

**Deliverable 6.5**

<b>Project ID</b>	654241
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<b>Project Acronym</b>	PhenoMeNal
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<b>Work Package Number</b>	6
<b>Work Package Title</b>	PhenoMeNal Virtual Research Community Gateway
<b>Deliverable Title</b>	D6.5 Training and online tutorial for general use of the PhenoMeNal
<b>Delivery Date</b>	M30
<b>Work Package leader</b>	EMBL-EBI
<b>Contributing Partners</b>	EMBL-EBI, CRS4, UoB
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<b>Abstract:</b> The deliverable provides a summary on the user training, training materials and documentation available for the users.	



## Table of Contents:

<b>1</b>	<b>Executive Summary</b> .....	<b>3</b>
<b>2</b>	<b>Contribution towards the project objectives</b> .....	<b>3</b>
<b>3</b>	<b>Completed training activities</b> .....	<b>4</b>
3.1	<b>User workshops</b> .....	<b>4</b>
3.2	<b>Training booth at conference</b> .....	<b>4</b>
3.3	<b>Webinar series</b> .....	<b>5</b>
<b>4</b>	<b>Training Material</b> .....	<b>6</b>
<b>5</b>	<b>Delivery and Schedule</b> .....	<b>7</b>
<b>6</b>	<b>Future Plans</b> .....	<b>7</b>



## 1 Executive Summary

This deliverable provides a report on the various training activities and technical communication documents or user guides developed to ensure that the PhenoMeNal e-infrastructure is accepted and used by the scientific community. The development of PhenoMeNal training activities is extensively described in deliverable *D2.3 Updated report on mapping of e-infrastructures, users, investments for supporting policy developments in the field of metabolomics, biomarkers and biobanks* and as part of the *dissemination and outreach plan* under the Outreach work package, WP3.

Since the successful first release of PhenoMeNal Cloud Research Environment (CRE) portal in March 2017<sup>1</sup>, we have hosted 3 hands-on user-focused training sessions. These workshops were held at different European locations: Pula (Italy), Cambridge (UK) and Birmingham (UK). In addition, an exhibition booth with live demos of the PhenoMeNal services was set up at the MetaboMeeting Conference, held in Birmingham in December 2017. In conjunction with these user focused training sessions, an in-house train-the-trainer event is currently being planned as part of the PhenoMeNal structured training program. The event is being designed to provide trainers, people within the consortium who will provide training to end users, with guidance, methods and training materials for delivering uniform, standardised and impactful training.

Starting October 2017, a webinar series was launched in collaboration with the training team at EMBL-EBI<sup>2</sup>. These webinars were recorded and are freely available on the project website<sup>3</sup>, EMBL-EBI training pages and TeSS<sup>4</sup> (Elixir's training portal). Four introductory webinars on PhenoMeNal services and workflows have been completed so far with another two scheduled for spring 2018.

The training materials have been developed collaboratively by the partners and are available on the PhenoMeNal Wiki<sup>5</sup> on GitHub. In addition, the PhenoMeNal YouTube channel<sup>7</sup> hosts videos on demonstrations on workflows and software tools.

## 2 Contribution towards the project objectives

The deliverable has contributed towards the project objective:

**Objective 6.1:** Establishment of the PhenoMeNal Virtual Research Community (VRC) portal

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<sup>1</sup><http://phenomenal-h2020.eu/home/2017/03/13/announcement-of-first-public-release-of-the-phenomenal-cloud-research-environment/>

<sup>2</sup> <https://www.ebi.ac.uk/training>

<sup>3</sup> <http://phenomenal-h2020.eu/home/training-online/>

<sup>4</sup> <https://tess.elixir-europe.org>

<sup>5</sup> <https://github.com/phnmnl/phenomenal-h2020/wiki>

<sup>6</sup> The training materials can also be accessed via project website and portal

<sup>7</sup> <https://www.youtube.com/channel/UCXGAVsVNQk-aUpckjRC8Ang>



### 3 Completed training activities

#### 3.1 User workshops

The PhenoMeNal user workshops featured introductory lectures on the use of PhenoMeNal services followed by hands-on practical sessions on using PhenoMeNal tools and workflows for data analysis. For a detailed report on the workshops, see D1.4.5 (Bi-annual progress report).

Date and place	Title
11th - 15th September 2017, Pula, Italy	CloudMet 2017 <sup>8,9</sup>
30th October - 2nd November 2017, Cambridge, UK	Metabolomics workflows <sup>10</sup>
14th December 2017, Birmingham, UK	PhenoMeNal Gateway workshop - Taking metabolomics data processing and analysis to the cloud <sup>11</sup> .

**Table 1.** PhenoMeNal workshops overview

#### 3.2 Training booth at conference

PhenoMeNal hosted an exhibition booth at the MetaboMeeting 2017<sup>12</sup> that offered hands-on demonstrations of the services<sup>13</sup>.

