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Deliverable WP6.5 Implementation of risk communication to pedestrians (V2P)

Work package: WP6 - V-2-X Communication

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Document Control

This deliverable is the responsibility of the Work Package Leader. It is subject to internal review and formal authorisation procedures in line with ISO 9001 international quality standard procedures.

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Introduction

The purpose of this deliverable is to act a companion to the demonstrator “Implementation of risk communication to pedestrians (V2P)” that has been completed within the TransSec project and will give a brief introduction to the demonstrator.

In Figure 1 we can see a simple overview of the various communications terminologies that constitute Vehicle to Everything (V2X) communications. In this we can also see that Vehicle to Pedestrian (V2P) consists of the communications that originates in the vehicle (in this case a truck) and is targeted directly to the pedestrians themselves.

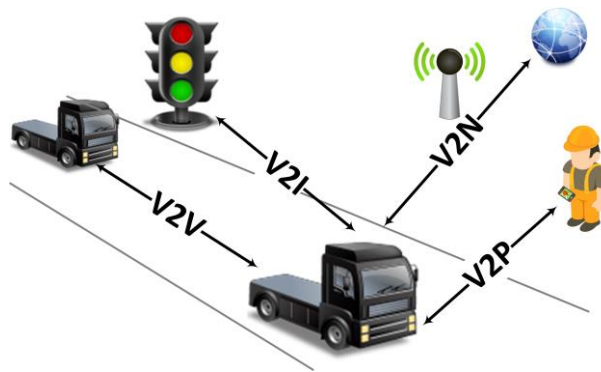


Figure 1 Simple Illustration of V2X Communications

Within the TransSec project WP6 has been tasked with the implementation of this demonstrator (amongst other demonstrators) and have devised several methods and channels of disseminating the risk event to pedestrians based on research carried out on current standards and methodologies in place globally.

This demonstrator consists of two main features:

- Notification to static infrastructure
- Notification to dynamic entities

For the static infrastructure, the TransSec risk notification includes the static elements used in cities that can be utilised as an early warning system for pedestrians. These include digital signage and audio warning that may be present in public areas, parks, markets and plazas. As the locations of the risk events are known the digital signage can be used to inform the pedestrian population of the risk and provide relevant information to those in the area on how to evacuate and seek safety.

Notification to dynamic entities takes the form of informing pedestrians directly via a mobile application that is capable of receiving messages from the TransSec cloud services. In order to deliver this demonstrator significant effort has been expended in the area of a future deliverable that covers Vehicle to Infrastructure communications (D6.6 - V2I). The V2I components are required in order to facilitate the overall TransSec architecture that support the full suite of V2X communications. This is to say that the V2I components supports the V2P demonstrator which can be seen in Figure 2.

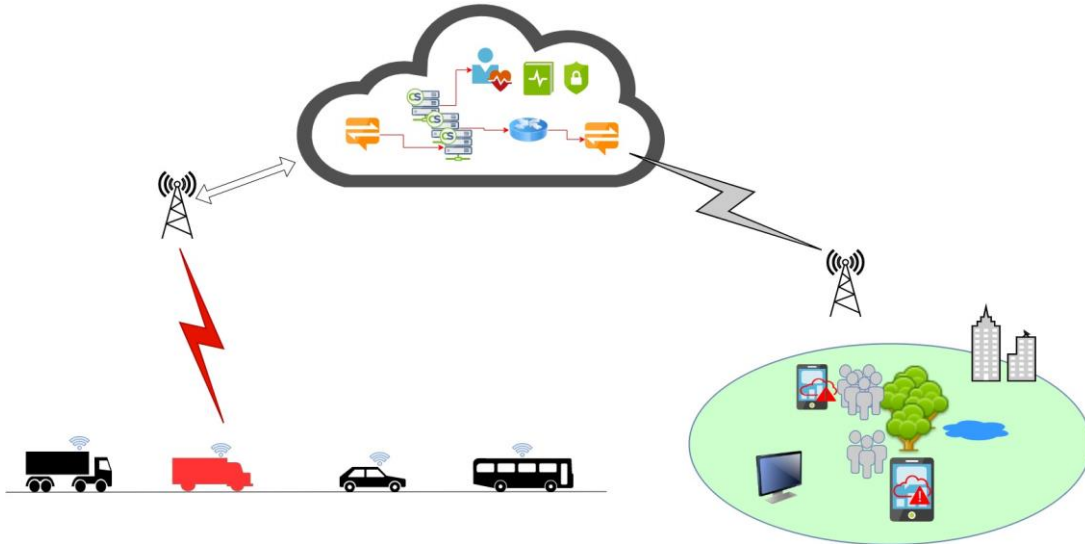


Figure 2 TransSec V2X Concept including V2P

As risk events are detected by the TransSec vehicles the risk level is communicated to the TransSec cloud services via the Road Side Units (RSUs) over hybrid connections that incorporate both cellular and network data traffic. The TransSec web services (running in the cloud) analyses the received risk events and determines the cohort of pedestrians that are to be notified of the risk event and push the notifications to the TransSec mobile application. The TransSec mobile application then informs the user that there is a risk event active, provides the location of the event origin and provides the user with a means of evacuation away from the source of the risk as can be seen in Figure 3.

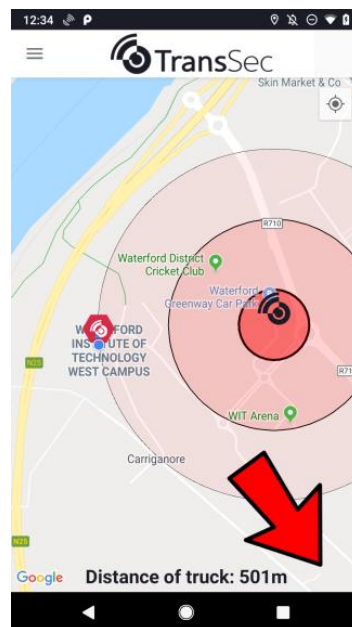


Figure 3 TransSec V2P mobile application with Risk Event Active

Conclusion

This document provides only a brief view into the V2P demonstrator that have been realised out of the work from WP6 as part of the TransSec project. The full demo is available upon request and will be publicly available to view via the projects' dissemination channels.