



Introduction: As with all electronics, functionality in medical devices is dependant of the available power. Directly proportional to size, this creates a bottleneck for implants and wearable systems. At ESAT-MICAS, research is ongoing to overcome this problem in extremely limited spaces.

Traditional Endoscopy:

- Limited Inspection Region
- Uncomfortable
- + Good Image Quality



Capsular Endoscopy:

- ± Extended Inspection Region
- + Comfortable
- Poor Image Quality

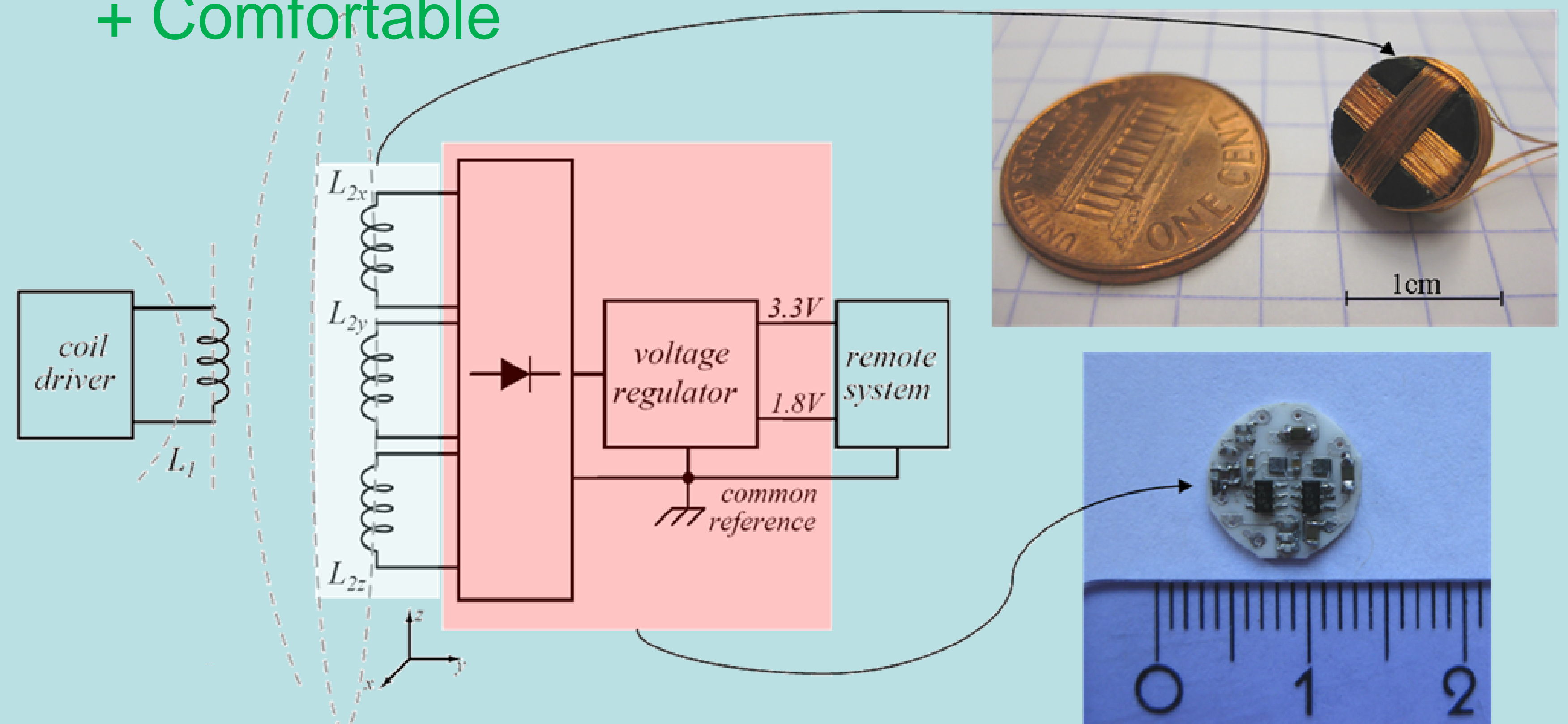


Fixed Devices

Must not reduce patient mobility
Secure change of implant parameters

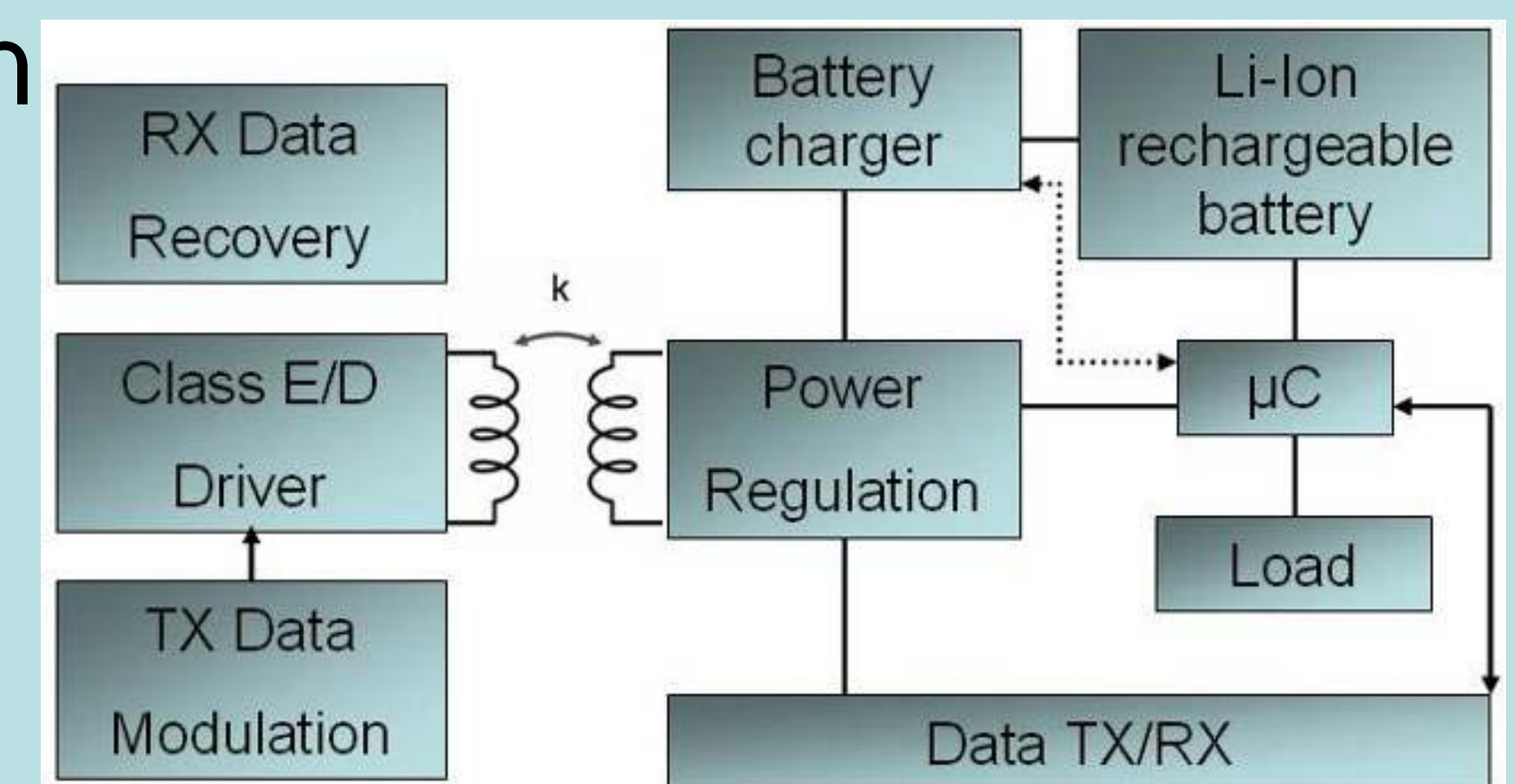
Solution

- 3D Inductive powering enables an unlimited supply of power (in time)
- + Extra functionalities (locomotion, biopsies, ...)
 - + Full Inspection Region i.e. full GI tract.
 - + Better Image Quality
 - + Comfortable



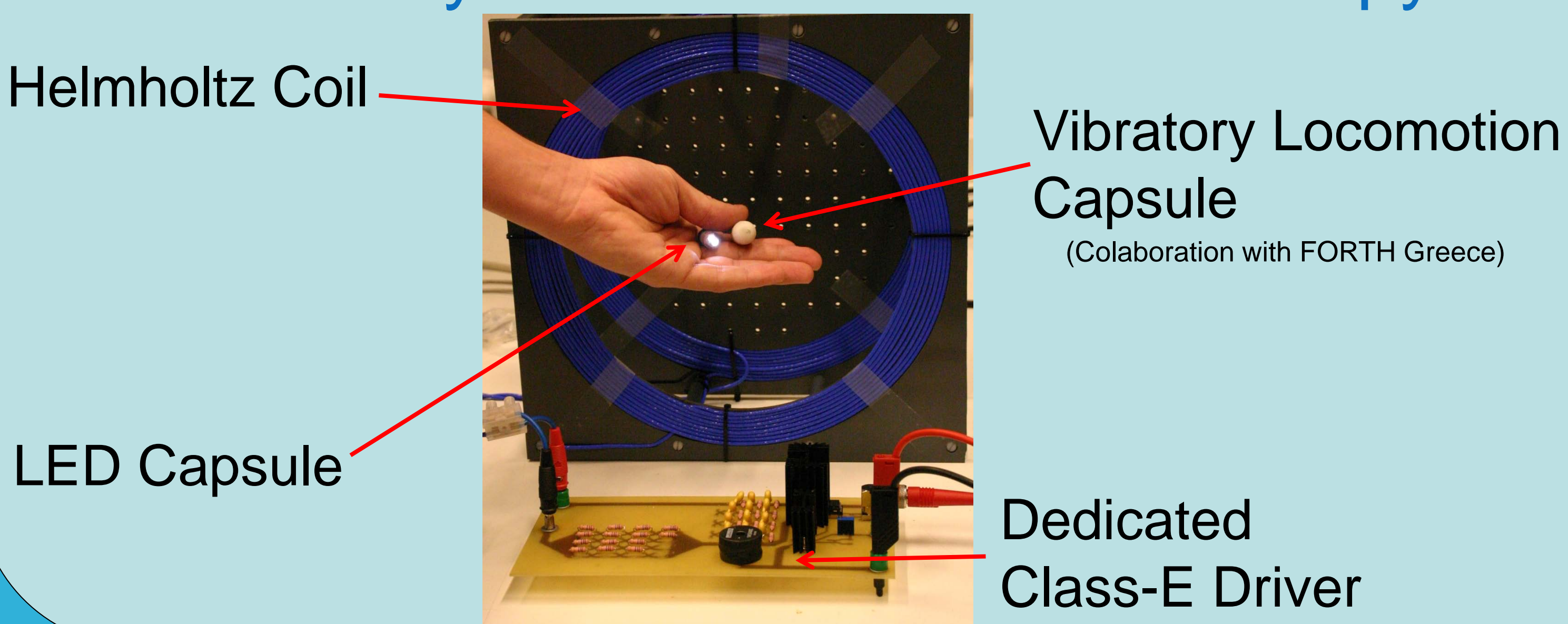
Inductive powering also enables:

