

SIMOCO CONNECTED AMBULANCE

**PROVIDING ADVANCED
COMMUNICATION CAPABILITIES
INSIDE AND OUTSIDE THE
AMBULANCE ENABLING THE
DELIVERY OF LIFE ENHANCING
OUTCOMES FOR PATIENTS**



simoco
wireless solutions



Connected Ambulance

Introduction

Ambulance services are constantly under pressure to improve clinical quality, create efficiency and ensure patient's safety. With the rapid increase in population and technology, the number of accidents and medical conditions are also drastically increasing. Therefore a demand for many types of smart technology in the medical field has become fundamental.

Paramedics need to be equipped with the right technology in order to assess and diagnose patients accurately and prepare the hospital for the patient's arrival with reliable and fast communication.

The Connected Ambulance offers a new approach by addressing these issues and provides a new way of removal of any distance difficulties between the hospital and ambulance which allows faster and efficient handling of the patient when arriving at the hospital. The combination of Land Mobile Radio (LMR), Long Term Evolution (LTE) and intelligence smarts provides secure, reliable and superior communications coverage and enables live streaming from ambulances.

Velocity a unique solution for the healthcare industry

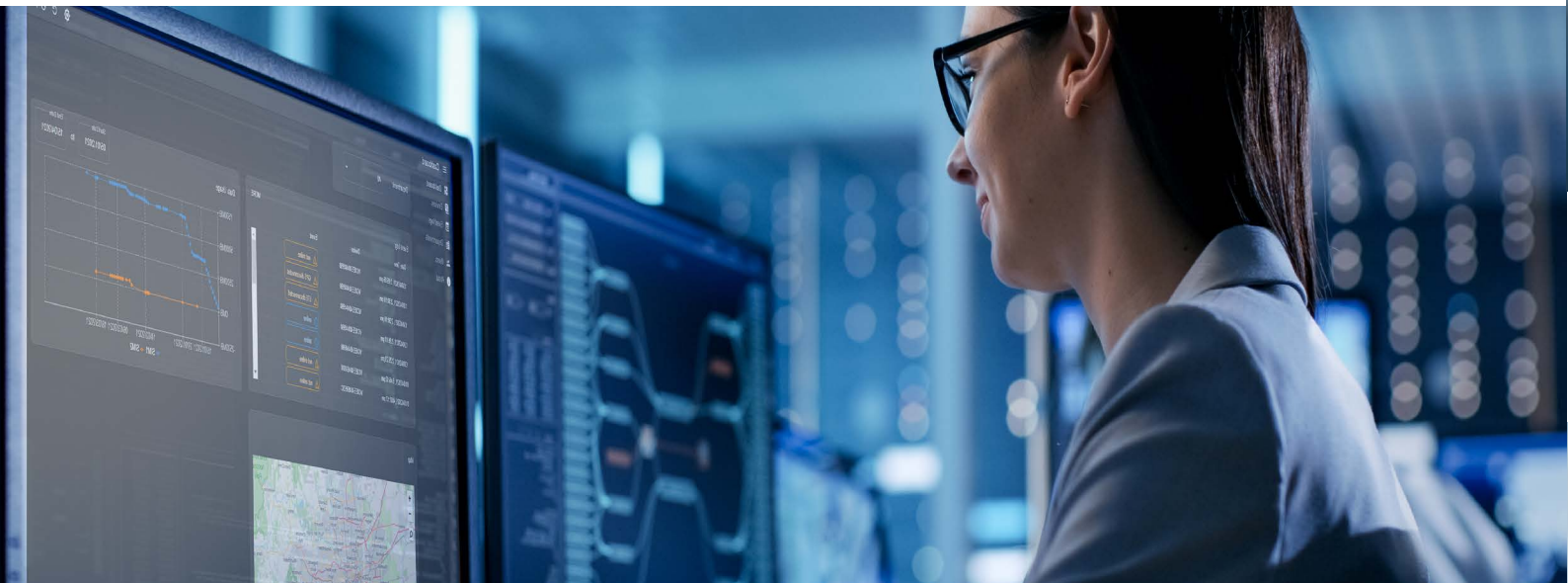
Stable connectivity requires a seamless connection that remains undisturbed despite the location. Simoco's unique intelligent communication solution, Velocity will transform communications for the healthcare industry. Velocity provides a converged communication network of multiple bearers and provides a host of connectivity options such as Wi-Fi, Bluetooth, Ethernet LAN ensuring voice and data will always get through.

