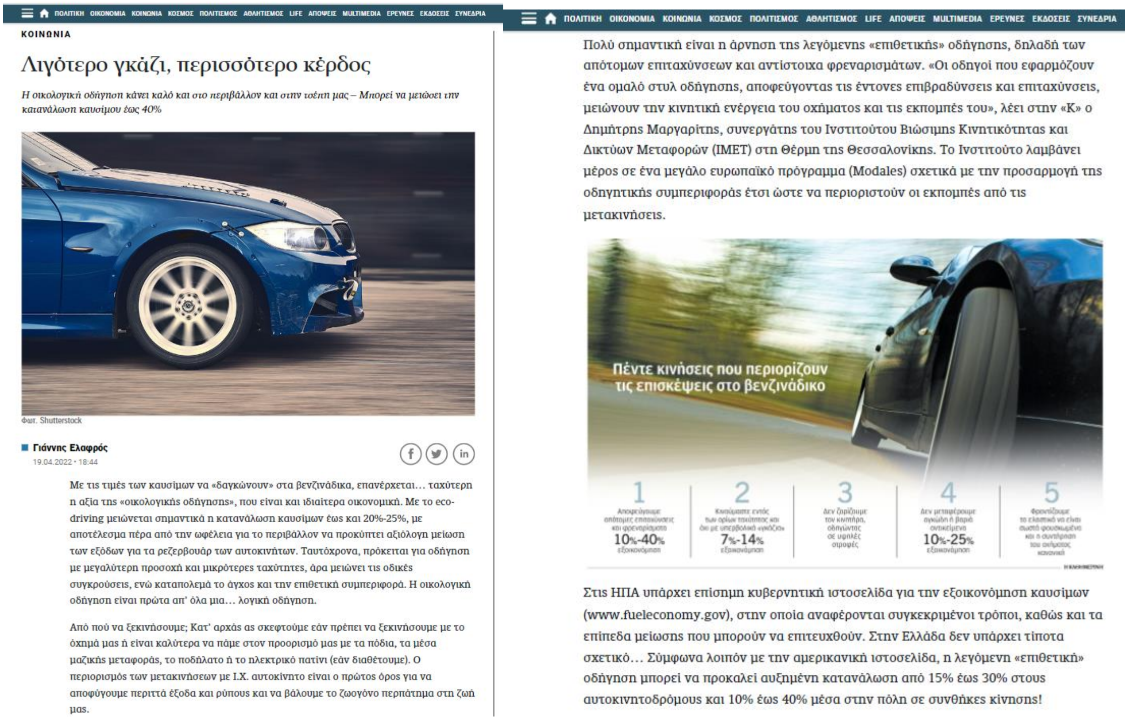
Table 5: List of MODALES "Focus on" interviews with the project partners

Publication date	Focus on (topic)	Interview title	Partner(s) interviewed	Link on the MODALES website
05/10/2020	Vehicle Tampering	The results on cross-border vehicle tampering are now available	Spark	https://modales-project.eu/the-results-on-cross-border-vehicle-tampering-are-now-available/
02/11/2020	Clean Mobility	Towards more sustainable mobility: an interview with ERTICO – ITS Europe	ERTICO	https://modales-project.eu/towards-more-sustainable-mobility-an-interview-with-ertico-its-europe/
07/12/2020	Mobile App	Are you an environmentally-friendly driver? Here's how MODALES will help you find out	LIST	https://modales-project.eu/are-you-an-environmentally-friendly-driver-heres-how-modales-will-help-you-find-out/
12/01/2021	Users	When sustainability and safety meet users: an interview with RACC	RACC/ACASA	https://modales-project.eu/when-sustainability-and-safety-meet-users-an-interview-with-racc/
04/02/2021	The characteristics of low emission driving	Shaping the characteristics of low emission driving with MODALES member VTT	VTT	https://modales-project.eu/shaping-the-characteristics-of-low-emission-driving-with-modales-member-vtt/
18/03/2021	Research and innovation	MODALES talks innovation with Okan University	Okan University	https://modales-project.eu/modales-talks-innovation-with-okan-university/
26/01/2023	China	Working towards shared low-emission mobility goals through effective cooperation with Chinese partners	Southeast University (SEU), Nanjing Sample Technology, Dynnoteq	https://modales-project.eu/working-towards-shared-low-emission-mobility-goals-through-effective-cooperation-with-chinese-partners/
26/04/2023	Awareness Campaign	Raising awareness of low-emission driving with FIA Region I and its Member Clubs	FIA	https://modales-project.eu/raising-awareness-of-low-emission-driving-with-fia-region-i-and-its-member-clubs/
10/05/2023	Low-emission training	Training drivers to help them reduce their emissions with IRU	IRU	https://modales-project.eu/training-drivers-to-help-them-reduce-their-emissions-with-iru/

In Year 1, MODALES almost met its target of 10 news published in English, with a total of 8 news published on the project's website (https://modales-project.eu/news-events). There were ten "press clippings" (articles from other websites) at https://modales-project.eu/press-clippings of which four were in languages other than English (three in Turkish, one in French), almost reaching the target of five. The lower number of publications is due to the lack of events and meetings that would have generated content for the website and the press.

