

*Dedicated to People Flow™*



THE DESTINATION CONTROL SYSTEM FOR OPTIMIZED PEOPLE FLOW

# KONE Polaris™

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## – 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 Polaris 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 Polaris Destination Control System (DCS) incorporates desired destination floors and the number of waiting passengers to significantly improve elevator convenience and efficiency.

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 Polaris 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

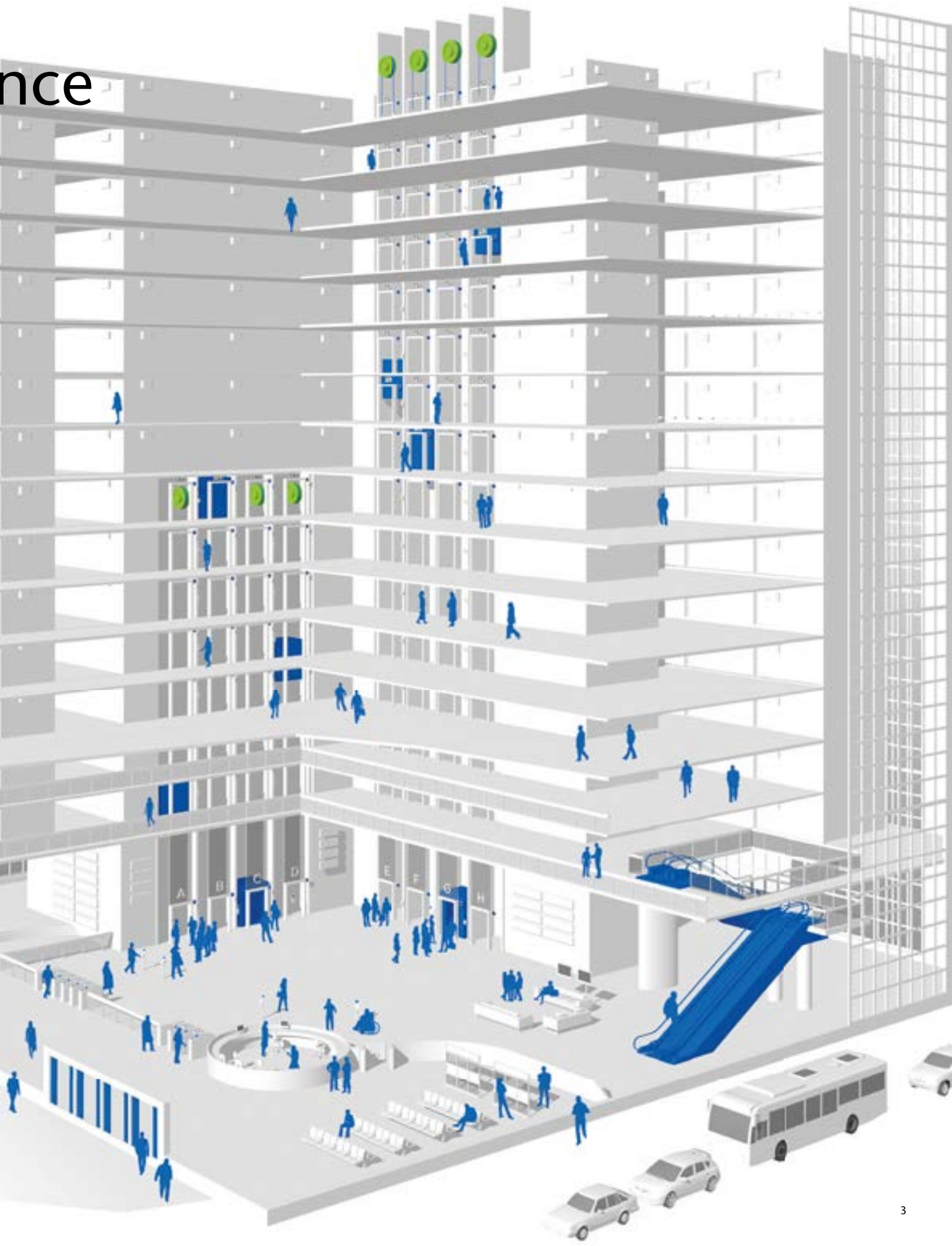
### KONE Hybrid DCS – better usability with no compromise on performance

In traditional destination control systems the destination floor is entered in the lobby using a destination operating panel (DOP). People who are not familiar with a DCS may find this confusing due to the lack of call buttons in the car operating panels.

