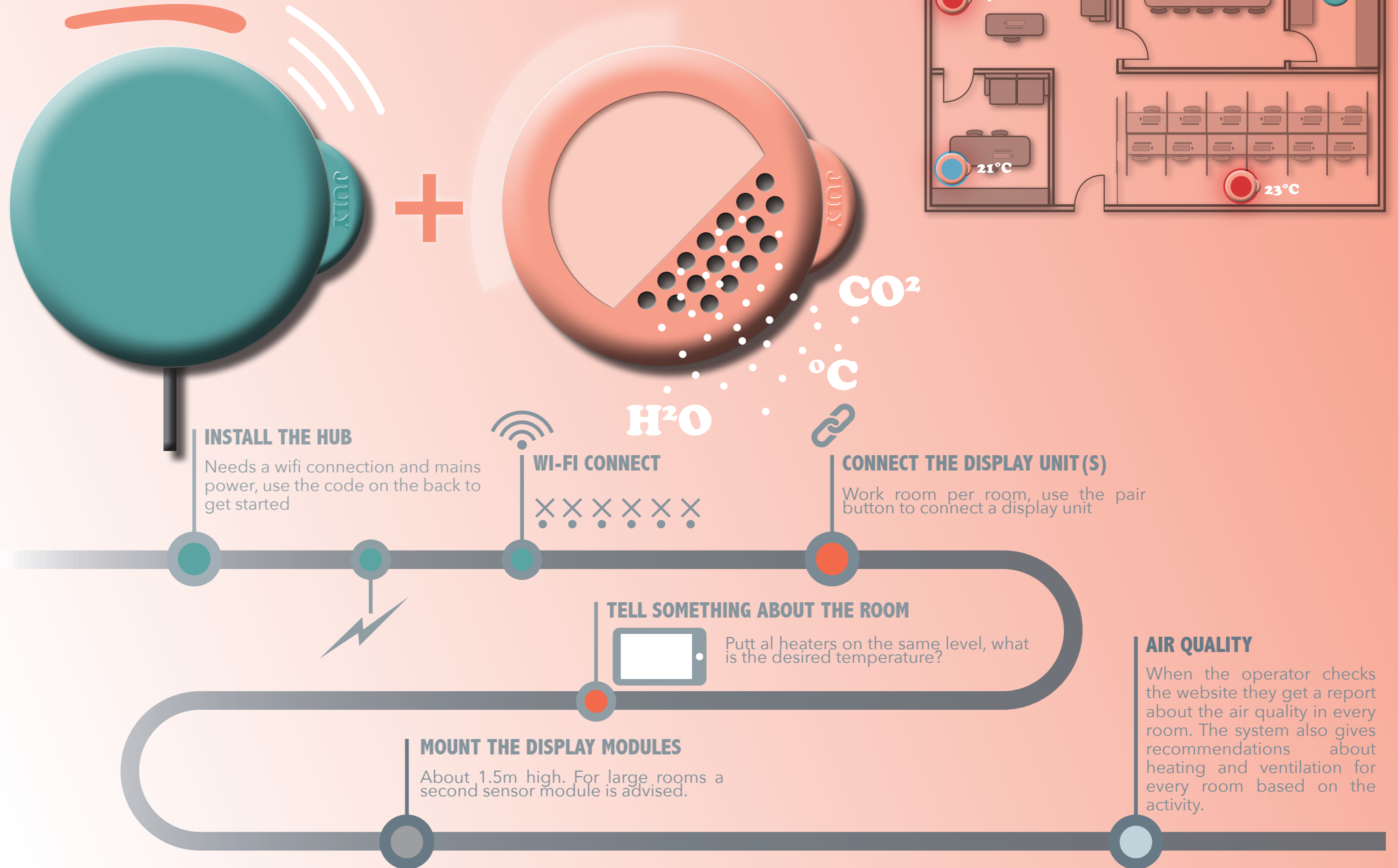


JULY



JULY

PROBLEM

In Flanders one in three white collar workers complains about the air quality in their office. For government employees, teachers and nurses this number rises to 40%. Bad indoor air quality is linked to a number of health problems. This can range from loss of concentration to headache. This phenomenon leads to more sick days for students and employees. Schools and offices benefit hugely from optimal indoor air quality. In Flanders there are 2500 primary schools, 1051 high schools and more than 7 universities. There aren't any exact numbers on the amount of office spaces but there are more than 1.6 million "bedienden". To improve the air quality for employees there are limits set by the government. These limits include CO₂ and relative humidity.