MODALES met the KPIs set for Year 2 of 10 news published in English, with a total of 14 news published on the project's website (https://modales-project.eu/news-events). There are 18 "press clippings" (articles from other websites) at https://modales-project.eu/press-clippings, 11 of which are included on ERTICO's channels, and three of which were published in Finnish, French and Catalan. More publications have been issued during Year 2, including a wide range of publications on ERTICO's channels. Particular focus was set on ERTICO channels, as the association sends out its weekly newsletter, which reaches over 4.000 subscribers, with an average open rate of 800-1000 readers per week.

In Years 3 and 4, MODALES published 19 news items in English on the project's website (https://modales-project.eu/news-events), reaching the KPI of 15 news items. In total, 17 "press clippings" (articles from other websites) were added to the page https://modales-project.eu/press-clippings, eight of which were published on ERTICO's channels, continuing the focus set on the ERTICO newsroom. Three of the press clippings were published in other languages, namely French, Greek, and Catalan (for an example, see Figure 27). This is below the KPI that was set for Years 3 and 4 of 15 press clippings in other languages.



ΠΟΛΙΤΙΚΗ ΟΙΚΟΝΟΜΙΑ ΚΟΙΝΩΝΙΑ ΚΟΣΜΟΣ ΠΟΛΙΤΙΣΜΟΣ ΑΘΛΗΤΙΣΜΟΣ LIFE ΑΠΟΨΕΙΣ MULTIMEDIA ΕΡΕΥΝΕΣ ΕΚΔΟΣΕΙΣ ΣΥΝΕΔΡΙΑ

ΚΟΙΝΩΝΙΑ

Λιγότερο γκάζι, περισσότερο κέρδος

Η οικολογική οδήγηση κάνει καλό και στο περιβάλλον και στην τσέπη μας – Μπορεί να μειώσει την κατανάλωση καυσίμου έως 40%

Φωτ. Shutterstock

Γιάννης Ελαφρός
19.04.2022 • 18:44

Με τις τιμές των καυσίμων να «δαγκώνουν» στα βενζινάδικα, επανέρχεται… ταχύτερη η αξία της «οικολογικής οδήγησης», που είναι και ιδιαίτερα οικονομική. Με το eco-driving μειώνεται σημαντικά η κατανάλωση καυσίμων έως και 20%-25%, με αποτέλεσμα πέρα από την ωφέλεια για το περιβάλλον να προκύπτει αξιόλογη μείωση των εξόδων για τα ρεζερβουάρ των αυτοκινήτων. Ταυτόχρονα, πρόκειται για οδήγηση με μεγαλύτερη προσοχή και μικρότερες ταχύτητες, άρα μειώνει τις οδικές συγκρούσεις, ενώ καταπολεμά το άγχος και την επιθετική συμπεριφορά. Η οικολογική οδήγηση είναι πρώτα απ' όλα μια… λογική οδήγηση.

Από πού να ξεκινήσουμε; Κατ' αρχάς ας σκεφτούμε εάν πρέπει να ξεκινήσουμε με το όχημά μας ή είναι καλύτερα να πάμε στον προορισμό μας με τα πόδια, τα μέσα μαζικής μεταφοράς, το ποδήλατο ή το ηλεκτρικό πατίνι (εάν διαθέτουμε). Ο περιορισμός των μετακινήσεων με Ι.Χ. αυτοκίνητο είναι ο πρώτος όρος για να αποφύγουμε περιττά έξοδα και ρύπους και να βάλουμε το ζωογόνο περπάτημα στη ζωή μας.

ΠΟΛΙΤΙΚΗ ΟΙΚΟΝΟΜΙΑ ΚΟΙΝΩΝΙΑ ΚΟΣΜΟΣ ΠΟΛΙΤΙΣΜΟΣ ΑΘΛΗΤΙΣΜΟΣ LIFE ΑΠΟΨΕΙΣ MULTIMEDIA ΕΡΕΥΝΕΣ ΕΚΔΟΣΕΙΣ ΣΥΝΕΔΡΙΑ

Πολύ σημαντική είναι η άρνηση της λεγόμενης «επιθετικής» οδήγησης, δηλαδή των απότομων επιταχύνσεων και αντίστοιχα φρεναρισμάτων. «Οι οδηγοί που εφαρμόζουν ένα ομαλό στυλ οδήγησης, αποφεύγοντας τις έντονες επιβραδύνσεις και επιταχύνσεις, μειώνουν την κινητική ενέργεια του οχήματος και τις εκπομπές του», λέει στην «Κ» ο Δημήτρης Μαργαρίτης, συνεργάτης του Ινστιτούτου Βιώσιμης Κινητικότητας και Δικτύων Μεταφορών (ΙΜΕΤ) στη Θέρμη της Θεσσαλονίκης. Το Ινστιτούτο λαμβάνει μέρος σε ένα μεγάλο ευρωπαϊκό πρόγραμμα (Modales) σχετικά με την προσαρμογή της οδηγητικής συμπεριφοράς έτσι ώστε να περιοριστούν οι εκπομπές από τις μετακινήσεις.

