

HeAT – Health and Assistive Technology laboratory

“Welcome to HeAT: a network of health technology professionals and a testbed environment that provide expert research services for health technology products.”

Location: Tampere University, Hervanta Campus

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Photos:
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Hannu Nieminen,
Milla Juutinen

Our services are tailored to your needs

We provide service packages from very small projects to clinical studies and long-term innovation collaboration.



“First contact is dealt without delays and the right collaboration partner is found from the HeAT lab network.”

Examples of services

- Testing a company product against a reference devices or testing the effect of an intervention
 - With healthy participants or with patients in collaboration with TaUH
- Testing against medical device standard (not an accredited lab)
 - E.g. ECG standards, SpO₂ standard
- Evaluation of an existing device design
- Development of full embedded prototype systems including algorithm and software development



**Clinical studies:
We can provide it all: plan, execute,
and analyze your project. Or we can
innovate and work together with you!**



HeAT networks with many research groups in Tampere University community and Tampere University Hospital



HeAT core groups:

- Mark van Gils - Decision Support for Health
- Antti Vehkaoja - Sensor Technology and Biomeasurements
- Jari Viik - Physiological Measurement Systems and Methods
- Jari Hyttinen - Computational Biophysics and Imaging Group

Examples of references and interventions



Biopac MP160 Research System

- 7 wireless modules for different physiological measurements (ECG, EEG, EMG, EOG, NICO, RSP, PPG and EDA)



