CiViTAS 2020

Cleaner and better transport in cities

S U I T S

Integrated Subject Module and Facilitator's Guide:

Module 1: Building Small-Medium local authorities' capacity to implement emerging transport technologies

Deliverable No.: D5.1

Project Acronym: SUITS

Full Title: Supporting Urban Integrated Transport Systems: Transferable tools for authorities

Grant Agreement No.: 690650

Workpackage No.: 5

Workpackage/ Measure Title: Development of the Capacity Building Programme

Responsible Author(s): Olympia Papadopoulou, Georgios Georgiadis, Anastasia Founta

Responsible Co-Author(s): Acknowledgement: Iason Tamiakis, Konstantia Karagkouni, Aristomenis Kopsacheilis

Date: 30/4/2019

Status: Final

Dissemination level: PUBLIC

The Civitas iniziative is co-financed by the European Union

European Platform on Sustainable Urban Mobility Plans

SUITS Supporting Urban Integrated Transport Systems:
Transferable tools for authorities

Funded under: H2020-EU.3.4. - SOCIETAL CHALLENGES - Smart, Green And Integrated Transport

Topic: MG-5.4-2015 - Strengthening the knowledge and capacities of local authorities

Funding scheme: RIA - Research and Innovation action

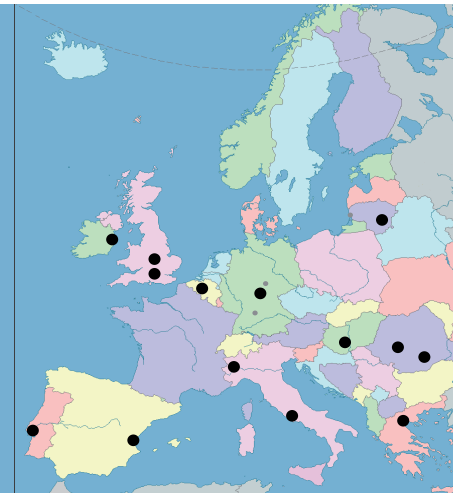
Coordinator: Coventry University

Total cost: appox. EUR 4M

Duration: 4 years (From Dec 1st 2016 to Nov 30th 2020)

22 Partners (see map)

Project Website: http://www.suits-project.eu/



COORDINATOR

UK: Coventry University

PARTICIPANTS

UK: Arcadis, Transport for West Midlands

Italy: Politecnico di Torino, RSM, Eurokleis, Citta di Torino

Ireland: Interactions

Greece: Lever, Sboing, Makios, Municipality of Kalamaria

Spain: ITENE, INNDea

Romania: Integral Consulting, Municipality of Alba Julia

Portugal: VTM

Hungary: Logdrill

Germany: Wuppertal Institute, Technische Universistat Ilmenau

Lithuania: Smart Continent

Belgium: SIGNOSIS

Table of contents

Abbreviations

ACRONYM	FULL TITLE
LA	Local Authority
L	Large-sized (for cities with population over 250,000 residents in their urban centre)
S-M cities	Small and Medium sized (for cities with population ranging between 50,000 and 250,000 residents in their urban centre)
SUMP	Sustainable Urban Mobility Plan
ETT	Emerging Transport Technologies
CBP	Capacity Building Programme
IT	Information Technologies
CSO	Civil Society Organisation
NGO	Non-Governmental Organization
V2I	Vehicle to Infrastructure
V2V	Vehicle to Vehicle

Booklet overview

This booklet forms part of the SUITS Capacity Building Programme (CBP). It consists of the integrated subject module[1] and the *Facilitator's guide*[2] .Both elements are required to enable facilitators to conduct a classroom course for capacity building in S-M LAs. The booklet provides the theoretical background, practical instructions and training material, taking into account the target audience, the purpose of the CBP and the nature of the chosen topic.

The *Integrated Subject Module* sets the theoretical background and content of the CBP.

The *Facilitator's Guide*[3] transforms the theoretical background into the necessary material, the methodology, the schedule and the profile of facilitators & participants that the capacity building process will require; It consists of the following: (1) Power Point Presentations, (2) Exercises Preparation, (3) Build the script (i.e., how to transform the theory into scenarios of Capacity Building Programme), (4) Case Studies and Learning Activities, (5) Material Check Lists, (6) Participants Materials (workbook), (7) Classroom preparation guide and (8) Communication Material.

Booklet manual

Beginning with *Course overview*, the reader - user or facilitator - is introduced to the overall purpose of the course, the learning objectives, the participants' & facilitator's profile. Moreover, practical issues of the course such as the preparation of the classroom and the process to award digital badges are also provided.

Moving on to *Chapters*, the reader - user or facilitator - receives instructions on the course delivery based on the content, the supportive-to-the-process material and the proper use of it. The workbook and the power point presentation are complementary documents to this section. The facilitator needs to be aware of both documents while going through each chapter of this booklet.

Helpful Tips:

a. Use *workbook* to get the detailed information included in the content. Check reference to workbook pages to navigate properly. The workbook is supportive to each chapter's respective content and has to be distributed to the participants during the course. Participants may keep notes on it and use it during exercises.

b. Use *power point* to support you with "instructions for facilitator" for better understanding the course flow. Check reference to power point slides to navigate properly. Check the complementary to the workbook distributed material in Annexes as described in the field "Distributed material (handouts, exercises, other type of material)". Power point is only supportive to the facilitator.

c. Check sources according to citations (provided in workbook) to deepen in provided information.

d. Check further reading to enhance knowledge in a wider perspective.

1 The output of Task 5.1: Development of an Integrated Subject Module (check Introductory Document).

2 The output of Task 5.2: Facilitator's Guide of WP 5 (check Introductory Document).

3 Inspiration by "Workshop facilitators guide" (n.d.). [ebook] European Comission. Available at: https://www.unicef.org/eu/crtoolkit/downloads/FACILITATORS_GUIDE_-_Child_Rights_Toolkit_Workshop.pdf [Accessed 28 Mar. 2019] and 2. "Train the Trainer", Facilitator Guide Differentiating Instructional Paths for Students NWEA. (n.d.). [ebook] Available at: https://www.peoriapublicschools.org/cms/lib/IL01001530/Centricity/Domain/23/0-TTT-FG%20%20DI%20_NWEA%20.pdf [Accessed 28 Mar. 2019]

Module 1: Building Small-Medium local authorities' capacity to implement emerging transport technologies

Nowadays, the extreme technological evolution concerns mobility solutions in various ways. The widespread adoption of internet based technology and complex data processing is increasing the possibilities to develop and implement mobility measures in a more efficient and adaptable way. Terms such as driverless cars, connected vehicles, Internet of Things are all widely used today, but their exact meanings and their effects on local authorities are quite unclear. Local Authorities (LAs) are facing challenges on how to procure these kind of measures, how to implement them, what is going to be their added value (on health, economic prosperity, safety, sustainability etc.), what is LAs role in the whole technological ecosystem.

