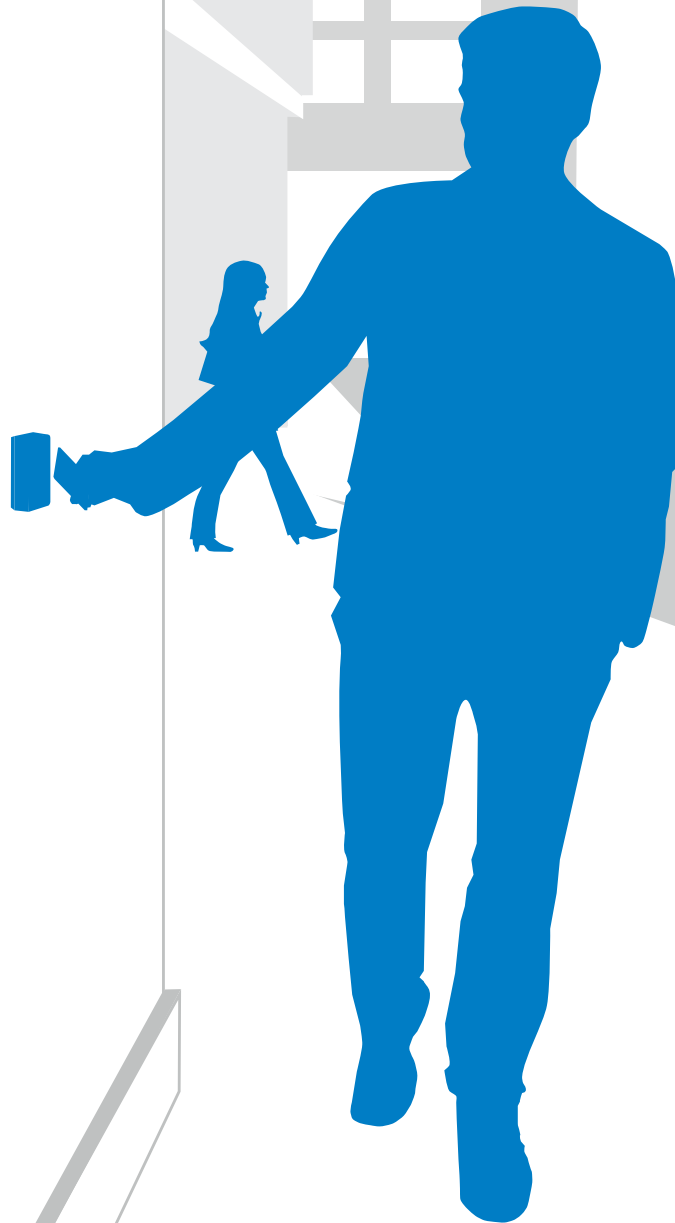


Dedicated to People Flow™



PLANNING GUIDE FOR

KONE Access™

THE SCALABLE AND FLEXIBLE ACCESS CONTROL SOLUTION

Table of Contents

General	4
Introduction to KONE Access	7
Key customer benefits	7
User benefits	8
Long-term benefits	8
General information about access control systems	10
Access areas	10
Access points.....	11
Example of normal access rights by group	11
Elevator as an access point	12
KONE Access specifications	14
Architecture	14
Components and software.....	15
Features	20
KONE Access for your building.....	23
Defining a KONE Access solution	23
Site survey.....	23
Security concept	24
Responsibilities.....	24
Project timeline	25
Elevator, platform, and building-level details	27
General system constraints.....	27
Elevator signalization integration.....	28
Elevator platforms	28
Safety standards.....	28
Appendix A	29
When integration with third-party access control systems is needed.....	29
Glossary	31

Any information in this Planning Guide is estimated but the real-life values may vary depending on the actual installation. This document may not be used as a basis for ordering, as a contractual document nor as a commitment, covenant, guarantee, representation or warranty of any kind from KONE that the values given herein will be attained in a specific real-life installation. This document is provided for general information purposes only and, for the avoidance of doubt, KONE does not accept liability for any inconsistency or inaccuracy in the information provided. Furthermore, KONE does not accept any liability for possible differences between the actual values and these estimates. Moreover, if there is any inconsistency or ambiguity between this document and KONE's tender, quotation and/or offer documents, the tender, quotation and/or offer documents shall prevail.



General

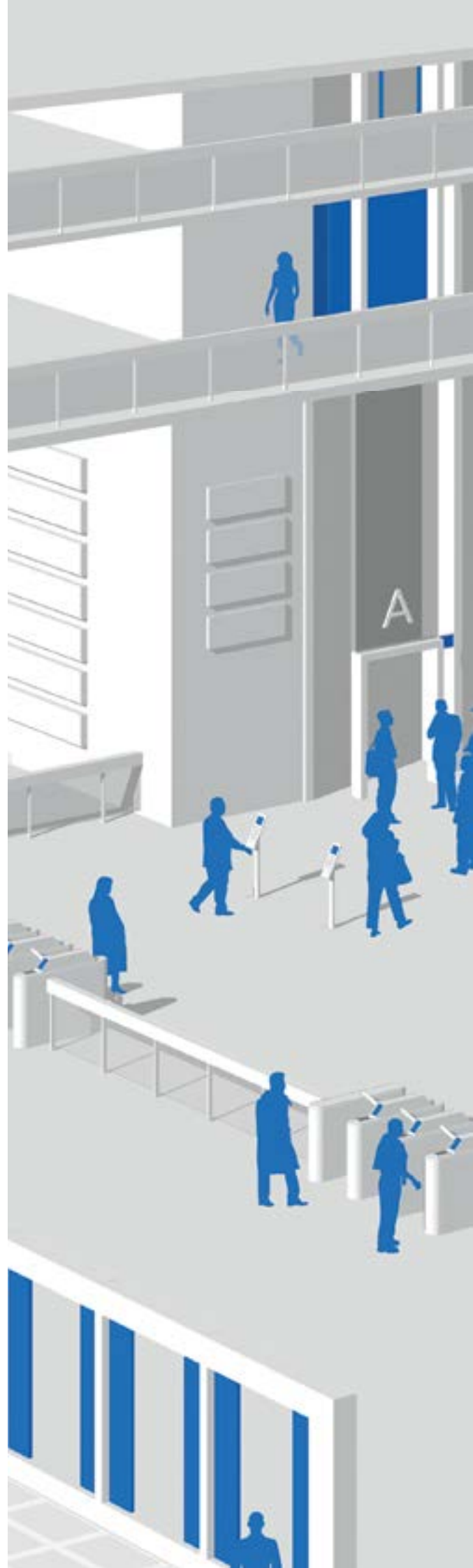
This planning guide provides the general information about KONE Access™ necessary for specification and installation of the system. For specific details relating to individual building layouts, contact a local KONE representative.

This guide is intended to be a reference book for KONE customers, to refer to when needed. The sections and subsections will help the reader locate specific information quickly and efficiently.

The initial chapters introduce KONE Access and how access control helps optimize people flow in buildings. The guide then describes how to configure individual solutions and addresses key construction considerations.

The Appendix A contains information about various scenarios of integration between KONE Access and third party access control systems.

This guide is primarily intended for architects, builders, site managers, consultants, investors, subcontractors, and project managers, as well as those involved in related areas such as electrical installation and building security access.









