Technology Contributions of ACCIMT for Covid-19 Mitigation

The Arthur C Clarke Institute for Modern Technologies (ACCIMT**)** has initiated a number of projects to assist the on-going Covid-19 mitigation activities of the country. Those technology solutions were developed in keeping with the needs identified during ACCIMT's interactions with the health authorities and medical professionals to discuss possible technology contributions by the institute.

Given below are some of those technology contributions:

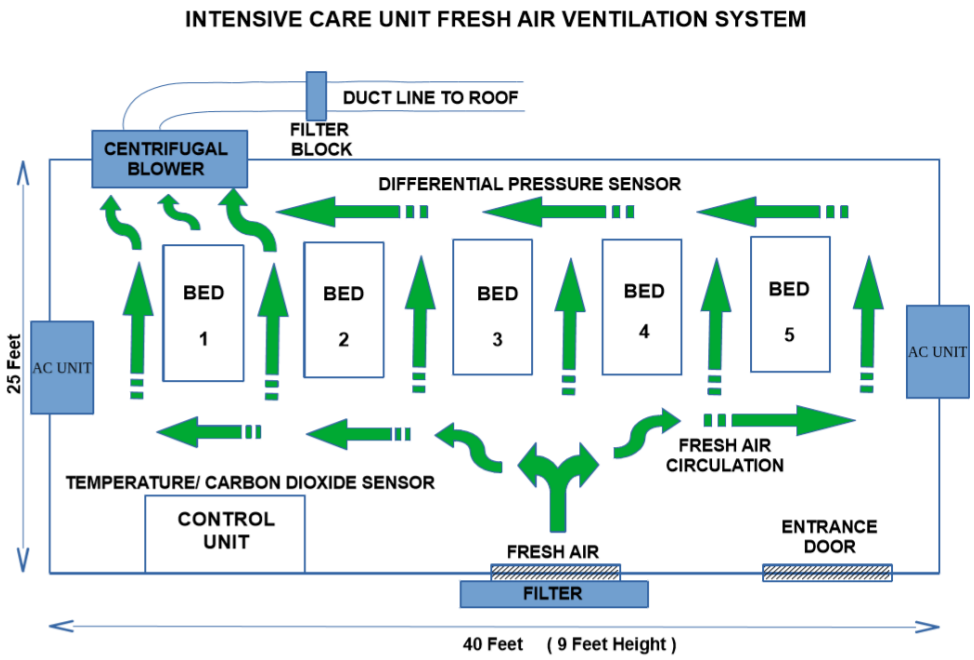
Safe-Chambers for Extracting Biological Samples for Covid-19 Testing

This product was developed in response to multiple requests received from several key government hospitals involved in treating Covid-19 patients, during ACCIMT's interactions with the medical professionals there. The product is designed to enable extraction of testing-samples by medical staff with no risk of physical contact with the patients, or the persons suspected to be infected. The first unit developed by the ACCIMT was delivered to IDH on April 07, and five more units with some improvements were fabricated and provided to Homagama, Sri Jayewardenepura and Mulleriyawa Hospitals during April 22-26. The product has been found to be immensely useful for the purpose by the hospitals concerned.

The pictures show those safe-chambers being received by medical staff of the respective hospitals, including Dr. Rathnasiri Hewage, Director of Sri Jayewardenepura Hospital; and also 'the product in use' at the hospitals.

Fresh Air Ventilation Systems for Intensive Care Units (ICUs)

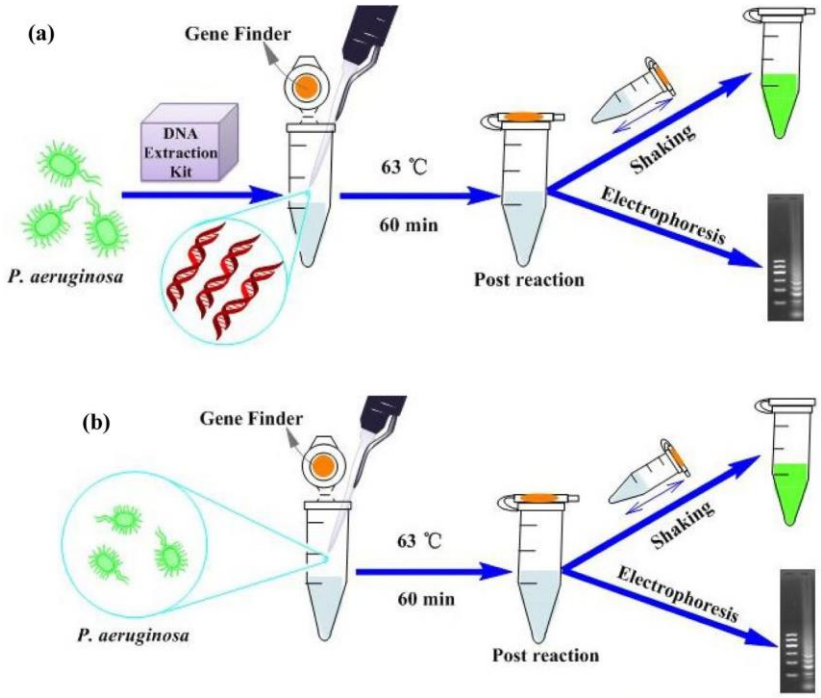
This project was initiated based on requests received from Ragama and Sri Jayewardenepura hospitals. Covid-19 is a respiratory disease and it can be transmitted through air, especially in closed room environments. The proposed system would refresh the air inside ICU with fresh air in real-time, with the help of suitable sensors, additional electronic circuitry and rapid centrifugal air ventilation through blowing. The proposed system uses a germ killing filtering process prior to blowing out air into the atmosphere. The system design has been completed, and fabrication and installation would be available for any desired hospital, on request.



Loop Mediated Isothermal Amplification based viral DNA detection

The ACCIMT initiated this vital project with a view to developing a Covid-19 testing apparatus, as a lower cost, faster-response, more flexible and field-usable alternative to RT-PCR test apparatus. The process adapted would be similar to RT-PCR, and instead of using thermal cycling for reacting with the viral DNA, the proposed process uses amplification of Viral DNA in a constant temperature range.

The development is undertaken as a joint project of the ACCIMT, with an external expert with specialization in bio-medical engineering as the partner, with a team of ACCIMT engineers working on the project.



Electronic Hardware Recovery of Dysfunctional Electronic Equipment used in Hospitals

The ACCIMT has planned a programme, and offered to the Department of Health, to provide on request the services its highly skilled and dedicated team of technical personnel to repair, or modify as necessary, various types of inoperative hospital equipment including PCR-test systems and medical ventilators.

Automation of Hospital Beds

Using the ACCIMT-developed and proven electronic control platform, the existing hospital beds can be automated for convenience of handling patients.

Testing and Modifications of Non-Contact Thermometers

Based on a request received from an external client, the ACCIMT has developed a system to screen body temperature of employees of factories and other workplaces in a very efficient way adapting low cost units available in the market.