



Advancing Lift and Escalator Safety Through Technology and Risk-Based Oversight

Presented by the [Electrical and
Mechanical Services Department \(EMSD\)](#)
of the [HKSAR Government](#)



1. Digital Log-books for Lifts and Escalators



Log-books in Hong Kong

Requirements under the Lifts and Escalators Ordinance



- Basic particulars
- Technical information



- Maintenance and examination records
- Fault and breakdown records
- Incidents
- Passenger trapping cases



- Maintenance plan

01. KEEP

Responsible Persons (RPs)
for Lifts or Escalators



02. RECORD

Registered Contractors
Registered Engineers
Registered Workers

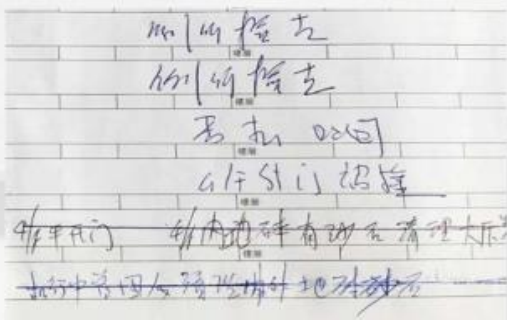


03. INSPECT

EMSD



Limitations of Paper-bound Log-books



E10	檢下台檢查開鎖	26/12	12:15
	並更換檢查位正等	1/20	
E10	觸發下台扶手開鎖重	27/12	11:40
	最後正等		
E10, C1	例行保養	30/12	22:22
E15	批修 出E15 檢查盤	30/12	17:00
	開鎖 更換 磁器 主開鎖正等		