"July" comes in handy to measure and advice on indoor air quality. July measures the CO₂ and humidity and advises to stay under the legal limit. July also measures the room temperature. This way you can easily see which rooms are heated to much and recommends to lower the temperature. The device is easy to install and works in all types of buildings. Existing installations can be transformed into a smart installation that helps to reduce heating costs and improve employee and student productivity.

+3500 school buildings
1.6 milion people
working in an
office

PEOPLE IN
OFFICES -SCHOOLS

30-40%

CO₂: max 1200ppm
Humidity: 40% to 60%

MONTHLY FEE OF €15
HUB+3DISPLAYS

5 EURO / EXTRA
DISPLAY MODULE

Increase productivity, Decrease illness,
Better energy performance buildings

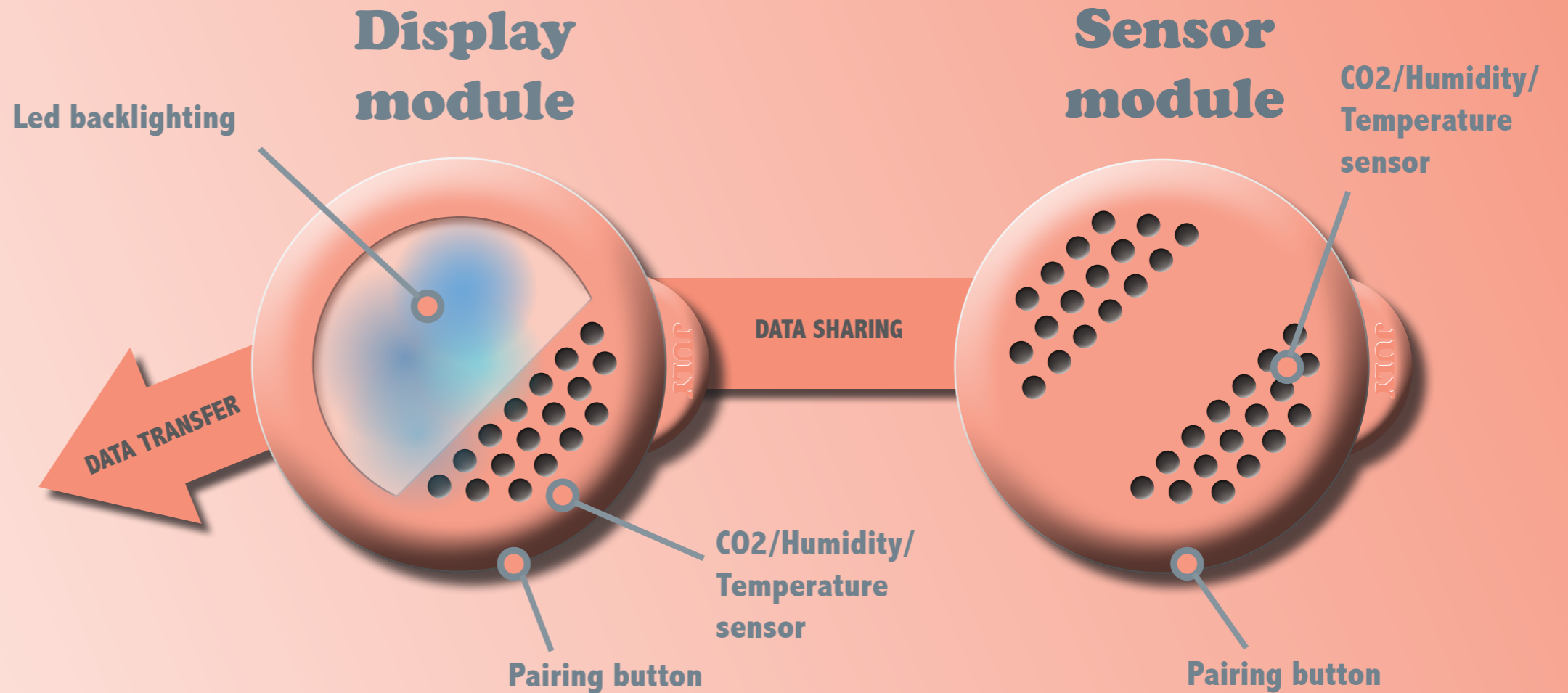
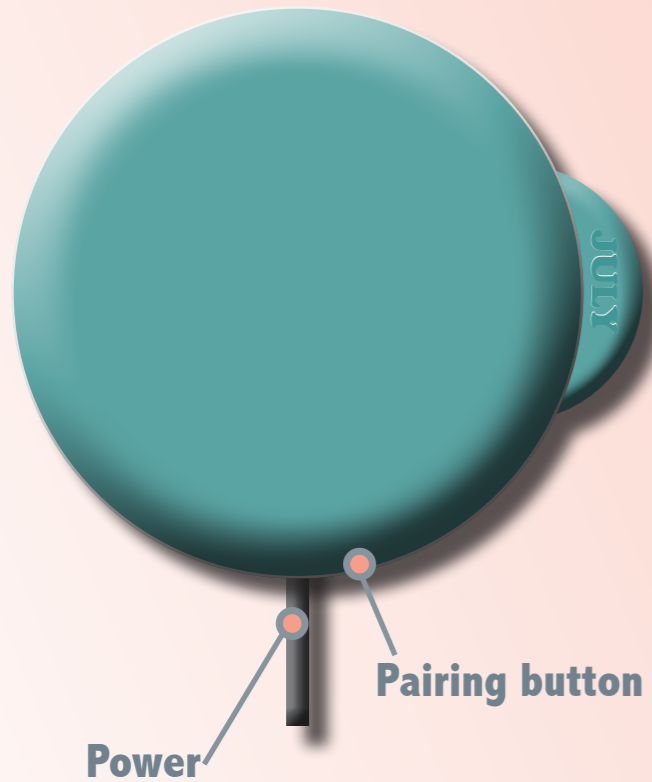
SOLUTION

