



# D5.10 “Performance evaluation and Lessons Learned Report I”

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# TRUSTS

## Trusted Secure Data Sharing Space

### D5.10 “Performance evaluation and lessons learned Report I”

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## Glossary of terms and abbreviations used

Abbreviation / Term	Description
AI	Artificial Intelligence
AML	Anti-Money Laundering
E2E	End-to-End
FAIR	Findable, Accessible, Interoperable, and Reusable
FR	Functional Requirements
GA	Grant Agreement
GDPR	General Data Protection Regulation
IR	Interview Requirements
KPI	Key Performance Indicator
ML	Machine Learning
MPC	Multi Party Computation
PSI	Private Set Intersection
QR	Questionnaire Requirements
SLA	Service Level Agreement
SR	Industry Requirements
SUS	System Usability Scale
TRUSTS	Trusted Secure Data Sharing Space
UC	Use Case
UCD	User Centred Design
UCR	Use Case Requirements

## Executive Summary

The purpose of this deliverable is to report on the lessons learned from the trials that were executed during TRUSTS Cycle 1 trials (May - November 2021).

It includes analysis and validation of the Use Case scenarios and Test cases, as well as end-users' evaluation.

The three business-oriented use cases used to validate the TRUSTS MVP v.1 version of the platform (delivered on April 2021) are:

- Use Case 1: “The Anti-Money Laundering compliance use case”
- Use Case 2: “Agile Marketing through Data Correlation”
- Use Case 3: “The data acquisition to improve customer support services”

This deliverable receives input from the D5.4, D5.6, D5.8 deliverables, which provide:

- The description of the cycle 1 trials using the MVPv.1 version of the TRUSTS platform.
- Trials outcome and stakeholders evaluation

The lessons learned from all UCs are aggregated towards providing valuable input to the platform development tasks as well as the business model definition work package 7.

Trials outcomes are also utilised within the scope of the FRs refinement, which are analysed in the deliverable D2.3.

# 1 Introduction

TRUSTS WP5 is focused on demonstrating and validating the TRUSTS Platform through executing actual trials. The project goal is to create a trusted and secure platform, as well as privacy-aware analytics methods for sharing secure data or for providing the ability to collaborate over private and sensitive data, while preserving the data privacy. It also lays the groundwork for an ecosystem that will enable federation of independent data marketplaces.

The Cycle1 Trials were performed between May 2021 and November 2021. The deliverables D5.4, D5.6 and D5.8 report on the Trials of UC1, UC2 and UC3, respectively. They refer to the trials methodology, the objectives of the trials, as well as the definition of the Test Cases for each UC. They also provide records of the test case results and demonstration material (e.g. screenshots, video) from the trials.

This information gathered from all three use cases is analysed in the current deliverable D5.10. Such analysis leads to a consolidated list of Lessons Learned. The TRUSTS platform (MVP v.1) has been evaluated for usability, functionality, performance and business perspectives during the trials.

The main outcome of D5.10 is to provide recommendations for further improvement of both functional and non-functional capabilities of the TRUSTS platform. They also provide input to D2.3 towards producing the updated list of Functional Requirements. Finally, lessons learned and recommendations will impact the Cycle 2 field trials design.

## 1.1 Mapping Projects' Outputs

Purpose of this section is to map TRUSTS Grant Agreement (GA) commitments, both within the formal Deliverable and Task description, against the project's respective outputs and work performed.

Table 1: Adherence to TRUSTS GA Deliverable & Tasks Descriptions

TRUSTS Task		Respective Document Chapter(s)	Justification
T5.3 Performance evaluation and lessons learned	<i>The purpose of this task, led by NOVA, can be briefly described from the following two aspects. First, the performance of each use case will be evaluated, particularly from the KPI perspective to illustrate how the TRUSTS platform capabilities can be leveraged for different applications in each use case. Secondly, according to the results received from each use case in every agile-based iteration, the task will provide requirements and suggestions to further improve both functional and non-</i>	Section 2	<i>In Section 2 the Trials deployment methodology is stated.</i>
		Section 3	<i>In Section 3 the performance during the Cycle 1 Trials of UC1, UC2 and UC3 is evaluated, by consolidating information from the Trials documentation (Test Case Forms and Stakeholders Questionnaires).</i>



	<i>functional capabilities of TRUSTS. This task will also provide and establish systematic feedback loops to WP3 and WP4 for continuous refinement. Results will be analysed both quantitatively and quantifiably. Conclusions and recommendations will be drawn including recommendations for further trial validations.</i>	<i>Section 4</i>	<i>In section 4 the Lessons Learned from the UCs results on the tested functionalities of the TRUSTS platform are stated, with recommendations for further trial validations.</i>
<b>TRUSTS Deliverable</b>			
<i>D5.10 Performance evaluation and lessons learned report I [M24]          First report per demonstration phase, containing a critical evaluation and findings from the pilots, lessons learned, the degree the KPIs have been met and suggestions for improvements.</i>			

## 1.2 Deliverable Overview and Report Structure

The aim of this deliverable is to report on the evaluation of the actual Cycle 1 field trials of TRUSTS UCs.

In particular, Section 2 outlines the methodology for such evaluation of all UCs.

Section 3 contains the analysis of the results of each of the three TRUSTS UCs.

Then, Section 4 compiles the results from all UCs and presents the Lessons Learned on the TRUSTS platform and the business evaluation, providing recommendations towards improving the platforms performance usability and business sustainability.

Finally, Section 6 states concluding remarks of the deliverable, while the ANNEX section shows a sample of User Acceptance Tests from the trials for the corresponding UC1, UC2 and UC3, respectively.

## 2 Trials deployment methodology

A consistent methodology was defined in order to achieve comparability of the trials results and ease lessons learned analysis. All UCs adopted this methodology which is highlighted below:

### Step 1: Trials deployment announcement

- An official announcement for the TRUSTS platform availability is provided
- Each UC should appoint a leader

### Step 2: Detailed UC infrastructure description

- Each UC describes the respective deployment structure

### Step 3: UC trial stakeholders' definition

- Each UC defines the stakeholders that participate in the trials.
- All stakeholders prior to each trial sign a respective Inform & Consent form.
- Signed forms will be kept by the UC leader

### Step 4: Trials implementation

- The UC leader appoints a leader for each trial.
- The trial leader defines the test cases executed in each trial.
- The trial leader fills the trials registry
- The trial leader safeguards that all necessary stakeholders participate in the trial and they sign the inform & consent form
- The trial leader fills the Test Case forms and uploads them to the respective folder.
- Evidence is provided for the performance of the trial e.g. video recording, photos, screenshots, etc. This evidence accompanies the test case forms.
- Following each trial a Questionnaire is filled by each trial participant

Thus, the results from each trial are included in the following documentation:

- The Test Case Forms filled by the trial leader
- The Questionnaire filled by each trial stakeholder
- The supporting trials material e.g. photos, videos, etc.

The above information is analysed per UC and in a consolidated manner for the whole project.

### 3 Trials results and evaluation

In the following section, the trials process and trials results per TRUSTS UC is analysed.

#### 3.1 UC1 Cycle 1 trials results

This section will offer the results of the evaluation that are characterised by first discussing the plan projected by UC1, then discussing the overlap of the test think-aloud, and finally summarizing the stakeholder's experiences and lessons learned while executing the first cycle of the UC1 trials using the TRUSTS MVP v.1.

Within the first cycle of the TRUSTS trials that started in May 2021 and lasted until November 2021, UC1 performed 10 trial sessions with the collaboration of four stakeholders and in total seven different participants. The trial sessions concluded with 17 questionnaires answered giving several improvement remarks to the project from a business and a technical perspective. All trials sessions are accompanied with screenshots and are further discussed and illustrated in the UC1 respective Deliverable 5.4 submitted in parallel by December 2021.

The key information on the executed UC1 trials are summarized in Table 2 below.

Table 2: TRUSTS trials cycle 1 of UC1 trial sessions

UC1 trial sessions	UC1 stakeholders	UC1 participants	UC1 questionnaires
25-06-2021	1 (EBOS)	2	1
28-06-2021	2 (EBOS, InBestMe)	3	2
02-07-2021	1 (EBOS)	2	1
13-07-2021	2 (EBOS, InBestMe)	3	2
14-07-2021	1 (EBOS)	3	1
26-07-2021	1 (EBOS)	2	1
08-10-2021	1 (EBOS)	3	3
11-10-2021	2 (EBOS, KN Analytics)	2	2
14-10-2021	3 (EBOS, NOVA, KN Analytics)	4	2

22-10-2021	1 (EBOS)	3	2
<b>Total:</b>	<b>4</b>	<b>7<sup>1</sup></b>	<b>17</b>

### 3.1.1 High Level UC description

The objective of UC1 "The Anti-Money Laundering compliance" is to demonstrate the capabilities of the TRUSTS Platform as a 'Trusted Secure Data Sharing Space' for AML purposes. In this scenario, the aim is to establish and validate how data shared and/or shared analytics can be done via the TRUSTS Platform can feed into the three AML applications/solutions enhanced with big data analytics, for providing faster and more accurate detection of financial crime and money laundering, and how these enriched data can be securely brokered/traded via the Platform to interested customers who need to perform AML checks, such as financial institutions, internal corporate audit departments, fiduciaries and corporate service providers but also tax advisors, automotive dealers, estate agents.

Effective Anti-Money Laundering (AML) programs - to ensure AML compliance - are a fundamental requirement for obliged entities. Ensuring effective policies, procedures, human resources, and technologies helps protect the organization and instil confidence in its operations. Money laundering is a critical component of a fair and functioning society. AML compliance is not a nice to have, or a necessary evil<sup>2</sup>, it's a fundamental requirement.

EBOS primarily acts as an application provider. By developing and enhancing the three AML applications with AI and ML techniques with the guidance of the WP4 "Privacy and Preserving Mechanisms" and deploying them in the TRUSTS platform so the end-users (NOVA, InBestMe) can search and access them, to perform the appropriate tests while exchanging data and metadata within.

Precisely, the UC1 is designed to test several functionalities of the TRUSTS platform following the ten scenarios that were defined and documented in D5.1, submitted in March 2020, as the detailed description of the planning and operational information of the three business-oriented UCs, towards a successful accomplishment of the first phase of the TRUSTS trials.

The well-defined scenarios of UC1 for the first phase of the trials were:

#### 1. Scenario 1: Companies' subscription

EBOS, NOVA and InBestMe subscription (selection of plan, subscription, signing the contract/smart contract, companies' representative's definition, and roles).

##### *Expected Results:*

Successful subscription of EBOS, NOVA and InBestMe. Successful definition of roles and enrolment of representatives. User friendliness, clear processes, ability to verify and modify, logs existence.

<sup>1</sup> The number represents the unique individuals that participated in the trials.

<sup>2</sup> AML compliance checklist: best practices for Anti-Money Laundering (trulioo.com)

## **2. Scenario 2: Application onboarding**

On board of the three AML applications/service

- AML RiSC
- AML Screening
- AML Transaction Monitoring

and verify that they are properly on-boarded and are accessible via the platform.

*Expected Results:*

Successful on-boarding of the three AML applications

## **3. Scenario 3: Application/Service search on catalogue**

Search for the application/service (as an end-user/consumer) and check if they are available and listed in the catalogue (by key words or directly for the adequate AML application/service).

*Expected Results:*

The UC1 end-users (InBestMe and NOVA) will search for the three AML applications/services either directly or with key words through the search engine.

## **4. Scenario 4: End-user's purchase of AML applications/services**

UC1 users (EBOS, NOVA, InBestMe) subscription (selection of plan, subscription, signing the contract/smart contract, company representative's definition and roles, logs existence).

*Expected Results:*

Successful selection and subscription. Then the end-users will proceed with selection of smart contract billing to then be able to use the adequate AML application/service through the TRUSTS data marketplace.

## **5. Scenario 5: Contract fulfilment**

Ensure smart contract fulfilment

*Expected Results:*

Successful smart contract fulfilment. Appropriate billing is issued according to the subscribers' contract and compensation is achieved according to the application/service provider contract. Subscription is done.

## **6. Scenario 6: Billing and Payment**

Completion of the billing and payment cycles. Marketplace keeps tracking (logs) of the transactions.

### *Expected Results:*

Successful Completion of the billing and payment. All transactions will be logged to ensure quality and traceability and to keep track of i.e., payment cycles/transactions etc.

## **7. Scenario 7: Data onboarding and services execution**

End-users on board input data, execute the three different AML applications/services and verify that they are properly running. The AML applications/service can be executed with the applicability of the ML/AI.

### *Expected Results:*

Successful onboarding of data as per the specific file type. Successful use of the AML application/service through the TRUSTS data marketplace.

## **8. Scenario 8: Service usage**

Schedule service usage, use the service, and evaluate the service results.

### *Expected Results:*

All transactions will be logged to ensure quality and traceability.

## **9. Scenario 9: Marketplace Federation**

Ensure that federation is achieved with neighbouring marketplaces in terms of metadata/service/subscriber's catalogue, smart contract, privacy policies.

### *Expected Results:*

Federation achieved. Transactions are logged and validated. Users are rated. Compliance to law is confirmed.

## **10. Scenario 10: Service quality evaluation**

Collect users' evaluation and if needed to improve operations.

*Expected Results:*

Contract fulfilment, transaction logs existence, user evaluation existence, process to evaluate the complete process by the TRUSTS operations to improve performance existence. At least 2 contracts are fulfilled. Operation completeness, SUS score > 80.

Just five of the scenarios were applicable for testing during the first phase of the Trials, due to the limitations of the development of the TRUSTS ecosystem. The whole set of the scenarios will be further tested in the upcoming second cycle of the TRUSTS trials commencing January 2022.

The scenarios 4, 5, 6, 9 and 10 will be tested in the second cycle of the TRUSTS UC1 trails starting January 2022.

### 3.1.2 Trials test cases results analysis

A **test case** is a document, which has a set of **test** data, preconditions, expected results and postconditions, developed for a particular **test** scenario to verify compliance against a specific requirement. Test Cases acted as the starting point for the test execution and were followed during the execution of the TRUSTS trials.

The Test Cases actions implemented for each scenario in the first cycle of the TRUSTS UC1 trials are seen in the following Table 3.

Table 3: UC1 Test Cases Description

UAT Test Results	
Test Cases	Pass/Fail

<p><b>SC1- 1. Companies' subscription</b></p> <p><i>Step 1. EBOS, NOVA and InBestMe access the TRUSTS portal.</i></p> <p><i>Step 2. EBOS, NOVA and InBestMe accesses the registration area of the portal and selects the appropriate subscription service</i></p> <p><i>Step 3. The subscriber selects the appropriate contract and electronically signs it.</i></p> <p><i>Step 4. The TRUSTS platform system activates the contract and introduces the subscriber into the catalogue to be visible in all federated nodes.</i></p> <p><i>Step 5. Corporate node is deployed in EBOS, NOVA and InBestMe premises</i></p> <p><i>Expected Results:</i></p> <p>Successful subscription of EBOS, NOVA and InBestMe. Successful definition of roles and successful enrolment of EBOS, NOVA and InBestMe representatives.</p>	<p>Steps 1, 5: <b>PASS</b></p> <p>Steps 2, 3, 4 are not implemented yet</p>
<p><b>SC2- Application Onboarding</b></p> <p><i>Step 1. The application provider accesses the TRUSTS portal.</i></p> <p><i>Step 2. The application provider reads the portal information and informative text. Also, standards that the TRUSTS marketplace complies with and privacy policies e.g., GDPR, etc.</i></p> <p><i>Step 3. The application provider accesses the registration area of the portal and selects the appropriate application upload subscription service.</i></p> <p><i>Step 4. The application provider selects the appropriate contract and electronically signs it.</i></p> <p><i>Step 5. The application provider uploads the application in the TRUSTS application area.</i></p> <p><i>Step 6. TRUSTS operators check the application quality and security issues. And if all is ok, TRUSTS accepts the application.</i></p> <p><i>Step 7. TRUSTS introduces the AML RISC application in the catalogue. Terms of usage of the application are included</i></p> <p><i>Step 8. TRUSTS introduces the application in the catalogue to be available to all federated nodes. Terms of usage of the application are included in the application description as well</i></p> <p><i>Step 9. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i></p> <p>Successful on-boarding of the three AML applications</p>	<p>Steps 1, 2, 5, 7, 8: <b>PASS</b></p> <p>Steps 3, 4, 6, 9 are not implemented yet</p>



<p><b>SC3- Application/Service search on catalogue</b></p> <p><i>Step 1. The subscriber (EBOS, NOVA, InBestMe) accesses the TRUSTS portal</i></p> <p><i>Step 2. The subscriber (EBOS, NOVA, InBestMe) searches the "AML RiSC" application in the catalogue</i></p> <p><i>Step 3. The subscriber (EBOS, NOVA, InBestMe) searches the "AML Screening" application in the catalogue</i></p> <p><i>Step 4. The subscriber (EBOS, NOVA, InBestMe) searches the "Transaction Monitoring" application in the catalogue</i></p> <p><i>Expected Results:</i></p> <p>The UC1 end-users (EBOS, NOVA, InBestMe) will search for the three AML applications/services either directly or with key words through the search engine.</p>	<p>Steps 1, 2, 3, 4: <b>PASS</b></p>
<p><b>SC4- End-user's purchase of AML applications/services</b></p> <p><i>Step 1. The subscriber representatives (EBOS, NOVA, InBestMe) accesses the TRUSTS portal and login</i></p> <p><i>Step 2. TBD</i></p> <p><i>Step 3. TBD</i></p> <p><i>Step 4. TBD</i></p> <p><i>Step 5. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i></p> <p>Successful selection and subscription. Then the end-users will proceed with selection of smart contract billing to then be able to use the adequate AML application/service through the TRUSTS data marketplace.</p>	<p>not implemented yet</p>

<p><b>SC5- Contract fulfilment</b></p> <p><i>Step 1. The subscriber representatives (EBOS, NOVA, InBestMe) accesses the TRUSTS portal and login</i></p> <p><i>Step 2. TBD</i></p> <p><i>Step 3. TBD</i></p> <p><i>Step 4. TBD</i></p> <p><i>Step 5. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i></p> <p>Successful access of actors to TRUSTS. Successful smart contract fulfilment. Appropriate billing is issued according to the subscribers' contract and compensation is achieved according to the application/service provider contract. Subscription and payment are done.</p>	<p>not implemented yet</p>
<p><b>SC6- Billing and Payment</b></p> <p><i>Step 1. The subscriber representatives (EBOS, NOVA, InBestMe) access the TRUSTS portal and login</i></p> <p><i>Step 2. The platform verified credentials and validity of subscription</i></p> <p><i>Step 3. TBD</i></p> <p><i>Step 4. TBD</i></p> <p><i>Step 5. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i></p> <p>Successful access of EBOS, NOVA, InBestMe to the TRUSTS portal and successful. Completion of the billing and payment. All transactions will be logged to ensure quality and traceability and to keep track of i.e., payment cycles/transactions etc.</p>	<p>not implemented yet</p>

<p><b>SC7- Data onboarding and services execution</b></p> <p><i>Step 1. The subscriber representatives (EBOS, NOVA, InBestMe) accesses the TRUSTS portal and login</i></p> <p><i>Step 2. The subscriber representatives (EBOS, NOVA, InBestMe) searches the "AML RiSC", "AML TRM", "AML Screening" application in the catalogue and downloads the application on premises</i></p> <p><i>Step 3. Successfully access to the AML RiSC, AML TRM, application UI</i></p> <p><i>Step 4. Upload of data onboarding</i></p> <p><i>Step 5. Successful train of data and execution of the application</i></p> <p><i>Step 6. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i></p> <p>Successful access of EBOS, NOVA, InBestMe to the TRUSTS portal. Successful onboarding of data as per the specific file type. Successful use of the AML application/service through the TRUSTS data marketplace.</p>	<p>Steps 1, 2, 3, 4, 5: <b>PASS</b></p> <p>Step 6 is not implemented yet</p>
<p><b>SC8- Service usage</b></p> <p><i>Step 1. The subscriber representatives (EBOS, NOVA, InBestMe) accesses the TRUSTS portal and login</i></p> <p><i>Step 2. The platform verified credentials and validity of subscription</i></p> <p><i>Step 3. The subscribers access the catalogues and search for appropriate metadata and applications in a user-friendly manner</i></p> <p><i>Step 4. The subscriber representatives (EBOS, NOVA, InBestMe) select the appropriate metadata and service and initiate the usage process</i></p> <p><i>Step 5. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i></p> <p>Successful access of EBOS, NOVA, InBestMe to the TRUSTS portal while all transactions will be logged to ensure quality and traceability.</p>	<p>Steps 1, 3, 4: <b>PASS</b></p> <p>Step 2, 5 not implemented yet</p>