Introduction to KONE Access

KONE Access is a comprehensive access control solution that enables better people flow and optimal usage of elevator features.

It provides locking functionality for elevators, landing call devices, destination operating panels, and turnstiles (which can be integrated with a destination control system if required). The system can be extended to cover **automatic and manual building doors** in order to provide comprehensive access control throughout the building.

Key customer benefits

KONE Access features a fully scalable access control system that is seamlessly integrated with elevator systems and building doors.

It provides maximum security, ensures smoother, smarter people flow, and adds real value to a property. Customizable and flexible, KONE solutions can be easily adapted to meet changing needs and requirements.

Key benefits include:

- improved people flow with an integrated elevator and access control system
- the possibility to scale up or adapt the system if needs change, with a straightforward user interface for easy integration of new tenants or expansion to new building areas
- easy and straightforward installation process
- everything from one partner – a single point of contact for planning, installation, and maintenance of elevators, doors, and access control system means less coordination, fewer meetings, and faster implementation
- reduced risk of expensive and complex construction changes at later stages with early planning and installation of the access control system
- personalized elevator features and a clean, modern appearance

User benefits

Users (mainly facility managers and receptionists) can easily:

- create and manage access profiles according to area, time, date, or person
- control door, turnstile, and elevator access according to individual access rights
- specify personalized elevator calls for user groups or individuals, including allowed floors, home floor, accessibility features, and priority calls
- manage visitor access for improved convenience and building security

Tenants of office and high-end residential buildings can benefit from:

- more comfort with direct elevator calls to the home floor from turnstiles
- ease of use
 - access control integrated into elevator-call devices and building doors
 - fast system response after access card is displayed
 - personalized elevator features

Long-term benefits

KONE Access provides convenience, improved accessibility, and easy access control. Increased tenant satisfaction and improved security will enhance the building's prestige and value.

KONE Access is ideally suited for office and high-end residential buildings, where access control, accessibility, and user convenience are especially important. It enhances the value and desirability of the building, providing high-end features for a marginal cost increase of the total elevator project.

The long-term benefits of KONE Access are:

- increased building value
- improved building security
- increased tenant satisfaction
- reduced tenant turnover and faster renting of vacant floor space
- planning, installation, and maintenance of elevators, doors, and access control system all handled by a single provider

Table 1: Customer benefits

Design		Realization		Operation	
Architectural design	The visual appearance of integrated AC system is highly valued, especially for its simplicity	Physical construction	Integration of access and elevator systems is built in, and performance is verified through extensive system testing	Maintenance & repair	Single maintenance partner means less coordination
People flow design	Early planning of integrated AC enables efficient people flow	Installation	Single provider means less coordination, fewer meetings, and reduced installation time	Access rights configuration	Only one registration of access rights needed; flexible integration of new tenants
Engineering	20-30% savings in working time due to less coordination of providers	Access control system implementation	Single provider enables quicker implementation and faster commissioning	People flow management	Well-designed, integrated AC system reduces the need for security personnel
Tendering of different work	With all elements available from one provider, all components for elevator and access control systems, as well as integration, can be specified in a single tender	Training of operators and users	Reliable system means less down time which means happier tenants and less time spent by facility manager for coordinating troubleshooting	Upgrades and installation of new features	KONE Access software platform enables flexible upgrades and easy system expansion
Access control system design	KONE Access system both solves the challenges and meets the strict requirements of the elevator environment	Provider management	Fewer contractors means less working time and reduced costs (approx. €1000 per contractor)	Fault handling	Faster troubleshooting and fewer faults; when faults do occur, there is a single point of contact

General information about access control systems

Although the primary reason for installing an access control system is to improve security, these systems can also improve people flow, and enable a more personalized experience for users. The easiest way to see this is in elevators with integrated access control and turnstiles.

The important questions that should be considered before installing an access control system are: who is it for, when is it needed, and where is it needed?

The who and when concern users, to whom access rights are granted and managed according to specific timeframes. User groups can include:

- employees, whose access permission can range from medium and long-term to permanent, depending on the organizational structure
- contractors, who normally have short to medium-term access permission, normally limited to their assigned working areas
- visitors, who have short-term access permission, typically one day, and who are escorted by a host

The where deals with the areas that require access control. Access control devices can be installed in a semi-public area, such as next to the main door of an office building and inside the elevators, or in a secure area such as the staff entrance and office door. Access to public areas is usually unrestricted.

The concept of access control security is based on access areas and access points.

Access areas

An access area is an area with common access rights, for example the office space of a tenant company. Access areas for contractors or the public can also be defined if needed.

The example below shows a building floor divided into four access areas. Lobby area with reception does not require any access rights, thus it forms access area 1. After turnstiles is access area 2. Access areas 3 and 4 require additional access rights. Personal access rights can be granted to one, several, or all of the access areas.

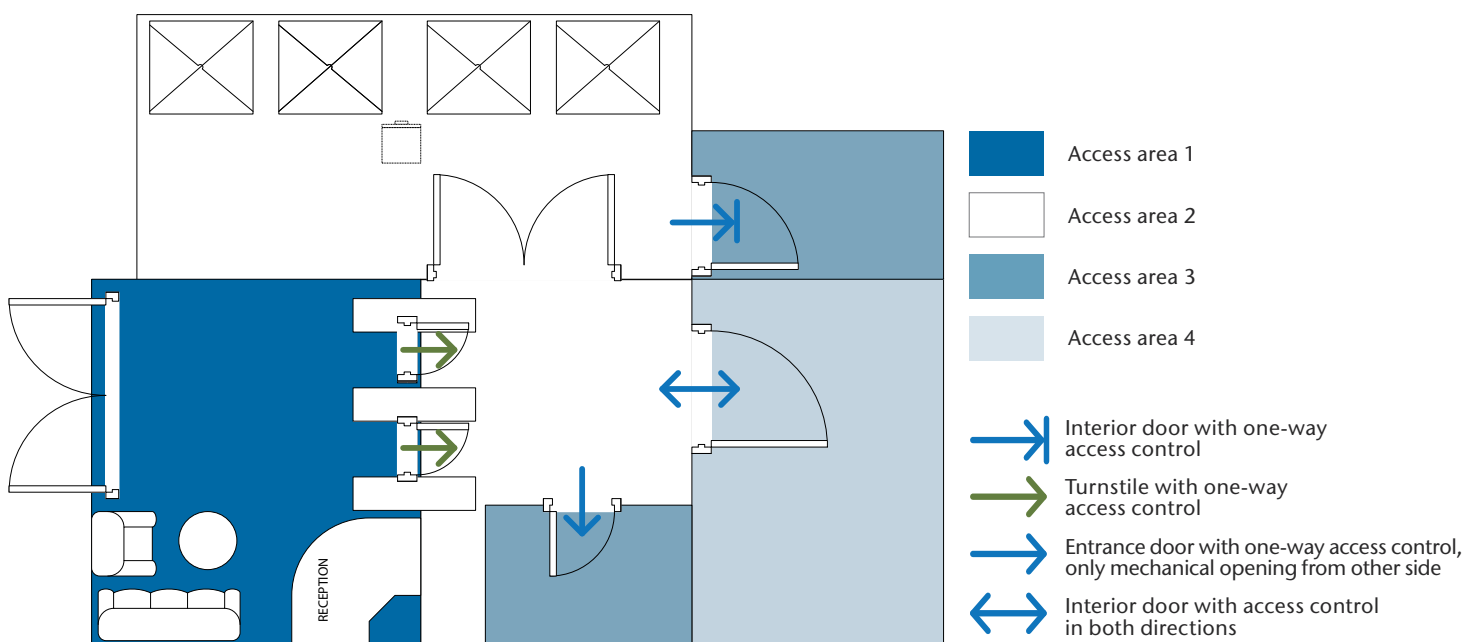


Figure 1: Example of access areas

Access points

An access point is a controlled passage between access areas. In the example picture there are two types of access points: one-way passages and two-way passages. In the one-way passage the card reader is either installed next to the door or integrated into the elevator signalization. In the case of the door, the traffic coming in the opposite direction is handled with a push button that opens the door lock or with a standard mechanical lever.

