

*Dedicated to People Flow™*



THE DESTINATION CONTROL SYSTEM FOR OPTIMISED PEOPLE FLOW

# KONE Polarix™

# KONE Polaris™

## – an effortless lift experience

Imagine smart, easy-to-use-lifts in better organised 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 lift experience.

Unlike conventional lift 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 lift 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:

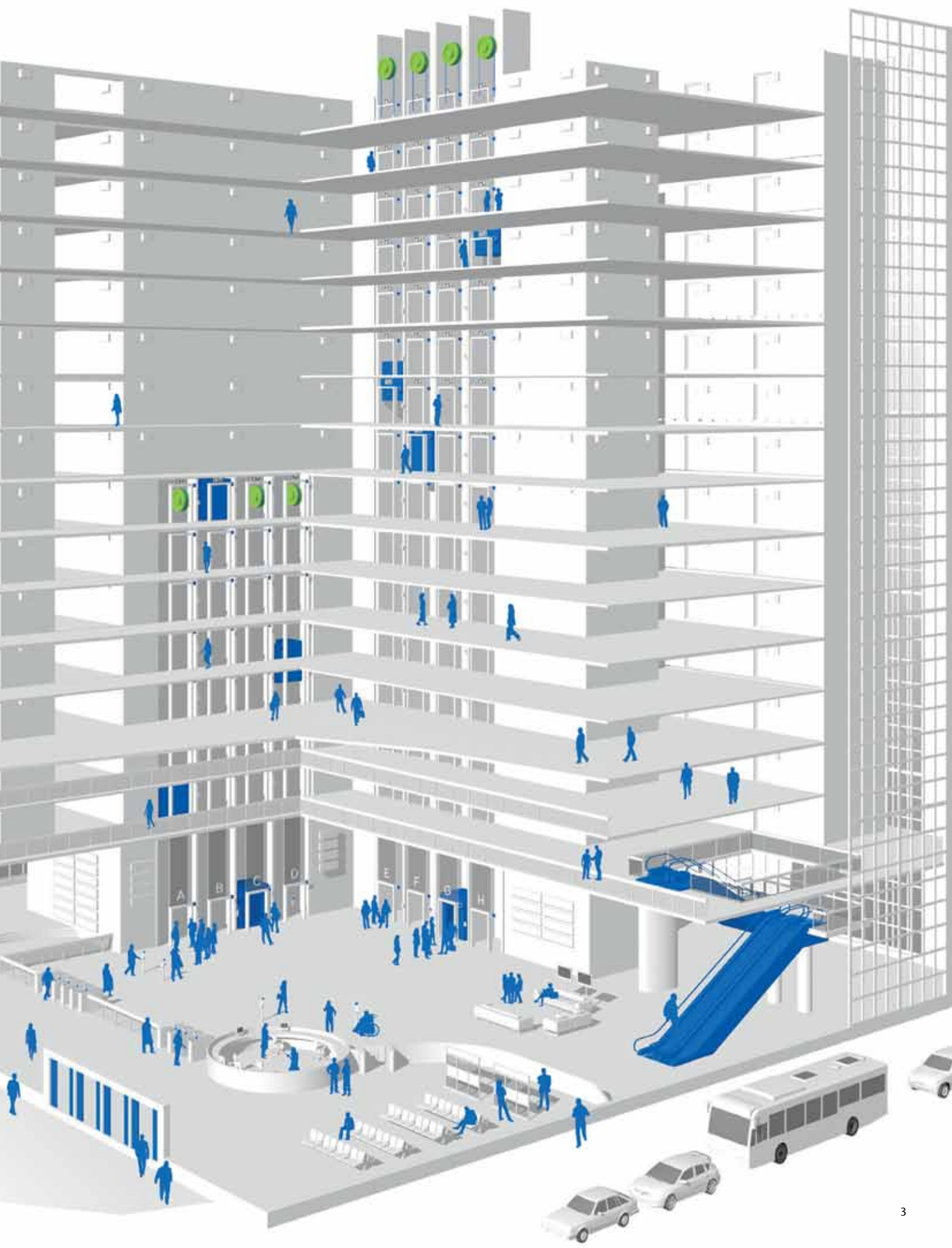
- Increased efficiency for building owners
- Increased comfort and reduced journey times for passengers
- Increased security and peace of mind for residents

### **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 lifts offer the performance advantages of a modern DCS lift system with the ease of use of a conventional collective system.





# More for passengers throughout their journey

## More handling capacity

The handling capacity of the lift 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 travellers 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 lift, they don't need to struggle through a crowd to press a button inside the lift 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 lift.

## Better security

KONE Polaris enables the lift system to be integrated with the building's access control system. Occupants can use access cards and PIN codes, restricting unauthorised use of lifts 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 personalisation

KONE Polaris can be personalised 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 lift 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 lift and each car only serves a specific range of floors, cars are much less likely to become crowded.



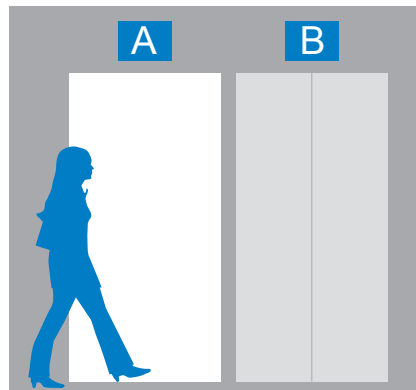
# All it takes is three simple steps



## 1 Select

your destination floor

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



## 2 Move

to your lift.

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



## 3 Enjoy

the journey.

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

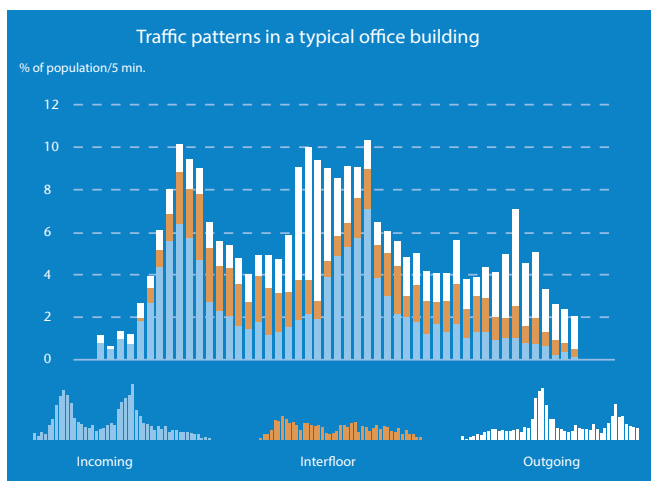


# Increased capacity, shorter journey times

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 optimisation routines accordingly. During lighter traffic periods, passenger waiting times or lift energy consumption can be optimised, while during heavy traffic periods the lift 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 optimisation



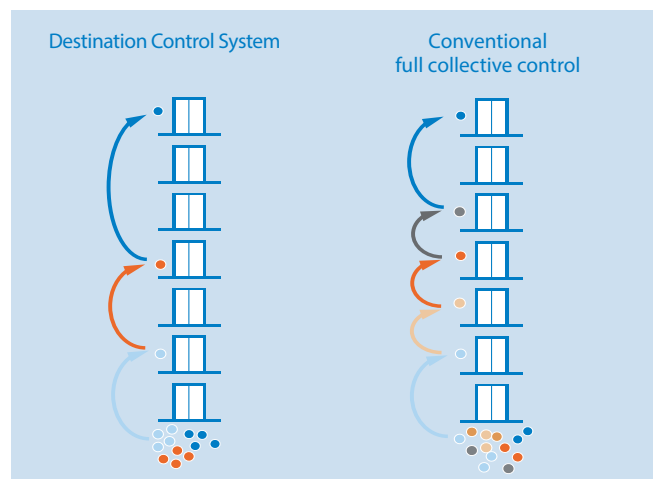
KONE Polaris continuously monitors the traffic behavior in the building and intuitively adapts to different traffic patterns in order to provide the optimum service at all times.