<p><b>SC9- Marketplace Federation</b></p> <p><i>Step 1. The subscriber representatives (EBOS, NOVA, InBestMe) accesses the TRUSTS portal and login</i></p> <p><i>Step 2. TBD</i></p> <p><i>Step 3. TBD</i></p> <p><i>Step 4. TBD</i></p> <p><i>Step 5. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i></p> <p>Successful access of EBOS, NOVA, InBestMe to the TRUSTS portal while transactions are logged and validated. Users are rated. Compliance to law is confirmed.</p>	not implemented yet
<p><b>SC10- Service quality evaluation</b></p> <p><i>Step 1. The subscriber representatives (EBOS, NOVA, InBestMe) accesses the TRUSTS portal and login</i></p> <p><i>Step 2. TBD</i></p> <p><i>Step 3. TBD</i></p> <p><i>Step 4. TBD</i></p> <p><i>Step 5. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i></p> <p>Successful access of EBOS, NOVA, InBestMe to the TRUSTS portal and at least 2 contracts are fulfilled. Operation completeness.</p>	not implemented yet

The information of the number of Scenarios and Test Cases that were executed during the UC1 trials are summarized in Table 4 below.

Table 4: Number of Test Cases executed per scenario per trial session

Date of Trials	Number of Test Cases Tested									
	SC1	SC2	SC3	SC4	SC5	SC6	SC7	SC8	SC9	SC10
25-06-2021	5	3	3	-	-	-	-	-	-	-
28-06-2021	5	1	1	-	-	-	-	-	-	-

02-07-2021	1	1	-	-	-	-	2	2	-	-
13-07-2021	1	1	-	-	-	-	1	1	-	-
14-07-2021	-	1	1	-	-	-	1	1	-	-
26-07-2021	1	1	-	-	-	-	3	3	-	-
08-10-2021	1	-	-	-	-	-	3	3	-	-
11-10-2021	2	-	1	-	-	-	3	3	-	-
14-10-2021	3	3	2	-	-	-	3	3	-	-
22-10-2021	1	-	2	-	-	-	3	3	-	-

The overall business and technical results of the first cycle of UC1 Test Cases are listed in the Table 5.

Table 5: Consolidated Business and Technical results of the first cycle of UC1 Test Cases

Scenario	Business results	Technical results
<b>SC1</b>	<ul style="list-style-type: none"> <li>Needs focusing on GDPR</li> <li>Liked the graphical presentation of the relevant data analysis</li> </ul>	<ul style="list-style-type: none"> <li>Liked the usability of the UI, despite a complex backend. It does not show some page with instructions or examples for the non-businesspeople to better see the value, as well as for non-technical people to understand the complexity behind what it appears in front.</li> <li>The business scenario was impressive, allowing two different companies from different sectors to exchange data in a privacy-preserving way.</li> </ul>
<b>SC2</b>		<ul style="list-style-type: none"> <li>Liked the usability of the UI, despite a complex backend. It does not show some page with instructions or examples for the non-businesspeople to better see the value, as well as for non-technical people to understand the complexity behind what it appears in front.</li> </ul>
<b>SC3</b>	<ul style="list-style-type: none"> <li>The search button for the end-user on the homepage is only enabled for the datasets</li> </ul>	<ul style="list-style-type: none"> <li>The search button on the homepage should be enabled for all (datasets, apps, services)</li> </ul>

<b>SC7</b>	<ul style="list-style-type: none"> <li>· The business scenario was impressive, allowing two different companies from different sectors to exchange data in a privacy-preserving way.</li> <li>· Our training data and the trained model extracted from the AML RiSC app, can be sold in TRUSTS platform</li> <li>· It doesn't state which organization published that application</li> <li>· The tab 'Download Main Files' can be used to download the model, the training data and some metadata. This information can be sold through the TRUSTS platform.</li> </ul>	<ul style="list-style-type: none"> <li>· It doesn't say anywhere which organization published that application</li> <li>· The three apps are applicable for more improvements. UI improvements, spelling mistakes etc.</li> </ul>
<b>SC8</b>		

### 3.1.3 Stakeholders questionnaires analysis

In addition to the Test Cases above, the UC1 trials participants were required to complete a questionnaire template (as described in D5.4) after each trial's session as feedback to the UC leader as well as to the TRUSTS project and implementation team.

The Questionnaires were structured to obtain the users:

1. Sector
2. Role
3. Rate of the test case goal achievement (1: fail, 5: success)
4. Rate of the testbed performance (1: bad, 5: good)
5. Rate of the interface usability (1: bad, 5: good)
6. What he liked most in the trial
7. What he did not like in the trial
8. His proposal to improve the trial of the TRUSTS platform in general

Their comments are summarized as follows:

- **Sector:** Private
- **Role:** Business and Technical driver, and Domain expert
- The **test case goal achievement** was on average rated with 3.75 (1: fail, 5: success)
- The **testbed** performance was on average rated with 3.75 (1: fail, 5: success)
- The **interface usability** was on average rated with 4.5 (1: fail, 5: success)
- What was **most liked** in the trial:
  - The flow of the trials and the sequence of the steps
  - The usability and simplicity of the UI in the applications, as well as the presentation of the results in the AML application and the distribution of information in them.
  - Data seems protected by the encryption used in the APP, and that Threat models appear to have been considered.
  - insight as to what to expect

- What was **not liked** in the trial:
  - not a mature operational enough "platform"
  - technical person should accompany the end-user
  - not a clear way to go through, not user-friendly
  - not enough functionalities to test as per the concept described, but limited
  - reservation about how long it takes the user to enter information into the APP, it may be a little more complex than expected but be ordinary or for data protection
- Several **proposals** to improve the trial of the TRUSTS platform in general:
  - improvements are needed, further developments/functionalities are missing
  - more "business" processes to fully understand the concept. Perhaps in the second cycle with more functionalities will be better comprehensible.
  - backup and emergency plans may be needed in such marketplaces

### 3.1.4 UC1 Lessons learned and recommendations

Overall lessons learned from the first cycle of UC1 TRUSTS trials were:

- Even if the comments were positive regarding the steps followed and the flow, the current stage of the TRUSTS marketplace environment development, which is still non-operational as an integrated platform, allowed only selected basic functionalities to be tested (i.e., service onboarding, companies' registration, metadata uploading). Several key functionalities were missed, like subscription, federation even the limitation of needing a technical person to execute the trial sessions was pessimistic.
- This led to being unable to get a complete picture of the platform as a service or a product. More decentralised and clear processes with a user-friendly UI should be considered for the next cycle.
- Overall, the business applications that were demonstrated met with notable success but there is room for improvements. The UC1 applications UI and performance was most liked but a few reservations were commented on and will be considered for improvements in the second cycle of trials. Their flow and process were well structured and performed and the UC aim was established.

## 3.2 UC2 Results and evaluation

The UC2 "Agile Marketing through Data Correlation" tests the TRUSTS capability to support dataset trading among business stakeholders. It focuses on a telecom/content provider (NOVA) and a bank (PB) to test these services, in order to increase their digital transformation and respective entrepreneurship activities as pioneers in the Greek Telecom and Banking sectors.

Table 6: TRUSTS trials cycle 1 of UC2 trial sessions

UC2 trial sessions	UC2 stakeholders	UC2 participants	UC2 questionnaires
18-06-2021	4 (NOVA, PB, FORTH, LST)	6	6

09-07-2021	4 (NOVA, PB, FORTH, LST)	8	5
22-07-2021	4 (NOVA, PB, FORTH, LST)	11	9
27-08-2021	4 (NOVA, PB, FORTH, LST)	6	6
01-10-2021	4 (NOVA, PB, FORTH, LST)	11	10
05-11-2021	5 (NOVA, PB, FORTH, LST, RSA)	6	4
<b>Total:</b>	<b>5</b>	<b>17<sup>3</sup></b>	<b>40</b>

**Note:** Effort was made that in the UC2 trials participants from partners' organisation include colleagues not directly participating in the project development, in order to achieve objective evaluation.

### 3.2.1 High Level UC2 description

The UC2 is designed to test several functionalities of the TRUSTS platform. Towards this task, eight (8) scenarios were designed when the February version of this UC2 was deployed to verify the functionality of the TRUSTS platform. From these, only five were tested during the current Trials, due to limitations of the development of the TRUSTS environment. These are:

- **Scenario 1: Application onboarding** - Onboarding of PSI (uploading of the executable application, smart contract, inclusion to the application catalogue, quality test). Federation issues should be tested e.g., application onboarding in different federated nodes.

#### *Expected Results:*

The MPC/PSI service is successfully checked for security and malfunction issues and on-boarded to TRUSTS using the provided UI. A respective smart contract is issued and the service usage rules are defined.

- **Scenario 2: Companies subscription** - NOVA and PB subscription (selection of plan, subscription, signing the contract/smart contract, companies' representative's definition and roles). Federation issues should be tested e.g., companies subscribed in different federated nodes.

#### *Expected Results:*

NOVA, PB, FORTH and LST are subscribed to a specific subscription service using the UI provided by TRUSTS. NOVA and PB users are subsequently enrolled according to the rules of the subscription that each company chose.

<sup>3</sup> The number represents the unique individuals that participated in the trials.



- **Scenario 3: Metadata uploading/ announcement** - NOVA and PB onboard the metadata. Federation issues should be tested e.g., companies subscribed in different federated nodes.

*Expected Results:*

The metadata upload process is successfully performed, their lifecycle is defined and they are discoverable in the catalogue

- **Scenario 4: Service catalogue usage** - Search in service catalogue by NOVA and PB for discovering the appropriate metadata, the adequate PSI, de-anonymization risk analysis, etc. services. Federation issues should be tested e.g., transparently searching to all federated nodes.

*Expected Results:*

NOVA and PB search through the catalogue for the required service transparently to all federated nodes. In addition they may see the T&Cs of the services usage.

