TagItSmart
Smart tags driven service platform for enabling ecosystems of connected objects

Grant agreement 688061

Open Call Deliverable Report for

TAGITWINE
PILOT FOR BRAND PROTECTION AND ANTI-COUNTERFEITING IN WINE INDUSTRY:

– Progress Report Q1-Q4 –

Deliverable ID:	**D3.1**
Deliverable Title:	**Progress Report Q1-Q4**
Revision #:	**1.0**
Dissemination Level:	TIS Consortium
Responsible beneficiary:	Durst
Contributing beneficiaries:	University of Donja Gorica (UDG)
Contractual date of delivery:	31.12.2018*
Actual submission date:	11.12.2018

Start Date of the Sub-Project: September 1st, 2017 Duration: 12+4 Months*

**No cost extension approved until 31.12.2018*

Contents

Introduction *4*

Section 1 - WP1 Business Modeling and System Architecture *5*

Activities and Progress **5**

Deliverables Status **5**

Section 2 - WP2 Pilot Implementation and Execution *6*

Activities and Progress **6**

Deliverables Status **7**

Section 3 - WP3 Management and Dissemination *8*

Activities and Progress **8**

Deliverables Status **12**

Conclusion *13*

	Name	Organization	Date	Visa
Project Management Team				

Document history

Revision	Date	Modification	Authors
v0.1	25.10.2018	Document outline adopted from the Q1-Q3 report.	Tomo
v0.2	5.11.2018	Content update.	All
v0.3	6.12.2018	Report for Q1-Q4 completed.	Tomo, Stevan
v0.4	11.12.2018	Final review.	All

Introduction

This report serves as a part of the deliverable D3.1. It is a cumulative progress report for the project activities that took place during the all four quarters of the TagItWine project Q1-Q4. In the following sections, overview of the activities and status on deliverables are provided.

Section 1 - WP1 Business Modeling and System Architecture

All objectives specified for the work package WP1 have been achieved and all of the tasks in WP1 have been completed within Q1. Summary of the activity is provided below.

Activities and Progress

Task T1.1 Analysis of business processes (Completed)

- Several meetings between UDG and Plantaze took place in order to identify the business processes relevant to the specification of the system architecture design.

Task T1.2 TiS platform analysis (Completed)

- Trip to Vaasa, Finland, for the Kickoff meeting in order to get to know all the TagItSmart partners and get better insight into the available TagItSmart technologies and components.
- A detailed analysis of TagItSmart solutions, relevant APIs and platform architectures has been performed.
- Trip to Novi Sad, Serbia, to meet with DNET development team. Discuss TagItSmart technologies that will be selected used in implementation of the pilot.

Task T1.3 System architecture and design (Completed)

- System architecture and implementation requirements for the brand protection pilot have been identified and specified.
- Report D1.1 on brand protection pilot system architecture and design has been created and submitted on time.

Deliverables Status

- Deliverable D1.1 *Report on Pilot System Architecture and Design* has been completed and approved.

Section 2 - WP2 Pilot Implementation and Execution

In accordance with the plan, all objectives specified in WP2 have been achieved. All tasks have been successfully completed and deliverable D2.2 has been submitted.

Activities and Progress

Task T2.1 Pilot implementation (Completed)

- Created accounts and configured cloud platform to support brand protection pilot requirements. Customization is being made in order to meet requirements for brand protection pilot (collaboration with DNET).
- We have started customizing existing mobile application obtained from the TiS ecosystem.
- Technical meeting in Podgorica (DURST, DNET, UDG, Plantaze) regarding technical implementation and pilot execution took place in mid November.
- Discussions and collaboration with DNET and DURST regarding the Smart tags. We designed and implemented Smart tags as a combination of QR codes, functional ink printing (photochromatic), and back-end heuristics on Cloud.
- In cooperation with DURST, VTT, and DNET, we designed the Smart tags (product stickers) and provided the layouts to DURST and VTT for printing. The first batch of stickers has been printed and on its way to us.
- The first version of the mobile application has been implemented. There is an Android and iOS version of the consumer mobile app, which is currently being tested. The app needs to be tested with the new Smart tags, once the first batch arrives.
- The cloud side of the system has been modified to support newly designed Smart tags and it has been customized to store scan/log data needed for the system heuristics.
- The product information has been entered into the database.
- A simple version for extended user experience functionality has been prototyped and built into the mobile app.
- A custom dashboard for analysis of the historical scan/log data will be implemented as the pilot execution unfolds.
- Initial integration tests have been performed (collaboration with DNET).