Στις ΗΠΑ υπάρχει επίσημη κυβερνητική ιστοσελίδα για την εξοικονόμηση καυσίμων (www.fueleconomy.gov), στην οποία αναφέρονται συγκεκριμένοι τρόποι, καθώς και τα επίπεδα μείωσης που μπορούν να επιτευχθούν. Στην Ελλάδα δεν υπάρχει τίποτα σχετικό… Σύμφωνα λοιπόν με την αμερικανική ιστοσελίδα, η λεγόμενη «επιθετική» οδήγηση μπορεί να προκαλεί αυξημένη κατανάλωση από 15% έως 30% στους αυτοκινητοδρόμους και 10% έως 40% μέσα στην πόλη σε συνθήκες κίνησης!

Figure 27: MODALES mentioned in an article in newspaper Kathimerini (in Greek)

3.7. Low-emission driving - Awareness Campaign and training videos

Task 7.3 of MODALES is an awareness campaign, which made extensive use of the project outputs and communication tools to give visibility to MODALES and to promote the low-emission driving guidelines and training to private and professional drivers in targeted countries. This includes promotion to bodies such as motoring organisations (e.g. member clubs of FIA), driving schools, road transport operators and their associations/forums (e.g. IRU) and to public authorities. The campaign targeted different media at users appropriate to their country (language) and sector (motorists, HDV drivers).

The awareness campaign was originally due to start in early 2021 but, although planning started at that time, it did not make sense for any campaign to go live before the guidelines, app and training are available and before first trials were conducted with the volunteer drivers. The above actions started in late autumn 2021 so the campaign commenced at the beginning of 2022 with short and impactful messages in graphical form to advise on different aspects of low-emission driving behaviour and associated actions (such as maintenance and trip preparation). The messages were developed based on the guidelines (MODALES D5.1: Guidelines for low-emission driving) and the training plan (MODALES D5.5: Training courses manual for low-emission driving). They were disseminated in the form of:

- A set of ten simple infographics, containing one message/guideline, for inclusion on social media sites of partners or other stakeholders (using the hashtags #MODALESproject and #MODALEStips specific for the campaign). These are available in 11 different languages;
- Short and user-friendly guidance documents (one or two pages, also available in different languages) available on the MODALES website which are linked to from the above social media campaigns in order to provide a greater depth of information and guidance;
- Making the training videos publicly available online on the MODALES website and on YouTube.

The first infographics were disseminated from mid-January 2022. From then onwards the campaigns accompanied the on-road trials on a regular basis (at least two social media posts per month in the countries covered) until the end of the project.

FIA Region I led the MODALES awareness campaign to share low-emission driving tips and to encourage professional and private car users to adopt good driving behaviours and maintenance practices. To achieve this objective, FIA Region I worked with Member Clubs, seeking support through their vast network, to reach the Clubs' members in different countries. By working closely together with Member Clubs, FIA Region I aimed for the MODALES awareness campaign to reach as many drivers as possible.

A set of ten infographics with driving tips was developed and translated into eight EU languages, as well as in Turkish, Russian, and Chinese to raise awareness around the world. The driving tips were especially aimed at petrol and diesel car drivers and they divided into three categories: 1 - before driving, 2 - while driving, and 3 – car maintenance (see Figure 28).

Every tip was accompanied by an explanation, and all information is accessible on the MODALES campaign page.

Figure 28: Examples of the tips in the three different categories

The awareness campaign with MODALES tips was launched in March 2022 and was implemented until the end of February 2023.

A social calendar was prepared and set out the dates and posts that FIA Region I, its member Clubs, and project partners would publish MODALES tips content. FIA Region I published posts at least once a month on Twitter and LinkedIn channels, every first Thursday of the month (see Figure 29). FIA Region I Mobility Clubs and MODALES Partners used this social media calendar as a guideline and could enrich the post contents depending on their needs. All posts tagged FIA Region I, project partners, and Clubs as well as the project hashtag #MODALESTips was mentioned to increase engagement opportunities.

