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Deliverable D3.1

**DevOps metrics and measurements training content
(talks, lectures, seminars)**

Document details:

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1. Introduction

1.1 Purpose

This document describes the presentations and other content given during lectures, talks or seminars for training purposes, delivered by the experts from the University of Tilburg (UvT) and the Politecnico di Milano (POLIMI) to members of the Cyprus University of Technology (CUT) on DevOps metrics and measurements.

This deliverable is part of Work Package 3 (WP3) that describes the actions to enable successful transfer of knowledge from the leading institutions to CUT for luxuriating its knowledge base on technical issues of the Distributed Environment, Cloud Computing Environment, Service Delivery Environemt, Definition of standardized metrics, Server Side Metrics, Client Side Metrics, DevOps oriented Metrics and finally Integration of metrics and measurement activities.

1.2 Definitions, Acronyms, and Abbreviations

CUT: Cyprus University of Technology

UvT: University of Tilburg

POLIMI: Politecnico di Milano

1.3 Overview

The rest of this document is structured as follows: Section 2 describes the training content delivered by members of the POLIMI, section 3 presents the training material covered by staff of UvT and finally, section 4 concludes this document.

2. POLIMI Site Visits

2.1 First Site Visit

During the first site visit of the second series of site visits, members from the CUT group attended a number of presentations given by the POLIMI group as well participated in discussions related to the topic of WP3 3. In particular, the general subject of these presentations and discussions was dealing with research challenges in microservices, containerization of cloud applications and the corresponded metrics, and DevOps strategies with social software engineering.

2.1.1 Day One

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	11/12/2016	Time:	10:00-13:30
Facilitator:		Location:	RITZ Milano Hotel Via Lazzaro Spallanzani, 40 20129 Milano

1. Subject / Short Description

Project Coordination / Preparatory Activities

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.c y	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

2.1.2 Day Two

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	12/12/2016	Time:	09:00-11:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

ECoWare is a middleware that allows users to collect data from the surrounding environment, by using distributed probes, and it provides a Complex Event Processing by filtering, correlating and analyzing data properly, allowing to manipulate efficiently high degrees of raw sensor data. It is a service-based solution that abstracts probes that are distributed into the environment, as well as it provides the analysis capabilities required to make timely analyses on how a space is evolving. ECoWare has been originally developed in the context of Cloud Computing and Web Services

2. Attendees

Name	Department/Division	E-mail	Phone
Giovanni Quattrocchi, Phd Candidate	POLIMI / Italy	giovanni.quattrocchi@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	

Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
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3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
EcoWare Presenation	Document		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
Chapter_2_ECoWare.pdf	Giovanni Quattrocchi, Phd Candidate

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	12/12/2016	Time:	11:30-13:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Microservices Taxonomy – An introduction

2. Attendees

Name	Department/Division	E-mail	Phone
Martin Garriga, Post-doctoral student	POLIMI / Italy	martin.garriga@polimi.it	

Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Microservices	Document		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
MicroServiceTaxonomy_WorkingDraft_V1.pdf	Martin Garriga, Post-doctoral student

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	12/12/2016	Time:	14:30-15:30
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

A Discrete-Time Feedback Controller for Containerized Cloud Applications

Modern Web applications exploit Cloud infrastructures to scale their resources and cope with sudden changes in the workload. While the state of practice is to focus on dynamically adding and removing virtual machines, we advocate that there are strong benefits in containerizing the applications and in scaling the containers. This presentation describes an autoscaling technique that allows containerized applications to scale their resources both at the virtual machine (VM) level and at the container level. Furthermore, applications can combine this infrastructural adaptation with platform-level adaptation. The autoscaling is made possible by our planner, which consists of a grey-box discrete-time feedback controller.

2. Attendees

Name	Department/Division	E-mail	Phone
Giovanni Quattrocchi, Phd Candidate	POLIMI / Italy	giovanni.quattrocchi@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Containerized Cloud Applications	Document		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
p217-baresi.pdf	Giovanni Quattrocchi, Phd Candidate

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	12/12/2016	Time:	15:30-16:30
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Architecting Microservices (de-) Compositions

Microservices is a novel architectural style that overcomes the shortcomings of a monolithic architecture in which the application logic is encapsulated within a deployable unit. Microservices provide small services that are easy to understand, deploy and scale independently, even using different technology stacks. Several industries have recently migrated, or consider migrating their monolithic applications to microservices. Monolith decomposition involves isolating business functionalities into microservices that interact through standardized interfaces, thus optimizing the autonomy and replaceability of the services.

