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### **THE OCTOPUS KIOSK & HEALTHSCAN TABLET**

TELEMEDICINE – EPIDEMIOLOGY – A.I DATA ANALYTICS - COUNTERFEITED MEDICATIONS -  
MOBILITY - ENERGY INDEPENDENT

My name is Mountaga Keita, inventor and founder of Tulip Industries Ltd, based in Conakry (GUINEA). We manufacture interactive and energy-independent kiosks.

The healthcare sector in Africa is undergoing a tremendous transformation from traditional medicine to a modern and well-structured healthcare system; many African countries are striving to meet the growing demands for quality healthcare services with a universal health coverage for their populations.

Yet, Africa's healthcare industry is characterized by a disparity between private and public sectors, both in terms of facilities and funding; Nearly all technologies in use in Africa's healthcare sector are imported from various countries around the world and costly. Most governments' in Africa are dedicating their energies towards making healthcare more accessible and affordable for the general population of Africa.

Furthermore, the Globalization of the world economies, with mass traffics and trades, make it easy for pandemic outbreaks to reach a global scale, in matters of hours and days. Hence, it becomes a priority for

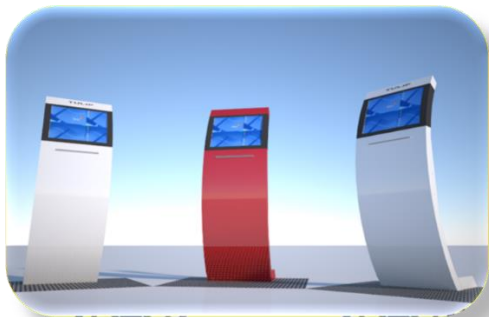
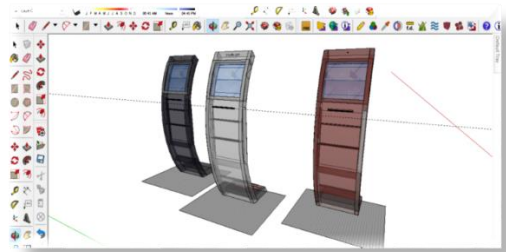
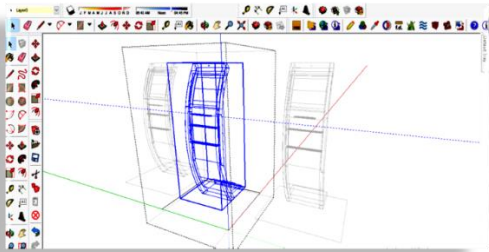


Governments to be self-reliant and battle ready to contain and dodge those pandemic outbreaks within their borders.

TULIP INDUSTRIES, being a green technologies manufacturer, has aligned its vision and mission toward boosting Africa's healthcare industry with our easy to use, affordable and mobile telemedicine solutions.

As a world class innovation company, concerned with the problems of under-equipment in hospitals, the isolation of doctors operating in remote areas, Tulip Industries has designed and manufactured an interactive terminal and a tablet health scanner, ready for telemedicine and unique: the OCTOPUS and the HEALTHSCAN

Our technology makes it possible to literally transport in a regular vehicle these "mobile clinics" into urban pockets of poverty, as well as to remote rural areas nationwide, speed up patient consultations, diagnostics, allowing teleconferences, and data viewing with other medical specialists located elsewhere; The OCTOPUS also prints encrypted medical prescriptions for patents, allowing only pharmacies to decrypt prescriptions, not counterfeit medications markets.



