

HYBRID CONNEX NEWS

Advanced connectivity for healthcare

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hybrid connex

Welcome to Hybrid Connex

The Hybrid Connex 'Digital Ambulance of the Future' project is a joint NHS and commercial technology initiative that uniquely combines 4G, 5G and satellite connections, ensuring that NHS vehicle crews - wherever their location - will always be online with a high-speed connection.

The opportunities that Hybrid Connex offers could transform the way the NHS delivers care to a significant number of patients a year, by taking advantage of technology to diagnose and treat people closer to home, avoiding the need for them to go to hospitals and other healthcare facilities.

Funded by a 5.7m euro grant by the European Space Agency (ESA), emergency services connectivity specialists Excelerate Technology is leading a consortium of partners to deliver Hybrid Connex, including:

NHS
Arden and
Greater East Midlands
Commissioning Support Unit

excelerate

CATAPULT
Satellite Applications

firewire

esa

vodafone

To get involved, please register at the Hybrid Connex online engagement portal here: <https://www.hybridconnex.co.uk/>

For more information, please contact Monica France at NHS Arden & GEM via m.france@nhs.net

See the film

hybrid
connex
Digital Ambulance of the Future

A film explaining all about the Hybrid Connex 'Digital Ambulance of the Future' project is available to view here:
<https://www.hybridconnex.co.uk/>

Hybrid Connex NHS Engagement Event

The first face-to-face engagement session for Hybrid Connex was held at the Healthy Living Lab, Westcott Innovation Centre in Aylesbury on 29 June 2022.

The focus of the event was to provide NHS colleagues with the opportunity to hear more about the Hybrid Connex programme and meet the partner organisations.

Delegates also had the opportunity to hear from important stakeholders including Senior Ambulance User for the NHS Ambulance Radio Programme (ARP) Chris Lucas and discuss how Hybrid Connex could complement ARP and the forthcoming

Emergency Services Network in the future. A key focus of the event was engagement with NHS colleagues, to explore their day-to-day challenges in delivering emergency medicine and to inform Hybrid Connex partners how these challenges could be helped by technology. In turn this information will help inform the requirements development of the next generation of products to be delivered by ARP.



Key agenda items

- Chair of the event Sally Eason, Associate Director, Digital Transformation & Service Redesign for NHS Arden & GEM introduced the day and led the discussions.
- Chris Lucas, Senior User, NHS Ambulance Radio Programme, presented an overview of the ARP, aims and objectives with updates on progress to date. He outlined how the Hybrid Connex research & development programme could support the next iteration of ARP and future technology.
- Catherine Greene, Interim User-Centred Design Manager introduced the NHS engagement session & facilitators, who were:
 - Lynda Sibson, Stroke Telemedicine Partnership Manager
 - Dan Lasserson, Professor of Ambulatory Care & Clinical Lead, Acute Hospital at Home.
- Simon Hill, Chief Technical Officer, Excelerate Technology gave an overview of Hybrid Connex and its benefits in terms of enabling robust, permanent connectivity, no matter where you are.

NHS engagement session – Stroke Telemedicine Pathway & Hospital at Home Pathway

The emphasis of this part of the event was engagement with NHS partners and understanding the challenges they face in day-to-day delivery of their service. Two patient pathways were used as a focus, to encourage delegates to think of each stage in the pathway and any other variables or services they relied on to deliver best practice and ensure the patient was in the right place at the right time, first time.

These pathways were the Stroke Telemedicine Pathway and the Hospital at Home Pathway. Both Lynda Sibson and

Dan Lasserson introduced the pathways and facilitated the sessions with colleagues from Arden & GEM and Catapult.

The event was well attended by a mix of organisations. All delegates participated in the discussions and networking.

The outputs of the engagement session will be shared with all delegates and presented to ESA in the next reporting phase.

All organisations have agreed for further engagement and dates are being arranged for Hybrid Connex partners to visit colleagues in their places of work.

How does Hybrid Connex complement the Ambulance Radio Programme?



"Hybrid Connex is a particularly interesting research and development programme that is working to develop improved digital capability for ambulance services by looking at the next generation of connectivity.

"We believe this complements and mirrors the aims of the NHS Ambulance Radio Programme (ARP) in the provision of modern communications platforms for the ambulance and wider health sector, which will enable the use of technology advances in patient care.

"To this end, ARP has begun developing an open dialogue with the Hybrid Connex programme, particularly around ensuring that input from end-users across the ambulance sector is central to the development of the next generation of connectivity solutions in the future. This will also assist and inform the next generation of products to be delivered by ARP.

"ARP does not view Hybrid Connex as an alternative to the current ARP Products or the Emergency Services Network, nor is it a competitor solution. It is about a broad range of key stakeholders working collaboratively together today to inform the successful development of future connectivity requirements for ambulance services tomorrow.

*"We hope these research and development collaborations will provide ambulance services with the powerful connectivity platform they need to build on, so they can create the digital healthcare applications of the future that will genuinely transform patient care." - **Chris Lucas, Senior User, NHS Ambulance Radio Programme (ARP)***

Creating new pathways of care using the power of increased mobile connectivity

How could permanent mobile connectivity improve urgent and emergency care in the UK?

Pressure on the NHS has never been greater.

With ambulance trusts facing unprecedented demand, more patients waiting longer in A&E, significant delays at handover and discharge routes limited by a lack of social care options, it is imperative that innovative answers to these issues are found quickly.



