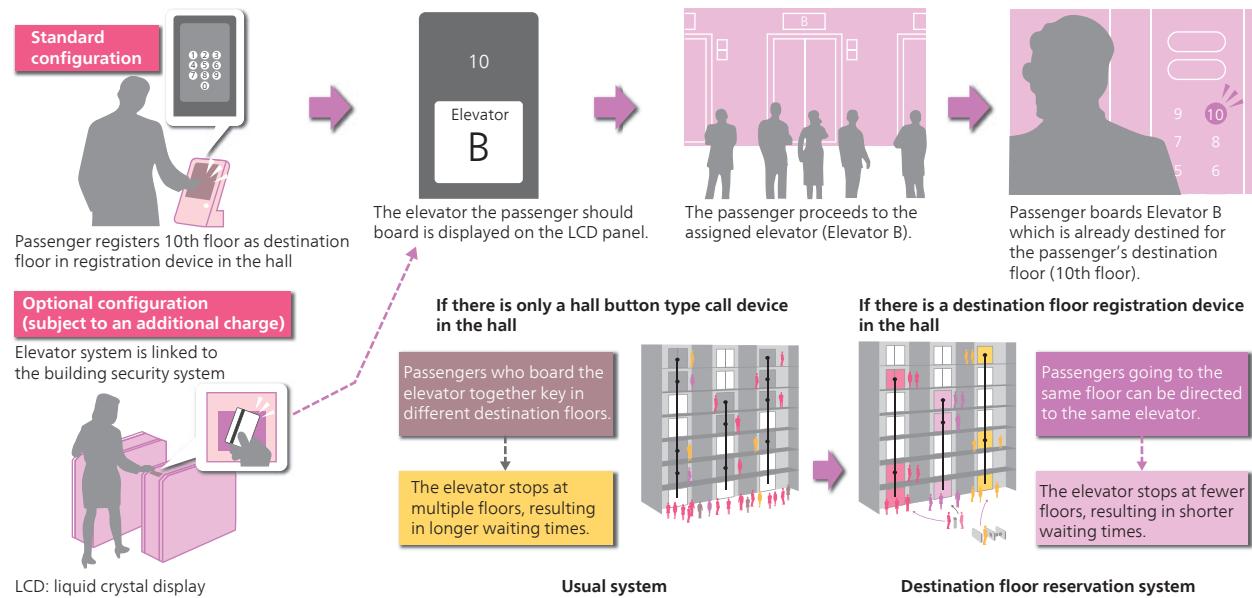


# Building Systems



1 Features of group control elevator with new destination floor reservation system

## 1 Group Control Elevator Based on New Destination Floor Reservation System

The destination floor reservation system assigns an elevator for each destination floor registered by passengers and displays/informs passengers ahead of time of the elevator they should take. Group control elevators with this new system were first widely spread overseas and are now being increasingly introduced in Japan as well.

Hitachi launched the group control elevator with new destination floor reservation system, the second elevator proactively anticipating unconscious human behavior in keeping with the core concept of Hitachi elevators, to realize the smooth travel and comfort unconsciously expected by passengers. Based on the group control elevator with destination floor reservation system Hitachi released for overseas markets, the new elevator system is a product with an improved congestion algorithm and improved interface. Under the standard configuration, passengers key in their destination floor into a destination floor registration device in the hall. In addition with the optional configuration, the elevator system, which will be linked to the building's security system, will prompt the assigned elevator to the destination floor once the passenger has passed through

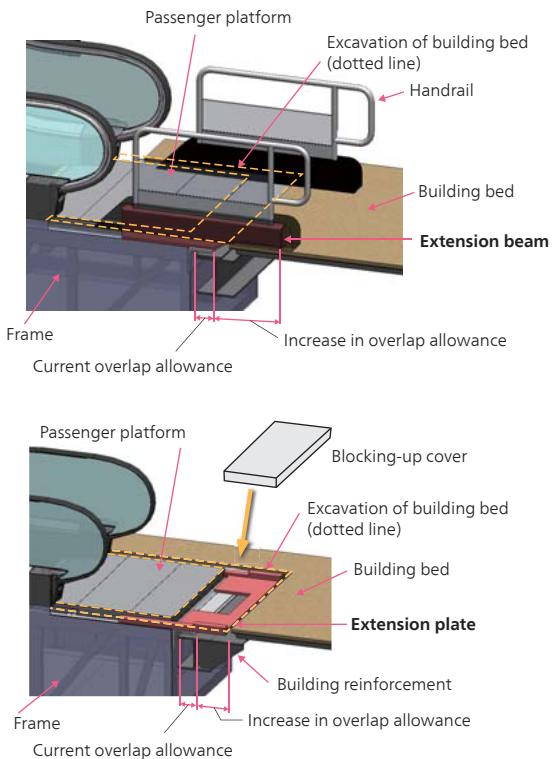
the security gate.

In the future, Hitachi will continue providing elevators that can transport more passengers smoothly and comfortably to their destinations through control of elevator services that considers the movement of people within a building both in a vertical and in a horizontal direction.

## 2 Anti-seismic Reinforcement Structure for Existing Escalators

As a Building Standards Law Enforcement Order concerning measures to prevent elevators and escalators from falling became effective in April 2014, an increasing number of building owners are planning to retroactively upgrade existing facilities and anti-seismic reinforcement as part of extension or remodeling work. However, increasing the overlap allowance of existing escalators also requires work on the building beam side, and in the case of buildings that are open for business, there is also a need to shorten the construction period and reduce the scope of the work.

The extension beam structure offered by Hitachi makes it possible to significantly increase the overlap allowance by extending the extension beams on top of the building bed, while minimizing excavation of the



**2** Overview of extension beam structure (top) and extension plate structure (bottom)

building bed.

