Experiment Definition Challenge

Along with the tasks related to the correct operation of the rover when it's on its way from the Antarctic Base, you will have to conduct an additional experiment related to the snow samples that will be collected by the rover. We let you select a topic that you find relevant and doable within the given framework, but we guide you with the following information.

Antarctica is a land with a very low human activity. But can this tiny activity create detectable pollution or modify the environment? How can the impact of the Scientific Base be measured, and is it significant?

We know that Antarctica has an extreme and unique climate. Are there bacteria living in the snow? How can they survive?

These are the type of questions that we want you to find answers to. We need you to find a way to prove or disprove a hypothesis that you define. What needs to be analysed in Antarctica? What needs to be prepared before going? And how do we do it with our limited resources? How much electrical power will your activities require? How much Internet time will you require (there is no unlimited WIFI…)?

There are some articles to inspire yourself:

- http://bit.ly/fluospectro-freshwater
- http://bit.ly/coastalbio
- http://bit.ly/rapididbact

Material given to you:

- Snow/Ice samples collected by the rover.
  You must also find a method to verify that the rover did not contaminate samples.
- OceanOptics S2000 spectrophotometer.
- MinION DNA sequencer.

What we ask you to deliver by Tuesday, 3. November 2015, 23:59 CET:

- Define the hypothesis you want to prove or disprove.
- Describe briefly (1/2 page) what kind of experiment(s) you need to do and the objectives you have.
- List the resources you'll need in order to conduct these experiments.