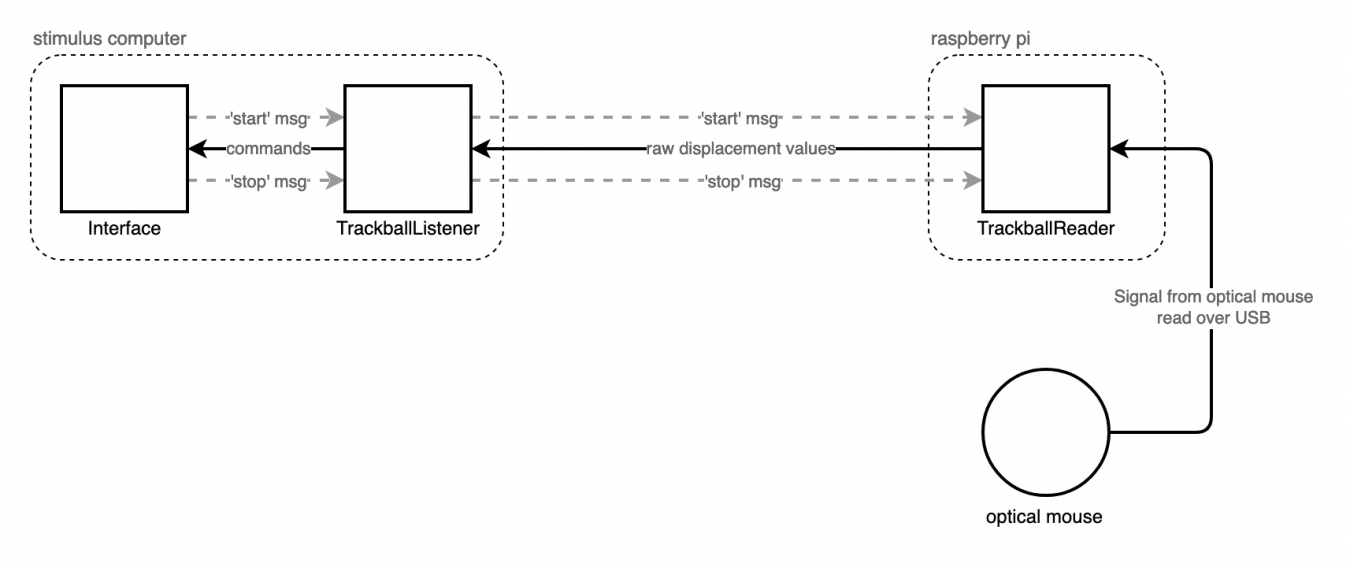
Trackball system



The system consists of 4 component parts - the optical mouse sensor itself, the `TrackballReader` object (running on a raspberry pi), the `TrackballListener` object and the `Interface` object (both running on the stim computer).

`Interface` has a two-way UDP connection to `TrackballListener`. `TrackballListener` has two-way UDP connections to both `Interface` and `TrackballReader`. `TrackballReader` has no other connections.

The sequence of events is as follows:

1. `Interface` sends a `start` signal to `TrackballListener`
2. `TrackballListener` passes the `start` signal onto `TrackballReader`, and monitoring for incoming data over UDP.
3. Until a `stop` signal is sent,
    1. `TrackballReader` starts reading all displacement values from the optical mouse and sending them over UDP (one value at a time) to `TrackballListener`
    2. `TrackballListener` receives the displacement values over UDP, and adds them to a running displacement sum. Every `n` milliseconds, it computes an instantaneous running speed from the current displacement sum, and resets the sum to 0.
    3. `TrackballListener` determines whether the current state is `running` or `still` by comparing the computed running speed to a threshold.
    4. If the new state is different from the old state (at last time interval), `TrackballListener` sends a command to `Interface` over UDP, specifying a switch of stimulus
4. `Interface` sends a `stop` signal to `TrackballListener`
5. `TrackballListener` passes the `stop` signal onto `TrackballReader`, and stops monitoring for incoming data (goes into idle mode)
6. `TrackballReader` receives the `stop` signal and stops reading data from the optical mouse.