- + Wireless recharge of a battery
- + Data communication
- + Suitable for textile integration

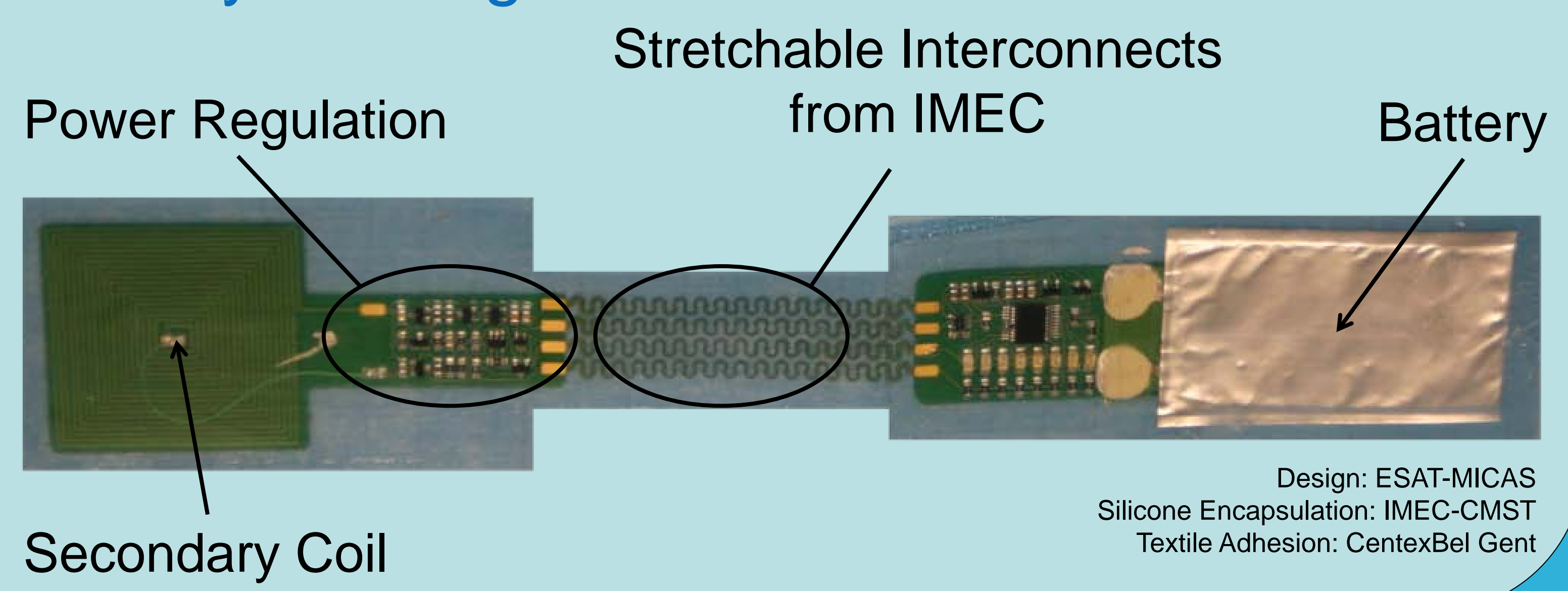


Implementations

Inductive Powered LED illumination and locomotion system for wireless endoscopy



Textile integrated, silicone embedded wireless battery recharger with data communication



Contact: Prof. Dr. Ir. Robert Puers
ESAT-MICAS
Kasteelpark Arenberg 10
B-3001 Leuven
<http://www.esat.kuleuven.be/micas>

