THE DESTINATION CONTROL SYSTEM FOR OPTIMIZED PEOPLE FLOW

KONE Destination

KONE DESTINATION – AN EFFORTLESS ELEVATOR EXPERIENCE

Imagine smart, easy-to-use-elevators in better organized lobbies. Imagine orderly boarding, uncrowded cars, shorter travel times, and fewer unnecessary stops. KONE Destination makes all of this a reality. Simply select a destination floor and enjoy the perfect elevator experience.

Unlike conventional elevator control systems, which only register the desired travel direction, the KONE Destination – is a destination control system that incorporates desired destination floors and the number of waiting passengers to significantly improve elevator efficiency and convenience.

This additional information leads to increased handling capacity, shorter journey times, fewer intermediate stops, and enhanced passenger comfort.

The significantly improved system performance is most evident during intense traffic periods and rush hours, when traditional control systems struggle to cope with the high volume of traffic.

Efficiency, comfort, and security

KONE Destination brings benefits for all building stakeholders in all types of buildings, from large office buildings to hotels and residential complexes:

- Increased efficiency for building owners
- Increased comfort and reduced journey times for passengers
- Increased security and peace of mind for residents

KONE DESTINATION CAN BE CONFIGURED TO MEET YOUR NEEDS:

- Two configurations – hybrid and traditional destination control systems – are available depending on the visual, user-experience, and performance requirements of your elevator system
- We offer a range of technological solutions to fit building type and hight, as well as security and architectural needs


WELCOME

MORE FOR PASSENGERS THROUGHOUT THEIR JOURNEY

More handling capacity

The handling capacity of the elevator group is improved, especially during peak traffic periods such as the morning up-peaks common in office buildings.

Less waiting, fewer intermediate stops

KONE Destination uses the information on the number of travelers and their destination floors to group together passengers with the same destination, leading to shorter transit times and fewer intermediate stops.

Improved comfort

Because passengers choose their destination floor before entering the elevator, they don't need to struggle through a crowd to press a button inside the elevator car. And because the system knows the journey time from the operating panel to the car, passengers can take their time walking to their assigned elevator.

Better security

KONE Destination enables the elevator system to be integrated with the building's access control system. Occupants can use access cards and PIN codes, restricting unauthorized use of elevators significantly and adding to the security of the entire building.

Easier accessibility

For people who need more time and space, an accessibility function can be activated with a card reader or a special button. This gives passengers more time to reach the car, longer door dwell times, and, because fewer people will be assigned to that car, more space as well.

More personalization

KONE Destination can be personalized to further increase passenger comfort. User-specific door times, automatic call allocation to passengers' home floors, and audible passenger guidance all help make the KONE Destination experience a uniquely personal one.

Enhanced guidance

The optional elevator destination indicator shows the selected destination floors. Only destinations from a passenger's departure floor are shown, enabling them to quickly recheck that they are entering the right car.

More space

Because KONE Destination assigns the correct number of passengers to each elevator and each car only serves a specific range of floors, cars are much less likely to become crowded.

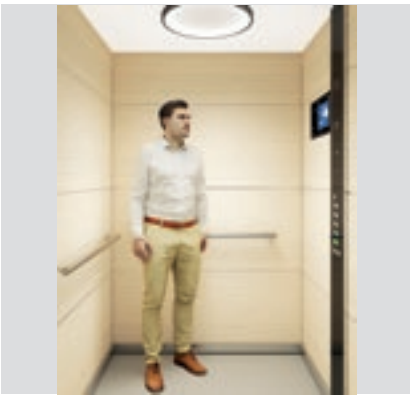
ALL IT TAKES IS THREE SIMPLE STEPS

1 SELECT FLOOR OR SHOW YOUR CARD

Choose your destination floor at the operating panel, via our mobile application or show your access card at the turnstile. The display will tell you which elevator you have been assigned to.

2 FIND YOUR ELEVATOR

Move to the elevator that has been assigned to you. As you approach, you can see which one is yours by checking to the identifier above each elevator.

