

## Success Story

# Modernizing Asia's largest online Emergency Medical Services (EMS) portal; Ziqitza



### Client:

Ziqitza Healthcare Limited

### Industry:

Healthcare

### Country:

India

### Our Role:

Product Engineering

## About the Client

Ziqitza Healthcare Ltd. (ZHL) is India's leading provider of organized, professional, and networked ambulance services. The emergency service provider operates with a fleet of 3,389 ambulances across 18 states and has served over 3 million patients so far.

ZHL regularly partners with state governments and the National Health Mission (NHM) to operate the 108 ambulance service helpline for emergency medical services & 104 health helplines for health-related queries. Their all-inclusive emergency medical services include ambulances, medical helplines, mobile medical units, and corporate health solutions such as ambulances/doctors/medical rooms, etc.

## Key Facts

**67,000**

emergency calls received  
per day

**3500+**

ambulances integrated

**2 million+**

tele-health consultations

## Services Used

 Software re-Engineering

 DevOps

## Technology Stack

-  Java
-  React Native
-  NEXT.js
-  PostgreSQL
-  docker



*“Ziqitza healthcare ltd, till date they have handled 1.5 million calls and served 1.5 lac covid patients in the country, by shifting them to Covid hospitals on time between March 2020 to April 2021. The information is gathered through its operations in Madhya Pradesh, Odisha, Punjab and Jharkhand with 3300 ambulances on ground and more than 10,000 EMS healthcare workers on the frontline fighting the war against COVID 19.”*

## The Hindustan Times

### The Situation

The healthcare industry is at the forefront of technological innovation. The digital healthcare ecosystem is experiencing a growth in demand for app-based emergency medical services (EMS).

As the number of requests at the Ziqitza EMS portal expanded, it became difficult for their legacy web application to seamlessly process all the requests. The existing application lacked request management capabilities. For example, the ambulance booking system was not being completely digitized (it involved paper-based work). The service Requests (SR) had to be processed manually and the service logging was done on spreadsheets. The system was integrated with outdated third-party solutions that limited it to follow a modernized approach to manage operations.

Hence, Ziqitza approached Daffodil Software to create a web and mobile application so that it could help hospitals serve health emergencies more seamlessly. The client outlined the following key requirements for the modernized application:

- Develop a robust workflow for the entire order of execution of each SR on the web app received after the end-users call.
- Decouple the mobile app’s dialer, UI, and other components to make it more customizable.
- Reduce the system downtime on the apps when changes need to be incorporated.
- Create a centralized logging system for tracking the SR throughout its execution.
- Improve the responsiveness and load time of the UI and implement better management of access rights.

### The Solution

The Daffodil team reverse engineered the application, discovering several shortcomings in the legacy application. The solution developed by the team consists of two parts- first, a web app developed on React for managing an outbound team that would take calls, manage access rights, and process the SRs, and secondly, a mobile app developed on React Native for the drivers, EMTs, Supervisors, and Auditors. Some of the development highlights were:

## Service Request Cycle Management

When a patient places a call on one of the emergency phone numbers, the outbound team receives a Service Request (SR). Ambulances and drivers are then assigned along with Emergency Medical Technicians (EMTs) using the web app. The system captures and smoothly onboard users from government and private hospitals to serve as outbound teams who would process the SRs.

There are role-based permissions for each user of the web app including Care Agents who answer calls to trigger the creation of SRs. This is done through a master data management system. The well-categorized roles include the Roles- Master, Shift Master, District Master, Client Master, Hospital Master, and several others with their respective access rights.

An Operations Support Desk (OSD) module helps manage the fleet of ambulances and drivers with respect to fleet fueling, addressing driver's tickets related to their issues, etc.

## Driver Mobile App

Once a driver and ambulance are assigned for a pick-up on the web app, the driver gets notified about it on their mobile app. The driver is assigned based on proximity to the patient's location and availability of ambulances at Ziqitza's partner hospitals. Multiple dispatches can be made for a single SR depending on the need. The driver mobile app's integrated dialler can be used by the driver to get in touch with the caller. Meanwhile, push notification and SMS with details about the assigned ambulance and driver goes to the caller.