01



Accuracy

Missing information, amendments or deletions

02



Availability

Lost or damaged

03



Legibility

Poor handwritings

04



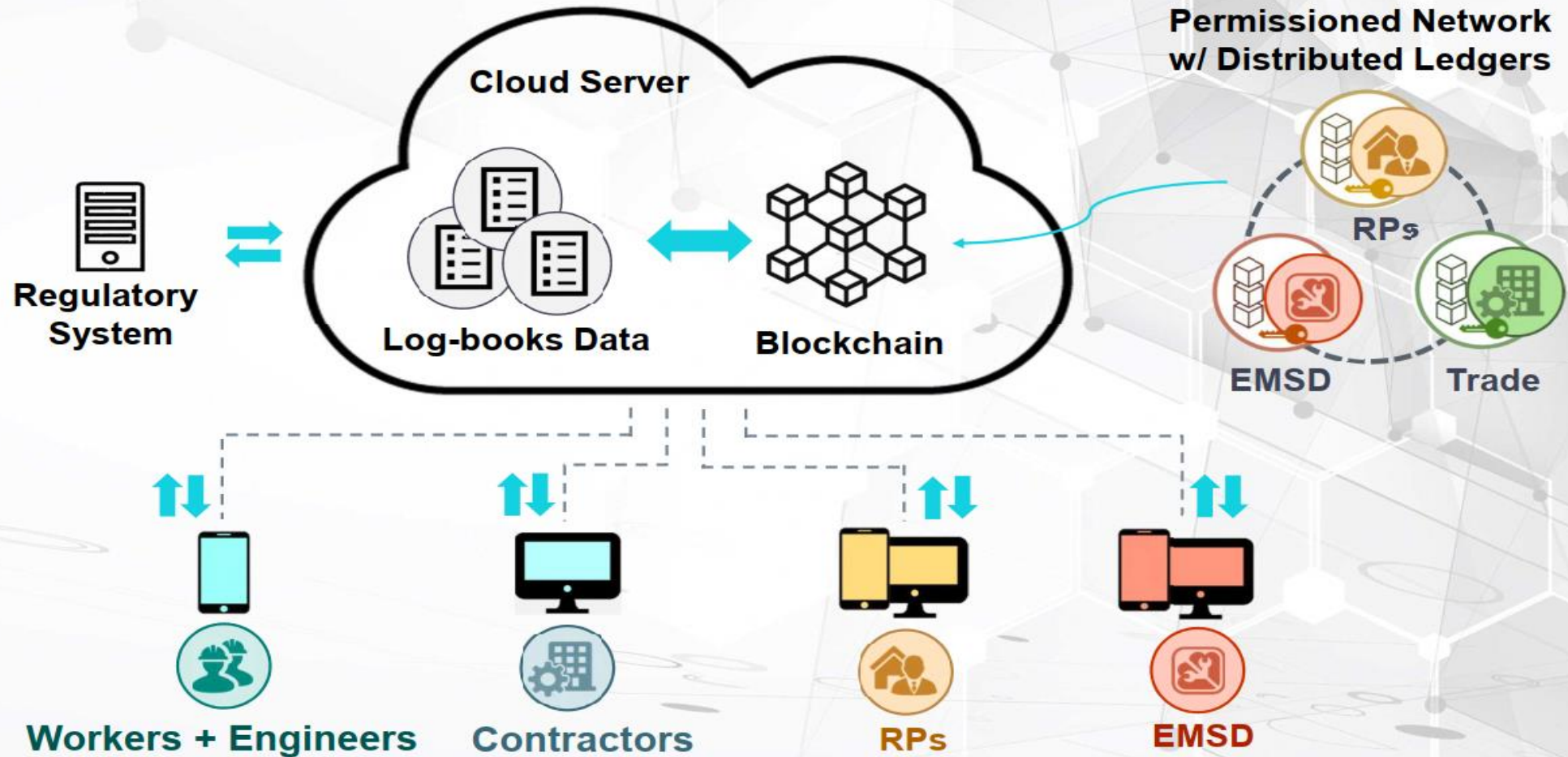
Accessibility

Scattered over Job Sites





System Architecture of Digital Log-books



Features of Digital Log-books

The Design Objective

智方便

Smart Report

Support Image Upload



This feature block is highlighted in orange. It includes icons for a fingerprint scanner, a smartphone, a QR code, and a location pin. The illustration shows a smartphone displaying the EMSD Digital Log-Book app interface, a person in a uniform, and a hand holding a smartphone to scan a QR code on a wall.

Cloud Upload



Cloud Upload



This feature block is highlighted in teal. It includes a cloud upload icon. The illustration shows a hand holding a smartphone and another smartphone displaying a cloud upload confirmation screen.

Customized Dashboard

Facility Management



This feature block is highlighted in light blue. It includes a dashboard icon and a facility management icon. The illustration shows a laptop displaying a complex dashboard with various charts and maps.

Smart Notification

Real-time Report



This feature block is highlighted in light green. It includes a notification bell icon and a report icon. The illustration shows a man in a suit looking at a tablet and a tablet displaying a real-time report interface.



Benefits to RCs & RPs

Dashboard with Data Analytics



Dashboard for Contractors

- Job monitoring
- Works progress
- Resources planning
- ➔ Operation optimization



Dashboard for Owners



- Facility management
- Contractor management
- Overdue reminders



Roll-out of Digital Log-books

- Digital Log-books (DLBs) was rolled out to the public in Nov 2022
- Free of Charge
- Regarded as **specified form** under the Ordinance, thus comply with the statutory requirement of keeping log-books
- No need to fill in paperbound log-books if inputted on DLBs



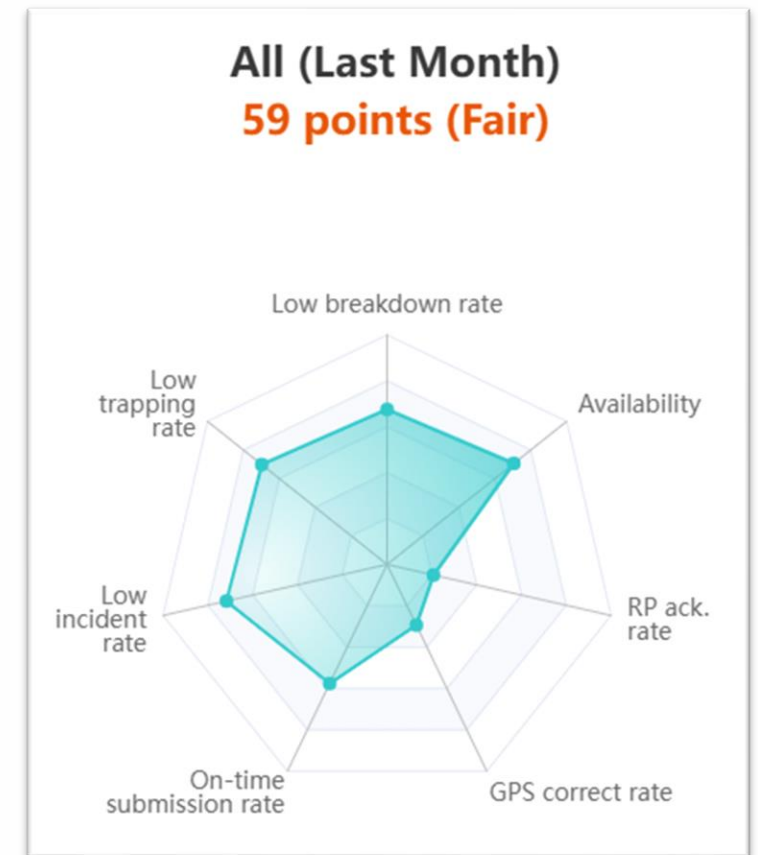
Digital Log-books New Functions

- 1) Application Programming Interface (API):
 - "Application Programming Interface" (API) function, allowing users to establish an information exchange bridge between their own computer systems and the DLBs
 - Automatically transfer job record and specifications of lifts and escalators to the user's computer system for further analysis



