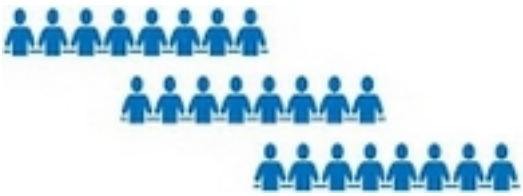
Evaluation

An evaluation phase is planned as part of the project. It will take place in several stages:

* **Preparation for deployment**, including:
  * Drawing up test protocols: a protocol for healthy subjects and a protocol for patients suffering from Parkinson's disease.
  * At the same time, defining the methods used to process the physiological data.
  * Submission to the local ethical committees.
  * Selecting volunteers.
* **Carrying out the experiment with healthy subjects and patients**: an evaluation of physical activity and its physiological consequences for the 120 patients and volunteers concerned in Toulouse and Lisbon.
* **An analysis of the results**: analysis of the results in terms of medical impacts and technical impacts (acceptability, ease of use...).

Different populations with different degrees of physical activity will be evaluated:

* 

  40 young healthy subjects (20 in Toulouse and 20 in Lisbon)
* 20 young obese subjects whose physical activity we know to be limited (10 in Toulouse et 10 in Lisbon)
* 40 elderly subjects with no pathology limiting physical activity (20 in Toulouse (10 of whom are matched by age and sex with the Parkinson's patients (cf. below)) and 20 in Lisbon)
* 10 Parkinson's patients in the early stages of the disease and/or well balanced by the treatment
* 10 patients with Parkinson's disease or a Parkinsonian syndrome, with significant akinesia.

By choosing Parkinson's patients whose motor activity will be slightly or very affected, we are able to evaluate the system on well-characterised populations.

Physical activity will be evaluated over a period of 7 consecutive days.

An evaluation of motor difficulties (akinesia) during standardised movements and abnormal movements (trembling, dyskinesia) will be carried out with the Kinect console in a pilot study of 10 Parkinson's patients with or without treatment.

The evaluation will be carried out during a day's hospitalisation. The recorded data will be compared with the visual data and the evaluation as it is traditionally carried out by a neurologist (the widely approved UPDRS rating scale).

The volunteers and patients will be evaluated over a year (in 2014). Recruiting of subjects will be shared between Toulouse and Lisbon.