



ecos object management

Object management of the future

The object management of the future represents a **24/7 availability** of the objects without personnel deployment.

The objects are uniquely identified, therefore the **usage** and **down times** can be determined individually for each object.

Query masks when objects are returned, ensure that defects are automatically forwarded to the technicians. **Only operational objects** will remain in the workflow.

The **operator terminals** can be integrated into the locker system at any position. They can be equipped with high-resolution capacitive touch displays of sizes 7", 10" or 12".

The **modularity** of our locker systems and the combination of classic lockers with drawers enables a particularly high use of available space with best ergonomics and operability.

Our **drawers** are electronically controlled with automatic closing and opening. This facilitates use and prevents operating errors, such as leaving a compartment open. The fundamental advantage of drawers is the clearer access to the objects. This is particularly advantageous for multiple and smaller objects in one compartment, as for example with tool management.

Our compartments can be equipped with the latest **RFID technology** so that several objects per compartment can simultaneously be identified.

Each compartment is available with **charging connections** for 5 V, 12 V or 230 V in the large lockers.



ecos system made up of lockers and drawers with 10" touch display

Workflow of the future

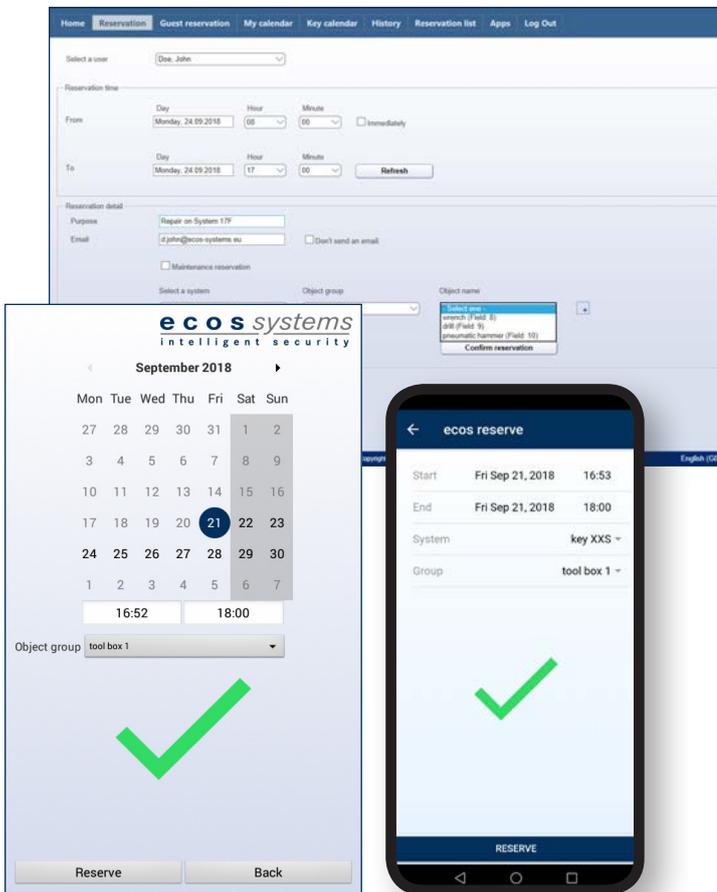
Communication via WLAN or LTE and batteries **with sufficient capacity for a full working day** of operational readiness on site make important objects highly flexible in terms of organisation.

Laptops or tools can easily be monitored.

The objects can be reserved at any time - from the workplace, on the road, but also directly at the system.

This enables a self-organizing, fully documented and easily monitored **handout process**.

In a future of **flexible workplaces** this is the only way to organize a workflow efficiently.



