AERIAL BIOMETRIC SCANNING AND CROWD ANALYSIS

Crowded areas are open to confluence and manipulation. Largely because it is extremely difficult to identify perpetrators, potential or known threats in a crowd. Crowds provide anonimity to those with malicious intents, and, as a result, crowded events may give way to violence, theft, and extortions.
Concerts, festivals and rally venues, stadiums, civil demonstrations, national holiday celebrations, opening ceremonies with intense participation are just a few of countless instances where it is very difficult to ensure security. Authorities, who want to ensure the safety of the participants in crowded organizations, sometimes use methods such as increasing the number of security personnel. However, an increase in manpower mostly prove inefficient in the face of massive crowds. Performing ID checks manually, checking for banned objects or illegal substances on hundreds or even thousands of people is no task that could be tackled by multiplying the number of security personnel.

Our UAV-based Aerial Biometric Scanning and Crowd Analysis System, backed by Papilon's superior facial recognition algorithm, consists of a commercially available, small UAV equipped with long-range cameras and Papilon's real-time facial recognition software, SnapFace. Our high-tech facial recognition software SnapFace instantly captures all faces in a crowd simultaneously and sends them for query. To get maximum efficiency from the system, the customers must use high-end and quality hardware. Granted that there is a distance of fifty pixels between two eyes, in other words, when sufficient camera equipment is used, the Papilon Aerial Biometric Scanning and Crowd Analysis System can perform identifications regardless of the UAV's height or the number of people in the crowd. In addition, depending on the quality and processing power of the hardware used for the queries, the system can capture and query an unlimited number of human faces simultaneously in a single frame.

The system works in integration with Papilon's central biometric data management and storage systems Polyface or APFIS and instantly compares facial images captured with the UAV's camera with those held in the systems' datasets. The system compares the photographs of citizens taken for official procedures and the real time footage from the vehicular camera. The system then looks for matches and authenticates the identity of the subject.

The system can also be used to track suspects fleeing and hiding from the security forces or victims in cases of abduction, and people with disabilities and memory-related diseases such as Alzheimer's and dementia.
With Papilon's Aerial Biometric Scanning and Crowd Analysis technology, people who have the intent to ignite violence or act manipulatively and pose threat to the well-being of others in political rallies, civil demonstrations, and strike gatherings can be identified and duly treated.

The system can also be used to ensure the safety of guests during important political and diplomatic visits without drawing public concern, causing panic, or disrupting the daily life.
Alternatively, the system can be equipped with our motion tracking and skeleton analysis software, NuiTrack, our emotion, reaction, and demographic analysis system, SeeMetrix, or thermal cameras.
Thanks to Nuitrack's ability to recognize and classify more than one hundred actions, people who exhibit violent behavior within the crowd can be identified immediately and the people in the crowd or in close range to the crowd can be protected. Nuitrack can recognize more than a hundred actions, such as hitting, yelling, pushing, or grabbing an object. With Seemetrix, it is possible to conduct age and gender analysis on the crowd to determine the ratio of vulnerable people such as the elderly or children, therefore assign a risk rate to the crowd and adjust security measures accordingly. Thanks to Seemetrix, the behavioral tendencies and the general temperament of the crowd can be determined and the possibility turmoil or violence can be anticipated. Seemetrix also recognizes emotions such as anger and hatred on people's faces, giving security forces tips on who can ignite violence or anxiety within the crowd. As a result of the system's cumulative power, security in crowded events and gatherings can be ensured and civil freedoms can be cherished..