Technological Solutions Curbing COVID19 Contagion

Social distancing, quarantine, and isolation are the most effective measures taken to curb the spread of the COVID-19 virus. To be effective, such measures require the cooperation and active compliance of the public. By leveraging smartphones, authorities can verify individuals' compliance required to self-quarantine and enforce strict measures against those who violate them. Authorities may implement what is known as contact-tracing to track coronavirus patients' location and proximity, designate infected locations or events, and instruct citizens to take specific precautions.

Delivering a wealth of information on the user's location, proximity to other entities and association with others, mobile phones, and social media provide useful health authorities tools. For example, by monitoring mobile phones or digital bracelets, Septier's Quarantine Location Tracker can locate any cellular device position at any given time. The associated Crowd Controller monitors illegal public gatherings in quarantine zones, targets messages to violators and warn the participants, and notifies authorities of any breaches in the isolated area. In addition to real-time tracking, the system also uses advanced analytics to predict locations of future gatherings. The CoronAlert Application developed by Septier helps maintain quarantine restrictions and robust communication channels to the public and, by doing so, curbs the spread of the virus.

Authorities may check in with quarantined individuals and may use voice analytics to assess their emotional state. Voice analytics detect genuine emotions. Nemesysco's patented Layered Voice Analysis (LVA) measures and reveals the genuine emotions during voice-based communications, enabling personnel at call centers to determine whether people are complying with authorities' guidelines. The system will call the people in quarantine and ask relevant questions about the situation. Once the conversation ends, the system indicates whether the person called upon was truthful in their self-testimony and will determine if there is a low, medium, or high risk indicated in the subject's answers.

Smart Forms developed by Suspect Detection Systems Ltd. (SDS), provides a similar verification for declarations people make when filling online forms. Smart Forms

technology utilizes the P300 and Guilty Knowledge (GKT) methodology with an AI algorithm to determine if the response is true or false. The system enables authorities to check the validity of self-reporting of individuals' health conditions or screen travelers before entering or screening travelers before entering the country.

The Encounter app, developed by TrekAce, can operate on mobile phones or non-removal digital bracelets worn by individuals in quarantine. The company utilizes technology based on its unique military application that identifies the proximity between sister apps. As a mobile phone app, TrekAce works in the background, sensing, and alerting contact or proximity to other phones. The system differentiates between quarantined, diagnosed, or super-spreaders - and alerts users and authorities of dangerous encounters in real-time, and immediately closes infection cycles. Since such encounters are identified in real-time, the Ministry of Health is notified immediately, thus providing authorities with valuable data for epidemiological investigations.

The Quarantine Violations Supervisor System (QVS), developed by Trilogical, enables authorities to supervise, govern, and maintain quarantine restrictions during a pandemic. The system monitors each quarantined civilian's location and alerts authorities if an individual leaves the quarantine perimeters. QVS also communicates directly with the person to ensure compliance or assist in an emergency. Compliant individuals receive mobile phone monitoring apps or wear a GPS tracker during quarantine for monitoring purposes, both in and out-doors. In cases where further quarantine must be enforced, a non-removal GPS tracker bracelet is used. By monitoring these devices, the system can match the person's location at a specific address or, otherwise, tracks the individual's movements and alerts law enforcement.

During a pandemic, it is important to locate infected individuals quickly and isolate them to prevent further contagion. Furthermore, it is critical to obtain information on the individuals' movements before their diagnosis to assist with epidemiological investigations to contain the virus as much as possible. This capability becomes even more essential once a country eases restrictions and all living areas - from business to social activity – return to medium or full capacity.

Wave Guard's Tracer offers accurate, real-time location monitoring and assessment of virus' spread. The solution is fully compliant with privacy and data protection standards. With Tracer, health authorities can retroactively reconstruct infected individuals' locations and detect their infection paths, thus creating a list of potentially infected individuals required to quarantine. The system also monitors the locations of quarantined individuals and generates compliance alerts in real-time. The system can also administer exclusion zones in secure zones, such as in airports, or operational areas in industrial or medical facilities, where unauthorized access is forbidden. Tracer provides the geo-location of phone subscribers around the world without using an app installed on mobile phones. The system's analytic tools assist authorities in understanding the spread of the virus, analyzing heat maps, identifying "patient zero," and integrating with external data sources.

Leveraging Israel's defense industries' extraordinary capabilities, the International Defense Cooperation Directorate (SIBAT), in the Israel Ministry of Defense, provides the gateway for foreign governments and enterprises seeking solutions to address the most pressing challenges posed by the pandemic. SIBAT remains updated about technologies and solutions being developed by Israeli defense industries, large companies, and small or medium enterprises (SME). These new capabilities are adapted to meet the evolving needs and operational requirements expressed by SIBAT's partners in Israel and abroad.