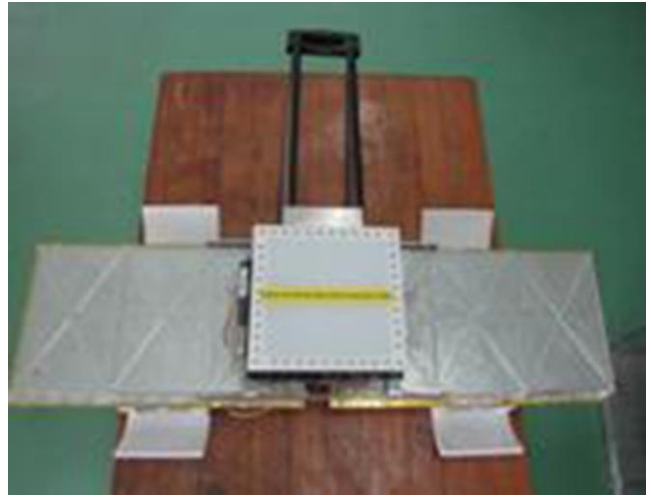


Ground Penetrating Radar (GPR)

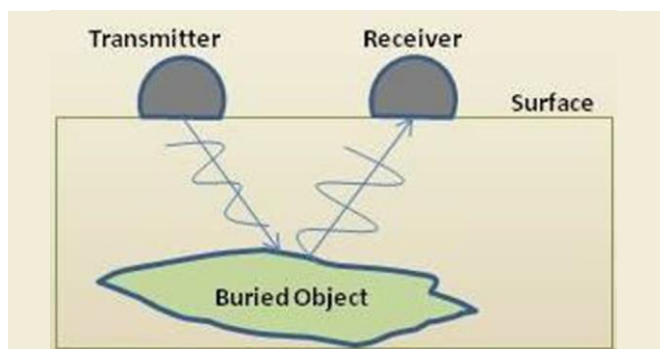
Salient Features

- Based on stepped-frequency continuous wave (SFCW) approach, ultra-wideband (100%, i.e., bandwidth of 500MHz with centre-frequency of 500 MHz).
- Depth Resolution better than 30 cm.
- Integrated GPS for geo-tagging of the recorded data.
- Built using commercial components readily available in the market, thus increasing the prospects of using indigenously developed GPR instruments at much lower cost (20 times lower compared to imported versions) for commercial and scientific use.
- Total mass of the system is 10 kg out of which 5 kg is for electronics and antennas and the rest for the structure (can be further optimized). Power requirement of the instrument is 10 W.

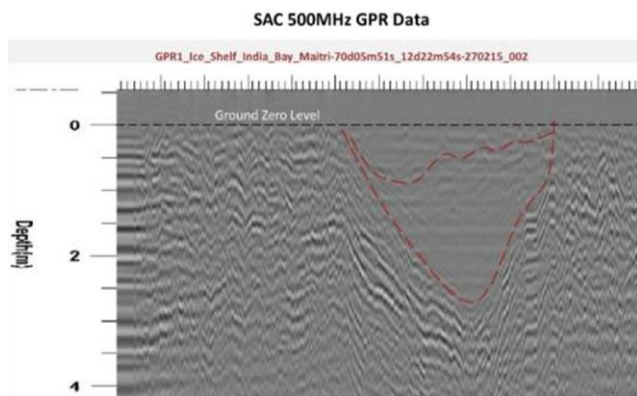
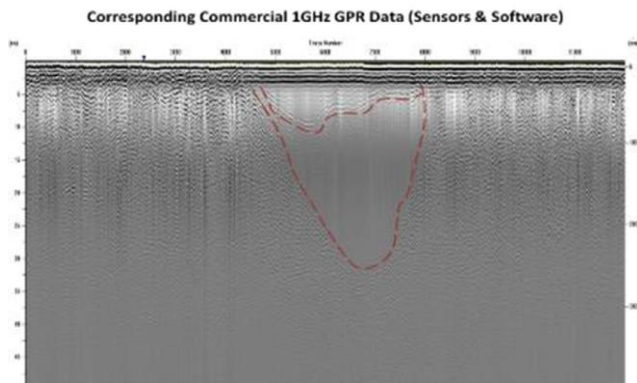


Potential Applications

- GPR is a high-resolution imaging radar that works on the principle of scattering of EM waves to locate buried objects. It operates by transmitting high frequency directly down into the ground via wideband antennas and detecting the reflected signals from targets (objects or materials with a dielectric contrast with the surrounding medium) buried beneath. It can be brought to use for the following applications:
- Can be brought to use for both commercial as well as scientific applications.
- GPR is an instrument that finds applications in environmental, engineering, archaeological, and other shallow investigations.
- Different applications require subtle changes in the hardware (frequency selection) as well as the processing software. Therefore, once the exact application goal is defined the system can be tuned accordingly.



Benchmarking with respect to Commercial GPR



Technology Transfer from ISRO

ISRO is willing to offer the knowhow of this technology to suitable entrepreneurs / industries in India. Capable manufacturing industries interested in acquiring this knowhow may write with details of their present activities, requirements and plans for implementation, infrastructure and technical expertise available with them, their own market assessment, if any, and plans for diversification to the address given below: