

## Public-Private cooperation to develop guidelines on ventilation strategies for infection control

The spreading of the SARS-CoV-2 virus occurs through virus-laden droplets which are expelled while a person is: sneezing, coughing, singing, shouting, screaming, speaking or even breathing. The transmission occurs directly (human-to-human transmission), indirectly (through a contaminated surface) and via airborne (aerosols). Ever since the announcement of this pandemic by the World Health Organization (WHO) earlier this year, more and more studies appear that suggest that the aerosols play an essential role in the transmission of the SARS-CoV-2 virus.

Rather surprisingly, very little is known about the characteristics and fate of such aerosols. This leads nowadays to heated debates within both civil and scientific communities regarding their role on the transmission of the virus, and the appropriate measures against the spreading of the virus.

In view of our health and economy, business and society demand more than ever, effective and tailored guidelines to prevent the viruses from spreading. Ventilation is vital in limiting the concentration of a virus in the air indoors. We have therefore initiated a **public-private cooperation to develop guidelines on ventilation strategies for infection control**. The key to effective guidelines is that these are based on solid, up-to-date scientific facts, are functional, and are widely supported by business and society. Therefore we choose for a cooperation with a corresponding research program where business partners of different sectors are involved from the start in the development of guidelines.

### Status

We have outlined the required **research program** to develop the guidelines on ventilation strategies for infection control, and have brought together the research team. The program consists of three research lines, namely survivability of viruses in aerosols, droplet spreading deposition as a function of environmental parameters, and adequate ventilation concepts. We recognise the immediate need for up-to-date guidelines. Therefore, we propose a phased approach where initially, the research will be focused on the influencing parameters that are expected to be the most relevant. As a result, a first set of recommendations will be drawn within the first year of research. As the research progresses, and more results are obtained from all projects, the initial guidelines will be revisited and adapted accordingly.

The corresponding research team consist of the Physics of Fluids group of the University of Twente, MARIN of Wageningen, the Medical Microbiology and Infection Control department at the University Medical Centre Groningen, Institute of Physics of University of Amsterdam and the department of the Built Environment at Eindhoven University of Technology.

**Use cases** are currently being defined for which ventilation concepts will be designed and tested (laboratory and in-situ) in this program. Uses case for sectors as retail, transport, health care, labour and leisure are considered. We are reaching out to businesses to set-up the use cases and draw-up the cooperation.

This **public-private cooperation** will be at a total value of approximately (10)(2b) We aim to obtain about 75% of subsidy and are currently preparing the application. The remaining 25% will be supported by the participants of the project. The start is foreseen for Autumn 2020.

For more information please contact (10)(2e) (10)(2e) @marin.nl, +316 (10)(2e) or (10)(2e) (10)(2e) @marin.nl, +31 (10)(2e)