

## Deliverable D4.2 Requirements for future smarter borders focusing on human factors - Summary

The deliverable explores the human factor aspects and requirements related to the EU border management system, its main actors and tasks. Existing challenges in both manual and automated border controls, which were observed during field studies and desk-research are presented, along with recommendations on how to overcome such challenges. While investigating and analysing the human factor aspects of the future smart borders, a special focus is given to the task-allocation between humans and technologies. Moreover, important aspects of border control tasks that are related to job-satisfaction, stress and motivation of border guards are highlighted

Despite the provisional plan to focus on the human factors requirements after conducting field studies and gathering a deeper understanding on the complexities of the EU border management system and on the intrinsic differences between border crossing points, it became clear that to present new requirements would not benefit the system. The compulsory nature of requirements would require homogeneous border control practices and infrastructures across the EU, in order to be applicable and bring additional value. Therefore, the flexible and non-binding nature of recommendations seemed to be more effective to bring meaningful improvements for the human factors in the current border control system and future smart borders.

BODEGA Human Factors Recommendations addresses relevant aspects and actions that should be taken into consideration for the improvement of border control performance and the well-being of border guards. The recommendations aim to enhance situation awareness, balance workload (under-load, over-load), prevent monotony and fatigue and instead support vigilance, attention and concentration, minimise external workload (stress), maintain motivation, support trust on technology, colleagues and organisation and maintain and develop skills and knowledge.

The digitalisation is to change the local job culture of border guards and change their perception, behaviour, values. When we analyse Human Factors aspects, we cannot set aside the organizational aspects. Moreover, we have to consider the organization as a socio-technical system that is to say as a whole system inside which the organizational and the technical aspects is tightly linked. In addition to risk assessment made on the spot, the border authorities will use the information and risk analysis available for their risk assessment purposes prior to the border crossing. The introduction of the smart borders should not impair the expertise of the border guards in manual check.

One significant change in BG's work, due to the self-service checks, is the reduction of direct contact with travellers. There is a shift in the activity from the traveller view side and different traveller groups must be carefully considered and the direct communication with travellers, including questioning travellers. As interacting with passengers is one of the main values for the majority of border guards, the recommendations concentrate on this change issue. The infrastructure imposes strong constraints on border control organisation including limited space and large flow of passengers. Recommendations related to task allocation required deep analysis of work tasks and the activities as they are concretely performed on the field,



understanding the work requirements and employees' needs, as well as an evaluation of activities of human and technology guaranteed best suited recommendations.

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