



TRusted, Citizen - LEA collAboratlOn
over SOcial Networks

01

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<http://trillion-project.eng.it/>



Editorial



Welcome to the first TRILLION newsletter. The purpose of the project is to build an open, flexible, secure and resilient socio-technical platform to foster effective communication and collaboration between citizens and law enforcement officers.

The TRILLION project is implemented in 3 years, and since we are approaching to the last year of the project we would like to report about the most important milestones reached so far.

During the **1st year of the project**, community policing emphasis was given on carefully studying the *human aspects*. For this, through the early involvement of end users and stakeholders, *community policing* was analysed from different points of view (sociological, technical, legal and ethical) in order to start from a solid baseline for the development of TRILLION. Approaches to technical development were also discussed in parallel to the investigation of best practices globally, while a plan for the project dissemination was compiled.

During the **2nd year of the project**, effort has shifted to the design and implementation of TRILLION components, still considering the active involvement of end users and stakeholders, in order to validate the design and implementation, but also to get ideas for extensions or possible improvements. Proceeding towards the delivery of an integrated platform, effort was put in the finalisation of TRILLION architecture, while the implementation of the different modules and components has been supported through early evaluation using mock-up sessions and early prototype testing. The results have been quite rewarding, allowing the platform implementation to proceed not only according to plan, but also to extend the foreseen capabilities through the inclusion of wearable computing capabilities.

Entering the **3rd and final year of the project**, following a successful path towards implementation and integration, effort will be out in the evaluation of the final results. For this, all planned events for supporting a comprehensive evaluation by end users will be pursued, in order to collect analyse, and document the testing results, so that they can

be taken under consideration towards the final implementation. The final prototypes of the work in the project will be produced giving emphasis on the reusability of solutions, so as to maximise the impact of project's results.

A **broad community of users** has been involved in the context of the project, with different levels of participation. They have evaluated the TRILLION platform and validated that it complies with their operational requirements - check out section on the third page of this issue of the newsletter.

To maximise the **impact of the project**, apart from the planned evaluation plan already defined even during the proposal phase, efforts have already started towards the identification, of exploitable results, while collaboration with other projects focussing on community policing or interested in using TRILLION results for privacy protected/citizen based reporting have already started and will be intensified, with TRILLION playing a key role in clustering with leading clustering activities.

TRILLION in a nutshell

13

partners from

8

countries

delivering 1 integrated platform

tested across 5 locations

involving 11 users



Involving the end-users

The active involvement of the end-users, citizens and LEAs, from the start of the project activities and the adoption of a bottom-up approach is of utmost importance: both for TRILLION, as the end-users are the ones who can provide input from the operational perspective; and for the end-users, who will be the main beneficiaries of the services implemented in the context of the project.

The participatory approach is at the heart of the TRILLION implementation where citizens, who are increasingly more connected via mobile devices are involved in testing the applications provided by TRILLION.

But involving end users in the definition of the requirements and use cases is not enough.

The delivery of a *participatory culture* enabling the full acceptance and adoption of the TRILLION Platform is also in the project mandate. The solution must be used by citizens. It therefore has to be made as attractive and easy to use as possible by ALL citizens and not just by digital experts.

In order to do this, we have **involved users from the design phase**: users must be motivated and guided to adopt such a solution. We are addressing this challenge with the involvement of the end users through the End users' kick off meetings and through the organisation of a series of **Serious Games**.

TRILLION End users' meetings

TRILLION Kick-Off meeting was held on the 3rd December of 2015 at Engineering offices in Eindhoven–Netherlands. During the kick off meeting an introduction to TRILLION project as well as the challenges and opportunities of the project were presented. Also, the representatives from all partners participated at a round table discussing about the role of end users throughout the project.

End-user's second meeting was held on the 17th-18th March of 2016 at Lecce, Italy. During the meeting a presentation, discussion and refine of the use cases to be tested in TRILLION took place. Also, the Lecce operational environment in which TRILLION will be deployed was presented and the end users were involved in TRILLION activities. Finally, the next steps for the users' participation across the TRILLION activities were defined.

TRILLION third end user meeting was held on the 16th June of 2016 at London, UK. The objectives of the meeting were a) the presentation, discussion and refinement of the use cases to be tested in TRILLION, b) the involvement of the end users in TRILLION activities and c) the definition of the next steps for the users' participation across the TRILLION Work Packages.

Finally, the fourth TRILLION's end user meeting was held on the 19th May of 2017 in Eindhoven, Netherlands. The main objectives of this meeting were: a) the review



of the status of the prototypes and the integration for pilot α , b) the definition of the plan for future improvements of each prototype and the integration plan for pilot β , c) the checking of the plan for collecting feedback from users in order to address the improvements suggested by them and d) the discussion about the test and validation of pilot α by end-users (plan, questionnaires, etc.).

TRILLION Serious Games

As integrated part of the TRILLION project there are 5 interactive checkpoints (organized through testpanels) where endusers are asked for feedback and user guidance to the TRILLION developers. The very first moment was the Mockups validation and test of the initial TRILLION app user interface.

This was organized at 5 test locations in October and November 2016 subsequently in Eindhoven, York, Ancona, Lecce and Lisbon). The Mockups were also tested by students from MIUN (Sweden) and VACCINE (USA).

