Development and Testing of Ventricular Fibrillation Detection Software Module

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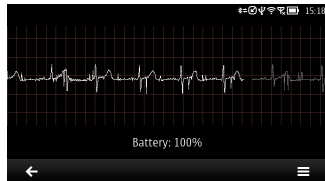
November 11–15, Helsinki, Finland
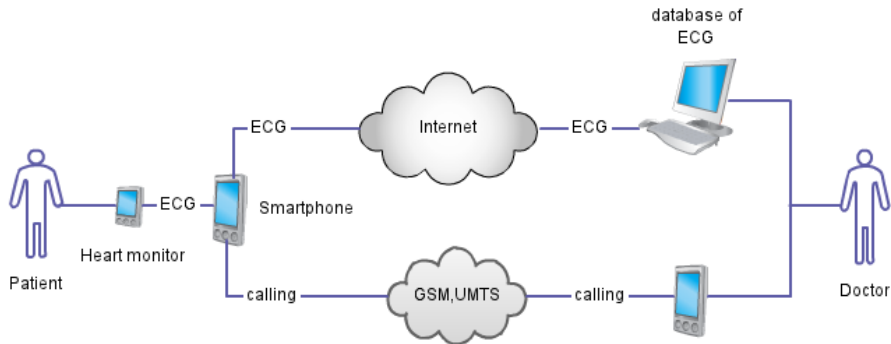
Cardiovascular diseases

- Major health problem
- Greatest risk group
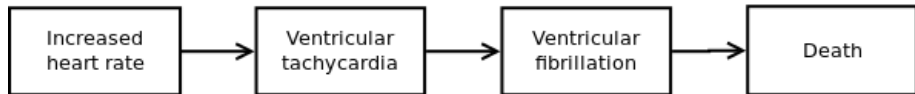- Constant monitoring

CardiaCare

- Smartphone
- Application
- User-friendly
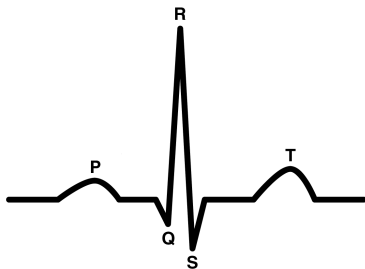- Customizable ECG viewer
- Analyzer
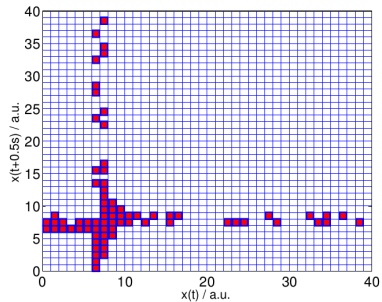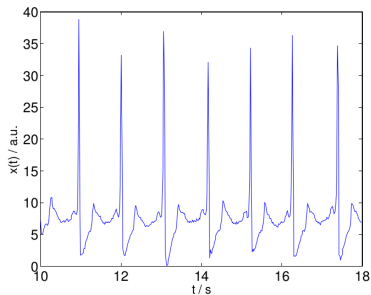- Emergency call

How it works?

Sudden death

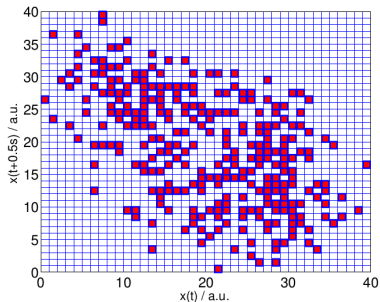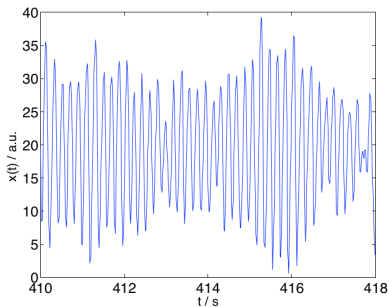# Requirements for the algorithm

- Real-time
- Reliability
- High speed
- Simplicity

Phase Space Reconstruction

Phase Space Reconstruction

Arithmia detection

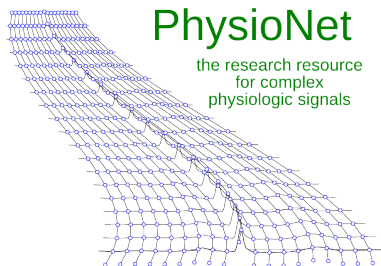$$d = \frac{\text{Number of visited boxes}}{\text{Number of all boxes}}$$

If $d > d_0$, then classify ECG episode as VF,

$$d_0 = 0.15$$

Testing of the algorithm

- MIT-BIH
- PhysioNet
- Open-source software
- WFDB-library
- WFDB-applications
- ECG records

PhysioNet
the research resource
for complex
physiologic signals

Testing: Normal ECG record

Testing: VF ECG record

Thanks for your attention!