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FIBEE

Hitachi Destination Floor Reservation System
日立目的地楼层预约系统

FIBEE Hitachi Destination Floor Reservation System
日立目的地楼层预约系统

“FIBEE” leads passengers more smartly to their destination floors. By learning elevator usage data on a daily basis, FIBEE controls to give priority to handling capacity for congested floors such as morning up peak. Moreover, FIBEE saves energy according to the traffic situation.

“FIBEE”让乘客能更巧妙地前往自己的目的地楼层。“FIBEE”通过学习每天电梯的使用状况来进行控制，如在早上高峰时间段优先拥挤楼层的运送能力。而且，FIBEE还会根据交通情况进行节能运行。

What is the destination floor reservation system?
什么是目的地楼层预约系统?

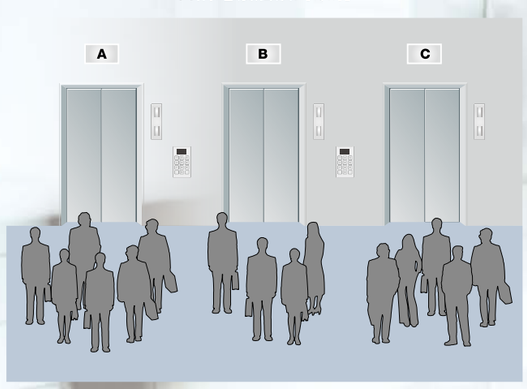
In the destination floor reservation system, as passengers register their destination floor at the hall, the elevator car to be used by each passenger can be informed ahead of time to the passenger, meaning the system can reduce congestion at the hall. In addition, Hitachi FIBEE improves handling capacity and saves energy by original technology.

在目的地楼层预约系统中，乘客会在电梯厅登记目的地楼层，所以可以事先将各乘客应使用的电梯号机通知乘客。该系统可以通过这种方式缓解拥挤时电梯厅的拥挤状态。
日立FIBEE采用独特的技术，力求进一步提高运送能力及节电降耗。

Conventional group controls
常规的群管理

As each passenger waits in front of the first arriving elevator, the area is overcrowded
所有的乘客都在首先到达的电梯前等待，所以该电梯前会拥挤

Destination floor reservation system
目的地楼层预约系统



As each passenger waits in front of the assigned elevator to arrive, congestion can be reduced
各乘客都在应使用的电梯前分散等待，所以会缓解拥挤状态

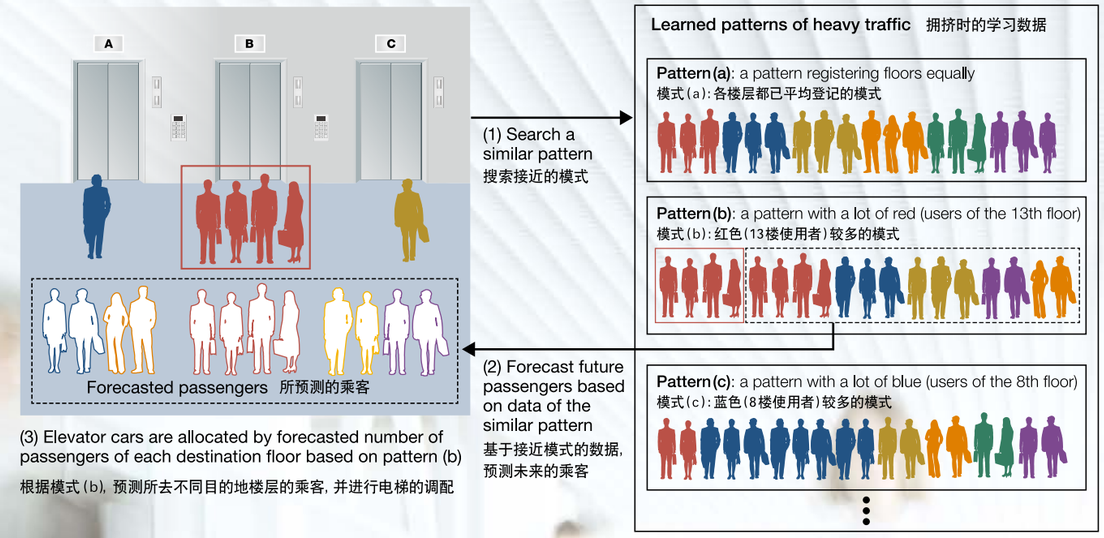
FIBEE features
FIBEE 的特征

1. Handling capacity is improved maximum 50%(*1) by handling capacity preference operation.
1. 通过运送能力优先运行，运送能力最大将提高 50%(*1)

