EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

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COST STSM Reference Number: COST-STSM-TU1206-16486
STSM Applicant: Dr Michiel van der Meulen, TNO (NL)
STSM Topic: Urban typology for reviewing the state of the art in urban subsurface planning
Host: Rubén Lois-González, University of Santiago de Compostela (ES)

Dear Hans,

Please find below my report for the application for a Short-term Scientific Mission (STSM) I made to the University of Santiago the Compostela. The objective was to establish an urban typology that is suitable to review the state of the art in the use of subsurface data in urban planning. The results will be implemented directly in the reporting of WG1. My report reiterates the original plan, summarises the activities and then provides the results in two attached documents.

RATIONALE
Working Group 1 of Cost Action TU1206 will deliver a report on the current capabilities in the management and modelling of subsurface data by GSOs and other researchers, and to assess the related needs of City-partners by compiling inventories of:

- Existing management of subsurface data and legislation and practice related to the sharing of, and access to, these (including key geotechnical and groundwater data);
- Methodologies and workflows related to, and applications of, urban subsurface 3D /4D modelling - the representation of subsurface conditions depends fundamentally on the comprehensive availability, and quality, of input data;
- City-scale 3D/4D models and their uses, with case studies relating to specific needs of City-partners;
- Interactions between GSOs, researchers and urban decision-makers;
- Relevant EU directives and design codes, such as INSPIRE - an infrastructure for spatial information in Europe to support Community environmental policies, and EUROCODE 7 - the world's first geotechnical design code to share a common philosophy with the design methodology for structures.

Given the composition of the consortium, the main regional focus of SUB-URBAN is Europe. So far, several members of the action have proposed a city to be considered a case example in the report. We now have to make our selection, which should be representative for Europe, geologically and geographically.

OBJECTIVES

'Geographically representative' refers not only to the physical but also human geography of cities we consider: for any planning approach it makes a fundamental difference what size a city has, what the population is, whether it is prosperous or poor, isolated or not, etc. However, an urban typology that is applicable to our particular project is not readily available and should be conceived and agreed within the project. Establishing such typology is the first objective of the STSM, and the second one is to apply it and make a selection of cities to be included in the report of WP1.

ORIGINAL WORK PLAN AND SCHEDULE

3-7 February 2014	**actual STSM:** Meeting in the University of Santiago de Compostela, to be spent discussing (applicant – host and relevant staff members), studying and writing. The outcome will be a draft of the introductory sections of the WP1 report, including the scope, approach and a selection of cities (based on the urban typology).
17 February 2014	**STSM follow up:** Plenary discussion of the results in a SUB-URBAN project meeting.
28 February 2014	**STSM follow up:** Consolidated introduction of the WG1 report, to be further complemented with case descriptions and their discussion.

ACTIVITIES AND RESULTS

To kick off the STSM, we discussed a concept note that Rubén Lois prepared (included as attachment 1). On the basis of that we defined the parameters by which a city will be characterised: geographically (size and density parameters), in terms of its management, and geologically.

As planned, the SMTS was spent writing and discussing. In addition to that, we spent one day on an urban-geographical excursion to A Coruña: primarily because this is a city that will be reviewed in the report of WP1, but also to have a discussion with its municipality about their contribution to the project. Other than the host Rubén Lois, his coworkers Miguel Pazos Otón (transport geographer) and Maria José Piñeira Mantiñán (urban geographer) participated in the STSM.

SMTS results:

- A presentation (included as attachment 2) that was used to report back to the project team, on the 17th of February, in order to:
    - Convey the urban typology as such, hence structuring the contributions that will be produced per city.
    - Arrive at a selection of cities (including contributors to the report).
- As the first version of the introductory sections of the WP1 report (the iontreoduction as such, and a section on methodology). This is work in progress, in accordance with the overall plan of TU1206 a draft version of the report of WP1 is to be delivered in May. Depending on how this work turns out, we will decide whether it will be a report or a peer-reviewed publication. In addition to this report, Rubén Lois and I are considering writing a paper on the concept of urban subsurface planning.

Altogether the SMTS was successful, in the sense that it was spent as planned, and because it helped preparing a collaborative reporting effort that is now taking place. In a broader sense, it turned out to be very useful to take a combined geological / human geographical view on urban subsurface planning; such multidisciplinary view is in fact a sine qua non in such complex environment.

Finally I would like to remark that the STSM was very well hosted: the practical support I received was excellent (lodging, work space), and so was the overall collaboration and hospitality.

Best regards,

Michiel van der Meulen
TNO, Geological Survey of the Netherlands