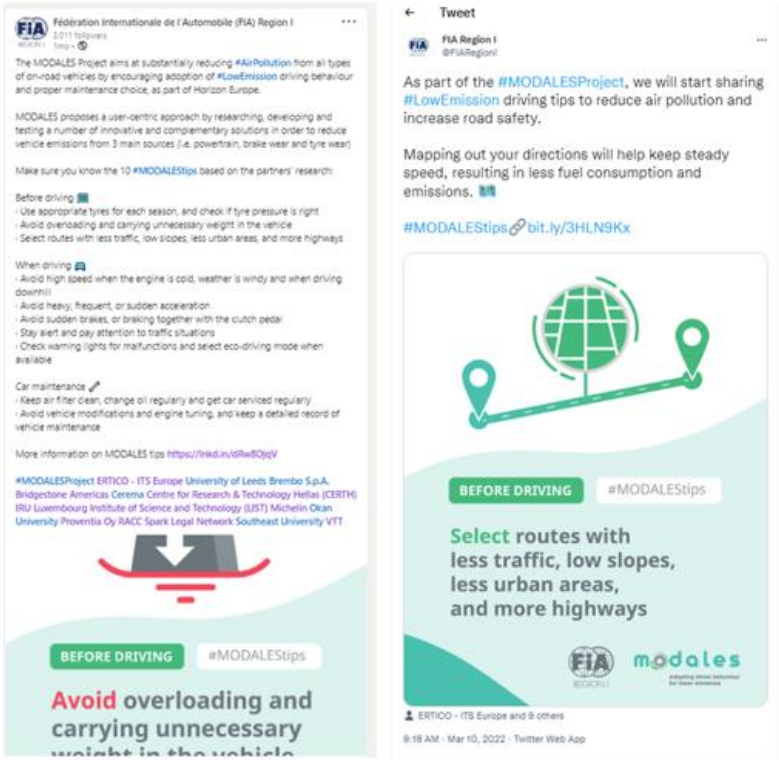


Figure 29: Examples of #MODALESTips posts from FIA Region I

With the support of FIA Region I Member Clubs, MODALES tips reached as many drivers as possible in Europe and beyond. Member Clubs such as ACA (France), ACI (Italy), ADAC (Germany), ACL (Luxembourg), ÖAMTC (Austria), RACC (Spain), and TCS (Switzerland) actively supported the campaign and repeatedly shared useful tips via their different social media channels (see Figure 30: Twitter and Figure 31: LinkedIn).

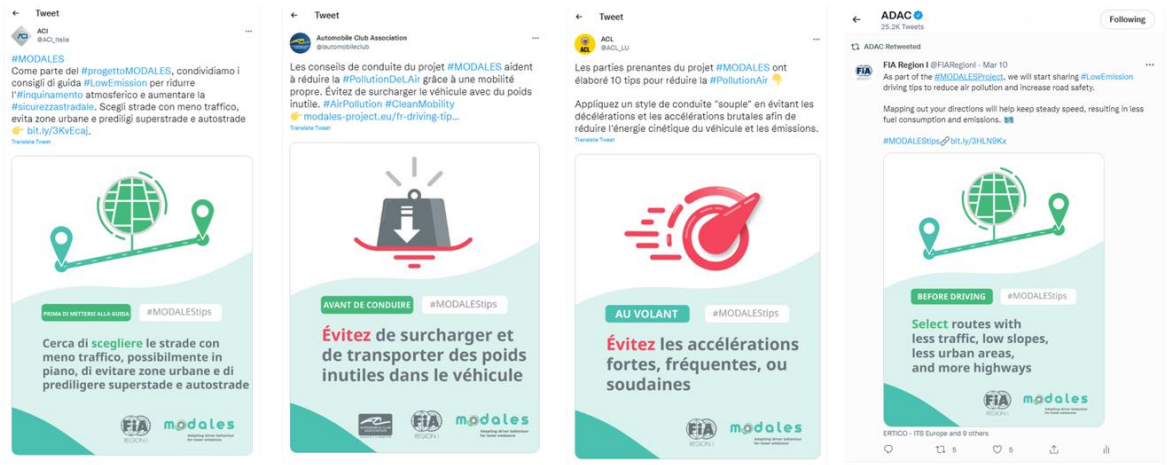


Figure 30: Examples of #MODALESTips tweets from FIA Region I Mobility Clubs in Italy, France, Luxembourg and Germany

