



... in the Internet of Things

Bachelor Project (PO)
Scenario Description

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Peter Kietzmann
Leandro Lanzieri

peter.kietzmann@haw-hamburg.de
leandro.lanzieri@haw-hamburg.de

Prof. Dr. Thomas Schmidt

INET AG, Dept. Informatik HAW Hamburg

t.schmidt@haw-hamburg.de

Disaster!

What now?

Disaster



● Loss of infrastructure

● No communication!

● What to do now?

Goal: Quick Disaster Recovery

- Disaster assessment for first responders
 - Aerial overview pictures
 - Data collection & distribution
 - Basic communication (command and control)
- Infrastructure Requirements
 - Mobile & ad hoc
 - Fault & delay tolerant
 - Energy efficient & self sustainable

Approach: Balloons Serving Internet Infrastructure

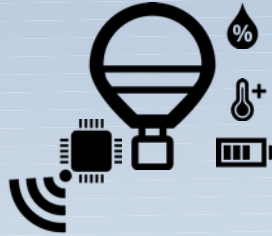
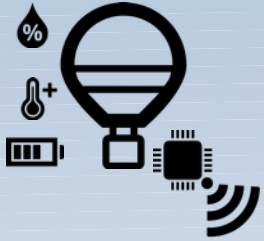
- Easy to deploy
- Low cost hardware
- Mobile by design
- Scalable
- Wide area coverage
- Proven to work in large scale



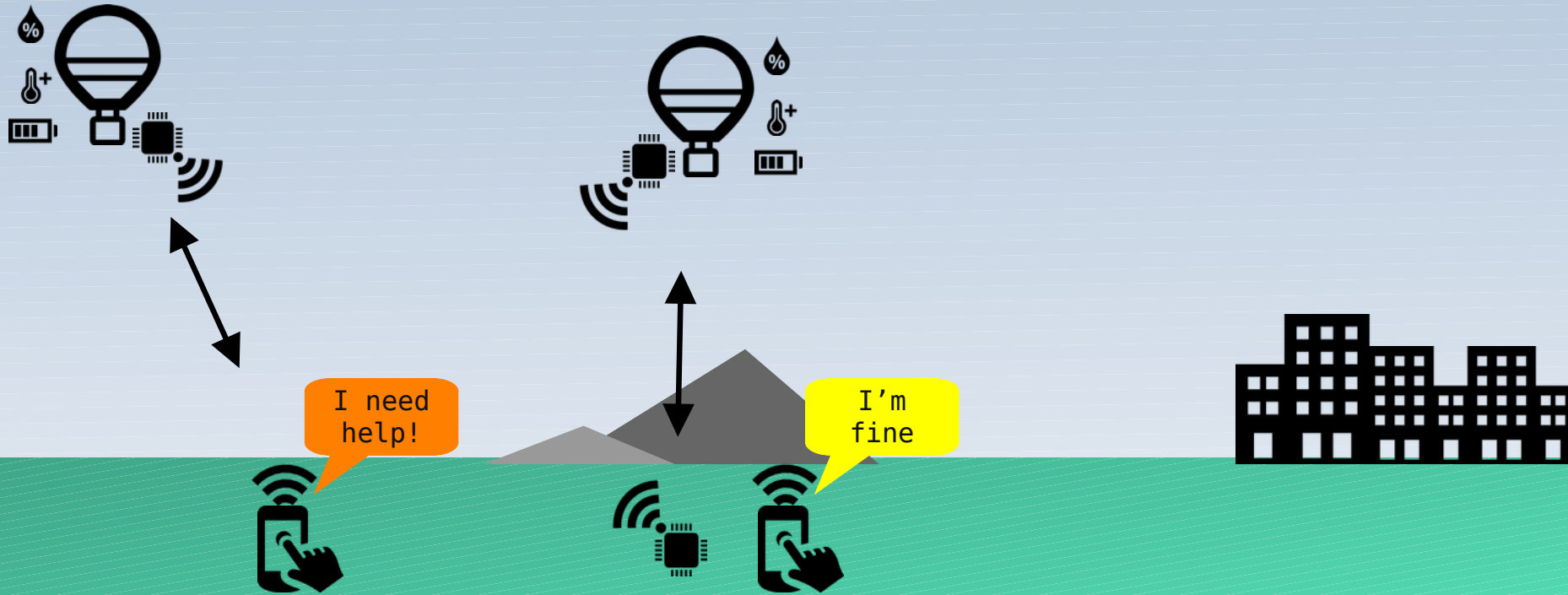
Approach: Balloons Serving Internet of Things Infrastructure