Task T2.2 Pilot execution (Completed)

- Several meetings with Plantaze for planning of the tagging of the wine bottles and discussion of pilot execution.
- In-house testing of TagItSmart mobile app and Smart tags.
- Coordination with Durst and VTT regarding second round of stickers.
- Updating the mobile app on AppStore and Playstore in order to fix issues noticed during in-house testing and reported by project collaborators.
- Implementing a simple scan log preview (web access) developed for accessing the Cloud data for the most recent scans.
- Around 5000 bottles tagged using stickers from the first batch. These will be used for demos with presence of TagItWine representatives.

- Over 12000 bottles tagged using sticker from the second batch. These will be used in stores and restaurants.
- Plantaze arranged demos in Voli chain hyper markets. Voli is the largest chain of stores in Montenegro.
- Two demos and promotions took part in Voli super stores in Podgorica (two 3-hour events).
- Additionally, 5000 tagged bottles distributed through Voli stores. For that purpose, we designed and printed additional bottleneck tag which provides brief instructions on how to download and use the app.
- Promo events organized in Plantaze's facilities: stores, restaurants, as well as in their wine cellar Sipcanik. Over 700 bottles have been distributed to Sipcanik cellar store.

Task T2.3 Technical and business evaluation (Completed)

- Nearly 30 wine producers surveyed regarding the anti-counterfeiting and brand protection solutions.
- Several meetings with Plantaze in order to get required input for business evaluation.
- User engagement analysis based on collected feedback.
- Technology stack evaluation and photochromic ink functionality (longevity) testing.
- Business model analysis.

Deliverables Status

Deliverable D2.1 *Report on pilot implementation and specification of the execution environment* has been completed and approved.

Deliverable D2.2 *Report on technical and business evaluation of the pilot* has been submitted and waiting for approval.

Section 3 - WP3 Management and Dissemination

Summary of the activity on work package WP3 is provided below.

Activities and Progress

Task T3.1 Administrative management (Completed)

- Overall project management and coordination is an ongoing activity.
- Continuous communication with TIS partners, mainly with DNET, DURST and VTT.
- There was some communication with projects HoneyTag and DLT-Tag.

Task T3.2 Dissemination coordination (Completed)

Events where TagItWine project was presented and TagItSmart technology promoted:

- Presented TagItWine project at the Kick-off meeting in Vaasa, Finland.
- Presented TagItSmart project at the opening ceremony for new Lab for food quality and safety at the University of Donja Gorica. Dr. Srdjan Krco participated in the opening speeches together with VIP guests: Montenegrin Minister of agriculture, Rector of the University of Donja Gorica, and Dean of Faculty for food technology, food safety, and ecology.
- Organizing a Meetup in Podgorica to present TagItSmart project and promote TagItSmart Open Call #2 to representatives of SMEs and researchers from Montenegro. This led to HoneyTag submission that was successful.
- Attended Monte Vino 2018 wine tasting event, which had several wine makers from Montenegro and abroad. We conducted a survey their opinion about the issue of wine counterfeiting and TagItWine as a possible solution for the problem.
- TagItWine project was presented at 13. International book fair in Podgorica (8. May 2018)
- TagItSmart and TagItWine were presented at “Digital Society” meetup with Rob van Kranenburg at UDG during his visit to TagItWine and HoneyTag projects (28. May 2018).
- Participated in TagItSmart exhibition at IOT Week 2018 in Bilbao.
- Presented TagItWine solution at the Blockchain meetup in Belgrade on June 11th.

Technical papers on TagItWine system and TagItSmart technology ecosystems:

- T. Popovic, M. Simeunovic. S. Sandi, “*Towards an IoT Solution for Anti-Counterfeiting Protection in Wine Industry”,* Mediterranean Natural Sciences and Engineering Congress (MENSEC)*,* October 2017*.*
- S. Sandi, S. Radonjic, J. Drobnjak, M. Simeunovic, B. Stamatovic, T. Popović, “*Smart Tags for Brand Protection and Anti-Counterfeiting in Wine Industry*”, IT ‘18, 2018.

Figure 15.1. TagItSmart booth at IoT Week 2018, Bilbao (Spain).

