This talk will discuss two systems: a large radio telescope to be built in China, and a small handheld radar concept system suitable for 3-D imaging of concealed objects.

The National Astronomical Observatory of China (NAOC) is building what will be the largest telescope in the world. The telescope employs a spherical reflector, 500m in diameter, with a surface that actively deforms into a paraboloid. We have studied the feasibility of a 19 element array system and analysed two feed element approaches, modeling the array performance with one of the feeds*. This talk will discuss radiotelescope operation and results of the study will be presented.

The second part of the talk will discuss a somewhat smaller imaging system. Millimeter-wave imaging portals can now be found in many airports around the world. However, future systems are likely to extend beyond the portal, either with larger stand-off ranges, or be more agile, compact and portable. Here a bench-top system will be discussed, designed to explore 3D imaging at 1.5mm wavelengths. Images generated by the system will be presented along with our first 3d images.

*: This work was funded by NAOC.