In particular, S-M cities may believe that state of the art services and technology are designed to address large city needs. Due to this preoccupation, LAs in S-M cities tend to reject such solutions without initially evaluating them in detail mainly due to the cost implications.

This module concerns Emerging Transport Technologies (ETT) implementation in S-M cities through a description of a variety of Emerging Transport Technologies and case studies and through a selection of appropriate tools and guidelines.

1. Course overview

As part of the roll-out of SUITS CBP Toolkit, and in line with the broader objectives of capacity building in S-M cities LAs to implement and monitor implementation of Emerging Transport Technologies (ETT) as part of a SUMP, SUITS project has developed guidelines for a LA-level classroom course. It aims to build and/or strengthen the capacity of LAs to deliver UFT measures inclusively, successfully, through policymaking, design, implementation /evaluation and usage.

SUITS has developed a capacity building programme to enhance LAs' capacity in performing mobility projects identified as essential by SUMP (at Stage 2, Step 6), specifically regarding implementation and assessment stages of SUMP measures (Stage 4). In this perspective, it supports S-M cities at 7.2 SUMP step in preparing an action and budget plan and at 8.1 SUMP step in arranging for monitoring and evaluation[4]. The course focuses on ETT for all users, as being one of the most important pillars of strategic plan measures package and one of the topics LAs need further support[5].

SUITS CBP and consequently this classroom course, was developed to address the different needs[6] of the following groups:

a. Policy makers and Heads of Departments in LAs

- need for strategic level support
- e.g. political capacity (Value of project, convince public, added value to LA's vision) etc.

4 SUITS CBP is complementary to the CBPs of "sister projects" (SUMPs - UP and PROSPERITY), that address to all city sizes, to higher levels of government (PROSPERITY) and to all phases of SUMP cycle.

5 During SUITS project, a multicriteria analysis was conducted to determine the modules topic. This analysis considered the following: a.SUITS overall ambition, b. SUITS partners and external expert's opinion, c. Urban transport priorities of S-M CIVITAS cities, d. Integration considerations between SUITS and its sister projects, e. Integration and enrichment of CIVITAS learning center, f. SUITS cities capacity needs. For more information, check introductory document.

6 The SUITS consortium specified the needs in the sector of transport and mobility of S-M cities through desktop research as well as in group and individual meetings, workshops and interviews with SUITS cities. For more information, check introductory document.

b. Planners and middle level staff

- need for strategic design support, as well as for guidance on operational implementation
- e.g. organizational capacity (funding sources, process monitoring, punctuality, working team etc.).

c. Junior engineers and designers working in LAs

- need for technical and operational support
- e.g. organizational capacity (technical/ data resources, guidelines/ successful case studies) etc.

Finally, this course is designed to be conducted within a single day.

1.1 PURPOSE & OBJECTIVES OF THE COURSE

The overall purpose of the course is to increase participants' understanding about the value of ETT in their urban transport system; recognising or creating opportunities and operational environment for adopting them in the local context. It helps cities to build specific skills regarding how success of measures based on ETT can be ensured by convincing stakeholders and by overcoming financial, legal, administrative and technical barriers. Specifically, the course is designed to offer concrete practical tools and guidance to better implement these technologies, to advance local priorities on ETT by presenting the value of such technologies for S-M cities along with financing methods and legal aspects as such value is derived from real-world case studies. Finally the course aims at strengthening cooperation between LA's staff on different levels, from policy makers to junior engineers, through the conduction of interactive exercises over the course.

To summarize, at the end of the course, participants will:

- Be able to understand the effects/cost of lack of ETT measures for the users, the operators and the economy of the city.
- Be aware of the most relevant to S-M cities ETT.
- Be able to understand the effects/cost of lack of emerging technologies for the users, the operators and the economy of the city.
- Be inspired by successful case studies of SUITS and other S-M cities.
- Be aware of the requirement to develop inclusive systems.
- Understand the concept and methodology for developing ETT and while being able to recognise or find out the needs of vulnerable transport users.
- Be able to explain the benefits of ETT in their cities.
- Be able to recognize the actors/stakeholders need to cooperate with from public and private sectors.
- Be aware of the process and the resources required for developing ETT regulations.
- Be aware of the requirements for supporting the introduction/extension of ETT solutions in their cities.
- Be able to identify existing and innovative financing opportunities for the implementation of ETT.
- Understand the relevance of improving ETT on the urban mobility sector to local and European strategy.
- Identify tools and guidelines to develop/update their expertise on the enhancement of ETT.

1.2 PARTICIPANTS' PROFILE

The primary audience for the workshop is the staff working in LAs including technical staff, junior engineers and expert engaged in procurement and measures implementation monitoring in order to provide them technical assistance on this topic. The intended audience includes also policymakers and practitioners who do not need to be transport experts, but need practical guidance on:

- How to evaluate the social impact of these measures and therefore prioritise them.
- How to convince other stakeholders to cooperate with and set up commitment.
- How to overcome financial and legal barriers when implementing such measures (especially for advanced technological solutions etc.).

The course also addresses to technical staff, junior engineers and expert engaged in procurement and measures implementation monitoring in order to provide them technical assistance on this topic.

1.3 FACILITATOR'S PROFILE

External expert on emerging transport technologies for all users in transportation OR an in-house employee (e.g. local champion, change agent etc.) experienced in the whole process of designing and implementing emerging transport technologies.

1.4 EVIDENCE TO AWARD DIGITAL BADGES

During the course, interactive activities, called exercises will be carried out. Once the exercises included in the booklet are completed successfully, a digital badge is awarded to each participant separately.

