

INITIAL EXPERIENCES OF REMOTE SCANNING SUPPORT IN MRI



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Context and Drivers...

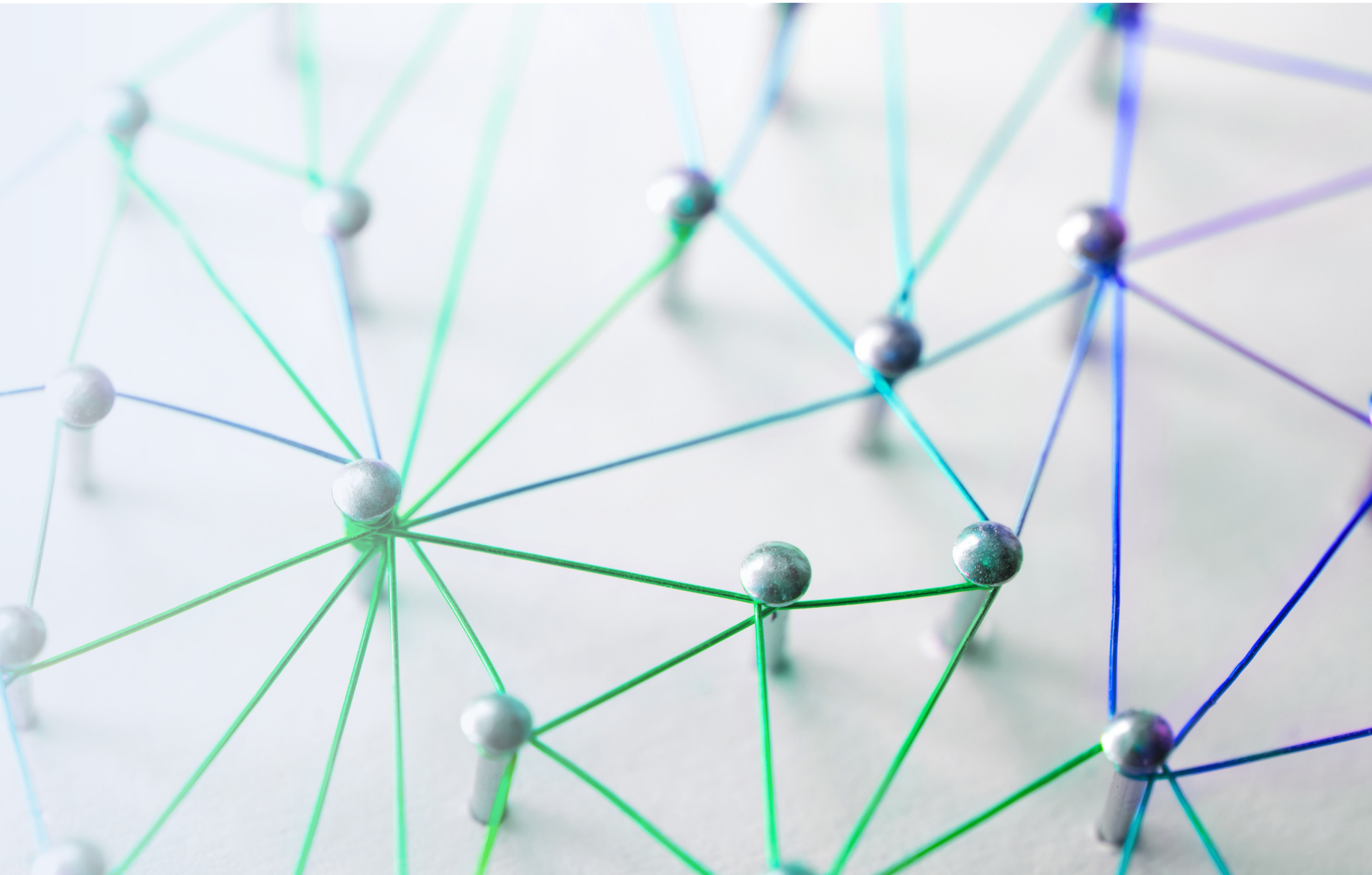
Fresh thinking is one of the core values at InHealth, with innovation and new ways of working essential to support business growth and improve services for patients. A big part of this innovation in the current healthcare context is around digitization and wider implementation of technology (PPP, 2021). This was emphasized in the Topol Review (2019) which looked at how technology should and is being used to transform healthcare in the 21st Century. Further underpinned in the NHS Long Term Plan (2019) which also highlights the importance of digital technology in improving service delivery through supporting staff shortages and helping to meet increasing demand on resources.