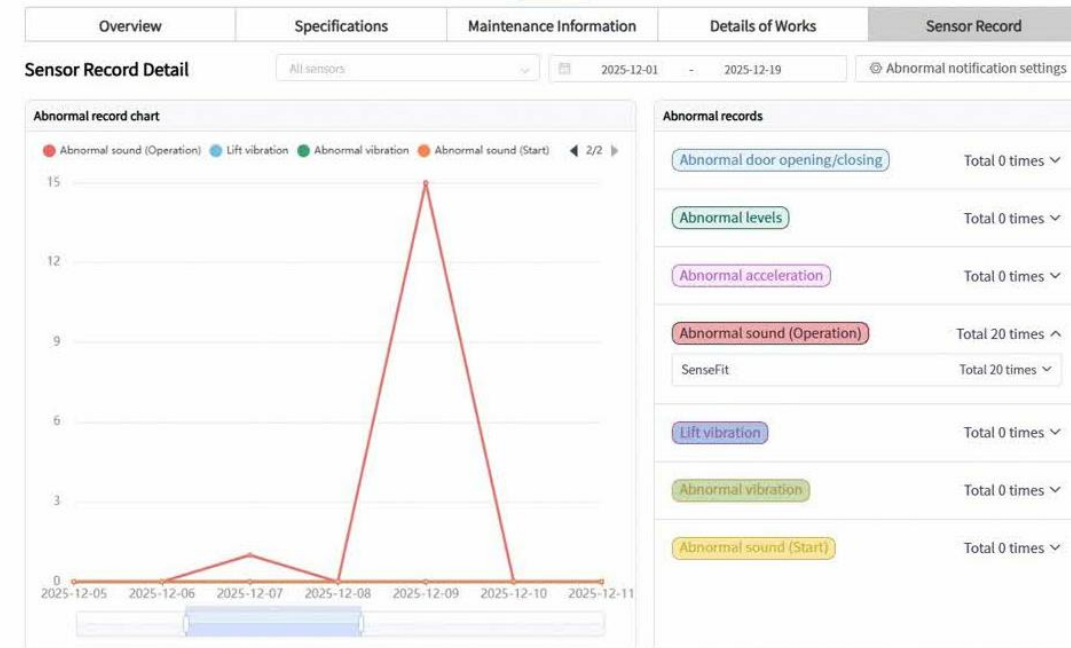
Digital Log-books New Functions

- 2) Integrated Index:
 - Incorporate the various data related to the **operational performance of a L/E** and the **performance of the worker and RPs** responsible for its upkeep
 - Provide a **scoring system** for visualization, analysis and benchmarking of the overall performance
 - Facilitate the RPs, the trade and the EMSD to **monitor the operation and management** level of L/E more effectively



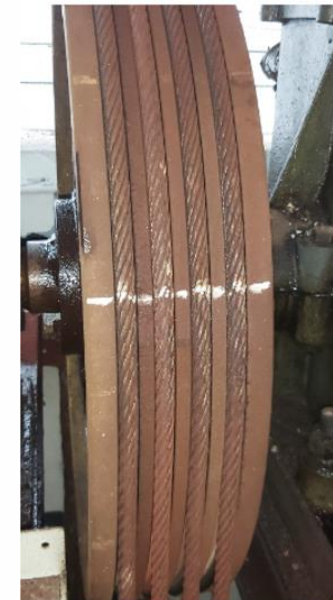
Digital Log-books New Functions

- 3) IoT Sensor Platform:
 - Display the fault signals from IoT sensors on the DLB web portal and mobile app
 - Consolidate the signals of different sensors from different suppliers, to be shown on one single platform
 - If faults are detected, the DLB would send smart notifications to the relevant RP, RC and RW



Digital Log-books New Functions

- 4) LECAS (Lift and Escalator Condition Analysis System) :
 - Use **A.I.** to **analyze the photos uploaded to the DLB platform**
 - Assess the condition of lift and escalator components
 - **Smart notification** will be sent via the DLB platform to the user who uploaded the photos for **follow-up actions**



71K



As at Mar 2026,
 log-books for more than **71,000** lifts / escalators
 (~80% of all lifts / escalators in HK) were digitalized

香港國際機場
 HONG KONG INTERNATIONAL AIRPORT



HONG KONG HOUSING SOCIETY
 香港房屋協會

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 香港城市大學
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機電工程署
 EMSD

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 EMSD



Digital Log-books Website

URL:

https://www.emsd.gov.hk/en/lifts_and_escalators_safety/digital_log_books_system/index.html



- Background and Features
- Promotional Videos
- User Manuals
- Enquiry
- More...



