

TAMAR

Noncontact Vitals Screening System

Body Temperature, Heart & Respiratory Rates



General

The new reality of virus pandemics necessitates safeguarding people entering government facilities, businesses, mass transportation, public institutions, sports venues, and hospitals from exposure to contagions. This is critically important to both the economy functioning and containing the spread of disease. Recent breakouts of the coronavirus family such as COVID-19, SARS, EBOLA, MERS and other Influenza viruses have driven the search for technological solutions to prevent spreading. To date, most of the technologies enlisted in the battle against pandemics have focused on checking body temperature. However, these viruses infect the respiratory tract, heart and cardiovascular system and are not always accompanied by a fever.

To meet the challenge of providing more reliable screening in high traffic areas, ELTA has designed a unified, remotely operated system able to accurately test **body temperature, heart and respiratory rates** in a few seconds. By integrating ELTA's field proven radar sensor and a high performance thermal camera together with an intelligent, easy to operate application with Artificial Intelligence (AI), an optimized solution has been achieved - **TAMAR**.



Where Courage Meets Technology

Introduction to TAMAR

TAMAR is a commercial off-the-shelf modular solution that remotely detects, with a very high level of accuracy, persons that may be infected with respiratory-based viruses or other related illnesses. Operated at a distance from the subject, the system quickly and reliably determines whether a risk is posed, displaying a pass/fail green or a red alert in accordance with predetermined thresholds. The display of additional physiological parameters is also available to the operator such as temperature of different body parts (hand, forehead, nose, and mouth), heart and respiratory rates. TAMAR operates as a closed system. Sensor data is not stored or transmitted, alleviating privacy concerns. TAMAR's application was developed with sophisticated AI algorithms. Data collected from the sensors is quickly and automatically computed and displayed without human intervention. The procedure is designed to be quick, automated and simple in order to handle high traffic while maintaining social distancing.

TAMAR's design is equally suited for indoor or outdoor use at airports, train and bus stations, cruise lines, hotel resorts, stadiums, megamalls, military bases, federal buildings, and other large institutions desiring additional layer of protection against persons infected by dangerous and contagious viruses.

TAMAR was designed in accordance with the World Medical Association's Declaration of Helsinki protocol and was successfully field-tested at a large hospital in Israel during the coronavirus pandemic. TAMAR's main sensors are deployed and proven in other applications around the world.

TAMAR Components

The TAMAR solution is portable and can be easily set up within several minutes. The solution comprises:

Civilian 24 GHz Radar Sensor - is a compact lightweight Doppler radar which monitors and measures heart and respiratory rates based on Doppler Effect. The sensor transmits at very low power, complies with CE & FCC and safety standard IEEE C95.1 guaranteeing protection to the subject and operator.

Thermal Camera System - is a COTS thermal imaging camera with Blackbody Automated Calibration Source that separately measures the temperature of different parts of the body.

Operator workstation - hosts the TAMAR application which interfaces to the sensors. The application performs the screening using AI algorithms and manages the solution. The application utilizes open architecture to allow additional systems to be integrated upon request.



Benefits

- Noncontact operation
- Automatic and AI
- Fast results
- Very safe and accurate
- Lightweight & portable
- Easy to operate, no special skills required