A. Problem Statement/Title:

Future-Proofing HDB Lift Operations (FHLO)

B. Background of the Problem:

HDB's new Roadmap – Designing for Life – centres on the overall health and well-being of HDB residents, with "Live Well" being one of the key pillars of the roadmap. We are thus looking out for solutions which contribute towards a built environment that promotes residents' physical, mental and social well-being, and create healthy towns for people of all ages.

Residential lifts are one of the key infrastructures which make high-rise HDB living possible, and residents use them on a daily basis. With the emergence of COVID-19, we have seen measures such as applying self-disinfecting coatings on lift buttons and safe distancing within the lifts being implemented to reduce possible virus transmission.

As we adapt to a COVID-19 endemic world, we are interested in enhancing the design of the lifts more holistically, by incorporating innovative and effective technologies to create a vertical transport environment which improves the well-being of our residents, either via eliminating physical human contact points, via systematic sanitising of the mediums in the lifts, or through other ways.

C. Technical Requirements / Performance Criteria:

The innovative solution that HDB is exploring is to incorporate new technologies for lifts as we move towards having COVID-19 as an endemic disease. The solution should:

a) <u>eliminate physical contact with lift components</u>

Lift Car Operating Panel (COP) and lift call buttons (located inside the lift car on the COP and outside of the lifts at lift lobbies) are both high-touch points which could act as mediums for virus transmission. Eliminating physical contact will improve the hygiene within the lift and reduce chances of virus transmission via these lift components.

b) <u>include automated air and surface sanitisation capabilities</u>

Better air circulation and quality could improve the residents' experience and reduce virus transmissions through air and surfaces respectively. Thorough sanitisation of such mediums automatically at appropriate times (e.g. when there are no passengers in the lifts) may help to curb virus transmissions through these mediums. Potential health hazards associated with such capabilities shall also be taken into considerations and assessed as part of the solution proposal, including recommendations of usage.

c) <u>reduce manpower requirements for maintenance of cleanliness</u>

Current practices require physical manpower to perform cleaning services for the lifts, which can be labour-intensive for large number of lifts. Given the need to shift towards more sustainable practices, the solution should propose plausible methods to reduce the manpower required for general servicing and cleaning of the lifts.

d) <u>cater to a wide range of users</u>

The solution must be user-friendly enough for all users to adapt and learn. It has to be intuitive enough for elderly who could be less technologically savvy, and it has to cater for users with special needs, such as visually impaired users.

e) be cost-effective and scalable to be implemented in both existing and new HDB lifts

Due to the large number of lifts (about 26,000) in HDB developments, the retrofitting costs involved would be an important factor. Hence, we intend to identify a solution which is cost-effective enough to be adopted in existing lifts with minimal modifications to the existing lift design. This will keep the disruption to lift services minimal. For new lifts, provisions can be made in the design upfront to allow easy incorporation/integration of the solution when needed.

f) consider the cost of cyclical replacement and maintenance

The solution shall take into account the costs of cyclical replacement and maintenance of the components as part of the cost-effectiveness and scalability agenda.

Should we choose to adopt the solution for all lifts, the mass application would also help to bring the cost of the solutions down. Private developers may also tap on the solution for their developments.