2. Risk-based Measures to Enhance Lifts' Safety



Two serious lift incidents in 2018

[Hong Kong healthcare and hospitals](#) [Hong Kong / Society](#)

Hong Kong lift accident that injured two people caused by braking system malfunction, government report reveals

🕒 2-MIN READ



Make SCMP preferred on Google



Karen Zhang

Published: 7:00pm, 14 Jul 2018 | Updated: 10:20pm, 14 Jul 2018

[Accidents and personal safety](#) [Hong Kong / Society](#)

Woman dies after falling into Hong Kong lift shaft at her estate

🕒 2-MIN READ



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Clifford Lo

Published: 8:35pm, 11 May 2018 | Updated: 12:29pm, 12 May 2018



Lift Safety Enhancement Measures

LC Paper No. CB(1)996/17-18(07)

**For discussion
on 29 May 2018**

LEGISLATIVE COUNCIL PANEL ON DEVELOPMENT

Enhancing Safety of Aged Lifts

PURPOSE

This paper aims to brief Members on the follow-up work of the Electrical and Mechanical Services Department (EMSD) on the lift incidents that happened at Waterside Plaza in Tsuen Wan on 8 April 2018 and Paris Court of Sheungshui Town Centre on 11 May 2018, and to outline the proposed measures to enhance the safety of aged lifts.

This presentation would be focusing on the Short-Term Measures

Short Term Measures:

- Special Maintenance of Lifts
- Increased Inspection Frequency

Middle Term Measures :
Lift Modernisation Subsidy Scheme

Long Term Measures :

- Feasibility of Mandatory of Lift Modernisation/ Replacement
- Risk Assessment of Lifts

Special Maintenance of Lifts

To **step up the maintenance** of lifts without modern safety devices that may affect the safe operation of lifts

Modern safety devices are

- unintended car movement protection device,
- ascending car overspeed protection device, or
- double braking system

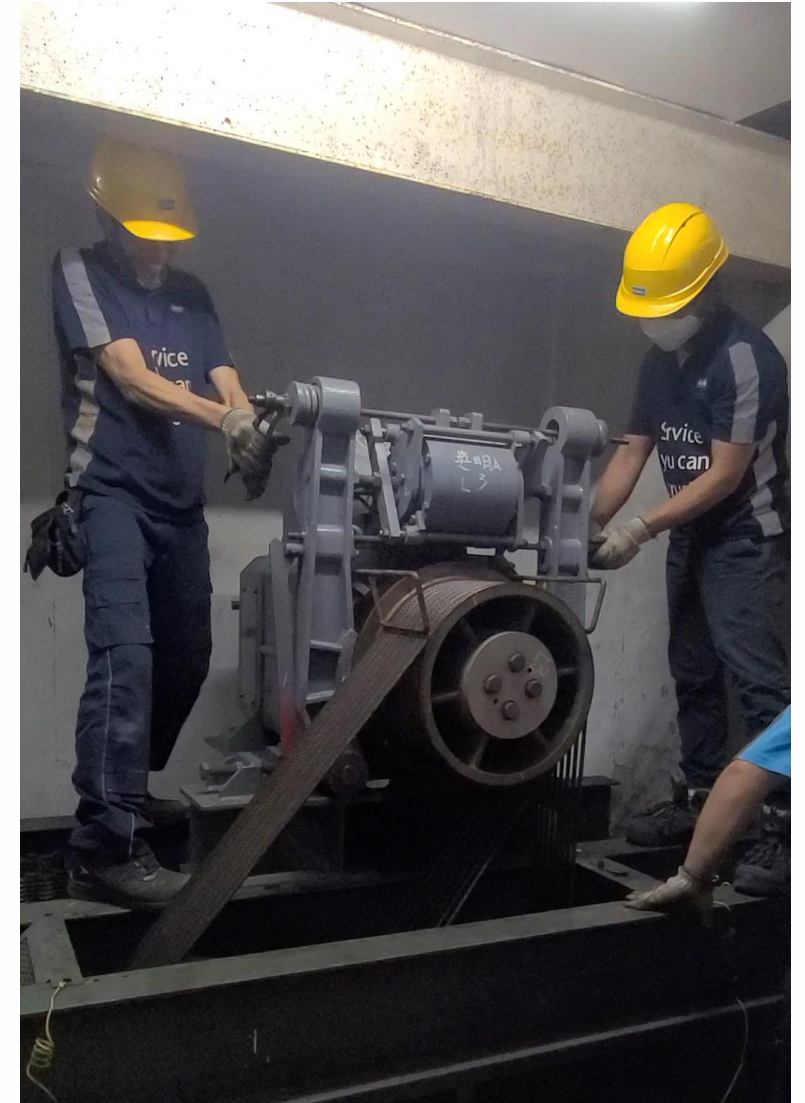
Frequency is not less than twice a year



Special Maintenance of Lifts

Scope of Special Maintenance

1. a. Disassembly maintenance of the braking mechanism for the lift machine brake



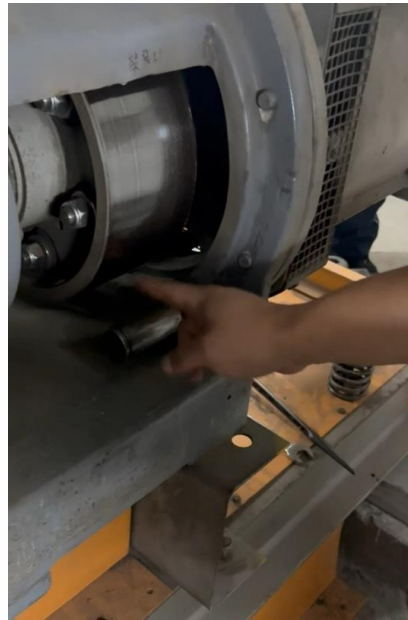
Special Maintenance of Lifts

Scope of Special Maintenance

1. b. Disassembly maintenance of the braking mechanism for the lift machine brake



Clean the brake drum



Lubricate the brake



Measure the Lining



Clean the brake pad



Special Maintenance of Lifts

Scope of Special Maintenance

1. c. Disassembly maintenance of the braking mechanism for the lift machine brake – Reassembly of the brake



Special Maintenance of Lifts

Scope of Special Maintenance

2. Measure the braking distance by performing no-load brake test



Special Maintenance of Lifts

Scope of Special Maintenance

3. a. Measure grooves of traction sheave in the lift traction machine



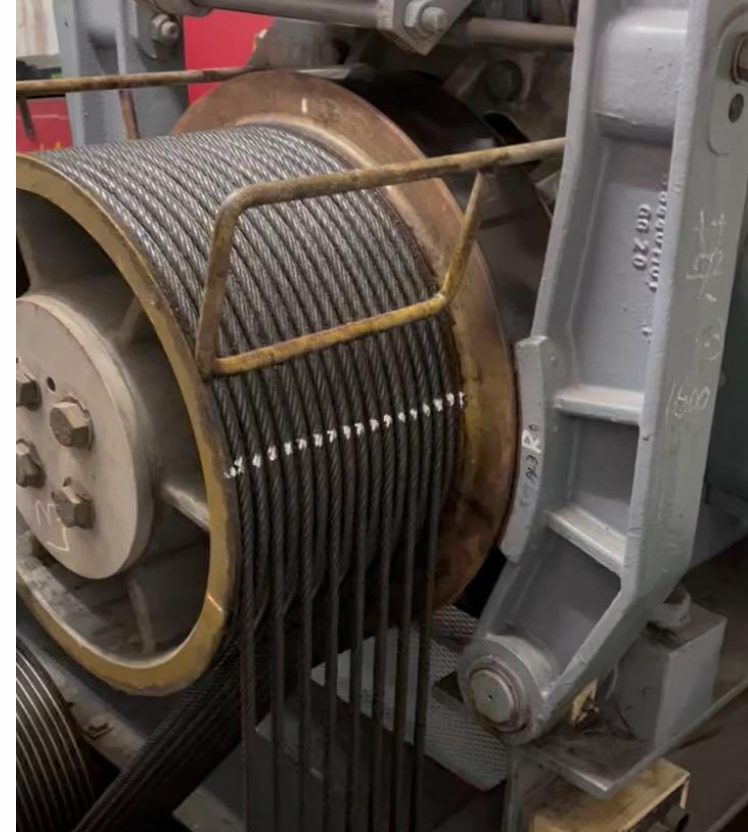
Special Maintenance of Lifts

Scope of Special Maintenance

3. b. Perform no-load traction test for the lift and measure the leveling accuracy



