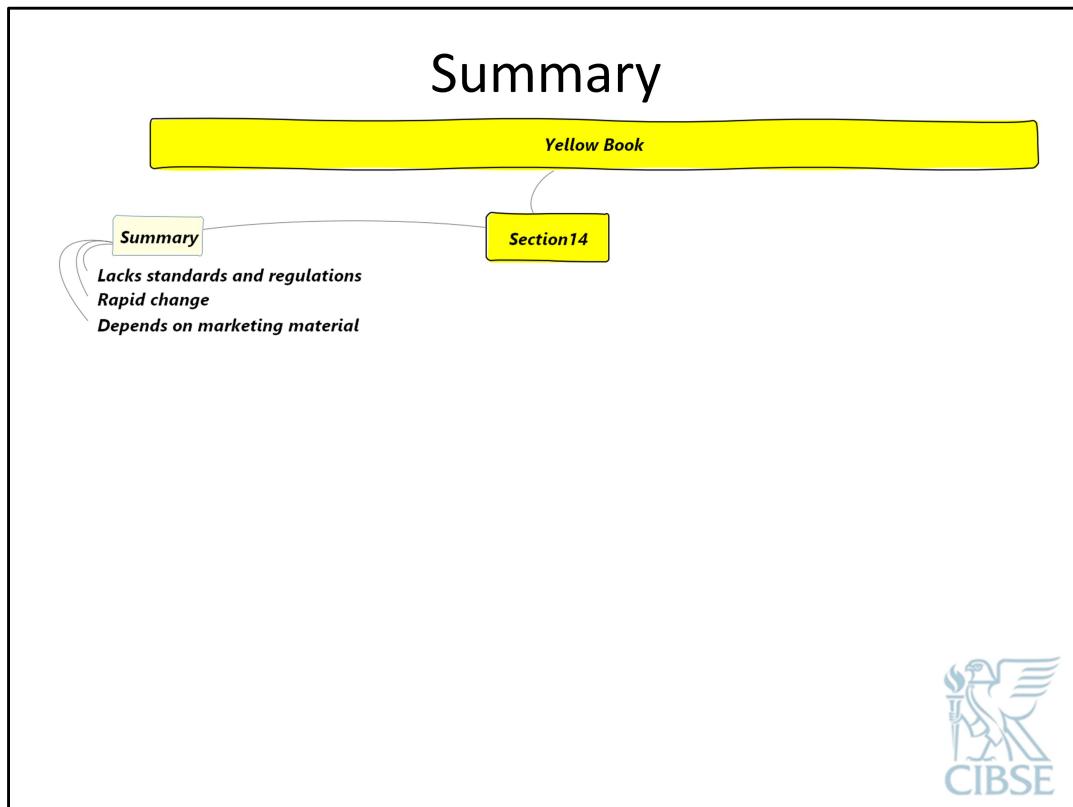


Section 14 of the (Yellow Book) Guide D covers a wide range of subject matter with lots of interdependencies so I have put together this presentation as a **“mind map”** rather than the usual PowerPoint bullet lists



