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(CAP4CITY)**

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**CAP4CITY Deliverable 2.1 – Smart Sustainable City Roadmap  
Executive Summary**

Deliverable Form	
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## Partners

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	Danube University Krems	Austria
	Technological University of Delft	The Netherlands
	Gdansk University of Technology	Poland
	Universidad Nacional del Sur	Argentina
	National University of La Plata	Argentina
	Pontifícia Universidade Católica do Rio Grande do Sul	Brazil
	Faculdade Meridional	Brazil
	Universidad Externado de Colombia	Colombia
	Escuela Colombiana de Ingeniería Julio Garavito	Colombia
	Technical University Federico Santa Maria	Chile
	Universidad Católica del Norte	Chile

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## Executive Summary

This deliverable is part of the Work Package 2 (WP2) “Development of Training Modules (Context-wise)” of the Erasmus+ CAP4CITY project. This report documents the work performed for the Task 2.1 (Development of Smart Sustainable City Roadmap) which had the purpose of suggesting a roadmap for Smart Sustainable Cities (SSC) development. This deliverable is important for the progress of the project because the guideline for developing Smart Sustainable Cities is the starting point for identifying the content of the training modules (training needs). In other words, the suggested steps of the roadmap are mapped to potential competencies that will be taken into consideration when developing the educational programs.

To achieve the goal of developing a guideline for SSC development, a literature review was performed to identify governance enablers (positive aspects) and challenges (barriers and obstacles) for Smart Sustainable Cities development which were used as the basis for describing the steps for the SSC roadmap. In addition, it was considered some best practices identified in the cases studies performed in a previous stage of the CAP4CITY project (WP1). According to the results of the literature review and the insights from real SSC initiatives, we conceived the roadmap for Smart Sustainable Cities development. The roadmap described in this report is generic aiming to guarantee flexibility for it to be used by different cities in different contexts. It contains five main stages; however a city does not need to perform all phases and there is no fixed starting point, it will depend on the context and maturity level of each initiative/city. The goal of the roadmap is to serve as input for the training modules.

The first section of the report briefly introduces the content to be presented, the purpose and scope of the report. It describes the relation with other work packages and project reports and finishes exposing the structure of the report and the research method used for the development of the Smart Sustainable City roadmap. The second section brings a brief literature background and presents the SSC conceptual framework adopted to guide the roadmap development. The third section explains the methodology for identifying the governance enablers and challenges, and for the roadmap development. The fourth section demonstrates the results of the literature review performed to identify SSC enablers and challenges, describing 22 governance challenges and 16 governance enablers. The results are discussed, and the roadmap is suggested in the section five. In the last section, conclusions are exposed, and recommendations are made for the next steps of the project. Four annexes are included in the final version of this report.



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## 1. Introduction

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### 1.1 Purpose and Scope

The deliverable D2.1 is part of the Work Package 2 (WP2) “Development of Training Modules” of the Erasmus+ CAP4CITY project. This report represents the outcome of the Task 2.1 (Development of Smart Sustainable City Roadmap), which had the purpose of suggesting a guideline for Smart Sustainable Cities (SSC) development to serve as input for the training modules.

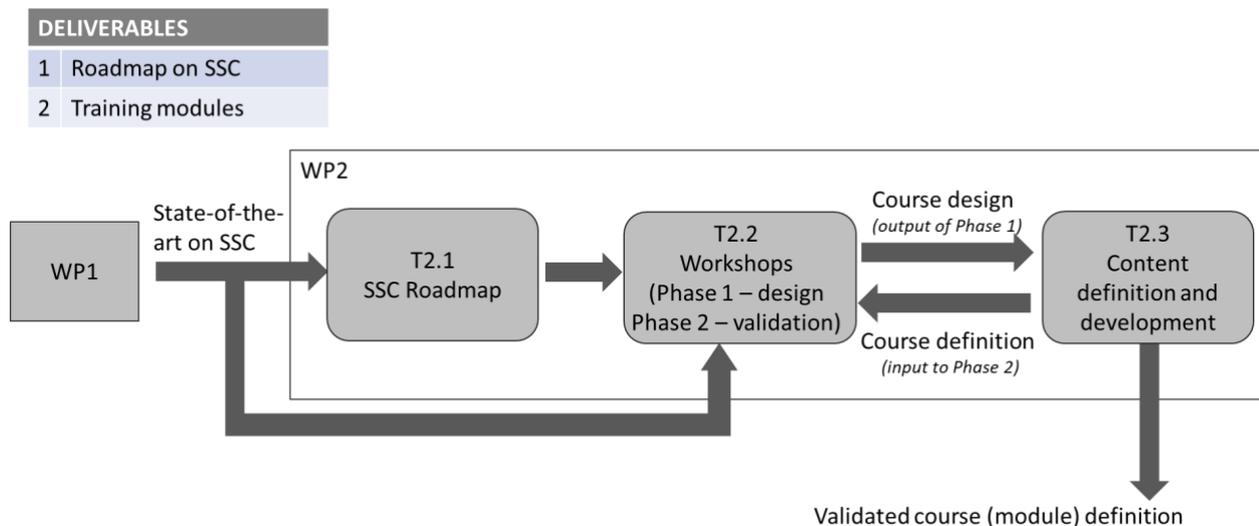
The main objectives of the deliverable D2.1 can be summarized as following:

- Review the SSC literature to identify governance enablers and challenges for the development of Smart Sustainable Cities;
- Provide a glossary of important concepts related to Smart Sustainable Cities;
- Suggest a guideline for the development of SSC initiatives in the format of a generic roadmap consisting of phases and steps to be used as input for the definition of the content of the training modules, which is the main goal of CAP4CITY project;
- Create the basis for identifying the possible competencies to develop smart sustainable cities. The phases and steps suggested in the SSC roadmap are used to map the necessary competencies to develop Smart Sustainable Cities.

According to the “Strengthening Governance Capacity for Smart Sustainable Cities” Project Description (p. 78), the target groups of this deliverable includes teaching staff, students, trainees and administrative staff. The dissemination level involves project partners department/faculty, institution, local, regional, national and international.

### 1.2 Approach for Work Package and Relation to other Work Packages and Deliverables

As mentioned before, this deliverable is part of the Work Package 2 (WP2) “Development of Training Modules”. In order to develop training modules for SSC it is important to identify what needs to be included in the educational programs, or in other words, which competencies are needed to develop SSC. One way to identify these competencies is the identification of which steps/actions are necessary to develop Smart Sustainable Cities initiatives, which is the purpose of the present deliverable. Aiming to identify these steps for developing Smart Sustainable Cities, a literature review was performed, and the best practices identified by the Work Package 1 (CAP4CITY Report D1.2 General Competencies for Smart Sustainable Cities) were taken into consideration. Therefore, the outcomes of WP1 were used as input for the WP2. The Figure 1 illustrates the relation between WP1 and WP2 and the tasks within WP2.



**Figure 1: Relation between WP1 and WP2 and the tasks within WP2**

The identified phases and steps suggested by the SSC roadmap were mapped to the potential competencies needed to perform each step. This mapping was executed with the help of all project partners, during the 1 Year Project Meeting, which took place on the 29<sup>th</sup> of October 2019. Thus, the SSC roadmap suggested in this deliverable intends to help on the definition of general competencies, i.e. skills, knowledge and attitudes, needed for administrative workforce, professionals and the general population for each step (e.g. analyzing the context, planning actions, maintaining or monitoring SSC initiatives, among others). The results of the workshops performed as part of Task 2.2 (Workshops with Stakeholders to design and validate the training modules) can be also combined to the steps of the proposed roadmap intending to build the content of the training modules. Therefore, the outputs of Task 2.2 and of this deliverable (D2.1) should contribute on the creation of new curricula (T2.3) with focus on skills and competencies needed for the development of Smart Sustainable Cities.

In addition, the outcome of the Task 1.3 (Report on SSC-related education programs in HEIs in Latin America) which identified, catalogued and described SSC-related educational programs offered by higher education institutions in Latin America, can be used to identify possible lacks in training programs that build general and/or role specific competencies needed for smart sustainable cities, comparing the programs and the necessary capabilities needed for each step of the roadmap.

### 1.3 Methodology and Structure of the Deliverable

The proposed roadmap was developed based on a literature review in the field of Smart Sustainable City which identified governance aspects that could help (enablers) or hinder (challenges) the development of SSCs. In addition to the literature review, it was also considered some of the best practices (case studies) developed in an early stage of the CAP4CITY project (WP1 – D1.2 General Competencies for Smart Sustainable Cities).