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### Meet the Inventors

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## Wireless RF receive/transmit coils for simultaneous MR image acquisition and data communication

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Wireless communication between the MRI scanner and its subsystems (i.e. ~ RF coils, on-board sensors and monitors, local B0 shimming, active detuning, etc) is vital to the development of next generation MRI scanners. The removal of wired connections in an MRI scanner improves patient throughput and workflow, reduces the system complexity, improves patient comfort in the scanner by removing the intrusive cable bundles between the RF coils and the scanner, and ultimately enables the miniaturization and portability of the scanner itself. Wireless data transfer in an MRI scanner is an active research interest of all of the major manufacturers, such as GE Healthcare. To enable wireless communication in the MRI scanner, we propose a novel MRI RF coil design that allows simultaneous MR image acquisition and wireless communication with the same RF coil array. By using the same RF coil array to perform simultaneous MR image acquisition and wireless data communication minimal hardware is required to be added to the scanner, which is essential to reducing the system complexity and enabling portability of next generation MRI scanners. Further, this design can be easily integrated into existing MRI scanner because it is self-contained and requires no modification to the existing MRI hardware. Currently, there are no MRI RF coil arrays available for MRI scanners which can perform simultaneous MR image acquisition and wireless data transfer.

