

<p><b>DESTINI</b></p> <p>SMART DATA PROCESSING AND SYSTEMS OF DEEP INSIGHT</p> <p><a href="http://www.destini2020.eu">http://www.destini2020.eu</a></p>	 <p><b>DESTINI</b> Smart Data Processing and Systems of Deep Insight</p>
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## Deliverable D3.2

### **Expert Visits' Minutes and Notes**

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# 1. Introduction

## 1.1 Purpose

This document presents minutes and notes kept during discussions held between experts, other members of the consortium and/or stakeholders/practitioners. Experts' site visits were obstructed by the COVID-19 virus outbreak. As a result, fewer visits were actually performed physically. Nevertheless, the expert visits were substituted with teleconferencing meetings, which were regularly held during the first two and a half years of the project. Efforts to exchange visits between partners were intensified during the last six months of the project, given the reprisal of outgoing travel activities by all universities involved, as well as the allowance for travel from potential industrial partners in the close collaboration network of JADS, Sapienza, and CUT. It should be noted that Sapienza was not able to perform physical Experts Visits, and the reason for this was the following: During the period of the first Expert Visit performed in the period of March 2020, Sapienza was already under travel restrictions and lockdowns. Also, during the period of the second Expert Visits, despite the fact that restrictions were less strict and minimized, the partners were still facing difficulties traveling due to the COVID-19. Therefore, there was no way that the delegation from Sapienza could participate in such visits with physical presence. Nevertheless, we have utilized a hybrid approach in which the Sapienza participated in the meetings via teleconferencing.

This deliverable is part of Work-Package 3 (WP3) that describes the actions to support the successful transfer of knowledge, best practises and research skills from the leading institutions to CUT to tackle the research challenges that exist within the JRAs and the key knowledge areas identified in WP2. The actions of WP3 mostly refer to the organisation of summer schools and workshops, the delivery of virtual training sessions, short-term staff exchanges, experts visits, and short-term on-site training at the leading institutions' labs and infrastructure.

## 1.2 Definitions, Acronyms, and Abbreviations

CUT: Cyprus University of Technology

JADS: Jheronymous Academy of Data Science

JRA: Joint Research Area

### 1.3 Overview

The rest of the document is structured as follows: Section 2 outlines the site visits performed by JADS in two occasions, each spanning from two to three days. Finally, section 3 concludes this deliverable.

## 2. JADS Site Visits

### 2.1. First JADS Expert Visit to CUT

#### DAY 1

<b>Workpackage</b>	WP3 - Training and Knowledge Transfer		
<b>Date: (MM/DD/YYYY)</b>	10/03/2020	<b>Time:</b>	10:00
<b>Facilitator:</b>	Andreas Andreou	<b>Location</b>	CUT

#### **1. Subject short description**

During the first day of the first visit of JADS to CUT, JADS experts delivered directions & guidelines for establishing the main pillars of the research and innovation agenda, in a manner which is in line with the upcoming Horizon Europe research framework programme, and taking into consideration the standardisation work that JADS and other (direct and indirect) project partners were able to put forth (e.g., joint participation efforts in the scope of the OASIS “Topology and Orchestration Specification for Cloud Applications” standardisation initiative). The outcome of the discussion was a draft version of the research and innovation agenda, where it was validated by the consortium and modified into the final form, reported in this deliverable.

<b>2. Attendees</b>		
<b>Name</b>	<b>Department/Division</b>	<b>Email</b>
Andreas Andreou	CUT	andreas.andreou@cut.ac.cy
Willem-Jan van den Heuvel	Tilburg University / JADS	wjheuvel@gmail.com
Damian Tamburri	JADS	maelstrom.the.master@gmail.com
Panayiotis Christodoulou	CUT	panchristodoulou@hotmail.com
Andreas Christoforou	CUT	xristofo@gmail.com
Spyros Loizou	CUT	loizou.spyros@gmail.com
Michalis Pingos	CUT	mfpingos@gmail.com

<b>3. Pre-work/Preparation (documents/handouts, reading material, etc.)</b>	
<b>Type</b>	<b>Description</b>
Agenda	Agenda of the day's programme

Notes	Notes of ideas to be discussed
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## DAY 2

<b>Workpackage</b>	WP3 - Training and Knowledge Transfer		
<b>Date:</b> (MM/DD/YYYY)	11/03/2020	<b>Time:</b>	10:00
<b>Facilitator:</b>	Andreas Andreou	<b>Location</b>	CUT

### 1. Subject short description

During the second day of the first visit of JADS to CUT, JADS experts delivered directions & guidelines for conducting survey papers and other meta-research aimed at establishing solid foundations for the collaborative project actions to come.