In cases where there is a shutter or wall, etc. in the direction of travel of the escalator, preventing application of the extension beam structure, an extension plate structure is effective. Use of the extension plate structure involves excavation of a larger building bed and reinforcement is thus required. However, placement of the extension plate within the building bed so that it extends across the top of the building beams makes it possible to achieve a significant increase in the overlap allowance while ensuring user flow.

### 3 Machine Room-less Elevator for Asia and the Middle East

Hitachi launched a new machine room-less elevator for the middle- and high-end segments of the Asian and Middle Eastern elevator markets, which are expanding as a result of economic development.

This new elevator is designed to meet the regulations and needs of each target market. It features the latest specifications for the Japanese market, along with a number of car ceiling designs, LCDs that show all kinds of information, and other quality design features. The elevator is also designed to save energy and reduce environmental impact through features such as the use of LED lights in cars and a more efficient operation system. With a smaller elevator shaft than previous models, the new elevator also reflects efforts to increase

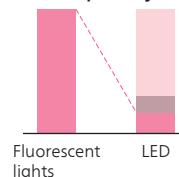


Example of design of car interior



Standard ceiling (LED lighting)

Reduces energy consumption by 1/6\*



Example of design of car ceiling (LED lighting)

\*Elevator capable of carrying 11 persons. Fluctuates according to ceiling type and capacity.

### 3 Specifications of new machine room-less elevator

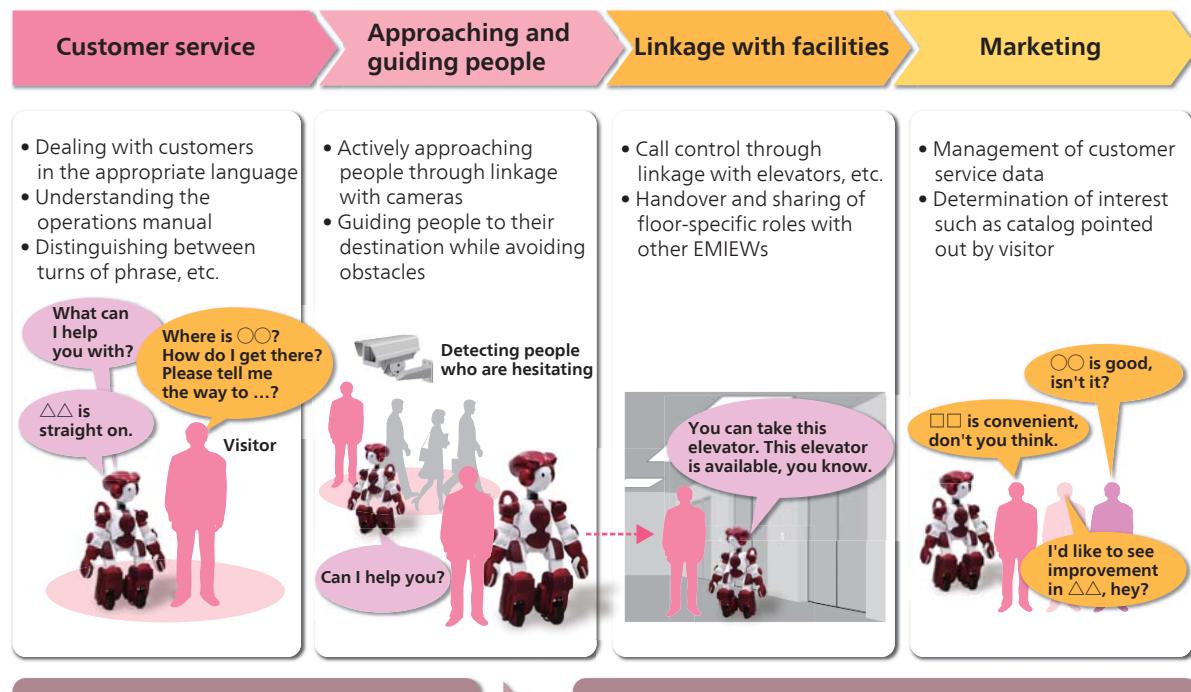
product competitiveness, and the standardization of basic specifications means that the new elevator can be delivered flexibly in a short time frame.

Hitachi aims to expand business and to receive orders of approximately 5,000 units in Asia and the Middle East by continuing to work on developing products that meet customer requirements.

### 4 Humanoid Robot EMIEW3

Japan is facing various societal issues such as decline in its working-age population due to a decreasing birth rate and aging population, and rapid globalization. The manufacturing industry has made progress using robots to free up its work force and ensure stable quality. The service industry, on the other hand, is lagging behind with the introduction of robots and there are high expectations for the introduction of robot technology to perform various operations, including global customer services, which are a pressing issue of late. Hitachi therefore developed EMIEW3, excellent mobility and interactive existence as workmate, a new type of human-symbiotic robot to improve the productivity of the service industry.

The four main services offered by EMIEW3 are as



④ Services offered by EMIEW3

follows.

#### (1) Customer service

Determining whether to use Japanese, English or another language, and dealing with customers through linkage with an operations manual.

#### (2) Approaching and guiding people

Approaching people in need of assistance and guiding them to their destination while avoiding obstacles.

#### (3) Linkage with facilities

Providing information and guidance smoothly

through linkage with building facilities such as monitoring cameras.

#### (4) Marketing

Accumulating and managing the customer service data.

In the future, Hitachi will expand and create various services and enhance human-friendly functions through collaborative creation with customers. Hitachi will also promote commercialization of the technology in collaboration with its research and development group.