

Building a Star Trek Communicator

Prerequisites:	- Basic Star Trek knowledge (TNG, Voyager or comparable) - LoRa / BLE knowledge - Programming skills (Python, C)
Level:	This topic is appropriate for Bachelor and Master Students
Language:	German or English

INTRODUCTION

The Star Trek Communicator as known from Captain Picard, Captain Janeway and their colleagues is a tiny, versatile device mainly meant for communication, localization and basic sensing within a space ship or space station¹. Nowadays, building such a device is not impossible using of-the-shelf components: All required components are available for cheap. The objective of this work is to build such a communicator including the required environment at the ComNets institute.

PROJECT DESCRIPTION

The objective of this project is to build a two layer communication platform:

1. The personal communication devices ("*communicators*") are carried by the individuals. They perform basic sensing operations and can be used to signal and trigger events via a push button. Those devices communicate using bluetooth low energy (BLE).
2. The gateways receive the BLE signals of the communicators and forward the messages to a central management server. Here, additional operations like executing actions or localization of users are performed.

Using this architecture, at least the following operations should be possible:

- Measure the current body temperature of the user
- Localize the user in the department
- Trigger an action on the management server

As the hardware platform, BLE tags (communicator) and LoPys (Gateways) could be used.

CONTACT

If you are interested in this work, please contact us via mail: projects@comnets.uni-bremen.de

¹<https://memory-alpha.fandom.com/wiki/Communicator>