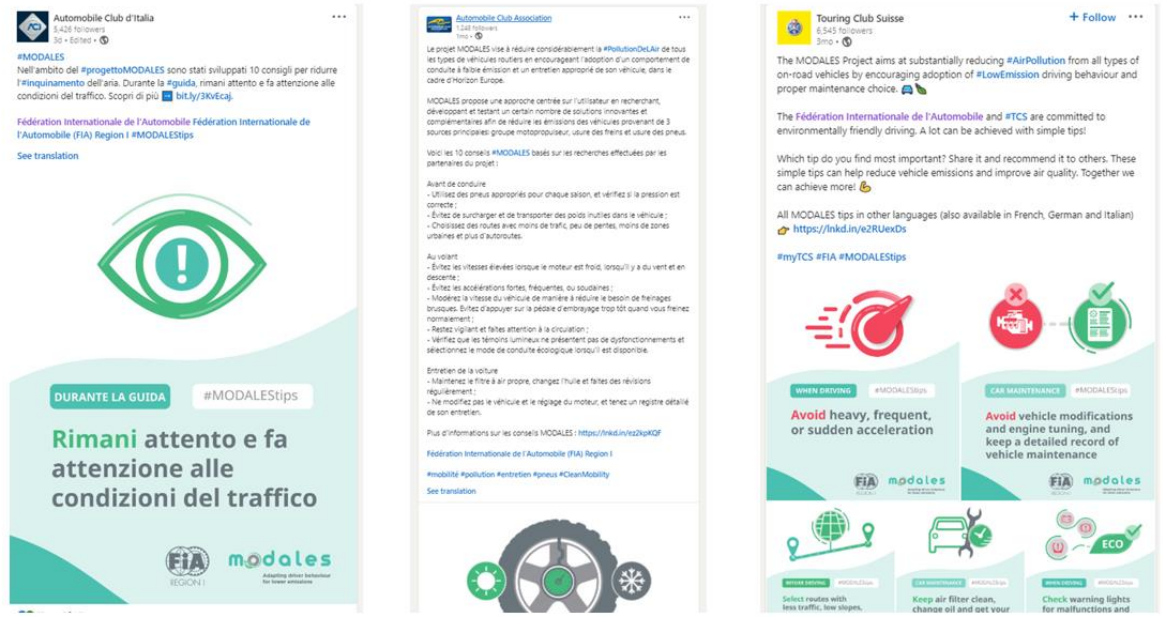


Figure 31: Examples of #MODALESTips posts on LinkedIn from FIA Region I Mobility Clubs in Italy, France and Switzerland

The statistics of the campaign on social media in Table 6 show that FIA Region I social media activities have gained almost 100,000 impressions, and nearly 2000 engagements. Certain posts on LinkedIn achieved over 10% of engagement rate, which is a very good performance.

Table 6: FIA Region I awareness campaign – Social media statistics (March 2022-March 2023)

FIA Region I Platform	Number of posts	Impression /Reach	Engagements	Likes	Retweets/ Reshares	Average engagement rate
Twitter	29	81,572	1,213	283	80	1.5%
LinkedIn	10	11,033	550	215	29	4.9%

Outside social media, FIA Region I took the opportunity to share the MODALES' tips with novice drivers (18-26-year-olds) from Slovenia, Austria, Poland, Bulgaria, the UK, Spain, Hungary, Bosnia Herzegovina, and the Netherlands at their national contests and the international final of Region I Best Young Driver Contests in Madrid, Spain. The MODALES tips have proven so far to be useful for drivers and FIA Region I will continue to disseminate the tips to road users via FIA Region I's network of driving schools and events (Best Young Driver Contest and/or Road Patrol Training for Excellence) after the end of the project.

To complement the campaign, three different MODALES training videos on low-emission driving were developed by IRU (see Figures 32-34). The training videos were developed as part of WP5 but complement the Awareness Campaign developed in WP7. The videos cater to drivers of different types of vehicles: private car, taxis and light duty vehicles, and heavy-duty vehicles. The videos range from 15 to 17 minutes long and are available in 8 languages (soundtracks in English, French, Spanish, and Italian, and versions with subtitles in Greek, Finnish, Turkish and Chinese), which reflect the countries where the on-road trials were held. After the trials were conducted in the pilot sites, the MODALES training videos were published and made publicly available on the MODALES website (on the home page, about page, and media section) and on YouTube[19] through the ERTICO channel in May 2023.

Figure 32: MODALES training videos on the project website

[19] Available at https://www.youtube.com/playlist?list=PL4LSYXNwsQOk3bT4jlgWo645JqCISX7mY

Figure 33: Screenshot from a MODALES low-emission training video

Figure 34: MODALES low-emission training video publicly available on YouTube

On 31 May 2023, the videos counted 498 views in total, with the videos for drivers having the most views, with 418 views in total. The LDV video counted 41 views, and the HDV video 39 views. Apart from views by the drivers in the on-road trials (who were sent links to the videos, which at the time were unlisted on YouTube), most of these views are in the space of less than one month (May 2023) when the videos were made public.

Of the car driver training videos, the Spanish language version has had the most views so far, with 114 views, as MODALES partner RACC-ACASA runs one of the trial sites and, as a motoring organisation, was in a position to publicise the video widely. In second place was the English version with 100 views, and in third place, the Chinese subtitled version has had 56 views as of the end of May 2023.