Input masks of our reservation module on the system, via the web and on the smartphone



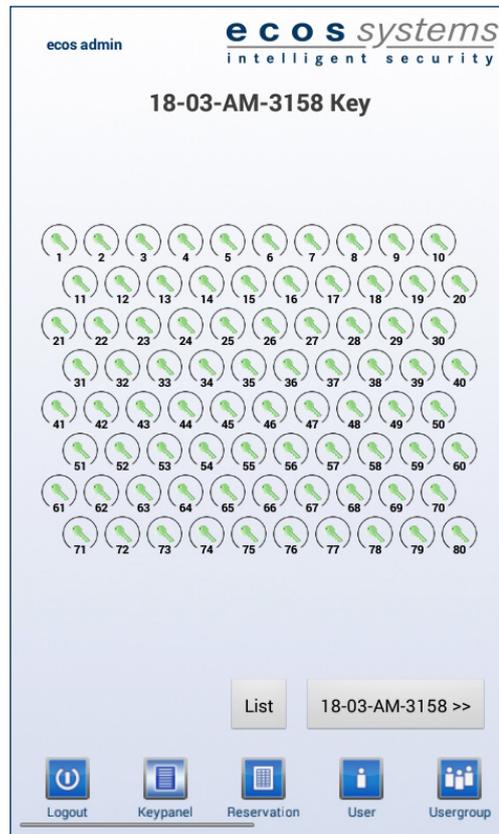
Mobile ecos drawer Drawer system with 7" terminal, RFID reader and 4M/4 drawers

Control unit

All our systems are equipped with state-of-the-art ARM processors. With Android as the operating system, the stability and future security of our object management systems is guaranteed.

All systems are stand-alone capable, but can also be managed via our web application **ecos webman**.

Apps for all common operating systems are freely available. Thus, smartphones or tablets can also be used for operation.



Subsystem image asset manager with 7" control unit - key panel



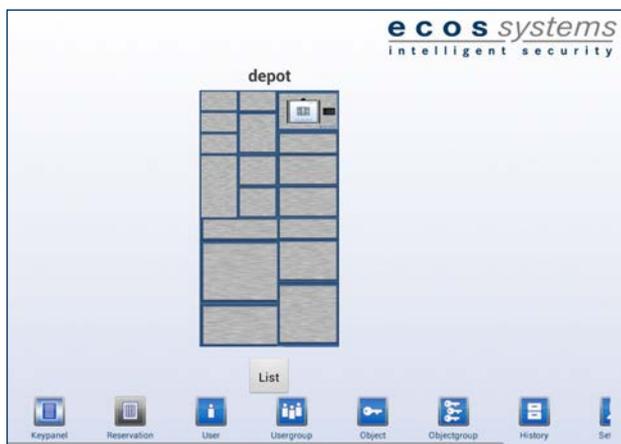
Subsystem image asset manager with 7" control unit - drawers



A user friendly interaction between man and machine is the most important factor for the acceptance of new technology.

The two graphic user interfaces show clearly the advantages of a well-structured menu. With one fingertip the selected compartment opens.

Our high-resolution color display made of Gorilla glass with capacitive touch (7" or 10") enables all known techniques from smart phones, like swiping or zooming.



System picture of the 10" control unit of the ecos depot on page 6



System picture of the 12" control unit of the ecos drawer on page 7



Asset Manager

The "asset manager" has been developed for use in small business or organizations.

Together with our software modules "time management", "reservation", "fleet management" and "administration for external objects or keys", most of your organizational problems are solved.

As a compact all-in-one system the "asset manager" controls objects as well as keys (also see our brochure "ecos key management"). All your valuable assets can be protected and controlled by one system.

This system is only available as a wall-mounted version with a depth of 250 mm.

Lockers

The **ecos depot** lockers are available either with both a stainless steel door or a polycarbonate door.

Our lockers with depths of 250 mm and 500 mm are summarised in the two tables shown.

Depots	Width block (mm)	Height block (mm)	Depth block (mm)	Inside use W x H x D (mm)	Inside use Volumen (l)
1m	270	150	250	220 x 135 x 240	7
1mx2		300		220 x 285 x 240	15
1mx3		450		220 x 435 x 240	23
2m	590	150	250	540 x 135 x 240	17
2mx2		300		540 x 285 x 240	37
2mx3		450		540 x 435 x 240	56

