GoodSAM
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Working with NHS Police and Fire Services
GoodSAM

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 Saving Lives with Technology

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Using Artificial with Real Intelligence
GoodSAM is the world’s most advanced emergency services mobile technology platform.

From alerting trained bystanders to dispatching statutory emergency services; from on-scene video triage to our latest innovation, the remote assessment of vital signs through video; GoodSAM offers a suite of functions which not only saves lives, but also improves emergency resource management.

We have 3 core principles:

- Governance
- Security
- Innovation

with a collaborative ethos enabling us to work with you to provide the best possible solution to optimise outcomes.

GoodSAM is revolutionising emergency management.

Welcome to GoodSAM. Welcome to the future.
GoodSAM solutions are used by Ambulance, Police and Fire services, as well hospitals, universities and charitable and commercial organisations.

By utilising the universal smartphone, we can reduce hardware costs considerably and bring life saving care and support everywhere, including countries with very limited resources.
GoodSAM Cardiac is both a technology platform and a community of life savers. This not-for-profit service alerts those able to perform basic life support and use an Automated External Defibrillator (AED) to cardiac arrests occurring near them.

Cardiac arrest survival in Heathrow Airport is ~80%. This compares to 9% on the streets of London. The difference is access to AEDs (at every other gate) and someone starting high quality CPR within minutes of the arrest (all air crew are trained). GoodSAM aims to use technology to achieve this everywhere.

They say you’re never more than 5 metres from a spider, and you’re rarely more than 300 metres from someone who can perform high quality CPR and use an AED. The problem has been making them aware of the cardiac arrest in the building next door or just around the corner.

This is where the GoodSAM platform comes in. It is a platform for first aid organisations, hospitals and the emergency services. For ambulance services, it integrates into Computer Aided Dispatch (CAD) to automatically trigger customisable alerts. Responders can register under an organisation which they are affiliated with or use the GoodSAM catch-all. This highly governed process ensures all Responders are who they say they are and appropriately trained. The GoodSAM platform gives ambulance services complete control over who they are alerting (which categories of Responders, from which organisations) over what radius and which rules should be set up for different mapped areas.

There are advanced messaging features (e.g. push-to-talk radio) in the App as well as Patient Report Forms (PFRs) and instant video (e.g. to get advice from the clinical desk).
Complete Control

Organisations can create any number of “categories” of Responders and have COMPLETE CONTROL over who they are alerting for specific emergencies. For example, in a cardiac arrest, 2 off duty staff could be alerted over 1km, 2 professionals from other services over 500m and 1 trusted first aider over 300m. Using the KML mapping function, these rules can be changed in urban and rural settings.

GoodSAM Cardiac figures:
> 100,000 users
> An alert triggered every 2-3 minutes
> 500 alerts triggered each day
> Many survivors, ~ 1 every day/ every other day

The GoodSAM Alerting Platform can also be used for many other forms of alerts - for example, to alert local neighbours / carers to elderly fallers and local flat residents who carry naloxone to opioid overdose patients.
GoodSAM Pro enables staff and CFR dispatch to any type of incident.

Dispatch is the formal triggering of a statutory response and different to “alerting” (as in GoodSAM Cardiac).

With GoodSAM Pro staff and Responders can book “on duty” and “off duty” and can appear as a specific resource asset (for example, a motor-bike responder) on the dashboard. Their hours can be logged and more permutations for dispatch algorithms can be created.

GoodSAM Pro is also a powerful system that supports co-responding from not only staff and Community First Responders but Responders from across the emergency services.

With KML mapping and complex algorithmic determinants, you really can take your dispatch process into the 21st century.

And with the ability of Responders to video into a clinical hub, simply by pressing the video button on the GoodSAM app, it enables advanced decision making to be made instantly.

It even supports multidisciplinary video conferencing... so if you want to dial in the patient’s cardiologist into the video consultation, it’s as easy as clicking their link or entering a phone number.

When it comes to improving pre-hospital efficiency, nothing beats GoodSAM Pro and the Instant Video system.
Professional dispatch

GoodSAM Pro is built into the GoodSAM App. GoodSAM Pro is used by a number of Services to dispatch staff and CFRs to a range of incidents beyond cardiac. It works in the same intuitive way as the response to cardiac arrest.

The Responder app works on all devices and on any handset - including personal devices. This brings massive cost savings and efficiency gains. It also means staff and resources can be located and communicated with in events such as Major Incidents.

A range of functionality from in app buzz messaging, radio comms and resource tracking enables Responders on the ground and Control to respond effectively and flexibly during an incident. Analytics tools allow key metrics, such as acceptance of calls, on scene times and interventions provided to be logged.