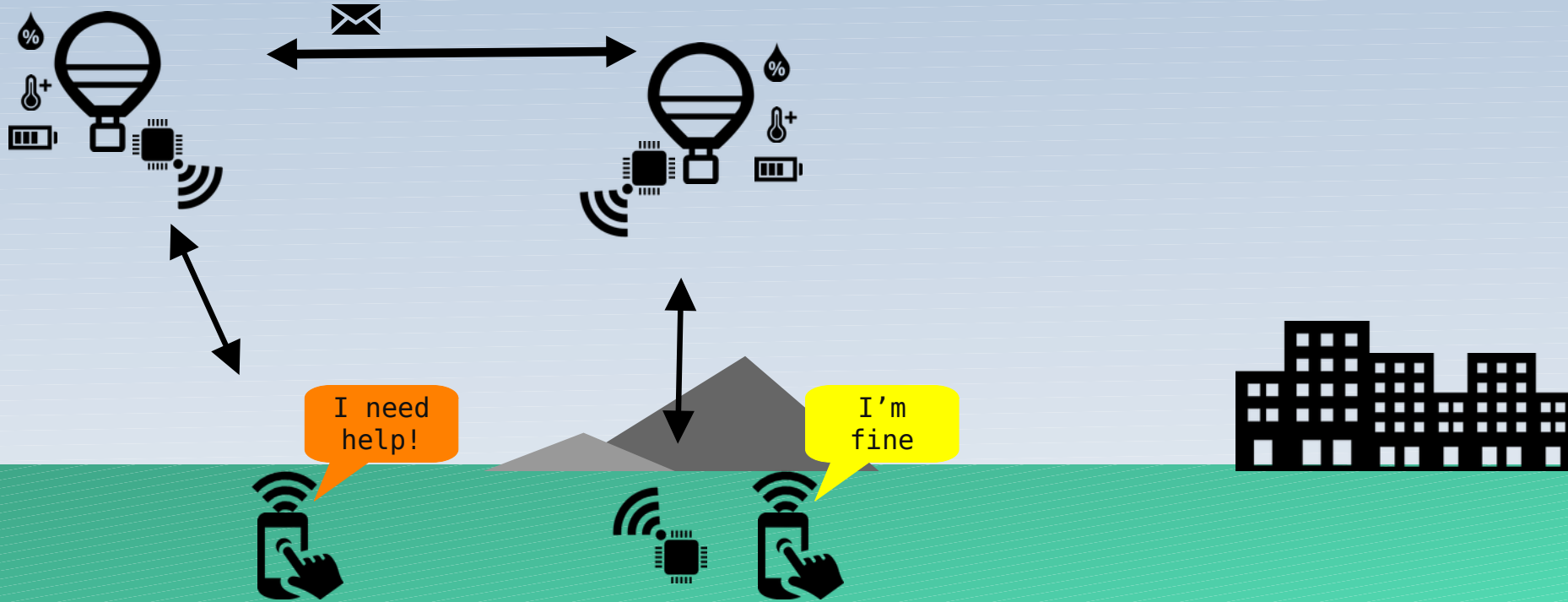
Approach: Balloons Serving Internet of Things Infrastructure



