

**Available**

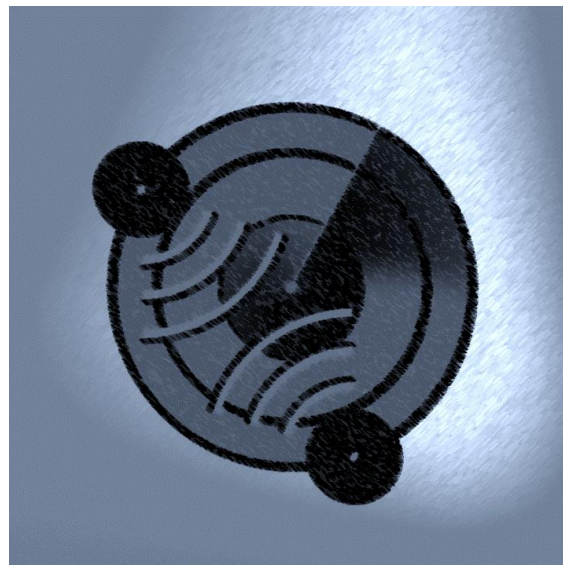
## Spectrum Sharing Radar Prototype

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### Project description:

With the advent of mobile communications, the microwave spectrum is becoming increasingly dense. Several surveillance radar systems have traditionally operated in L-, S-, and C-bands for decades. However, their operation now faces challenges due to spectrum scarcity and RF interference from communication networks. Recently, there has been considerable interest in designing radar systems that have the ability to share spectrum with communication networks. Programs such as DARPA SSPARC, NSF EARS, CommRad, and RC3S are also actively working on equipping existing radar systems with spectrum-sharing transmission and reception. This design methodology has been termed as 'coexistence' spectrum sharing.

The goal of this project is to develop a hardware prototype of a coexistence spectrum-sharing radar. We would leverage on existing hardware prototypes and designs of cognitive radio and cognitive radar in the design process. The cognitive transmission allows the system to only transmit in those frequency bands that are sampled by the receiver.



### Required background

Signal and systems (essential), Mavlas (essential), Random signals (desirable)

### Environment

MATLAB