In addition, the training videos were shared on Bilibili[20] in order to make them accessible in China (see Figure 35). The videos on Bilibili counted 243 views in total (88 for the private cars video, 92 for the LDV video, and 63 for the HDV video).

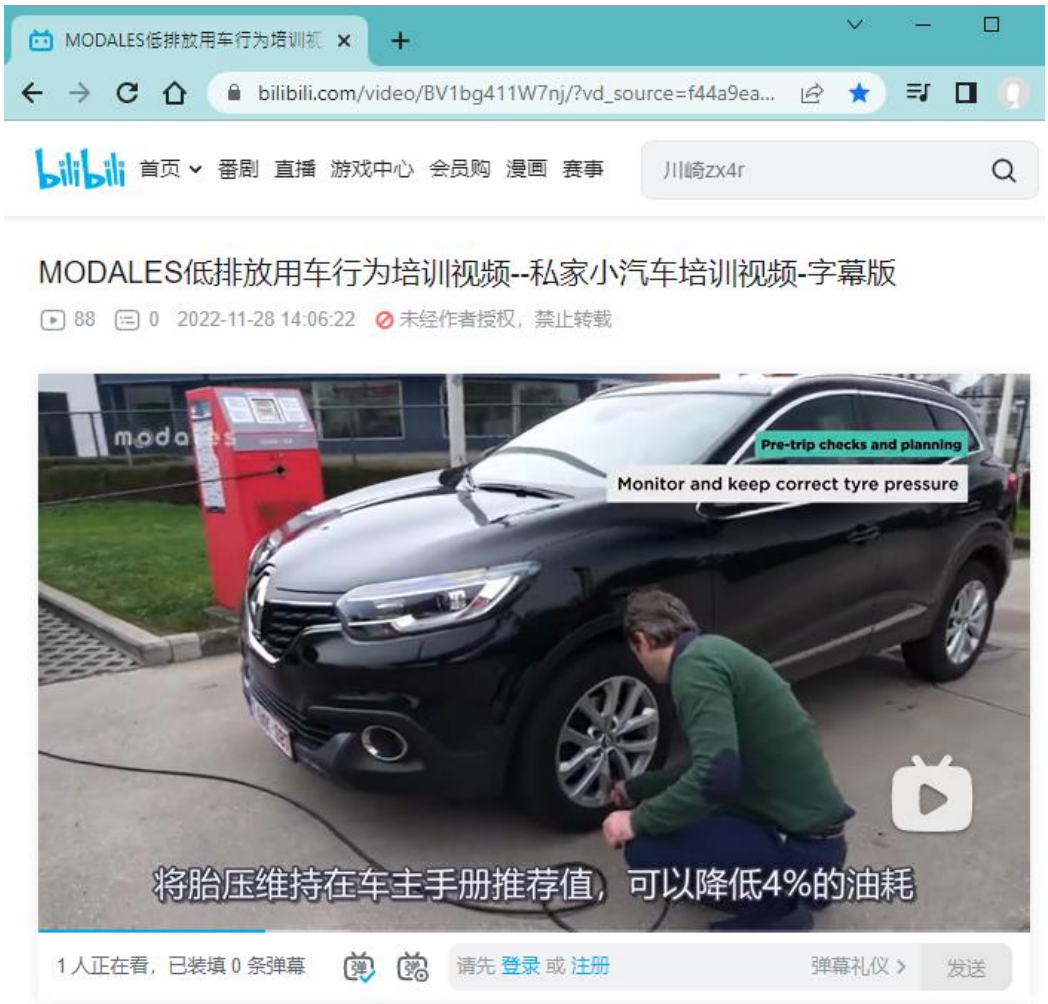


Figure 35: Screenshot of the video for car drivers on Bilibili

3.8. Dissemination in China

International cooperation is an important aspect of the MODALES project. The involvement of two International Partners in China (Southeast University – SEU and Nanjing Sample Technology – NST) started in spring 2021, with the approval of the EC Contract Amendment. In July 2021 and August 2022, and they were supported by UK-based partner Dynnoteq (ensuring liaison between the European project consortium and the Chinese partners).

SEU hosted a six-day summer school which attracted more than 300 undergraduate students from 20 top universities in China in 2021, and more than 500 undergraduate students from 24 universities in China in 2022. MODALES was presented as a flagship theme in the international expert forum of this event (see Figure 36). In addition, about 500 participants joined the event online in 2021. In 2022, over 40 industry leaders and experts in the field were invited to give presentation to the students. The

[20] The video for car drivers is accessible here, the video for LDVs can be found here, and the video for HDVs can be accessed here.

MODALES dissemination material (see Figure 37) at the students' disposal was downloaded 466 times in total.

