

Design & Technology



Challenge #1 - Car driving safety

Reducing the accident risks when driving is one of the current world-wide challenges.

Distractions, fatigue, stress affect human reaction time to any external stimuli. The alteration of the reaction time can cause accident and death. Handheld devices can provide assistive solutions to improve the driver attentions and monitor the driver activities. Software and hardware solutions (special focus on human-machine interfaces), use of intelligent safety systems and integrated safety can help in this challenge.

Challenge #2 - Simulation of crisis management activities

Computer-aided simulations can help to prepare a city for natural disasters. These simulations can improve evacuation techniques, traffic control, water and electric

network control estimating the behavior of large mass of people. This challenge aims at improving decision-making capabilities through an integrated suite of modeling and analysis tools providing insights into the collective behavior of the whole organization in response to crisis scenarios.

Challenge #3 - Human identification on-the-fly

The current large-scale identification systems installed in airports, ports and checkpoint Country borders need a constant human supervision. Operators and specialized personnel must monitor these identification systems. Most of the time, this becomes a hassle for the travelers. Look for novel identification systems able to recognize people while crossing a gate with no need of stopping them. RFID, biometrics and other technologies can be used to solve this challenge.

Challenge #4 - Automatic people counting

Automatic counting of people, entering or exiting a region of interest, is very important for both business and security applications. Shopping malls and supermarkets can use this information to identify hourly traffic patterns, to optimize labor scheduling, and to monitor the effectiveness of promotional events. The counting of people is also very important for security purposes. It helps assign accurate number of security personnel at key places, and design efficient evacuation plans. Automatic detection of abnormal

behavior and threats in crowded spaces is welcome in this challenge.

Challenge #5 - Food safety

Food is a very important part of our life. Its quality and processing can influence our health. Being able to know exactly where the food comes from is a huge challenge. Suggest and demonstrate a tracking mechanism that provide access to the life cycle of a product from inception to ingestion.

Challenge #6 - Intelligent parental control

From smartphones to tablet computers, to the hundreds of channels and thousands of on-demand video offerings on TV, consumers have never had more options for how to spend their time. For parents, however, the amount of content that is out there can often lead to anxiety – about what their children watch on TV, what websites they are visiting and who they are talking to from behind all those electronic screens. So what can a concerned parent do?

Challenge #7 - B2B platform for international businesses.

B2B companies around the world need a way to find potential customers, track existing customers, explore companies by industry and get basic information about a company such as industry, location, and contact info. Several databases already exist, but they are far from being

complete and not user-friendly. Companies in China, Mexico, Russia, Brazil, US are struggling through unstructured websites in order to find information about potential customers.

Suggest and demonstrate a technology, a system or a platform that can improve the search and the acquisition of potential customers in other geographical areas.