In the two-way passage there are two card readers, one on each side of the controlled passage. In this kind of arrangement users are required to show their access card in both directions, meaning access is tightly controlled.

Any component that monitors and controls access in a single unit is considered an access point. For example, an elevator can be considered as an access point.

Example of normal access rights by group

Employee

- medium-term, long-term, or permanent access, normally unlimited
- access rights set according to organizational structure – by department or cost center, for example
- time-based access rights: 5 (Mon-Fri) x 15 (5-20) h, 5 x 24 h, 7 x 15 h, 7 x 24 h

Contractor

- short or medium-term access permission, normally limited
- access rights set according to contract and working area (cleaners, consultants, security, staff, etc.)
- time-based access rights: 5 (Mon-Fri) x 15 (5-20) h

Visitor

- short-term access permission, normally 1 day
- access rights set according to host status, usually escorted around the building
- time-based access rights: 5 (Mon-Fri) x 10 (8-18) h

Elevator as an access point

Elevator is an access point between access areas 1 and 2, for example, when access area 1 is lobby area without access rights restrictions and access area 2 is office area on each floor with restricted access rights, provided that access control is controlled inside an elevator. For each floor it is possible to assign different access rights, which will be especially useful in multi-tenant office building. Elevator area can also form on each floor own access area. For instance, when elevator lobby is one access area and office is different access area (see Figure 2).

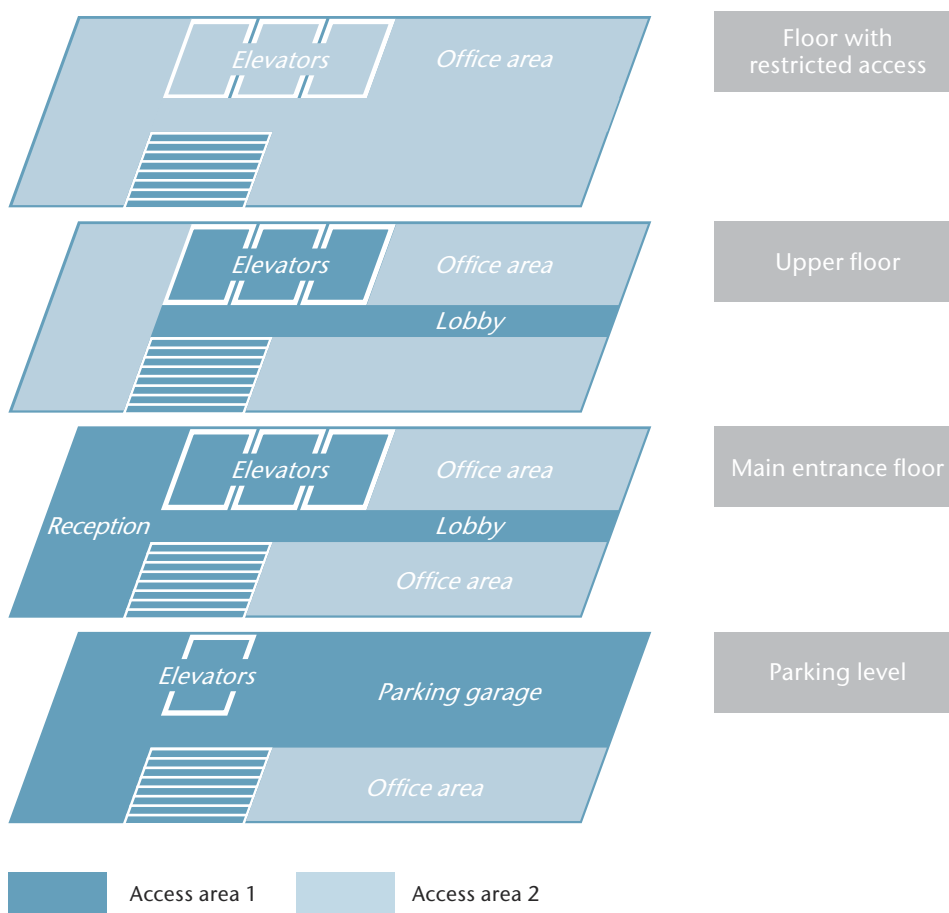


Figure 2: Access area of the elevator



KONE Access specifications

Architecture

This section introduces the KONE Access system architecture, major components, and functionalities. Since this guide is not intended to be a detailed design blueprint, the level of technical detail in this section is kept at a general level. However, it does contain all the information required by architects, builders, site managers, consultants, investors, subcontractors, and project managers when specifying and ordering KONE Access.

With KONE Access customers can specify a comprehensive, state-of-the-art access control solution that covers all key access-related points in the building, beginning with elevators and turnstiles, and eventually extended to building doors.

Everything is controlled via management software (provided by KONE) and a server (provided by either KONE or the customer). Elevator access control features are delivered by KONE; customers are responsible for organizing the installation of the required local area network with the building's electrical contractor. The KONE representative can also help with any issues regarding electrical cabling.

KONE Access can be installed in a wide range of KONE elevator call devices, such as COPs (car operating panels), DOPs (destination operating panels), and landing call stations (LCSS). Integration is possible both with conventional elevators and those that use a destination control system (DCS).