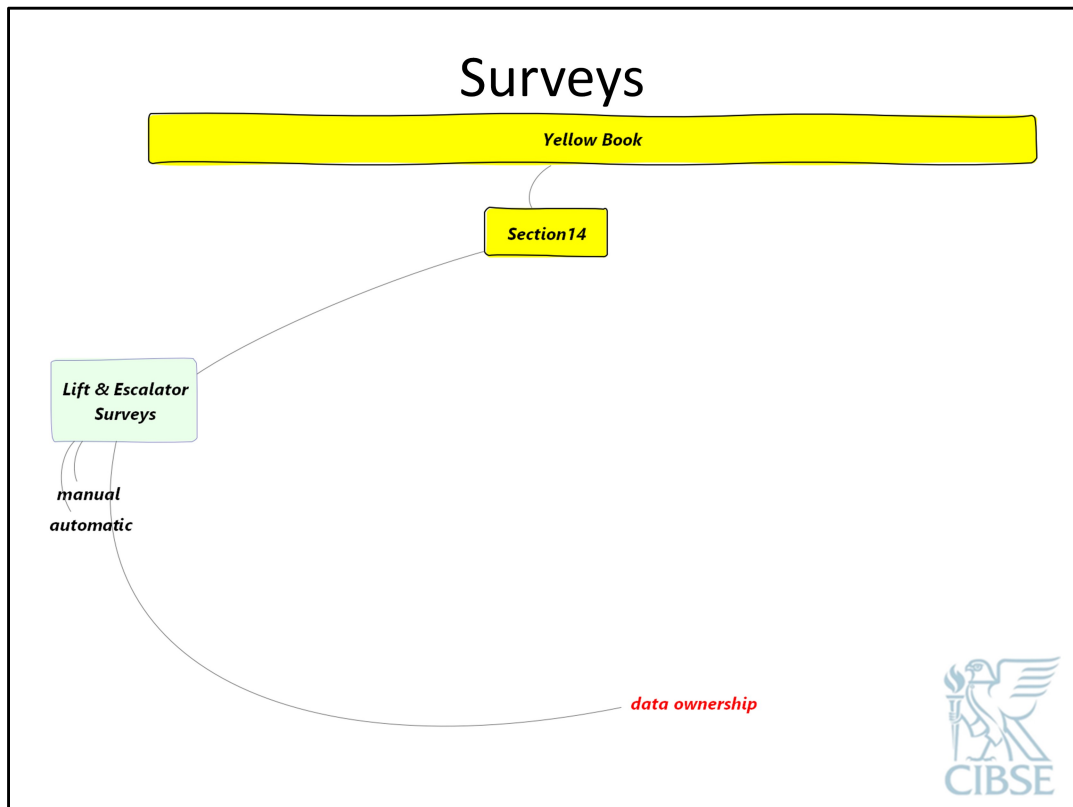
- Section 14 covers **collection, management and exchange** of data with **lifts** (and to a lesser extent with **escalators**)

- It is a subject area undergoing **rapid and continual change**

- As a result there is **little standardisation** in an area which needs to provide many different types of users and stakeholders with consistent points of reference.

- So **Section 14 is unusual** because, due to the lack of published standards, the text instead makes **reference to marketing material** from both equipment suppliers and service providers – though this is purely for the purposes of **example and is no way a recommendation**.

- In this respect, the **2020 version is already out-of-date** and it is likely that the 2025 Section 14 will begin the same path as soon as it is published!

