

Approval Process for Remote Monitoring and Diagnostics (RM&D) Lifts

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Do not circulate to external parties without BCA's prior consent



Embracing Technology

Manpower Challenges



1. Ever Increasing Lift Number



2. Workload Impacting Lift Safety



3. Heavy Reliance on Manpower

Embracing Technology



Use of R&D Technology



Improved Productivity

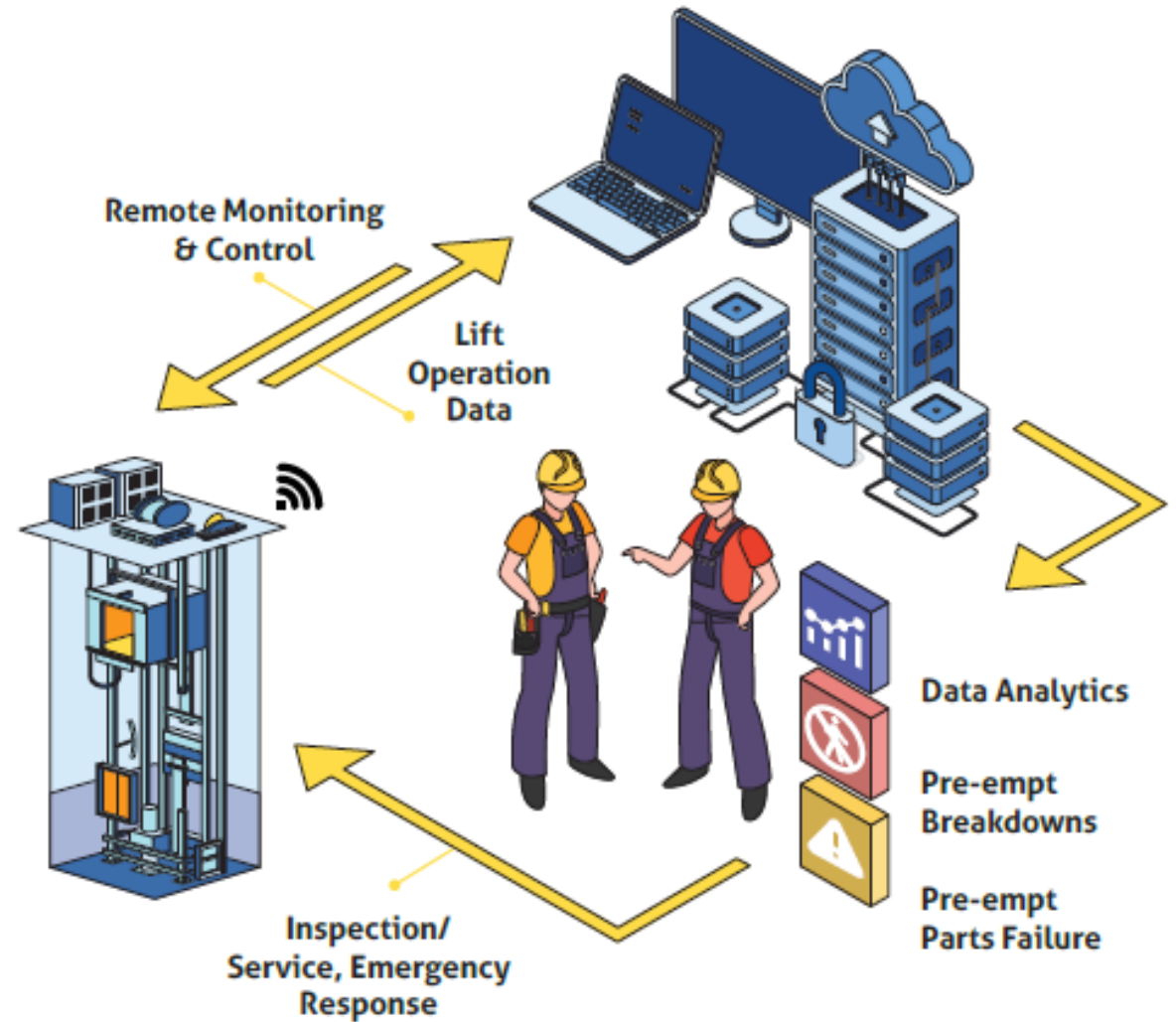


Sustainable - Higher Lift to
Technician Ratio



Remote Monitoring and Diagnostics (RM&D)

Use of RM&D in lifts for predictive maintenance is becoming a feasible approach to improve productivity in the maintenance workforce and reliability in lifts.