The FIBEE learns the patterns of daily congestion conditions. When the number of passengers increases, it allocates elevators to ensure passengers going to the same destination floor to use the same elevator as much as possible by searching for a similar pattern to the current situation from previously learned patterns and forecasting future passengers based on the data of searched pattern. This feature helps reduce the number of elevators stopping floors and improves handling capacity. According to our simulations, the handling capacity in morning up peak is improved by maximum 50% compared with conventional group controls.(*1)

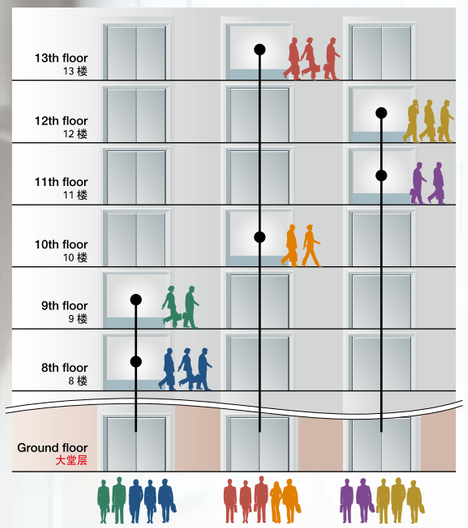
FIBEE 按不同的模式不断学习每天的拥挤状况。一旦乘客增多，将根据当前情况与学习结果，搜索接近的模式。并且，基于接近模式的数据，按不同的目的地楼层预测未来的乘客，并进行电梯的调配，以尽量让目的地楼层相同的乘客乘坐同一部电梯。由此，可以减少各电梯的停止次数，从而提高运送能力。本公司的模拟结果显示，与常规的群管理相比，上班时拥挤时段的运送能力最大可提高 50％。(*1)

(*1) Comparison with Hitachi conventional system. The improvement ratio of handling capacity may vary depending on the elevator specifications and conditions of use.
(*1) 与本公司常规系统相比。运送能力的改善效果会因电梯的规格与使用状况的不同而不同。



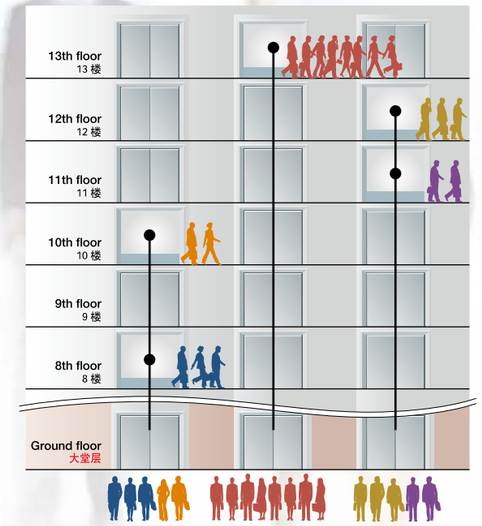
(3) Elevator cars are allocated by forecasted number of passengers of each destination floor based on pattern (b)
根据模式(b)，预测所去不同目的地楼层的乘客，并进行电梯的调配

An example car allocation in pattern (a)
模式(a)时的电梯调配例



Allocating elevator cars to equalize the elevators' stopping floors of each unit
进行电梯的调配，以使各号机的停止楼层均匀分布

An example car allocation in pattern (b)
模式(b)时的电梯调配例



Allocating elevator cars to give priority to the highest demand floor (13th floor)
高需求使用楼层（13 层）将优先调配电梯