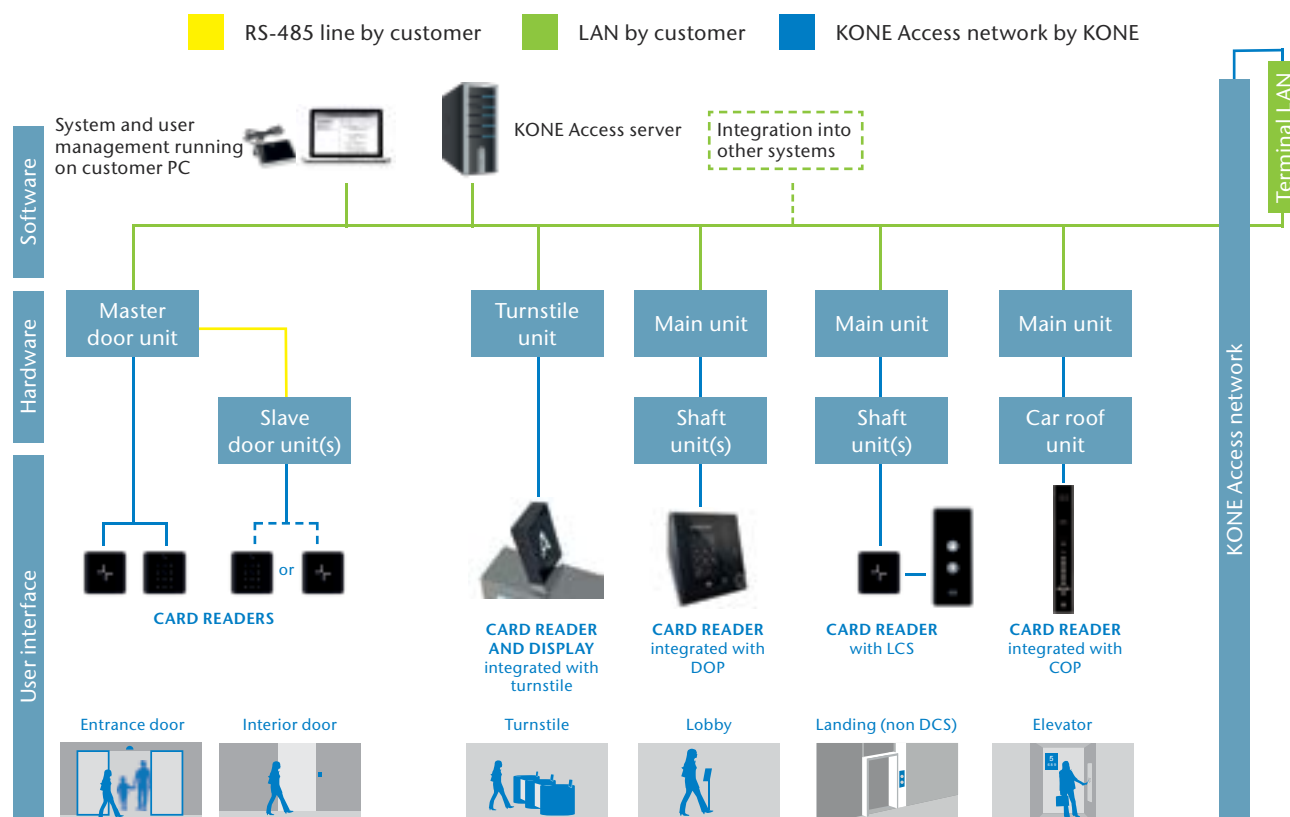


Figure 2: KONE Access system architecture

Components and software

Software

- Access control features
- Elevator-related features
- Building door interface
- Management tools



KONE Access server



Desktop reader



System and user management running on customer PC

Hardware

- Card readers (visible elements)
- Systems hardware units (access manager and remote reader)
- Access cards



Card reader and card reader PIN



Access cards



Access manager



Remote reader

Card readers integrated with:

- destination operating panels
- car operating panels



Wide range of car operating panels



KSP 858 touchscreen destination operating panel



KSP 853 destination operating panel

Figure 3: KONE Access components

Main unit

The main unit comprises the main controlling units of the elevator-related access control system components installed in elevator machine rooms or shafts. Access managers, which control the remote readers, are the primary components of the main unit.

Shaft unit

Shaft units, installed in elevator shafts, control the card readers and transfer messages forward to the main units. Remote readers are the primary components of shaft units.

Car roof unit

Car roof units control the card readers integrated into the COPs and transfer messages to the main unit. Remote readers are the primary components of car roof units.

Card reader

Card readers can be integrated into elevator COPs, turnstiles, and, where a DCS is in use, into DOPs as well. In supported models (see Elevator signalization integration, page 28) the card unit is fully integrated into the DOP or COP, while in unsupported models and in office doors and LCSSs, surface-mounted card readers are used. Card readers are controlled by remote readers and access managers.

Turnstile unit

If turnstile integration is required, the hardware provided by KONE includes a turnstile unit. KONE also installs the turnstile displays and surface-mounted card readers or card reader PIN units.

NOTE: Destination Guidance Display is available, enabling direct home floor call feature.

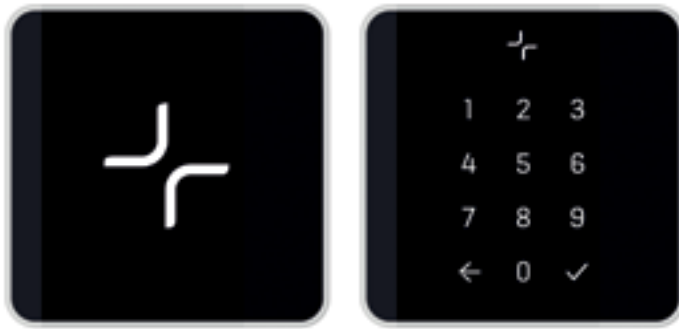


Figure 4: Card reader and card reader PIN unit (surface mounted), 88.5 x 88.5 x 20 mm

Master door unit

The master door unit is used to control entrance doors and other building doors with two-way access control (see Figure 1. Example of access grids). It grants or denies access when a user displays their badge at the card reader and can operate independently if the connection to the server is lost. One master door unit can accommodate up to eight slave door units. The unit can also be used to control two card readers directly, in which case it should be installed a maximum of 25 m from the readers. The master door unit includes versatile door and lock-sensing and control functionalities.

Slave door unit

Slave door units can be used to control building doors in the case of one-way access control. Slave door units are a cost-effective way to control normal interior doors where advanced functionality is not needed. Slave door units require a network connection to the master door unit.

Desktop reader

The desktop reader is used for programing access cards. Receptionists, for example, can use it to program visitor badges in the lobby.



Figure 5: Desktop reader

Access cards (badges)

KONE offers three different kinds of access cards:

- **Classic** – the standard employee badge is completely white to allow for customized printing. This badge normally has no access time limit – it is valid as long as the holder is registered with the access control system or until the badge is blocked by the administrator. The Classic badge is usually used as the default badge, and is sufficient for most standard access control applications.
- **Desfire** – an advanced employee badge with more memory and a higher security level, the Desfire can be used for a variety of different applications (for example, as a payment method on public transport and as an access card for multiple facilities).
- **Visitor Classic** – visitor badges can be assigned by a receptionist using the visitor management software’s graphical user interface, which makes checking visitors in and out quick and easy. Time limits can be set individually for each visitor badge: after the validity period expires, the badge is automatically blocked by the system. The building’s security plan dictates visitor badge time limits, distribution policy, and other parameters.

