## Secondment Report

<table>
<thead>
<tr>
<th>Name of fellow:</th>
<th>J. Arturo Torres-Matallana (ESR3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start and end date of secondment:</td>
<td>26/10/2015 - 23/11/2015</td>
</tr>
<tr>
<td>Location of secondment:</td>
<td>University of Sheffield, Sheffield, United Kingdom</td>
</tr>
</tbody>
</table>

### Main aim of secondment:

1. Learn InfoWorks
2. Understand the Haute-Sûre catchment model in the new InfoWorks version
3. Learn more about uncertainty in InfoWorks

We followed a structured plan during the secondment:

- Week 1: Learning InfoWorks - Basics
- Week 2 – 3.5: Practice in InfoWorks plus working with a specific model
- Week 3.5 – 4: Learn about how is implemented an uncertainty analysis in InfoWorks

### Summary of secondment activities:

- Week 1: Review of literature about InfoWorks: mathematical models for hydraulics and water quality, specifically transport of sediments. The material for the review was given by the professors and researchers from the Pennine Water Group at University of Sheffield.

- Week 2 - 3.5: Hands on InfoWorks. Learning how to model dry weather conditions plus rainfall events in a sewer network of example following training material of InfoWorks. In a further stage, an update to InfoWorks ICM from InfoWorks CS was done for the sewer network of the Haute-Sûre case study in Luxembourg. Several runs for dry weather flow and wet weather conditions were performed. The results were discussed with professors and researchers from the Pennine Water Group at University of Sheffield.

- Week 3.5 – 4: Modelling of water quality processes in the Haute-Sûre sewer network in InfoWorks ICM. Discussion about which are the key factors in uncertainty analysis with InfoWorks, mainly runoff area, rainfall fields, sampling scheme, roughness of pipes.

On 12th November 2015, a dissemination event took place. A presentation of the research project status of ESR3 and ESR4 was done to the professors and researchers of the Pennine Water Group at University.

Every week at least one meeting was done with participation of the ESR3 and ESR4, and professors and researchers from the Pennine Water Group at University of Sheffield, mainly Prof. Simon Tait, Dr. Alma Schellart and Dr. Will Shepherd. The meetings had the purpose of orienting the ESR's work under the guidance of experts of the field. Also, it was a space for discussing openly the modelling results and the progress along the secondment.

### Status/progress of any deliverables linked to secondment (if applicable):

Not applicable

### Any other comments:

Arturo Torres-Matallana (ESR3) would like to thank to the professors and researchers of the Pennine Water Group at University of Sheffield for their support and advise since the first instance of the secondment. The review and discussion of the Haute-Sûre InfoWorks model and the modelling approach towards uncertainty analysis was very enthusiastic and productive. Thank you!

I would also like to thank the ESRs Vivian Camacho, Manoranjan Muthusamy, Ambuj Sriwastava and Mahmood Mahmoodian, for making of the secondment a very pleasant opportunity to discuss openly our research topics and enjoy the time together.