- **Scenario 5: Service usage** - Schedule service usage (PSI, De-anonymization risk analysis, E2E TRUSTS service), deploy any necessary modules, use the service, evaluate the outcome.

*Expected Results:*

The involved parties purchase the service usage and use it according to the contract. Transactions are logged. At the end of the transaction the respective billing is issued.

Functionalities of the following three scenarios will be tested in Cycle 2 Trials:

- **Scenario 6: Contract fulfilment, service performance tracking, quality evaluation** - Ensure smart contract fulfilment, evaluate transaction logs, collect users' evaluation, improve operations if necessary.
- **Scenario 7: Federation** - Ensure that federation is achieved with neighbouring marketplaces in terms of metadata/service/subscriber's catalogue, smart contract, privacy policies
- **Scenario 8: Datasets announcement, recommendation and matching** - Ensure that the users will be able to announce datasets and their characteristics.

### 3.2.2 Trials test cases results analysis

The test cases implemented for each of the 5 scenarios in the current Trials are subjected to the constraint of the degree of the TRUSTS platform implementation. The Test Case Steps implemented for each scenario in the most recent Trials run is seen in the following Table 7.

Table 7: UC2 Test Cases Description

UAT Test Results	
Test Cases	Pass/Fail

<p><b>SC1- Service Onboarding</b></p> <p><i>Step 1. The application provider (PSI, de-anonymisation risk analysis) accesses the TRUSTS portal</i></p> <p><i>Step 2. The application provider reads the portal information and informative text</i></p> <p><i>Step 3. The application provider reads standards that the TRUSTS marketplace complies to and privacy policies e.g. GDPR, etc.</i></p> <p><i>Step 4. The application provider accesses the registration area of the portal and selects the appropriate application upload subscription service</i></p> <p><i>Step 5. The application provider selects the appropriate contract (price is set by the application provider, TRUSTS compensation scheme is defined as standard term in the contract) and electronically signs it.</i></p> <p><i>Step 6. The application provider uploads the application in the TRUSTS application introduction area. Alternatively the application can be externally linked</i></p> <p><i>Step 7. TRUSTS operators check the application quality and security issues. This could be done manually and offline by TRUSTS operators.</i></p> <p><i>Step 8. TRUSTS accepts the application</i></p> <p><i>Step 9. TRUSTS introduces the application in the catalogue to be available to all federated nodes. Terms of usage of the application are included in the application description as well</i></p> <p><i>Step 10. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i> User friendliness, Clear processes</p>	<p>Steps 1, 6, 9 Pass</p> <p>Non implemented steps 2,3,4,5,7,8,10</p>
<p><b>SC2- Companies subscription</b></p> <p><i>Step 11. The subscriber (NOVA, PB, FORTH, LST) accesses the TRUSTS portal</i></p> <p><i>Step 12. The subscriber reads the portal information and informative text</i></p> <p><i>Step 13. The subscriber reads standards that the TRUSTS marketplace complies to and privacy policies e.g. GDPR, etc.</i></p> <p><i>Step 14. The subscriber accesses the registration area of the portal and selects the appropriate subscription service (the trial should be done on both standalone TRUSTS installation and federated mode where the subscribers will enrol in different federated marketplaces)</i></p> <p><i>Step 15. The subscriber selects the appropriate contract and electronically signs it.</i></p> <p><i>Step 16. The subscriber enrolls its representative and respective roles</i></p> <p><i>Step 17. The subscriber verifies if he/she wants to be included in the catalogues (suppose YES)</i></p> <p><i>Step 18. The TRUSTS platform system activates the contract and introduces the subscriber into the catalogue to be visible in all federated nodes</i></p> <p><i>Step 19. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i> User friendliness, Clear processes</p>	<p>Steps 11,16,17,19 Pass</p> <p>Step18, PARTLY Achieved (contracts aren't yet implemented)</p> <p>Steps 12, 13, 14, 15 aren't yet implemented</p>
<p><b>SC3- Metadata uploading</b></p> <p><i>Step 20. The subscriber representatives (NOVA, PB) accesses the TRUSTS portal and login</i></p> <p><i>Step 21. The platform verified credentials and validity of subscription</i></p> <p><i>Step 22. The subscribers reaches the metadata upload area and describes the appropriate information</i></p> <p><i>Step 23. TRUSTS platform automatically checks if the information is complete and introduced to the metadata to the catalogues in order to the discovered in all federated marketplaces</i></p> <p><i>Step 24. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i> Successful access of actors to TRUSTS</p>	<p>Pass step 20,22,23</p> <p>Steps 21,24 aren't yet implemented</p>

Successful upload of NOVA and PB metadata Successful upload of NOVA and PB metadata to the catalogue	
<b>SC4- Service catalogue usage_</b>  <i>Step 25. The subscriber representatives (NOVA, PB) accesses the TRUSTS portal and login</i> <i>Step 26. The platform verified credentials and validity of subscription</i> <i>Step 27. The subscribers accesses the catalogues and searches for appropriate metadata and PSI application in a user friendly manner</i> <i>Step 28. NOVA and PB select the appropriate metadata and service and initiate the usage process</i> <i>Step 29. All transactions above are logged to ensure quality and traceability.</i>  <i>Expected Results:</i> Successful access of actors to TRUSTS	Pass step 25,27,28  Steps 26,29 aren't yet implemented
<b>SC5- Service usage_</b>  <i>Step 30 The subscriber representatives (NOVA, PB) access the TRUSTS portal and login</i> <i>Step 31. The platform verified credentials and validity of subscription</i> <i>Step 32. The subscribers access the catalogues and search for appropriate metadata and applications in a user-friendly manner</i> <i>Step 33. NOVA and PB select the appropriate metadata and service and initiate the usage process</i>  <i>Expected Results:</i> Successful access of actors to TRUSTS Applications are successfully deployed in the respective corporate nodes 3 applications are used	Pass step 30,32,33  Step 31 not yet implemented

The information of the number of Scenarios and Test Cases that were executed during the UC2 trials are summarized in Table 8 below.

Table 8: Number of Test Cases executed per scenario per trial session

Date of Trials	Number of Test Cases Tested							
	SC1	SC2	SC3	SC4	SC5	SC6	SC7	SC8
18-06-2021	3	4	2	1	1	-	-	-
09-07-2021	1	2	1	1	-	-	-	-
22-07-2021	3	4	2	1	1	-	-	-
27-08-2021	3	4	2	1	1	-	-	-
01-10-2021	3	4	2	1	1	-	-	-
05-11-2021	1	1	-	-	1	-	-	-

The results reported in the forms for each Test Case are summarized in the following Table 9.

Table 9: Consolidated Business and Technical results of the first cycle of UC2 Test Case

Scenario	Test case	Title	Business results	Technical results
SC1	TC1	PSI application onboarding		Liked the usability of the UI, despite a complex backend. It does not show some page with instructions or examples for the non-business people to better see the value, as well as for non-technical people to understand the complexity behind what it appears in front.
	TC2	Data analysis application onboarding	Needs focusing on GDPR	The business scenario was impressive, allowing two different companies from different sectors to exchange data in a privacy-preserving way.
	TC3	Banking application onboarding	Liked the graphical presentation of the relevant data analysis	
SC2	TC1	NOVA subscription	The use of CLI or GUI should focus on simplicity	Liked the usability of the UI, despite a complex backend. It does not show some page with instructions or examples for the non-business people to better see the value, as well as for non-technical people to understand the complexity behind what it appears in front.
	TC2	PB subscription		
	TC3	LST subscription		
	TC4	FORTH subscription		
SC3	TC1	NOVA Metadata		
	TC2	PB Metadata		
SC4	TC1	NOVA and PB Metadata on the catalogue	Needs focusing on GDPR	The business scenario was impressive, allowing two different companies from different sectors to exchange data in a privacy-preserving way.
SC5	TC1	PSI, Banking application and de-anonymisation risk analysis services usage	Liked the graphical presentation of the relevant data analysis	

### 3.2.3 Stakeholders questionnaires analysis

In addition to the Test Case UAT Forms, the participants completed a questionnaire analysis after each test (see ANNEX II).

Their comments are summarized as follows:

- The general consensus was that the procedure was straightforward with well-defined steps and that all the functionalities needed are there and perform well.
- The search process had convenient filters when searching for applications and data.
- The responders had mixed feelings about the current usability aspect. Overall, it is not considered acceptable, and the use of GUI to access all functionality was considered to be essential for the success of the endeavour.
- The graphical presentation (maps) in the banking application of the respective data analysis was mentioned as a strongpoint. However, it was suggested that a more in-depth presentation of the platform's analytics capabilities should be provided, regarding the graphs and heatmaps of the correlated data.

- The process of adding administrator rights needs improvement. In general, it was suggested that procedures should become more familiar to the average user.
- More focus should be given to the GDPR principles.
- It is required that instructions are provided for non-technical or the non-business users

### 3.2.4 UC2 Lessons learned and recommendations

Cycle 1 Trials lead to concrete conclusions with respect to TRUSTS platform, tested procedures and functionalities. Specifically:

- All tested FRs were successful. FRs include service onboarding, companies' registration, metadata uploading, service catalogue usage and service usage. However, the current state of TRUSTS marketplace is not considered operational.
- The business applications usage was successful. Private Set Intersection functionality worked flawlessly, allowing two different companies from different sectors (here a bank and a telecom operator/content provider) to exchange data in a privacy-preserving way. the Banking application and de-anonymization risk analysis applications were also successfully tested for performance, usability and business point of view.
- The search process demonstrated convenient filters. There is certainly room for improvement, adding further attributes e.g. keywords, dataset lifecycle, etc.
- The User Interface during the Trials was characterized as not acceptable. In fact, an advanced UI has been designed for TRUSTS, with a complete set of menus and flows but was not functional during the trials. It is strongly recommended that it will be integrated in the next MVP version.
- Detailed online instructions on TRUSTS usage is required

## 3.3 UC3 Results and evaluation

Table 10: TRUSTS trials cycle 1 of UC3 trial sessions

UC3 trial sessions	UC3 stakeholders	UC3 participants	UC3 questionnaires
01-09-2021	1 (REL)	3	3
03-09-2021	1 (REL)	3	3
06-09-2021	1 (REL)	3	3
27-09-2021	1 (REL)	3	3

28-09-2021	1 (REL)	3	3
29-09-2021	1 (REL)	3	3
<b>Total:</b>	<b>1</b>	<b>15<sup>4</sup></b>	<b>18</b>

### 3.3.1 High Level UC description

UC3 focuses on the creation of new services that are going to be provided in the TRUSTS marketplace. As well as their smooth operation and demonstrate their usability.

