



Humanitarian and Service Logistics (HumSerLog) Research Group



Objectives and Scope – Humanitarian and Service Logistics Research Group (HumSerLog) aims to advance in the fields of emergency response and disaster relief, humanitarian and service logistics. Our research group consists of industrial engineering faculty members from Kadir Has University in Istanbul, Turkey.

Fields of Interest and Expertise – We mainly focus on emergency response and disaster relief, humanitarian and service logistics. Emergency situations, both man-made and natural, require an effective emergency management involving complex decisions. The complexity of emergency management decisions lies mostly in the existence of at least partially conflicting, various objectives and goals concerning evacuation and transportation time, risk, cost, travel distance, etc. This challenge is intensified by the need to take into consideration various possible scenarios under uncertainties. We aim to develop decision making models for the planning, mitigation and response phases of emergency management. In these models, we aim to include multiple, perhaps competing objectives such as evacuating or transporting on paths with shortest evacuation or transportation time, following paths that pass through the maximum number of supply centers, and following paths that are less damaged or risky, taking into consideration uncertainties and stochastic nature of the process. From a methodological perspective, we utilize stochastic modeling, multi-objective decision making and heuristics/ metaheuristics for developing applicable solutions for humanitarian and service logistics problems.

Our Experience – Our research group consists of successful academicians published in respected journals in the areas of emergency response and disaster relief, multi-criteria decision making, metaheuristics, logistics and network optimization.

Previous experience of the research group includes hospital emergency evacuation research in collaboration with the health care industry as part of a project funded by the National Science Foundation (NSF) in the U.S.; information technology research on data fusion and mining for climate studies as part of “EPP2006: NOAA Interdisciplinary Scientific Environmental Technology (ISET)” Cooperative Education and Research Center; and an interdisciplinary project in the area of infrastructure restoration funded by the U.S. Department of Homeland Security.

Our Core Competencies are information, education and transfer of knowledge, we are a reliable partner for EU project development and implementation, and a focused team with excellent organizational skills as well as significant academic and institutional experience.

Our Role as a Partner in H2020 Projects – Our team completed several research projects successfully in the areas of emergency response, disaster management, logistics, data mining and data fusion funded by international funding agencies. In a EU project, we can conduct fundamental and applied research, and take an active role in project development, design, testing, piloting, validation, education, training, and dissemination through conferences, workshops and meetings. Our university has various manufacturing and testing labs equipped with modern hardware and software. We have Fablab, Urban Engineering Lab and incubation center to commercialize project outcomes. Our Urban Engineering Laboratory was funded by the IBM Shared University Research Award. IBM secured advanced hardware and software are used for coursework, research and development of solutions related to urban problems. We have well established undergraduate and graduate programs to educate our students. We disseminate our project results through public meetings and conferences.

Topics of Interest – We are particularly interested in finding partners in humanitarian and service logistics related H2020 calls: 1) SU-DRS03-2018-2019-2020: Pre-normative research and demonstration for disaster-resilient societies 2) SU-DRS02-2018-2019-2020: Technologies for first responders 3) SU-DRS01-2018-2019-2020: Human factors, and social, societal, and organizational aspects for disaster-resilient societies 4) LC-GV-09-2020: Setting up a common European research and innovation strategy for the future of road transport.

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