



# A smart locking platform

that maximizes security and  
minimizes lifecycle costs





# 20 years of technology leadership

## Battery-free access

For 20 years, iLOQ has led the way in developing battery-free smart locking solutions that make living and working a smooth and seamless experience.

With our key-based digital locking system, the power needed to confirm access rights and open locks comes from the motion of inserting the key into the lock. No batteries or cables are needed.

With our keyless mobile solution, the power needed to confirm access rights and open locks comes from an NFC-enabled smartphone. No batteries, cables or physical keys are needed.

iLOQ cylinders replace existing cylinders with no modifications needed to doors or the infrastructure.

Access rights are quickly and easily programmed to the key or to an app running on the smartphone with iLOQ's powerful, cloud-based, SaaS administration software. They can be updated and blocked as needs change to maximize security and minimize lifecycle costs.

## One platform, multiple possibilities

Thanks to opportunities offered by digitalization, you can now choose iLOQ's key-based system, the mobile solution or even a combination of the two. With all access rights managed using the same software platform, iLOQ 5 Series fulfills the access management needs of all properties and user environments.



## Unique benefits

1

### Multiple access possibilities

Choose how you get access:

- Digital key – can be used as a traditional key or with a reader
- Smartphone key
- Key fob
- PIN code

2

### Smarter, simpler administration

One flexible, scalable, easy-to-use cloud-based SaaS platform.

Device-to-device communication between keys, locks, smartphones, readers and the software platform.

3

### State-of-the-art security

Access rights are always up-to-date.

Lost, stolen or unreturned keys are immediately blocked.

Expired keys have no access without administrative actions.

Confidential data protected with strong encryption.

4

### Streamlined operations

iLOQ's standard, open application programming interface creates a multitude of integration possibilities.



## Secure, smart and sustainable access management

In combination with iLOQ's programming device and a Microsoft-Windows-based PC, iLOQ's cloud-based SaaS platform enables advanced, real-time, 24/7, multi-site programming, administration and management of access rights for the entire locking system. Its powerful data encryption methods ensure high system security while its simplicity and ease of use drive down administration time and costs.



## Features in brief

- Convenient management of locks, keys, sites and users on a single platform
- Access rights quickly and simply defined, updated and canceled
- Real-time views of access rights, access codes, keys, locks and readers on property floor plans
- Time restrictions can be set
- Possibility to overwrite automatic keys
- Lost or stolen keys can be immediately blocked
- Audit trail reports track use and help prevent misuse
- Quick and simple multi-site management
- 24/7 Internet connection
- Fast and easy installation
- Automatic backups and updates
- User-friendly graphical user interface
- High system security
- Powerful data encryption methods
- No need to invest in dedicated hardware and software IT
- No in-house server maintenance costs
- Device-to-device communication
- Secure login with a physical token
- API integration

## iLOQ's solutions for access management challenges

Challenges with other locking systems	Solutions with iLOQ 5 Series
Batteries and/or cables	<b>Battery-free keys and locks</b>
High lifecycle costs	<b>The more keys/locks, the higher the savings</b>
Many physical keys and risk of key copying	<b>One digital key/smartphone securely holds all access rights</b>
High costs and risks related to lost/stolen keys	<b>Lost/stolen keys immediately blocked</b>
Complicated access rights administration	<b>Easy programming and access rights updated over the air</b>





# Device-to-device (D2D) communication

With iLOQ's D2D feature, a vast amount of data is remotely updated and quickly shared in both directions between keys, locks, smartphones, readers and the administration software platform before a lock is opened. Data includes the latest access rights, a list of blocked keys, time limitations, the latest time and audit trails. This eliminates the need for site visits to manually import or export data to locks and keys saving time and the environmental impact of excess traveling.

# State-of-the-art security

The decentralized iLOQ 5 Series is part of the digital ecosystem. It has many features that make the programming of access rights and other security-related operations more efficient and secure.

## Data security

Customer databases are located on an ISO 27001:2013-certified cloud server.

A log-in procedure (separate encryption of data) is needed for the client software installed on a customer's PC that manages the system.

Each customer has their own SQL Server database, which is completely separate from other databases and isolated from the internet (communications through a web server).

## Distributed security

A physical programming token is required for security-critical programming tasks – this is connected to the customer PC's USB port.

## Secure system architecture

All communications are protected with AES-256 encryption, and devices are securely programmed to the system using a programming token.