Furthermore, we are proud to be a system which supports blue light collaboration. If your service is considering co-responding or a platform to support dispatching staff, then GoodSAM Pro is a simple, efficient, reliable and highly controllable way of doing this.
GoodSAM, with the help of the GoodSAM community, has built the world’s largest Defibrillator Registry with > 100,000 Defibrillators (AEDs) mapped.

If a GoodSAM users sees an AED in a fixed location (e.g. on a wall), they simply upload a picture of it with some information about the hours of its availability.

We then confirm that it is there and it appears on the GoodSAM Defibrillator registry as an orange AED.

We believe defibrillator data belongs to the statutory organisation for the region and therefore we share all the data we gather with these organisations. If the AED is checked (in terms of battery and pad life) then it changes to a red AED on the map.

The AED database displays in a location controlled manner on the GoodSAM App.
Mobile AED Registry

We are aware that we have mapped most static AEDs! We are also aware that there are many in the boots of people’s cars. We have therefore created the only mobile AED Register. Simply click “I have an AED with me” in the App, and you and your AED are tracked. There are ~ 700 police cars and many taxis with AEDs in London. This system means they can all be followed.

Drone AED Delivery

Drone technology now makes this a reality. The difficulty is governance - ensuring that it is safe for a drone to land and that it isn’t stolen.

The GoodSAM platform and community provides this governance. With the large density of Responders, one of our community can view and confirm landing is safe. They can also ensure the drone is handled properly and returns to base following an incident.
The GoodSAM platform has comprehensive communication and incident management features built in.

### Communication at an Organisational Level / Major Incident Management:

As an organisation, your staff / volunteers can be categorised, for example, according to their role. They can have different icons for mapping purposes.

In the event of a major incident, the organisations administrators of the platform can send out a notification to all staff (or subsets) that an Incident has occurred. This alert can override silent which is imperative for such a system.

Not only can staff be mapped and communicated with individually, but staff can reply in real time giving updates. If staff are pre-hospital based and already on scene, or if they wish to show a situation, then they can just click the video icon within the App and video will stream straight through to Control.

### Communication at an Individual Level:

Individuals on the GoodSAM App can see colleagues and communicate directly with them through the inbuilt “radio” function. Of course everyone has control as to whether they can accept such messages but this tool has multiple uses - from finding a colleague on scene to seeing if a friend fancies a coffee.

### Instant Video Advice

The GoodSAM App has an “Instant Video” button which can stream directly through to Central Control or the Clinical Hub. Alternatively, the user can select a contact or number for the video to be streamed to, for example, the on duty consultant/medical director. Each organisation can choose to store or not store these communications.
Debrief & MDTs

We often get to debrief in our teams, but rarely across services. Similarly, getting the relevant people together to discuss a difficult case can be tricky. Within the GoodSAM Dashboard, however, you can create a video chat room and invite as many people as you wish. Everyone can join in a multiple person video chat to feedback from a job or to have a multi-disciplinary team meeting. This works on any smartphone and from any computer with no need to download any Apps.

Contributors can be invited by email or their phone number. They just click the link and join the meeting!

To set this up, click “Consultation” and select how long you want the room to be open.

Then invite attendees into the room. There is an additional free text message area to provide more details. At the time of the meeting, everyone just clicks the link.

This is a fantastic way of building cross services collaborative working.
Locate and open any mobile phone camera in < 10 seconds - no App needed

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Video can then be

- Viewed by Dispatcher / Control
  with unlimited administrators and levels of access, this enables rapid advanced triage decisions.

- Analysed by Artificial Intelligenc
  for example by our Instant Vitals system to provide heart and respiratory rate

- Shared / Forwarded
  in a highly controlled manner to senior support, advanced services, or other services

- Stored in Cloud
  Fully GDPR / HIPPA compliant in country storage for 31 days, 1 year, 7 years or 100 years. Alternatively our API can enable storage on local servers

- Not stored
  No video is ever stored on the callers mobile phone and there is no requirement for any storage
The GoodSAM video platform has a multitude of uses across sectors. The ability to “see” a situation as opposed to “hear” a description, often from a stressed caller, can dramatically alter resource deployment. It can also enable immediate management - from guiding someone to hold an airway open, to stopping the escalation of a violent incident if the aggressor knows they are being recorded.

Video can also be streamed with a single click from the GoodSAM App, or from CCTV, Drones, Body Cameras, Go-Pros or any device with an RMTP feed.