- **Scenario 1: Actors Onboarding and maintenance** - Service Provider onboarding to TRUSTS platform, in our case BANK (Customer) and REL (Service Provider) connect to the TRUSTS UI, make new accounts and each user gets the appropriate rights/roles.

#### *Expected Results:*

Registration is successfully completed and both parties are able to self-register new users. Rights/Roles assignment from both node administrators is also tested to function properly, the customer and the service provider is able to proceed and perform maintenance.

- **Scenario 2: Services onboarding and maintenance** - Create a service, define the description for the service, upload packages and also send metadata to the broker. Notifications to the service consumer are not yet implemented.

#### *Expected Results:*

REL can create a service, upload the required packages in order to provide the service. Metadata is sent to and from the customer. Notifications should be sent to the service consumer.

- **Scenario 3: Catalogue search for data and services** - The BANK user can connect to the CENTRAL node and search for a service, a service can be selected and the user can choose to sign a contract with the partner to buy their services. Contract payment and signing is not yet implemented.

#### *Expected Results:*

The BANK user should be able to connect successfully on the CENTRAL node and be able to search for a service. Once a service is selected, the user can choose to sign a contract with the partner in order for the service provider to provide their services.

- **Scenario 4: Download/Consume data** REL provides a service. BANK requests from the service provider the result of the service.

<sup>4</sup> The number represents the different individuals that participated in the trials.

*Expected Results:*

REL can successfully provide a service on the TRUSTS platform. The BANK can request the result from the service provider and successfully receive back their result.

### 3.3.2 Trials test cases results analysis

The information of the number of Scenarios and Test Cases that were executed during the UC3 trials are summarized in Table 11 below.

Table 11: Number of Test Cases executed per scenario per trial session

Date of Trials	Number of Test Cases Tested				
	SC1	SC2	SC3	SC4	SC5
01-09-2021	1	1	1	1	-
03-09-2021	1	1	1	1	-
06-09-2021	1	1	1	1	-
27-09-2021	1	1	1	1	-
28-09-2021	1	1	1	1	-
29-09-2021	1	1	1	1	-

The results reported in the Test Case forms are summarized below:

- Users can connect to the site with no problem, no connectivity issues occurred to the whole span of the trials. New user accounts can be created easily and we can edit the information about the user.
- During the service creation, users can upload the pre-defined files and the system creates the relative metadata. User and Bank NODE are securely communicating through the central NODE based on the proper keys provided on both sides. Searching a service is fully functional, and the Bank can request and get the response for the service, through the secure channel already defined in central NODE from the previous steps.
- We should also mention that it is not possible to change the role of a user from the UI unless the user who's trying to change the specific account has been granted Admin role rights from the backend side.

### 3.3.3 Stakeholders' questionnaires analysis

Most of the stakeholders responded in regard to the colour scheme of the TRUSTS marketplace. Some button placements were not ideal as there are better places to have them in order to grab the user's attention. Also, most of the titles/button names did not have the appropriate description to them. As a result, the user was unable to easily find the next step needed to proceed. There were also some mislabelled sections that should be fixed with the appropriate names.

### **3.3.4 UC3 Lessons learned and recommendations**

1. The initial role assignment should be available to use from the UI.
2. Functionalities like Certificates should be included through the UI.
3. The colour scheme should be changed to a more attractive colour palette
4. Many buttons should change their positioning to a more suitable place
5. We should make sure all the titles have a description attached to them so the user is informed on what he is required to fill
6. All sections should be labelled properly with their correct names



## 4 Use Cases Lessons Learned and recommendations

### 4.1 Lessons learned for the TRUSTS platform

TRUSTS platform is being developed to create a fully operational and GDPR-compliant European Data Marketplace for personal and non-personal related data. Towards this goal, a systematic process was followed to collect requirements and FRs from a wide set of sources (electronic surveys, interviews, literature search, regulatory framework, analysis of past deliverables, etc.). The resulting FRs are listed in D2.2 and became the basis for the detailed definition of the UC scenarios and the subsequent Trials.

The Cycle 1 Trials for the UC scenarios followed the first release of the platform in April 2021. At this stage, the TRUSTS platform is still non-operational, allowing only siloed functionalities to be tested. In this framework, UC1, UC2 and UC3 proceeded to trials focusing on:

- Application/Service onboarding,
- companies' registration,
- metadata uploading,
- Asset catalogue search,
- Services usage.

The Lessons Learned derived from all UCs Cycle 1 trials are:

- During Trials, all MVP v.1 functionalities were tested through well-defined scenarios. Usability during the trials was limited due to the fact that technicality was mandatory.
  - **Recommendation:** Implement all FRs of D2.2 and D2.3.
  - **Recommendation:** All interactions with the TRUSTS platform should be achieved via a UI.
  - **Recommendation:** Subscriber management processes should be implemented
- MVP v.1 User interaction mechanism is not adequate for a contemporary operation marketplace.
  - **Recommendation:** The UI should be a clean and minimalistic graphical interface with hassle-free sign-up and drag-and-drop functionality.
  - **Recommendation:** TRUSTS UIs should cover market federation issues.
- The stakeholders noted that TRUSTS usage documentation is mandatory.
  - **Recommendation:** Instructions and Help function is required.
  - **Recommendation:** A presentation of key TRUSTS functionalities, including the platform's analytics capabilities, is required.
  - **Recommendation:** TRUSTS should provide personalized information
- The search process on a prototype service/dataset catalogue demonstrated convenient filters during these Trials, but there is certainly home for improvement.

- **Recommendation:** Cycle 2 Trials should demonstrate advanced search function, providing selection according to several data attributes e.g. categories.
- Harvesting of all TRUSTS information in each node may impede scalability.
  - **Recommendation:** Factors impeding TRUSTS scalability should be further investigated and the relative solutions should be tested during Cycle 2 Trials.

## 4.2 Business evaluation

Key TRUSTS business strategy focus is:

- Become a fully operational European Data Marketplace, providing Intellectual Property management for personal and non-personal related data.
- Act as a platform Federator, laying the groundwork for an ecosystem that will enable federation of independent data marketplaces.
- Create framework conditions to facilitate the emergence of an ecosystem of an ever-increasing number of companies around TRUSTS.

Along these lines, during the Cycle 1 Trials, the stakeholders raised respective issues and put forward proposed recommendations. In particular:

- Privacy concerns and fears of disclosure of trade secrets were raised when testing the AML and PSI Apps. The stakeholders suggested:
  - **Recommendation:** Cycle 2 Trials should include security oriented and GDPR compliance trials.
- TRUSTS current UIs and workflows are not friendly to use, do not follow a business logic and are quite restricted.
  - **Recommendation:** Need to follow a one-stop-shop concept, for coherently mapping the market's needs on data transactions. It should include services concerning registration, advanced search, buy/sell data, use/provide service, browse data/service catalogue, choose contract, and upload/download datasets.
- Trials should be more complex, resembling the real life usage of TRUSTS.
  - **Recommendation:** Trials should be done with more assets (metadata, services, applications)
  - **Recommendation:** Trials should be done on a more populated platform, with multiparty transactions
  - **Recommendation:** Trials should provide federation test cases.
- Contracting, payment and remuneration processes were not available in the current state of the TRUSTS development.
  - **Recommendation:** Create contractual models regarding the assets. e.g., data ownership and data usage.

- **Recommendation:** Implement appropriate APIs towards payment and other financial services.

The above business recommendations are consistent with the Functional Requirements for the TRUSTS platform that are defined in deliverable D2.2.

## 5 Conclusions

This deliverable reported on the evaluation results from the TRUSTS Trials that were executed between June and November 2021.

All three UCs were adequately represented in this set of trials, acquiring experiences which will be used in order to mature the deployment of these UCs in the forthcoming Cycles. The lessons that were obtained from these deployments are applicable to all TRUSTS UCs and will be carried on into the next Cycle.

During the reported period, Trials dealt with a number of limitations, given that the TRUSTS environment is still non-operational. Nevertheless, testing progressed to a significant level, enabling consistent deployment of the selected UCs scenarios and test cases. The identification of lessons learned and the corresponding recommendations described in this deliverable provide a solid ground for the upcoming platform implementation and Cycle 2 Trials.

A second version of this report will be produced by October 2022, containing a critical evaluation and findings from the pilots to be executed in the period January 2022 – August 2022, including lessons learned, the degree the KPIs have been met and suggestions for further improvements.

## ANNEX I: TRUSTS UC1 Technological Validation

### UC1 trial 22-10-2021

### TRUSTS Technological Validation

### User Acceptance Test

UAT Scope	
UAT - In Scope	UAT - Out of Scope
In Scope <ul style="list-style-type: none"> <li>Companies' subscription</li> <li>Application search on catalogue</li> <li>Data onboarding and app execution</li> </ul>	Out of Scope <ul style="list-style-type: none"> <li>Smart contracts and payment - non implemented yet</li> </ul>
UAT Assumptions and Constraints	
UAT Assumptions	
Assumption <ul style="list-style-type: none"> <li>Successful access to the TRUSTS portal</li> <li>User friendly platform UI with clear processes</li> <li>Successful subscription/enrolment of the companies</li> <li>Contract fulfilment, service performance tracking</li> <li>Successful access to the platform by the end-user</li> <li>Successful application search on the TRUSTS catalogue</li> <li>Successful onboarding of data</li> <li>Successful application downloads and execution</li> <li>User friendly app UI with clear processes</li> </ul>	
UAT Constraints	
Constraint <ul style="list-style-type: none"> <li>Non-user-friendly UI or clear process</li> <li>Non implemented functionalities (i.e., smart contract)</li> </ul>	

- Need of a technical person to execute the trial overall

#### UAT Risks

Description	Probability High   Medium   Low	Impact High   Medium   Low	Mitigation
Risk <i>List the risks of UAT.</i>	<i>How likely is the risk to occur?</i>	<i>What is the impact of the risk on the UAT?</i>	<i>Steps to avoid the risk.</i>
<i>Add more rows if needed.</i>			

#### UAT Team Roles & Responsibilities

Name	Roles	Responsibilities
GIANNA AVGOUSTI	UC LEADER	TRIALS DIRECTIONS AND FUNCTIONALITIES TO TEST
KYRIAKOS NEOKLEOUS	TECH PERSON	TECH GUIDANCE AND EXECUTION OF STEPS
ALEXANDROS ANDREOU	TECH PERSON	OBSERVER

#### UAT Entry Criteria

##### Criteria

It is required to have the TRUSTS platform or the VM platform environment), required data input, required applications, required parameterization, etc.