2. Attendees

Name	Department/Division	E-mail	Phone
Martin Garriga, Post-doctoral student	POLIMI / Italy	martin.garriga@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Architecting Microservices (de-) Compositions	Document		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
Microservices_WorkingDraft.pdf	Martin Garriga, Post-doctoral student

2.1.3 Day Three

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	13/12/2016	Time:	09:00-11:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description
Discussions on utilizing Ecoware for applying new policies and techniques

2. Attendees			
Name	Department/Division	E-mail	Phone
Giovanni Quattrocchi, Phd Candidate	POLIMI / Italy	giovanni.quattrocchi@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time

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4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	13/12/2016	Time:	11:30-13:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Round table discussion on the following topics : Ecoware, containerization, metrics

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Giovanni Quattrocchi, Phd Candidate	POLIMI / Italy	giovanni.quattrocchi@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Ecoware, containerization, metrics	discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

2.1.4 Day Four

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	14/12/2016	Time:	09:00-11:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Presentation by CUT members on the topic: Approaching Human Resource Management and Project Scheduling problems using CI techniques

2. Attendees

Name	Department/Division	E-mail	Phone
Damian Andrew Tamburri, Post-doctoral student	POLIMI / Italy	damianandrew.tamburri@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Approaching Team organization and staffing using CI techniques	Paper		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
1-s2.0-S096599781630076X-main.pdf	Constantinos Stylianou, PhD

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	14/12/2016	Time:	11:30-13:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description
Presentation by CUT members on the topic: Modeling microservices adoption with Fuzzy Cognitive Maps

2. Attendees			
Name	Department/Division	E-mail	Phone
Martin Garriga, Post-doctoral student	POLIMI / Italy	martin.garriga@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Modeling microservices adoption with Fuzzy Cognitive Maps	Paper		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
1-s2.0-S0925231216315764-main.pdf	Andreas Christoforou, PhD Candidate

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	14/12/2016	Time:	14:30-16:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description
Round Table Discussion / Brainstorming Identification of common grounds for research work on the topic of interests from CUT and POLIMI

2. Attendees			
Name	Department/Division	E-mail	Phone
Giovanni Quattrocchi, Phd Candidate	POLIMI / Italy	giovanni.quattrocchi@polimi.it	
Martin Garriga, Post-doctoral student	POLIMI / Italy	martin.garriga@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	

Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
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3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Research work	discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

2.1.5 Day Five

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	15/12/2016	Time:	09:00-11:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Investigation on CI optimization, classification and prediction suitable for organizational structuring and team allocation.

2. Attendees

Name	Department/Division	E-mail	Phone
Damian Andrew Tamburri, Post-doctoral student	POLIMI / Italy	damianandrew.tamburri@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	

Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
	Discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

2.1.6 Day Six

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	16/12/2016	Time:	09:00-11:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Implementation of necessary experiments to produce results - Discussion on the analysis of results and identification of data sources required to run the experiments.

Share Data from POLICloud.

2. Attendees

Name	Department/Division	E-mail	Phone
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Damian Andrew Tamburri, Post-doctoral student	POLIMI / Italy	damianandrew.tamburri@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	16/12/2016	Time:	11:30-13:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

EcoWare Source code presentation

Share EcoWare source code : <https://github.com/deib-polimi/ecoware>

2. Attendees

Name	Department/Division	E-mail	Phone
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Martin Garriga, Post-doctoral student	POLIMI / Italy	martin.garriga@polimi.it	
Giovanni Quattrocchi, Phd Candidate	POLIMI / Italy	giovanni.quattrocchi@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

Workpackage:	WP3 - Metrics and Measurement activities		
Date: (MM/DD/YYYY)	16/12/2016	Time:	13:00-14:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Schedule next research steps and definition of communication and collaboration methods