Conference participated:

- Presenting the TagItWine solution during the 1st International conference about Vranac and other Montenegrin wines, organized by "13. jul Plantaze", Podgorica, November 20-21 2017.
- Presented paper about TagItWine Smart Tags at the IEEE international conference, 23rd Information Technology 2018, held in Žabljak, Montenegro.
- TagItWine featured at ENTER conference, 25-26. April 2018, Belgrade, Serbia.
- Presented TagItWine solution on IoT Week 2018 in Bilbao.
- Presented TagItWine solution at the "Blockchain – the new architecture of the world" conference, organized by Boris Mints Institute from Tel Aviv, in Tivat, Montenegro (5. October 2018).
- TagItWine was featured in TagItSmart booth at AIPIA 2018 congress & exhibition organized by Active & Intelligent Packaging Industry Association, November 19-20, Amsterdam

Figure 15.2. TagItSmart booth preparation for AIPIA 2018, Amsterdam (photo by VTT).

Media coverage includes:

- Several posts at LinkedIn (TagItSmart group and by project team).
- TagItWine integration with OriginTrail described in blog post: https://medium.com/origintrail/utilizing-smart-sensors-to-prevent-wine-fraud-origintrails-pilot-with-tagitsmart-1949dc62113f
- TagItWine was featured in regional blog “Women and wine”: http://www.zeneivino.com/u-fokusu/vesti/falsifikatima-odzvonilo/
- TagItWine featured at PSFK blog: https://www.psfk.com/2018/04/app-gives-customers-wine-details-scan.html
- TagItWine promo event was filmed to be featured in a short promo video for UDG. https://www.youtube.com/watch?v=Wts15iGGKig

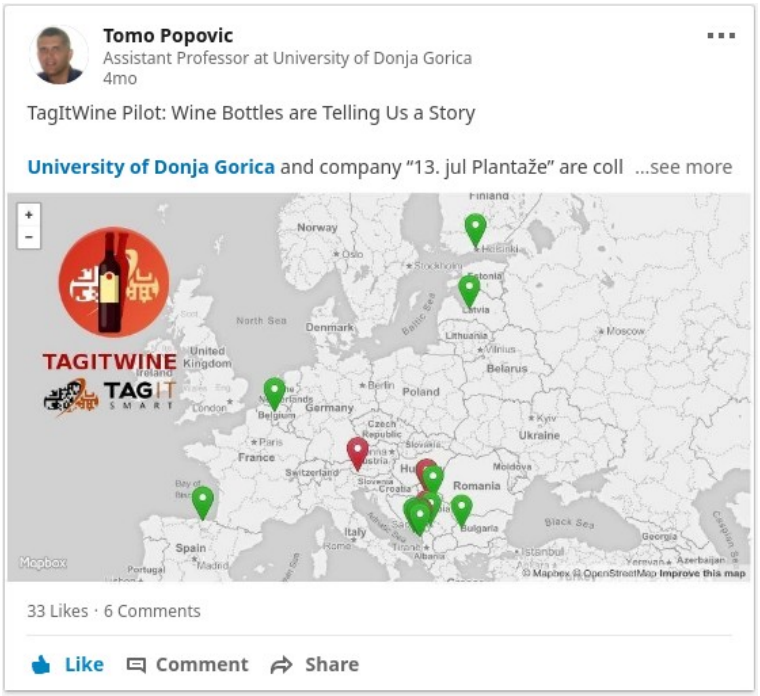

Figure 15.3. Several LinkedIn posts made during the coarse of the project.

Although not initially planned, it has been decided that TagItWine project would benefit from a project website at http://tagitwine.me. This was especially important at the time the TagItWine was published to Google Play and Apple App stores.

Additional functionality and purpose of the website was tied to QR codes: if a TagItWine tag is scanned with a standard QR code reader app, the user would be directed to TagItWine website and offered to download app corresponding to their device type.

Figure 15.4. TagItWine website at http//tagitwine.me.

Deliverables Status

- This progress report for quarters Q1-Q4, part of D3.1, has been completed.

Conclusion

The document provides an overview of the project activities carried out during the duration of the TagItWine project. This document serves as deliverable D3.1 scheduled for the end of the project.

Majority of the effort in Q1 period was dedicated to defining pilot system architecture and design (WP1) and to initiate actives related to the pilot implementation (WP2). In Q2, the main efforts were aimed at the WP2 Task 2.1 activities and the implementation of the pilot solution, which includes Smart tag design, mobile app implementation, and the cloud side customizations. During Q3 period main focus was on pilot execution. Around 17000 bottles have been tagged and several pilot execution and promotion events have been organized. In addition, several dissemination activities took place as reported for Task 3.2. During Q4 period, including the 4 months non-cost extension, main focus was on feedback collection, user engagement analysis and business model considerations and evaluations.