## Flexible and Customizable Components

A decoupled application architecture allows for integrating third-party or in-house plug-ins as and when required. Every State government had different requirements for the web and mobile apps. So, there is room for unlimited customization in terms of the dialler used and the Vehicle Tracking System (VTS), and the UI.

Also, both apps can be configured and set up on the basis of call center capacity and levels of caller verification required by each state. There is also the option of selecting which emergency numbers – 100 (police), 101 (fire service), 108 (ambulance) – would be received by the Care Team.

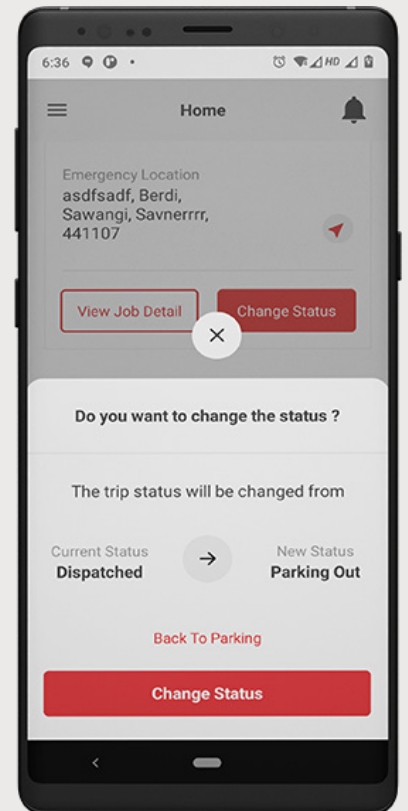
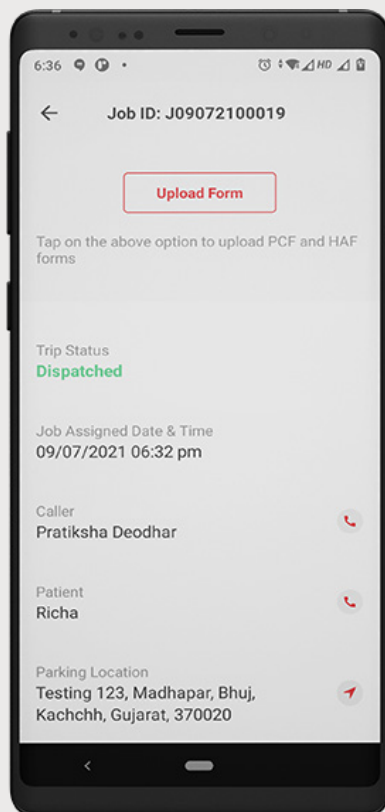
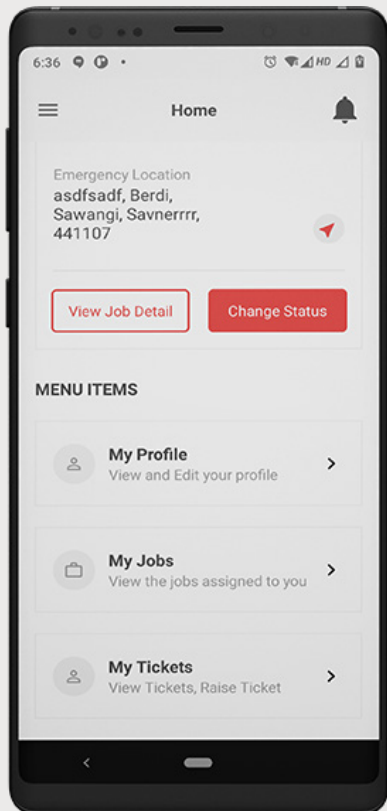
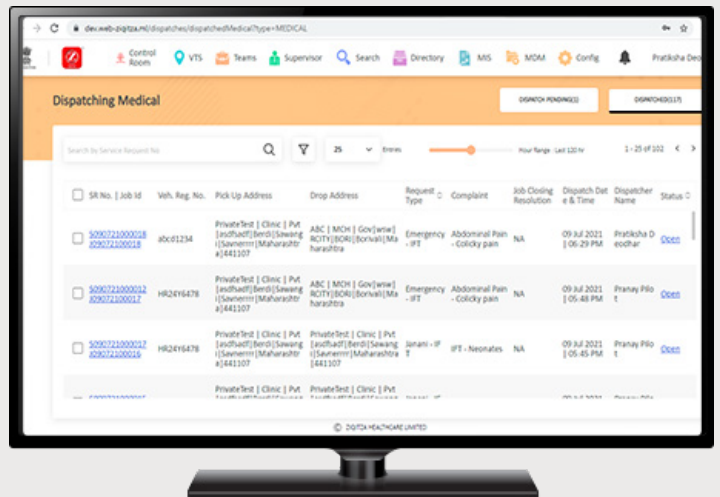
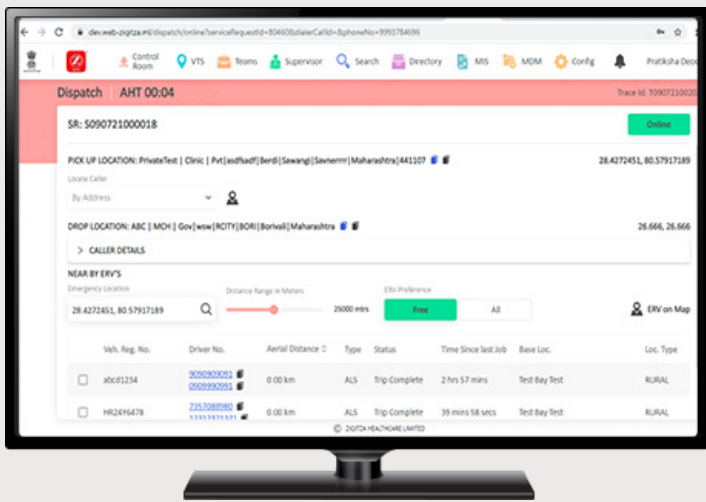
## Service Request Tracking and Reporting