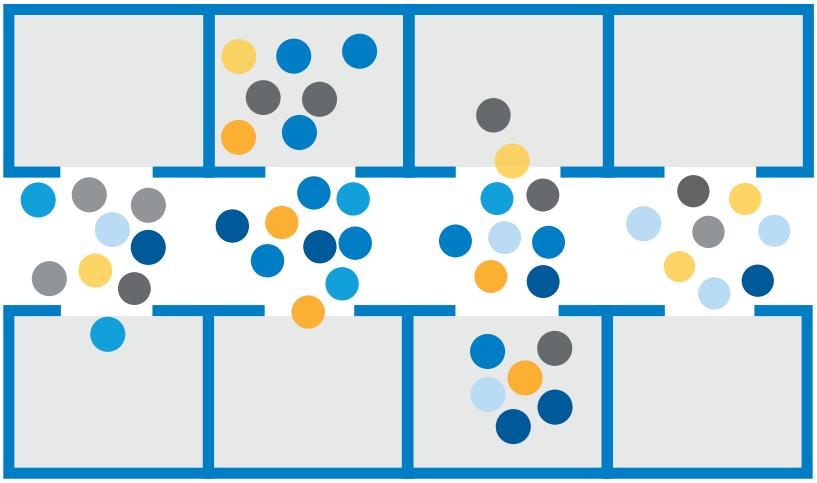


3 ENJOY YOUR JOURNEY

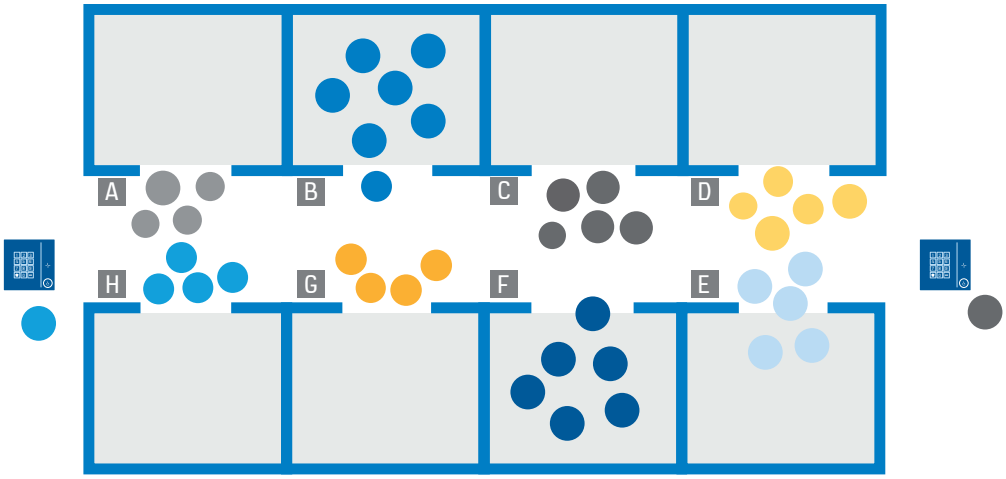
Enjoy a quick ride in a uncrowded car. The next-stop indicator on the car operating panel displays the stops the elevator will make.

KONE DESTINATION – SIMPLY A BETTER WAY TO TRAVEL

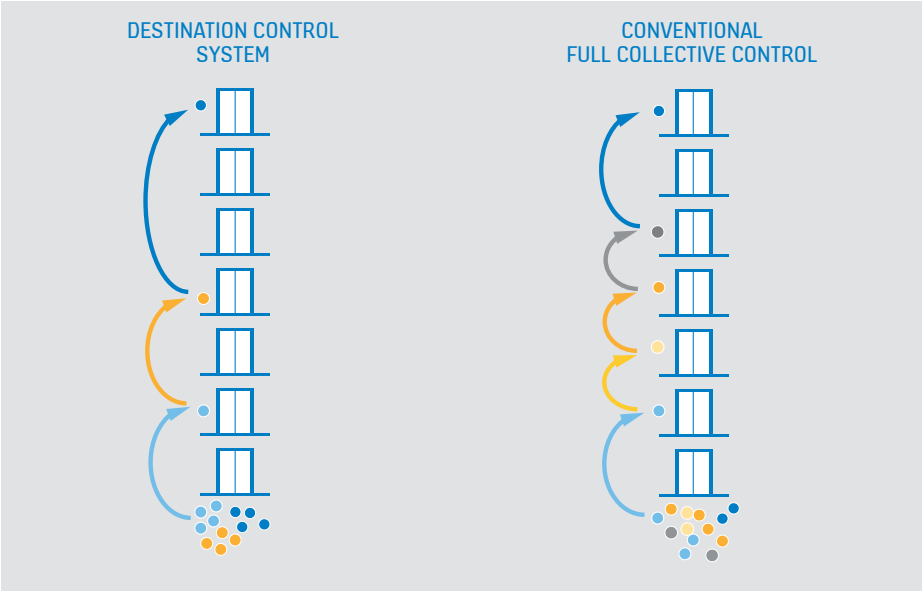
With conventional collective control systems, passengers wait in a crowd then rush into the first car that arrives. They also crowd around the car operating panel to select their destination floor. Those traveling to higher floors are delayed by several intermediate stops.