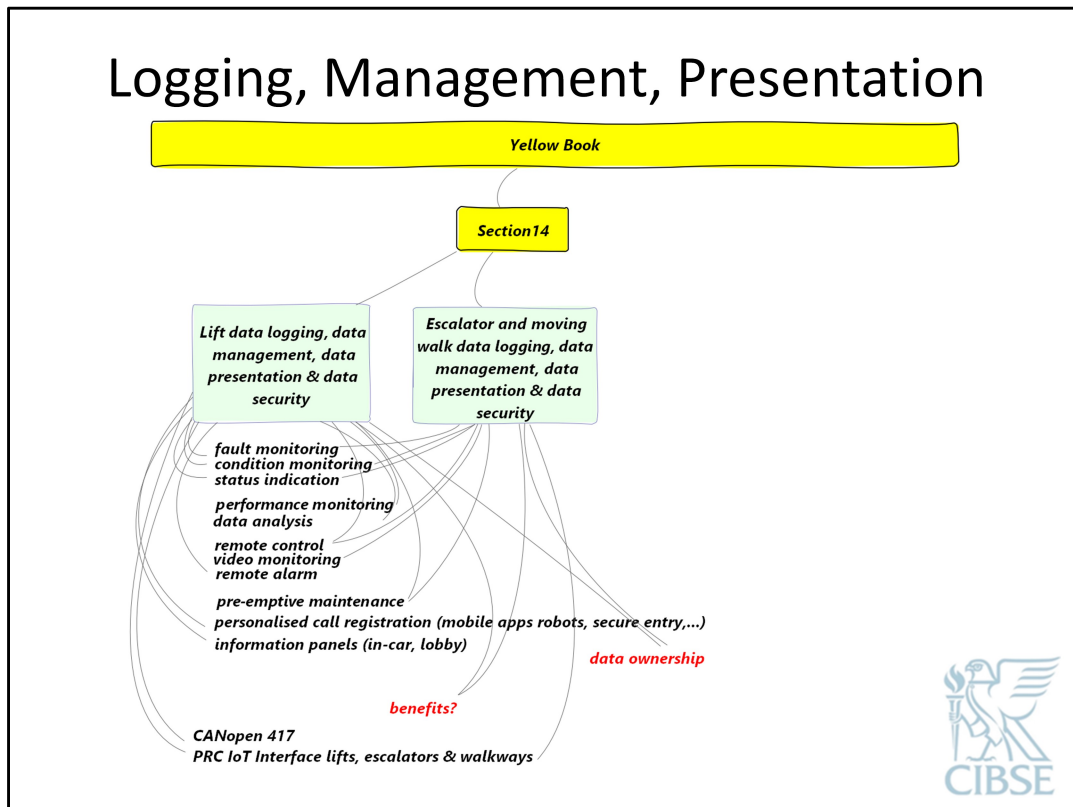


Lift surveys are often conducted to **indicate the likely demand patterns** in an **existing building**, for example, as part the design study prior to a modernisation.

By their nature are **labour intensive** and therefore cover only one or two representative days.

However, with the advent of **destination control call stations** it is possible to conduct longer term surveys with **automated data-collection** for example to tune parameters of the controlling algorithm with the objective of improved demand handling and performance (reduced energy consumption), which is covered in the **following subsection...**

In the 2025 version I want to say a bit more about who owns the data.



The next two sub-sections cover a shared set of subjects - **mainly for lifts** but with a **subset** also relevant to **escalators** and moving walkways.

Data-logging – extraction and recording of raw data from the lifts

Data-management- storage, processing, and analysis

Data presentation – which involves understanding the audience

This is a mixture of equipment and services

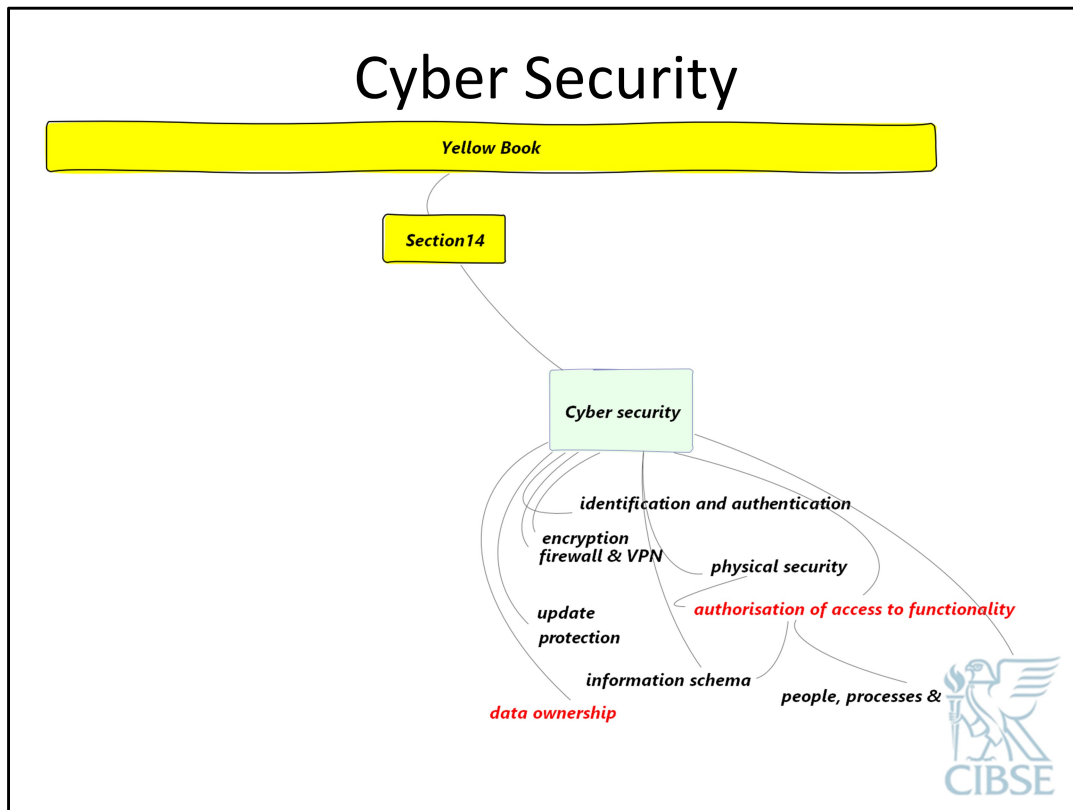
With all these capabilities, it is very important to understand **who benefits** and in **what ways**.