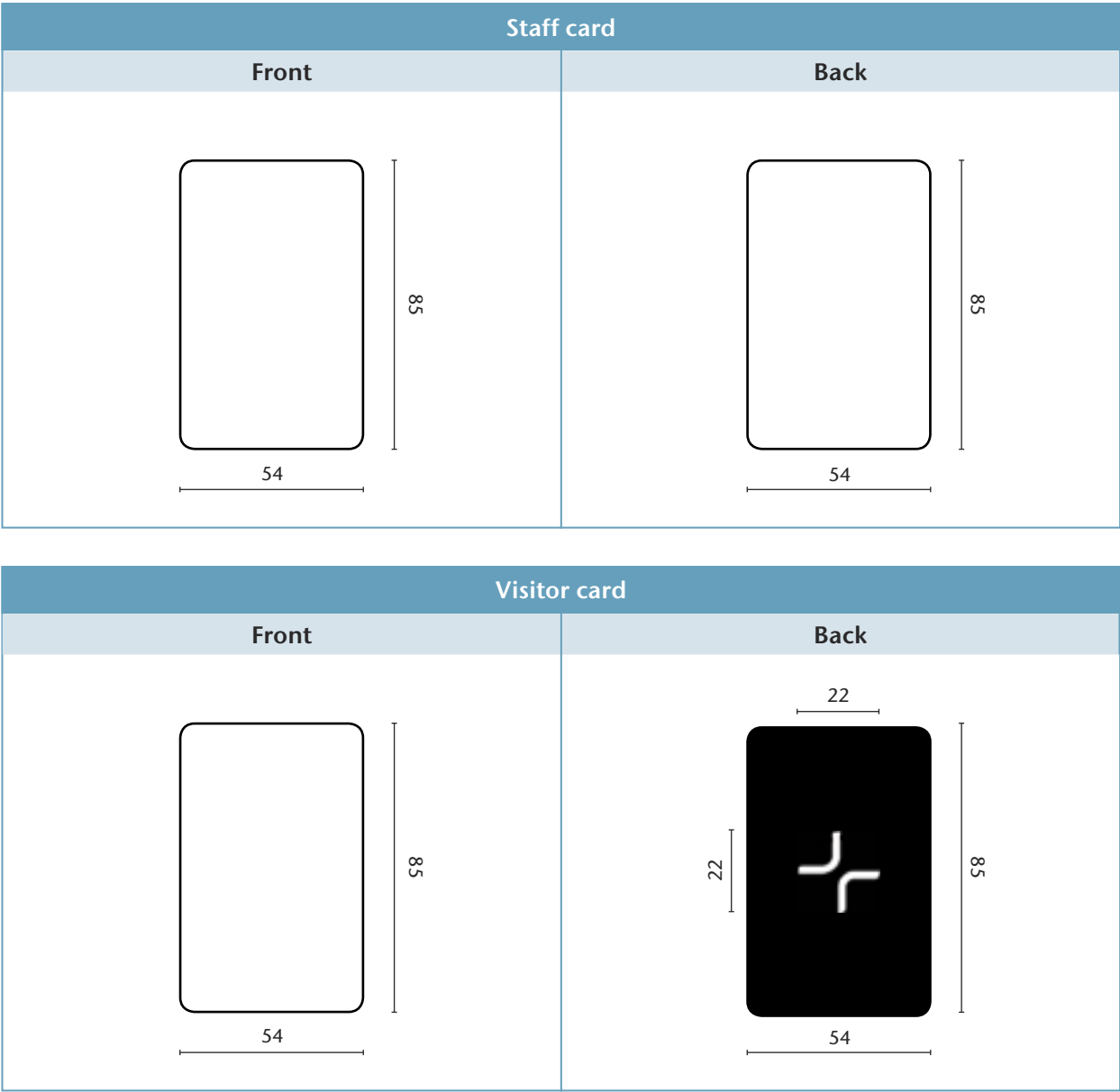


Figure 6: Access cards (badges)

KONE does not provide a badge printer. Table 2 details supported third-party printers.

Table 2: Supported third-party badge printers

Printer name/Manufacturer	Windows Operating System (32-bit)			
	2000	XP	Vista	Windows 7 32-bit and 64-bit
EDIsure (Digital Identification Solutions):				
XID 830	✓	✓	✓	✓
XID 93xx	✓	✓	✓	✓
XID 5xxie	✓	✓	✓	✓
XID 5xxi, XID 4xx, XID 380	✓	✓	–	–
XID 350	✓	–	–	–
DCP 360i	✓	✓	✓	✓
DCP 240+ DCP 340+	✓	✓	✓	✓
DCP 100, DCP 240, DCP 340	✓	✓	–	–
Zebra/Eltron:				
P300	✓	–	–	N/A
P310, P310i, P320i, P330i	✓	✓	–	N/A
P400	✓	–	–	N/A
P420, P420i, P430i	✓	✓	–	N/A
P500, P520, P520i	✓	–	–	N/A
P600	–	–	–	N/A
P630i, P640i, P720	✓	✓	–	N/A
Other:				
Fargo DTXxxx, HDPxxx	–	✓	✓	✓
CLEARjet CX-one, CP-2	✓	✓	–	N/A
Magocard Rio 2e	✓	✓	–	N/A
Magocard Rio Pro	✓	✓	✓	✓

Server and workstation computers

KONE Access requires a server, software, and a software license. A workstation is needed for each administrator in the lobby. Server hardware can either be provided by KONE or the customer. The server is connected to the elevator system via a low-latency LAN.

KONE Access software and license

The software and license are preinstalled on the server provided by KONE. Other required software is installed as part of the system commissioning process. There are two license options: standard and extended. See Features, page 20.

Table 3: KONE Access hardware requirements

Workstation requirements	
CPU	Intel Pentium 4 processor or higher
Memory	1 GB main memory (RAM)
Hard disk	Hard disk with at least 200 MB free memory
Others	Network adapter, DVD drive
Server requirements	
CPU	Intel i7 processor Quad Core
Memory	Min. 4GB main memory (RAM)
Hard disk	2 hard disks, RAID1, 250 GB
Others	Network adapter, DVD drive optional

Features

KONE Access is supplied with either a standard or extended license. The basic features of the standard license are sufficient for basic access management, whereas the extended license enables more versatile monitoring and control.

Table 4 details the features of the standard and extended licenses. For elevator-related access control, KONE Access enables DOP and COP locking and unlocking according to personal access rights, as well as personalized elevator calls for user groups and individuals (see the first section of Table 4 for details). The access control features of the KONE Access software enable creation and management of access rights for tenants and visitors. In addition, turnstiles can be seamlessly integrated with a destination control system, meaning that a single badge swipe both opens the access gate and initiates a personalized elevator call to the user's home floor. KONE Access can also be used to control access via building doors. The optional access control features provide more advanced functionalities.

Table 4: KONE Access features

Elevator-related access control features (standard license)

DOP and COP unlocking according to personal access rights

Personalized elevator calls for user groups (only with destination control system)

- Accessibility call – activates accessibility features: extra door time for entry, extra walking time, annunciator (ACU), preselected car, extra door time on exit
- Empty car call – assigns user to empty car, non-stop travel to destination floor
- Priority to destination – enables fastest possible travel time by not accepting other calls
- Space reservation – reserves extra space inside the car

Personalized elevator calls for individuals

- Allowed floors, access based on time profile
- Home floor (direct call from turnstile to user's predefined home floor)
- PIN-code access (e.g. outside office hours)

LCS locking and unlocking and priority landing calls (not DCS)

Access control features (standard license)

Access areas – create and manage access areas inside the building

Time profiles – create and manage access profiles based on time or date

Personal access rights – create and manage personal access rights based on access areas and time profiles

Visitor management – issue temporary visitor badges

System administration – option to add multiple administrators

RFID badge creation – receptionist can prepare and allocate badge for user. Also possibility to allocate temporary transitional badge with limited validity.

Data log reports – data on device status and usage is available from the system database

Building door interface (standard license)

Locking and unlocking of doors and turnstiles

Grant access according to personal access rights

Optional access control features (extended license)

Tenant management – independent management of access rights by tenant; for organizations with autonomous divisions that share common servers and network infrastructure

PIN-code-only access – enables access without a badge and without identifying a person

Access-point and devices-status monitoring – statuses are shown in the management UI as an interactive graphic

Advanced add-ons and system extensions can also be offered depending on individual customer requirements. These can be used to enhance the flexibility and functionality of the standard system if the needs of the building change.