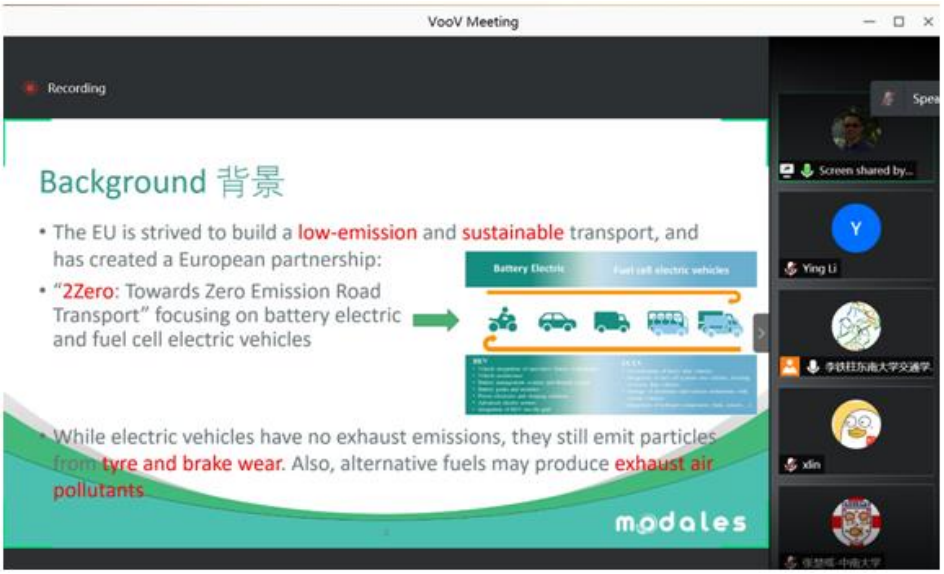


Figure 36: Southeast University Summer School online seminar in 2021 including MODALES

Figure 37: MODALES dissemination material available to the participants of the Southeast University Summer School in 2022

In addition, WeChat was also used as a channel to promote MODALES-related events and to distribute MODALES brochures, or other dissemination materials from the MODALES website. Similar to Twitter in Western countries, WeChat is the most used social media networks in China.

Currently, the MODALES project information is shared by a related event group i.e. the aforementioned Chinese summer school group. In order to reach out a wider audience, this group was created through the SEU WeChat public platform, as of 3 August 2021, the MODALES leaflets/brochures have been downloaded a total of 553 times since its release 8 days previously, as shown in Figure 38. In 2022, a similar dedicated WeChat group was created specifically for that year's

summer school, through which MODALES dissemination materials were distributed, and a total of 466 material downloads occurred through this WeChat group.

Figure 38: MODALES dissemination featured on the Southeast University Summer School WeChat group in China

4. Monitoring and reporting

4.1. Reporting sheet

To record all activities past, present and future, a monitoring and reporting tool was established and is accessible and editable for all partners in the internal SharePoint portal[21].

The dissemination activities report was filled in by the leading partner of every realised dissemination activity. The purpose of this report is to provide the information needed to the Dissemination Manager and the Task 7.4 leader (ERTICO) for publishing the activity to the MODALES website and reporting to the European Commission.

4.2. Key performance indicators

The communication and dissemination activities were monitored and evaluated against a set of predefined Key Performance Indicators (KPIs) as presented in Table 8 below.

Table 7: Communication & dissemination Key Performance Indicators

Activity and criteria (KPI)		Expected performance		
		Year 1 (expected and actual)	Year 2 (expected and actual)	Years 3 and 4 (expected and actual)
Dissemination plan, procedures and strategies (T7.1)	**Deliverables**	≤ 1-month delay for delivery Achieved in Year 1. D7.3 in Year 2 was delayed. Achieved for D7.4 in Year 4.		
Communication tools (Task 7.2)	**Website** - visitors	150/month (actual: 150 on average)	200/month (actual: 322 on average)	250/month (actual: 269)
	Website – Number of news published in English	10 (actual: 8)	10 (actual: 14)	15 (actual: 19)
	Website – Number of news published in other languages, including press clippings	5 (actual: 4)	5 (actual: 3)	15 (actual: 3)
	Twitter – total number of posts related to MODALES	100 (actual: 81)	150 (actual: 126)	200 (actual: 279)
	LinkedIn – members of MODALES group	30 (actual: 41)	60 (actual: 69)	120 (actual: 100)

[21] https://erticobe.sharepoint.com/:x:/r/sites/MODALES/_layouts/15/Doc.aspx?sourcedoc=%7BEB849AE6-60AA-4D32-8914-646C67F56234%7D&file=MODALES%20Dissemination%20register.xlsx&action=default&mobileredirect=true