The digital badge is linked to the email address of the participant. The facilitator uses the platform https://mydigitalbadges.net/ developed through the SUITS project to issue the badge. The participant then receives an email with an icon (digital badge) directly from the platform. There is information encrypted in the picture related to the course. The participant then, proceeds as follows:

- Saves the picture (badge) as PNG file.
- Creates an account on Mozilla's backpack https://backpack.openbadges.org/backpack/welcome.
- Uploads the badge

This is the place where everyone can store all their badges (from SUITS workshops or other webinars, e-learnings etc.) to be used for future reference. The platform, developed in SUITS, can be used by multiple organizations (local authorities, companies, institutions, etc.) to design, issue, award, display and manage their own digital badges.

Please note that the facilitator should strongly recommended to participants to actively engage with the exercises both in terms of communication as well as practically completing them.

1.5 CLASS PREPARATION CHECKLIST

TASK	X
Obtain and test LCD projector and personal computer	
Obtain flip chart or white board, markers (1 for every 4-5 participants) and sticky notes	
Main data of the participant city **if available** (i.e. population, accidents data, transport users involved etc.)	
City map with mobility info (i.e. main roads, points of interest, Public Transport routes, cycle routes, pedestrian routes, "black spots" etc.)	
Exercises printed in A3 paper size for the working groups (one per group)	
Exercises printed in A3 paper size for the facilitator (to summarize classroom results)	
Registration list (see template in Annex 2-module 1)	
Obtain and test PowerPoint file (PDW-PPT)	
Copy participant materials. For each participant: agenda & workbook	

1.6 CLASSROOM SETUP

TOTAL DURATION	4 hours 15 minutes		
SETUP	∏ shape tables, in order to be able for the participants to work on a group		
PARTICIPANTS	**Participants' profile**	**N° of participants (approx. 10-12 people)**	**Chapters to follow**
	1. Policy Makers/Heads of LA's departments	Approx. 2 people attending first half of the module	Chapter 1, 2, 3, 4, 5
	2. Planners and middle level staff	Approx. 3 people attending the whole module	All chapters
	3. Technical staff and Junior engineers	Approx. 5 people attending the whole module	All chapters
AGENDA	Please find the agenda template in Annex 1 - module 1		

2. Chapters

The training is structured into chapters. For each chapter, a set of components is defined to provide all necessary information in order for the facilitator to run the course. For each chapter, the facilitator obtains:

1. a condensed version of chapter content with reference to the respective workbook pages, where the content is further deployed,
2. an estimation of its duration,
3. instructions on how to run each training section while providing the
   - additional to the workbook material to be distributed, and
   - reference to the supporting power point slides.

Further reading stands for additional to the references sources where participants and facilitator may enhance their knowledge on the topic. Citations linked to references are included in workbook.

CHAPTER 1: INTRODUCTION

CONTENT	In the introduction, the outline of the course, the framework on which this material has been developed, the overall purpose and objectives of the course are presented. Then the most common problems regarding urban mobility are defined. Specifically, road traffic is responsible for the largest share of air pollution derived from the transportation sector: 71% of overall CO2 emissions[7]. Conventional transport technologies, applied in most cases, cause: Environmental impacts (greenhouse gas emissions), Congestion and Bottle Necks in urban areas, safety issues. The overall module's aim of the course is to increase the capacity of S-M cities, to implement and monitor the Emerging Transport Technologies (ETT) throughout policymaking, budgeting, designing and facing the current challenges when implementing these measures. In particular it aims at: a) Increasing the understanding of the value of Emerging Transport Technologies in our cities and b) building specific skills regarding how success of the measures based on ETT can be ensured. This is going to happen by convincing stakeholders and by overcoming financial, legal, administrative and technical barriers. The dimension of cost socially wise is also introduced.
WORKBOOK PAGES	Pages 1-11
DURATION	40'
INSTRUCTIONS FOR FACILITATOR	a. Introduce yourself, present the outline of the course and make a reference to the framework in which this course has been developed (SUITS project). b. Mention module's purpose and its particular objectives; Pin up photos which shows several futuristic and some conventional transport modes - **ETT photos**; c. Ask from each participant to briefly introduce him/herself while expressing his/her expectation by this course; Ask from each participant to choose one of the pictures which express better how he/ she would like to move in a futuristic world. d. Make a reference to the key aspects of the problems related to conventional transport systems. e. Divide participants into two (2) groups and asks from each group to highlight the most common weaknesses regarding transport modes in their city - **Exercise A**.
DISTRIBUTED MATERIAL (HANDOUTS, EXERCISES, OTHER TYPE OF MATERIAL)	1. Future and current transport modes photos which are presented in a flip chart for participants to choose (Annex 3-module 1) 2. EXERCISE A: Analysing weaknesses of the urban transport system (Annex 4-module 1) • Writing material (Paper, pens markers, etc.) • Main data of the participant city if available (i.e. population, crime data, accidents data, transport users involved etc.) • City map with mobility info (i.e. main roads, points of interest, Public Transport routes, cycle routes, pedestrian routes, etc.)
PRESENTATION SLIDES	Slides 4-19

7 European Union. (2019). EU transport policy | European Union. [online] Available at: https://europa.eu/european-union/topics/transport_en [Accessed 26 Mar. 2019].