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Martin Garriga, Post-doctoral student	POLIMI / Italy	martin.garriga@polimi.it	
Giovanni Quattrocchi, PhD Candidate	POLIMI / Italy	giovanni.quattrocchi@polimi.it	
Prof. Sotirios Chatzis	CUT / Cyprus	sotirios.chatzis@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Schedule next research steps and definition of communication and collaboration methods	discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

2.2 Second Site Visit

Members from the CUT group participated in the second site visit at POLIMI. During this visit members from the POLIMI group presented their work that is related to software development and deployment for distributed applications. At first, a comprehensive introduction on the MODAClouds project was made, whereas in the second lecture, an approach for the management of resources in very large cloud platforms was described.

2.2.1 Day One

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	02/27/2017	Time:	09:30-11:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Welcome and introduction

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Welcome and introduction			

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

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Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	02/27/2017	Time:	11:00-14:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Presentation on AWS Lambda functions

2. Attendees

Name	Department/Division	E-mail	Phone
Martin Garriga, PhD candidate	POLIMI / Italy	martin.garriga@polimi.it	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Microservices and AWS Lambda	Presentation	Martin Garriga	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
-------------	-------------

Microservices and AWS Lambda.ppt	Martin Garriga, PhD candidate

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	02/27/2017	Time:	14:00-16:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Discussion on Microservices

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Martin Garriga, PhD candidate	POLIMI / Italy	martin.garriga@polimi.it	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Discussion on Microservices	discussion		

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4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

2.2.2 Day Two

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	02/28/2017	Time:	09:30-12:00
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Discussion about Social dept and organizational/team structure

2. Attendees

Name	Department/Division	E-mail	Phone
Damian Andrew Tamburri, Post-doctoral student	POLIMI / Italy	damianandrew.tamburri@polimi.it	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Social dept and organizational/team structure	Discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	02/28/2017	Time:	14:30-15:30
Facilitator:		Location:	III floor, building 22, via Golgi, 42

1. Subject / Short Description

Presentation on Edge Computing

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Prof. Danilo Ardagna	POLIMI / Italy	danilo.ardagna@polimi.it	
Tajfar Saeed, PhD Candidate	POLIMI / Italy	saeed.tajfar@polimi.it	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Edge Computing	Presentation	Danilo Ardagna	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
Edge_Computing.pdf	Danilo

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	02/28/2017	Time:	15:30-16:30
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description
Presentation IoT and 5G networks

2. Attendees			
Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Prof. Danilo Ardagna	POLIMI / Italy	danilo.ardagna@polimi.it	

Saeed Tajfar, PhD student	POLIMI / Italy	saeed.tajfar@polimi.it	
Constantinos Stylianou, PhD candidate	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Presentation IoT and 5G networks	Presentation	Saeed Tajfar, PhD student	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
IoT and 5G Networks.pdf	Saeed Tajfar, PhD student

2.2.3 Day Three

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/01/2017	Time:	09:30-11:30

Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan
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1. Subject / Short Description

Further discussions about social dept and microservicees

2. Attendees

Name	Department/Division	E-mail	Phone
Damian Andrew Tamburri, Post-doctoral student	POLIMI / Italy	damianandrew.tamburri@polimi.it	
Martin Garriga, PhD candidate	POLIMI / Italy	martin.garriga@polimi.it	
Constantinos Stylianou, PhD candidate	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Further discussions about social dept and microservicees	discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/01/2017	Time:	14:30-15:30
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

EcoWare and future evolution

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Sam Guinea	POLIMI / Italy	sam.guinea@polimi.it	
Constantinos Stylianou, PhD candidate	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time

EcoWare and future evolution	Presentation	Prof. Sam Guinea	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
MontyPi.pdf	Prof. Sam Guinea

2.2.4 Day Four

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/02/2017	Time:	10:30-11:30
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description
Presentation on PoliCloud

2. Attendees			
Name	Department/Division	E-mail	Phone

Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Alessandro Frossi (Technical and administrative staff)	POLIMI / Italy	alessandro.frossi@polimi.it	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Andreas Christohorou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Constantinos Stylianou, PhD candidate	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Presentation on PoliCloud	presentation	Alessandro Frossi	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
PoliCloud :: Architecture and Roadmap.pdf	Alessandro Frossi

