ICT-Emissions

D7.7 Final workshop

SEVENTH FRAMEWORK PROGRAMME

FP7-ICT-2011-7

COLLABORATIVE PROJECT – GRANT AGREEMENT N°: 288568

Deliverable number (D.7.7)

Delivery date (planned): 31/03/2015 (Month 42)

Delivery date (actual): 31/03/2015

Author(s): Florinda Boschetti (1), Hermann Heich

Author'(s') affiliation (Partner short name): 1. POLIS

Document Control Page

Title	Methodology to evaluate the impacts of ITC/ITS measures on mobility, vehicle energy consumption and CO_2 emissions
Creator	Florinda Boschetti (POLIS), Hermann Heich
Editor	Florinda Boschetti (POLIS)
Brief Description	The main objective of this document is to collate agenda, list of participants, minutes and material from ICT-Emissions Final workshop.
Publisher	ICT-EMISSIONS Consortium
Contributors	Hermann Heich
Type (Deliverable/Milestone)	Deliverable
Format	Document
Creation date	31 March 2015
Version number	1.2
Version date	31 August 2015
Last modified by	Florinda Boschetti (POLIS)
Rights	Copyright "ICT-EMISSIONS Consortium". During the drafting process, access is generally limited to the ICT-EMISSIONS Partners.
Audience	☐ internal ☒ public ☐ restricted, access granted to: EU Commission
Action requested	☐ to be revised by Partners involved in the preparation of the deliverable ☐ for approval of the WP Manager ☐ for approval of the Internal Reviewer (if required) ☒ for approval of the Project Co-ordinator
Deadline for approval	

Version	**Date**	**Modified by**	**Comments**
0.1		Florinda Boschetti (POLIS)	1st draft version of ICT-Emissions D7.7 for partners comments
1.0	7/05/2015	Florinda Boschetti (POLIS)	Final version
1.1	20/08/2015	Florinda Boschetti (POLIS)	New chapter 1.5 Conclusions and audience feedback
1.2	31/08/2015	Zissis Samaras (LAT)	Final editing

Contents

List of tables

List of figures

Executive summary

ICT-Emissions came to an end in March 2015. Project results and recommendations were presented to an expert audience at a Final Conference in Brussels on 31 March 2015. This document illustrates the workshop outline, the final agenda, a complete list of attendees, and some impressions form the conference.

1 Final workshop

At completion of the project, a final conference was organised in Brussels on 31 March 2015 to show results and demonstrate the developed methodology and relative tools.

The event targeted a wide audience representing the potential users of the methods and tools developed by the project.

1.1. WORKSHOP OUTLINE

The event looked at state-of-the-art methodology and validated tools to evaluate the impact of ICT-related transport measures on mobility, vehicle energy consumption and CO_2 emissions of vehicle fleets at the local scale.

The final workshop stressed on novel aspects of the ICT-Emissions methodology being notably the integration between traffic and emission modelling at micro and macro scales, and the use of existing commercial models which were fine tuned to simulate the impacts of ICT measures on emissions.

Presenters have tried to answer to the following research questions which were set out at the start of the project:

- What is the environmental benefit of introducing “green navigation” on GPS navigators?
- How much can adaptive cruise control, enabling V2V communication reduce real-world emissions?
- How much would a city benefit from different Urban Traffic Control systems?
- What is the impact of dynamic speed limits on a ring-road?

The project team deems that the integration of the ICT-Emissions methodology and developed tools into an initiative that wants to prove the climate- and environmental benefits of integrated traffic and transport management or a cooperative systems will add value to such an activity. Having a recognised and validated approach for this kind of impacts will deliver credibility to the results generated.

1.2. WORKSHOP PROGRAMME

The workshop agenda can be found below.

Table 1: Final workshop agenda

Time	Topic	Presenter
10:00 – 10:15	**INTRODUCTION**	Aude Glénisson, European Commission and Zissis Samaras, LAT/AUTh
10:15 – 10:45	**SESSION 1:** **The ICT-Emissions modelling framework**	
	Traffic modelling	Silvana Toffolo, CNH
	Emissions modelling	Leonidas Ntziachristos, LAT/AUTh
10:45 – 12:45	**SESSION 2:** **Case study cities (Madrid, Turin, Rome, Munich):** **Results and future perspectives**	
	Variable Speed Limit	Alvaro Garcia, TRANSyT/UPM
	Green Navigation	Cristina Valdes, TRANSyT/UPM
	Urban Traffic Control	G. Tuffanelli, Roma Mobilitá & G. Magra, CNH
	Ecodriving	Giorgio Magra, CNH and Alvaro Garcia, TRANSyT/UPM
	Start-Stop Scenarios	Christian Vock, AVL
	Adaptive Cruise Control Systems	Werner Maier, B&M
12:45 – 13:30	*Networking lunch*	
	SESSION 3: **Knowledge transfer for a wider uptake of ICT-based measures in traffic management**	
13:30 – 13:45	The ICT-Emissions Library	Werner Maier, B&M
13:45 – 14:00	Impact assessment of Intelligent Transport Systems (ITS) measures reducing CO2 emission	Jean-Charles Pandazis, ERTICO
14:00 – 15:00	Conclusions and Outlook: Exploring research areas towards shaping Smart Cities with ITS	Zissis Samaras, LAT/AUTh

The agenda is also available online http://www.ict-emissions.eu/wp-content/uploads/2015/04/20150331-ICT-Emissions-Agenda-final-conference_FINAL2.pdf

INTRODUCTION:

The event was opened by Mrs. Aude Glénisson from the European Commission, DG CONNECT. She congratulated the project team for undertaking research that has potential for application in a wider context in the future. With regards to Horizon 2020 (the EU Framework Programme for Research and Innovation) she pointed out the calls for “Smart Cities and Communities” where transport, Information and Communication Technologies (ICT) and energy performance play an important role.

SESSION 1: The ICT-Emissions modelling framework

A panel of qualified speakers gave a comprehensive overview of the ICT-Emissions modelling framework and detailed on how traffic- and emission modelling has been set-up and applied. It was illustrated how the commercial models have been enhanced/modified, linked together and how they were calibrated to meet real-world conditions.

SESSION 2: Case study cities (Madrid, Turin, Rome, Munich): Results and future perspectives

The session unveiled some prominent results of investigations undertaken within the project in Turin, Madrid and Rome and showed the impacts on traffic- and energy parameters for the following measures:

- Variable Speed Limit
- Green Navigation
- Urban Traffic Control
- Ecodriving
- Start-Stop scenarios
- Adaptive Cruise Control Systems

The session was rounded up by a presentation on the impact of introducing hybrid vehicles into future vehicle fleets.

SESSION 3: Knowledge transfer for a wider uptake of ICT-based measures in traffic management

The workshop ended with a presentation of the ICT-Emissions result database which is now being filled in with data. The public will have access to the database and will be allowed to download the detailed results together with some meta data.

Mr. Jean-Charles Pandazis from ERTICO emphasized the need for a "standardised assessment methodology" where ICT-Emissions has provided a significant contribution to. The standardisation is unavoidable when results from different initiatives have to be interpreted, compared and up-scaled.

A set of set of conclusions and closing words by the project coordinator Prof. Zissis Samaras from Aristotele University of Thessaloniki wrapped up the event.

1.3. PRESENTATIONS

All presentations were made available on the project website after the meeting. Workshop participants received an e-mail message containing the link where to download the presentations.

Hyperlinks to the presentations are given below.

- Introduction - Zissis Samaras, LAT/AUTh
- Smart Cities and Communities – Open calls – Aude Glenisson, European Commission
- Traffic modelling – Silviana Toffolo, CNH
- CO2 emissions and energy modelling – Christian Vock, AVL; Roberto Tola, CRF; Giorgio Magra, IVECO and Dimitrios Tsokolis, Christos Samaras and Leonidas Ntziachristos, LAT/AUTh
- Madrid Case Study. Variable Speed Limits. M-30 Ring Motorway – Alvaro Garcia, TRANSyT/UPM
- Green navigation. Case study: Madrid – Cristina Valdes, TRANSyT/UPM
- UTC Case Studies: Turin, Rome – G. Tuffanelli, Roma Mobilitá & G. Magra, CNH
- Hybrid Vehicles – Christian Vock, AVL
- Eco-driving Case Studies: Madrid, Turin – Alvaro Garcia-Castro, TRANSyT-UPM; Giorgio Magra, CNH-IVECO
- ICT Measure: Start/Stop – Christian Vock, AVL
- Adaptive Cruise Control Systems – Werner Maier, B&M
- Knowledge transfer for a wider uptake of ICT-based measures in traffic management: The ICT-Emissions Library - Werner Maier, B&M