#### UAT Requirements-Based Test Cases

##### Test Cases

##### Test Case 1

##### **Companies' subscription**

##### *Test Procedure:*

Access to the TRUSTS portal.

Access the registration area of the portal and selection of the appropriate subscription service

Selection of the appropriate contract and enrolment

##### *Expected Results:*

Successful access, selection of contract and subscription

##### Test Case 2

##### **Application search on catalogue**

<p><i>Test Procedure:</i></p> <p>Access to the TRUSTS portal.</p> <p>Login with a corporate user account.</p> <p>Application search on catalogue</p> <p><i>Expected Results:</i></p> <p>Successful access, login, and search result</p>			
<p>Test Case 3</p> <p><b>Data onboarding and app execution</b></p> <p><i>Test Procedure:</i></p> <p>Access as a Consumer User into the Trust Platform</p> <p>Navigation into the Platform for searching Apps, Services and Datasets.</p> <p>Download of the three AML applications on premises, upload of data onboarding and application execution</p> <p><i>Expected Results:</i></p> <p>Successful download of the three apps, successful upload of data onboarding and execution of the three AML applications on premises</p>			
<b>UAT Test Results</b>			
<b>Test Cases</b>	<b>Pass/Fail</b>	<b>Tested By</b>	<b>Date Tested</b>
<p>Test Case 1</p> <p><b>Companies' subscription</b></p> <p><u><i>Example:</i></u></p> <p><i>Test Procedure:</i></p> <p>End-users' enrollment</p> <p><i>Expected Results:</i></p> <p>Successful subscription of an end-user.</p> <p>Successful definition of roles.</p> <p>Successful enrolment of end-user's representatives</p>	PASS	<p>GIANNA AVGOUSTI + KN + AA</p>	22-10-2021
<p>Test Case 2</p> <p><b>Application search on catalogue</b></p> <p><i>Test Procedure:</i></p> <p>Application search on catalogue by the end-user</p> <p><i>Expected Results:</i></p> <p>End user successfully accesses the TRUSTS platform</p> <p>End user searches the word "AML" in the catalogue</p>	PASS	<p>GIANNA AVGOUSTI + KN + AA</p>	22-10-2021

The search result to be successful			
<b>Test Case 3</b> <b>Data onboarding and app execution</b> <i>Test Procedure:</i> Download of the three AML applications on premises and successful execution of the services/solution <i>Expected Results:</i> Successful download of the three AML applications on premises Successful access to the AML applications UI on premises Successful upload of data onboarding Successful execution of their services/solution	PASS	GIANNA AVGOUSTI + KN + AA	22-10-2021
<b>Addendums &amp; Appendices</b>			
Link to screenshot and trials documentation = <a href="#">TRUSTS UC1 22-10-2021 - Google Drive</a>			



# UC1 \_ 14-10-2021

## TRUSTS Technological Validation

### User Acceptance Test

UAT Scope			
UAT - In Scope		UAT - Out of Scope	
In Scope <ul style="list-style-type: none"><li>Companies’ subscription</li><li>Application search on catalogue</li><li>Data onboarding and app execution</li></ul>		Out of Scope <ul style="list-style-type: none"><li>Smart contracts and payment - non implemented yet</li></ul>	
UAT Assumptions and Constraints			
UAT Assumptions			
Assumption <ul style="list-style-type: none"><li>Successful access to the TRUSTS portal</li><li>User friendly platform UI with clear processes</li><li>Successful subscription/enrolment of the companies</li><li>Contract fulfilment, service performance tracking</li><li>Successful access to the platform by the end-user</li><li>Successful application search on the TRUSTS catalogue</li><li>Successful onboarding of data</li><li>Successful application downloads and execution</li><li>User friendly app UI with clear processes</li></ul>			
UAT Constraints			
Constraint <ul style="list-style-type: none"><li>Non-user-friendly UI or clear process</li><li>Non implemented functionalities (i.e., smart contract)</li><li>Need of a technical person to execute the trial overall</li></ul>			
UAT Risks			
Description	Probability High   Medium   Low	Impact High   Medium   Low	Mitigation
Risk List the risks of UAT.	How likely is the risk to occur?	What is the impact of the risk on the UAT?	Steps to avoid the risk.
Add more rows if needed.			
UAT Team Roles & Responsibilities			
Name	Roles	Responsibilities	
GIANNA AVGOUSTI	UC LEADER (EBOS)	TRIALS DIRECTIONS AND FUNCTIONALITIES TO TEST	
MICHALIS SPYROU	TECH PERSON (EBOS)	TECH GUIDANCE AND EXECUTION OF STEPS	
KONSTANTINOS THEODOROPOULOS	NOVA	Observer, participant	
UAT Entry Criteria			
Criteria			

It is required to have the TRUSTS platform or the VM platform environment), required data input, required applications, required parameterization, etc.			
UAT Requirements-Based Test Cases			
Test Cases			
Test Case 1 Companies' subscription Test Procedure: Access to the TRUSTS portal. Access the registration area of the portal and selection of the appropriate subscription service Selection of the appropriate contract and enrolment Expected Results: Successful access, selection of contract and subscription			
Test Case 2 Application search on catalogue Test Procedure: Access to the TRUSTS portal. Login with a corporate user account. Application search on catalogue Expected Results: Successful access, login, and search result			
Test Case 3 Data onboarding and app execution Test Procedure: Access as a Consumer User into the Trust Platform Navigation into the Platform for searching Apps, Services and Datasets. Download of the three AML applications on premises, upload of data onboarding and application execution Expected Results: Successful download of the three apps, successful upload of data onboarding and execution of the three AML applications on premises			
UAT Test Results			
Test Cases	Pass/Fail	Tested By	Date Tested
Test Case 1 Companies' subscription Example: Test Procedure: End-users' enrollment Expected Results: Successful subscription of an end-user. Successful definition of roles. Successful enrolment of end-user's representatives	PASS	GIANNA AVGOUSTI + MICHALIS SPYROU + KONSTANTI NOS THEODORO POULOS	14-10-2021
Test Case 2 Application search on catalogue Test Procedure: Application search on catalogue by the end-user Expected Results: End user successfully accesses the TRUSTS platform	PASS	GIANNA AVGOUSTI + MICHALIS SPYROU + KONSTANTI NOS THEODORO	14-10-2021

End user searches the word "AML" in the catalogue The search result to be successful		POULOS	
Test Case 3 Data onboarding and app execution Test Procedure: Download of the three AML applications on premises and successful execution of the services/solution Expected Results: Successful download of the three AML applications on premises Successful access to the AML applications UI on premises Successful upload of data onboarding Successful execution of their services/solution	PASS	GIANNA AVGOUSTI + MICHALIS SPYROU + KONSTANTI NOS THEODORO POULOS	14-10-2021
Addendums & Appendices			
Link to screenshot and trials documentation = TRUSTS_UC1_14-10-2021 - Google Drive			

## ANNEX II: TRUSTS UC2 Technological Validation

The most recent, more complete set of UC2 trials (01-10-2021 and 05-11-2021) produced the following UATs.

### UC2 trial 01-10-2021

### TRUSTS Technological Validation

### User Acceptance Test

UAT Scope			
UAT - In Scope		UAT - Out of Scope	
In Scope The scope of the trials is to contribute the TRUSTS development process and verify that the produced environment complies with the project scope		Out of Scope Logs, Smart contracts and payment - non implemented yet	
UAT Assumptions and Constraints			
UAT Assumptions			
Assumption <ul style="list-style-type: none"><li>At least <b>PSI/MPC, deanonymization risks analysis applications</b> are successfully on-boarded on TRUSTS nodes.</li><li>Successful subscription of NOVA, PB, FORTH and LST.</li><li>Successful definition of roles.</li><li>Successful enrolment of NOVA, PB, FORTH and LST representatives.</li><li>Successful upload of metadata and introduction to the catalogue</li></ul>			
UAT Constraints			
Constraint <ul style="list-style-type: none"><li>Non-user-friendly UI or clear process</li><li>Non implemented functionalities (i.e., logs)</li><li>Need of a technical person to execute the trial</li></ul>			
UAT Risks			
Description	Probability High   Medium   Low	Impact High   Medium   Low	Mitigation
Risk <i>List the risks of UAT.</i>	<i>How likely is the risk to occur?</i>	<i>What is the impact of the risk on the UAT?</i>	<i>Steps to avoid the risk.</i>
<i>Add more rows if needed.</i>			
UAT Team Roles & Responsibilities			

Name	Roles	Responsibilities
Konstantinos Theodoropoulos	UC Leader	Trial organising
George Margetis, Xavi Oliza	Tech Person	Tech guidance and steps execution
Evangelos Kotsifakos, George Kostopoulos,	Stakeholders	
Manos Papadakis, Manos Adamakis, Takis Kanakakis	Participants – Technical observers	Observers
Panayotis Katopis,	Participant - business observer	Observer
<b>UAT Entry Criteria</b>		
<b>Criteria</b>		
Entry Criteria .VM platform environment, Required: Data, Apps, Metadata, Services		
<b>UAT Requirements-Based Test Cases</b>		
<b>Test Cases</b>		
Test Case 1 <b>Service Onboarding</b> <i>Onboarding of MPC/PSI (onboarding, smart contract, inclusion to the service catalogue, quality test). Federation issues should be tested e.g. service onboarding in different federated nodes</i> <i>Expected Results:</i> The MPC/PSI service is successfully checked for security and malfunction issues and on-boarded to TRUSTS using the provided UI. A respective smart contract is issued and the service usages rules are defined.		
Test Case 2 <b>Companies subscription</b> <i>NOVA and PB subscription (selection of plan, subscription, signing the contract/smart contract, companies' representative's definition and roles). Federation issues should be tested e.g. companies subscribed in different federated nodes</i> <i>Expected Results:</i> NOVA, PB, FORTH and LST are subscribed to a specific subscription service using the UI provided by TRUSTS. NOVA and PB users are subsequently enrolled according to the rules of the subscription that each company chose.		
Test Case 3 <b>Metadata uploading</b> <i>NOVA and PB onboard the metadata. Federation issues should be tested e.g. companies subscribed in different federated nodes.</i>		

The metadata upload process is successfully performed, their lifecycle is defined and they are discoverable in the catalogue

## Service catalogue usage

*Expected Results:*

NOVA and PB search through the catalogue for the required service transparently to all federated nodes. In addition they may see the T&Cs of the services usage.