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/02/2017	Time:	14:30-15:30
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Presentation on Poli ICT Infrastrutture

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Paola Mussida, ICT Project Manager/Team Leader	POLIMI / Italy	paola.mussida@polimi .it	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Andreas Christohorou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Constantinos Stylianou, PhD candidate	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time

Presentation on Poli ICT Infrastrutture	Presentation	Paola	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
ICT Services Area.pdf	Paola

2.2.5 Day Five

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/03/2017	Time:	09:30-12:30
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Further discussions on topics that were performed during the week, such as microservices, edge computing, IoT.

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	

Prof. Danilo Ardagna	POLIMI / Italy	danilo.ardagna@polimi.it	
Martin Garriga, Post-doctoral student	POLIMI / Italy	martin.garriga@polimi.it	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Andreas Christohorou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Further discussions on these topics: microservices, edge computing, IoT.	discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

Workpackage:	WP3 – Metrics and Measurement activities
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Date: (MM/DD/YYYY)	03/03/2017	Time:	14:30-15:30
Facilitator:	POLIMI	Location:	POLIMI, III floor, building 22, via Golgi, 42, Milan

1. Subject / Short Description

Project organization and future planning

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Andreas Christohorou, PhD Candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Project organization and future planning	discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

3. UvT Site Visits

3.1 First Site Visit

Researchers from the CUT group participated in the first site visit, of the second series visits, in UvT. During this visit a number of lectures were given by UvT group members. The lectures covered a wide range of aspects and research topics on cloud distributed systems, such as data science and intelligence sharing, big data and analytics.

3.3.1 Day One

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/29/2017	Time:	09:30-11:00
Facilitator:	UvT	Location:	Koopmans (K) building room K1011A Warandelaan 2, 5037 AB Tilburg

1. Subject / Short Description

Lecture on Data Science and Intelligence Sharing

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	

Prof. Chi-Hung Chi	CSIRO Australia	chihung.chi@csiro.au	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Data Science and Intelligence Sharing	Presentation	Chi-Hung Chi	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
Data_Science.pdf	Chi-Hung Chi

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/29/2017	Time:	11:30-12:15
Facilitator:	UVT	Location:	Koopmans (K) building room K1011A Warandelaan 2, 5037 AB Tilburg

1. Subject / Short Description

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	
Prof. Kostas Magoutis	UvT / The Netherlands	magoutis@cse.uoi.gr	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Cloud meets IoT	Presentation	Kostas Magoutis	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

Cloud-IoT.pdf	Kostas Magoutis
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Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/29/2017	Time:	12:15-13:00
Facilitator:	UvT	Location:	Koopmans (K) building room K1011A Warandelaan 2, 5037 AB Tilburg

1. Subject / Short Description

Presentation on Internet of Everything

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Internet of Everything	Lecture	Prof. Mike Papazoglou	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
CACERES-Talk-Final.pptx.pdf	Prof. Mike Papazoglou

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/29/2016	Time:	15:00-17:30
Facilitator:	UvT	Location:	

1. Subject / Short Description

Discussion on the covered lectures/presentations

Project planning

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	

Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Previous lectures/presentations discussion	Discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

3.3.2 Day Two

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/30/2017	Time:	09:30-10:15
Facilitator:	UvT	Location:	Jheronimus Academy of Data Science Sint Janssingel 92 5211 DA 's-Hertogenbosch

1. Subject / Short Description

Lecture on Big Data Analytics

2. Attendees			
Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UVT / The Netherlands	mikep@uvt.nl	
Prof. Chi-Hung Chi	CSIRO Australia	chihung.chi@csiro.au	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Big Data and Analytics	Lecture	Prof. Chi-Hung Chi	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
Big_Data.pdf	Prof. Chi-Hung Chi

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/30/2017	Time:	10:15-11:00

Facilitator:	UvT	Location:	Jheronimus Academy of Data Science Sint Janssingel 92 5211 DA 's-Hertogenbosch
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1. Subject / Short Description

Design of a Modeling Technique to analyze the problem of Process Simulation throughout the Business architecture