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 optimise waiting times.

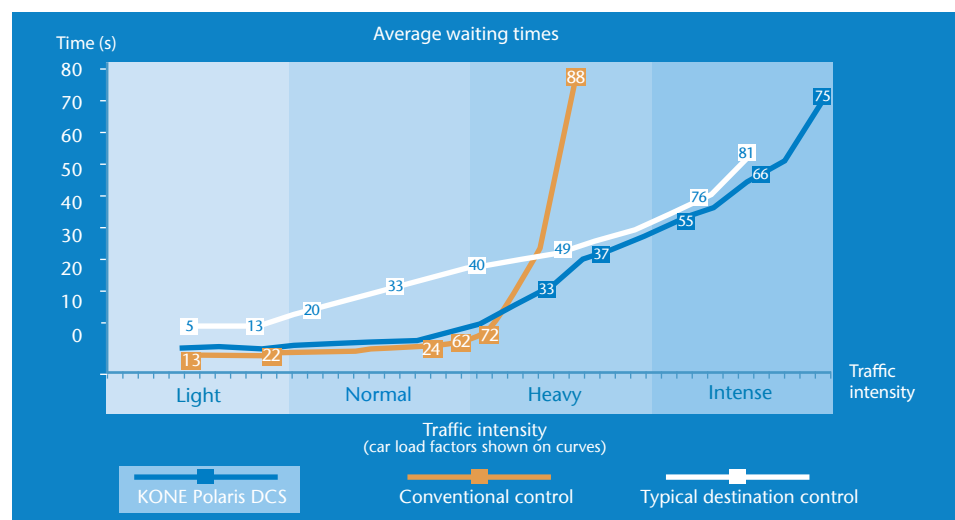
Depending on the number of cars in the group, the car capacity, and the number of floors in the building, KONE Polaris can increase the handling capacity of an lift group by 20–100% during heavy up-peak traffic. In extreme cases the selection of KONE Polaris in the planning phase can eliminate one lift 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 lift groups using a conventional control system, even during heavy traffic periods.

Compared to typical destination control systems and conventional lift 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.

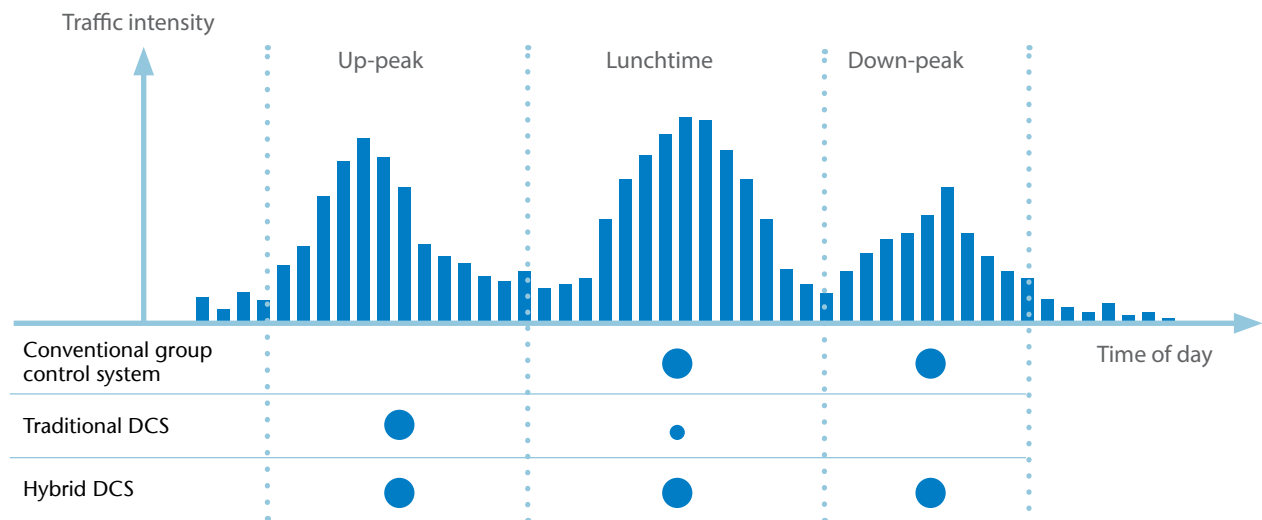


The KONE Polaris DCS minimises the number of intermediate stops by grouping passengers intelligently. This leads to shorter journey times and better handling capacity compared to conventional full collective lift systems.