The KONE Hybrid DCS solves this problem by incorporating normal car operating panels in addition to the destination operating panels, so first-time or occasional users can choose the method that makes them feel most comfortable.

KONE Polaris Hybrid DCS elevators offer the performance advantages of a modern DCS elevator system with the ease of use of a conventional collective system.

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# 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 Polaris 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 Polaris 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 Polaris 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 Polaris experience a uniquely personal one.

## Enhanced guidance

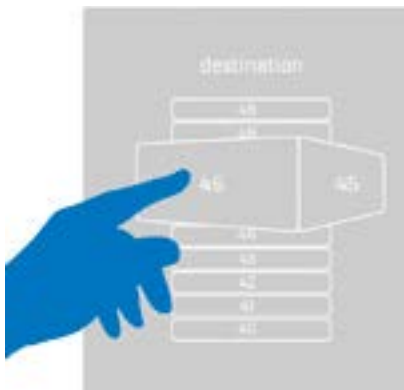
The optional elevator destination indicator shows the selected destination floors. Only destinations from a passenger's departure floor are shown, enabling them to quickly recheck that they are entering the right car.

## More space

Because KONE Polaris 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.



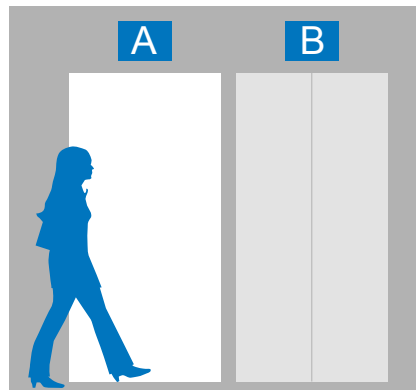
# All it takes is three simple steps



## 1 Select

your destination floor

The display will tell you which elevator has been assigned to you.



## 2 Move

to your elevator.

As you approach, you can check which elevator is yours by referring to the identifier above each elevator.



## 3 Enjoy

the journey.

The next-stop indicator on the car operating panel displays the stops the elevator will make.

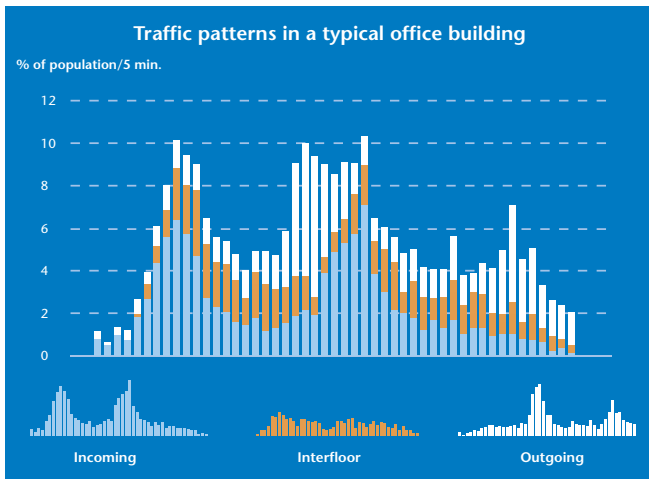


# Increased capacity, shorter journey times

KONE Polaris 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 Polaris uses our industry-leading group control technology, which features several software innovations, including:

- Artificial intelligence
- Traffic forecasting
- Fuzzy logic
- Genetic algorithm
- Multi-objective optimization

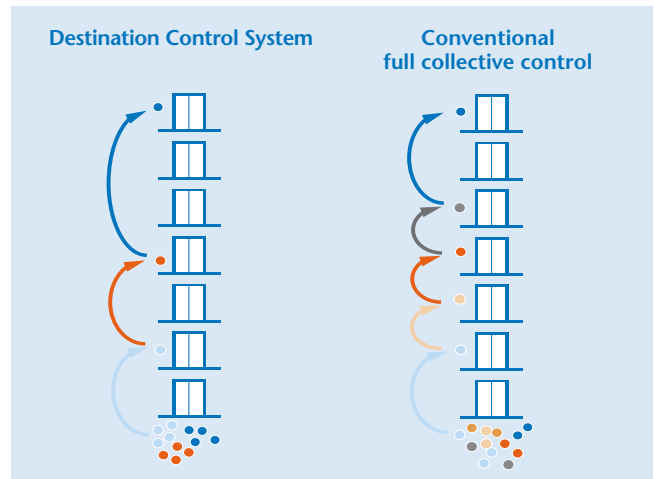


KONE Polaris continuously monitors the traffic behavior in the building and intuitively adapts to different traffic patterns in order to provide the optimum service at all times.