Leveling Test



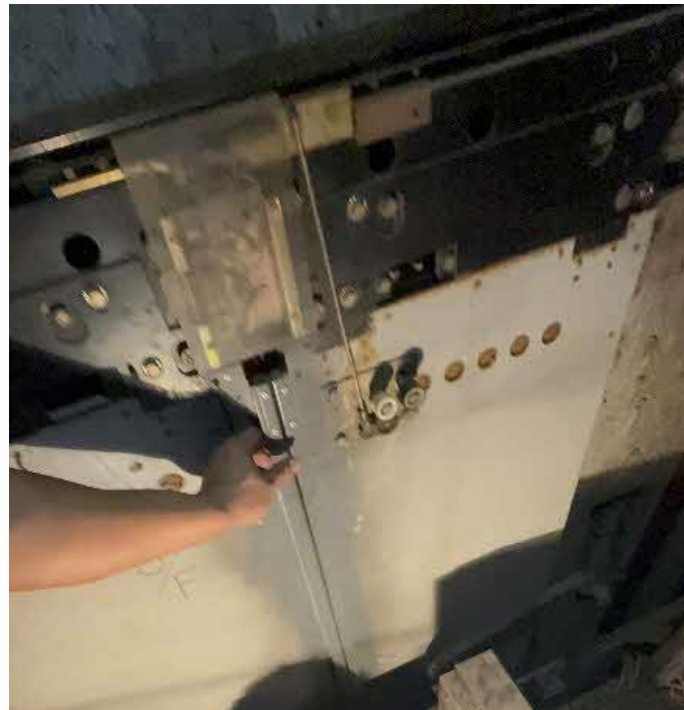
No load traction test



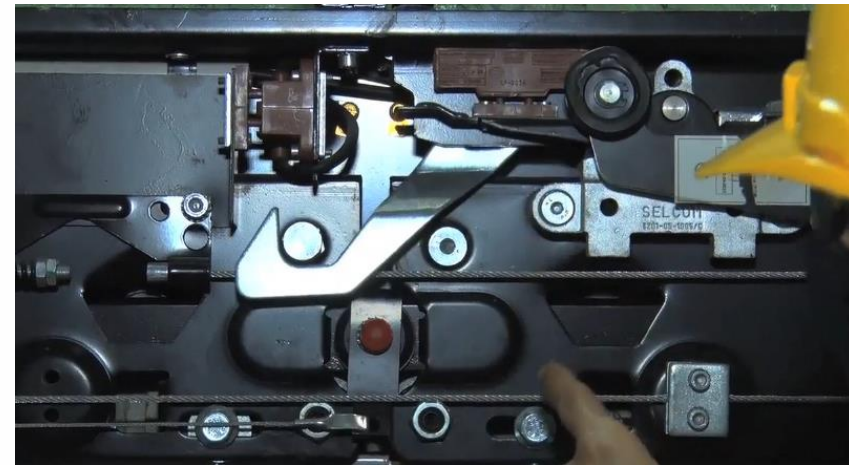
Special Maintenance of Lifts

Scope of Special Maintenance

4. Check the mechanical locks and electrical contacts of all lift landing doors



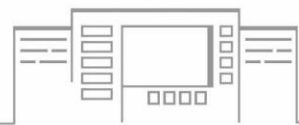
Landing door Lock



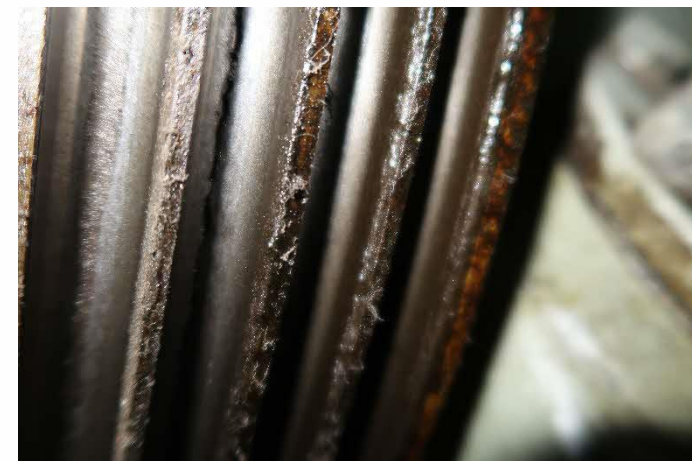
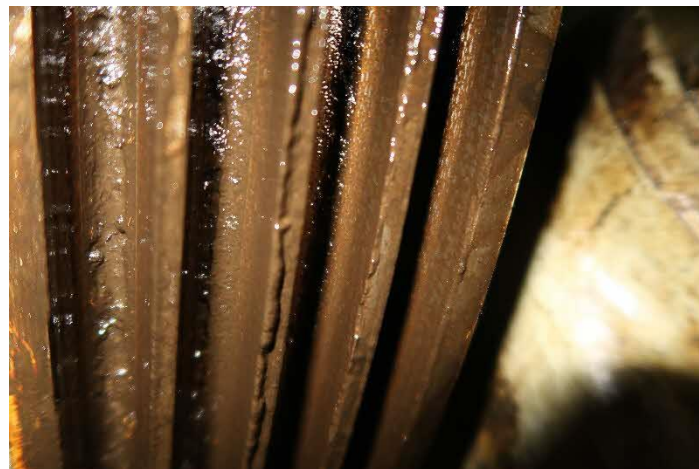
Car door Lock



