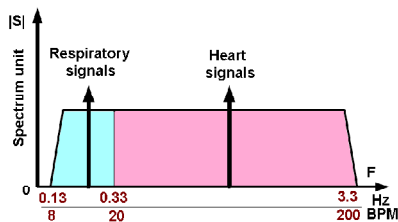


Remote Life-sign Detection: movement breathing heartbeat

Basic idea: The device is based on the impulse radar sensor that sends short, low energy electromagnetic pulses and receives the reflected pulses from the medium being monitored. Using original digital signal processing methods, it is possible to distinguish signals related to cardiac and respiratory movements.

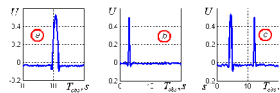
Frequency range of the signal



Human movement detection

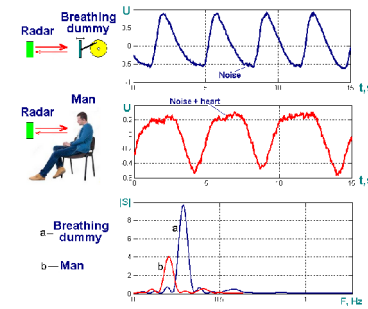


The man in the area of the radar sensor



- Slowly passed
- Quickly ran
- Two people passed

Detecting breathing

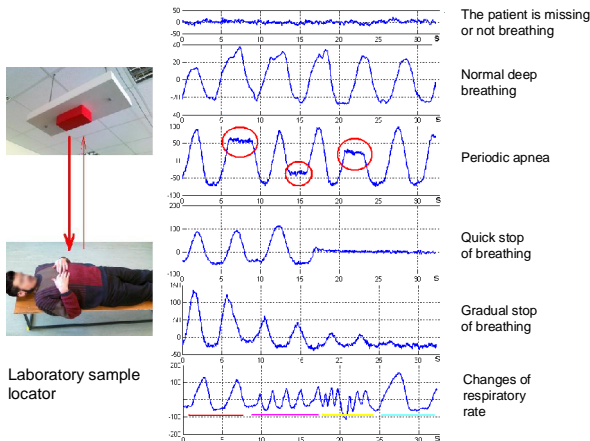


Dummy breathing signal from textolite plate 120x120mm. (Amplitude of oscillations 12mm)

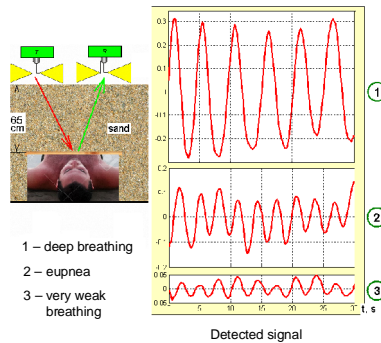
Human breathing signal

Comparison of the spectrum

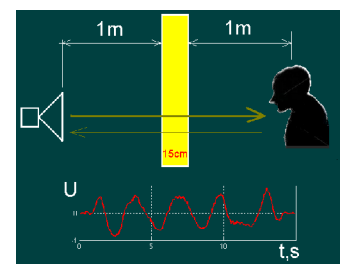
Monitoring patient's breathing



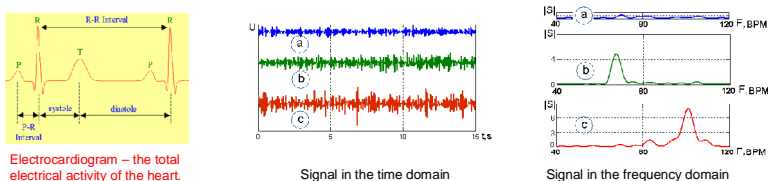
Detection of human breathing under a layer of sand 65cm and more



Detection of human breathing behind the wall

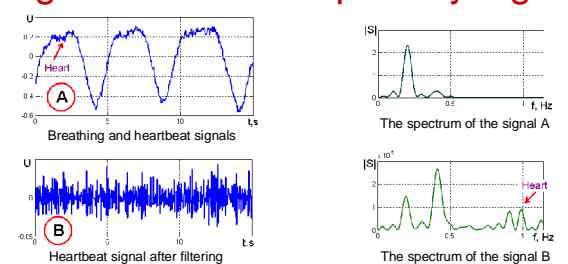


Detection of human heartbeat



- No life-sign in the controlled area
- Only a calm heart in a controlled area (no breathing)
- Only a heart after 20 squats in a controlled area (no breathing)

Detection of human heartbeat on the background of the respiratory signal

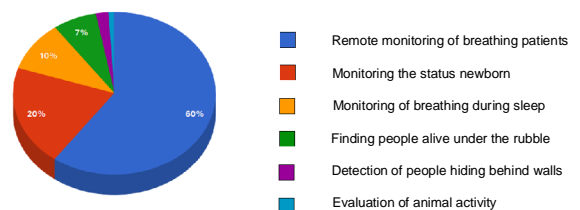


Geography studies: development centers of bioradars and similar



Latvia,
Germany,
Russia,
China,
Japan,
USA,
England,
Sweden,
Canada,
Lithuania

Existing and potential market



A rough estimate, based on the Internet data