## Service usage

*Expected Results:*

The involved parties purchase the service usage and use it according to the contract. Transactions are logged. At the end of the transaction the respective billing is issued.

## Test Cases

### Pass/Fail

**Tested By**

Date Tested

### Test Case 1

## Service Onboarding

Steps 1, 6, 9  
Pass

Xavi	Oliza,
George Margetis	

1-10-2021

*Step 1. The application provider (PSI, de-anonymisation risk analysis) accesses the TRUSTS portal*

Non  
implemented  
steps  
2,3,4,5,7,8,10

**Step 2. The application provider reads the portal information and informative text**

*Step 3. The application provider reads standards that the TRUSTS marketplace complies to and privacy policies e.g. GDPR, etc.*

*Step 4. The application provider accesses the registration area of the portal and selects the appropriate application upload subscription service*

*Step 5. The application provider selects the appropriate contract (price is set by the application provider, TRUSTS compensation scheme is defined as standard term in the contract) and electronically signs it.*

*Step 6. The application provider uploads the application in the TRUSTS application introduction area. Alternatively the application can be externally linked*

*Step 7. TRUSTS operators check the application*

<p>quality and security issues. This could be done manually and offline by TRUSTS operators.</p> <p>Step 8. TRUSTS accepts the application</p> <p>Step 9. TRUSTS introduces the application in the catalogue to be available to all federated nodes. Terms of usage of the application are included in the application description as well</p> <p>Step 10. All transactions above are logged to ensure quality and traceability.</p> <p><i>Expected Results:</i> User friendliness, Clear processes</p>			
<p>Test Case 2</p> <p><b>Companies subscription</b></p> <p><u>Example:</u></p> <p>Step 11. The subscriber (NOVA, PB, FORTH, LST) accesses the TRUSTS portal</p> <p>Step 12. The subscriber reads the portal information and informative text</p> <p>Step 13. The subscriber reads standards that the TRUSTS marketplace complies to and privacy policies e.g. GDPR, etc.</p> <p>Step 14. The subscriber accesses the registration area of the portal and selects the appropriate subscription service (the trial should be done on both standalone TRUSTS installation and federated mode where the subscribers will enrol in different federated marketplaces)</p> <p>Step 15. The subscriber selects the appropriate contract and electronically signs it.</p> <p>Step 16. The subscriber enrolls its representative and respective roles</p> <p>Step 17. The subscriber verifies if he/she wants to be included in the catalogues (suppose YES)</p> <p>Step 18. The TRUSTS platform system activates the contract and introduces the subscriber into the catalogue to be visible in all federated nodes</p> <p>Step 19. All transactions above are logged to ensure quality and traceability.</p> <p><i>Expected Results:</i> User friendliness, Clear processes</p>	<p>Steps 11,16,17,19 Pass</p> <p>Step 18, PARTLY Achieved (contracts aren't yet implemented)</p> <p>Steps 12, 13, 14, 15 aren't yet implemented</p>	<p>Konstantinos Theodoropoulos</p> <p>George Kostopoulos</p> <p>George Margetis</p> <p>Evangelos Kotsifakos</p>	1-10-2021
<p>Test Case 3</p> <p><b>Metadata uploading</b></p> <p><u>Example:</u></p> <p>Step 20. The subscriber representatives (NOVA, PB) accesses the TRUSTS portal and login</p> <p>Step 21. The platform verified credentials and validity of subscription</p>	<p>Pass step 20,22,23</p> <p>Steps 21,24 aren't yet implemented</p>	<p>Xavi Oliza, George Margetis</p>	1-10-2021

<p><i>Step 22. The subscribers reaches the metadata upload area and describes the appropriate information</i></p> <p><i>Step 23. TRUSTS platform automatically checks if the information is complete and introduced to the metadata to the catalogues in order to the discovered in all federated marketplaces</i></p> <p><i>Step 24. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i>          Successful access of actors to TRUSTS          Successful upload of NOVA and PB metadata          Successful upload of NOVA and PB metadata to the catalogue</p>			
<p>Test Case 4  <b>Service catalogue usage_</b>  <u>Example:</u></p> <p><i>Step 25. The subscriber representatives (NOVA, PB) accesses the TRUSTS portal and login</i></p> <p><i>Step 26. The platform verified credentials and validity of subscription</i></p> <p><i>Step 27. The subscribers accesses the catalogues and searches for appropriate metadata and PSI application in a user friendly manner</i></p> <p><i>Step 28. NOVA and PB select the appropriate metadata and service and initiate the usage process</i></p> <p><i>Step 29. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i>          Successful access of actors to TRUSTS</p>	<p>Pass step 25,27,28</p> <p>Steps 26,29 aren't yet implemented</p>	<p>George Margetis, Xavi Olyza</p>	<p>1-10-2021</p>
<p>Test Case 5  <b>Service usage_</b>  <u>Example:</u></p> <p><i>Step 30 The subscriber representatives (NOVA, PB) access the TRUSTS portal and login</i></p> <p><i>Step 31. The platform verified credentials and validity of subscription</i></p> <p><i>Step 32. The subscribers access the catalogues and search for appropriate metadata and applications in a user-friendly manner</i></p> <p><i>Step 33. NOVA and PB select the appropriate</i></p>	<p>Pass step 30,32,33</p> <p>Step 31 not yet implemented</p>	<p>Evangelos Kotsifakos, Manos Adamakis, George Margetis, Xavi Olyza,</p>	<p>1-10-2021</p>



metadata and service and initiate the usage process <i>Expected Results:</i> Successful access of actors to TRUSTS Applications are successfully deployed in the respective corporate nodes 3 applications are used			
<b>Addendums &amp; Appendices</b>			
<a href="https://drive.google.com/drive/folders/1koEQ1QjuQ_j9kX3Ef4T8655k6vvq1RW8?usp=sharing">Link</a> to screenshots and trials documentation <a href="https://drive.google.com/drive/folders/1koEQ1QjuQ_j9kX3Ef4T8655k6vvq1RW8?usp=sharing">https://drive.google.com/drive/folders/1koEQ1QjuQ_j9kX3Ef4T8655k6vvq1RW8?usp=sharing</a>			

# UC2 trial 05-11-2021

## TRUSTS Technological Validation

### User Acceptance Test

UAT Scope			
UAT - In Scope		UAT - Out of Scope	
In Scope The scope of the trials is to contribute the TRUSTS development process and verify that the produced environment complies with the project scope		Out of Scope Logs, Smart contracts and payment - non implemented yet	
UAT Assumptions and Constraints			
UAT Assumptions			
Assumption <ul style="list-style-type: none"> <li>At least <b>PSI/MPC, deanonymization risks analysis applications</b> are successfully on-boarded on TRUSTS nodes.</li> <li>Successful subscription of NOVA, PB, FORTH and LST.</li> <li>Successful definition of roles.</li> <li>Successful enrolment of NOVA, PB, FORTH and LST representatives.</li> <li>Successful upload of metadata and introduction to the catalogue</li> </ul>			
UAT Constraints			
Constraint <ul style="list-style-type: none"> <li>Non-user-friendly UI or clear process</li> <li>Non implemented functionalities (i.e., logs)</li> <li>Need of a technical person to execute the trial</li> </ul>			
UAT Risks			
Description	Probability High   Medium   Low	Impact High   Medium   Low	Mitigation
Risk <i>List the risks of UAT.</i>	<i>How likely is the risk to occur?</i>	<i>What is the impact of the risk on the UAT?</i>	<i>Steps to avoid the risk.</i>
<i>Add more rows if needed.</i>			
UAT Team Roles & Responsibilities			
Name	Roles	Responsibilities	
Konstantinos Theodoropoulos	UC Leader	Trial organising	
George Margetis, Taha Abdel Aziz Manos Adamakis,	Tech Person	Tech guidance and steps execution	
Evangelos Kotsifakos, Panayiotis Katopis	Stakeholders		

<b>UAT Entry Criteria</b>		
<b>Criteria</b>		
Entry Criteria .VM platform environment, Required: Data, Apps, Metadata, Services		
<b>UAT Requirements-Based Test Cases</b>		
<b>Test Cases</b>		
Test Case 1 <b>Service Onboarding</b> <i>Onboarding of MPC/PSI (onboarding, smart contract, inclusion to the service catalogue, quality test). Federation issues should be tested e.g. service onboarding in different federated nodes</i> <i>Expected Results:</i> The MPC/PSI service is successfully checked for security and malfunction issues and on-boarded to TRUSTS using the provided UI. A respective smart contract is issued and the service usages rules are defined.		
Test Case 2 <b>Companies subscription</b> <i>NOVA and PB subscription (selection of plan, subscription, signing the contract/smart contract, companies' representative's definition and roles). Federation issues should be tested e.g. companies subscribed in different federated nodes</i> <i>Expected Results:</i>  NOVA, PB, FORTH and LST are subscribed to a specific subscription service using the UI provided by TRUSTS. NOVA and PB users are subsequently enrolled according to the rules of the subscription that each company chose.		
Test Case 3 <b>Metadata uploading</b> <i>NOVA and PB onboard the metadata. Federation issues should be tested e.g. companies subscribed in different federated nodes.</i> <i>Expected Results:</i>  The metadata upload process is successfully performed, their lifecycle is defined and they are discoverable in the catalogue		
Test Case 4 <b>Service catalogue usage</b> <i>Search in service catalogue by NOVA and PB for discovering the appropriate metadata, the adequate PSI, deanonymization risk analysis, etc. services. Federation issues should be tested e.g. transparently searching to all federated nodes</i> <i>Expected Results:</i>  NOVA and PB search through the catalogue for the required service transparently to all federated nodes. In addition they may see the T&Cs of the services usage.		
Test Case 5 <b>Service usage</b> <i>Schedule service usage (MPC, PSI, De-anonymization risk analysis, end to end TRUSTS service), deploy any necessary modules, use the service, evaluate the outcome</i> <i>Expected Results:</i>  The involved parties purchase the service usage and use it according to the contract.		