Observation in Brakes Disassembly



Observation in Traction Wheels



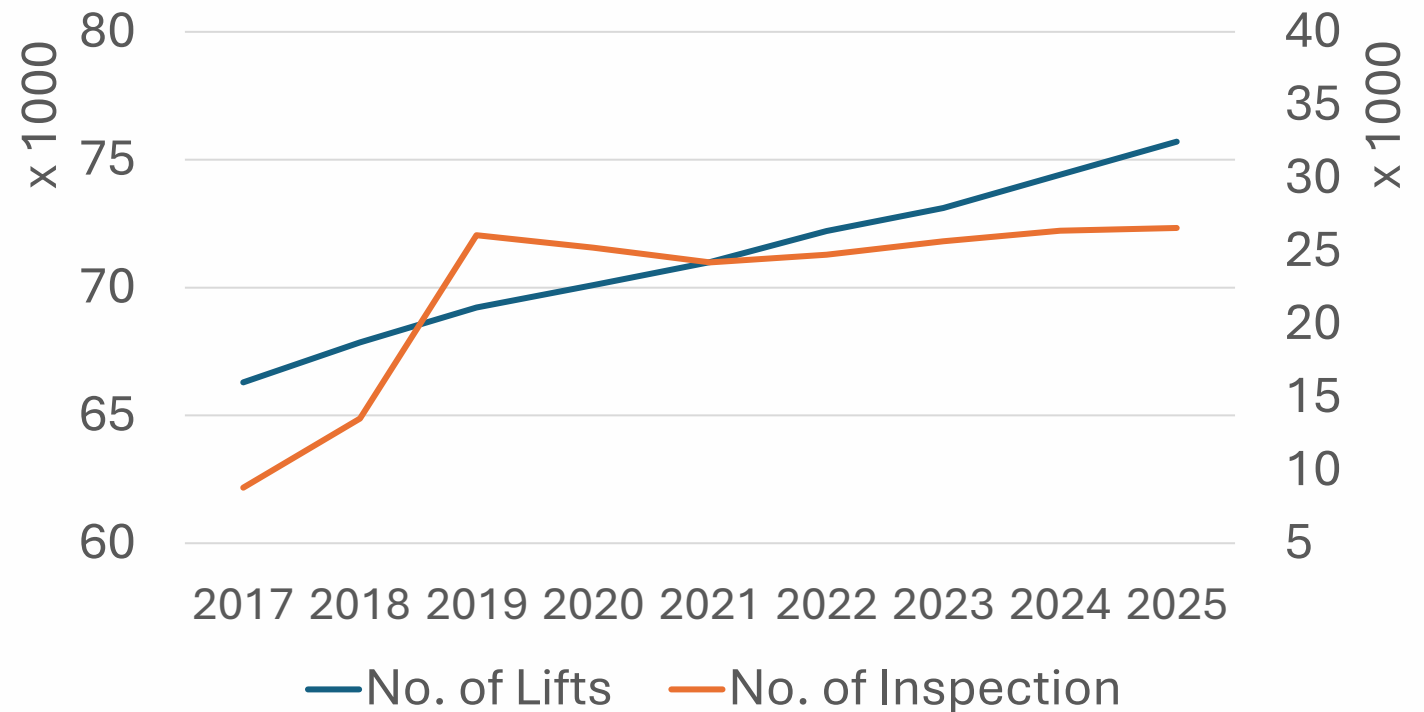
Increased Inspection Frequency

To **increase surveillance checks on maintenance works** to ensure the quality of the inspection and maintenance works carried out by the Registered Contractors.

We faced the following challenges while we tried to increase the inspection effectively:

- Limited Manpower Under Fiscal Constraints
- Growing Demand from aging Installations
- Untapped Data Potential