The COVID-19 pandemic has accelerated the use of technology, to support more remote working. The potential for remote scanning support provides the opportunity to play a role in short term staff cover, reducing the number of staff present in scanning rooms where numbers are being limited (such as for training), as well as being able to utilise skilled members of the workforce who may be vulnerable and having to shield away from the clinical setting. Moving forwards, demand for imaging is set to increase because of the backlog created from reduced capacity and delayed presentation to referring clinicians.

A key part of the recovery and renewal plan (2020) is how improved connectivity and digitization can help better deliver services, part of which is around how remote scanning provides opportunity to broaden supervision and sharing experience for those of the workforce in junior or support roles, and new ways of working.

Offering remote image scanning services will enable radiographers to reduce the need to travel to multiple sites, improve their efficiency and provide better resource distributions across the system in response to local variations in demand. (PPP, 2021)

This poster outlines our first experience of Siemens Healthineers *syngo* Virtual Cockpit, a software solution designed to assist scan procedures from a distance.



The project

Siemens Healthineers *syngo* Virtual Cockpit Remote scanning interface was set-up across one static location with three MRI scanners.

The following two scenarios were tested over a 6-month period, accessing the three scanners from:

- a) A steering room within the department
- b) Home location, MRI Clinical Lead

The software was used to test its functionality and performance under real world conditions. Its main use within the department was to support training and skill mix amongst staff, as well as protocol management. Testing remote access from a home location with standard broadband capability was conducted to check accessibility and performance.

The initial feedback from users in the trial were:

Positives

- Real time support for other staff members via remote access
- Remote access to provide off site support where needed
- Training of staff while other staff are scanning
- Protocol management of multiple scanners simultaneously.
- Full scanner functionality
- Good quality communication and access with standard home network speeds

Negatives

- No patient contact
- Challenges with multi-tasking and communication across three scanners
- Limited view of patient in scan room – be good to use bore camera
- Reliance on scanner availability to complete protocol management but greater potential for access
- Due to network limitations from home connectivity some lag noted in the cursor movement

syngo Virtual Cockpit has real potential to provide **oversight and support** to less experienced staff or where difficult examinations present.

This would be particularly useful in new service set-up e.g. cardiac scanning in hospitals where scanners are spread-out or a satellite department with less experienced staff.

syngo Virtual Cockpit provides an opportunity to support **training and development** of junior staff. It could also be a useful means of monitoring performance of staff; either for those new during induction, those with capability concerns, or general monitoring of scan technique. There is also a potential to use the software to support assistant practitioners scan using standard operation procedures outlining roles and responsibilities.

Protocol management is a challenge in departments with multiple systems. *syngo* Virtual Cockpit provides access to three scanners simultaneously making this a less time consuming and more efficient job.

Considerations

Careful consideration needs to be given to staff resources, depending on the department layout. The awareness of the needs of the patient by the scanner including safety management and patient care as well as scanning in case of connectivity issues limits any potential staff or efficiency saving. Remote support would be better provided by a dedicated steering radiographer and not someone who is based at another scanner doing their own work at the same time.

From a safety and human factors perspective it is important to note the **cognitive requirements** involved in 'multi-tasking' if using more than one scanner. Research shows that multitasking results in a strong negative impact on performing even simple tasks, and that it slows people down and results in more mistakes. It may be possible to become skilled at performing two tasks 'simultaneously', but the concentration required should not be underestimated which in turn could be more fatiguing than normal onsite scanning. Because of the lack of scanner noise and 'being present' onsite there is also a disengagement from the patient. These are important factors to consider and will limit potential utilisation.

From a **personal and professional perspective** is the potential impact remote scanning could have on being a radiographer. Safety management and responsibility for the episode of care has always fallen to the registered radiographer. The shared responsibility for the patient means that teamwork and trust between the staff on-site with the patient and the steering staff is more crucial than ever. Part of being a healthcare professional and being viewed as such, is the interaction with patients, especially discussions around their condition, as this helps to adapt technique and improve image acquisition. Is there a danger of disengagement from the patient or is this an opportunity for the staff on-site to focus on the patient while remote staff focus on the scanning.

