

Presentation: Digitization of COVID-19 Related Process
Presented to: LDoh Limpopo Department Of Health
Presented by: Lizzard Tech (Pty) Ltd



Who Are We?



- Lizard-Tech is a modern software development firm specializing in IoT Solutions, FinTech Solutions and Analytics solutions just to name a few.
- Over the past years, the core speciality and area of expertise of some of the team members has been system integration, monitoring and development in the FinTech Sector, Retail Sector and Trafficking Sector.
- We strive to achieve the highest quality of Technological innovation and begin the GOTO Pan-African Tech Firm in today's South Africa.



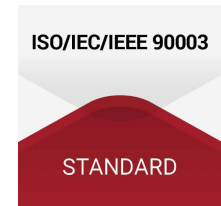


Mission of Proposed System

- Ensure that people stay negative at all cost in the Province and surrounding areas.
- Ensure recovery of people already infected in order to minimise the spread of the novel coronavirus.
- Ensure that critical business data/information related to Covid-19 processes with in LDoH is safely stored, easily and readily available to health workers on duty and department officials.
- Ensure that data collected by separated or isolated tools is collected cohesively and made immediately accessible and can be used for analysis and decision making. Build a positive workplace environment and achieve higher levels output.
- Ensure a visible holistic view of business critical data (Covid - 19 related process data) in the form of dashboards

Standards & Compliance

- All hardware embedded communication software is in alignment with ISO/IEC/IEEE 90003:2018 standard for Software engineering
- Our integrated biometric and facial recognition module comply with the common ISO/IEC 19794-5 standard for Information Technology Biometric Data Interchange.
- All real-time tracking devices and modules in this solution are in alignment and compliance with ISO/IEC 18305:2016 (Information technology) — Real time locating systems
- The proposed User registration and deregistration modules in this document for integration into existing systems is in full alignment with ISO 27001:2013 standards.






Health MSI (Management System Integration)

- The MSI platform is a Master System Integration container which houses various proposed modules for different access levels and tiers of the provincial health department.
- The MSI is a cloud based HTTPS secured solution with a centralized database and a distributed end user portal for various institutions (hospitals, campuses, etc).
- MSI uses facility access levels and user access roles to the various integrated modules of the system, i.e District Office can only access analytics & reports, whereas a primary health facility will have access to the Azuri Tools & other operational applications.
- Benefits of the MSI include the easy access of institution data and Covid Operational Tools from a dashboard.
- Similar platform currently developed for Oceans Mall in Durban KZN

Health MSI Management System Integration



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HEALTH

Home > MSI Dashboard

HEALTH MSI

Search...

Zebediela Hospital

- FACILITIES (7)
- INTERNAL TOOLS (6)
 - Queue Management
 - Digi-Registration
 - Azuri Screening
 - IAMS (Tracking)
 - IAMS (Assets)
 - Patient Management
 - Patient Monitoring
- STAFF (2)
- PATIENTS (2)
- Reports
- Logout

5 DISTRICT OFFICES

41 HOSPITALS

480 PRIMARY HEALTH...

5 CAMPUSES

2491 PATIENT COUNT

1410 TOTAL SCREENIN...

101 INFECTED

80 RECOVERED

Monthly Status

Screensings: 1 Jan, 2020 - 30 Jul, 2020



Month	Screenings
January	0
February	70
March	20
April	45
May	65
June	30
July	95

Centre Preparedness Completion

- Polokwane: 140/200
- Giyane: 300/400
- Venda: 400/800

▲ 17%
3,249
PPE STOCK LEVELS

AI Powered Analytics



Analytics

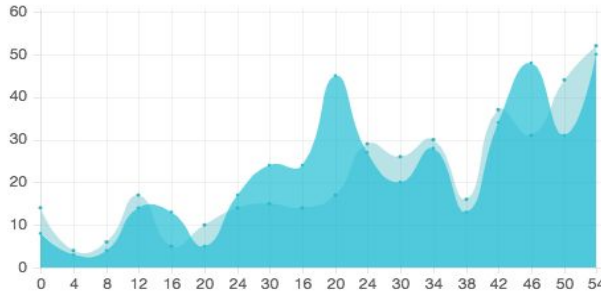
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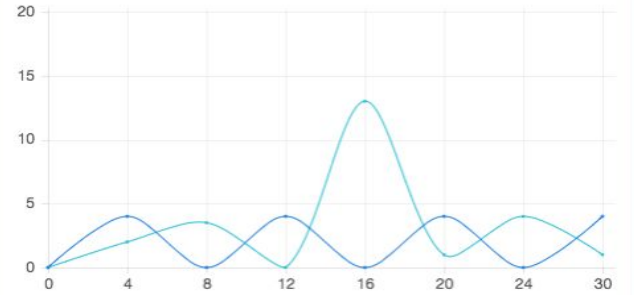
 Reports <