- Impact assessment of Intelligent Transport Systems (ITS) measures reducing CO2 emission - Jean-Charles Pandazis, ERTICO

- Conclusions and Outlook: Exploring research areas towards shaping Smart Cities with ITS – Zissis Samaras, LAT/AUTh

The powerpoint presentations can be found on the project website at http://www.ict-emissions.eu/category/news/

1.4. AUDIENCE

The audience comprised a good mix of stakeholders interested in a greener and more efficient urban transport.

The participation ranged from representatives of car manufacturers, system suppliers, software companies, consulting firms as well as cities and regional authorities in charge of greener transport (Bratislava Region, Flanders, Ile-de-France, London, Lorraine Champagne-Ardenne, Madrid, Rome, Stockholm Region, Turin).

The list of attended at the final conference is shown below.

Table 2: List of attendees

N.	Name	Organisation
1	BARRERA Gabriela	Polis
2	BEECKMANS Paul	GreensEFA in European Parliament
3	BELTRAMI PIAGGIO Marcello	PSA
4	BUCK Christine	ACEA
5	BURGAT Martin	ACEA
6	CATLOW Ian	London's European Office
7	CHATZIKYRIAKOU Despoina	Toyota Motor Europe
8	CIANFANO Marco	Rome Mobility Agency
9	CLAEYS Natacha	Flemish Government
10	COCOZZA Massimo	5T s.r.l.
11	DAHLBERG Erika	Stockholm Region EU Office
12	DAINVILLE Marie-Tiphaine	Ile-de-France Europe

13	DEL PINO ALVAREZ Jose	Madrid Calle 30
14	DOLEJSI Petr	ACEA
15	FLECHL Barbara	AustriaTech
16	GARCIA-CASTRO Alvaro	Universidad Politecnica de Madrid-TRANSya
17	GLÉNISSON Aude	European Commission
18	GROZAVU Cezar	Ministry of Regional Development and Public Administration
19	HEICH Hermann	Heich Consult GmbH
20	JONCKHEERE Sylvain	Hart Energy
21	KEIPER Winfried	Robert Bosch
22	KONTINAKIS Nikolaos	EUROCITIES
23	KRID Laurianne	FIA Region I
24	LARSEN Soren	Nordic Logistics Association
25	LU Meng	DINALOG / IBEC
26	MAGRA Giorgio	CNH IVECO
27	MAIER Werner	Berner & Mattner Systemtechnik GmbH
28	MARTINIE Mael	CODATU
29	MARTINO Angelo	TRT Trasporti e Territorio
30	MONZON Andres	TRANSyT-UPM
31	NOCERA Silvio	IUAV university
32	NTZIACHRISTOS Leonidas	Aristotle University
33	PANDAZIS Jean-Charles	ERTICO - ITS Europe
34	PÁPAI Zoltán	Institute for Transport Sciences Non Profit
35	PEREYRON Florian	Volvo Renault Trucks
36	RABITSCH Anja	EU Representation Office of Carinthia

37	ROOKS Caroline	European Parliament
38	ROUSSEAU Christian	Renault SA
39	SAMARAS Zissis	Aristotle University
40	SHIKO Vera	Institute of Transport
41	SOUET Claire	Ile-de-France Region
42	SUN Qi	UITP
43	TATSCHL Reinhard	AVL List GmbH
44	TOFFOLO Silvana	CNH IVECO
45	TRIDON Cédric	Volvo
46	TUFFANELLI Giacomo	Rome Mobility Agency
47	ÜSÜK Esen	European Office of the Metropolitan Region FrankfurtRheinMain
48	VALDÉS Cristina	TRANSyT-UPM
49	VAN LIER Tom	VUB-MOBI
50	VAUGEOIS Marie	CCI PAYS DE LA LOIRE
51	VIZCAINO Alvaro	EMT Madrid
52	VOCK Christian	AVL List GmbH
53	VOLLMANN Marcelo	Renault
54	VOSTREJSOVA	Representation of the South Moravian Region to the EU
55	WERTHER Anne	Europabüro der bayerischen Kommunen
56	WINDER Andrew	ERTICO - ITS Europe

1.5. FEEDBACK FROM THE AUDIENCE

The closing session titled “Conclusions and Outlook: Exploring research areas towards shaping Smart Cities with ITS” was moderated by Prof. Zissis Zamaras who opened the floor to all participants for questions and answers with the speakers.

