Preliminary Report: Terrorist use human-born Improvised Explosive Devices against public and military persons. These undetected suicide bombers enter crowded public areas in order to detonate the IED, inflicting lethal damage to the surrounding individuals. Currently, there are no detection systems that can identify suicide bombers at adequate standoff distances. We develop models and a methodology that examine current technologies to increase the probability of identifying a suicide bomber. (Received September 09, 2010)