 Logout

Infected (vs) Recovery To Date



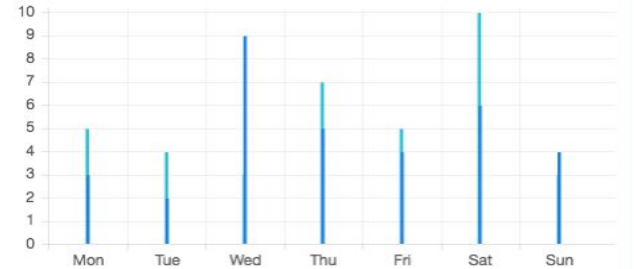
Patient Notification (ICU)



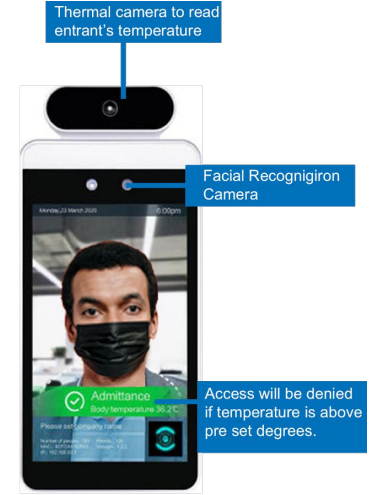
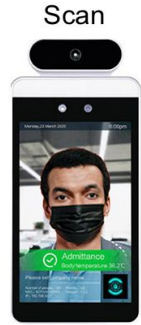
PPE Stock Levels



Queue Capacity (weekly)



Electronic User Registration

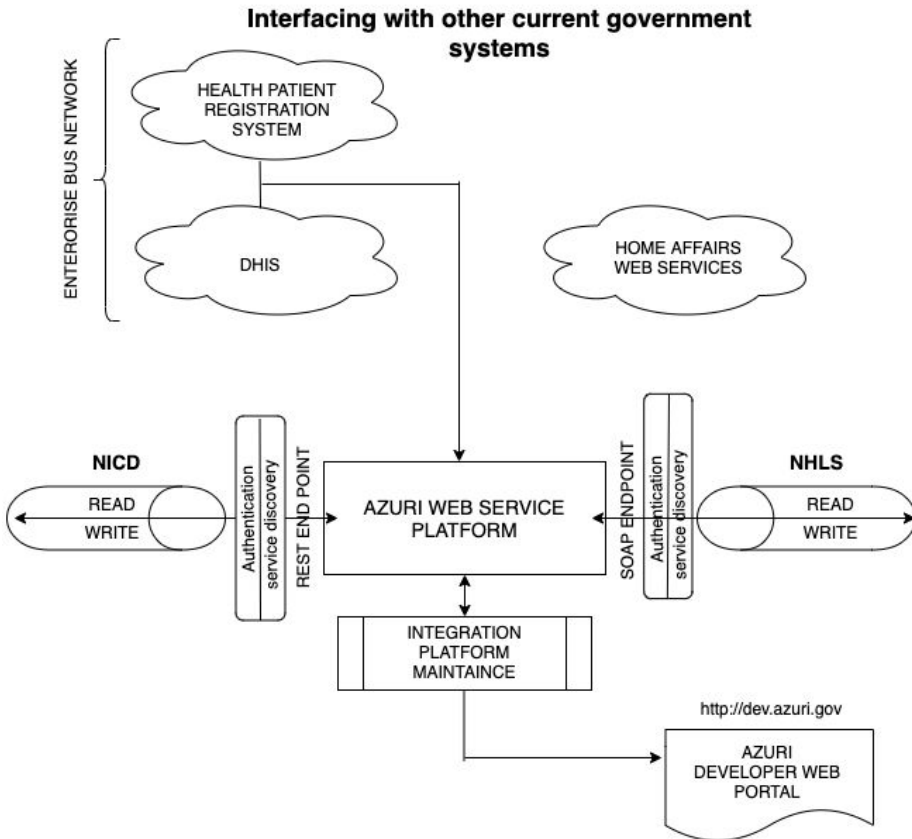


Screening of People



- The Screening of people/individuals making use of limpopo health facilities will also be achieved through two different system features.
- Camera Temperature Screening (Azuri Screening Device)
 - System has an infrared thermometer and an infrared thermal camera.
 - User will be prompted to position their face in front of these cameras.
 - Camera combined together can read body heat temperature and store in central database.
- Mobile Application / USSD Service (A questionnaire Web Page).
 - This is a self-service for users with no smart phones where internet connection could still be a problem.
 - User does manual screening in the form of a questionnaire.
 - This data is then saved in a central database to later retrieval and analysis.

Systems Integration & Interfacing



- Can integrate into any existing system, provided access to the systems database or an API endpoint is supplied by the client.
- Types of Integration :
 - **EAI - Enterprise Application Integration** (SOAP / RESTful Web Services)
 - **DI - Data Integration** (Centralized and Consolidated Database)
 - **EDI - Electronic Data Integration** (Paperless exchange of Documents, i.e. Excel Spreadsheet Reports)

Tracking and Tracing

- Azuri Wrist Track wristband software Band is a wearable and rugged device which houses that uses both GPS Location tracking and bluetooth location tracking for indoors to track a patient / individual.
- This device will be running custom software developed by LizzardTech which communicates with our servers and reports gps location if a patient is out-door and bluetooth if the patient is indoor. The tracking module is in compliance with the ISO/IEC 18305:2016 (Information technology) — Real time locating systems
- Features include geo-fencing configuration where alerts and notifications can be triggered (by the presence or absence of the patient/individual) within a specified geographical area.
- Indoor navigation and broadcast functionality allows the device to use Bluetooth communication to broadcast patient/individuals information and location to nearby doctors, nurses and monitoring rooms.

Tracking Assets & Personal Protective Equipment (PPE)

- The PPE Management add-on module works with an Assets module to simply track issuance, monitor PPE lifecycles and reduce waste and costs.
- The inventory of disposable PPE equipment will be managed and processed through our core Integrated Asset Management Module, making it easier to monitor stock-levels, issuing records within various departments to patients and staff.
- IFMS Asset management software is ready to integrate with existing government software that handle PPE tracking.
- Our IFMS will house its own interface for a variety of devices but use the backend system to store and retrieve data



Household Profiling





Facility Preparedness

- The LDoH MSI will house a web page which will allow facility health care officials and department officials to report on facility readiness and bed availability and occupancy.
- Once facility health-care official logs into the LDoH MSI, They will be able to add facility information such as location, operators and fill out readiness acceptance form.
- This information will be saved in the platform central database for use by other downstream and upstream interfacing systems.
- The system will allow alerts once a patient has been discharged to let the facility management know of the status of the beds, whether occupied or not. Thus, allows for real-time processing of the inventory of beds which are ready to be occupied, currently occupied beds and unoccupied beds.
- Predictive AI models will be used by taking the current stats of the Limpopo infection rate and allow procurement of extra beds in the health facilities.
- A dashboard view or downloadable report of all facilities and state of preparedness will be accessible on the MSI for decision making.

Patient Management Solution



Integrated Document Management System

- The LDoH MSI will be integrated with **Lizzard Tech** custom build Document Management System (IDMS).
- IDMS was developed and implemented for Chupa chartered accountants for contract document auditing and management.
- IDMS will be used by the LDoH as a patient Records Management System. This system will allow all health care officials within LDoH to capture patient medical and clinical information (Name, Surname, Prescribe medication, medication specification etc) of a patient, as well as any supporting documentation can be scanned and attached to the record.



Bed Occupancy Monitoring System

- The LDoH MSI will be able to monitor and report on bed occupancy within each health facility in the department.
- First; a bed occupancy sensor device will be attached to each bed within any LDoH facility.
 - This sensor can detect if bed is occupied or not, and send the MSI backend.
 - Each bed will be fitted with this device which is in accordance with ISO Standards and compliant with ICASA Standards.
- A sticker beacon will be installed in various parts of all limpopo health facilities. These include clinic, hospital and isolation centres.
 - These beacon will be able to connect to wearable device provided to patient who tested positive for accurate indoor monitoring.
 - This information will be able to

Queue Management Solution



- The Azuri Queuing Management System is an integrated system that manages customer / patient queuing within a facility and broadcasts the queue count and status on a TV monitor or a compatible mobile app that communicates with the solution.
- The system is operated through a KIOSK at the entrance of a facility, where a ticket number is issued to a client and the client awaits to be notified either by TV Screen, Mobile App (if patient requested using the mobile app) or a digital voice-over installed within the facility.
- Patients that download the mobile app can avoid the KIOSK and make use of a patient portal to schedule health check up, get notification of where they are in the queue (generated ticket number) and get a notification of when the individual should make their way to the specific health service centre.



Together We Can Beat This