## Device security

Device identity is ensured by strong PKI-based (public key infrastructure) authentication.

There is mutual authentication (AES-256-encrypted) between the key and lock.

There is state-of-the-art app protection from malware and misuse.

**iLOQ Cloud**  
Highly intelligent, easy-to-use platform

**iLOQ 5 Series**  
Flexible, modifiable smart locking solution

- iLOQ S5 key
- iLOQ S5 locks
- iLOQ Online
- iLOQ S50 locks
- iLOQ S50 keys



# Smart, secure and sustainable access to all properties

iLOQ has the clear goal of ensuring a life made limitless by providing easy, efficient and secure access to everyday living and working spaces. To date, we have delivered almost 8 million digital locks and keys. Our solutions can be seen globally from the smallest apartment buildings to some of the largest and most complex utility sites.

**Solutions tested in the harshest arctic conditions for long-lasting, reliable performance**



# Improving the quality of life in residential properties

iLOQ transforms properties into more modern and smarter living environments increasing property value for building owners.

Access rights can be quickly and easily programmed and updated as residents move in and out saving time for locking system administrators.

Lost, stolen or unreturned keys can be instantly blocked, eliminating the need to change or reset locks to maintain a high level of security and reduce lifecycle costs for facility managers.

With access rights for the main entrance, the door to their apartment and all common areas programmed to one digital key or sent to iLOQ's app on their smartphone, everyday life is easier and smoother for residents.

Keys to the building can be stored in wall-mounted key tube cylinders that can be opened with a smartphone. This makes it easy for facilities companies and external service providers to get instant access (ideal in emergency situations) and they do not need to waste time picking up and returning keys.

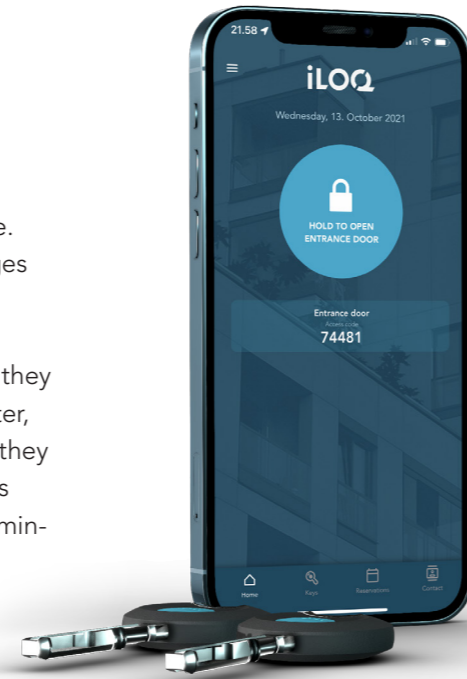




# Unlock smarter living with iLOQ HOME

iLOQ HOME is so much more than an app running on a smartphone. It is a digital access management solution that fundamentally changes the way of living in residential properties.

By removing the constraints of the traditional lock and key and how they are managed and making the locking system work harder and smarter, residents have more freedom, security and flexibility to live the way they want. And, with everything they need on their smartphone, residents can do more themselves reducing the burden on locking system administrators and boosting the value of properties for building owners.



## Ground-breaking benefits

Residents can remotely unlock the main entrance door for family members, visitors or deliveries. This increases convenience for them and reduces the need for property owners to invest in expensive video phone solutions.

Residents can book and manage common facilities in the building, making their lives easier and reducing the need for a complicated infrastructure and investment in many different platforms.

Residents can enhance their feelings of safety by quickly blocking lost or stolen keys themselves. They can order new keys and update the access rights using the near-field communication functionality on their smartphone. There's no need to go to the time and expense of contacting a locksmith.

The app contains up-to-date information about all the keys to an apartment. Residents can conveniently set up profiles and assign individual keys to, for example, specific members of their family.

In master-key systems, the app provides a comprehensive overview of who has accessed an apartment using the master key which helps to prevent unauthorized access. While, in central key systems, residents can grant access to 3rd-party service providers which is ideal if someone needs to access an apartment in an emergency situation.

iLOQ HOME has a fast return on investment. It reduces OPEX, enables new revenue streams and provides opportunities for increased equity. And any new features developed can be quickly integrated into the existing solution.



