Sensing interactions
Team: Schrödinger

Mission
How can we design a wearable system that allows the users to access information about their effect on others around them by deepening the understanding of these interactions?

Background/context
The rise of the quantified self -movement has popularized the sensing of ones own body. This has lead to several new types of sensors being released to the market. Measuring simple functions of the body is rapidly developing into a sea of algorithmically extrapolated information. We, as social beings are born from interactions with others. At the same time we are gaining more and more insight into our physical self. What information might we share of ourselves or benefit from seeing in others? How could we aid social interactions to make them deeper and more meaningful with this newly surfaced information?

Society connection
Psychologists, quantified self thought leaders, solutions aiding people with social limitations.
Bionics researchers.
Healthcare professionals.

CERN connection
- Joao Pequenao
- Martin Gastall & optic fiber sensors

Possible new technologies
CERN is using photonic power for high-precision equipment at CMS detector. The photonic power module (PPM) generates a high-energy laser beam, which is transferred via fiber optics to the receiving equipment and converted back to electricity by optimized circuit that offer conversion efficiencies far greater than typical photovoltaic solar cells. In the future, this new approach could have potential in wearable technologies.

Explorative questions:
What tools could be provided to improve our understanding of these interactions and our effect on others?
What knowledge might be found about our mental and emotional state?
　　How human interactions could be improved by additional sensor data and technology?
　　What are unexpected situations that may arise from using this kind of technology?
　　What the current sensor technology could detect if not limited by the power consumption?
How could light be used in power and data transfer?
How accurate does the information need to be?

Target users:

Therapy groups, quantified self enthusiasts...
Normal people who desire deeper understanding and connections to themselves and their surrounding world; "How did they react?", "What he/she really means", "How that extra cup of coffee affected my creativity in the brainstorming session?"

Expected outcome:
A wearable device that locally or remotely relays usable information about peoples reactions in a group. The information should be usable as feedback about interactions, not only data.

Success metrics:
Concept is validated with a proof of concept prototype, tested with real users. Positive social impact of the solution is clearly demonstrated.

Research plan:
Explore technologies available at CERN and in the consumer market.
Look into how the people are currently interacting and what is missing.
Look for the best timing to convey this information, is it instant or something to look at at the end of the day.
Is the information supporting a single interaction or a longer term personal change?
Explore and push the boundaries of the technology.