With KONE Destination passengers select their destination before entering the lobby area and are guided directly to the dedicated car. A limited number of other passengers within a specific range of floors are assigned to the same car. Boarding is calm and orderly, and travel times are minimized.



The KONE Destination minimizes the number of intermediate stops by grouping passengers intelligently. This leads to shorter journey times and better handling capacity compared to conventional full collective elevator systems.



INNOVATIVE TECHNOLOGY, ATTRACTIVE DESIGNS

Multiple ways to call the elevator

After the location and exterior, the main lobby and elevators are the most important elements in a building's character.

Our user-friendly, integrated solutions are designed to make it easy for people to move throughout your building.

KONE Destination combines innovative technology with attractive signalization alternatives. This combination increases comfort and security, and enhances architectural freedom and the visual appearance of your building's lobby.

Our KSP 853 is an attractive, surface-mounted destination operating panel featuring traditional buttons.

Our KSP 858 destination operating panel incorporates capacitive touchscreen technology and a highly intuitive interface for an effortless elevator experience.

KONE RemoteCall is an innovative mobile application for smartphones. The clear, easy-to-use interface allows users to make personalized elevator calls quickly and conveniently from anywhere in the building.

Alternatively, receptionist can use RemoteCall on tablet to call elevators for visitors.

With KONE Destination system turnstiles can be integrated with the elevators, so elevator call can be made automatically from turnstiles when users show their access card.

INCREASED CAPACITY, SHORTER JOURNEY TIMES

KONE Destination uses artificial intelligence to learn and forecast a building's traffic flows. When traffic intensity changes, the control system assesses the changing traffic patterns and alters its optimization routines accordingly. During lighter traffic periods, passenger waiting times or elevator energy consumption can be optimized, while during heavy traffic periods the elevator handling capacity is increased.

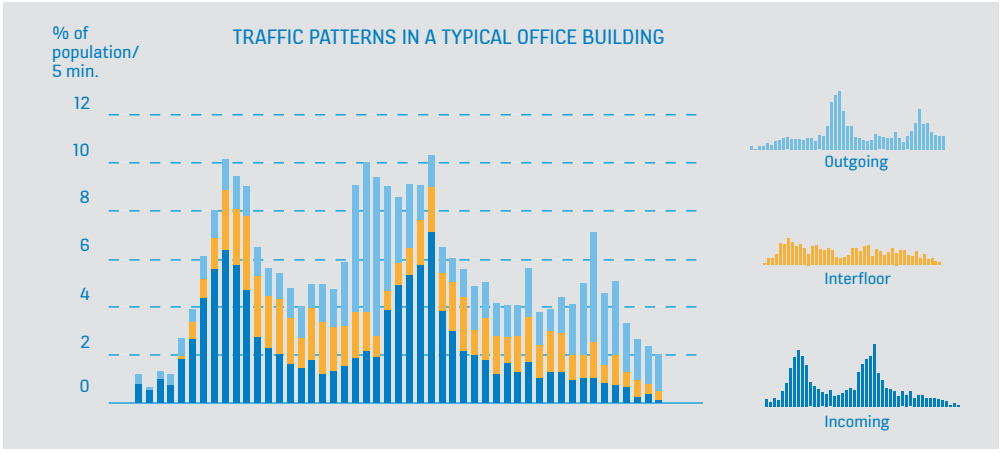
KONE Destination uses our industry-leading group control technology, which features several software innovations and artificial intelligence forms:

- Traffic forecasting learns from historical elevator data to forecast upcoming traffic and proactively change elevator group behavior
- Fuzzy logic identifies the state of the current traffic situation, so that the elevator control system can react accordingly
- The genetic algorithm calculates which elevator is the best choice for each call based on the current situation
- Multi-objective optimization adjusts the waiting and travel time based on the current traffic situation

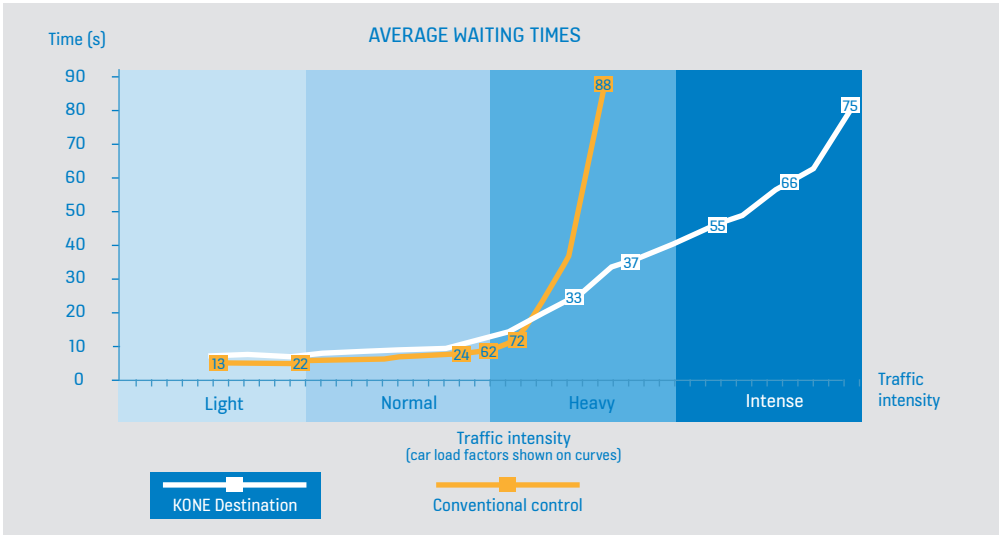
Depending on the number of cars in the group, the car capacity, and the number of floors in the building, KONE Destination can increase the handling capacity of an elevator group by 20–100% during heavy up-peak traffic. In extreme cases the selection of KONE Destination in the planning phase can eliminate one elevator from the group increasing the rentable space in the building.

This increase in handling capacity is not achieved at the expense of in-car comfort. With KONE Destination, car load factors, which represent how full the cars are, remain low compared to elevator groups using a conventional control system, even during heavy traffic periods.

Compared to typical destination control systems and conventional elevator control systems, KONE Destination cuts waiting times throughout the day. The figure below illustrates how KONE Destination reduces waiting times for passengers regardless of traffic flow intensity.



KONE Destination continuously monitors the traffic behavior in the building and intuitively adapts to different traffic patterns in order to provide the optimum service at all times.



KONE Destination combines short waiting times with low car load factors. In traditional control systems waiting times tend to increase exponentially when traffic intensity increases over a critical point, whereas KONE Destination can handle much higher traffic. Built-in artificial intelligence allows KONE Destination to detect periods of light-normal traffic intensity and adjust the operating mode accordingly in order to optimize waiting times.