ecos standard lockers with a depth of 250 mm

Depots	Width block (mm)	Height block (mm)	Depth block (mm)	Inside use W x H x D (mm)	Inside use Volumen (l)
1Mx1/3	270	150	500	220 x 135 x 490	15
1Mx1/2		225		220 x 210 x 490	23
1Mx2/3		300		220 x 285 x 490	31
1M		450		220 x 435 x 490	47
1Mx2		900		220 x 885 x 490	95
1Mx3		1350		220 x 1335 x 490	144
Lx1/3	430	150	500	380 x 135 x 490	25
Lx1/2		225		380 x 210 x 490	39
Lx2/3		300		380 x 285 x 490	53
L		450		380 x 435 x 490	81
Lx2		900		380 x 885 x 490	165
Lx3		1350		380 x 1335 x 490	247
2Mx1/3	590	150	500	540 x 135 x 490	36
2Mx1/2		225		540 x 210 x 490	55
2Mx2/3		300		540 x 285 x 490	75
2M		450		540 x 435 x 490	115
2Mx2		900		540 x 885 x 490	234
2Mx3		1350		540 x 1335 x 490	353

ecos standard lockers with a depth of 500 mm



ecos depot, locker system with a 10" control unit and integrated RFID reader and 1Mx1/3-, 1Mx1/2-, 1Mx2/3-, 1M-depots and 2Mx1/3-, 2Mx2/3-, 2M-depots and Lx1/3-, Lx1/2-, Lx2/3-, L-depots

Drawers	Width block (mm)	Height block (mm)	Depth block (mm)	Inside use W x H x D (mm)	Inside use Volumen (l)	Loadweight (kg)
1m/4	270	150	250	85 x 45 x 140	1	1,0
1m/2				210 x 45 x 140	1	2,0

ecos standard drawers with a depth of 250 mm

Drawers	Width block (mm)	Height block (mm)	Depth block (mm)	Inside use W x H x D (mm)	Inside use Volumen (l)	Loadweight (kg)
L/6	430	450	500	320 x 45 x 350	5	20,0
L/3				320 x 114 x 350	13	
L/2				320 x 184 x 350	21	
2M/6	590	450	500	480 x 45 x 350	8	20,0
2M/3				480 x 114 x 350	19	
2M/2				480 x 184 x 350	31	
3M/6	910	450	500	800 x 45 x 350	13	20,0
3M/3				800 x 114 x 350	32	
3M/2				800 x 184 x 350	52	
4M/6	1230	450	500	1120 x 45 x 350	17	20,0
4M/3				1120 x 114 x 350	48	
4M/2				1120 x 184 x 350	72	

ecos standard drawers with a depth of 500 mm

On the left you can see the different models of the **ecos drawer** drawers in tabular form.

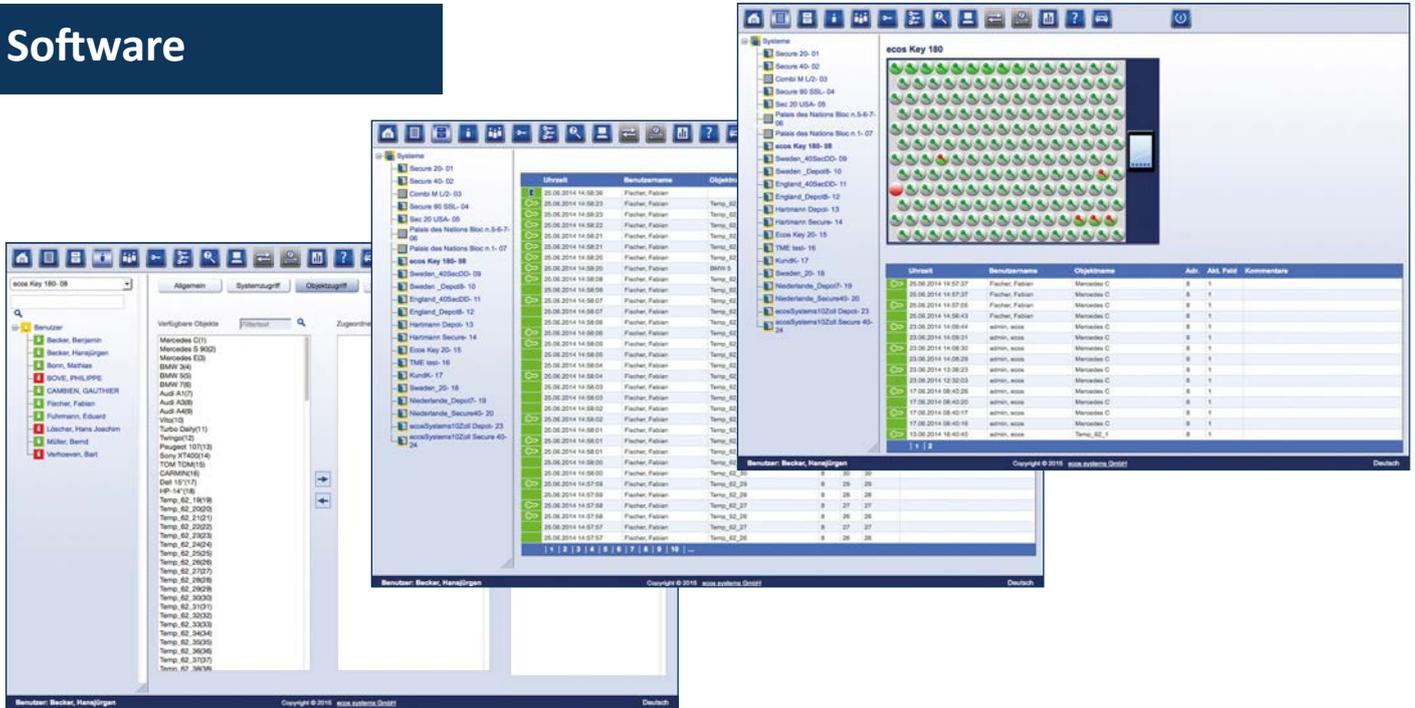
The smaller 1m/4 and 1m/2 drawers are only available in blocks of 4 or 2. Their external dimensions are identical to those of the ecos depot 1m compartments.