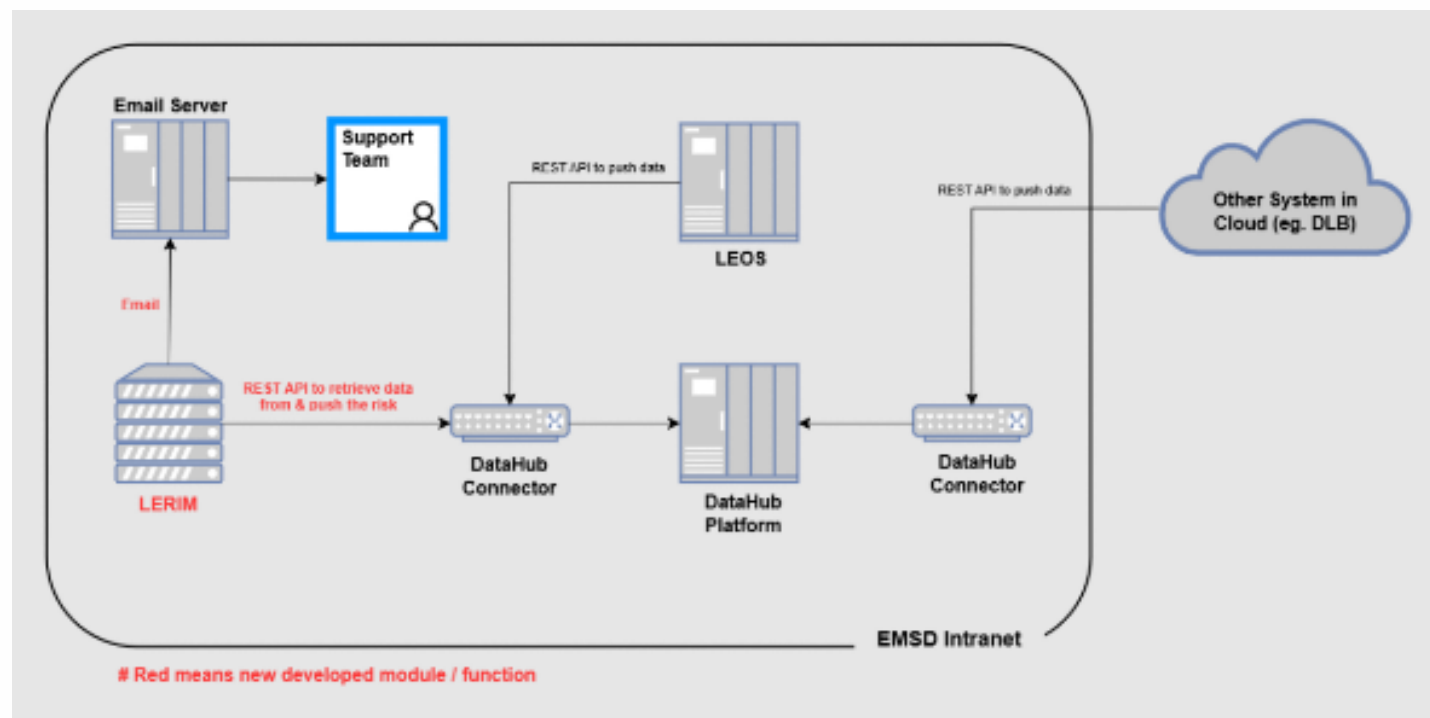
Nos. of Lifts and Inspections over the years



Lift and Escalator Risks Index Model (LERIM)

To solve the problem, we introduced the Lift and Escalator Risks Index Model (LERIM)

- It is a risk prediction engine using **Artificial Neural Networks** to learn from existing big data collected.
- Existing data: lift and escalator particulars, location data, warning letters, incident reports, inspection checklists, prosecution and disciplinary records, Digital Log-books records etc.
- The model will identify lifts, escalators, workers, contractors, and engineers **presenting higher risk in terms of safety performance and statutory compliance.**



Lift and Escalator Risks Index Model (LERIM)

With the LERIM and Digital Log-books, we were able to

- A **true risk based approach** for planning lifts inspection
- **Making use of all the data** we had been collecting
- **Optimize the time** required for manual scheduling of inspection and travel for inspection
- **Enhancing the limited manpower** of the inspection staff

數碼工作日誌
Digital Log-books

機電工程署巡查 > 巡查日程

2025年08月27日 星期三

狀態 未完成 45 已完成 0 已取消 0

人員 J Chang

Staff	Time	Location	Risk Level	Status
J Chang (AIGL51)	12:00	香港半山甘道3號	高優先次序, AgedLiftAttdNotByGLSD5	未完成
WS MAN (AIGL52)	10:00	九龍土瓜灣譚公道84號至90號	高風險, 突擊巡查	未完成
WS MAN (AIGL52)	16:00	九龍新蒲崗寧遠街3號至23號越秀廣場	突擊巡查	未完成
KF SUNG (AIGL53)	09:00	九龍尖沙咀寶勒巷12號至18號粵海酒店	高風險, 突擊巡查	未完成
KF SUNG (AIGL53)	15:00	九龍尖沙咀金馬倫道33號	突擊巡查	未完成
KY CHIU (AIGL54)	10:00	九龍九龍城聯合道18號	高風險, 後備工作	未完成
KY CHIU (AIGL54)	13:30	九龍大角咀海庭道18號帝柏海灣 (TOWER 2)	高優先次序, 突擊巡查, AgedLiftAttdNotByGLSD5	未完成



Thank you!