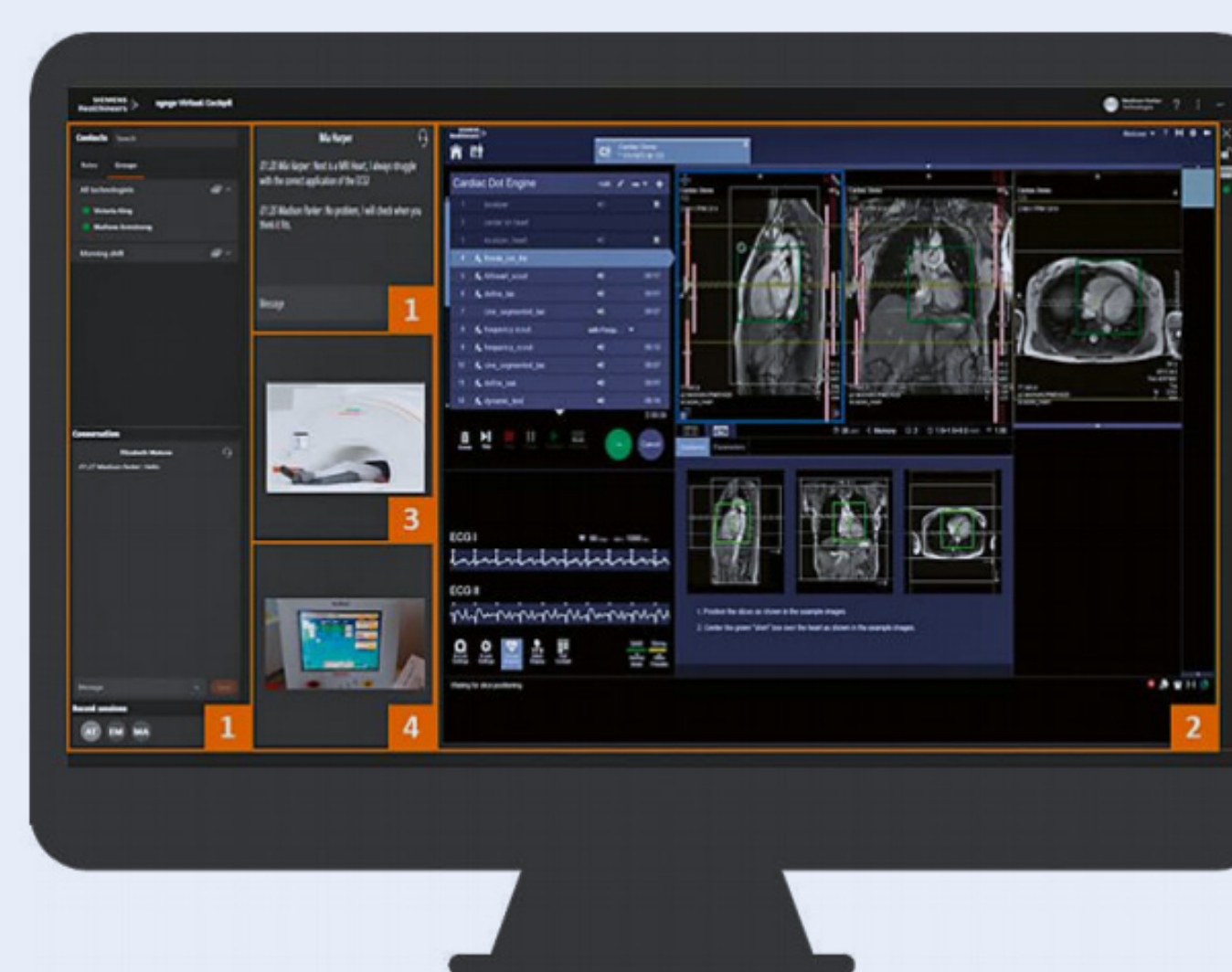
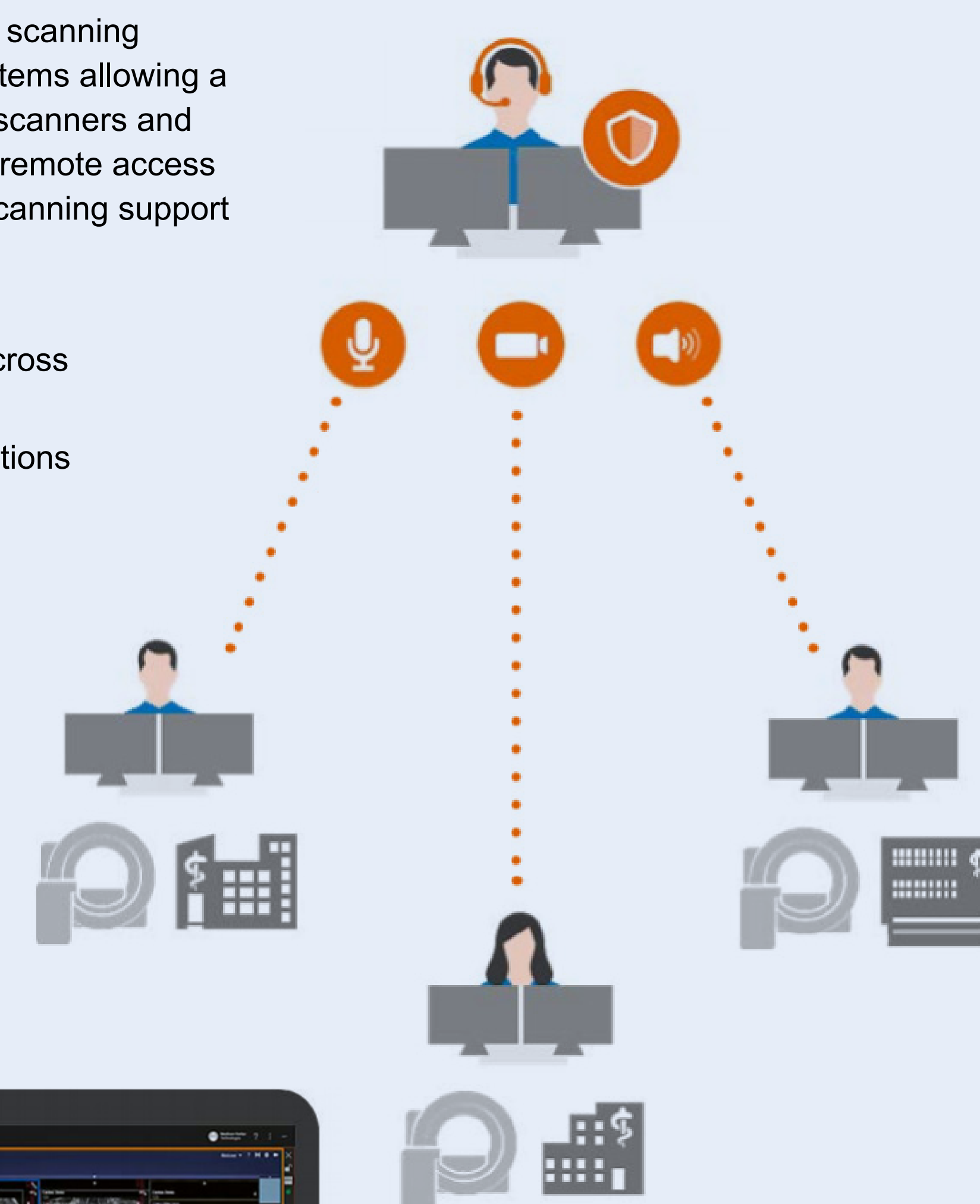
What is it?