<sup>8</sup> <http://phenomenal-h2020.eu/home/about/events/cloudmet-2017/>

<sup>9</sup> <http://phenomenal-h2020.eu/home/2017/10/31/cloudmet-2017-helps-establish-phenomenal-as-an-effective-data-analysis-and-training-platform/>

<sup>10</sup> <http://phenomenal-h2020.eu/home/about/events/metabolomics-workflows/>

<sup>11</sup> <http://phenomenal-h2020.eu/home/2017/11/10/phenomenal-gateway-workshop-taking-metabolomics-data-processing-and-analysis-to-the-cloud/>

<sup>12</sup> <http://metabomeeting2017.thempf.org/partners>

<sup>13</sup> <http://phenomenal-h2020.eu/home/2017/11/07/phenomenal-metabomeeting-2017/>



**Agenda**

Monday 11 December	Tuesday 12 December	Wednesday 13 December
12:45 - 13:45 Hands-on demo   Q&A	10:30 - 11:00 Q&A	10:00 - 10:30 Q&A
15:45 - 16:15 Q&A	12:45 - 13:45 Hands-on demo   Q&A	12:15 - 13:15 Hands-on demo   Q&A
18:00 - 19:00 Hands-on demo   Q&A	16:30 - 17:30 Hands-on demo   Q&A	

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**Figure 1.** PhenoMeNal flyer showing agenda for demonstrations during the conference.

### 3.3 Webinar series<sup>14</sup>

PhenoMeNal webinars showcase the general usage of the PhenoMeNal infrastructure and available workflows for data analysis.

Date	Title and speaker
24th Oct, 2017	Using PhenoMeNal for your metabolomics data analysis on the cloud, <i>Pablo Moreno, EMBL-EBI</i>
25th Oct, 2017	PhenoMeNal: Metabolomics data analysis in the cloud, <i>Pablo Moreno, EMBL-EBI</i>
23rd Nov, 2017	LC/MS data analysis with XCMS and MetFrag on PhenoMeNal, <i>Steffen Neumann, IPB</i>
7th Feb, 2018	Metabolomics in the Cloud: Scaling Computational Tools to Big Data, <i>Tim Ebbels, ICL</i>

**Table 2.** List of PhenoMeNal webinars conducted so far

<sup>14</sup> <http://phenomenal-h2020.eu/home/training-online/>



### 3.4 Other training activities by partners

Event	Title and Speaker
COST-CHARME: Big Data Training School for Life Sciences <sup>15</sup> , 18-22 September 2017, Swedish Agricultural University, Uppsala, Sweden.	Data-intensive bioinformatics on HPC and Cloud, <i>Ola Spjuth, UU</i>
	Scalable and reproducible workflows with Pachyderm, <i>Jon Ander Novella, UU</i>
	Large-scale clinical metabolomics using mass spectrometry, <i>Stephanie Herman and Payam Emami Khonsari, UU</i>
	Machine learning in Spark, <i>Marco Capuccini, UU</i>
	Analysis of mass spectrometry data in parallel using the Pachyderm workflow system on top of Kubernetes, <i>Stephanie Herman, Jon Ander Novella, and Payam Emami Khonsari, UU</i>
EMBO Practical Course on Metabolomics Bioinformatics for Life Scientists	Using Galaxy workflows for metabolomics, <i>Etienne Thévenot, CEA</i>

**Table 3:** List of training activities by partners

## 4 Training Material

All the training materials are freely available on PhenoMeNal Wiki as well as the project website and on the “Help<sup>16</sup>” page of the PhenoMeNal CRE portal. The training materials have been classified as:

- User documentation<sup>17</sup>: provides introduction to PhenoMeNal, its architecture, the available services, including step-by-step tutorials on the installation of the PhenoMeNal CRE on various cloud providers.
- Developer documentation<sup>18</sup>: resources for developers on tools, software and release procedures.

<sup>15</sup> <http://astrocyte.com/COST-CHARME/COST-CHARME/Home.html>

<sup>16</sup> <https://portal.phenomenal-h2020.eu/help>

<sup>17</sup> <https://github.com/phnmnl/phenomenal-h2020/wiki/User-Documentation>



- Tutorials<sup>19</sup>: step-by-step tutorials on workflows

## 5 Delivery and Schedule

The deliverable has been submitted on time.

## 6 Future Plans

As discussed in D2.3, efforts are being concentrated to approach research groups and SMEs for organising face-to-face training and hands-on assistance on use of PhenoMeNal services. Other training activities include:

- Interactive user workshop, 6-8th June at EMBL-EBI. The workshop will be aimed at PhD students, post-docs and researchers with at least one to two years of experience in the field of metabolomics who are seeking to improve their skills in metabolomics data analysis using Cloud.
- Webinar on Statistical workflows and Challenges and Opportunities with Virtual Research Environments.

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<sup>18</sup> <https://github.com/phnmnl/phenomenal-h2020/wiki/Developer-Documentation>

<sup>19</sup> <https://github.com/phnmnl/phenomenal-h2020/wiki/Tutorials>