Multi-layered Security Technologies

for hyper-connected smart cities

EU&JP Collaboration

1.   M-Sec Partner's Experience

For some partners it was the first time to be part in a collaborative project between EU&JP. For others, such as ICCS, CEA, KEIO, NTTE and NII were already involved in other projects such BigClout Project (a platform focusing on Smart City applications that included distributed intelligence with edge computing principles, big data analytics capability,..).

Overall, partners have learnt a lot from collaborating on a human level (finding common hours for teleconferences was one of the hardships due to the time-difference), a technological level (e.g., learning about innovative solutions in Japanese Smart Cities), and a policies level (e.g., getting to know about Japan's Act on Protection of Personal Information – APPI, the Japanese GDPR).

It was very rewarding to work alongside new partners and get in touch with new cultures. It served definitely to gain cultural knowledge and proximity.

Generally, it was not easy to find a pragmatic scenario reflecting real stakeholders' needs and enabled by applying research outcomes, but the consortium successfully found it through a number of discussions with partners and related stakeholders thanks to the diversity in terms the cooperation with different partners, different capacities, and different cultures (European and Japanese) in all the project stages. It was a great opportunity to learn in both technical and non-technical areas.

EU&JP partnership was quite unique in that we faced cultural difference of citizens in different countries via the use of software. Just regarding privacy issue, EU and JP have different laws, the ratio between Android vs iOS smartphones is opposite, and citizens' interests to real world things are different. Such difference had to be affected to the design and implementation of the software. Without this partnership, we could have not had such the experience.

In the future, it will also be possible to collaborate with the organizations that participated in this project and conduct other projects with them or with partners that would like to continue with the technical and commercial development of the M-Sec solution thanks to the strong relationship with the partners and stakeholders, which was achieved by this project.

2.   M-Sec Main Results EU&JP

Thanks to EU&JP collaboration, the M-Sec project has counted with a strong partnership of leading European and Japanese universities and research centers as well as companies in the area of Big Data, IoT, Cloud Computing, Blockchains that had an extensive experience in smart city related projects and that have made

possible to research and develop a framework that provides end to end security in the smart city IoT ecosystem.

The M-Sec project had also two cities fully committed to challenge their smart city needs by using M-Sec results; Santander and Fujisawa. Both cities have evaluated M-Sec infrastructure and show case its outcomes in a real life environment, in order to demonstrate the opportunities that project results as an important first step towards a wider adoption of the project multi-layer security concepts, both within the smart cities and the wider industry.

Extensive study regarding GDPR and APPI based on the adequacy agreement of January 23rd, 2019. For that common interfaces were developed to be compliance with both regulations. The consortium has made available all information which could be beneficial to EU or JP companies wishing to develop business or implement innovative ideas in Europe, Japan or in a crossborder way.

3.   M-Sec Crossborder Pilots Experience

From a data protection point of view, the fact that an app developed in Japan is used in Europe has been a major challenge and additional work, which is explained in the section on 'Data protection policies and processes'. This barrier has been overcome with the close collaboration between Keio University, developers of the SmileCityReport app, Santander City Council, through its DPO, and CEA & NTTDMC as privacy officers of the M-Sec project.

From a technological point of view, developing a robust and stable enough app for the iOS and Android platforms, which are predominant ones in Japan and Europe respectively, has been very tricky considering the available resources. Despite the efforts of Keio University to develop the app and Santander City Council to provide its support in testing, improving and translating it, the latest version was not robust enough to open it to a wider audience. However, both cities have had the opportunity to test it in a closer environment involving what we call user friends, people with previous experience in other research projects.

From a language point of view, the idea of exchanging posts, including pictures and text, between the two continents with the aim of fostering closeness between both cities has encountered a language limitation. In both cities, using English as the common language would have been a barrier to attracting participants to the pilot. Therefore, a Spanish-Japanese and vice versa translation functionality was required.

From a cultural point of view, defining the common themes of the both cities has allowed us to identify not only the main differences already known, but also the similarities between cities belonging to such contrasting cultures.