1ste master Product Ontwikkeling
2019-2020

Merlin Bauwens
Lucas Gueutal
Brent Van Camp

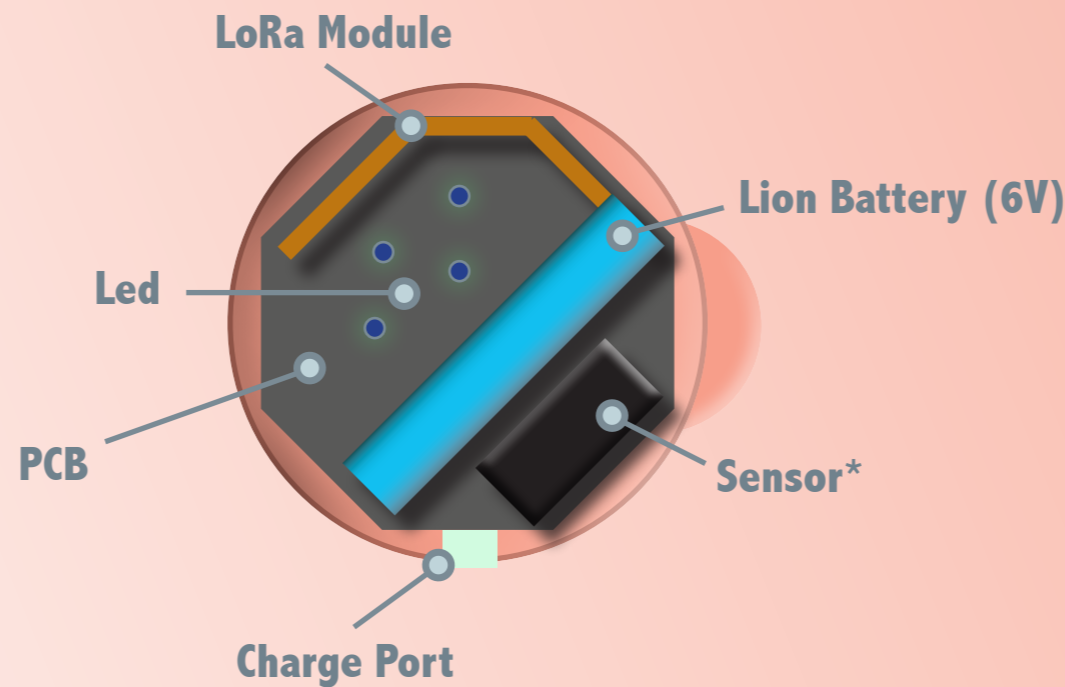
JULY

HUB



July consist of a central gateway, a display module and additional sensor module. The display module can **measure CO² levels** in the air, **air humidity** and **temperature**. With this data the unit can communicate the air quality of the room. For large rooms an additional sensor module can be paired. The display module checks the air quality every 5 minutes. Breathing LEDs change color to indicate the air quality. Blue indicates good air quality, orange if you need to open a window and red to ventilate and leave the room while taking a break. The display and sensor modules work with a 6V Lion battery and have a cable if a power supply is nearby. This way they can be placed freely around the room.

Every 15 minutes the display module sends its data to the gateway. This is done with a LoRa network. The gateway has an internet connection and uploads the data to the cloud. When the operator checks the **website** they get a **report** about the **air quality in every room**. The system also gives recommendations about heating and ventilation for every room based on the activity.



*Sensirion CO2 and RH/T Sensor Module SCD30