By bringing healthcare closer to the patient, diagnosing and treating them safely but closer to home, we could see a significant number of patients no longer needing to visit hospitals (or other healthcare facilities) to receive the care they need.

Whether this care is delivered by the ambulance service, primary care teams or mobile units made up of specialist clinicians, the principle of greater use of mobile care could significantly speed up the care pathway for patients, improving their health and experience of their NHS care, while reducing bottlenecks in the wider healthcare system by keeping people out of hospital when they do not need to be there.

There is no doubt that delivering care in this new way will be a step change in the way the

NHS has traditionally delivered care to patients. It will require clinicians, technology partners and everybody involved in the local integrated care system (ICS) to work together to achieve this type of care; but it is certainly possible. However, to get to that stage we need to be sure that the technology necessary for this new way of delivering care is able to function on a secure base of permanent, resilient connectivity. Which is where Hybrid Connex comes into play.

Hybrid Connex is a new research and development programme funded by the European Space Agency (ESA) designed to enhance and improve robust connectivity for the UK's emergency services, especially the ambulance sector. And this exciting initiative could hold the key to solving some of the major challenges facing the NHS today.



The NHS and technical partners working on the Hybrid Connex programme believe that permanent, unbreakable connectivity (via a hybrid of 4g, 5g and satellite) can be the basis upon which a whole new spectrum of healthcare applications and systems will be built, creating brand new pathways of care that will achieve the following:

- Significant reductions in unnecessary conveyance to hospital emergency departments
 - Transformed patient experience with treatment and diagnostics being undertaken at home
 - Substantial reductions in handover delays (transfers of care between ambulance and hospitals)
 - Faster, immediate access to specialist clinicians and consultants via ‘there and then’ telemedicine
 - Remote treatment using technology to physically treat patients

“Greater use of mobile teams undertaking diagnostic services and delivering treatment and care away from hospitals and other healthcare facilities could be a huge opportunity to relieve pressure on the NHS, especially the urgent and emergency care system.”

"We believe these exciting innovations are now within reach, although we understand that the engagement and input of those working in the NHS – particularly in ambulance services, acute hospitals and primary care – as well as those implementing the new products via the NHS Ambulance Radio Programme (ARP) leading to the forthcoming Emergency Services Network (ESN) - is absolutely key to ensuring we develop the right applications and systems that will be of most use to those on the frontline of care.

“We are already engaging with a range of clinicians, technology specialists and other people in the NHS about Hybrid Connex and its application to mobile care and we hope to be moving towards our first pilot studies within NHS trusts in the very near future.”

Chief Operating Officer Bethan Evans, Excelerate Technology and Hybrid Connex Programme Lead

Hybrid Connex: Project Timeline

Hybrid Connex is a two-year research and development programme which commenced in January 2022 and ends in December 2023.
Here is the project timeline:

JAN 2022 - OCT 2022: Definition Phase



The Definition Phase is focused around the initial capture of the stakeholder requirements. In this case these generally come from the ambulance trusts. These user requirements are then reviewed and updated to derive the system level requirements for each user requirement.

For example, if the user requirement is to ensure that the device fitted to an ambulance powers up without human intervention then the system requirement could be that it must connect to the vehicle battery. All of these requirements are recorded in a database for analysis and traceability.

APR 2022 – APR 2023: Technology Phase



The Technology Phase is focused on taking the user/system requirements which have been captured in the Definition Phase and to start to create the initial bench prototypes of any hardware and software to realise the design for the final product.

This is achieved by breaking down the work into work package groups that are then worked on by multiple engineers across multiple consortium members. Each work package may create a piece of hardware or software that can then be tested in the "lab" by use of simulation tools etc. In parallel with this engineering work, the test bed for real world testing will be created so that we can test and demonstrate compliance to the original requirements as we near the end of the project.

Throughout the Technology Phase we will maintain regular contact with the stakeholders to ensure that we are still delivering what they will ultimately want to use for their product.

This phase is preparing the groundwork for the Product Phase.

APR 2023 – OCT 2023: Product Phase



The Product Phase is entirely focused on creating the first actual complete physical prototypes of the product. These will be created with the chosen final manufacturer for the product.

Throughout this phase, and as soon as we have the first actual prototypes, then we will undertake a series of formal approval tests appropriate to such a product. For example Radio Frequency (RF) approval (to make sure it does not radiate outside of agreed parameters), environmental tests (eg: shake, bake, drop, accelerated life), vehicle approval tests appropriate to this type of equipment etc.

The project has allowed for three iterations of hardware/software during the Product Phase after which it should be good enough for volume production.

JUN 2023 – DEC 2023: Demonstration Phase



The Demonstration Phase is about formal acceptance and demonstration of the product. This is both for the project sponsor (ESA) and also the stakeholders (NHS Trusts). The latter will be demonstrated to two ambulance trusts either using the ambulance procured for this project or the stakeholders' ambulance if appropriate.

The outcome of the Demonstration Phase will be a final sign off to confirm the product meets the original stakeholder requirements and any formal approvals needed.

For more information about project timelines, please contact Bethan Evans at Excelerate Technology via bethane@excelerate.info



For more information visit www.hybridconnex.co.uk or contact Monica France at NHS Arden & GEM via m.france@nhs.net