2. Saving an average of 10%(*2) in terms of energy consumption by energy saving operation.
2. 通过节能运行，日平均节电降耗量将降低 10％(*2)

This operation reduces the energy consumption of elevators while considering balance with the convenience(*3) by forecasting the traveling routes and occupancy rate of cars during low traffic. According to our simulations, this operation achieves approximately 10% reduction of daily electric energy consumption compared with our conventional system.(*2)

此控制通过预测轿厢在交通闲散时段的行驶模式和拥挤度，在考虑和利用方便的平衡度的同时(*3)，从现在到未来降低电梯的整体用电量所采用的运行方式。模拟显示，与本公司的常规系统相比，该控制方式将实现每天约降低 10％的用电量。(*2)

(*2) Comparison with Hitachi conventional system (calculated in the time zone between 7:00 to19:00, which elevators are ordinary in operation.) The energy reduction may vary depending on the specifications of the elevators and conditions of use.
(*2) 与本公司的常规系统相比（这是在电梯日常运行的 7:00 至 19:00 之间的时区计算的。）该能源的减少可能会因电梯的组成及其使用条件的不同而有所不同。

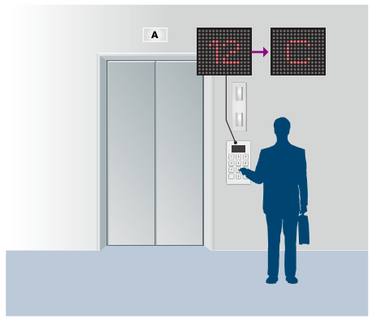
(*3) Waiting time may be longer than Hitachi conventional system for a few second.
(*3) 与本公司的常规系统相比，有可能会出现等待时间较长的情况。

Usage of elevator with FIBEE

FIBEE 中电梯的使用

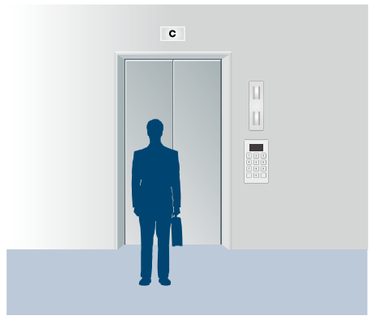
In FIBEE, the conventional hall buttons (Up and Down arrows) located at the elevator lobby are replaced by the destination floor registration devices. Passengers register their destination floor through these devices at the lobby instead of in the elevator.

在 FIBEE 中，位于电梯厅的常规电梯厅按钮（向上和向下箭头）被目的地楼层登记装置所取代。乘客不是在电梯里，而是通过在电梯厅的预约装置来登记自己的目的地楼层。



Register your destination floor
所去目的楼层的登记

- Passenger is required to register the desired destination floor through the destination floor registration device located at the elevator lobby. (*1)
- The destination floor registration device will display the elevator's name that has been assigned.
- 乘客需要通过在电梯厅的目的地楼层登记装置来登记（*1）。
- 该目的地楼层登记装置将显示供乘用的电梯编号。



Move to the front of assigned elevator
移动到供使用的电梯门前

- Passenger will now move to the front of assigned elevator and wait for the elevator.
- Passenger enters the assigned elevator after its arrival.
- 乘客现在将移至所调配的电梯前，并等待该电梯。
- 乘客在所予约的电梯到达后，进入该电梯。

Go to your destination floor
乘电梯去目的楼层

- As the passenger has already registered the desired destination floor, there is no need to push the destination floor button in the elevator.
- Elevator will bring the passenger to the registered destination floor.
- 由于该乘客已登记所需的目的地楼层，所以没有必要在电梯里再按目的地楼层按钮。
- 电梯将带着乘客去所登记的目的楼层。

(*1)
- Each passenger (even if passengers are going to same destination floors) needs to register the destination floor individually so as to allow FIBEE to effectively calculate the number of passengers being assigned to each elevator (to prevent elevators overloading and passengers waiting in vain for an elevator).
- Passenger who can not board the assigned elevator has to re-register the destination floor.
- If unusual registrations are present (i.e. one passenger enters multiple destination floors),FIBEE will not be able to identify these unusual calls, and still process these destination floors accordingly.
- Accidental or wrong registration of destination floor cannot be cancelled.

