



EmBrace



Social Distancing Bracelet



Wednesday, 24th February 2021
Nektarios Konstantopoulos, Senior Computer Engineer



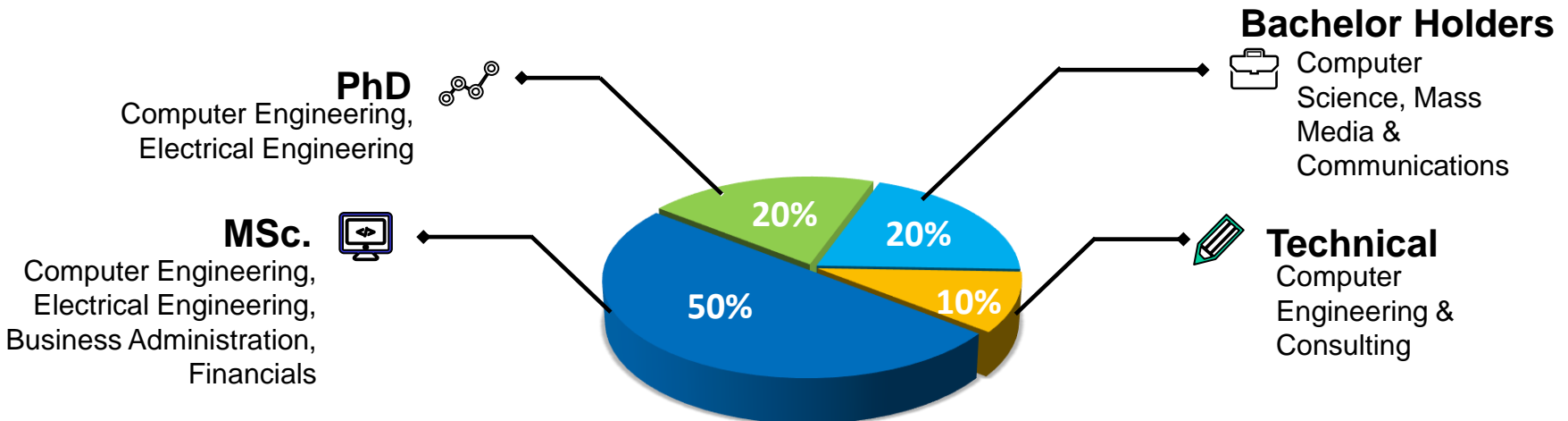
OptionsNet (Systems Integrator, Business)



Areas of Expertise

- Advanced Maritime systems
- Smart Systems
- E-Health
- Integrated Information Systems
- ICT Consulting & Customization

Company Est. : 2000, October
 Number of employees & Ext experts: 14
 Average Age: 35,9 years
 Average Working Experience: 12.9 years



Telocate (Knowledge Provider)



Dr.-Ing. Fabian Höflinger, CEO,
controlling, distribution, R&D
hardware



Dr. Johannes Wendeborg,
CTO, marketing, PR,
R&D **software**

■ Founded in 2014: **Telocate GmbH**

- 11 team members (January 2021)
- Precise acoustic localization with the mobile phone: **ASSIST**
- Asset tracking with **Telocate Wave**
- Social Distancing Solutions



Excellence

Cross-border experiment (Greece & Germany), Partners with complementary activities/knowledge and excellent performance, high levels of innovation

- Innovation Award Winner *LLOYDS GLOBAL LIST 2014*
- Google for Entrepreneurs - Startup Grind *Europe Main Event, London 2017*
- European Commission – SME Instrument *Seal of Excellence 2018*
- *IKT innovativ 2014* of BMWi (among the best six of 290)
- Award *Top Start-up Deutschland 2014* of Für-Gründer.de
- 2nd prize of *IKT foundation of the year 2017*



Excellence



Social Distancing Bracelet

- Help people to comply to distancing safety rules
- Track and localise people and crowd concentrations
- Test in Maritime Environment (Passenger or Cruise ship)



Excellence

Complement Bluetooth with Ultrasound technologies in the SD Bracelet

- Far more precise distance metering using the sound propagation time
- Robustness against ambient noise with modern signal processing methods

Features

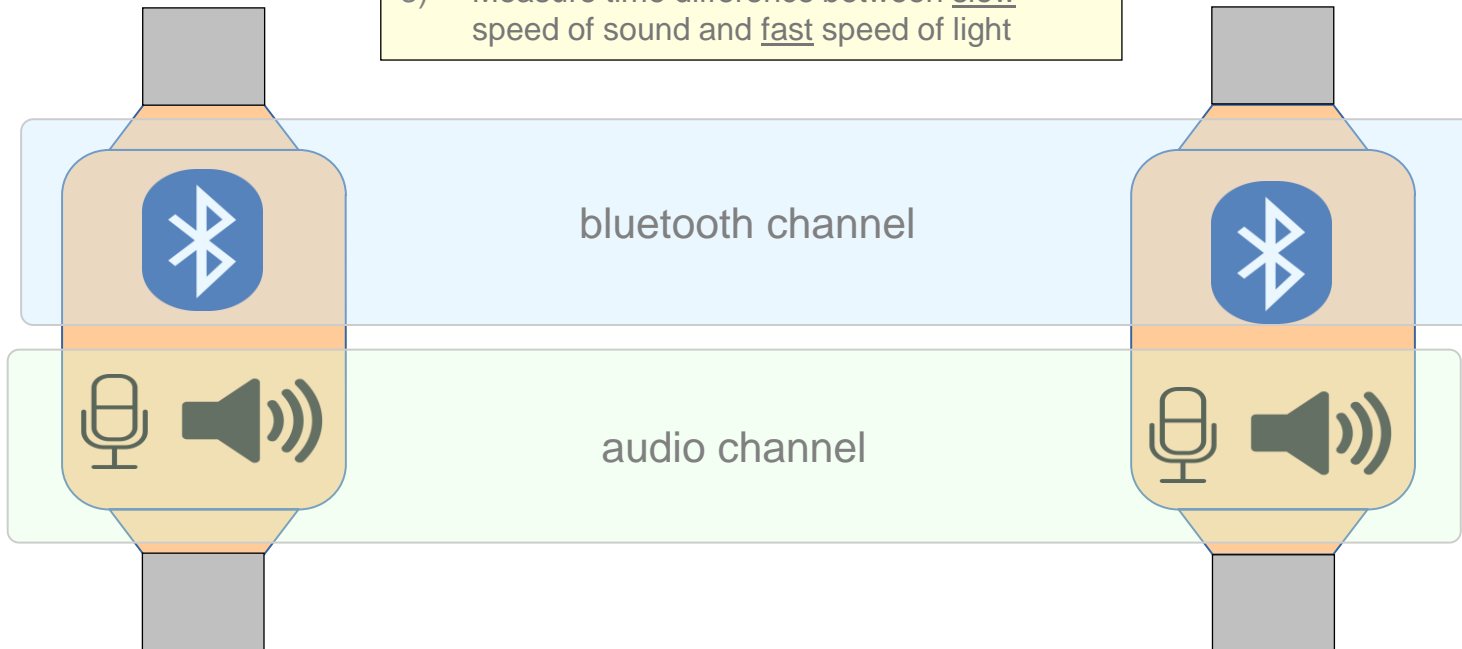
- Warning signals when close to others
 - Vibration
 - Bright LED flash
 - Acoustic cue signal
- Data security
 - All processing is done on the devices
 - No data is logged or shared
- Battery powered
 - Activity times similar to a smart watch
 - Standard USB charging port
- Modularity
 - Can be connected to an infrastructure (base station) to enable emergency evacuation system support

Implementation

Protocol

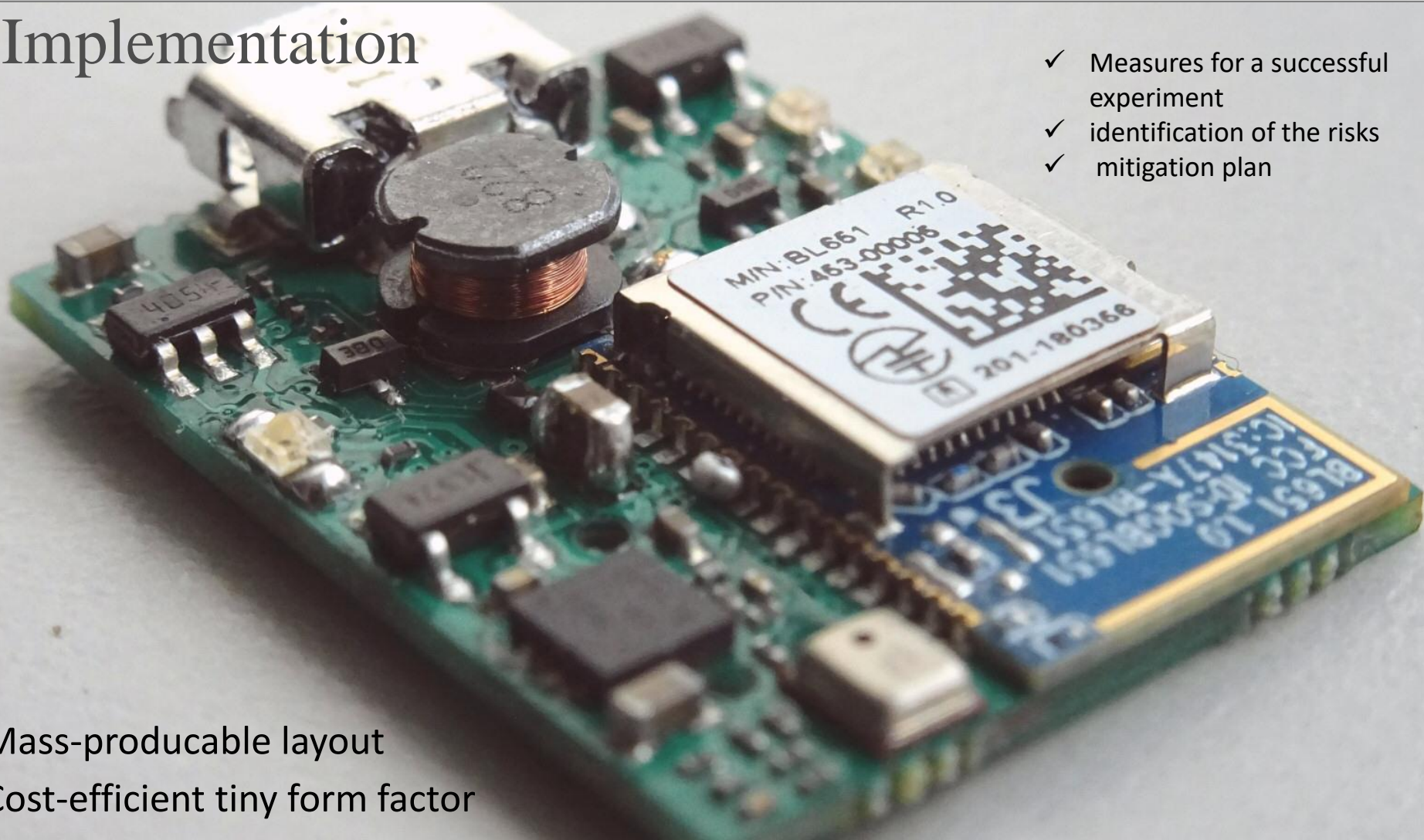
- 1) Bluetooth broadcast: Notify others bracelets in the vicinity
- 2) Respond a bluetooth and an ultrasound message to all detected bracelets
- 3) Measure time difference between slow speed of sound and fast speed of light

- ✓ Realistic Plan & budget
- ✓ Sufficient resources and time



Implementation

- ✓ Measures for a successful experiment
- ✓ identification of the risks
- ✓ mitigation plan

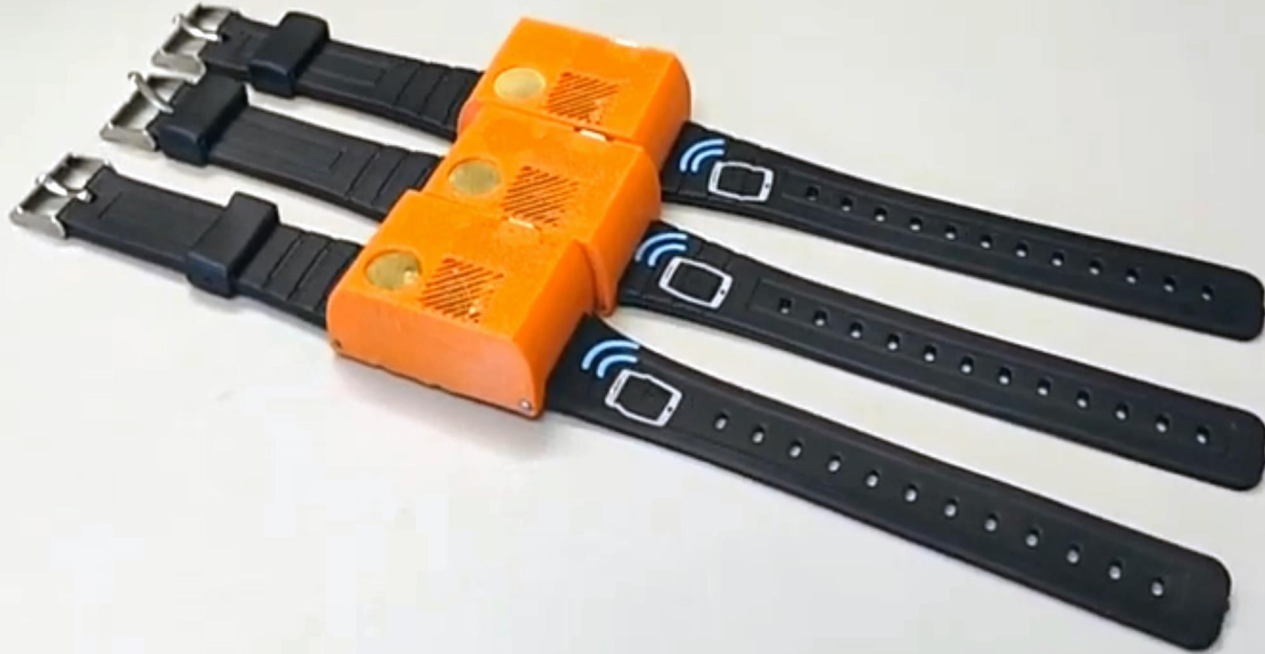


Mass-producible layout
Cost-efficient tiny form factor



Impact

- ✓ Benefit for both partners, complementary profiles, clear knowledge transfer subject and IP agreements, cross-border approach, win-win business opportunity
- ✓ Market opportunity, track record and market demand, current conditions (COVID-19 pandemic, investments etc.)
- ✓ Existing or forthcoming competition, position in the market after the successful experiment, rising competitiveness level of both partners
- ✓ Early adopters and present clients, distribution channels and partnerships, scalability of the solution, clear commercialization strategy



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Thank you for your attention!