

D4.1 Models from the field studies and Literature analysis focused on Human Factors implied at Border crossing - Summary

Work package 4 (WP4) aims to analyse the role of Human Factors at border checks within the context of the Smart Border Package revised proposal¹ establishing an Entry/Exit System (EES) and the use of biometric data based on 4 fingerprints and facial image. The generalised use of biometric data opens up the possibility to introduce more automated systems at the borders. Automated systems through e-gates with/without self services kiosks are already spreading all over the world, especially at airports. The Smart Borders Package will definitely encourage the use of automated systems at all borders. In this context, the WP4 of the BODEGA project focuses more particularly on the Human Factors analysis concerned by the introduction of automated systems with different levels of automation at the borders.

D4.1 is made up of two parts. The first section of the deliverable is dedicated to a review of the literature on Human Factors that can be impacted by the introduction of new border control processes and automated systems. The analysis begins by looking at organisational issues through the lens of change management. The focus then shifts to human Factors associated with different activities relative to border check in a context of technological change, such as perception and attention (for identity check). For what concerns risk assessment activities and the whole border control process, the literature related to situation awareness and decision-making is examined. Aspects related to workload, human-machine task allocation and organisational changes due to the introduction of new technological systems are also considered, based on literature related to human-machine task allocation in complex systems and lessons learned from fields such as air traffic control, industrial or nuclear power plants. A specific chapter is devoted to the Human Factors relevant to service work (working with customers).

The second section of the deliverable presents several models mainly regarding border guards' activity. Their aim is to share a global and common view of the border guards' activity at border check in first line. These models based on manual check are used to provide a reference view of the activity of border guards at border check in the context of technological/organisational change. They also support an analysis of possible changes in border guards' activities resulting from the introduction of automated systems or new technologies based on the use of biometric systems. A performance model, an organizational model and a cognitive activity model are also introduced.

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¹ [http://www.europarl.europa.eu/legislative-train/theme-towards-a-new-policy-on-migration/file-entryexit-system-\(2016-smart-borders-package\)](http://www.europarl.europa.eu/legislative-train/theme-towards-a-new-policy-on-migration/file-entryexit-system-(2016-smart-borders-package))



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Month of delivery: June 2017