CHAPTER 2: DESCRIPTION OF EMERGING TRANSPORT TECHNOLOGIES

CONTENT	Emerging technologies aim to improve urban mobility for all users and eliminate phenomena as described in introduction. This chapter provides a short description of certain ETT as follows: a. Clean fuel and e-vehicles: The aim is to substitute vehicles with conventional petrol or diesel engines with vehicles with low-carbon or carbon-free operation[8]. b. Cooperative systems: (Intelligent Traffic Lights) They allow the communication of traffic lights (and other infrastructure elements) with the vehicles (V2I) but is also refers to the communication systems between vehicles. (V2V). c. Traffic information systems: They provide information about real-time traffic conditions and other mobility parameters. They may concern all mobility modes (car, public transport, walking, cycling, multimodal) and may use many different ways to disseminate this information (mobile phone, road signs, etc.). Vehicles support these systems by collecting data (traffic conditions, road surface conditions and the surroundings) and may be used as input for operational traffic management[9]. d. Pedestrian assistance systems: The high-tech pedestrian crossing design is a new approach in the design of crossings. It helps to prevent accidents between pedestrians and drivers. The Multi-media Integration uses smart-phones that offer the potential of individualised solutions that cater for pedestrians having "non-standard" crossing needs. The Cooperative traffic light for Vulnerable Road Users (VRU) gives priority or additional crossing time (i.e., extending the green light phase or lessening the red phase) based on pedestrian characteristics (or on special conditions, such as weather). e. New systems and applications for parking management: Parking sensors allow detecting the presence of vehicles parked in the parking space. The management software can analyze and manage all input data entering in the system in real time and helps drivers find parking. Pricing based on "consumption" or demand-responsive pricing policy may be complementary to parking sensors.
WORKBOOK PAGES	Pages 13-20
DURATION	40 min.
INSTRUCTIONS FOR FACILITATOR	a. Present and describe an indicative list of ETT that may be applied in S-M cities. Explain some key elements of their function and implementation requirements. b. Return to the two (2) groups first created. c. Ask both groups to match the identified weaknesses (different problems for different groups) with the emerging technology which may be applied in order to improve current mobility conditions related to the use of these modes. **Exercise B**. d. Ask a representative of each group to add a column in the table on the previous flipchart/whiteboard and write down the corresponding technologies.
DISTRIBUTED MATERIAL (HANDOUTS, EXERCISES, OTHER TYPE OF MATERIAL)	EXERCISE B: Proposing transport technologies to counter current weaknesses
PRESENTATION SLIDES	Slides 20-36
FURTHER READING	1. Evidence-project.eu. (2019). Home. [online] Available at: http://evidence-project.eu/ [Accessed 26 Mar. 2019]. 2. Mobility and Transport - European Commission. (2019). Clean Vehicles Directive - Mobility and Transport - European Commission. [online] Available at: https://ec.europa.eu/transport/themes/urban/vehicles/directive_en [Accessed 26 Mar. 2019]. 3. Eltis.org. (2019). Traffic lights 'talk' with cars in North Holland pilot | Eltis. [online] Available at: http://www.eltis.org/discover/news/traffic-lights-talk-cars-north-holland-pilot [Accessed 26 Mar. 2019]. 4. Mobility and Transport - European Commission. (2019). Clean Vehicles Directive - Mobility and Transport - European Commission. [online] Available at: https://ec.europa.eu/transport/themes/urban/vehicles/directive_en [Accessed 26 Mar. 2019].

8 LAs need to support the expansion of alternative fuel vehicles use by providing the necessary infrastructure, by providing incentives (if available), by upgrading the fleet of their vehicles (buses, service vehicles etc.).

9 Municipalities, by using probe vehicles in their fleet, improve data collection useful both for traffic management and maintenance of public networks-space.

CHAPTER 3: VALUE FOR S-M CITIES (CHALLENGES, BENEFITS AND BENEFICIARIES)

CONTENT	Emerging Transport Technologies are a general value that could be tailored to the dimension and the needs of each S-M city. In this chapter, the benefits of these technologies for the S-M cities are identified and highlighted. References on how ETT help local communities reach their respective wider strategic goals and local, national, EU policies, as well as examples of how to respond to potential challenges, can be used as arguments to convince stakeholders. To support this process, first an identification of actors/stakeholders and secondly the use of Social Impact Assessment tool are deployed. Added value can be considered as the fact that along with the implementation of ETT, opportunity for other strategies/measures in favor of sustainable mobility can be exploited, such as High-tech pedestrian crossing systems with Multi-media, Integration for pedestrians' varied needs etc. Especially for S-M cities, given their limited resources, technologies with multiple benefits such as ETT have to be in favor. For this reason, a global approach containing public discussion and stakeholders' collaboration is required and in this frame, added value is further created by deeper and constant interactions and collaboration among all involved actors and this aspect should be highlighted to the participants. Furthermore, references on how ETT serve local communities wider strategic goals and local, national, EU policies, can enforce even more the argumentation for convincing stakeholders to prioritise such technologies. For example, ETT in S-M cities contribute to local strategies for tourism and therefore for economic growth, while helping EU members to meet the European Goals on Sustainable Urban Mobility. In the workbook European legislation concerning emerging transport technologies is provided. References on how ETT serve local communities wider strategic goals and local, national, EU policies, as well as examples of how to respond to probable challenges can be used as arguments for convincing stakeholders. To support this process, first an identification of actors/stakeholders and secondly the use of Social Impact Assessment tool are deployed. Social Impact Assessment method and tool, enable the identification of benefits in a systematic way, based on factors by theme. (Workbook p. 46 - overview of factors). A summary table referring to WebTAG methodologies is provided (Workbook p. 45). Finally, the identification of actors/stakeholders aim at addressing to them the most relative benefits and ensuring their consensus in implementing such technologies. The list of all involved actors and stakeholders on a city level excludes those of higher levels such as the EU policy makers and the Lead Agencies but contains all those that interfere with infrastructure, public transport operators, Universities and Institutes, vulnerable road groups and other transport related companies such as manufacturers (Safety Cube, 2018).
WORKBOOK PAGES	Pages 21-38
DURATION	25'
INSTRUCTIONS FOR FACILITATOR	a. Mention some of the potential benefits of ETT, how these measures are correlated to wider city strategic objectives and point out the importance of the global approach. b. Divide participants into 2 new groups and ask from each group to choose one of the ETT decided through Exercise B (different measures for different groups); Each group identifies the potential benefits the EET might bring to their city and which are the actors/stakeholders/social groups involved, by writing down benefits and actors on sticky notes - **Exercise C-part.1**. Then, each group chooses the actors/stakeholders/social groups that might have the most negative reactions and reallocates the sticky notes to **Exercise C-part.2**. Finally, provide to them arguments related to determined benefits or other arguments they might think. c. Make 3 columns in a whiteboard or flipchart. The one column refers to type of technology, the second to actors/stakeholders and the third to benefits (while groups are working).