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	
Prof. Ben Roelens	University of Ghent, Belgium		
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
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Design of a Modeling Technique to analyze the problem of Process Simulation throughout the Business architecture	Lecture	Ben Roelens	
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4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
Design of a Modeling Technique to analyze the problem of Process Simulation throughout the Business architecture	Ben Roelens

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/30/2017	Time:	11:30-12:15
Facilitator:	UvT	Location:	Jheronimus Academy of Data Science Sint Janssingel 92 5211 DA 's-Hertogenbosch

1. Subject / Short Description

Data on Business Models based on Data

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	
Prof. Ksenia Podoyntsina	Technical University of Eindhoven, The Netherlands	K.S.Podoyntsina@tue.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	

Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Data on Business Models based on Data	Lecture	Ksenia Podoynitsyna	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/30/2017	Time:	12:15-13:00
Facilitator:	UvT	Location:	Jheronimus Academy of Data Science Sint Janssingel 92 5211 DA 's-Hertogenbosch

1. Subject / Short Description

Responsible Smart Systems

2. Attendees			
Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	
Dr. Indika Kumara, PostDoc	UvT / The Netherlands	ipkumarawd@yahoo.com	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Constantinos Stylianou, PhD candidate	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Responsible Smart Systems	Lecture	Indika Kumara	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
SmartSystems.pptx	Indika Kumara

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/30/2017	Time:	15:00-15:45
Facilitator:	UvT	Location:	Jheronimus Academy of Data Science Sint Janssingel 92 5211 DA 's-Hertogenbosch

1. Subject / Short Description

Dossier Cloud

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	
Dr. Indika Kumara, PostDoc	UvT / The Netherlands	ipkumarawd@yahoo.com	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Constantinos Stylianou, PhD candidate	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Introduction to Dossier Cloud	Lecture	Andreas Christoforou	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
dossier_introduction_summer school_AC.pptx	Andreas Christoforou

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/30/2017	Time:	15:45-16:30
Facilitator:	UvT	Location:	Jheronimus Academy of Data Science Sint Janssingel 92 5211 DA 's-Hertogenbosch

1. Subject / Short Description
Process mining Big Software : Using process mining for making sense of Software Data

2. Attendees			
Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	

Dr. Indika Kumara, PostDoc	UvT / The Netherlands	ipkumarawd@yahoo.com	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Constantinos Stylianou, PhD candidate	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Process mining Big Software : Using process mining for making sense of Software Data	Lecture	JADS Student	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/30/2017	Time:	16:30-19:00
Facilitator:	UvT	Location:	Jheronimus Academy of Data Science Sint Janssingel 92 5211 DA 's-Hertogenbosch

1. Subject / Short Description

Meeting with local companies (PHILIPS, Booking.com) and the Municipality of 's-Hertogenbosch (Den Bosch)

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike Papazoglou	UvT / The Netherlands	mikep@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Meeting with local companies (PHILIPS, Booking.com) and the Municipality of 's-Hertogenbosch (Den Bosch)	Discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

3.3.3 Day Three

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	03/31/2017	Time:	09:30-11:00

Facilitator:	UvT	Location:	Jheronimus Academy of Data Science Sint Janssingel 92 5211 DA 's-Hertogenbosch
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1. Subject / Short Description

Dossier Cloud & DevOps

2. Attendees

Name	Department/Division	E-mail	Phone
Dr. Indika Kumara, PostDoc	UvT / The Netherlands	ipkumarawd@yahoo.com	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Dossier Cloud & DevOps	Lecture	Constantinos Stylianou	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
CS_Dossier_DevOps.pptx	Constantinos Stylianou, PhD

3.3.4 Day Four

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	04/01/2017	Time:	09:30-11:00
Facilitator:	UvT	Location:	Jheronimus Academy of Data Science Sint Janssingel 92 5211 DA 's-Hertogenbosch

1. Subject / Short Description
Discussion on Business Models based on Data

2. Attendees			
Name	Department/Division	E-mail	Phone
Ksenia Podoynitsyna	UvT / The Netherlands	K.S.Podoynitsyna@tue.nl	
Constantinos Stylianou, PhD candidate	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Discussion on Business Models based on Data	Discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by