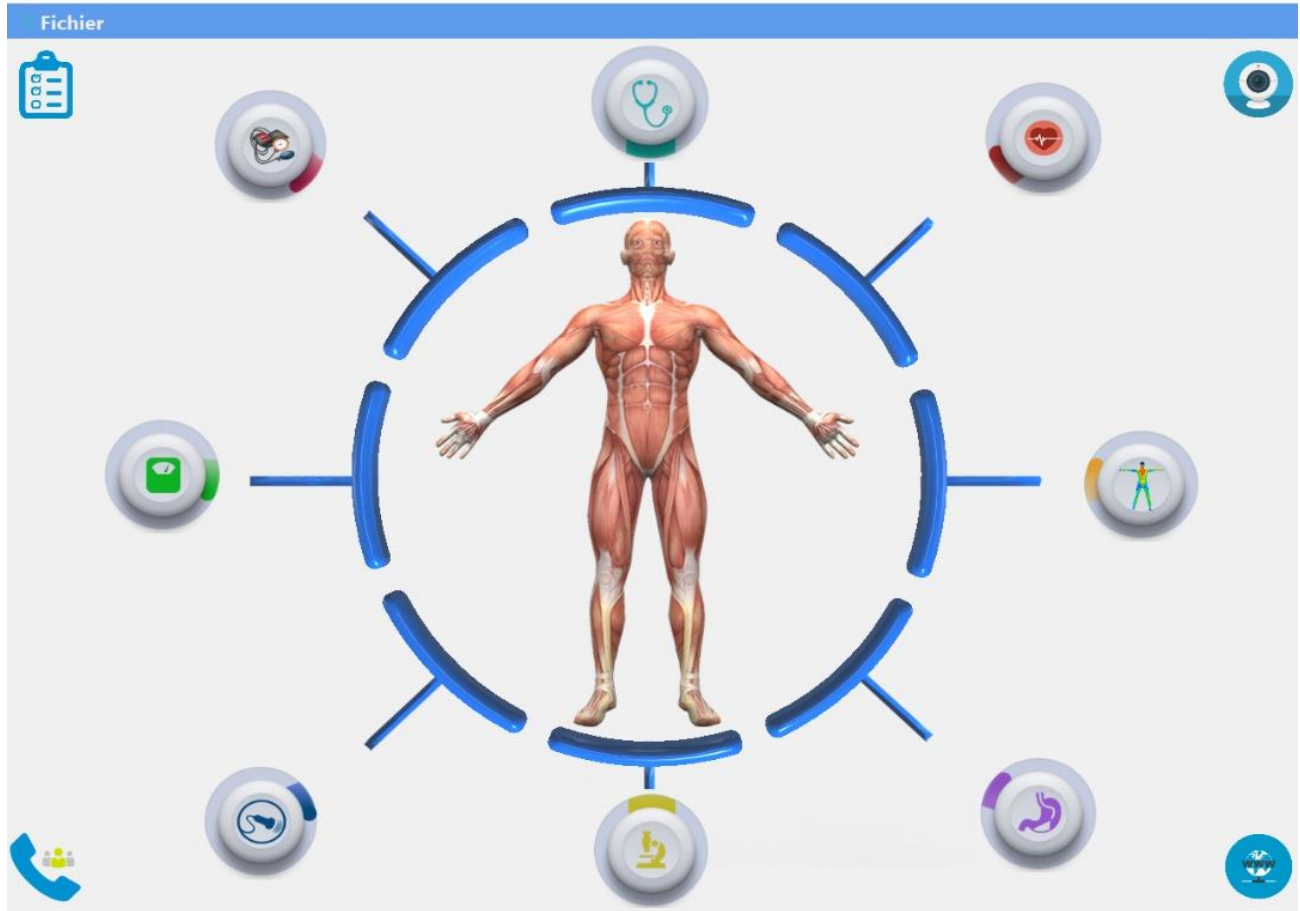
**Designed & Manufactured in Africa by Tulip Industries**





## KIOSK APPLICATION SOFTWARE PLATFORM

Octopuce Medical



The 8 sensors are all controlled using an application software platform created by Tulip Industries, They allow the migration of patients' data into encrypted digital files, ready for future Artificial Intelligence Algorithms.

### **MAIN PATHOLOGIES DETECTABLE BY THE "OCTOPUS" TELEMEDICINE KIOSK**

- **CARDIOLOGY:** Stroke, pulmonary embolism, arterial hypertension, myocardial infarction are pathologies highlighted by the digital stethoscope, pulse oximeter, ultrasound scanner and blood pressure monitor.
- **CANCEROLOGY:** The clues of breast and colon cancer are highlighted respectively by thermography and by the colonoscope, both allowing external and internal auscultation of the human body.



- **PRENATAL AND POSTNATAL HEALTH:** Auscultation of pregnant women and fetuses can be carried out using the digital scale, pulse oximeter, ultrasound scanner and blood pressure monitor.

- **EPIDEMIOLOGY:**

Our technology integrates an updated list of all pathologies and their respective codes as setup by the World Health Organization, for data interoperability and scalability. Doctors have the means now to select a diagnosed disease and thus automatically update the database of the hospital and national epidemic alert agency. The local health Ministry and the *WHO* can monitor and visualize in real-time statistics on all diagnosed diseases area by area nationwide. Moreover, the digitally connected microscope allows a real-time visualization and data sharing of Lab engineers researches with other specialists across the globe, such as the US Center of Disease Control.



## **ADVANTAGES OF THE "OCTOPUS" TELEMEDICINE TERMINAL**

- **E-TRAINING**



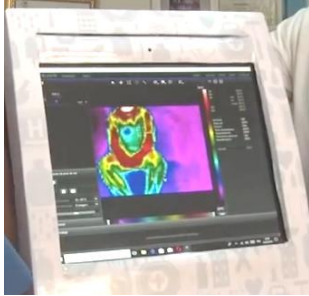
Our telemedicine technology allows a rapid and practical training of medical personnel, without the need for travel by trainers and doctors. General practitioners, specialists and even trainees can obtain teleassistance by more experienced colleagues to examine a patient together, in real time. National and international medical cooperation will thus be able to materialize better through the platform offered by this medical terminal. Financially, the savings will be substantial in terms of travel costs and on the field training logistics. Medical students will also be able to view live video footage of a surgical operations and ask questions to the surgeon's assistant in real-time.

- **INTEGRATED COMMUNICATION PLATFORM**

Our digital communication platform allows content sharing and real-time data exchange between professionals. We use a secured intranet portal to manage meetings between doctors and viewing data from the various sensors embedded in the terminal; our technology offers thorough services in a single visit. The doctor prescribes and prints the prescription from the OCTOPUS terminal, then the pharmacist scans this prescription as well as the medication sold, for perfect traceability of a patient's medical circuit. The paramedics will be provided with a secured all-terrain tablet, and must necessarily scan the patient's ring to access the data. Data are only viewable by registered doctors, pharmacist or approved paramedic.



#### ▪ INTEGRATED MEDICAL EQUIPMENT



The OCTOPUS is an integrated terminal, a one-stop medical service for telemedicine. Various terminal sensors provide biometric data: digital camera, Pulse Oximeter sensor, thermal camera, linear ultrasound scanner and digital microscope allowing direct analysis of samples taken from the patient, their remote viewing by other specialists in real-time. The integration of these specialized options saves time for patients and doctors, but also an indisputable saving in fees for medical visits for the patient.

#### ▪ DESIGN AND MOBILITY



Tulip offers this terminal and sensors in the form of a modular and scalable package, easy to configure for additional medical sensors. Telemedicine hardware and software are thus grouped together in this robust, mobile and energy-efficient terminal. The charging station is equipped with an internal inverter with a capacity of 48h, and with a small solar panel of 50W allowing the permanent use of the charging station in urban and rural areas. The structure of the terminal is antivandal, designed in steel and the touch screen is in shatterproof tempered glass, allowing a durable use of the terminal.

#### ▪ AFFORDABLE CONNECTIVITY

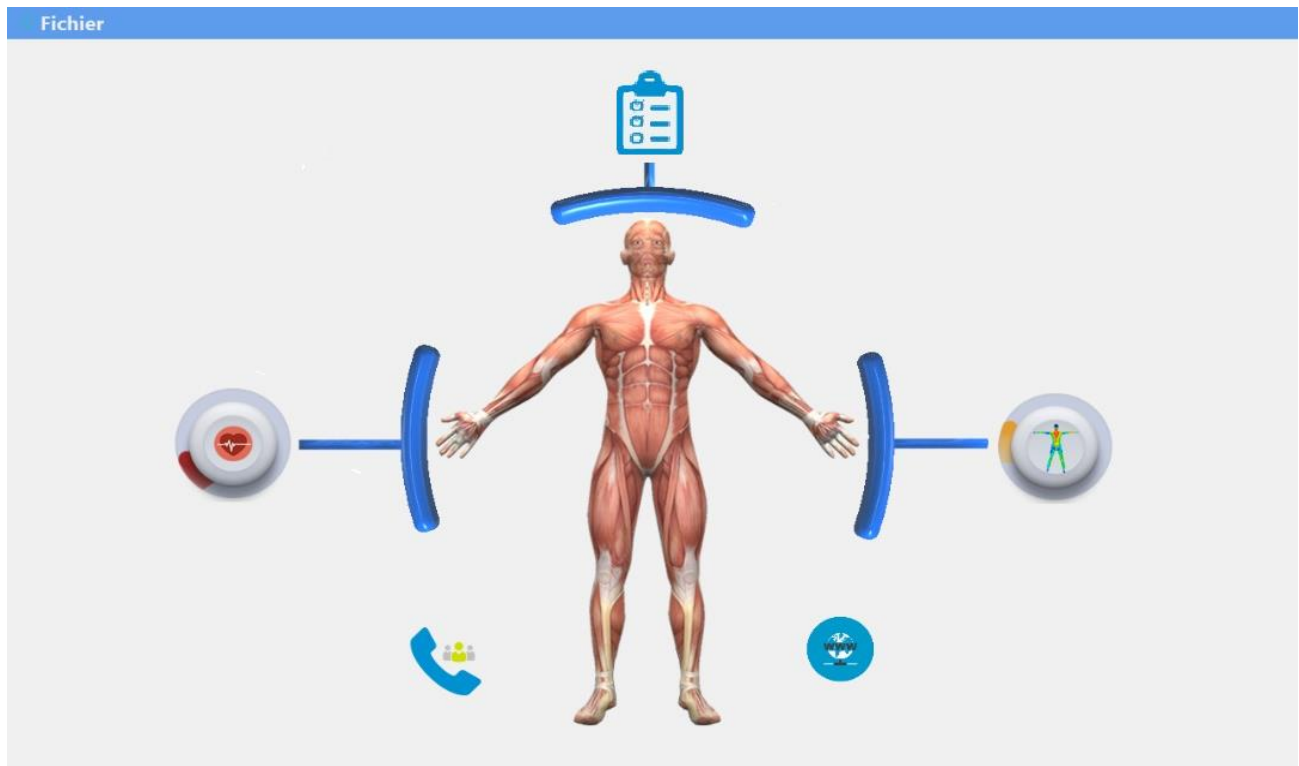
A reliable GSM Wi-Fi / 3G/4G connection is enough to communicate between professionals. No specific connectivity infrastructure or dedicated bandwidth is required to make the terminal functional. A reliable 3G/4G GSM connection is enough to communicate with acceptable quality. With the advent of fiber optic connections, the quality of connectivity will allow a larger college of professionals to communicate by teleconference and view an epidemic case or surgery in real-time.