It was a key recommendation of the Grenfell Tower Fire Investigation that agencies should be able to share live video to aide decision making. The GoodSAM Video platform makes this real.

**Artificial Intelligence - Instant Vital**

We have developed (and patented) the most advanced Artificial Intelligence system for server side analysis of Vital Signs. This means any video feed can be analysed for pulse and respiratory rate which is displayed to the dispatcher / administrator.

This is currently undergoing extensive testing for MHRA / FDA approval, with other parameters such as blood pressure coming online soon.
GoodSAM’s Instant-On-Scene tool is revolutionising dispatch and many organisations’ service delivery.

The Call Takers can open any callers smartphone camera and view their video feed without the need for any App (like Skype™ or FaceTime™). In an emergency you can’t afford delays in downloading an app or registering. It’s instant and additionally locates and tracks the caller.

Triage of patients is a vital part of allocating resources. Being able to see the MECHANISM OF INJURY and how SICK A PATIENT LOOKS adds considerably more to the voice description a lay caller can give.

GoodSAM’s video triage system is used by air ambulance and ambulance services around the world.

From critical illness to mental illness, “Seeing” the patient can make all the difference

Evidence of Benefit

Studies have shown that for air ambulance work, the use of GoodSAM’s Instant-On-Scene video can alter dispatch decisions (either upgrading or downgrading resource deployment) between 1/4 and 1/3rd of calls\(^1\).

Similarly, for standard emergency calls (999, 911, 112, 000), being able to see the patient has been shown to change the dispatchers situational awareness in half of calls, upgrading the responses to a higher priority in 10% and downgrading the response in 19%. In over 90% of calls GoodSAM video is considered to be useful (\(n = 579\))\(^3\).

This has huge potential, not just to improve patient care but also to improve resource utilisation and efficiency.

The video can be forwarded internally to a senior, or externally to get specialist advice. Or it can be shared with other agencies. You have complete control and a trackable record of who has accessed the video.

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\(^2\)London Air Ambulance preliminary results EMS 2020

\(^3\)Copenhagen EMS Video Streaming for emergency calls in Out-of-hospital Cardiac Arrest. Presented by Freddy Lippert NAEMSP San Diego, Jan 2020.
Care Before You Get There

Because the scene can be assessed, safety advice can be given immediately to the caller. Advice road safety, switching off electrical equipment etc can be given confidently.

Then the dispatcher, through the hands of the caller, can manage the patient, for example, opening the obstructed airway or applying pressure to a bleeding wound. This especially true when arrival of paramedic response may be held back for example in a terrorist incident.

Using the GoodSAM Instant-On-Scene video system has been shown to improve the quality of bystander resuscitation, improving CPR performance (position, rate, depth) in 70% of cases3.

Less Urgent Calls / Remote Advice

Being able to see also enhances care in less urgent cases, such as a child with a rash. In such cases, the video can be forwarded, in real time, to get a specialist opinion that may negate not only hospital admission, but ambulance dispatch.

Patients in Isolation

With the advent of Coronavirus, there are potentially thousands of patients who will need to be observed at home. GoodSAM’s video system is ideal for this, minimising infection of others.
Better Assessment of Call Urgency

As with the multiple different conditions that video is useful for in the healthcare sector, there are many different types of uses within the police and security sectors.

The platform is now being used with Police forces across the UK to both locate the caller and assess/see the incident.

Video can be used to better assess the urgency of the response as well as gather evidence. The urgency of the response as assessed by a simple telephone call can be confounded by the capacity of the caller or a caller exaggerating severity to get a faster response. Video enables direct assessment. The constant updating of the caller’s location means the caller can be tracked, for example if moving along county lines.

This means better resource deployment decisions can be made. Is another agency more appropriate?

Gathering of Evidence

The instant recording of video increases quality and quantity of evidence for investigations. It can also support victims of crime and assist in victimless prosecutions.

Better evidence will increase the number of early guilty pleas and provide cost and time efficiency savings as well as increased public confidence.

By recording evidence, especially of low acuity crimes, it may negate the need for officers to have to travel to the scene, saving time and money.

Because the video is live streamed and stored immediately, unlike video footage submitted from the public, there is no question of its authenticity as it could not have been edited.

The video is automatically date and time stamped and because the video is live streamed, if the phone is then disposed of, evidence is still retained. It can also negate the need to seize the phone since the evidence from it has already been stored.
Better Assessment, Better Evidence and Increased Officer Safe

Sharing

Video can be forwarded in real time, or after the event to specific officers for further investigation. This is done in a secure, recorded, auditable and time limited fashion.