syngo Virtual Cockpit is a remote scanning interface available on its MRI systems allowing a connection to be made between scanners and a remote user. Thereby enabling remote access to scanners for comprehensive scanning support regardless of physical location.

Its core features are:

- Real-time knowledge sharing across teams and sites
- Live video, audio, and chat functions
- One experienced radiographer can collaborate with up to three scanning workplaces simultaneously

- 1 – communication
- 2 – control panel
- 3 – patient camera
- 4 – contrast monitor



syngo Virtual Cockpit, a software solution designed to assist scan procedures from a distance. Expert colleagues receive access to the scanner and can support less-experienced technologists via chat, voice, and video (Siemens Healthineers, 2019).

Wider implementation

Operating from a multi-scanner single site location, the value of *syngo* Virtual Cockpit has predominantly been directly linked to support and training; however, there are far wider reaching and innovative benefits from the introduction of this solution across a regional or national footprint. The change management needed in the implementation of *syngo* Virtual Cockpit cannot be underestimated. To ensure that Siemens Healthineers are best placed to lead this change and adjust the current 'norm', it is important that the views of patients and the radiographer profession be taken into consideration. Other important general considerations around the implementation of technology noted in the Topol Review (2019) are around:

- Digital skills – by 2040 it is predicted that 90% of all NHS role will require an element of digital knowledge and skill, which will require addressing based on generational differences and location of work
- Data protection and cyber security to ensure safe access to digitization and robust connectivity
- Use of technology should be aimed at supporting staff to spend more time with patients, not less

References

Topol (2019) Preparing the healthcare workforce to deliver the digital future. The NHS Consortium
 NHS (2019) The NHS Long Term Plan. NHSE
 Richards (2020) Diagnostics: Recovery and Renewal. Public Policy Projects (2021)
 Kraft & Dummet (2019) *syngo* Virtual Cockpit – your software for remote scanning assistance and more flexible workforce management. Magnetom Flash (74)
 Siemens Healthineers (2019) *syngo* Virtual Cockpit – move knowledge, not staff.