RM&D as a Key Technological Enabler

Current Maintenance Requirements

Maintenance Frequency

- **Monthly visit** by lift maintenance contractor to maintain the lifts

Maintenance Outcomes

- Prescribed **Maintenance Outcomes** to be met

- An effective RM&D system is able to monitor the condition of the lifts (24/7) and make recommendations for actions to be taken when maintenance needs arise
- RM&D lifts have the potential to enable the **reduction on the frequency of maintenance visits** → **Quarterly Maintenance**



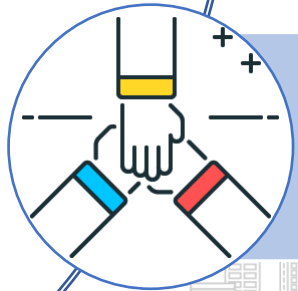
Rationale and Objectives of the Approval Process



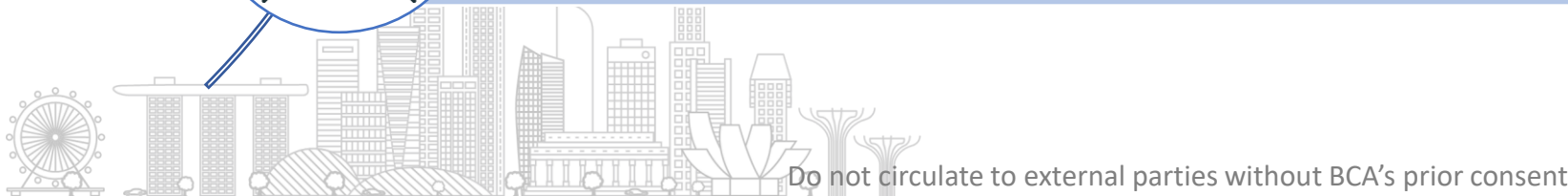
To encourage and facilitate the adoption of RM&D technologies so that stakeholders in the lift industry are able to maximize the benefits on the use of their RM&D technologies



Step by Step process to allow all stakeholders to monitor the effectiveness of the RM&D solution and the performance of lifts closely before transiting to a 3 monthly maintenance frequency



BCA will provide guidance on the approval process which would include requirements for the RM&D system and performance of the lifts (safeguards)



Approval Process



Application

- Interested Applicants to consult BCA
- BCA assesses product has required **monitoring coverage** and **key processes**
- Apply for selected lifts

Evaluation

- **Monthly Maintenance**
- Minimum of **6 months**
- Meet **Performance indicators** to obtain Approval for Quarterly Maintenance

Quarterly Maintenance

- **Apply and Obtain Approval** for Quarterly Maintenance
- Keep to **conditions of Approval** (i.e. continue to meet performance indicators and maintain use of RM&D solution)



Evaluation Criteria

Monitoring Outcomes

Specifies Monitoring Outcomes that RM&D system should fulfill so as to:

- Meet Maintenance Outcomes without the need for physical checks - *such as levelling of lift cars, elongation of rope*

Performance Indicators

- Evaluate the effectiveness of RM&D solutions through the sandbox by setting performance criteria in the following areas:
 1. Safety (e.g. high-risk findings)
 2. Reliability (e.g. uptime)
 3. Productivity (e.g. first time fix rate)

- Specifies performance standards for RM&D Solution Providers to meet to be able to transit to Quarterly Maintenance.
- BCA will share the Monitoring Outcomes and Performance Indicators with Applicants

Application Process



- BCA would be issuing Guidelines on the Approval Process (more details provided)
- Applicants (Lift Owner/RM&D Solution Provider/Lift Maintenance Contractor) who are interested to apply for their RM&D Solution and lifts can write in for a consultation with BCA*.

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Thank you



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