4. CUT Workshop – Cyprus, May 15-17, 2017

Representatives from all project partners participated in the second workshop organized at the CUT premises in Limassol. During this 3-day workshop members from POLIMI and UvT delivered lectures and presentations to members of the CUT group, as well as to other researchers and students. Also, a project management meeting was conducted in which members from all partners discussed the progress of the project, lessons learned so far, the steps for preparing the review report, the representation of each partner in Brussels, as well as the weaknesses and obstacles encountered thus far. On the last day of the workshop the 2nd Stakeholders Meeting and Workshop on Cloud Computing, Software Services and Smart Data Processing was organized. Members from the CUT and UvT presented the DOSSIER-Cloud project and part of its work to a group of targeted local stakeholders and finally a discussion for collaboration between the DOSSIER-Cloud members and the local stakeholders followed.

4.1 Day One

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	15/05/2017	Time:	09:30-10:30
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

Microservices, containers, and server-less computing

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Prof. Willem-Jan van den Heuvel	Tilburg / The Netherlands	w.j.a.m.vdnheuvel@tilburguniversity.edu	
Damian Andrew Tamburri, PhD	POLIMI / Italy	damianandrew.tamburri@polimi.it	
Clément Quinton, PhD	POLIMI / Italy	Clement.quinton@polimi.it	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Panayiotis Christodoulou, PhD candidate	CUT / Cyprus	paa.christodoulou@edu.cut.ac.cy	
Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
Maria Papachristodoulou, MSc student	CUT / Cyprus	mk.papachristodoulou@edu.cut.ac.cy	
Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Microservices, containers, and server-less computing	Lecture	Prof. Luciano Baresi	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
microservices.pdf	Prof. Luciano Baresi

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	15/05/2017	Time:	10:30-11:30
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

Data Engineering and Big Data Processing frameworks (part 1)

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Prof. Willem-Jan van den Heuvel	Tilburg / The Netherlands	w.j.a.m.vdnheuvel@tilburguniversity.edu	
Damian Andrew Tamburri, PhD	POLIMI / Italy	damianandrew.tamburri@polimi.it	

Clément Quinton, PhD	POLIMI / Italy	Clement.quinton@polimi.it	
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Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Data Engineering and Big Data Processing frameworks	Lecture	Prof. W.J van den Heuvel	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
Data-cyprus-1.pdf	Prof. W.J van den Heuvel

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	15/05/2017	Time:	12:30-13:00
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Prof. Willem-Jan van den Heuvel	Tilburg / The Netherlands	w.j.a.m.vdnheuvel@tilburguniversity.edu	
Damian Andrew Tamburri, PhD	POLIMI / Italy	damianandrew.tamburri@polimi.it	
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Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time

Data Engineering and Big Data Processing frameworks	Lecture	Prof. W.J van den Heuvel	
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4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
Data-cyprus-2.pdf	Prof. W.J van den Heuvel

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	15/05/2017	Time:	13:30-14:00
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

Elastic provisioning of resources for containerized applications

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
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Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Elastic provisioning of resources for containerized applications	Lecture	Prof. Luciano Baresi	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
elastic.pdf	Prof. Luciano Baresi

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	15/05/2017	Time:	15:00-16:00
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Prof. Mike P. Papazoglou	Tilburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Prof. Willem-Jan van den Heuvel	Tilburg / The Netherlands	w.j.a.m.vdnheuvel@tilburguniversity.edu	
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Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Software product lines – Basics	Lecture	Clément Quinton, PhD	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
Lecture_1.pdf	Clément Quinton, PhD

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	15/05/2017	Time:	19:00-20:00
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

Project Management Meeting

Summary of the last series of site visits, delays and actions.

Periodic Report preparation, travelling and coordination.

Schedule of next steps (Organize next site visits, Organize workshops) .