# Boost traffic in all conditions with Hybrid DCS

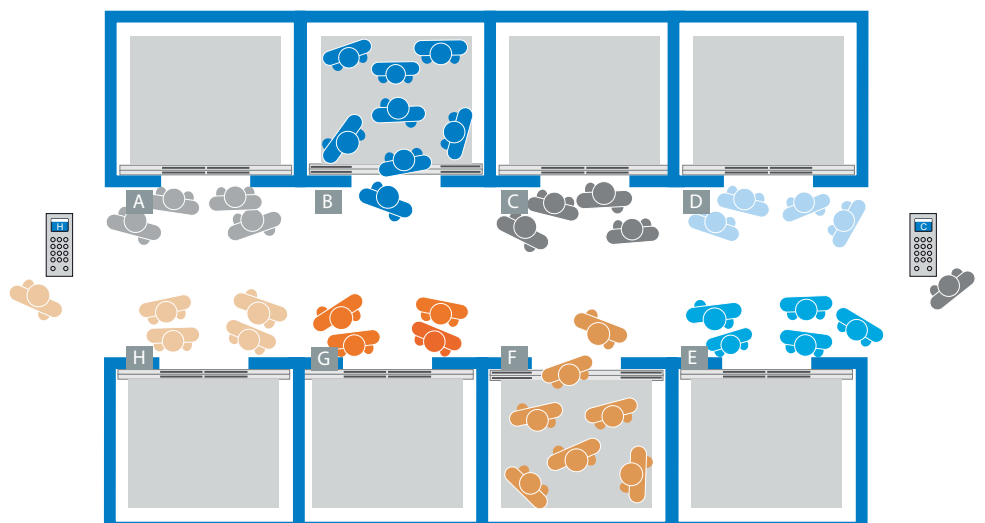
Traffic boosting comparison of conventional group control system vs. Traditional DCS vs. Hybrid



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 minimised.



# Modernise your building for better performance

## KONE Modernisation 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 optimise lift performance. And thanks to our smooth, staged installation process, disturbance and building downtime are minimised.

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

### How it works

The KONE Modernisation Overlay Tool is a temporary high-level group control tool for use during modernisation. Compatible with both old and new lift systems, its basic function is to allocate landing calls between the new, modernised lifts and the old lift system. The tool gives priority to the new lifts, maximising the use of lifts with the highest people flow capacity and lowest energy consumption. Passengers use common Destination Control Operating Panels for calling both old and new lifts.

### The process

Each lift is modernised in turn, gradually adding to the number of new lifts and increasing people flow capacity. With conventional modernisation, handling capacity will decline considerably during the first phases of the project.

The KONE Modernisation Overlay Tool maintains the people flow capacity, increasing it as more lifts are completed (see graph below). Before modernisation of the last lift, the overlay is removed and the final KONE group controller takes full responsibility for call allocation.

### Compatible with old and new

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

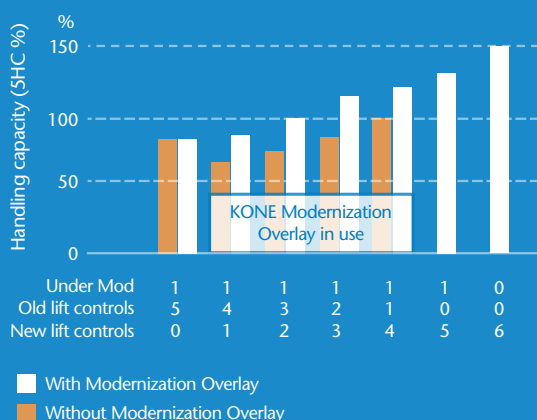
### Improved performance

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 personalised functionality and guidance for users with special needs. Integration with access control systems improves your building's security.

Group handling capacity with and without Modernisation Overlay in DCS modernisation



Examples of group handling capacity with and without Modernisation Overlay in a DCS modernisation

### Key benefits

#### Improved usability

- Common landing stations for old and new lifts
- Smooth transition from conventional control to destination control

#### Increased traffic capacity

- Improves capacity during modernisation with benefits of Destination Control System (DCS)

#### Better eco-efficiency

- Decreases energy consumption during modernisation

#### Wide compatibility

- Can interface with most types of existing lift controls

#### Minimised disturbance

- Short installation time
- Minimised downtime when setting up overlay system



# Innovative technology, attractive designs

After the location and exterior, the main lobby and lifts 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 signalisation 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 lift experience.



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

# Configured to meet your needs

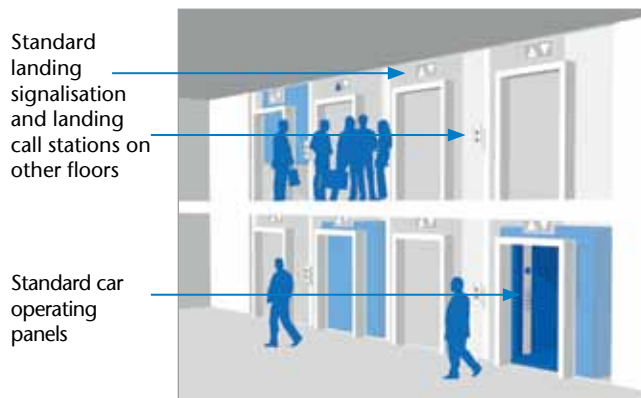
KONE Polaris is available in two configurations, making it easier to tailor the system to the individual needs of your building.

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



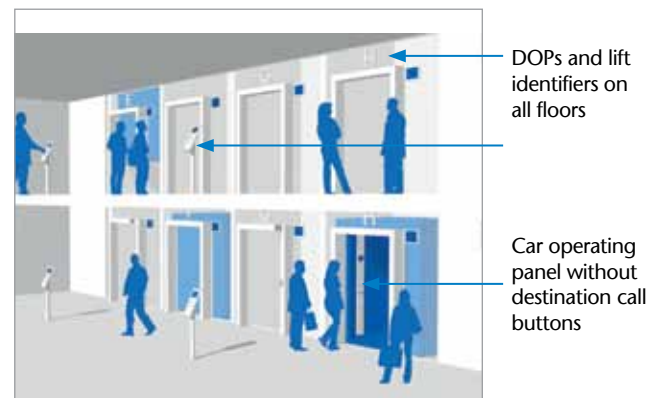
## Traditional DCS configuration

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 lifts serve the same floors
- with complex lobby arrangements (more than 5 lifts 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 lifts
- Traditional KONE Polaris™ destination control system



**Capital City – Moscow, Russia**

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



**Tour First – Paris, France**

- Completed: 2011
- Height: 231 m
- Floors: 51
- 28 lifts; 2 escalators
- Traditional KONE Polaris™ destination control system



KONE provides innovative and eco-efficient solutions for lifts, escalators, doors, loading bays and access. We support our customers every step of the way; from design, manufacturing and installation to maintenance and modernisation. 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 UniDrive™, KONE MonoSpace®, KONE MaxiSpace™ and KONE InnoTrack™. You can experience these innovations in architectural landmarks such as 30 St Mary Axe and Broadgate and 201 Bishopsgate buildings, BAA Terminal 5, Emirates Stadium, Brunel University, Citigroup, Jubilee Line and St. Georges Wharf.

KONE employs approximately 40,000 dedicated experts to serve you globally and locally in 50 countries.

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