Activity and criteria (KPI)		Expected performance		
		Year 1 (expected and actual)	Year 2 (expected and actual)	Years 3 and 4 (expected and actual)
Scientific Dissemination (Task 7.4)	Number of publications, concerned audience, quality level of publication	≥ 2 presentations in conferences (actual: 2) 1 articles in scientific/ITS magazines (actual: 3)	≥ 3 presentations in Conferences (actual: 4 technical papers and 3 general presentations) ≥ 1 articles in magazines (actual: 0) ≥ 2 papers in scientific journals (actual: 7)	≥ 5 presentations in Conferences (actual: 6 technical papers and 11 general presentations at events) ≥ 2 articles in Magazines (actual: 0) ≥ 2 papers in scientific journals (actual: 7)
Engage with stakeholders and events (Task 7.4)	Number of stakeholders attending MODALES events in Europe (midterm in Year 2 and Final Event in Year 4)	n/a	≥ 45 (actual 46)	≥ 70 (actual 40)
	Number of press clippings	≥ 10 (actual: 3)	≥ 10 (actual: 18)	≥ 20 (actual: 17)

For most important indicators (website visitors, news published, conference presentations and scientific papers) MODALES exceeded the planned targets.

In some areas, the target was not reached, with the COVID-19 restrictions on physical events during 2020 and much of 2021 being one factor. Furthermore, some targets such as articles in magazines, are perhaps less appropriate now compared to when the project was conceived, as most content is now online and this was balanced with more internal articles (such as MODALES "focus on" interviews) on the project website.

While the number of full news items published in languages other than English was below what was planned, there was a high multilingual content in this project, with videos being available in eight languages and the driving tips in eleven. The social media campaign also took place in several languages.

5. Conclusions

This document provides a final update of the project's Dissemination Strategy, activities and communication tools in Years 3 and 4.

During the end of 2019 and beginning of 2020 MODALES fulfilled its requirements in terms of dissemination and communication. However, the project's progress was affected by the COVID-19 pandemic, which drastically reduced the participation of the project partners in events (online only from March 2020 to October 2021) and therefore the possibility for MODALES to be showcased/presented.

During the end of 2020 and August 2021 MODALES fulfilled all its requirements in terms of communication and dissemination activities. During the end of 2021 and May 2023, MODALES fulfilled its requirements in terms of communication and dissemination activities and reached almost all the KPIs that were set for Years 3 and 4.

Completed actions include the update of the website (Library page, which includes the project's deliverables, press clippings, promotional materials, presentations, and training videos), news and events articles to promote the activities and achievements of MODALES, the launch of the MODALES Awareness Campaign, the publication of the project's factsheets with final results, and the organisation and promotion of the Final Conference of the project on social media and the MODALES website.

The Dissemination, Communication and Awareness Plan has been updated annually. This document is the last report.

5.1. Future dissemination and use of MODALES results

MODALES findings will continue to be utilised by partners after the project comes to an end. This continued use may be in the form of awareness campaigns, training videos or the use of the project's scientific findings for various purposes. Future exploitation of the different project outputs by the partners is detailed in D1.4 Exploitation Plan (confidential deliverable, submitted in May 2023).

MODALES Awareness Campaigns consisted of infographics, short video clips (excerpts of training videos), and guidance documents. FIA clubs and IRU, through their channels, members and the IRU academy will use the project outputs for future dissemination.

The publicly available MODALES low-emission driving training videos for car drivers, taxi and light-duty vehicle drivers, and heavy-duty vehicle drivers, will continue to be disseminated through IRU channels to its national members, as well as by ERTICO, FIA, RACC-ACASA and others.

The website at https://modales-project.eu contains all the above content and public technical results (deliverables, scientific papers, etc.) and will continue to be maintained for three years after the project's end, i.e. up to the end of May 2026.

6. References

1. MODALES Grant Agreement, 815189, H2020-MG-2018-2019-2020/H2020-MG-2018-TwoStages, Research & Innovation Action, Innovation and Networks Executive Agency, European Commission

2. Guidelines to the Rules on Open Access to Scientific Publications and Open Access to Research Data in Horizon 2020, European Commission

4. MODALES D1.4: Exploitation Plan, May 2023 (Confidential deliverable)

5. MODALES D2.3: Legal situation of tampering, September 2020

6. MODALES D5.1: Guidelines for low-emission driving, December 2020

7. MODALES D5.5: Training courses manual for low-emission driving, November 2021 (Confidential deliverable)

8. MODALES D7.1: Dissemination, Communication and Awareness Plan, November 2019

9. MODALES D7.2: Dissemination, Communication and Awareness Plan and Report (end of Year 1), October 2020

10. MODALES D7.3: Dissemination, Communication and Awareness Plan and Report (end of Year 2), December 2021

For more information:

MODALES Project Coordinator

ERTICO - ITS Europe

Avenue Louise 326

1050 Brussels, Belgium

info@modales-project.eu
https://modales-project.eu/

Adapting driver behaviour for lower emissions

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