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Luciano Baresi	POLIMI / Italy	luciano.baresi@polimi.it	
Prof. Mike P. Papazoglou	Tillburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	

Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
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3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Project Management Meeting	Discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by

4.2 Day Two

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	16/05/2017	Time:	09:30-10:30
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

Software product lines - Advanced concepts

2. Attendees

Name	Department/Division	E-mail	Phone

Prof. Mike P. Papazoglou	Tilburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Prof. Willem-Jan van den Heuvel	Tilburg / The Netherlands	w.j.a.m.vdnheuvel@tilburguniversity.edu	
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Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Software product lines - Advanced concepts	Lecture	Clément Quinton, PhD	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
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Lecture_2.pdf	Clément Quinton, PhD
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Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	16/05/2017	Time:	10:30-11:30
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

Continuous architecting of data-intensive applications in the cloud: Part 1 - Design and modelling

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike P. Papazoglou	Tilburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Prof. Willem-Jan van den Heuvel	Tilburg / The Netherlands	w.j.a.m.vdnheuvel@tilburguniversity.edu	
Damian Andrew Tamburri, PhD	POLIMI / Italy	damianandrew.tamburri@polimi.it	
Clément Quinton, PhD	POLIMI / Italy	Clement.quinton@polimi.it	
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Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Continuous architecting of data-intensive applications in the cloud: Part 1 - Design and modelling	Lecture	Damian Tamburri, PhD	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
Cyprus - Part 1 DevOps.pptx	Damian Tamburri, PhD

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	16/05/2017	Time:	12:00-13:00
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

Continuous Architecting of data intensive applications in the cloud: Part 2 - Rollout and deployment

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike P. Papazoglou	Tillburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Prof. Willem-Jan van den Heuvel	Tillburg / The Netherlands	w.j.a.m.vdnheuvel@tilburguniversity.edu	
Damian Andrew Tamburri, PhD	POLIMI / Italy	damianandrew.tamburri@polimi.it	
Clément Quinton, PhD	POLIMI / Italy	Clement.quinton@polimi.it	
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Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Continuous Architecting of data intensive applications in the cloud: Part 2 - Rollout and deployment	Lecture	Damian Tamburri, PhD	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by
Cyprus - Part 2 DevOps.pptx	Damian Tamburri, PhD

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	16/05/2017	Time:	13:00-14:00
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description
Industry 4.0: Digitising the manufacturing sector

2. Attendees			
Name	Department/Division	E-mail	Phone
Prof. Mike P. Papazoglou	Tilburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Prof. Willem-Jan van den Heuvel	Tilburg / The Netherlands	w.j.a.m.vdnheuvel@tilburguniversity.edu	
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3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Industry 4.0: Digitising the manufacturing sector	Lecture	Prof. Mike Papazoglou	

4. Pre-work/Preparation (documents/handouts, reading material, etc.)

Description	Prepared by
Smart Manufacturing Intro.pptx	Prof. Mike Papazoglou

Workpackage:	WP3 – Metrics and Measurement activities		
Date: (MM/DD/YYYY)	16/05/2017	Time:	15:00-17:00
Facilitator:	CUT	Location:	EE-CEID, 39, Saripolou & Socratous, Limassol

1. Subject / Short Description

Research focus groups meetings and discussions

Microservices – Social Software Engineering – Big & Smart Data and Applications

2. Attendees			
Name	Department/Division	E-mail	Phone
Prof. Mike P. Papazoglou	Tilburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Prof. Willem-Jan van den Heuvel	Tilburg / The Netherlands	w.j.a.m.vdnheuvel@tilburguniversity.edu	
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Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Research focus groups meetings and discussions	discussion		

4. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Description	Prepared by

4.3 2nd Stakeholders Event

Workpackage:	WP3 – Metrics and Measurement activities WP6 - Dissemination, Communication and Exploitation		
Date: (MM/DD/YYYY)	17/05/2017	Time:	09:00-09:15
Facilitator:	CUT	Location:	Amphitheater Pefkios Georgiades, Andreas Themistocleous Building Athinon Str.

1. Subject / Short Description
Welcoming Introduction to Dossier-Cloud project

2. Attendees			
Name	Department/Division	E-mail	Phone
Prof. Mike P. Papazoglou	Tillburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Clément Quinton, PhD	POLIMI / Italy	Clement.quinton@polimi.it	
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Panayiotis Christodoulou, PhD candidate	CUT / Cyprus	paa.christodoulou@edu.cut.ac.cy	

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Workpackage:	WP3 – Metrics and Measurement activities WP6 - Dissemination, Communication and Exploitation		
Date: (MM/DD/YYYY)	17/05/2017	Time:	09:15-10:45
Facilitator:	CUT	Location:	Amphitheater Pefkios Georgiades, Andreas Themistocleous Building Athinon Str.