	d. Ask a representative of each group (different from the previous training section), to reallocate the sticky notes with stakeholders/actors and benefits on whiteboard or flipchart. Then, he/she explains to the other group their choices. Common benefits/ arguments that correspond to common stakeholders/actors are not duplicated. e. Add to the participants' table some probable missing points, highlight added value by the collaboration of all actors and by the compliance with EU strategies, while presenting EU policies table. These aspects are even more important for S-M cities with limited recourses. He/she also makes a reference to the workbook pages of chapter 3 and its content. At last, point out the importance of the global approach. f. Present the Social Impact Assessment methodology along with summarised examples as they are produced in the context of the module.
DISTRIBUTED MATERIAL (HANDOUTS, EXERCISES, OTHER TYPE OF MATERIAL)	Exercise C: Analysing benefits and views of stakeholders on Emerging Transport Technologies
PRESENTATION SLIDES	Slides 37-51
FURTHER READING	1. Towards clean, competitive and connected mobility: the contribution of Transport Research and Innovation to the Mobility package. (2017). [online] Brussels: EUROPEAN COMMISSION. Available at: https://ec.europa.eu/transport/sites/transport/files/swd20170223-transportresearchandinnovationtomobilitypackage.pdf [Accessed 28 Mar. 2019]. 2. Smartset-project.eu. (2019). SMARTSET | The SMARTSET products and technical deliverables. [online] Available at: http://smartset-project.eu/downloads [Accessed 28 Mar. 2019]. 3. SFpark Evaluation Shows Parking Easier, Cheaper in Pilot Areas. (2014). [online] Available at: https://www.sfmta.com/press-releases/sfpark-evaluation-shows-parking-easier-cheaper-pilot-areas [Accessed 28 Mar. 2019]. 4. Big Consolidated Open Data Platform Stockholm. (n.d.). [ebook] Stockholm. Available at: http://www.grow-smarter.eu/fileadmin/editor-upload/12Solutions/Factsheets/Integrated_infrastructures/S8.1_29_GrowSmarter_Big_Data_Platform.pdf [Accessed 28 Mar. 2019]. 5. CIVITAS Insight 19 - E-mobility: Make it happen through SUMPs!. (2016). [online] Available at: https://civitas.eu/content/civitas-insight-19-e-mobility-make-it-happen-through-sumps [Accessed 28 Mar. 2019]. 6. Work Package 3 D3.1 Research and Gap analysis on data collection and analysis methods. (2017). [Report]. 7. Evidence-project.eu. (2019). Home. [online] Available at: http://evidence-project.eu/ [Accessed 26 Mar. 2019]. 8. Green Paper: PDF document: A 2030 framework for climate and energy policies & Green Paper on urban mobility

CHAPTER 4: SUCCESSFUL CASE STUDIES OR BEST PRACTICES OF SUITS CITIES

CONTENT	This chapter demonstrates 3 case studies - as best practices - of ETT. Case studies have been analysed in a profound way with regard to the implementation phase. In particular, it has been (a) provided the funding scheme,(b) identified the benefited social groups and (c) their benefits (expected and proved), (d) highlighted the use of outsources and (e) IT systems, (f) presented the time horizon of implementation and (g) the budget, (h) provided indicators to measure success and implementation and (i) identified the barriers and drivers correlating to capacity factors (see § 4.2.1 of Part 1:Introductory document). Available case studies on this topic are: i) Coventry's Smart Parking management ii) Ljubljana's Cleaner Fuel Vehicles - CNG Busses iii) Rotterdam's Electric Mobility, Electric Vehicles and Charging Stations In the module's workbook a detailed description of the above case studies is available in the form of factsheets (workbook p. 75- 85)
WORKBOOK PAGES	Pages 39-45
DURATION	40'
INSTRUCTIONS FOR FACILITATOR	a. Present and explain up to three case studies of LAs that have implemented Emerging Transport Technologies. Raise the following issues: (a) the initial problem and target goal? (b) scalability or replicability for these measures? (c) the area of implementation and which/how much equipment is needed, (d) the components/ implementation requirements for operating them? (e) the indicators for measuring the success/ impact ? (f) the barriers and drivers for the implementation of ETT? b. Use multimedia (videos) if available.
DISTRIBUTED MATERIAL (HANDOUTS, EXERCISES, OTHER TYPE OF MATERIAL)	Factsheets included in workbook
PRESENTATION SLIDES	Slides 52-67
FURTHER READING	1. AppyParking. (2019). One Click Parking | Connected Car Technology | AppyParking. [online] Available at: https://appyparking.com/one-click-parking-connected-car [Accessed 1 Apr. 2019]. 2. GOV.UK. (2019). Apply for cooperative-intelligent transport systems funding. [online] Available at: https://www.gov.uk/government/publications/co-operative-intelligent-transport-systems-funding-competition [Accessed 1 Apr. 2019]. 3. Civitas.eu. (2019). Hybrid and CNG buses | CIVITAS. [online] Available at: https://civitas.eu/measure/hybrid-and-cng-buses [Accessed 1 Apr. 2019]. 4. Ljubljana.si. (2019). First hybrid buses driving in Ljubljana next year. [online] Available at: https://www.ljubljana.si/en/news/first-hybrid-buses-driving-in-ljubljana-next-year/ [Accessed 1 Apr. 2019]. 5. Eltis.org. (2019). Introduction of gas powered buses in Ljubljana. Slovenia | Eltis. [online] Available at: http://www.eltis.org/discover/case-studies/introduction-gas-powered-buses-ljubljana-slovenia [Accessed 1 Apr. 2019]. 6. Cunder, G. (2012). https://civitas.eu/sites/default/files/6_1_d1_implementation_status_report_on_demand_responsive_services.pdf [ebook] Available at: https://civitas.eu/sites/default/files/6_1_d1_implementation_status_report_on_demand_responsive_services.pdf [Accessed 1 Apr. 2019]. 7. Evbox.com. (2019). Charging electric cars in Rotterdam | EVBox. [online] Available at: https://evbox.com/success-stories/rotterdam-city [Accessed 1 Apr. 2019].

FURTHER READING	8. Eltis.org. (2019). Rotterdam takes the lead in electrifying transport (The Netherlands) | Eltis. [online] Available at: http://www.eltis.org/discover/case-studies/rotterdam-takes-lead-electrifying-transport-netherlands [Accessed 1 Apr. 2019]. 9. Ppmc-transport.org. (2019). PPMC TRANSPORT. [online] Available at: http://www.ppmc-transport.org/rotterdams-commitment-to-electric-mobility/ [Accessed 1 Apr. 2019].

