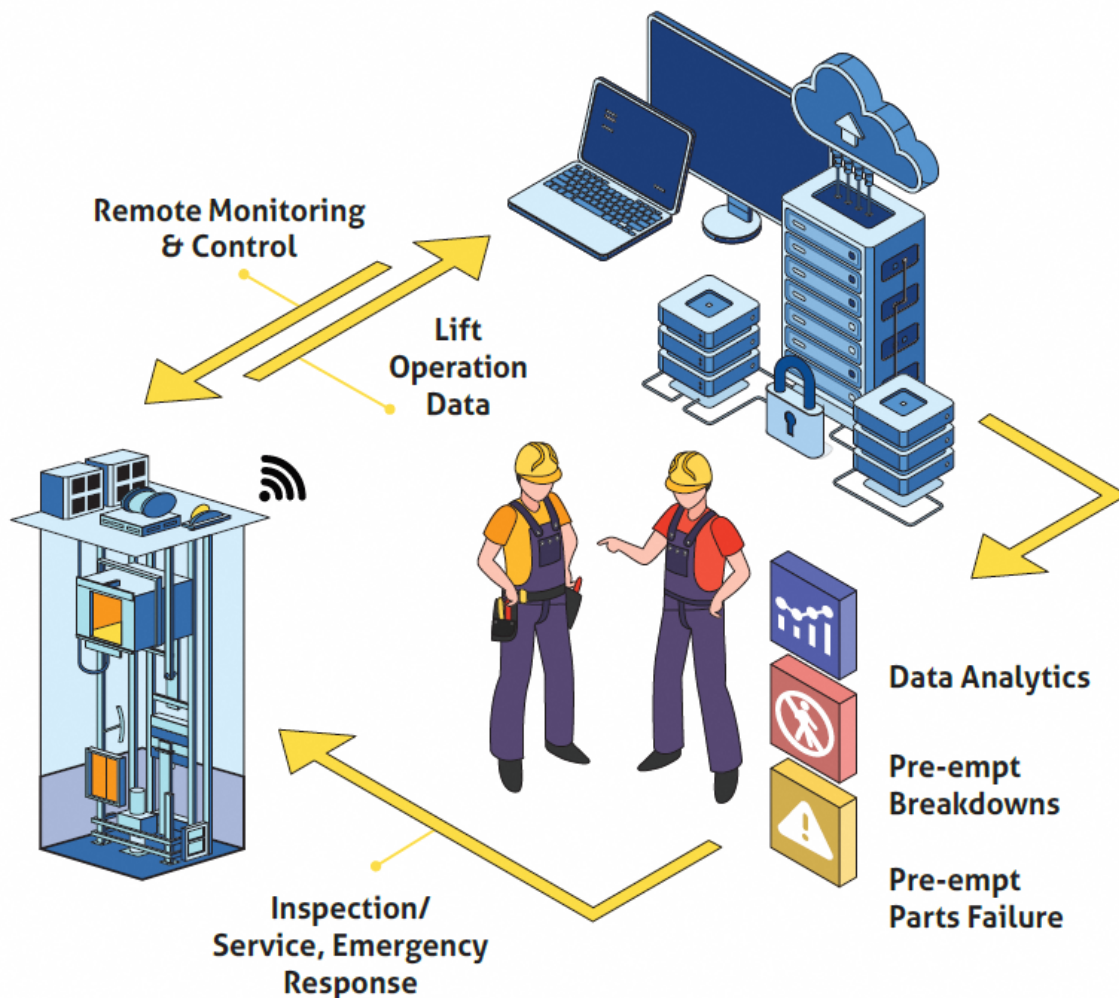


## Annex A – Factsheet on Remote Monitoring & Diagnostics Solution

1 Remote Monitoring & Diagnostics Solution or RM&D Solution refers to a system that continuously collects and performs analysis of the data collected, for detection, diagnosis and prediction of issues in lifts that require maintenance. Such advanced technology has the potential to improve lift safety and reliability, reduce reliance on manpower as well as provide an attractive job proposition for Singaporeans. To incentivise the adoption of RM&D, BCA is looking at allowing longer maintenance interval for lifts equipped with RM&D solutions under a dedicated RM&D regulatory regime.



Examples of information that can be monitored:

1. Lift movement
2. Position
3. Car and landing calls
4. Lift status
5. Door motion
6. Lift faults

2 More sophisticated systems allow users to obtain other information such as the total hours of maintenance per unit, total cumulative breakdowns, total cumulative repair hours and failure rates, and have features that improve the system's capabilities to detect, diagnose and predict issues in lifts that require maintenance.

## **Annex B - Factsheet on maintenance regime for approved RM&D lifts**

1. Under the Building Maintenance and Strata Management (Lift, Escalator and Building Maintenance) Regulations 2016, it is the duty of an owner of a lift to engage a registered lift service contractor to carry out regular maintenance on the lift. All lifts (other than a home lift, a vertical platform lift and a stairlift) must be maintained at least once every month.

2. Lift service contractors must meet 20 prescribed lift maintenance outcomes during the monthly maintenance. The full list of 20 maintenance outcomes can be found below.

|                                                      |                                                          |
|------------------------------------------------------|----------------------------------------------------------|
| 1. Door open control                                 | 12. Governor                                             |
| 2. Door protective devices                           | 13. Main ropes and compensation ropes                    |
| 3. Lift car and landing doors (gaps)                 | 14. Compensation rope and sheave tie-down and tensioning |
| 4. Lift car emergency alarm                          | 15. Buffer                                               |
| 5. Lift car intercom                                 | 16. Controller and electrical system                     |
| 6. Emergency power supply for lighting & ventilation | 17. Guide shoes or rollers of lift car and counterweight |
| 7. Movement of lift car                              | 18. Safety gears                                         |
| 8. Housekeeping                                      | 19. All lift parts (for corrosion and wear)              |
| 9. Lift machine and drive                            | 20. Stopping or level accuracy                           |
| 10. Brakes of lift machine and drive                 |                                                          |
| 11. Direct current machine                           |                                                          |

3. With effect from 1st August 2022, a lift owner, together with the RM&D solution provider and lift service contractor, may apply to BCA to allow his lifts, installed with an RM&D solution, to be maintained at three-monthly intervals. To assess the application, BCA would require the following information as part of the application process:

- a. Performance data of the lifts (including maintenance findings detected by the RM&D Solution and servicing records) for at least 6 months.

- b. Documentation demonstrating that the RM&D solution is compliant with the Code of Practice for Design and Performance of Remote Monitoring & Diagnostics Solution for Lifts<sup>1</sup> (“COP”).

4. Upon written approval of the application, the lift service contractor may carry out maintenance works at a three-monthly interval. The contractor will also need to maintain the lift in accordance with the recommendations of the RM&D solution. The Commissioner of Buildings (COB) may also impose other conditions for the approval.

5. More information on the application process and requirements (the COP as well as the Guidelines - Approval Process for Remote Monitoring and Diagnostics for Lifts) can be found on BCA’s website (URL: <https://www1.bca.gov.sg/regulatory-info/lifts-escalators/remote-monitoring-diagnostics-for-lifts-in-singapore>).

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<sup>1</sup> The COP provides specifications for the minimum architecture of RM&D systems which includes the use of data analytics for lift maintenance. It also stipulates the performance indicators used to evaluate the performance of the RM&D solution.