Other Devices

GoodSAM can handle feed from any device with an RMTP output. This includes body cameras, drones, CCTV cameras and GoPros for example attached to dogs.

The simultaneous gathering of multiple video feeds and sharing with other agencies provides greater awareness of the situation, a more coordinated response and more in depth understanding for future incidents.
Assessment of Fire and Resource Needs

For a lay person, describing a fire can be difficult. A small fire to one person, huge to another. Assessing other factors, for example the nature of the fire, the materials alight and the likely rapidity of its spread requires expert eyes.

GoodSAM’s Instant-On-Scene enables eyes on within seconds of the emergency call. Rapid deployment of the correct response, together with any specialist teams can then occur.

The ability to instantly locate can also save vital seconds, especially in rural areas where an address might not be available. The recording of video can be useful for later fire investigation purposes.

Drone Filming

The aerial assessment of the scene, be it fire or major incident is now a vital part of incident planning. The GoodSAM video platform can handle all forms of video feed including thermal imaging giving you the ability to securely share live and stored video with other agencies.
Other Sectors

There are many other sectors where urgent help is needed and the ability to instantly see the situation can make considerable differences.

For example, with motor vehicle breakdown, GoodSAM enables you to instantly see the dashboard and if needed be under the bonnet to give remote advice and guidance.

Similarly, on construction sites and in remote industrial locations, the GoodSAM instant-on-scene tool enables the organisations managers and first aiders to get immediate eyes on.

Consultations and Multi-Viewing

The GoodSAM platform also enables multiple phone cameras to be opened simultaneously. This enables multidisciplinary team meetings and cross-service debriefing/collaboration.

To enable this, simply create a room, text the link to all the mobile phone numbers/email addresses of those you wish to invite and at the specified time they all simply click the link and everyone can see and talk to each other.

There is no need to download any apps or register! It just works!
Security

Security and governance are at the heart of everything we do.

All data is AES 256 encrypted and fully GDPR and HIPAA compliant. We are ICO registered and have ISO 9001 and ISO 27001 certifications. We utilise TLS 1.2 to provide Grade A security.

Video Forwarding

Video can be forwarded from the dispatcher / operator in a highly controlled and auditable manner.

If the video is live streaming, this is sent. If it has finished and has been recorded, then a loop of video plays.

This can be sent directly to an email address or mobile phone number. The recipient clicks the link and automatically views the video. Again, no App is required to be able to watch this. A time can be set after which the video can no longer be viewed. It cannot be downloaded.

A certificate of details of those who have viewed the video can be requested for each video.
Video can be forwarded to one individual or multiple both within and outside of the service.

**Video Storage**

There are multiple video storage options. Firstly, nothing is ever stored on the callers mobile phone.

Service video storage options comprise:

- **No storage**

- **Cloud Storage** - this can be in country. Standard storage utilises AWS Cloud and retention of video data can be set to: 7 days, 31 days, 1 year, 7 years or 100 years.

- **Local Server Storage** - utilising our API, video can be pulled as soon as completed onto a local in house server. This can, for example, be tagged with the patient’s record number. With this system, no cloud storage occurs.

Video is routinely stored as Webm files and can be playable back directly through the browser. All storage is AES 256 encrypted.
We have been awarded many awards over the last couple of years including the Health Services Journal Award and the Sun’s NHS Who Cares Wins award for Best Innovation.

We have also received awards from EENA, the London Mayor MedTech Awards and in partnership with services we work with, the Council of Ambulance Authorities and the Air Ambulance Association’s annual awards.

GoodSAM is proud to be featured in the NHS Long Term Plan. By working with our NHS partners we can make a real difference, not only in saving lives but by improving service efficiency.

**CASE STUDY:**

CPR and GoodSAM

Apps and mobile technology are increasingly helping people to play a role in their own care and that of others. The GoodSAM app platform allows members of the public who can deliver basic life support (CPR) and use a defibrillator to receive alerts from anyone in their local area who needs urgent assistance. It integrates with ambulance dispatch systems and also features a crowdsourced map of defibrillators – including those in vehicles. The platform now has over 19,000 volunteers and partnerships with 80 organisations, including many NHS ambulance trusts. This is being supported to scale nationwide.
There are now many survivors thanks to GoodSAM. The greater the density of Responders, the more chance of that vital early response.

Please check out our website for the latest examples of GoodSAM survivors.

