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Quantum Sensors for the Hidden Sector

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Quantum Sensors for the Hidden Sector (QSHS) is a new UK-based collaboration working on resonant cavity detectors for halo axions. Our search facility, an 8.5mK dilution refrigerator containing a 20cm bore, 20cm long experimental volume threaded by an 8T magnetic field, was funded by STFC in 2021, and is now running at the University of Sheffield. The collaboration is developing a variety of low-noise electronics and high quality factor resonators, and we plan to install and test several low noise readout configurations within the next year. I will describe the Sheffield facility and the status of the quantum electronics under development.

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