CHAPTER 5: INNOVATIVE FINANCING, PROCUREMENT, PARTNERSHIP

CONTENT	This chapter is a short overview on the updated financing mechanisms for implementing this kind of technologies along with the innovative procurement methods and the innovative partnerships to be created. The content of this chapter is based on SUITS tools "Guidelines to Innovative Financing", "Guidelines to Innovative Procurement", "Guidelines to New Business Models, Bankable Projects and Innovative Partnerships". In particular, regarding available innovative financing mechanisms, an indicative selection of the most relative to ETT is made by also presenting their key points such as what is their application method and what are their benefits. Congestion Charge, Advertising, Collaborating with other cities, Research consortia and private companies, Toll Roads, Selling Expertise and Technical Know-how are some of the selected mechanisms. Furthermore, the recommended steps for innovative procurement procedures are presented. These steps respond to the current needs of implementing mobility measures in general and could be applied to ETT as well (Workbook, pg. 56). The chapter closes with a reference to the innovative public-private partnerships (Workbook, pg. 56) which introduce the engagement of civil society organisations (CSOs), and/or non-governmental organisations (NGO) and/or communities, and/or R&D. The possible role allocation and the benefits from each kind of partnership is highlighted.
WORKBOOK PAGES	Pages 47-59
DURATION	35'
INSTRUCTIONS FOR FACILITATOR	a. Make a short presentation of SUITS guidelines so as the give the framework of this chapter. Present guidelines objective and some other key elements in order to trigger participants' interest in innovations on this very important aspect of implementation and incite them to read more about it. Underline the fact that all 3 guidelines are complementary documents. b. Link successful case studies presented in previous chapter with this chapter by emphasising the innovative funding mechanisms, partnerships and/or procurement procedures which were employed in the implementation of these measures. c. Provide more details about financing, procurement and partnerships opportunities and options. d. Prompt discussion and guide participants on how to make use of existing or innovative methods in their own case. e. Transfer the general discussion results on the flipchart by connecting funding mechanisms with emerging transport technologies while adding more examples of financing mechanisms and innovative partnerships (a selection extracted by the guidelines). f. Suggest further reading and training material.

DISTRIBUTED MATERIAL (HANDOUTS, EXERCISES, OTHER TYPE OF MATERIAL)	
PRESENTATION SLIDES	Slides 68-90
FURTHER READING	1. SUITS CBP: "Guidelines to Innovative Financing" ARCADIS, U.K. 2018 2. SUITS CBP: "Guidelines to Innovative Procurement" Integral Consulting R&D (INTECO), Romania, 2018 3. SUITS CBP: "Guidelines to New Business Models, Bankable Projects and Innovative Partnerships", EUROKLEIS, Italy, 2018 4. SUITS e- learning course: "Financing, procurement and business models for sustainable urban transport" (www.nuacampus.org/elearning). 5. Civitas tool inventory. Application area: Financing, procurement, legal aspects, measure implementation - https://civitas.eu/tool-inventory?f%5B0%5D=field_application_area%3A927 6. Martin, J. and Shchuryk, O. (2018). Course Syllabus Topic Study 2: ITS and C-ITS user services. [ebook] CAPITAL Consortium. Available at: https://www.its-elearning.eu/assets/courseware/v1/ed6e59d55499f7a01c6659aa6abc5119/asset-v1:Capital+T101+2017_1+type@asset+block/CAPITAL_WP3_ITS2.pdf [Accessed 26 Mar. 2019].

CHAPTER 6: PROCESS AND IMPLEMENTATION ASPECTS

CONTENT	This chapter aims at giving an overview of the key steps of implementation process in order to increase technologies efficiency. Required data and data management, potential legal difficulties, milestones, risks, budget drivers and assessment indicators for Emerging Technologies are some of the factors when preparing the aforementioned technologies. In particular, the following steps are highlighted: 1. Integrate technologies in a wider strategic plan: Sustainable Urban Mobility Plan (SUMP) (Workbook, pg. 62). 2. Define indicators, required data sets and sustainable data collection/selection methods. For each measure category, the necessary data for implementing and assessing measures efficiency are defined. The identification of evaluation indicators at this stage optimises the data management process and helps building a baseline data base. Key performance indicators (KPI) consist of the main tool of assessing impact of the implemented EET (Workbook, pg. 65). 3. Identify potential difficulties/barriers per measures category and check for solutions to overcoming them (possible supportive LAs actions) (Workbook, pg. 64). With regard to handy and automated data collection methods for estimating ETT indicators, reference is made to the SUITS deliverable "Guidelines for cities on how to exploit open data and develop business opportunities" (WP3).
WORKBOOK PAGES	Pages 61-68
DURATION	45'

INSTRUCTIONS FOR FACILITATOR	a. Divide participants in 2 groups (NOTE: the groups syntheses may be different from Chapter 1 since now Policy Makers may have left the room) b. Assign each group to work on the same EET Technology (one of those which was proposed in Chapter 2) c. Hand out a chart to each group and ask each group to fill in the following elements also keeping in mind several case studies: (a) required data and surveys for implementation and evaluation of success - identification of relevant indicators, (b) main activities (both administrative and designing/application ones), (c) time plan, (d) needs for outsourcing, (e) potential legal barriers - **Exercise D** d. Prompt discussion with all the participants on critical supportive/ cooperative actions and commitments that LA should take in order to encourage the introduction/extension of EET. e. Make reference to the workbook corresponding chapter, providing an overview of the information included and presents KPIs table. Suggest participants to attend the corresponding e-learning course, developed in the frame of SUITS project, entitled "Data collection and analysis tools for integrated measures" (https://www.its-elearning.eu/assets/courseware/v1/ed6e59d55499f7a01c6659aa6abc5119/asset-v1:Capital+T101+2017_1+type@asset+block/CAPITAL_WP3_ITS2.pdf) f. Summarize course main results
DISTRIBUTED MATERIAL (HANDOUTS, EXERCISES, OTHER TYPE OF MATERIAL)	Exercise D: Final selection of Emerging Transport Technologies and identification of key actions to be implemented by LAs.
PRESENTATION SLIDES	Slides 91-95
FURTHER READING	1. Govtech.com. (2019). How Transportation Technologies Will Change Everything. [online] Available at: https://www.govtech.com/transportation/How-Transportation-Technologies-Will-Change-Everything-.html [Accessed 27 Mar. 2019]. 2. The Local Authority Guide to Emerging Transport Technology. (2017). [ebook] United Kingdom: The Institution of Engineering and Technology (IET). Available at: https://www.theiet.org/media/2954/ssd1471-la-guide-to-emerging-transport-tech-brochure.pdf [Accessed 27 Mar. 2019]. 3. Theiet.org. (2019). [online] Available at: https://www.theiet.org/media/2954/ssd1471-la-guide-to-emerging-transport-tech-brochure.pdf [Accessed 27 Mar. 2019]. 4. Work Package 3 D3.1 Research and Gap analysis on data collection and analysis methods. (2017). [Report]. 5. https://www.its-elearning.eu/assets/courseware/v1/ed6e59d55499f7a01c6659aa6abc5119/asset-v1:Capital+T101+2017_1+type@asset+block/CAPITAL_WP3_ITS2.pdf

CHAPTER 7: AVAILABLE TOOLS AND GUIDELINES

CONTENT	Guidelines and tools to support the design and implementation of such technologies are numerous. However, this chapter aims to provide the ones most correlated to S-M cities instead of being generic. The provided rating of the relevance to SUITS objectives supports the participants to prioritise these tools (Workbook, pg. 70). Besides SUMP guidelines that include generic suggestions (available in all EU languages by ELTIS), there are also other guidelines and tools for ETT developed in the frame of EU projects. About national guidelines, information is not easy to be accessed. Countries might already have or are about to produce this kind of guidelines .
WORKBOOK PAGES	Pages 69-77
DURATION	30’
INSTRUCTIONS FOR FACILITATOR	a. Present the available EC research guidelines and tools and makes special reference to any national technical guidelines and tools that exist [to be added by each SUITS country by the end of the project] b. Demonstrate online one or two more accurate tools (Workbook pg. 70) and explains the added value for each of them c. Present SUITS tools for data collection, selection, and visualisation and summarises SUITS guidelines[10].
DISTRIBUTED MATERIAL (HANDOUTS, EXERCISES, OTHER TYPE OF MATERIAL)	
PRESENTATION SLIDES	Slides 96-106

References

Workshop facilitators guide. (n.d.). [ebook] European Comission. Available at: https://www.unicef.org/eu/crtoolkit/downloads/FACILITATORS_GUIDE_-_Child_Rights_Toolkit_Workshop.pdf [Accessed 28 Mar. 2019].

Train the Trainer Facilitator Guide Differentiating Instructional Paths for Students NWEA. (n.d.). [ebook] Available at: https://www.peoriapublicschools.org/cms/lib/IL01001530/Centricity/Domain/23/0-TTT-FG%20%20DI%20_NWEA%20.pdf [Accessed 28 Mar. 2019].

10 By the time of the course implementation, the facilitator needs to provide this information (status of national guidelines – established, under development, non-existent) depending on the participant country.

ANNEXES MODULE 1

Building Small-Medium local authorities' capacity to implement emerging transport technologies

The annexes include related material, required for the proper planning and conduction of the presented module on safety and security transport measures. Specifically, a template of the module's agenda to be used ahead of the module's day along with a registration list to be completed by participants, on the spot. Moreover, the required exercises are included in a printable format for the facilitator to prepare and print the material needed.

ANNEX 1: Template of agenda/invitation

INVITATION

"Building Small-Medium local authorities' capacity to implement emerging transport technologies"

Date: …

Venue: …

Invited city/cities: …

Participants:
Key staff from transport planning /strategical urban planning / urban development / procurement departments

Facilitators: …

The workshop forms an integral part of the SUITS Capacity Building Toolkit of the Horizon2020 project "Supporting Urban Integrated Transport Systems: Transferable tools for authorities - SUITS". It serves the broad objective of building the capacity of small-medium cities' Local Authorities to implement and monitor the implementation of SUMP measures. The course is designed to build, or strengthen, the capacity of small-medium cities' Local Authorities to facing current challenges when implementing emerging transport technologies in transportation. Indicatively, the topics, on which the course will focus, are: a) the value of these technologies for small-medium cities, b) the identification of actors and stakeholders involved, c) the financing sources & innovative procurement, d) the available tools and guidelines regarding these technologies etc.

AGENDA			
Time	**Chapter**	**Course flow**	**Duration**
9:00-9:15	Registration		15 min
9:15-09:55	Introduction	a. Brief introduction of the trainer; Brief introduction of module's purpose and sections; Brief introduction of each participant & their expectations. b. Identification of the key aspects of the problems related to conventional transport systems.	40 min
09:55-10:35	Description of Emerging Transport Technologies (ETT)	a. Brief introduction of the concept and purpose of Emerging Transport Technologies (innovative technologies for urban transport solutions) for S-M cities. b. Description of some Emerging Transport Technologies (Clean fuels and e-vehicles, Traffic Information Systems, Pedestrian Assistance Systems etc.) and discussion on how these technologies could reduce identified problems.	40 min
10:35-11:00	Value of Emerging Transport Technologies for S-M cities (Challenges, Benefits and Beneficiaries)	a. Discussion focused on how strategic objectives of the city are connected to Emerging Transport Technologies. b. Benefits (Economic, Social, Environmental) and how to assess them. Beneficiaries and how to respond to specific challenges. c. Presentation of links on the EU regulations so as to further strengthen LAs arguments on the benefits of Emerging Transport Technologies.	25 min
11:00-11:15	Break		15 min
11:15-11:55	Successful Case studies or Best practices of SUITS cities	Presentation of case studies relevant to mentioned technologies. For each one of them, aspects such as: (a)the initial problem and target goal, (b) the scalability or replicability for these technologies, (c) the area of implementation, (d) the components/ implementation requirements for operating them, (e) the indicators for measuring the success/ impact, the barriers and drivers for the implementation of technologies.	40 min
11:55-12:30	Innovative financing mechanisms, procurement, partnerships for emerging transport technologies	a. Discussion on how to get aware and make use of existing or innovative methods in every city case. b. Presentation of SUITS innovative financing/ procurement/guidelines.	35 min
12:30-13:15	Process and implementation aspects for emerging transport technologies	a. Working on selected emerging transport technologies, participants will be asked to identify implementation aspects for their city such as: (a) potentially legal barriers, (b) supportive LA actions to encourage the introduction/implementation of the measure/campaign, (c) data requirements (d) implementation and evaluation indicators.	45 min
13:15-13:45	Available tools guidelines	a. Presentation of the available EC research guidelines, results and tools, demonstrate some of them online - explain the added value for each of them.	30 min
13:45-13:55	Conclusions / digital badges		10 min

ANNEX 2: Template of registration list

REGISTRATION LIST

"Building Small-Medium local authorities' capacity to implement emerging transport technologies"