Table 5: Examples of advanced add-ons and system extensions

Advanced add-ons and system extensions
Advanced visitor management – e.g. if the host leaves the building, the visitor's access rights are restricted
Cable-free access points – innovative cable-free access control
Fingerprint verification and identification – fingerprint recognition used as an additional or the sole access control method
Anti-pass back – entering the same door/gate with the same access badge is impossible until exit is registered
Facility management • Management of mechanical keys • Alarm management • Management of multiple access card media
Canteen solutions – allow employees to purchase meals with their badges
RFID badge production – receptionist can prepare and print badges. (Note: KONE does not provide the printer; a list of compatible printers is shown in Table 2.)
Printing solutions (follow-me printing) – allow employees to initiate print jobs on company printers by swiping their badge
Interface integration • CCTV • Human resources systems • Alarm systems • Building management systems • Camera recognition and additional biometrics
Parking management • Parking-space management for different user groups • Barrier control
Personnel management – time and attendance-management features



KONE Access for your building

Defining a KONE Access solution

Below are the basic steps to designing an access control solution.

A. Define access control needs

- Building layout and access grids
- Security needs and tenant analysis
- Typical configurations for building type

B. Define the optimal solution

- Characteristics of access control solution
- Product recommendations
- Product-specific modules, including specifications, options, and dimensions

C. Define details

- Installation requirements
- Construction considerations in relation to safety

Site survey

The site survey is an essential part of any access control project and is a collaborative process involving the customer and the KONE representative. This ensures efficient planning and high quality right from the start. During the site survey, the building is investigated from the point of view of its access control and security needs, and the scale of the installation.

Information gathered during the site survey and the planning stage:

- Building specifications
 - Layout of elevators, doors, DOPs, and turnstiles
 - Number and height of floors
 - Access grid and access point layout
 - Population and estimated visitor numbers
- Access control and security needs
 - Estimated number of access points (number of doors and elevators)
 - Estimated number of users
- Elevator platforms
- Elevator types and control methods (full DCS, hybrid, or conventional)
- Required software features (see page 20, Features)

KONE Access is highly scalable. In order to ensure smooth and reliable operation, it is important to estimate the expected system usage. Single-server solutions can handle up to 150,000 events per day, which is typically up to 100 access points and 1,000–3,000 users. Multiple servers are needed for larger installations. Please contact KONE technical support for further details.

Security concept

The building's security plan is an important source of information when it comes to defining security requirements for access control. KONE Access will significantly improve building and tenant security. Large office buildings receive high numbers of all kinds of visitors on a daily basis, and a properly planned access control system will help ensure a safe and secure stay for all of them.

A security plan may contain the following:

Instructions for employees on access and moving around the building

Anyone who is not an employee of Organization A is considered a guest. A host should accompany guests at all times. Guests should register at reception, where they will be issued with a visitor's badge that should remain visible throughout their stay. Guests are not allowed to move unaccompanied around the building. The host is also responsible for escorting guests to the exit on departure.

Instructions for opening doors for employees, visitors, subcontractors, etc.

Doors and gates in the building are opened with an access control badge. Guests should always enter the building via reception, where a member of staff informs the host of their arrival and issues them with a visitor badge.

Office security guidelines

Building doors are closed and locked at all times, excluding the main entrance, which is open 8 a.m.–5 p.m.

Responsibilities

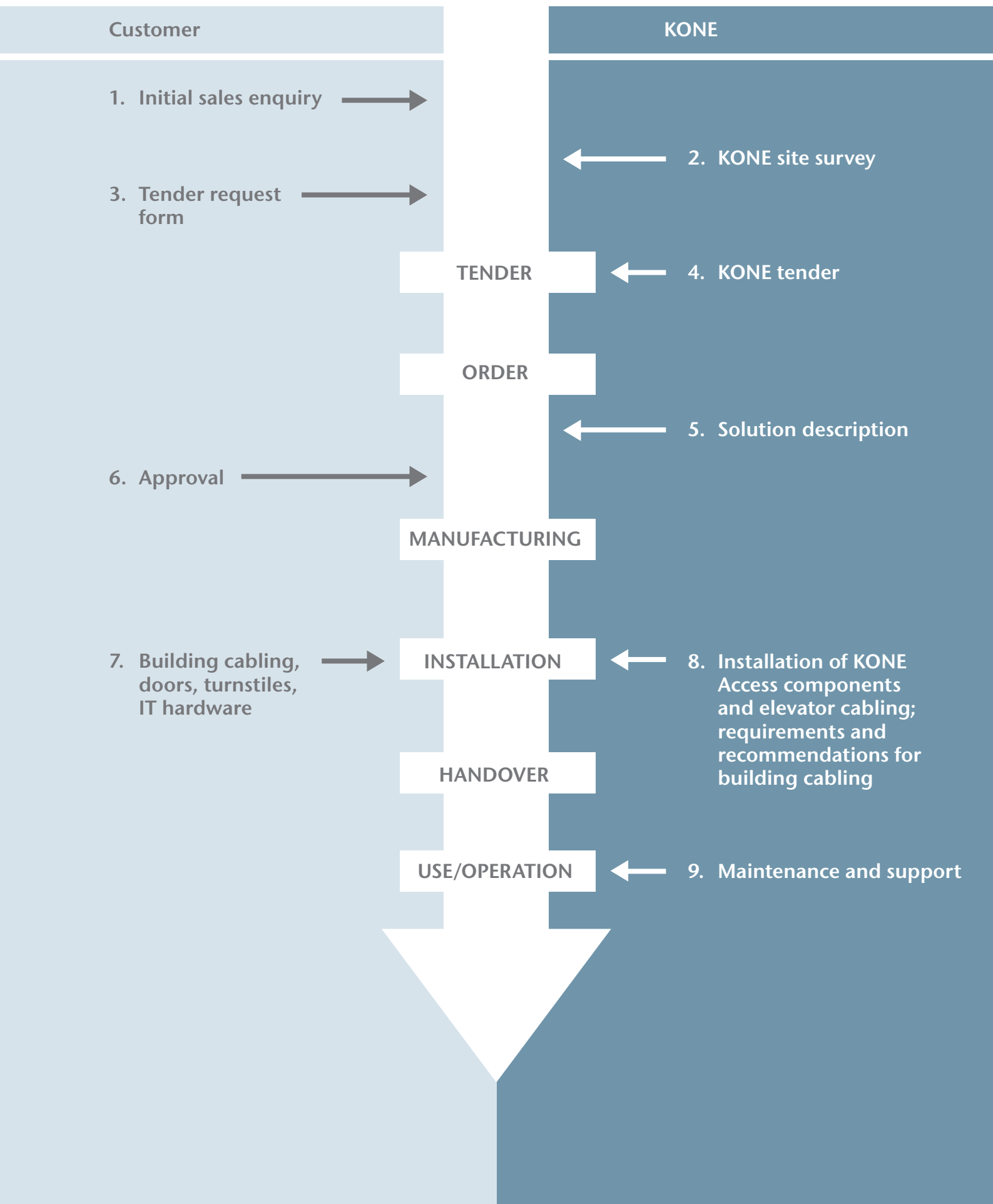
KONE is responsible for supplying and installing all the hardware components and software needed for KONE Access. Responsibilities for the building cabling and electrification are detailed in Table 6 below.

Table 6: Installation responsibilities

	Delivered by	
	KONE	Customer
LAN connection from additional access control system main units to server*		x
LAN connection from access control system main door units to server*		x
LAN connection from access control system turnstile units to server*		x
RS-485 line from access control system door unit to preferred main door unit*		x
230V power supply for access control system main door units		x
230V power supply for access control system door units		x
230V power supply for access control system turnstile units		x
Power and network cabling inside elevator shaft	x	
Power and network cabling inside machine room	x	

*Cabling acceptance test reports are required

Project timeline





Elevator, platform, and building-level details

General system constraints

Table 7: General KONE Access constraints

	Conventional	Polaris 500	Polaris 800	Polaris 900
No. of servers (provided by KONE)	0–2	0–2	0–2	0–2
No. of administrators	1–60	1–60	1–60	1–60
No. of bookings per access manager/min	120	120	120	120
System response time in elevator interface	< 1 s	< 1 s	< 1 s	< 1 s
Max. throughput per locked keypad DOP	12	12	12	12
Max. throughput per locked touchscreen DOP/min	N/A	15 ^a	15	15
Max. throughput per locked turnstile/min	30	30	30	30
Max. throughput per locked turnstile with elevator integration	N/A	N/A	N/A	20
Max. throughput per locked COP/min	20	N/A	20	20
No. of bookings per door/min	30	30	30	30
No. of access-controlled DCS groups in building	N/A	N/A	Within the limits of the total number of access points	
No. of access-controlled elevator cars/DCS group	N/A	1–4	1–8	1–8
No. of access-controlled DOPs/group	N/A	34	1–80	1–126
No. of access-controlled DOPs/riser	N/A	34	1–40	1–63
No. of access-controlled DOPs/floor	N/A	1–4	2–8	2–8
No. of access-controlled floors in COP, A side	1–72	N/A	2–40	1–126 ^b
No. of access-controlled floors in COP, A + B side	1–36	N/A	2–40	1–126 ^b
Card reader with any COP, surface mounted	Yes	N/A	Yes	Yes
Access control of LCS, card reader	Yes	N/A	No	No
Access control of LCS, card reader PIN	Yes	N/A	No	No
No. of access-controlled LCSs/elevators/access control risers/landings	1	N/A	N/A	N/A
No. of access-controlled LCSs/elevators/access control risers	0–6	N/A	N/A	N/A
No. of access-controlled turnstiles per group	0–12	0–12	0–12	0–6
No. of integrated turnstiles per group (turnstile DOP)	N/A	N/A	N/A	0–12
Max. no. of elevator groups integrated into a single turnstile	N/A	N/A	N/A	3
No. of access-controlled entrance doors	Within the limits of the total number of access points			
No. of access-controlled internal doors	Within the limits of the total number of access points			

a. No user-specific floors or call personalization, only source locking

b. Limited by selected DOP

Elevator signalization integration

As shown in [Figure 3. KONE Access components](#), card readers can be seamlessly integrated into elevator signalization. The KONE signalization solutions that support integration are detailed below.

COP integration

Card reader compatible COPs:

- Europe: KSS D23, KSS D43, KSS 570, KSS 670, KSS 900, KSS 970
- EAP: KDS 300, KDS D20, KDS D40

Other COPs can be supplied with surface-mounted card readers if locking of car calls is required.

DOP integration

The following DOPs support KONE Access card reader integration:

- KSP 858, KSP 853, KSP 853 AUS, KSP 833
- KSP 978P/978L, KSP 979P/979L

LCSs can be supplied with surface-mounted card readers if locking of landing calls is required.

Elevator platforms

KONE Access is compatible with the following elevator platforms:

- **For new elevator projects:** KONE MonoSpace® 700, KONE MonoSpace® 500, KONE MiniSpace™, KONE High Rise MiniSpace™, KONE Transys™, KONE S MonoSpace™, KONE S MiniSpace™
- **For modernization projects:** KONE ReGenerate™ 800, KONE ReGenerate™ 400, KONE ReGenerate™ 200, KONE ReSolve™ 800, KONE ReSolve™ 40

Safety standards

KONE Access fulfills the following codes and norms:

Safety codes

- EN 81-1:1998, electrical installation safety standards
- EN 81-72:2003, safety rules for construction of firefighters lifts
- EN 60 950-1, electrical equipment safety standards

Electromagnetic compatibility

- EN 12015:2004 (Emission)
- EN 12016:2004 (Immunity)

Restriction of the use of certain hazardous substances in electrical and electronic equipment

- RoHS Directive, 2002/95/EC

Passengers with disabilities

- EN 81-70-A1:2004, accessibility (with surface-mounted card reader)

International protection rating

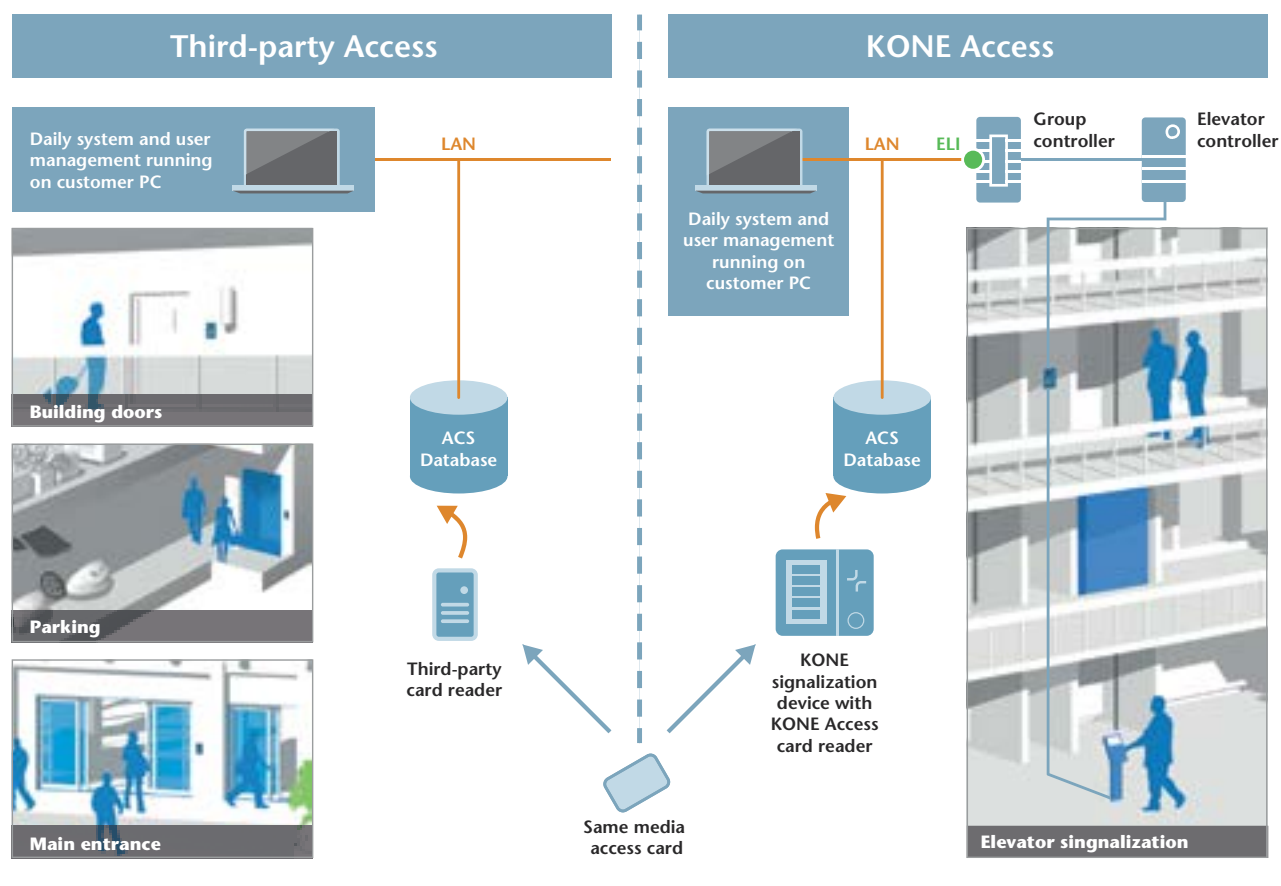
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Appendix A

When integration with third-party access control systems is needed

For additional flexibility, customer can choose to integrate any third-party access control system with KONE Access system. Access control to elevators will be covered by KONE Access, ensuring availability of personalized elevator features, and interface to third-party access control system(s) for the rest of the building done using one of the scenarios below.

Scenario 1. KONE Access and third-party access control systems without database integration



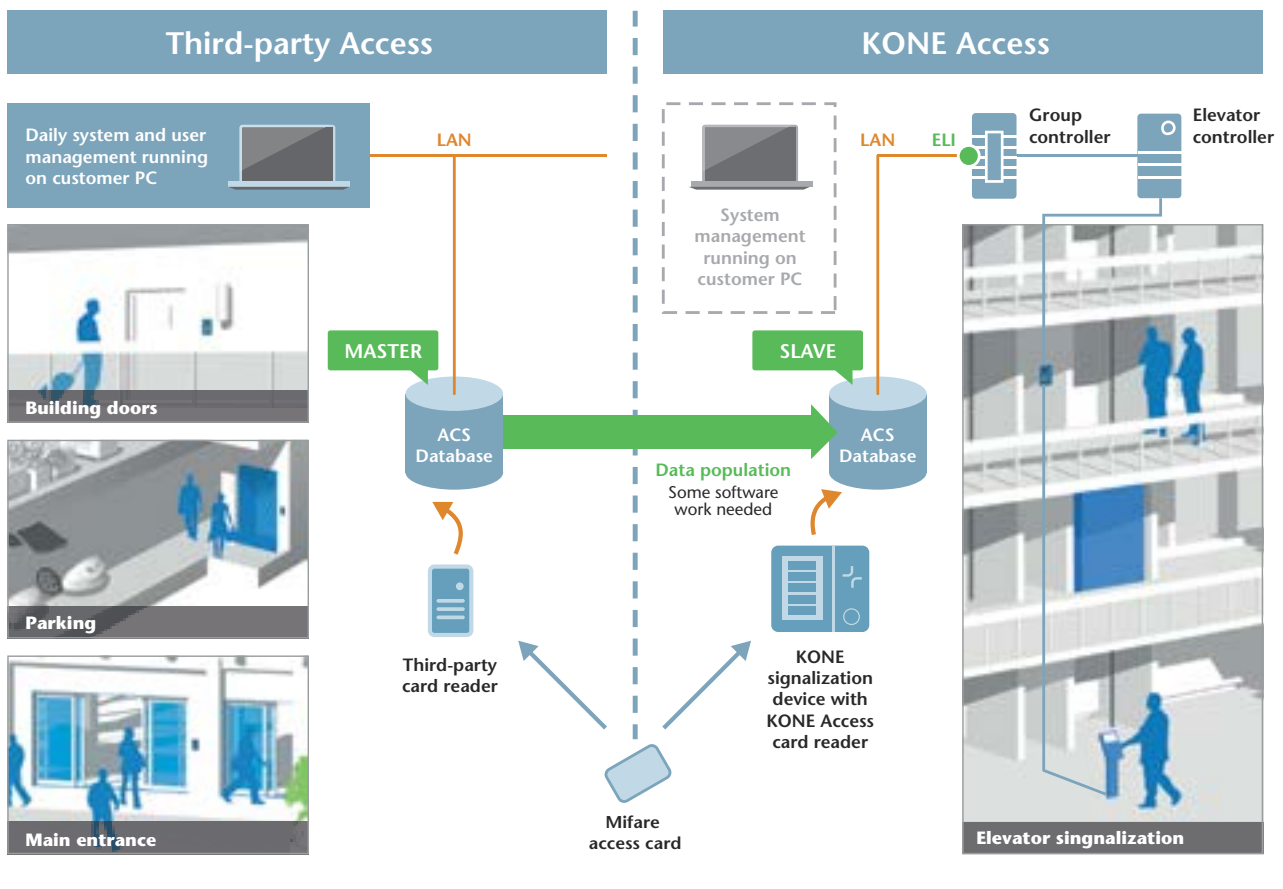
KONE Access can coexist with any other third-party access control system. In practice this means two access control systems. All KONE signalization devices will be equipped with KONE Access card readers and background systems. This will ensure that all elevator features provided by KONE Access will be available, like e.g. priority calls, disability features, special profiles. In addition to that, preferred by tenants or owners third-party access control for building doors will be used. End users will have only one access card and will see it as a single system, but the facility manager has to manage two databases. In this scenario if KONE and the third-party system both use Mifare protocol for access cards as the access card media, the coexistence of two systems is quite straightforward.

However, if there are different card media used, there are following options available:

- having two access cards, which isn't very convenient
- using a sticker on cards instead, as a means of combining access cards, but this must be tested to make sure there is no interruption between systems
- using combo-cards as a means of combining access cards, but this must be tested to make sure there is no interruption between systems

This scenario might be quite cost-effective compared to integrating KONE elevators with third-party access control system from scratch, as no integration costs are present. However, costs of maintaining and managing two databases shall be kept in mind.

Scenario 2. KONE Access and third-party access control systems with database integration (KONE Access Connectivity Suite™)



KONE Access can be integrated with third-party access control system via KONE Access Control Connectivity Suite, software that has been tested, thus, ensuring robust solution. And though some cooperation with the third-party access control provider is needed, significantly less integration work needs to be done than with building integration from scratch.

End users will have only one access card and will experience it as one system. The third-party access control system's database will populate the KONE Access database with correct information.

Having only one database makes things easier for system users and maintainers. The facility manager also has to update and manage only one database.

The only condition for this scenario to work perfectly is that if KONE and the third-party system both use Mifare protocol for access cards as the access card media. Then the user experience is the smoothest.

Glossary

DCS: Destination Control System

DOP: Destination Operating Panel

LCS: Landing Call Station

COP: Car Operating Panel

ACU: Annunciator

RFID: Radio Frequency Identification

LOL: Locking of landing calls

LOC: Locking of car calls

CCTV: Closed-circuit television

LAN: Local Area Network

Riser: a series of hall stations for an elevator or group of elevators

Access manager: a controller that autonomously controls and monitors access points

Remote reader: a reader unit for one card reader, it is always connected to an access manager via an RS-485 interface

Turnstile: a gate that allows one person to pass through at a time

Card reader: an RFID antenna device used together with control devices in an access control system (also known as a registration unit)



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™ and KONE UltraRope™.

KONE employs on average 47,000 dedicated experts to serve you globally and locally.

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