The utility and gas pipelines buried underground throughout the U.S. and most of other countries have not been properly inventoried. Most of the past and present inventory records are limited, scattered and in different accuracies. With the recent and continuous advances in ground penetrating radar (GPR) and global positioning system (GPS) technologies, it is now possible to conduct detailed inventory with good and uniform accuracies. Indeed, ground-based GPRs have been used for this purpose in recent years. However, its applications would likely be limited to local mapping due to its limited mobility. It has become apparent that the only rapid and cost-effective means in the near future to acquire regional- to coltlll~.