Referring to the results on Green Navigation, Mrs. Natacha Claeys of the Flemish Government asked what kind of policy advice should be concluded from these results. We pointed out that our results indicate that more intelligent systems and system combinations are necessary to avoid negative effects and maximize the positive results. They should not be discouraging policy interventions, quite the opposite.

On Variable Speed Limits, Mr. Christian Rousseau, Renault, asked “Why the reduction was the same in congested and non-congested case?” We replied that this result may be a coincidence of the particular case and may be related with the difference in the drop in the stop time percentage; in any case it is necessary to investigate additional cases. In this context Mr. Rousseau suggested that we should also check the distance between the vehicles. Also Mrs. Claeys asked what was the variability of the speeds; we replied that a significant drop in the stop time percentage was calculated, which give us an idea of a more homogeneous traffic flow induced by the variable speed limits.

With reference to the use of hybrids, Mrs. Despoina Chatzikyriakou, Toyota, asked if we have looked at comparisons across hybrid types, since the effect of hybrid penetration alone was found to be limited in the particular scenario of Turin. Our reply was no, because of the limited number of hybrid types, we have not made any sensitivity run. Mrs. Chatzikyriakou also indicated that for plugin hybrid we have considered only battery operation, which is rather optimistic, since in practice also the combustion engine is used. Mr. Rousseau, Renault, asked which energy mix for electricity has been used. We said we have used the Italian mix in the particular case.

Mr. Alvaro Vizcaino of Madrid's Public Transport Network EMT asked if we had figures for hybrid buses. We said that according to our ToR our focus was only passenger cars, hence no hybrid buses were considered.

On Eco driving, Mr. Pandazis, ERTICO, asked what are the reasons for the fuel consumption increase in congested condition. We answered that due to the congestion eco driving was not really possible. We observed even that not all cars could enter the corridor, that eco driving may worsen the congestion by reducing the capacity of the network. One should consider that congested situation is only during few hours of the day. Most of the time of the day we will have benefits.

Referring to Start/Stop Scenarios, Mr. Pandazis suggested that a combination of UTC and Start/Stop does not simply add up.

On Adaptive Cruise Control Systems, someone from the audience asked what the lowest velocity is when the system starts working, and if this is applicable. We have not modeled the congested case, a sensible velocity might be 20-40km/h. Mrs. Claeys

asked what the additional cost for a car manufacturer are. We replied that is not possible to answer this question.

Mrs. Chatzikyriakou, Toyota, suggested that we should widen the application to fully electric vehicles and to incorporate predictive systems as well. We replied, that yes this is now possible, and that via the ICT-Emissions platform more sophisticated systems can be simulated – definitely predictive systems are in the scope of the possible follow-up activities.

Dr. Silvio Nocera, IUAV Venice, suggested to better highlight the uncertainty of the process/results, and add the economic value of energy saving to the exercise.

During the break Mr. Cédric Tridon and Mr. Florian Pepeyron expressed the interest of Volvo on ADAS simulations in conjunction to Volvo's OBD activities.

After the event we received positive feedback from city representatives and researchers. An expert in Transport Planning, of the Institute of Transport, Tirana, Albania, said:

"For me the Conference was very interesting and a place to learn new theories and practices for ITS solutions and ICT devices for mitigation of road transport emissions. The Institute of Transport has some experiences and always is in need to update the knowledge on those themes. Hope in the future, the Institute of Transport will be involved and in collaboration with European transport institutions for activities coordinated by Polis."

Dr. Silvio Nocera, Professor in Transport Planning at the Department of Architecture & Arts, Università Iuav di Venezia, has suggested to create a forum in which academic and non-academic researchers can discuss problems and knowledge about carbon estimation in transportation, and take forward the discussion on some crucial questions on CO_2 that are still open, for instance:

- The uncertainty in carbon dioxide measurements;
- Pros and cons about micro- and macro-approach;
- The necessity of reducing the large interval in the economic estimation;
- and the consequences of these problems for stakeholders, researchers and transport policy makers.

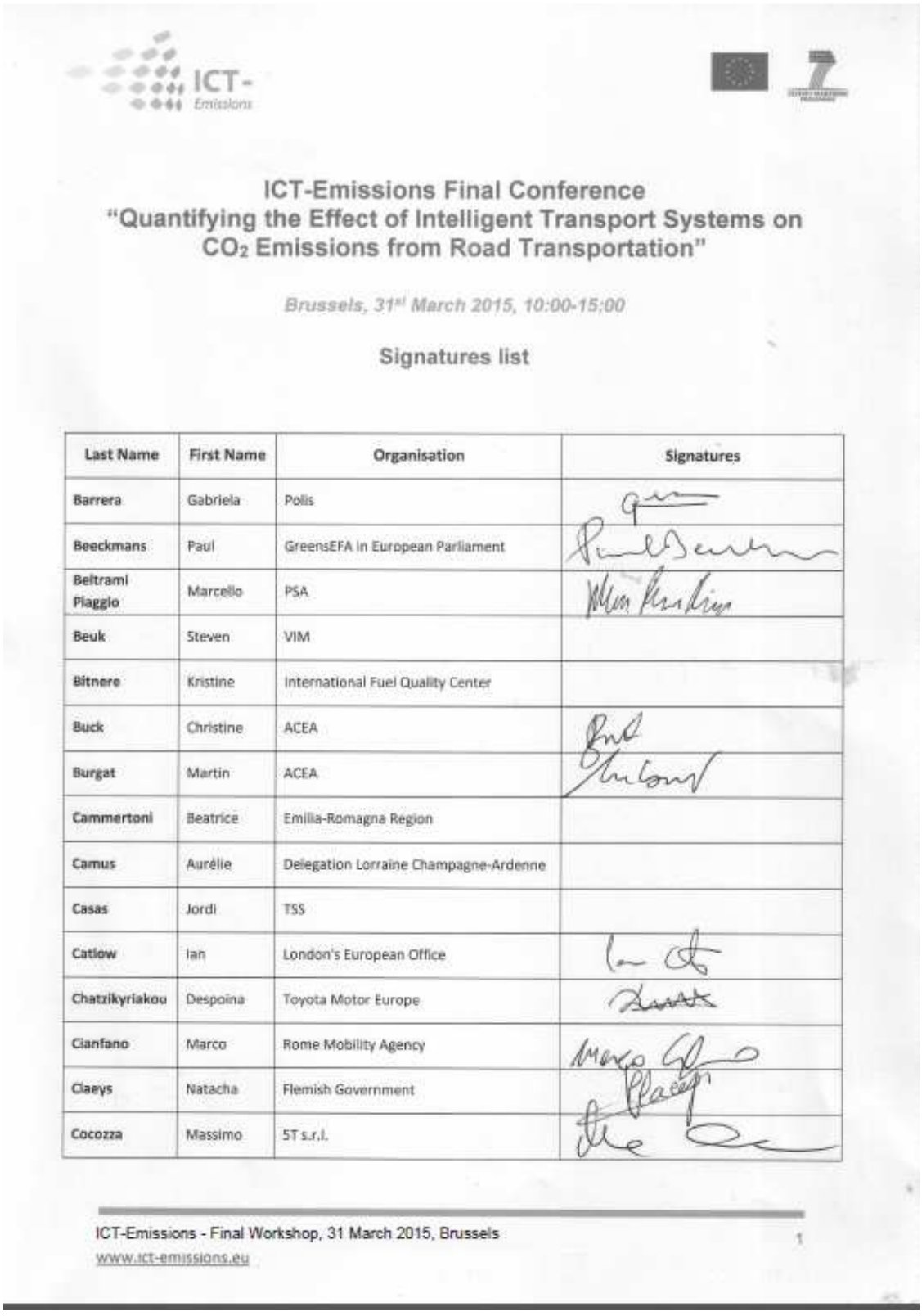
1.6. IMPRESSIONS FROM THE FINAL WORKSHOP

Figure 1: Mrs. Aude Glénisson, European Commission and Prof. Zissis Samaras, project coordinator