Transactions are logged. At the end of the transaction the respective billing is issued.			
UAT Test Results			
Test Cases	Pass/Fail	Tested By	Date Tested
<p><b>Test Case 1</b>  <b>Service Onboarding_</b></p> <p><i>Step 1. The application provider (PSI, de-anonymisation risk analysis) accesses the TRUSTS portal</i>  <i>Step 2. The application provider reads the portal information and informative text</i>  <i>Step 3. The application provider reads standards that the TRUSTS marketplace complies to and privacy policies e.g. GDPR, etc.</i>  <i>Step 4. The application provider accesses the registration area of the portal and selects the appropriate application upload subscription service</i>  <i>Step 5. The application provider selects the appropriate contract (price is set by the application provider, TRUSTS compensation scheme is defined as standard term in the contract) and electronically signs it.</i>  <i>Step 6. The application provider uploads the application in the TRUSTS application introduction area. Alternatively the application can be externally linked</i>  <i>Step 7. TRUSTS operators check the application quality and security issues. This could be done manually and offline by TRUSTS operators.</i>  <i>Step 8. TRUSTS accepts the application</i>  <i>Step 9. TRUSTS introduces the application in the catalogue to be available to all federated nodes. Terms of usage of the application are included in the application description as well</i>  <i>Step 10.All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i>  User friendliness, Clear processes</p>	<p>Steps 1, 6, 9  Pass</p> <p>Non implemented steps  2,3,4,5,7,8,10</p>	George Margetis	5-11-2021
<p><b>Test Case 2</b>  <b>Companies subscription_</b>  <u><b>Example:</b></u>  <i>Step 11.The subscriber (NOVA, PB, FORTH, LST) accesses the TRUSTS portal</i>  <i>Step 12.The subscriber reads the portal information and informative text</i>  <i>Step 13.The subscriber reads standards that the</i></p>	<p>Steps 11,16,17,19  Pass</p> <p>Step18,  PARTLY Achieved  (contracts aren't</p>	George Margetis	5-11-2021

<p><i>TRUSTS marketplace complies to and privacy policies e.g. GDPR, etc.</i></p> <p><i>Step 14. The subscriber accesses the registration area of the portal and selects the appropriate subscription service (the trial should be done on both standalone TRUSTS installation and federated mode where the subscribers will enrol in different federated marketplaces)</i></p> <p><i>Step 15. The subscriber selects the appropriate contract and electronically signs it.</i></p> <p><i>Step 16. The subscriber enrolls its representative and respective roles</i></p> <p><i>Step 17. The subscriber verifies if he/she wants to be included in the catalogues (suppose YES)</i></p> <p><i>Step 18. The TRUSTS platform system activates the contract and introduces the subscriber into the catalogue to be visible in all federated nodes</i></p> <p><i>Step 19. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i> User friendliness, Clear processes</p>	<p>yet implemented)</p> <p>Steps 12, 13, 14, 15 aren't yet implemented</p>		
<p>Test Case 3</p> <p><b>Metadata uploading</b></p> <p><u><i>Example:</i></u></p> <p><i>Step 20. The subscriber representatives (NOVA, PB) accesses the TRUSTS portal and login</i></p> <p><i>Step 21. The platform verified credentials and validity of subscription</i></p> <p><i>Step 22. The subscribers reaches the metadata upload area and describes the appropriate information</i></p> <p><i>Step 23. TRUSTS platform automatically checks if the information is complete and introduced to the metadata to the catalogues in order to the discovered in all federated marketplaces</i></p> <p><i>Step 24. All transactions above are logged to ensure quality and traceability.</i></p> <p><i>Expected Results:</i> Successful access of actors to TRUSTS Successful upload of NOVA and PB metadata Successful upload of NOVA and PB metadata to the catalogue</p>			

<p>Test Case 4</p> <p><b>Service catalogue usage</b></p> <p><u>Example:</u></p> <p><i>Step 25. The subscriber representatives (NOVA, PB) accesses the TRUSTS portal and login</i></p> <p><i>Step 26. The platform verified credentials and validity of subscription</i></p> <p><i>Step 27. The subscribers accesses the catalogues and searches for appropriate metadata and PSI application in a user friendly manner</i></p> <p><i>Step 28. NOVA and PB select the appropriate metadata and service and initiate the usage process</i></p> <p><i>Step 29. All transactions above are logged to ensure quality and traceability.</i></p> <p><u>Expected Results:</u></p> <p>Successful access of actors to TRUSTS</p>			
<p>Test Case 5</p> <p><b>Service usage</b></p> <p><u>Example:</u></p> <p><i>Step 30 The subscriber representatives (NOVA, PB) access the TRUSTS portal and login</i></p> <p><i>Step 31. The platform verified credentials and validity of subscription</i></p> <p><i>Step 32. The subscribers access the catalogues and search for appropriate metadata and applications in a user-friendly manner</i></p> <p><i>Step 33. NOVA and PB select the appropriate metadata and service and initiate the usage process</i></p> <p><u>Expected Results:</u></p> <p>Successful access of actors to TRUSTS</p> <p>Applications are successfully deployed in the respective corporate nodes</p> <p>3 applications are used</p>	<p>Pass step 30,32,33</p> <p>Step 31 not yet implemented</p>	<p>Manos Adamakis,</p>	<p>5-11-2021</p>
<b>Addendums &amp; Appendices</b>			
<p><a href="https://drive.google.com/drive/folders/1koEQ1QjuQ_j9kX3Ef4T8655k6vvq1RW8?usp=sharing">Link</a> to screenshots and trials documentation</p> <p><a href="https://drive.google.com/drive/folders/1koEQ1QjuQ_j9kX3Ef4T8655k6vvq1RW8?usp=sharing">https://drive.google.com/drive/folders/1koEQ1QjuQ_j9kX3Ef4T8655k6vvq1RW8?usp=sharing</a></p>			

## ANNEX III: TRUSTS UC3 Technological Validation

### UC3 trial 29-09-2021

### TRUSTS Technological Validation

### User Acceptance Test

UAT Scope			
UAT - In Scope		UAT - Out of Scope	
In Scope <ul style="list-style-type: none"><li>Actors Onboarding and maintenance</li><li>Services onboarding and maintenance</li><li>Catalogue search for data and services</li><li>Download/Consume data</li></ul>		Out of Scope <ul style="list-style-type: none"><li>-</li></ul>	
UAT Assumptions and Constraints			
UAT Assumptions			
Assumption <ul style="list-style-type: none"><li>User friendly platform UI with clear processes</li><li>User friendly app UI with clear processes</li></ul>			
UAT Constraints			
Constraint <ul style="list-style-type: none"><li>Non-user-friendly UI or clear process</li><li>Non-implemented functionalities (i.e., smart contract)</li></ul>			
UAT Risks			
Description	Probability High   Medium   Low	Impact High   Medium   Low	Mitigation
-	-	-	-

UAT Team Roles & Responsibilities			
Name	Roles	Responsibilities	
Manos Paschalakis	UC leader		
Konstantinos Argyropoulos	Technical Person		
Nikolaos Furlataras	Technical Person		
UAT Entry Criteria			
Criteria			
It is required to have the TRUSTS platform or the VM platform environment), required data input, required services running, required parameterization, etc.			
UAT Requirements-Based Test Cases			
Test Cases			
Test Case 1			
Actors Onboarding and maintenance			
Test Procedure:			
Users connect to the TRUSTS UI, register, log in.			
Expected Results:			
Users successfully connect to the TRUSTS UI, register, log in.			
Test Case 2			
Services onboarding and maintenance			
Test Procedure:			
Users connect to the TRUSTS UI, they can create a service and can edit a service.			
Expected Results:			
Users successfully connect to the TRUSTS UI, they create a service and edit a service.			
Test Case 3			
Catalogue search for data and services			



*Test Procedure:*

*Users can search for a dataset or a service*

*Expected Results:*

*Users can successfully search and get results for a dataset or a service*

Test Case 4

#### **Download/Consume data**

*Test Procedure:*

*Users can download the service's resources*

*Expected Results:*

*Users can successfully download the service's resources*

#### **UAT Test Results**

<b>Test Cases</b>	<b>Pass/Fail</b>	<b>Tested By</b>	<b>Date Tested</b>
Test Case 1 <b>Actors Onboarding and maintenance</b>  <i>Test Procedure:</i> <i>Users connect to the TRUSTS UI, register, log in.</i>  <i>Expected Results:</i> <i>Users successfully connect to the TRUSTS UI, register, log in.</i>	Pass	Konstantinos Argyropoulos	29/09/21
Test Case 2 <b>Services onboarding and maintenance</b>  <i>Test Procedure:</i> <i>Users connect to the TRUSTS UI, they can create a service and can edit a service.</i>  <i>Expected Results:</i>	Pass	Konstantinos Argyropoulos	29/09/21

<i>Users successfully connect to the TRUSTS UI, they create a service and edit a service.</i>			
<b>Test Case 3</b> <b>Catalogue search for data and services</b>  <i>Test Procedure:</i> <i>Users can search for a dataset or a service</i>  <i>Expected Results:</i> <i>Users can successfully search and get results for a dataset or a service</i>	Pass	Konstantinos Argyropoulos	29/09/21
<b>Test Case 4</b> <b>Download/Consume data</b>  <i>Test Procedure:</i> <i>Users can download the service's resources</i>  <i>Expected Results:</i> <i>Users can successfully download the service's resources</i>	Pass	Konstantinos Argyropoulos	29/09/21
<b>Addendums &amp; Appendices</b>			
<i>Link to trial's folder:</i> <a href="https://drive.google.com/drive/u/0/folders/1YPwO2SAEvIYvtteigqudi7XD9Iir9Lqw">https://drive.google.com/drive/u/0/folders/1YPwO2SAEvIYvtteigqudi7XD9Iir9Lqw</a>			