STAMINA - Demonstration of intelligent decision support for pandemic crisis prediction and management within and across European borders.

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Recently, Erasmus MC scientists from the Pathology & Clinical Bioinformatics dept. & ECDA (Prof. P.J. van der Spek) and the dept. of Medical Microbiology (Dr. R. Louwen) departments have successfully secured an EU project worth € 11 million euro, of which € 9.5 million is funded by the European Union. They are co-applicants on the EU project called STAMINA, which, as a whole, aims to develop a system to better cope with future pandemics (**Figure 1**).
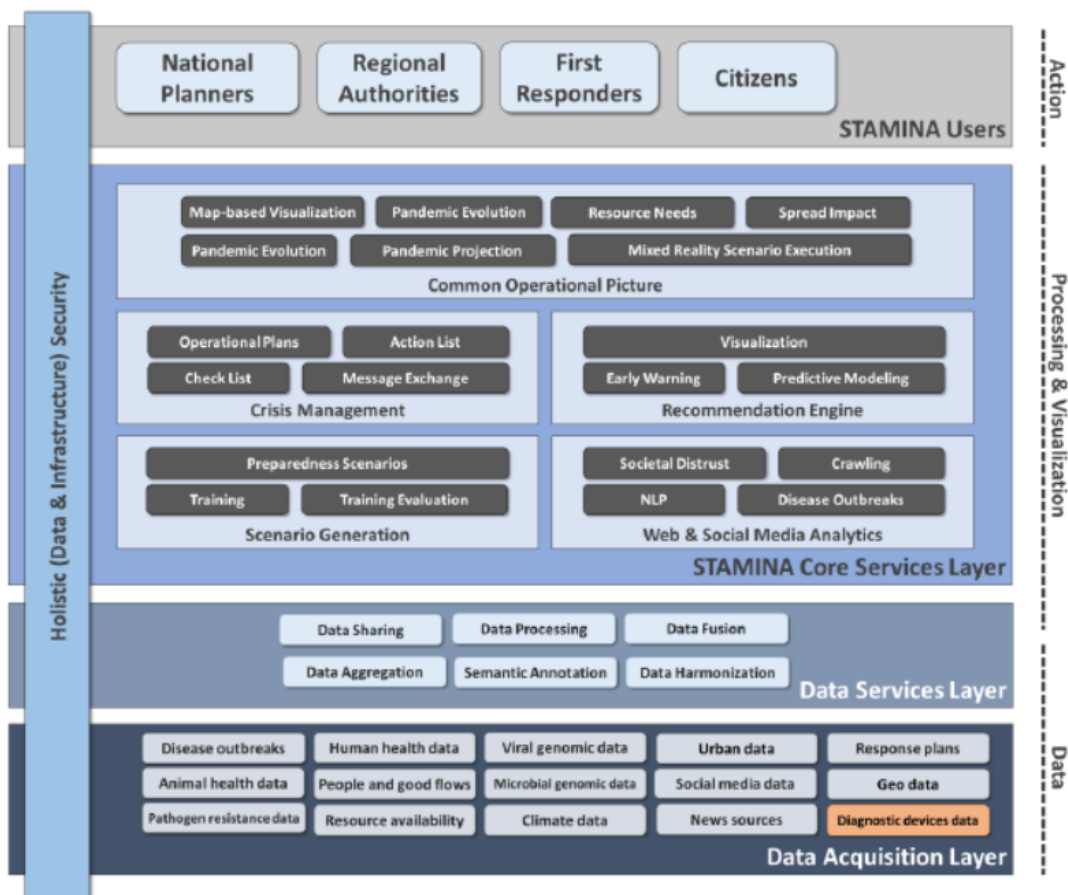
Figure 1: High-level view of STAMINA toolset for intelligent decision support

Dr. Rogier Louwen, the project leader at the Erasmus MC, will coordinate the genome analysis of pathogens to find specific areas that are unique to a known or newly discovered pathogen that is about to trigger an epidemic or pandemic. Hereafter the team will develop a rapid diagnostic test, specifically for these unique areas, using the diagnostic techniques called SHERLOCK and DETECTR. These techniques are based on newly developed CRISPR-Cas technologies, which offer the STAMINA team the opportunity to easily detect these pathogens within 10 minutes using a dipstick (similar to a pregnancy test), enabling testing on site. In this work package they obtain specific support from the partners EXUS SOFTWARE, SQUAREDEV, EV-ILVO, MCS datalabs, INNO, Institute Pasteur de Tunis and BEIA consult international and BioCoS.

In the past, European countries were struggling to organize a joint response, during an epidemic or pandemic and with the recent SARS-COV2 outbreak this has become more evident. The STAMINA team will try to improve a joined response by developing a warning system, rapid diagnostics, monitoring software and supporting decision-making models for governments with smart self-learning technologies that will be established during the project. Using techniques and technologies created thanks to the STAMINA project, the new European support system for epidemics and pandemics will be tested on a small scale first, where after, once successful, a simulation exercise involving all consortium partners on a large scale will be initiated at the end of the project.

Consortium

The STAMINA team consists of 38 partners, including governments, academics, companies and partners who are on the front lines during an outbreak, such as the Erasmus MC (https://www.youtube.com/watch?v=LtjpwmfgkJk)).

Link to all partners: https://cordis.europa.eu/project/id/883441