It is important not to be carried away by the gadgetry and to be wary of implementation **incompatibilities** that may lead to **customer lock-in**.

Who owns the data – beyond the statutory requirements of GDPR and the management of personal data.

The **raw data belongs to the owner of the lifts** which generates it. That is used by a service provider, possibly to **“teach” an AI system** for fault identification and prediction.

The prediction information thus belongs to the service provider. If the building owner changes service provider what access rights should they have to the **knowledge base to which they have contributed?**



Not simply a technical solution – people, process & technology:

- All **staff** in the suppliers and users businesses
- All **business processes** - a way of working

•Involves all phases from **product design to operation maintenance to decommissioning**

Use of **third party software libraries** and **expert collaborators** is recommended to ensure continuing protection against the latest evolution of threats.

A number of specifications and guides have been developed and more are in the pipeline: These document aspects where the **domain of lift systems is a special case** of a more generic specification, though often this is fairly simplistic - at the level of shaft communications and access to motor-rooms and similar.

The technical subjects of encryption, firewall and VPN, user authentication tend to describe how to **prevent access**, but a new range of APIs is being developed to **provide access to specific functionality** and these urgently require a **standardised set of user roles** and **associated access permissions** that are specific to lift domain. This would provide a **reference point** and a means of verification that **reassures a customer** that each supplier’s offering provides a **satisfactory level of cyber security**.

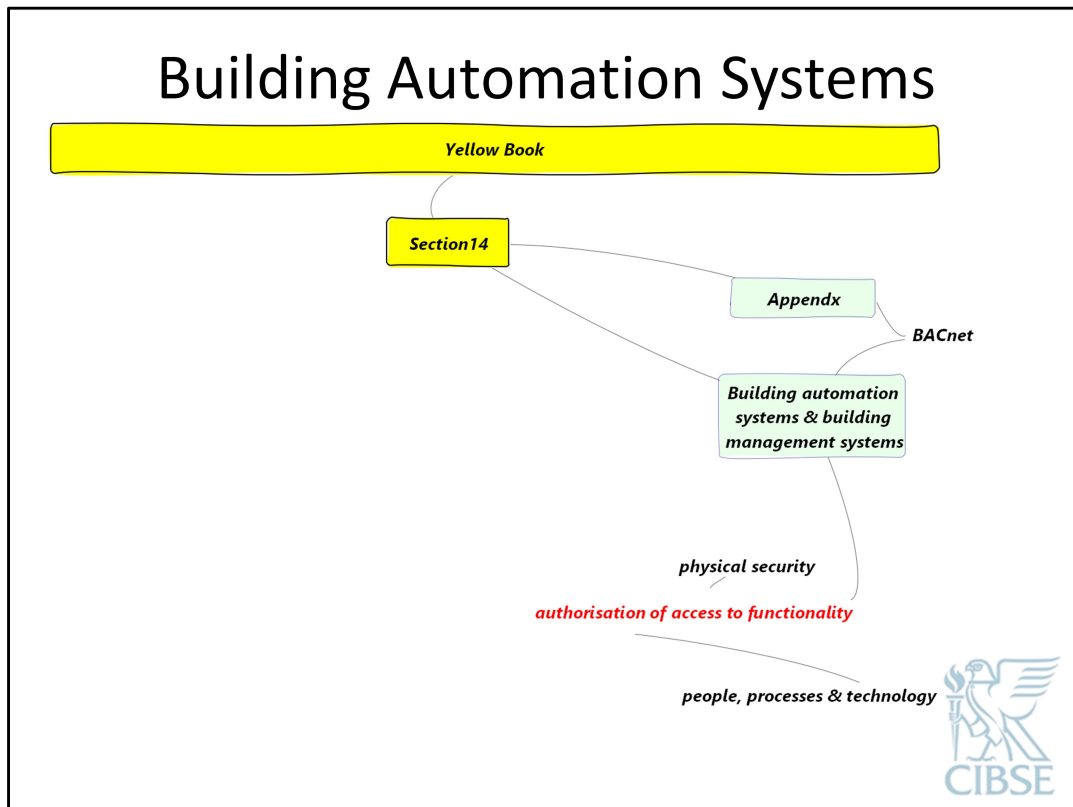
I am not aware of any works in progress to provide this – any audience suggestions?