# Ensuring modern society runs smoothly

Ensuring a functioning utilities industry and reliable operation of critical infrastructure sites relies on the management of numerous premises, a vast number of locks and a huge team of employees (most commonly subcontractors). With a traditional mechanical locking system, the unknown number of keys in circulation is an administrative nightmare and a major security risk. With iLOQ's battery-free and keyless solution, only the right people have access to the right sites at the right times.

Premises are often in remote locations with little or no internet access and no external power source available. iLOQ's locks and padlocks are battery-

and cable-free; the power needed to recognize access rights and open locks comes from an NFC-enabled smartphone. Access rights are remotely programmed and sent in real time to the smartphone. Administrators have a clear view of exactly who has access to where and when. Employees don't have to carry around many keys or visit administration offices to collect and return them, reducing time and travel-related environmental impact.

With no batteries to change or exposed keyways to clean, regular maintenance is eliminated (reducing time and costs) and reliable operation is guaranteed even in the harshest weather conditions.



## Maximizing efficiency of site visits

Mechanical locking system



iLOQ's smart locking solution



## Cost-effective access management in high-volume, high-turnover properties

### Student housing

When residents constantly change, keeping access rights up to date and dealing with lost keys are major challenges. With a traditional locking system, there are large numbers of batteries to be regularly changed.

iLOQ's battery-free solution offers the flexibility and security of using a digital-key-based system, a keyless mobile solution or a combination of the two. With just

one key or a smartphone, students can open the main entrance, their apartment, laundry rooms, warehouses and even padlocks.

Access rights are always up to date and lost or stolen keys can be immediately blocked, maximizing security and minimizing administration. And, with no batteries to change, low lifecycle costs and a fast return on investment are ensured.



## Offices

Keeping access rights up to date and maintaining security are huge challenges when employees, work roles and facilities constantly change and keys are frequently lost. iLOQ's battery-free digital-key-based system, keyless mobile solution or a combination of the two increases the flexibility of access management and keeps security levels high.

Employees can use one digital key or their smartphone to access all the areas they need. Administrators can quickly and easily update access rights and block lost or stolen keys. And, with no batteries to change, low lifecycle costs and a fast return on investment are ensured.

iLOQ readers allow frequently used doors to be opened with the digital key, a tag, a PIN code or even a smartphone. Time-restricted PIN codes can be easily assigned to external users of the building.

## Hospitals

Some staff members work within one department while others constantly move around many facilities. Quick and efficient access is vital as is maintaining the highest levels of security by restricting access to unauthorized areas or people.

With iLOQ's solution, multiple sets of keys are not needed. One digital key contains all the access rights a staff member needs and these can be quickly and easily updated as needs change. Selected doors can be installed with remote-controlled lock cylinders, PIN code readers and time-controlled electronic locks, and there is easy integration with existing access-control systems, such as RFID cards.

Lost or stolen keys can be immediately blocked, while audit trails prevent or help to solve misuse. And with no batteries to change, low lifecycle costs and a fast return on investment are ensured.



## Schools and public facilities

As high levels of security are vital, traditional locking systems are often supplemented with expensive access control systems. iLOQ's flexible and secure solution provides both digital locking and a remotely controlled access management system conveniently in one package.

iLOQ readers allow frequently used doors to be opened with the digital key, a tag, a PIN code or even a smartphone. Time-restricted PIN codes are easily assigned to external users or to grant access outside of normal business hours. Staff and visitors need only one key or their smartphone to access all the relevant areas.

The solution can be expanded without heavy modifications to the infrastructure. Access rights are always up to date, lost or stolen keys can be immediately blocked, and audit trails prevent or help to solve misuse. And with no batteries to change, low lifecycle costs and a fast return on investment are ensured.



More than  
8 million digital  
locks and keys  
delivered globally





## Leading the way in sustainability

Annual savings from iLOQ's  
battery-free technology



**100,000 kg**  
of non-recyclable battery waste<sup>1</sup>



**<200,000 liters\***  
of water



**>36,000 kg\***  
CO<sub>2</sub> equivalent



**>160,000 kwh\***

### Calculation

- ~3 million (iLOQ installed base)
- 2 x AA batteries (per lock needed in non-iLOQ solution)
- 2 years (assumed battery replacement rate)
- ~23 g (average AA alkaline battery weight)
- <sup>1</sup>Company management provided assumption

\*Environmental savings from the battery-manufacturing process.

Source: Company data; expert interview; battery lifecycle assessment report (2016) 100,000 liters of water. Life cycle assessment of consumption choices: a comparison between disposable and rechargeable household batteries

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