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

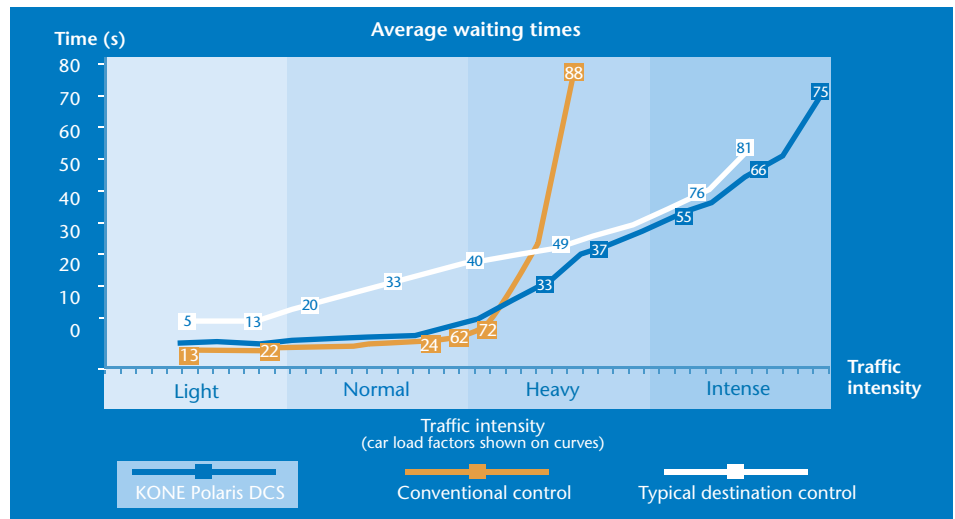
This increase in handling capacity is not achieved at the expense of in-car comfort. With KONE Polaris, car load factors, which represent how full the cars are, remain low compared to elevator groups using a conventional control system, even during heavy traffic periods.

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



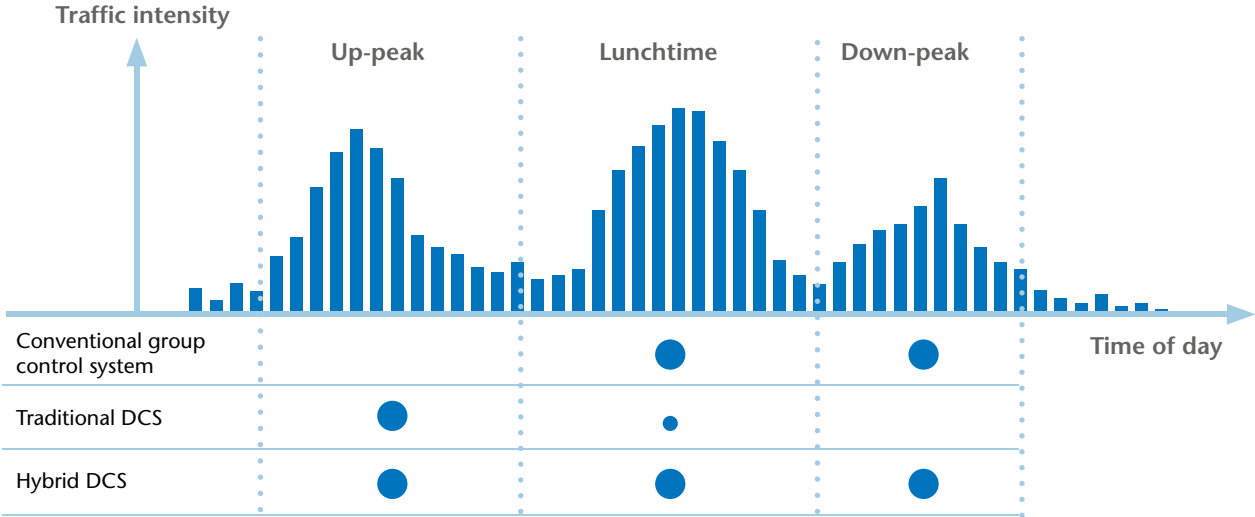
The KONE Polaris DCS minimizes the number of intermediate stops by grouping passengers intelligently. This leads to shorter journey times and better handling capacity compared to conventional full collective elevator systems.