TAILOR THE SYSTEM TO THE INDIVIDUAL NEEDS OF YOUR BUILDING

KONE Destination is available in two configurations – hybrid or traditional

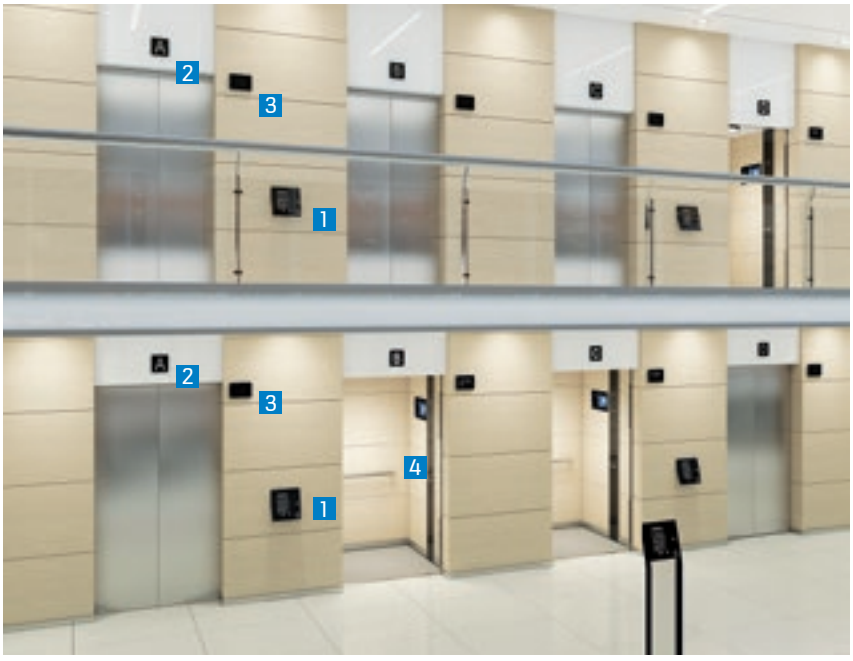
1 Destination operating panel on main floor
2 Standard landing call station on other floors
3 Elevator identifier on main floor
4 Standard hall lantern on other floors
5 Standard car operating panels with car call buttons

Hybrid configuration

With the hybrid configuration, the destination operating panels are located only on the main floors, while other floors have conventional landing signalization. Cars have a conventional car operating panel.

This configuration is particularly beneficial in the buildings with big inter-floor traffic and for improving traffic flow from heavily used floors like the main entrance floor. It is very useful in buildings with heavy up-peaks and buildings with large mid-building restaurants.

For modernization projects, this configuration is a highly cost-effective way to improve traffic flow in buildings with up-peak deficiencies.



1 Destination operating panels on all floors
2 Elevator identifiers on all floors
3 Destination indicators
4 Car operating panels without car call buttons

Traditional configuration

With the traditional configuration, the destination operating panels are on all floors and consequently there are no buttons on the car operating panel.

As the system receives complete passenger origin and destination information from all floors, it is able to provide the best service for all traffic conditions – the up-peak, the lunchtime rush, and the down-peak, as well as quieter periods.

This system is recommended for more complex buildings, for example:

- where not all elevators serve the same floors
- with complex lobby arrangements (more than elevators in a row, circular or L-shaped lobbies)
- with high traffic peaks.

MODERNIZE YOUR BUILDING FOR BETTER PERFORMANCE

KONE MODERNIZATION OVERLAY TOOL

Building upgrade

Whatever phase of its life cycle your building is at – whether it is facing competition from newer neighbors, going through major changes in usage or service requirements, or experiencing an increase in tenants – KONE is committed to supporting you.

KONE Destination will help you optimize elevator performance. And thanks to our smooth, staged installation process, disturbance and building downtime are minimized.

During elevator modernization, you might expect people flow capacity to decrease when elevators are out of service or when there are old and new elevator groups operating in the same lobby area. With the KONE Modernization Overlay Tool, you can eliminate capacity decreases during modernization and even increase people flow capacity during the modernization process.

How it works

The KONE Modernization Overlay Tool is a **temporary high-level group control tool** for use during modernization. Compatible with both old and new elevator systems, its basic function is to allocate landing calls between the new, modernized elevators and the old elevator system. The tool gives **priority to the new elevators**, maximizing the use of elevators with the highest people flow capacity and lowest energy consumption. Passengers use common destination operating panels for calling both old and new elevators.

The process

Each elevator is modernized in turn, gradually adding to the number of new elevators and increasing people flow capacity. With conventional modernization, handling capacity will decline considerably during the first phases of the project. The KONE Modernization Overlay Tool maintains the people flow capacity, increasing it as more elevators are completed (see graph below). Before modernization of the last elevator, the overlay is removed and the final KONE group controller takes full responsibility for call allocation.

Compatible with old and new

The KONE Modernization Overlay can be used with the KONE Destination, with traditional full collective elevator control systems, and also with most types of existing electrification systems. It is also compatible with elevators with a machine room as well as machine-room-less elevators.