Figure 2: View of the audience

Figure 3: Mrs. Silvana Toffolo, CNH IVECO, presenting in Session 1

Annex 1 – Attendance register



ICT-Emissions

ICT-Emissions Final Conference
"Quantifying the Effect of Intelligent Transport Systems on CO_2 Emissions from Road Transportation"

Brussels, 31st March 2015, 10:00-15:00

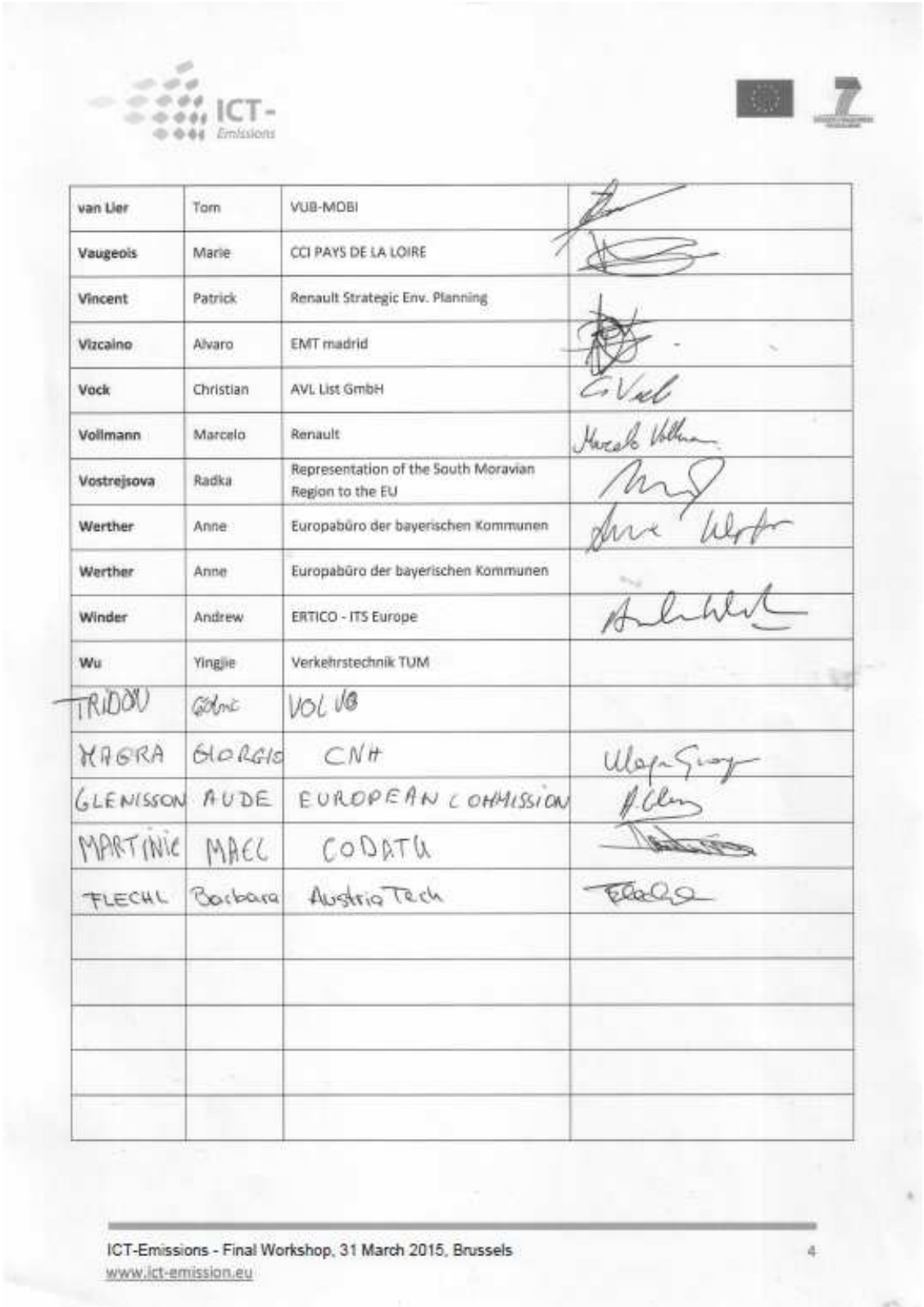
Signatures list

Last Name	First Name	Organisation	Signatures
Barrera	Gabriela	Polis	
Beeckmans	Paul	GreensEFA in European Parliament	
Beltrami Piaggio	Marcello	PSA	
Beuk	Steven	VIM	
Bitnere	Kristine	International Fuel Quality Center	
Buck	Christine	ACEA	
Burgat	Martin	ACEA	
Cammertoni	Beatrice	Emilia-Romagna Region	
Camus	Aurélie	Delegation Lorraine Champagne-Ardenne	
Casas	Jordi	TSS	
Catlow	Ian	London's European Office	
Chatzikyriakou	Despoina	Toyota Motor Europe	
Cianfano	Marco	Rome Mobility Agency	
Claeys	Natacha	Flemish Government	
Cocozza	Massimo	5T s.r.l.	

ICT-Emissions - Final Workshop, 31 March 2015, Brussels 1
www.ict-emissions.eu

Coda	Alessandro	EUCAR	
Conrad	Silke	Daimler	
Dahlberg	Erika	Stockholm Region EU Office	
Dainville	Marie-Tiphaine	Ile-de-France Europe	
Del Pino Alvarez	Jose	Madrid Calle 30	
Desaeger	Muriel	Toyota Motor Europe	
Dolejsi	Petr	ACEA	
Garcia-Castro	Alvaro	Universidad Politecnica de Madrid-TRANSya	
Grozavu	Cezar	Ministry of Regional Development and Public Administration	
Heich	Hermann	Heich Consult GmbH	
Heimgartner	Christian	Roland Müller Küsnacht AG	
Jonckheere	Sylvain	Hart Energy	
Keiper	Winfried	Robert Bosch	
Kekelakova	Dominika	Bratislava Region Brussels Office	
Kontinakis	Nikolaos	EUROCITIES	
Krid	Laurianne	FIA Region I	