### 2. Attendees

Name	Department/Division	Email
Andreas Andreou	CUT	andreas.andreou@cut.ac.cy
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<b>3. Pre-work/Preparation (documents/handouts, reading material, etc.)</b>	
<b>Type</b>	<b>Description</b>
Agenda	Agenda of the day's programme
Notes	Notes of ideas for survey papers to be discussed



## 2.2. Second JADS Site Visit to CUT

### DAY 1

<b>Workpackage</b>	WP3 - Training and Knowledge Transfer		
<b>Date:</b> (MM/DD/YYYY)	16/03/2022	<b>Time:</b>	10:00
<b>Facilitator:</b>	Andreas Andreou	<b>Location</b>	CUT

#### 1. Subject short description

During the first day of the second visit of JADS to CUT, discussions took place about possible future collaborations; in this vein, a specific teleconferencing with Aratos Group was kicked off along with representatives of Paradisiotis group and Sapienza regarding the submission of a national proposal in the scope of smart manufacturing, which is perceived as a key exploitation area for the knowledge exchange and transition activities and levels achieved in the scope of the project.

#### 2. Attendees

Name	Department/Division	Email
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3. Pre-work/Preparation (documents/handouts, reading material, etc.)	
Type	Description
Agenda	Agenda of the day's programme
Notes	Notes of ideas to be discussed

## DAY 2

<b>Workpackage</b>	WP3 - Training and Knowledge Transfer		
<b>Date:</b> (MM/DD/YYYY)	17/03/2022	<b>Time:</b>	10:00

<b>Facilitator:</b>	Andreas Andreou	<b>Location</b>	CUT
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### 1. Subject short description

During the second day of the second visit of JADS to CUT, a project management meeting took place with Sapienza joining via teleconferencing. In addition, JADS and Sapienza assessed the quality of the research knowledge acquired thus far, followed by directions for capitalising this knowledge for research papers (ICSOC) & other research proposals for external funding.

### 2. Attendees

Name	Department/Division	Email
Andreas Andreou	CUT	andreas.andreou@cut.ac.cy
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Michalis Pingos	CUT	mfpingos@gmail.com

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

Type	Description
Agenda	Agenda of the day's programme
Notes	Notes of ideas for survey papers to be discussed

### 3. Conclusions

In the context of Work Package 3, a number of actions and activities were organized and performed aiming to transfer scientific knowledge to CUT members in the area Smart Data Processing and Systems of Deep Insights to tackle the research challenges that exist within the JRAs and the key knowledge areas identified during WP2. One of these actions involved visits performed by experts of the two leading institutions, JADS and Sapienza, to CUT. Due to the COVID-19 virus outbreak, the restrictions on travelling, but also its manifestation within the partners, only JADS performed physical visits. Nevertheless, the purpose and aims of the visits were covered using teleconferencing means.

Despite the difficulties faced due to COVID-19, the consortium utilised its best efforts to organise and implement various site visits, with the intent of augmenting technology and knowledge transfer, cross-fertilization, and continued joint exploitation and dissemination activities. The site visits ended up being a very important circumstance, not only in terms of organisation purposes, but also in terms of socio-technical coordination of efforts across partners. Additionally, the discussions that took place with physical presence during the experts' visits, were more productive, and led to: (a) the inception of joint research initiatives beyond the third year of DESTINI; (b) the inception of joint research agendas' across the three research groups; (c) the synchronisation of activities between all tiers of partnership (i.e., Ph.D. level, post-doc level, tenured research level) The latter also includes discussions related to the organization of DESTINI's events, such as Workshops & Schools, Satellite Event, Mobility program.

The research challenges and initiatives identified through DESTINI include:

#### Business Process Mining:

- Analysis of business processes based on event logs
- Evolution of a business process to achieve a predefined goal – process discovery
- Conformance checking through process mining
- Decision support for processes (bottlenecks, delays, human resources, roles)
- Applications in smart manufacturing and healthcare environments

#### Digital Twins:

- Experimentable and interactive DT
- Smart DT in the form of graphical environments with visual querying capabilities
- Visualization & analytics of data produced by heterogeneous devices via DT

- Applications in smart manufacturing, healthcare, and maritime environments

#### Data Management and Curation:

- Exploitation of ontology frameworks and artificial intelligence to manage heterogeneous sources that produce large amounts of data
- Adoption of Data Lakes for organizing and storing this big data
- Transition from data lakes to data meshes for grouping data into large groups of data products
- Applications in smart manufacturing, healthcare, and maritime environments

#### Blockchain Technology:

- BPM: Utilize the Blockchain technology in various business processes to record data on a Blockchain network that can be later used to automate a business process
- IoT: Design and development of special purpose decentralized applications that could (i) record sensors' data that can later be shared or used for further analysis, (ii) trigger actions which can be directly recorded on a Blockchain ledger keeping a record for transparency purposes
- Industry 4.0: Procedures for (i) self-verification purposes where stakeholders can verify the authenticity of various certificates, (ii) securely recording data from various sensors within a smart factory during the production process, and, (iii) keeping track of documents/objects that are being shared/exchanged between various stakeholders