We work with academic partners around the world to demonstrate evidence of benefit from all the GoodSAM products. We publish our findings in high ranking journals. For the latest links, please visit www.goodsamapp.org
Core Principles

The underlying principles which established our cardiac arrest platform pervade subsequent GoodSAM developments. All the core features outlined apply to subsequent products in this brochure, and all are available through the GoodSAM Dashboard and Responder App.

Governance

Governance is our core. Our processes ensure ambulance services have complete knowledge and control of who they are alerting to emergencies.

Responder Approval: All organisations on GoodSAM only approve Responders which they can genuinely verify. Approvals are done by matching photo ID, email address and, where appropriate, GMC/HCPC/NMC/APHRA (etc) number. Responders are categorised into nationally governed (e.g. GMC registered doctors, HCPC registered paramedics), locally governed (e.g. CFRs by ambulance services) and first aid qualified. Ambulance services control which organisations and which groups of people they alert. They can even alert by category of Responder (e.g. police/fire etc.).

If you’re an organisation who would like to come on the GoodSAM platform (such as a first aid organisation or hospital), don’t worry about administration work around approvals. We can “auto-approve” with known email addresses - give us a call for more information.

In some parts of the world (e.g. New Zealand), the ambulance services have decided to alert anyone who self-certifies that they are CPR competent. This is because they train people, (e.g. in football stadia at half time), without issuing certificates and want to be able to alert these people to their next door neighbour in cardiac arrest. These people can also register on the system but will only be alerted in regions where the statutory ambulance service agrees to alert them, and only over a very small radius (1-200m).

Code of Conduct: We work with ambulance services to ensure Responders agree to a “code of conduct” specifically for the region they are in. This is displayed on the App, on the website and at time of sign-up.

Security and Standards

All data transmission through GoodSAM is AES 256 bit encrypted and data transmitted complies with Caldicott principles exceeding standards required by NHS and HIPAA. GoodSAM adheres to EU GDPR requirements.

Security is provided through TLS protocols
Scalable architecture using stateless servers
Self-healing capabilities with distributed notification system
Redundancies on all services (CAD, APP, WEB and Media servers) with 100% uptime
Innovation

GoodSAM is innovating way beyond cardiac care into the core of providing better care through Instant On Scene and video triage. From the GoodSAM Dashboard, you can access a plethora of features - from real-time data advising you on optimal alert radius, times of first on scene, through to individual patient reports compiled by Responders.

GoodSAM works across all smartphones. There is no need to supply CFRs/Responders with costly hardware. Their personal phone will support GoodSAM. This means they will always be alerted to local cardiac arrests, even when not on duty. Additionally, Responders buy phones that have a good signal where they live/work, minimising risk of non-connection.

But GoodSAM even operates where phones don’t have a data signal. This is useful in resource poor countries where mobile systems are unreliable. Responders can log into their profile and select “SMS alerting” saying where they live and work and the times they are at each. They can then become static Responders, alerted by SMS.

Collaboration

We are proud to collaborate with some of the largest and most advanced emergency services around the world. We work with organisations to develop solutions that optimise outcome.

GoodSAM is NOT a first aid organisation - we don’t teach first aid, supply services or sell AEDs. We are also not a pure tech company that develops a spec and disappears. We have a deep understanding of clinical need and work with organisations to continuously evolve. We act as a glue that can bond a spectrum of organisations - so that the skills which their members have can be used when least expected - to save lives in their community. As such, the App can be branded to maintain the core organisation’s identity for its members.
The Online Clinic

The GoodSAM Tech Stack is also behind Clinic.co, a revolutionary telemedicine platform that believes everyone should be able to access the best healthcare.

The doctor or nurse simply sends out a text at the time of the appointment, the patient clicks a link at that time and, without the need for any Apps or downloads, the video and audio start to stream.

For more information or to register, visit www.clinic.co
GoodSAM Partners

Ambulance Victoria

St John

East Midlands Ambulance Service NHS Trust

NHS

North West Ambulance Service NHS Trust

NHS

East of England Ambulance Service NHS Trust

NHS

South Western Ambulance Service NHS Foundation Trust

Welsh Ambulance Service

South East Coast Ambulance Service NHS Foundation Trust

Scottish Ambulance Service

London’s Air Ambulance

Air Ambulance Kent Surrey Sussex

Great North Air Ambulance

Thames Valley Air Ambulance

Metropolitan Police

Creating a safer Cambridgeshire

Bedfordshire Police

Hertfordshire Constabulary

CFA

Life

Surf Life Saving

St John Ambulance

British Red Cross

Lives

Sandpiper Trust wildcat
GoodSAM

www.goodsamapp.org

Please join us in advancing the delivery of emergency care