Date: …

A/A	NAME	EMAIL	ORGANIZATION	SIGNATURE

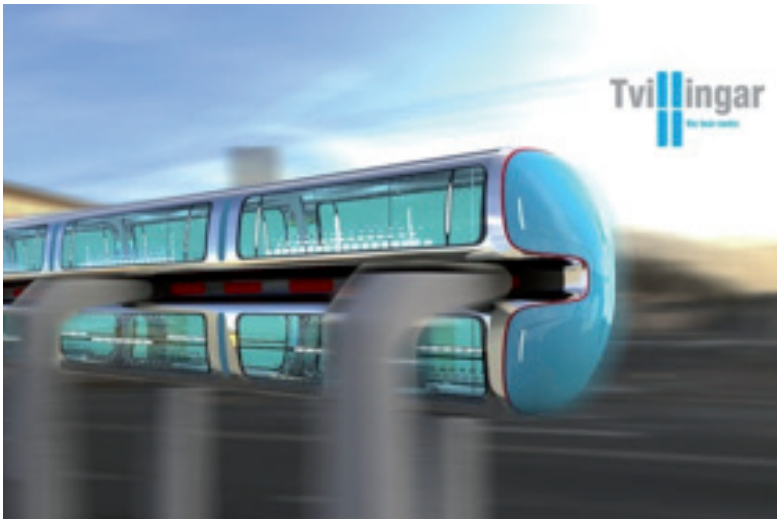
ANNEX 3: Ice breaker activity

How would you prefer to be transferred in your future city?

Capsules

Walking

Bicycle



Future metro

Electric Bus

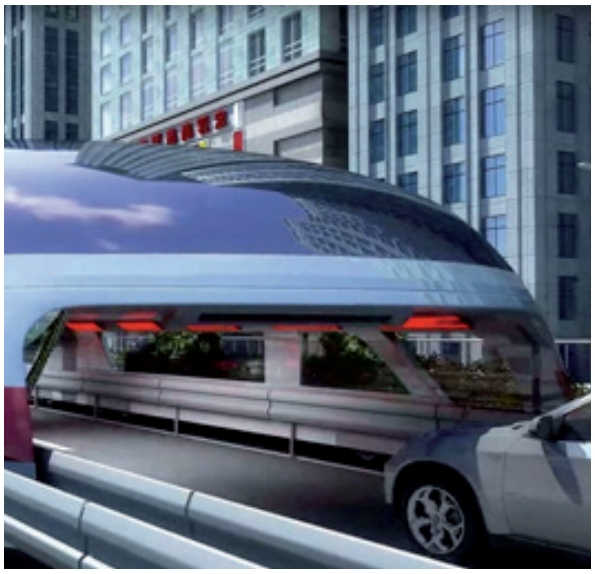
Unicycle

Body-jet-pack

Driverless taxi

Urban Transportation through water

Motorbike



Straddling Bus

Flying Car

ANNEX 4: Exercise A

EXERCISE A

Identifying weaknesses of the urban transport modes

Description of material
One table with 2 column where can be identified the weaknesses of urban transport modes.

Please use sticky notes to write down weaknesses that the modes of transport face in your city.

TEAM NAME

URBAN TRANSPORT MODE	WEAKNESSES
CAR	
PUBLIC TRANSPORT	
BICYCLE	
WALKING	

ANNEX 5: Exercise B

EXERCISE B

Analyzing weaknesses of the urban transport system and proposing transport technologies to counter them

Description of material

One table with 2 columns. The first column refers to the weaknesses that each mode of transport faces, as seen by the users. The second column refers to the transport technologies that can contribute to the mitigation of the identified weaknesses.

Please fill in the following matrix with the weaknesses face in your city and the transport technologies that can tackle those weaknesses.

TEAM NAME

WEAKNESSES	TRANSPORT TECHNOLOGY
• [WEAKNESS 1] • [WEAKNESS 2] • [WEAKNESS 3]	• [TECHNOLOGY 1] • [TECHNOLOGY 2] • [TECHNOLOGY 3]

ANNEX 6: Exercise C

EXERCISE C

Identification of key features for transport technologies

Description of exercise

1. Use sticky notes to fill in the two open Boxes. The first field refers to the benefits of a selected transport technology. The second field refers to the actors/stakeholders/social groups that will be affected (positively or negatively) by the technology.
2. On the left column of T-Chart transfer the actors/stakeholders which would present the most negative reactions to the proposed technology. On the right column, transfer the sticky notes so they can be used as convincing arguments to the stakeholders written on the left corner.

(To perform the exercise focusing on specific city, a city map, mobility data and relevant information are distributed to support brainstorming).

Please fill in the following box with the benefits that you believe the Emerging Transport Technology that you selected can bring to your city.

TEAM NAME

TECHNOLOGY TITLE

BENEFITS FOR YOUR CITY:

Please fill in the following box with the actors/stakeholders/social groups that you believe will be negatively or positively affected by the Emerging Transport Technology that you selected.

STAKEHOLDERS:

Please fill in the T-chart below, according to the arguments that may be expressed by actors in favour/against the implementation of the Emerging Transport Technologies provided to your group.

ACTORS	ARGUMENT

ANNEX 7: Exercise D

EXERCISE D

Final selection of Emerging Transport Technologies and identification of key actions to be implemented by LAs

Description of exercise

A. A table with 6 fields: (a) required data and surveys for implementation and evaluation of success - identification of relevant indicators, (b) main activities (both administrative and designing/application ones), (c) time plan, (d) milestones, (e) needs for outsourcing, (f) potential legal barriers.

TEAM NAME

TECHNOLOGY TITLE

MAIN ACTIVITIES (administrative and designing/ application)	REQUIRED DATA, SURVEYS FOR IMPLEMEN-TATION	EVALUATION INDICATORS	NEED FOR OUTSOURCING yes(what kind)/no	POTENTIAL LEGAL BARRIERS

Olympia Papadopoulou
olympia.papadopoulou@lever.gr

Anastasia Founta
Anastasia.Founta@lever.gr

Iason Tamiakis
Iason.tamiakis@lever.gr

Konstantia Karagkouni
konstantia.Karagkouni@lever.gr

LEVER Development Consultants S.A.
26th October 43, Thessaloniki, Greece
www.suits-project.eu
www.civitas.eu

THE CIVITAS INIZIATIVE
IN CO-FINANCED BY THE
EUROPEAN UNION