A centralized logging system helps the SR Master, one of the roles on the web app, to view the order of execution of the entire SR lifecycle. Throughout every session, a trace ID is tracked for each SR, and a transaction ID is tracked for resolving API issues. Every issue can be resolved when it appears.

The reporting tool was built on Next.js, a framework that runs on both the client and server. This allows for multiple forms of log creation to stay up-to-date with the application's performance.

# The Impact

The technology partnership with Daffodil has enabled Ziqitza to serve over 32 lakh people with their EMS system, including over 12 lakh pregnant women who had successful labor. Ziqitza continues to serve ambulance dispatches for hundreds of ambulances every day. It has spread its operations to 18 states with a formidable fleet of over 3,389 ambulances spread across State government hospitals and private corporations.












# About Daffodil

For more than 20 years, Daffodil Software has been a trusted software technology partner to organizations across the globe. We take pride in our ability to look beyond technologies & deliver innovative solutions.

Daffodil is a CMMI level 3 accredited organization with innovation, tech agility & process orientation rooted deep within the core. Our team of 1000+ technologists strive to shape the tech industry and help businesses elevate their value proposition through technology.

## Technology Partnerships & Certifications

 <p><b>Microsoft Partner</b> Silver Application Development partner</p>	 <p><b>Google Cloud</b> Premier Partner</p>	 <p><b>aws</b> partner network</p>
 <p><b>Microsoft Partner</b> Silver Collaboration and Content</p>	 <p><b>UiPath</b> Partner Robotic Process Automation</p>	 <p><b>PubNub</b></p>
 <p><b>ISO</b> 9001:2015 CERTIFIED COMPANY</p>	 <p><b>ISO</b> 27001:2013</p>	 <p><b>ISO</b> 20000 International Organization for Standardization</p>

## Awards & Accolades

 <p><b>Deloitte.</b> Technology Fast500 APAC Winner</p>	 <p><b>ITEUROPA</b> EUROPEAN IT &amp; SOFTWARE EXCELLENCE AWARDS</p>	 <p><b>zinnov</b> ZONES</p>	 <p><b>Great Place To Work</b> Certified INDIA</p>
 <p><b>mobilewebaward</b> 2020</p>	 <p><b>INDIA'S</b> MOST ADMIRABLE BRAND 2020 PEOPLE'S CHOICE</p>	 <p><b>CMMI</b> level 3</p>	 <p><b>THE ECONOMIC TIMES</b> <b>Best Tech Brands</b> 2021</p>

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