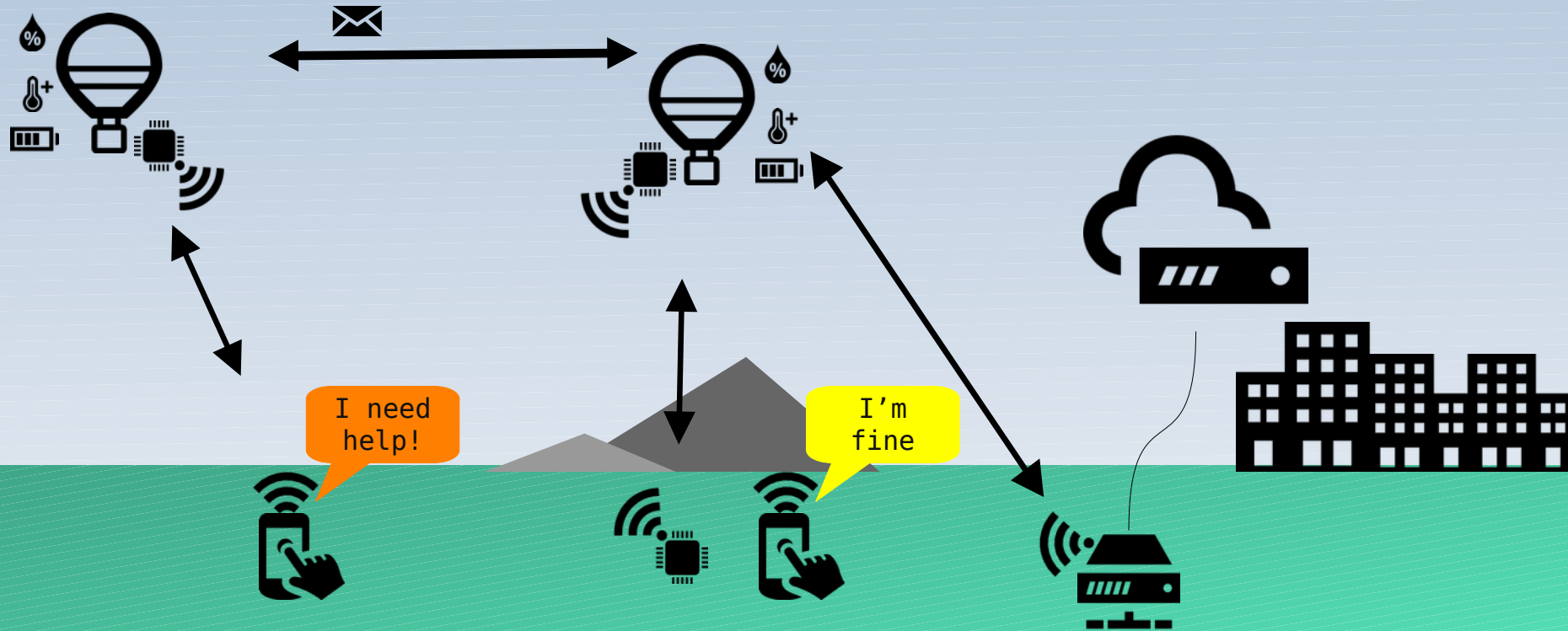
Approach: Balloons Serving Internet of Things Infrastructure