In May (Eindhoven), June (Lisbon) and July (Ancona and Lecce) TRILLION organized Serious gaming event for LEA's and citizens. The Serious game for LEA's where attended by 43 Law Enforcement Officers where organized around a scenario 'One day in the life of and Police officer'. It was presented as an simulation training. The session was concluded with an open discussion about TRILLION setup, goals and ambition focusing on the way Community Policing should/could be organized and supported



York



Lecce

Citizen- representatives

Vaccine

50 students

MIUN

40 students

SMART Salento Community

100 citizens

FloodVolunteers

200 citizens

City of Eindhoven

100 citizens

Stratumseind

150 citizens

LEA representatives

Policía Judiciária

10 police officers

Municipality of Lecce

20 police officers

Vigili del Fuoco

20 police officers

RTR

10 LEAs people

Vaccine

100 first responders

Main TRILLION results



[cont. Involving the end-users]

by technological tools/apps. The serious games for the citizens at the 4 test sites the TRILLION team setup a booth with beach flags in the streets of the respective cities. In Lisbon we used the campus of the Portuguese Police School. In total we had 112 participating citizens. The discussions and questionnaires supplied valuable input for the TRILLION development teams.

Who are the end users in TRILLION

The TRILLION project has started building a strong community of end-users guiding the project as it develops and helping to ensure that the final product has genuine value and practical application to both Law Enforcement Agencies and Citizens. Through direct partnership, through supported third parties and through their own funding, TRILLION involves 13 different user groups.



Main TRILLION Results

During the first two years of TRILLION project, we have focused on the definition of the architecture of TRILLION's platform and on its evaluation, performed through the first pilot phase. The abstracts of the corresponding deliverables, available on the TRILLION website (<http://trillion-project.eng.it/>), offer a clear picture of the project's achievements.

At management level, work has been performed and monitored through a complete and efficient operational methodology consisting of a set of management rules and guidelines, such as the use of a "Compliance checklist" for deliverables, used to ensure the quality of each delivered report document and prototype. Each produced result has been carefully checked for compliance with security, privacy, legal, ethical and usability standards.

Since **engagement of the end users and stakeholders** has been in the core of the projects implementation plan, a special Work Package (WP2) has been serving this goal, pursuing the engagement of users in the requirements phase and the definition of realistic use cases and scenario. The first two years have been very productive, allowing the set up of a **strong User Community**.

An extensive study of **best practices in community policing** based on extensive literature research, the identification of the sociological challenges and requirements faced by TRILLION, were produced, and the results of end user involvement have been combined to produce TRILLION's system specifications expressed in terms of functional and non-functional requirements. **Legal issues** arising with the usage of TRILLION have been defined, while user scenarios aimed at exploring and communicating the likely actions of users when interacting with the system have been clearly defined and reported,

providing significant inputs for the preparation of pilots α and β , as well as for the testing sessions in the Netherlands, Portugal and Italy.

The design and validation approach of TRILLION's project were thoroughly described at the third Work Package (WP3) of the projects, which acts as a bridge between the requirements and use cases identification and the implementation work. In this context, the trust dimensions, both from the process and operational viewpoints and from the implementation concept have been studied. The result is in-depth survey of information security threats related to the confidentiality, integrity and availability of information stored and transmitted through the TRILLION platform (including Cyber trustworthiness aspects), together with a report on existing countermeasures applicable when such an information security breach is positively detected. All the above work led to the definition of **TRILLION's architecture** first edition.

Following the completion of specification and architecture definition, the design and development of a set of infrastructural technologies that cover the entire data analytics cycle, from low-level data extraction to value-added information reporting has followed. A special Work Package (WP4) has been planned for this, in the context of which, the description of motivations and methodological and technical approaches adopted for data retrieval from web sources, reports on state of the art on information filtering and classification methodologies relevant to the TRILLION goals, and an overview of techniques used to enrich profiles within the system and the operational scenarios in order to increase trustworthiness and achieve an optimal level of community policing have been produced. At practical level, the first prototypes of the **Source Integration Framework (SIF)**, the TRILLION profiler, and the spatial context awareness and data analytics prototype have been made available featuring geo-localisation of information gathered, and the extraction of spatial context awareness.

Since TRILLION platform involves the combined use of both desktop and personal mobile devices, in a way which can ubiquitously integrate data from heterogeneous sources, a special Work Package (WP5) has been devoted to the definition and implementation of the corresponding apps and services. During the first two years of the project the definition, analysis implementation and proposition of TRILLION engagement techniques and tools for citizens, has been completed, leading to development of a game for training LEOs and a game based platform aiming at training citizens and building awareness over the benefits of Community Policing. In parallel, the theoretical foundation for developing a solution for decision-makers to analyse the data from multiple perspectives and to validate the data according to pre-defined business rules has been made available. The completion of work in this WP has resulted in the implementation of prototypes for citizens and LEAs, which has been followed by demonstrations in relation to the meta-information and functionalities implemented to support TRILLION analytical capabilities.

The use of mockups of the TRILLION web, mobile apps, combined with the implementation and demonstration of early prototypes for mobile and wearable applications have been planned and executed, as part of the early assessment and evaluation of the design and implementation work towards the provision of the project's Data Integration Framework, as described in WP6. The results have been quite supporting towards the improvement of design and increase of implementation effectiveness.

In the course of familiarizing the users with the use of TRILLION apps and get early feedback on the prototypes implemented, serious games involving citizens and LEAs in separate training sessions have been performed. This work performed in the context of WP7 will continue in the third year of the project providing valuable input for the final implementation.

Finally, during the first two years of the project the TRILLION consortium has established the dissemination and exploitation strategy, proceeding towards its implementation through the TRILLION's public website and presence in Social Media, organization of game training and awareness events in the target locations and participation in the co-organisation of workshops and events where the TRILLION results have been reported. The above actions have been closely following the dissemination plan defined in the corresponding Workpackage 8 of the project. Starting from the encouraging results of both the dissemination work and the implementation outcomes, the initiation of **clustering activities with other projects on community policing**, with TRILLION being among the most active projects has started, expecting to produce fertile ground for exchange of views, demonstration of results and possible opportunities for collaboration and re-use of knowledge.



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Stay tuned!

 <http://trillion-project.eng.it/>

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