KONE Polaris 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 Polaris can handle much higher traffic. Built-in artificial intelligence allows KONE Polaris to detect periods of light-normal traffic intensity and adjust the operating mode accordingly in order to optimize waiting times.

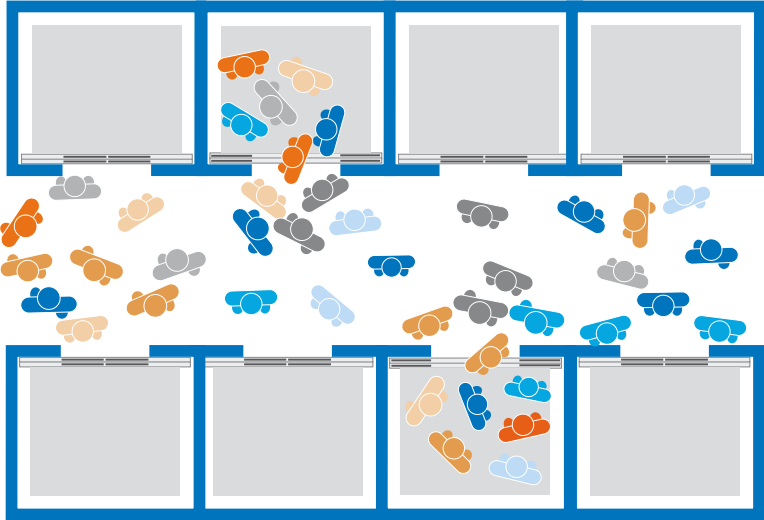


# Boost traffic in all conditions with Hybrid DCS

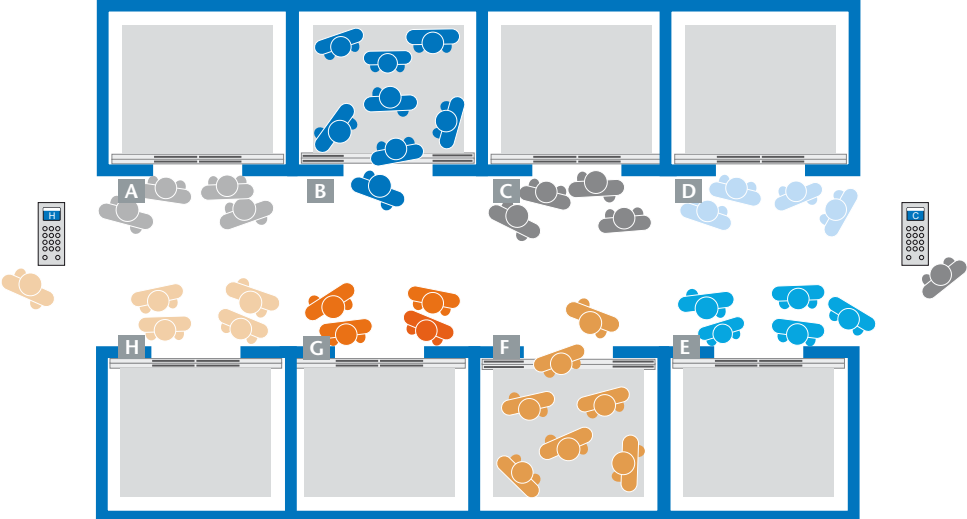
Traffic boosting comparison of conventional group control system vs. Traditional DCS vs. Hybrid



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 Polaris DCS**, 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.