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- BS ISO 8102-20:2022 ISO/TC 178 N 1041
- ISO 8102-20 , Electrical requirements for lifts, escalators and moving walks - Part 20: Cybersecurity (<https://www.iso.org/obp/ui/en/#iso:std:iso:8102:-20:ed-1:v1:en>)
- NEII - Report "Elevator and Escalator Industry Cybersecurity Best Practices" published 2017 revised July 2020 (https://nationalelevatorindustry.org/wp-content/uploads/2022/12/NEII-Cybersecurity-Best-Practices-7_9_20.pdf);

Planned:

- ISO Technical Report - "Remote Software Updates for lifts and Escalators" planned publication date Apr 2024
- There is a proposal from ETSI for an interface for elevators. For this the (ELA) task force defines the domain knowledge for elevators.

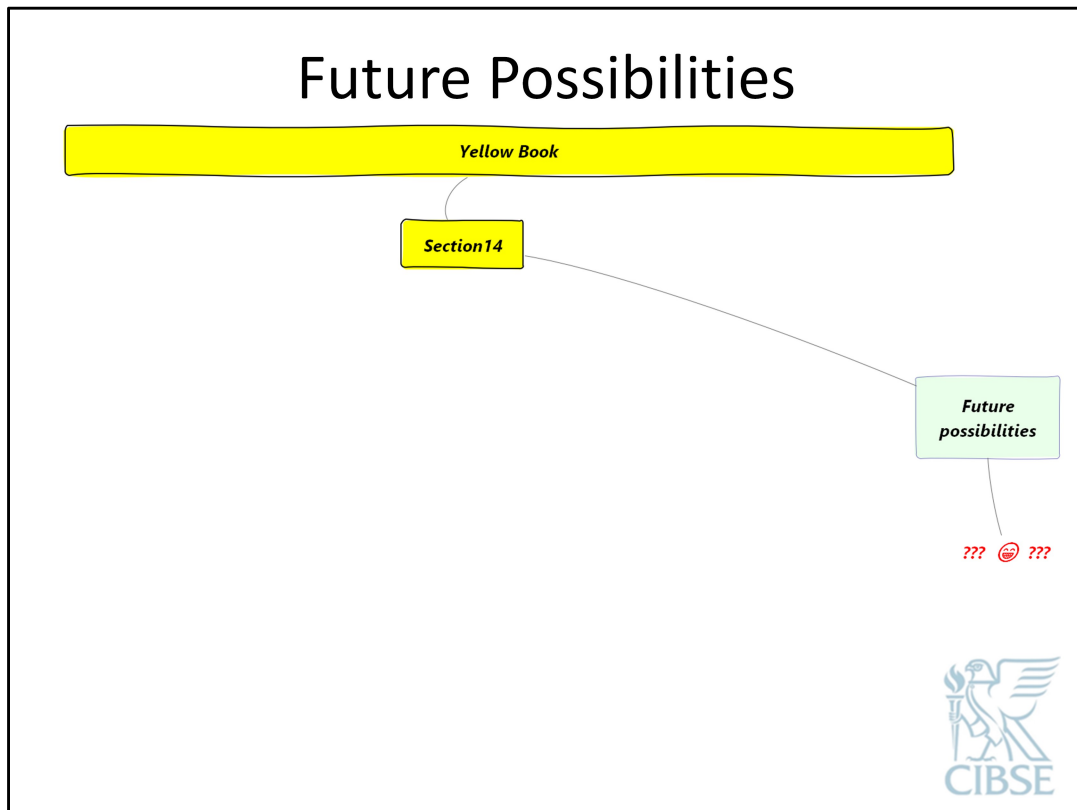


A common **networked** control and monitoring system for building management (particularly a “smart” building) is a sensible objective. Also a common management and reporting platform.

There is however, a significant difference between the usual BMS subjects – Heating, Lighting, Ventilation, Alarms, etc – and lifts because of the **rate at which events occur** and the variety of **types of event** in a system of lifts.

Currently, the most commonly communication protocol for BMSs is **BACnet** and some lift controllers can feed information into BACnet.

Authorisation to use functionality according to **user role** is particularly important in this context.



A lot could change or be about to change in the including possible areas of development:

- Smart buildings**

- Confederated digital twins** including people-flow (UK Digital Twin Hub may approach this in future)

also: National Cyber Physical Infrastructure; Connected Places Catapult