

## **SWINOSTICS – Two years into the project! Validation about to start**

The SWINOSTICS project addresses the need for fast and accurate field diagnostics in pig farming. To date, the time between initial disease outbreak, sample transportation and laboratory confirmation of the etiologic infectious agent **can be up to several weeks or months**. Reliable and simple diagnostic testing directly on site would enable rapid local decision making which is crucial to prevent further spreading of the disease.

The project focuses on field-based detection of important swine diseases (ASFV, PRRSV, H1N1, PPV, PCV2 and CSF). The device will use swine oral fluid samples as its main input, even though, it will be compatible with the use of other types of samples, such as faeces, blood or nasal swabs. The use of oral fluids as the main input diminishes the time needed for the analysis and simplifies the sample collection, allowing also the collection of wild boar samples.

At the current stage, the first integration testing phase has been completed. The scope of this has been to verify that all device modules operate flawlessly in combination with each other and to fix various issues that could affect overall device functionality.

The prototype includes the following modules:

- Sample delivery and liquids handling module: This is the main fluidics module, responsible for the entire fluidics operation in the SWINOSTICS device. It takes care of transferring the sample and other liquids over the sensors and finally to the waste tank. It is also responsible for cleaning the device tubing after the analysis, as well as for regenerating the biosensing surface (through appropriate liquids delivery).
- The main processing and communications module: This acts as the main “brain” of the device, controlling the entire operation. It is also responsible for storing the analysis results, as well as for communicating those results to the user’s tablet where the mobile application is running.
- The optical analysis module: This is central part of the SWINOSTICS device, since it is responsible for reading the sensors’ output.
- The temperature conditioning module: This module is responsible for keeping constant temperature in critical parts of the device.

An Android application has also been developed for controlling the entire device operation through a tablet or mobile phone. This is actually the main user interface to the device.

The upgraded version of all device modules, using the feedback from the first integration testing phase, is currently in progress. The upgraded modules will be used for further testing and full laboratory scale validation of the device, using reference samples, before moving to the field.

Stay tuned on the SWINOSTICS webpage and social media accounts for more updates!

SWINOSTICS is being developed by a multi-disciplinary team, coordinated by CyRIC, Cyprus Research and Innovation Center Ltd, in the framework of EU’s Horizon 2020 Programme. The project has been launched on the 1<sup>st</sup> of November 2017 and will run for three and a half years, to allow enough time for the development and real-world validation of the technology.

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Notes for editors:

1. Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (2014 to 2020) – in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market.

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