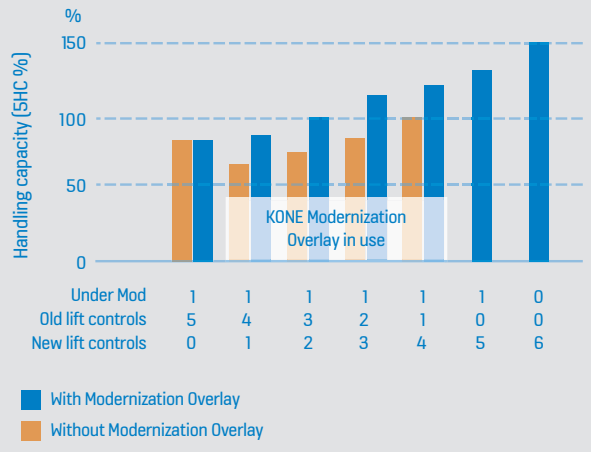
Improved performance

If the traffic and population in an office building increases, resulting in queuing and long waiting times, KONE Destination will return the service level back to normal or even boost it further.

Increased security

KONE Destination will also improve the safety of tenants by providing personalized functionality and guidance for users with special needs. Integration with access control systems improves your building's security.

Group handling capacity with and without Modernization Overlay in destination control system modernization



Examples of group handling capacity with and without Modernization Overlay in a destination control system modernization

KEY BENEFITS

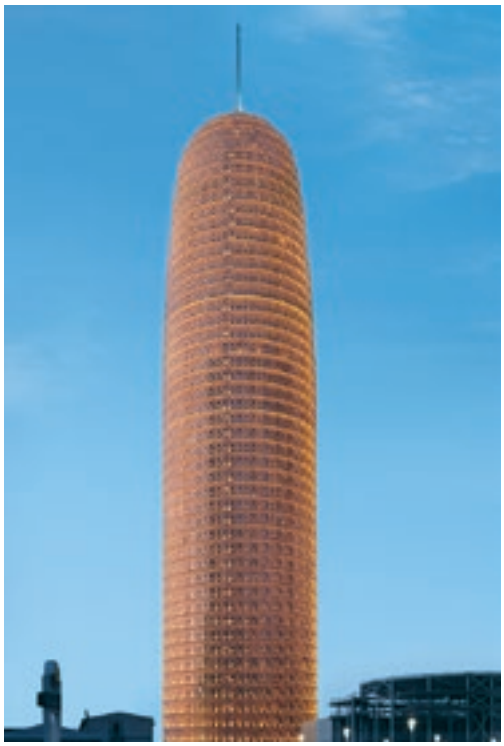
Improved usability
- Common landing stations for old and new elevators
- Smooth transition from conventional control to destination control

Increased traffic capacity
- Improves capacity during modernization with benefits of destination control system

Wide compatibility
- Can interface with most types of existing elevator controls

Minimized disturbance
- Short installation time
- Minimized downtime when setting up overlay system

REFERENCES



DOHA TOWER – DOHA, QATAR

- Completed: 2012
- Height: 238 m
- Floors: 46
- 21 elevators
- KONE Destination, traditional destination control system

CAPITAL CITY – MOSCOW, RUSSIA

- Completed: 2010
- Height: 302 m and 257 m
- Floors: 73 and 62
- 50 elevators; 6 escalators
- KONE Destination, traditional destination control system

TOUR FIRST – PARIS, FRANCE

- Completed: 2011
- Height: 231 m
- Floors: 51
- 28 elevators; 2 escalators
- KONE Destination, traditional destination control system

KONE provides innovative and eco-efficient solutions for elevators, escalators, automatic building doors and the systems that integrate them with today's intelligent buildings.

We support our customers every step of the way; from design, manufacturing and installation to maintenance and modernization. KONE is a global leader in helping our customers manage the smooth flow of people and goods throughout their buildings.

Our commitment to customers is present in all KONE solutions. This makes us a reliable partner throughout the life cycle of the building. We challenge the conventional wisdom of the industry. We are fast, flexible, and we have a well-deserved reputation as a technology leader, with such innovations as KONE MonoSpace®, KONE NanoSpace™ and KONE UltraRope®.

KONE employs close to 50,000 dedicated experts to serve you globally and locally.

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