# 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 Polaris™ 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

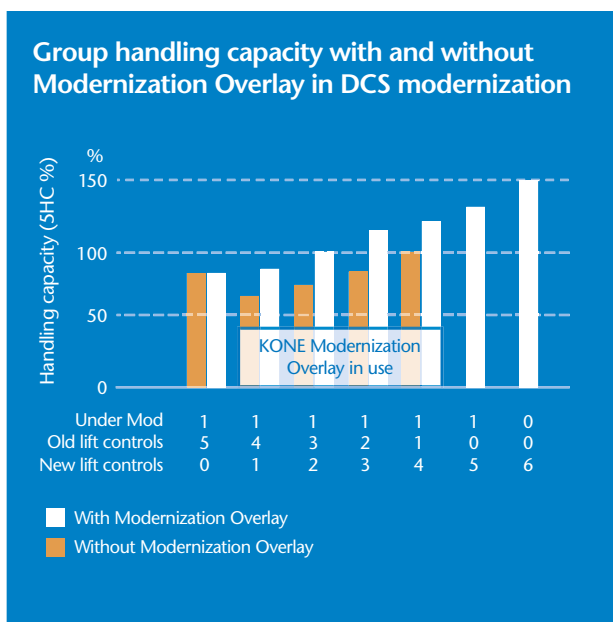
The KONE Modernization Overlay can be used with the KONE Polaris Destination Control System (DCS), with traditional Full Collective (FC) elevator control systems, and also with most types of existing electrification systems. It is also compatible with both machine-room and machine-room-less elevators.

### Improved performance

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

### Increased security

KONE Polaris 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.



Examples of group handling capacity with and without Modernization Overlay in a DCS 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 (DCS)
- Better eco-efficiency**
  - Decreases energy consumption during modernization
- Wide compatibility**
  - Can interface with most types of existing elevator controls
- Minimized disturbance**
  - Short installation time
  - Minimized downtime when setting up overlay system



# Innovative technology, attractive designs

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 Polaris 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 the latest 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.

# Configured to meet your needs

KONE Polaris is available in two configurations, making it easier to tailor the system to the individual needs of your building.

## Hybrid DCS configuration

With the Hybrid DCS configuration, the Destination Operating Panels (DOPs) 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 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.

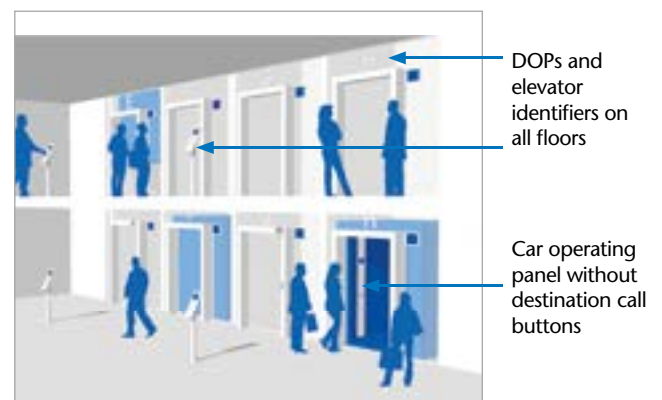
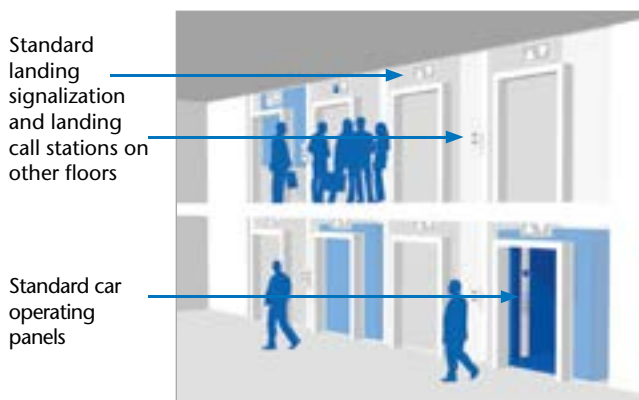
## Traditional DCS configuration

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

As the DCS configuration 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 5 elevators in a row, circular or L-shaped lobbies)
- with high traffic peaks.



# References



**Doha Tower – Doha, Qatar**

- Completed: 2012
- Height: 238 m
- Floors: 46
- 21 elevators
- Traditional KONE Polaris™ destination control system



**Capital City – Moscow, Russia**

- Completed: 2010
- Height: 302 m and 257 m
- Floors: 73 and 62
- 50 elevators; 6 escalators
- Traditional KONE Polaris™ destination control system



**Tour First – Paris, France**

- Completed: 2011
- Height: 231 m
- Floors: 51
- 28 elevators; 2 escalators
- Traditional KONE Polaris™ 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 EcoMod™, KONE UltraRope™.

KONE employs on average 40,000 dedicated experts to serve you globally and locally.

**KONE Corporation**  
**[www.kone.com](http://www.kone.com)**