Larsen	Soren	Nordic Logistics Association	
Lotz	Bastian	German Association of the Automotive Industry (VDA)	
Lu	Meng	DINALOG / IBEC	
Mahmod	Mohamed	DLR - German Aerospace Center	
Maier	Werner	Berner & Mattner Systemtechnik GmbH	
Martino	Angelo	TRT Trasporti e Territorio	

Milan	Lauriane	VUB	
Monzon	Andres	TRANSyT-UPM	
Nieuwmeyer-Bernhart	Julia	EU Representation Office of Carinthia	
Nocera	Silvio	IUAV university	
Ntziachristos	Leonidas	Aristotle University	
Pandazis	Jean-Charles	ERTICO - ITS Europe	
Pápai	Zoltán	Institute for Transport Sciences Non Profit	
Parrot	Mario		
Pereyron	Florian	Volvo Renault Trucks	
Ramaccianl	Andrea	A+S Consult GmbH	
Rooks	Caroline	European Parliament	
Rousseau	Christian	Renault SA	
Rudolph	Frederic	Wuppertal Institute	
Samaras	Zissis	Aristotle University	
Shiko	Vera	Institute of Transport	
Souet	Claire	Ile-de-France Region	
Sun	Qi	UITP	
Tatschl	Reinhard	AVL List GmbH	
Toffolo	Silvana	CNH IVECO	
Tuffanelli	Giacomo	Rome Mobility Agency	
Üsük	Esen	European Office of the Metropolitan Region FrankfurtRheinMain	
Valdés	Cristina	TRANSyT-UPM	



van Lier	Tom	VUB-MOBI	
Vaugeois	Marie	CCI PAYS DE LA LOIRE	
Vincent	Patrick	Renault Strategic Env. Planning	
Vizcaino	Alvaro	EMT madrid	
Vock	Christian	AVL List GmbH	
Vollmann	Marcelo	Renault	
Vostrejsova	Radka	Representation of the South Moravian Region to the EU	
Werther	Anne	Europabüro der bayerischen Kommunen	
Werther	Anne	Europabüro der bayerischen Kommunen	
Winder	Andrew	ERTICO - ITS Europe	
Wu	Yingjie	Verkehrstechnik TUM	
TRIDON	Gdmc	VOLVO	
MAGRA	GIORGIO	CNH	
GLENISSON	AUDE	EUROPEAN COMMISSION	
MARTINIC	MARC	CODATA	
FLECHL	Barbara	Austria Tech	