(*1)
- 每位乘客（即使乘客们将去同一目的楼层）需要分别登记目的楼层，以让 FIBEE 能有效地计算被分配到每部电梯的乘客数（防止电梯超载及乘客空等一部电梯）。
- 无法登上所配置的电梯的乘客必须重新登记目的楼层。
- 如果存在滋扰登记（即乘客输入多个目的楼层）的情况，FIBEE 将无法识别这些滋扰召唤，并相应地服务这些目的楼层。
- 目的楼层的意外或错误登记无法被取消。

FIBEE devices arrangement

FIBEE 装置的配置

There are two arrangement methods for FIBEE system. One involves installing FIBEE devices only on specific floors such as the lobby, and the other approach is to install FIBEE devices on all floors.

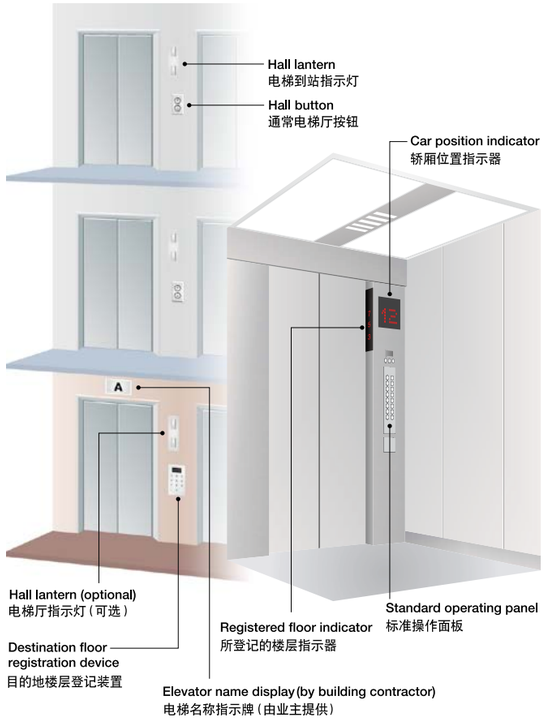
FIBEE 系统有两种配置方法。一种是将它们仅设置在拥挤的大堂等特定楼层，另一种是将它们设置在所有楼层。

Selected type (Installed on specific floors only)
所选楼层型（仅设置在特定楼层）

- Handling capacity is improved during up peak
- Suitable for high-rise buildings
- 在上高峰时段的运送能力将得到提高
- 适用于高档的大楼

Full type (Installed on all floors)
所有楼层型（设置在所有楼层）

- More flexible elevator hall layout can be designed
- Suitable for more complex skyscrapers
- 电梯的配置和电梯厅布局更灵活
- 适用于更复杂的摩天大楼



FIBEE devices specifications
FIBEE 装置规格

Basic ● Optional △ Not applicable —　　基本 ●，有偿选配 △，不适用 —

Items 项目			Selected type 所选楼层型		Full type 所有楼层型	
Number of applicable cars 可适用的电梯台数			3 to 8 cars 3 至 8 台电梯			
Number of applicable floors 可适用的楼层数			Max. 64 floors 最多 64 层楼			
Equipment 设备			Specific floors 特定楼层	Normal floors 一般楼层	Specific floors 特定楼层	Normal floors 一般楼层
	Hall (*1) 电梯厅	Hall button 电梯厅按钮	—	●	—	
		Destination floor registration device 目的地楼层登记装置	●	—	●	
		Hall lantern 电梯到站指示灯	△ (*2)	●	△ (*2)	
		Elevator name display (by building contractor) 电梯名称指示牌（由业主提供）	●	—	●	
	Car (*1) 轿厢	FIBEE Operating panel (Without floor buttons) FIBEE 的操纵箱（没有楼层按钮）	—		●	
		Standard operating panel 标准操纵箱	●		△	
		Car position indicator 轿厢位置指示器	●		●	
		Registered floor indicator 所登记的楼层指示器	●		●	

(*1) If fireman operation is required,
- Key switch or special button might be added to car operating panel or hall sides on each market's regulation.
- Add floor buttons to switch box inside on car operating panel.(Switch box size might be larger than standard).

Please consult with Hitachi engineer.

