REMOTE METAL DETECTION SYSTEM

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Problem: Underground metal detection today either for mine detection or treasure hunt involves close human intervention. This is rather dangerous and time consuming.

Objective: The purpose of this project is to develop a system that detect and map the subsurface metal without close-by human involvement.

The system will consists of two major sub-system:
1. Metal Detection System
   utilize colpitts oscillator
2. Positioning System
   camera based object tracking

Operation: The metal detection system can be mounted on any RC vehicle which drive around a target area. A fixed camera will continuously observe the target area and keep track of the RC vehicle through computer software. Upon detection of metal, the detection system will send signal to the software. Once the software receives signal, it will mark the current location of the RC vehicle in camera. The end result will be an image with markers indicating the location of underground metal.

Specification:
1. The area which the system can be deployed will be < 100 sf
2. The metal detection device will only detect metal object that is < 10cm deep underground.
3. The positioning system shall map the detected metal with accuracy of ±10cm.

EXAMPLE OF REAL LIFE APPLICATION