Omni-Angel®

A secure video management system, hosted on AWS, accessed and managed by the remote clinician.













Gwasanaeth Casglu a Throsglwyddo Meddygol Brys

Emergency Medical
Retrieval & Transfer Service

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Polypropylene box. Quick release of case for external use.



Trolley camera mount

Introduction:

Tactical Wireless Ltd and the Emergency Retrieval and Transfer Service (EMRTS-Cymru) have a collaborative agreement for the development of telemedicine solutions.

Omni-Angel® is a product jointly developed for the Adult Critical Care Transfer Service (ACCTS), that provides guidance and support to specialist ambulance crews, on request, by immersing a remote clinician via high resolution video and audio. The system uses two cutting-edge Oncam 12MP cameras to deliver a seamless 360-degree view of both the interior of the ambulance and the patient trolley, eliminating blind spots. Patented dewarping technology enables clinicians to zoom in on any area for detailed assessment, while the video feed can also be securely shared with additional remote specialists via MS Teams.

Three ambulances have been equipped, to serve NHS Wales' requirements and, after thorough testing, Omni-Angel® is being marketed, with Tactical Wireless Ltd having technical and commercial lead.



Adult Critical Care Transfer Service Cymru



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Note that Tactical Wireless Ltd does not provide an installation service but can recommend an installer.

ACCTS' ambulances already have a single 4G/LTE-A, or 5G, 2 SIM slot modem router installed.

Tactical Wireless supplies:

- 1. An Oncam C-12 360-degree camera, to be mounted in the ambulance roof, to be connected to the onboard router via power over ethernet (PoE).
- 2. A second identical Oncam C-12 360-degree camera, to be mounted, via a height adjustable arm, to the stretcher bridge and connected to a communications case, consisting of:
 - a. A 4G/LTE-A, 2-modem router.
 - b. Internal cellular, Wi-Fi and GPS antennas.
 - c. A 10 Ah LiPo battery, with a built-in battery management module.
 - d. A WAN port.
 - e. A LAN/PoE port.
- 3. A network Hub, hosted on Amazon (AWS), to enable the 3 cellular modems to be bonded, together with an optional satellite system.
- 4. An Oncam video management system, hosted on AWS, accessed and managed by the remote clinician.

The installation:

For ACCTS, TWL supplied a bespoke bracket, manufactured by ParAid and compliant with NHS' standards – 10G crash simulation and an elevating bracket for the camera.















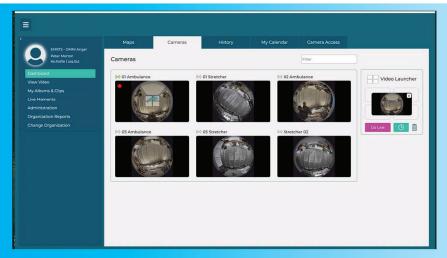
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Key Benefits and system flexibility:

- 1. The use of software-defined wide area network (SD-WAN) technology allows the bonding of the 4 WAN connections (3 cellular and a single satellite), to provide increased bandwidth and resilience, for use in remote and poorly connected areas.
- 2. The use of AWS, for both the network Hub and the vms, supports the security of the system, which complies with NHS Wales' security requirements.
- 3. The system complies with all other NHS Wales' requirements, mechanical integrity, hygiene etc.
- 4. The system has been designed to be flexible and can be used in a variety of scenarios:
 - a. The full system provides reliable video links on-the-move.
 - b. If a non-specialist stretcher is used, the roof mounted camera and onboard, single-modem router still provides a telemedicine capability.
 - c. The specialist, Omni-Angel® equipped stretcher can be used to provide remote video during transfers to and from the ambulance.
 - d. The system can be installed in wards, clinics, to enable remote specialist support to be sought.
 - e. The cased communications can be operated on its internal battery for more than 4 hours and can be deployed, along with a tripod mounted camera, to provide video links from areas where an ambulance or a trolley cannot go.









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