1. Subject / Short Description

Demystifying Smart Data & Smart Industrial Strength Applications: Solving Problems & Creating Opportunities

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike P. Papazoglou	Tillburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Clément Quinton, PhD	POLIMI / Italy	Clement.quinton@polimi.it	
Constantinos Stylianou, PhD	CUT / Cyprus	cstylianou@cs.ucy.ac.cy	
Panayiotis Christodoulou, PhD candidate	CUT / Cyprus	paa.christodoulou@edu.cut.ac.cy	

Andreas Christoforou, PhD candidate	CUT / Cyprus	ax.christoforou@edu.cut.ac.cy	
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Sokratis Metaxas	Waterboard of Limassol / Cyprus	socrates@wbl.com.cy	
Andy Oakley	Statore / Cyprus	andy@statorebrands.com	
Andreas Tapakoudes	Statore / Cyprus	info@statorebrands.com	

3. Training Content

Topic	Type (lecture, discussion, ...)	Trainer	Time
Smart Data & Apps.pptx	Presentation	Prof. Mike Papazoglou	

Workpackage:	WP3 – Metrics and Measurement activities WP6 - Dissemination, Communication and Exploitation		
Date: (MM/DD/YYYY)	17/05/2017	Time:	11:15-11:30
Facilitator:	CUT	Location:	Amphitheater Pefkios Georgiades, Andreas Themistocleous Building Athinon Str.

1. Subject / Short Description

Smart Services and Data Processing in Practice: Three Case-study Examples

2. Attendees

Name	Department/Division	E-mail	Phone
Prof. Mike P. Papazoglou	Tillburg / The Netherlands	m.p.papazoglou@uvt.nl	
Prof. Andreas Andreou	CUT / Cyprus	andreas.andreou@cut.ac.cy	
Clément Quinton, PhD	POLIMI / Italy	Clement.quinton@polimi.it	
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Dimitris Christodoulou, MSc student	CUT / Cyprus	dc.christodoulou@edu.cut.ac.cy	
Adonis Podinas, MSc student	CUT / Cyprus	ak.podinas@edu.cut.ac.cy	

3. Training Content			
Topic	Type (lecture, discussion, ...)	Trainer	Time
Smart Services and Data Processing in Practice.pptx	Presentation	Andreas Christoforou, PhD Cand.	

5. Conclusions

In the context of Workpackage 3, a number of actions and activities were organized and performed aiming to transfer scientific knowledge to CUT members in the area of Metrics and Measurement activities (DevOps oriented, Cloud focused).

Firstly, CUT members participated in a series of two site visits in Milan, where researches from POLIMI delivered lectures related to research challenges in a number of topics, such as, microservices, containerization of cloud applications and the corresponded metrics, and DevOps strategies with social software engineering. Moreover, a comprehensive introduction on the MODAClouds project was made and an approach for the management of resources in very large cloud platforms was described.

A new series of site visits in the Netherlands followed. Researches from CUT attended various lectures given by UvT members that covered a wide range of aspects and research topics on cloud distributed systems, such as data science and intelligence sharing, big data and analytics.

Finally, a 3-day workshop at the premises of CUT concluded the site activities of WP3, which included a project meeting, lectures delivered by senior researches and faculty from POLIMI and UvT, and a Stakeholders meeting. During the project meeting, members from all partners discussed the progress of the project, lessons learned so far, planning and preparing for the review meeting in Brussels end of June 2017, as well as weaknesses and obstacles in the progress (i.e delay issues). During the first 2 days of the workshop the lectures delivered by members of POLIMI and UvT were attended by CUT

undergraduate and graduate students, post-docs, researhers and members of the accademic staff. Lastly, during the stakeholders' event, the DOSSIER-cloud project was presented to various representatives from the local industry, market and the public sector, and then a discussion for collaboration between the DOSSIER-Cloud members and local stakeholders followed.