A combination of 4G/5G technology based in the vehicle enables a remote guidance of the paramedic from the hospital, to perform essential procedures on the patient. Through a live 5G network in Birmingham, UK whereby the University Hospitals Birmingham NHS Foundation Trust (UHB) and BT collaborated, the [UK's first remote diagnostic procedure](#) over 5G was made possible by healthcare professionals in June 2019. The demonstration showcased how 5G technology can enable clinicians and paramedics to collaborate effectively, even when they are miles apart. The diagnosis was made possible by 5G's ultra-fast speeds and ultra-low latency. This made it possible for there to be a delay of milliseconds between what was happening in the ambulance and what the clinician could see in the hospital mile away, as the data transmitted in real time. Wearing a specially equipped VR headset, the clinician was able to visualise exactly what the paramedic could see in the ambulance. Using a joystick, they are then able to remotely direct the paramedic in real time to perform any necessary scans, as well as get close-up footage of wounds and injuries of the patient.

Velocity is equipped with real time connectivity technologies such as 4G and can provide an upgrade path to 5G which will help first responders act quickly in an emergency and opens new possibilities in remote diagnosis and preventative healthcare. Velocity's technology when paired with human expertise has the power to elevate public services, relieve resource restraints and even save lives.



Wireless solutions built to drive efficiency and help save lives



Real time monitoring, maintenance and updates

Simoco's end to end network management tool Velocity Remote Manager, allows firmware updates, configurations and maintenance to your wireless on board device from a remote location while ensuring that sensitive data stays safe.



Network Security

Emergency services are responsible for collecting large volumes of data of patients and sending this back to hospitals. They are tasked to follow proper cyber security governance policies and mitigate networking risks to protect sensitive information. Velocity is designed with security in mind and includes the use of advanced security protocols such as virtual private networks (VPN). Other security features include setting up Demilitarized Zones (DMZ), MAC filtering, IP filtering, port filtering and port forwarding provide a standards-based security solution for connecting and managing remote assets, enabling customers to guard against malicious access to sensitive data.



Integrated GPS and location data services

Accurate location data is essential as lives often depend on it. Our solutions are fully equipped with integrated GPS providing location-based data for computer-aided dispatch and fleet management applications which help locate ambulances in need.



All in one intelligent communication solution

Our solutions provide an affordable and best in class intelligent communications which consolidate all your devices and peripherals providing paramedics and emergency personnel the reliability and resilience they need from a mission critical communication network.



Connecting to patient information system

Ambulance vehicles enabled with mobile Wi-Fi hotspots can provide communications to all your handheld devices such as smartphones, tablets and laptops. Enable your emergency responders with always on connectivity on the go, so they can securely access historical personal information and update patients' databases and so forth allowing them to assess and diagnose patients accurately and prepare the hospital for their arrival.



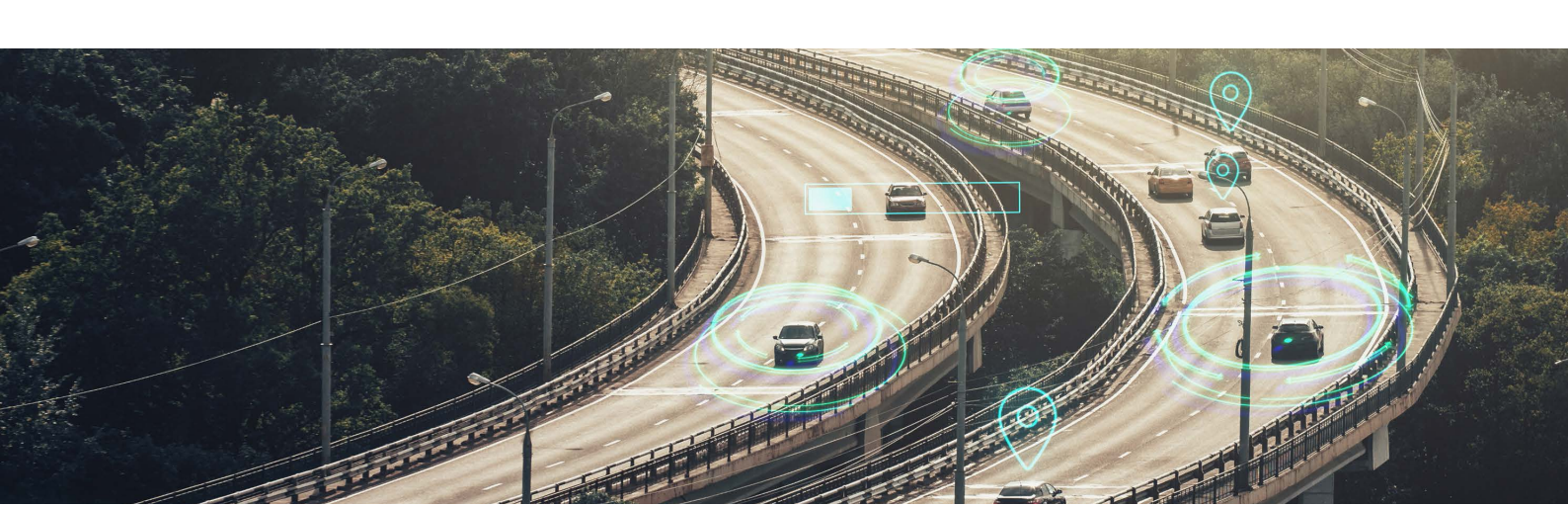
Live streaming- remote treatment performance