#### ▪ SUPPORT

Tulip Industries provides remote computer support necessary to maintain any telemedicine program. The patient's RFID rings are also designed and distributed by Tulip Industries to doctors and pharmacists in charge of marketing to the general public. Tulip is also responsible for deploying and maintaining the terminals at all times.



## The HEALTHSCAN TABLET



The tablet uses a thermal camera to scan the body temperature more precisely; the heart rate and O<sup>2</sup> saturation are picked up by the sensors when a finger is scanned to measure the blood flow's oxygen saturation.

The Oxygen saturation is dependent on the alveoli function in the lungs. With a Covid-19 induced pneumonia, Alveoli filled fluids prevent the O<sup>2</sup> from transferring into the blood stream, through capillaries around those alveoli; hence an O<sup>2</sup> level below 90% requires the person to seek medical attention as other organs may be affected by a poor oxygenation of the blood; combined with an abnormal temperature and fast heart rate, those 3 indicators together mean that the person is a health risk.

The indicators help prescreen the healthy patients from the severe cases and help prioritize the access to medical attention before the laboratory tests.

The covid-19 scanner is bringing here a cheap and renewable way to prescreen the public outside, the patients indoors and save lives by prioritizing urgencies.



## Inflammation results in more permeable alveoli

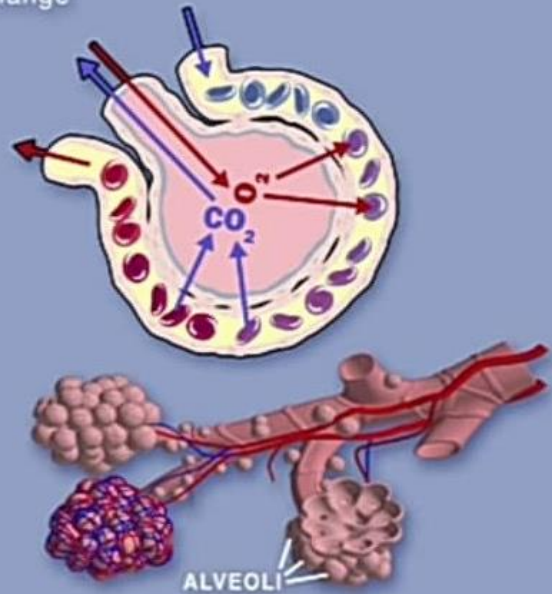
Alveoli (tiny air sacs in lungs) - interface of gas exchange

Where lungs replace carbon dioxide in blood with fresh oxygen you just inhaled

Increased permeability causes fluid to leak into the lungs

Decreases lungs' ability to oxygenate blood

In severe cases, floods them so you can't breathe



## EPIDEMIOLOGY/ CROWD SCANNER







**Founder & CEO**

**M. MOUNTAGA KEITA**