NOX A1

- Ambulatory polysomnography system



Finapres Nova

- Continuous non-invasive blood pressure

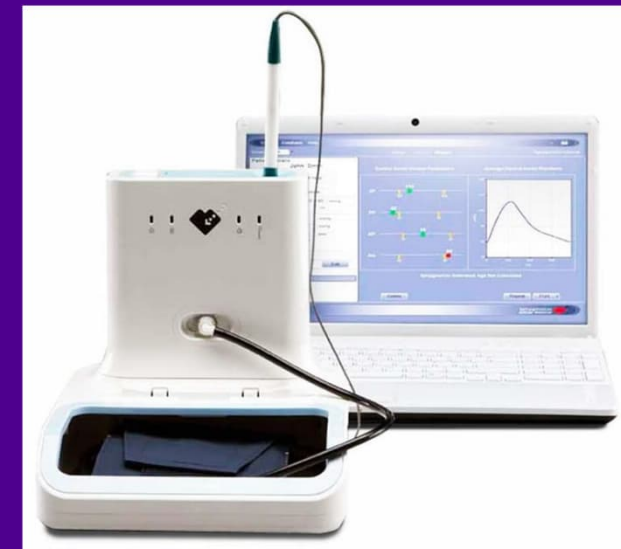
Hypoxico Everest Summit

- SpO₂ intervention
- High-grade reference devices

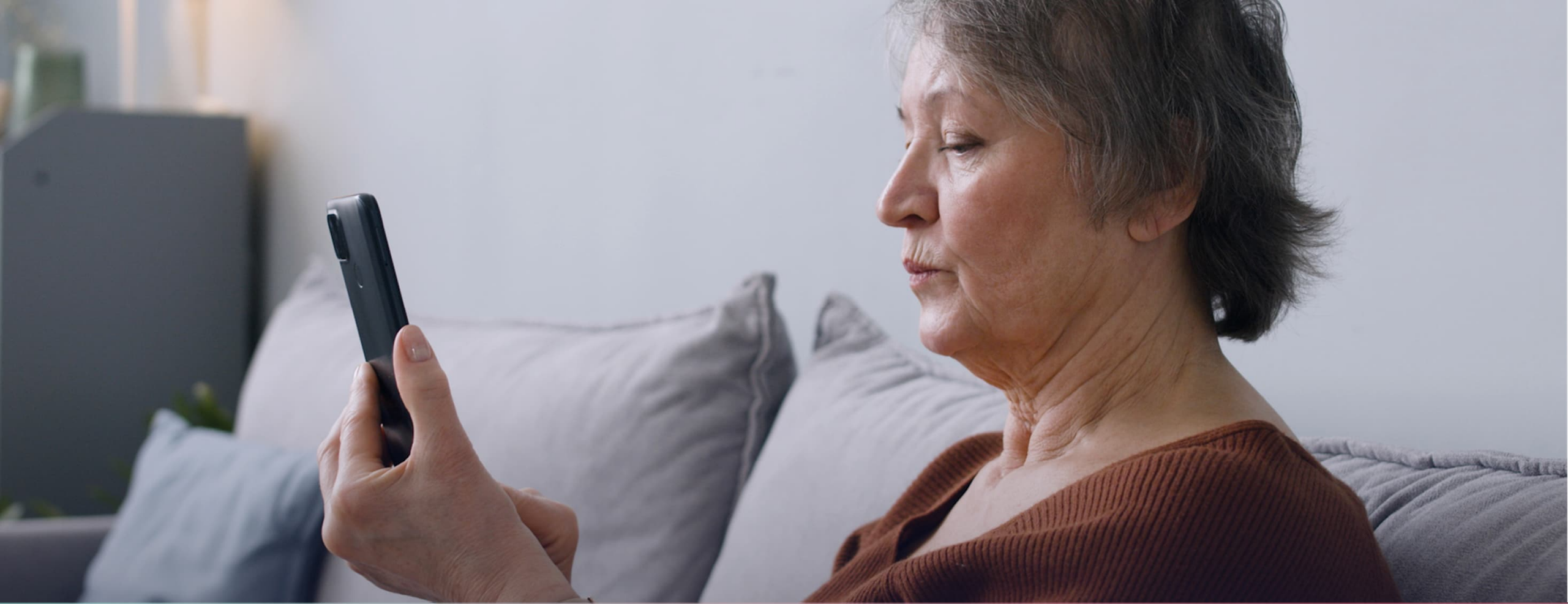


Types of collaboration

- Contract research
- Joint public funded research projects e.g. Business Finland, EU Horizon
- BSc and MSc thesis projects
- Smaller student projects



Case example: Vitacam



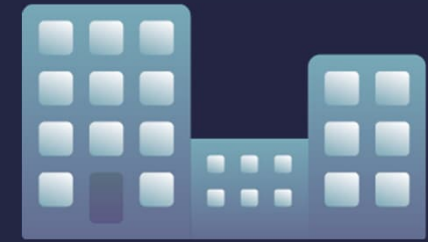
Vitacam[®]

<https://vitacam.health/>



Vitacam[®]

NE DEVICE SW



Founded in 2014

IT consultancy

inDemand winner

Co-creation

Certification

Collaboration

Founded by mobile industry veterans

Working on medical devices & imaging

Winner of EU wide innovation challenge

EU regulatory compliance

Collaboration across Finland and UK

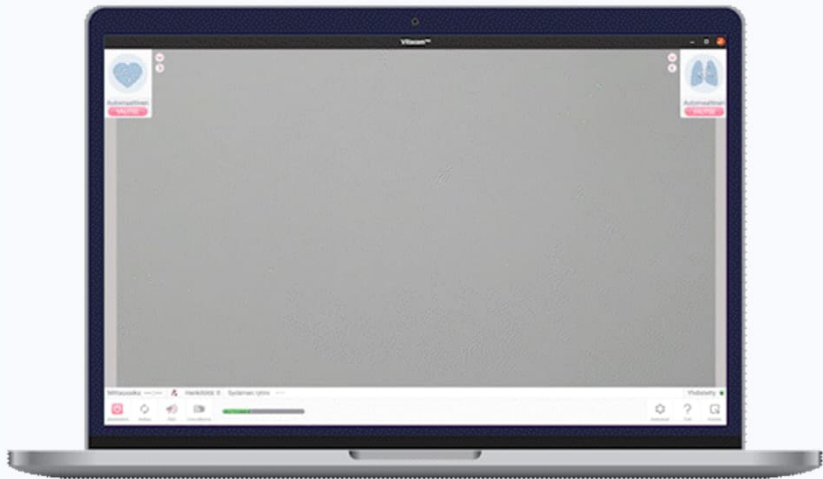
NOKIA



ISO 13485
MEDICAL DEVICES



VITACAM TRIAGE: MEASURE RESP RATE, HEART RATE & RHYTHM IN REAL TIME



EMERGENCY DEPARTMENT
TRIAGE



CLINICS

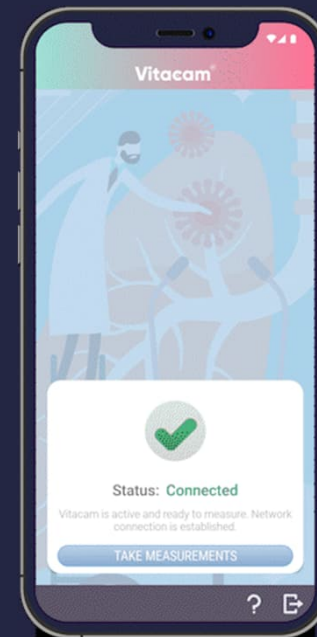
VITACAM MOBILE: MEASURE & TRACK PERIODICALLY



VIRTUAL WARDS / REMOTE
MONITORING



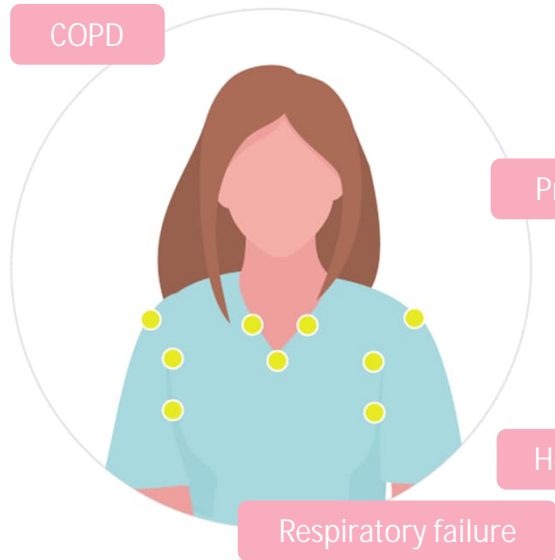
ELDERLY CARE



VITACAM: FOR BOTH CLINICAL AND HOME SETTINGS

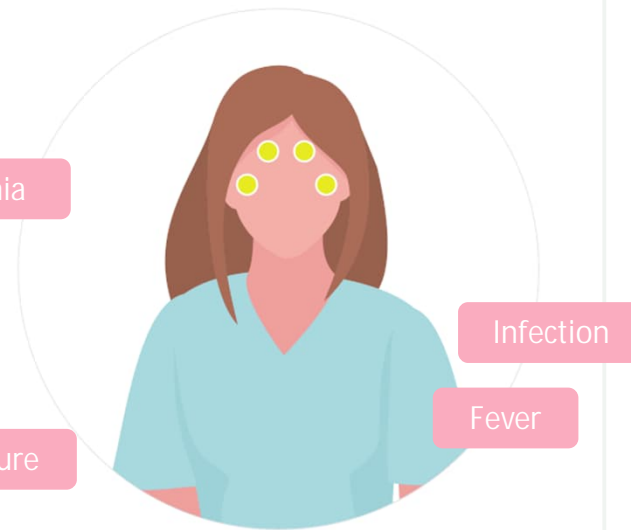
AIMING TO BE FIRST TO MARKET WITH OXYGEN SATURATION THROUGH VIDEO

Respiratory rate



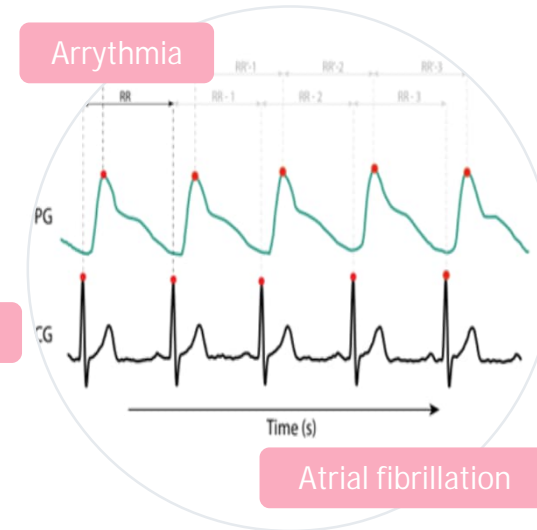
- Available now
- Derived from motion analysis of chest
- Mean Absolute Error: 2 breaths per minute (vs gold standard)

Heart rate pulse



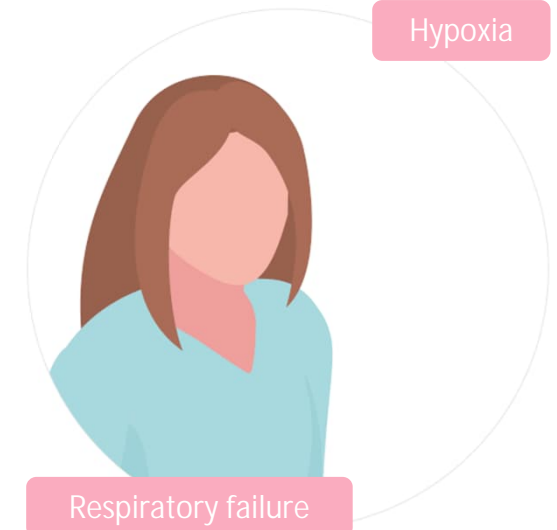
- Available now
- Algorithms detect subtle colour changes of the face from pulsatile blood
- Mean Absolute Error: 3 beats per minute (vs gold standard)

Heart rhythm & variability



- UNIQUE SELLING POINT
- Based on statistical analysis of inter-beat intervals.

Oxygen saturation



- UNIQUE SELLING POINT
- Clinical investigation in reporting phase

BENEFITS OF COLLABORATION WITH TAMPERE UNIVERSITY

1) EFFICIENT TEAMWORK TO PLAN THE RESEARCH

- Site visits & insights to develop the initial plan, budget and protocol
- Developing and improving the protocol as per ISO 14155:2020 and ISO 80601-2-61:2017, ensuring acceptance by Notified Body

2) ETHICS & REGULATORY APPROVAL

- Fast & high quality preparation for deliverables to Ethics committee and Fimea
- Timely & comprehensive responses to complex questions including data protection and clinical safety

3) CONDUCTING THE INVESTIGATION

- Effective & efficient recruitment and co-ordination
- Smooth sessions for data collection
- Always ensuring Good Clinical Practice & Safety protocols



GET IN TOUCH

Try out the app:



Apple App Store



Google Play:



Request credentials by email to
info@vitacam.health

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