Our solutions rely on constant mobile connectivity which makes possible to monitor procedures performed on a patient from a remote location and alert authorities from the hospital. The connected ambulance provides an innovative way to connect patients, ambulance workers and remote medical experts in real time. Typical standard procedures in ambulance vehicles require operational cameras to commence recording when a patient is on board. Utilisation of cameras in conjunction with Velocity ensures that the live-stream is running at fast speed and low latency.



Vehicle Health check

The large amount of services the ambulance vehicle provides as well as the volume of journeys ambulances make on a regular basis can lead to a greater risk of vehicles breaking down. Intelligence in our solutions allows for these checks by observing key indicators such as if a service light or oil light is illuminated, high temperature warnings, etc. Readings can be directly reported to a dispatch console informing fleet managers that the vehicle requires maintenance.



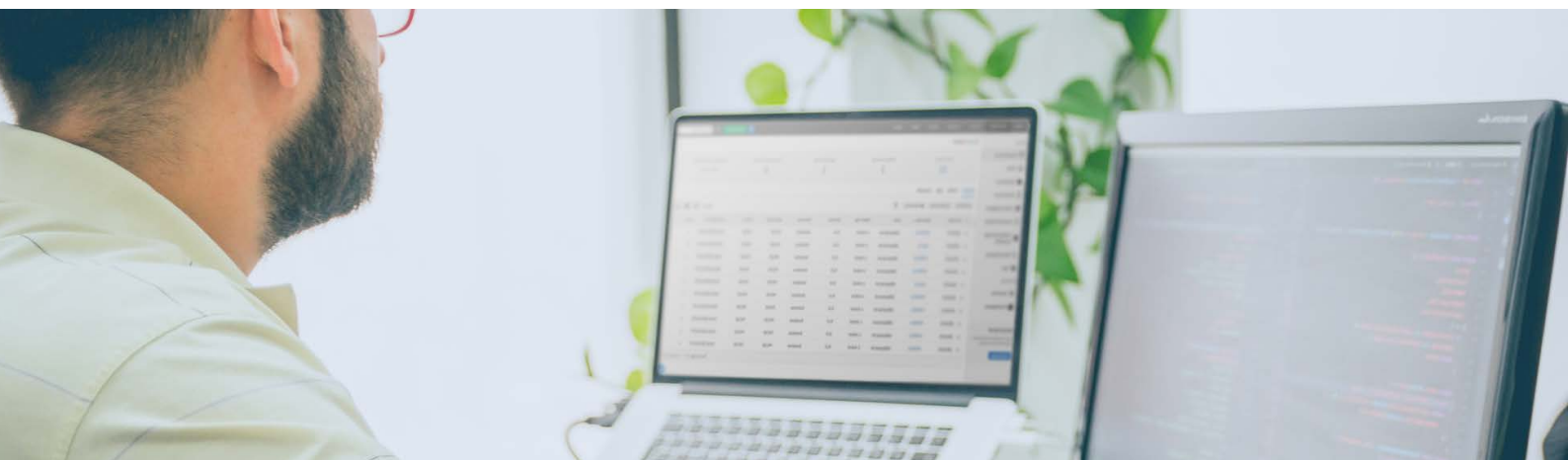
Fleet Management

Minimise one-off vehicle troubleshooting by monitoring, managing, and analysing connectivity and security issues from anywhere.



Complete fleet management for control room operations

Your emergency responders can use our dispatch and AVL software with integrated geofencing to track vehicle routes. The intelligence in our devices allows fleets managers to monitor route efficiency, look for redundancies or wasted time, and reconfigure routes for maximum effectiveness.



Real time video surveillance

Our solutions rely on constant mobile connectivity which makes possible to monitor security from a remote location and alert authorities immediately when problems arise.

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