(*2) Hitachi recommend installing Hall lantern on all floors for passengers to notice the arrival of the elevator easily.

(*1) 有消防运行要求时，
- 根据各国的规格，需要在操作箱或电梯厅追加钥匙开关或特殊按钮。
- 在操纵箱的开关盒里追加楼层开关（开关盒的尺寸可能比普通要大）

详细请咨询日立工程师。

(*2) 日立建议在所有楼层设置电梯厅指示灯，因为乘客可以很容易地知道电梯即将到达。

FIBEE functions
FIBEE 适用功能表

Basic specifications ● Optional specification △
基本规格 ● 有偿选配 △

Basic Functions
基本功能

Functions 功能	Description 内容	Destination floor registration device 目的地楼层登记装置	
		Selected type 所选楼层型	Full type 所有楼层型
Handling capacity preference operation **运送能力优先运行功能** (FI-HCO)	This operation optimizes handling capacity by allocating elevators based on the learning results of heavy traffic and the current floor registrations. 根据所学习的拥挤状况的模式与当前的目的地楼层召唤登记状况进行预测，并进行重视提高运送能力的运行。	●	●
Energy saving operation **节能运行功能** (FI-ESO)	This operation reduces energy consumption of elevators by forecasting the traveling routes and occupancy rate of elevators during low traffic. 在使用者较少的闲散时段，预测电梯的运行轨迹及电梯乘坐率，同时还进行能从现在到未来实现电梯整体节能的运行方式。	●	●
Instantaneous Reservation and Service Forecasting **服务梯预约引导机能** (FI-IRF)	Upon receipt of a hall call, this function activates an elevator to serve this call, and at the same time the call is acknowledged by the hall lantern and chime. 按下厅召唤按钮，立即会有服务梯被预约，并且通过厅外的指示器的亮灯及预约钟的鸣声(一声)来引导乘客。	●	●
Arrival Notice Indication **到站预报引导机能** (FI-ANI)	Four to five seconds prior to the arrival of an elevator, this function will activate the hall lantern flickering and the chime sound. 电梯在离到站4～5秒钟前，厅外的指示器会一熄一亮，并通过预报钟的鸣声(多声)来引导乘客	●	●

Operation Functions
运行功能

Functions 功能	Description 内容	Destination floor registration device 目的地楼层登记装置	
		Selected type 所选楼层型	Full type 所有楼层型
Centralized Control for Special Floors **特殊层的优先服务** (FI-CCF)	This function preferentially assigns an elevator to the special floor (e.g. the director's room). 对于高级管理人员等办公楼层的厅外召唤，优先服务应答。	△	△
Service floor selection **服务楼层选择功能** (FI-SFS)	Allows the operator to select the service and non-service floors using, for example, the switches on the control panel. 通过监视屏的开关等操作，可以选择服务楼层、非服务楼层。	△	△
VIP Service **VIP运行** (FI-VIP)	When welcoming or sending off important guests, this function permits an elevator to be summoned by pushing a specially provided hall button, and the elevator will travel directly to the desired car call floor.(*2) 通过VIP(重要人物)专用召唤按钮，可使一台电梯从群管理中分离出来，进行专用运行。(*2)	△	△

(*2) Please consult with Hitachi engineer.
(*2) 详细请咨询日立工程师。

System Backup Operation Functions
系统支援操作功能

Functions 功能	Description 内容	Destination floor registration device 目的地楼层登记装置	
		Selected type 所选楼层型	Full type 所有楼层型
Group Management Operation Microprocessor Malfunction Recovery System **群管理运行微机发生故障时** (FI-OMR)	When the active microcontroller in the dual system fails, the stand-by microcontroller takes over the group control for continuing operation. 将微型多用电脑2重系列化。即使1个微型多用电脑发生故障，另1个可以进行系统支持，这样可持续进行群管理运行。	●	●
Group Management Control System Malfunction Recovery System **群管理控制系统异常时** (FI-GMR)	When the group management control system malfunctions, this system activates the " skip/stop " operation for all elevators, covering either the odd number or even number floors with respect to the lowest floor. 以最下层为基准，交替执行奇数／偶数层的隔层服务，使全部层楼能够得到服务。	●	●