

## **Benefits of Second Generation Beacons vs. First Generation Beacons**

- Spread spectrum mitigates the chance of interference to a higher degree. Benefits include better timing, TOA/FOA computation, interference mitigation, etc.
- With SGBs, you repeatedly have 100m independent location accuracy within 30 minutes of transmission, giving SAR forces a more realistic survivor location in dangerous terrain, providing safety to both the beacon user and SAR forces. Higher location accuracy means less time searching for a victim in areas such as canyons and the open ocean. Additionally, spread spectrum beacons / SGBs front-load their distress transmissions, sending more transmissions in the crucial minutes after activation and then reducing the number of transmissions as time goes on, providing better “last known position” data for SAR forces. Spread-spectrum signal schema allows for better penetration of triple canopy and ocean weather effects, vital in an inland or maritime SAR case. High-precision independent location capability using MEOSAR constellation reduces terrain blockage/GPS occlusion effects during SAR cases in mountainous terrain and where GNSS signals may be degraded due to topography/geography. SGB waveform format allows for future extensibility, i.e. survivor data or other data feeds in “rotating fields” of transmission, and aircraft registry information in the case of SGB ELT(DT)s.