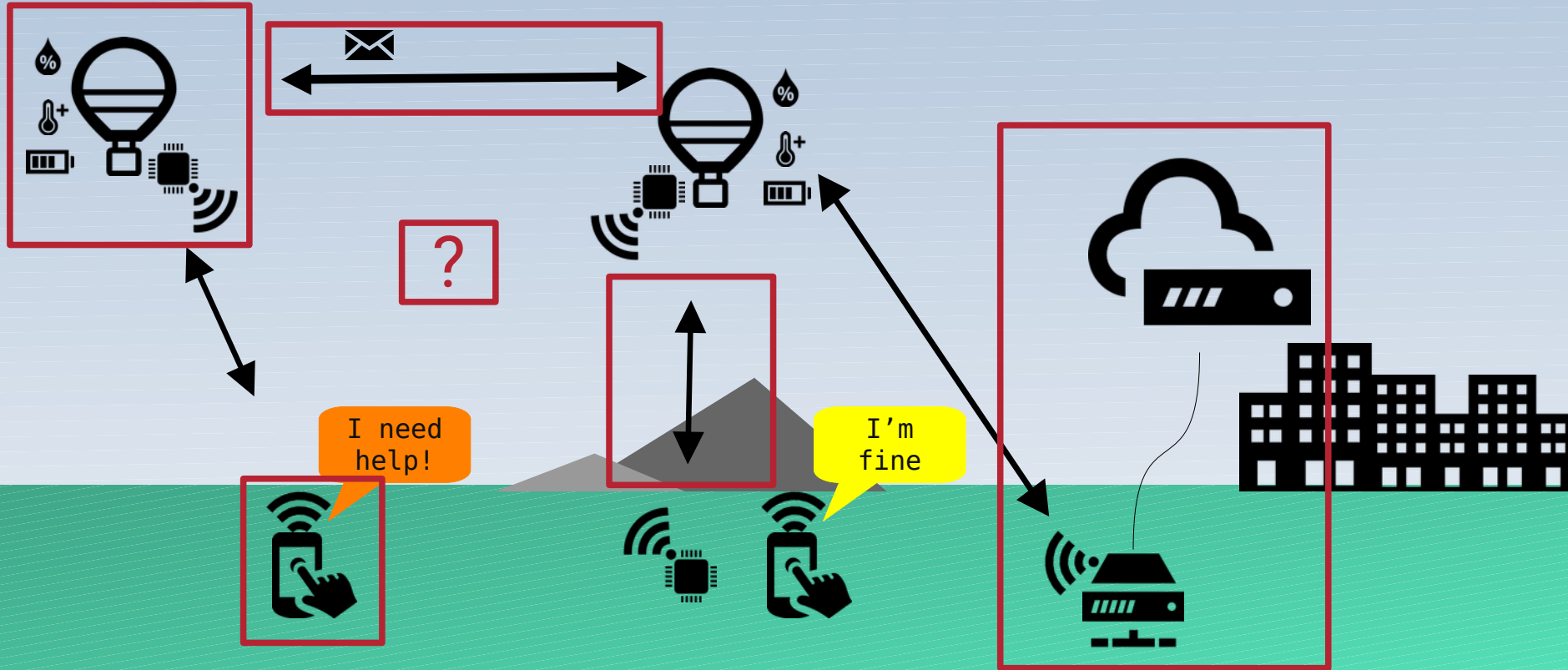
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Approach: Balloons Serving Internet of Things Infrastructure



Formalities & Tools

- MS Teams
 - Access code
- GitHub
 - Everyone: send name, GitHub handle, HAW mail address to MS Teams
 - Own fork of <https://github.com/RIOT-OS/RIOT>
 - Code is always pushed to own RIOT fork
 - Final code in <https://github.com/smartuni>
- Milestone Presentations
 - Mandatory: proper presentation, slides, documented source code checked-in
- Final documentation: Hackster.io (to be clarified)
 - Project documentation and description linked to GitHub repository
 - <https://www.hackster.io/riot-os>

References

Related work

- [1] <https://loon.com>
- [2] MiniLoon: https://youtu.be/VwZossjoc_w
- [3] MiniLoon documentation: <https://www.hackster.io/386121/miniloon-60a9c9>

Images

- <https://de.freepik.com/fotos-vektoren-kostenlos/banner> (Erstellt von macrovector)
- <https://www.nationalgeographic.com/news/2015/04/150427-nepal-earthquake-damage-temples-buddhism-hinduism-world-heritage-monuments-unesco/#/01nepalday2.jpg>
- <https://www.euronews.com/2017/12/26/2017-terrorist-attacks-natural-disasters-and-political-upheaval>
- <https://historyshadow.wordpress.com/2013/11/11/philippines-national-calamity-the-increasing-frequency-of-disasters-in-an-overpopulated-world/>
- <https://loon.com/technology>