The larger drawers are also only available in blocks. Only the outside width varies. The height and depth are the same for all blocks. Each block can be equipped with 2, 3 or 6 drawers.



ecos drawer, system with a 12" control unit with integrated RFID reader and 1m/4, 1m/2, L/6, 2M/2, 3M/3 and 4M/3 blocks

Software



Our ecos web-based application program, “ecos webman“ enables the administration of all ecos systems, key cabinets, lockers and terminals. Using group rights for users, keys and systems make managing easy. Keys may be allocated to a determined position, or dynamically managed for random return, without a fixed return position.

The MSSQL data base is used as default. There is no limit to the number of users. Now are there charges for recurring license fees. The integration into most IT environments generally works via web services.

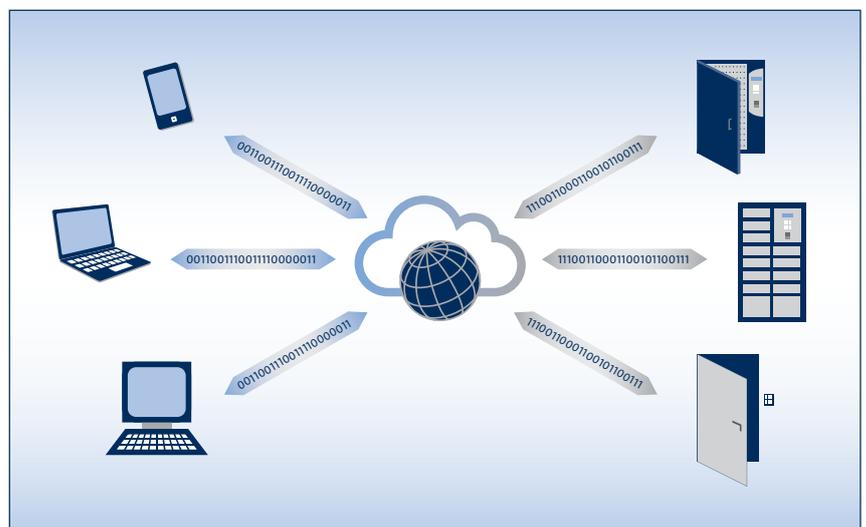
Extension modules, like reservation planning, fleet management or time & attendance, merge smoothly with existing operation processes.

Software as a Service

To keep every system up to date the ecos Software-as-a-Service (SaaS) uses the cloud.

Automatic updates and back-ups ensure the latest version of software and security of your data.

Server capacity, internal maintenance and administration are obsolete.



IT Security

Server and systems connect via your company's ethernet (LAN or WLAN), using the most sophisticated and reliable network protocols from the mobile world technology like SOAP and REST.

Using independent communication via GSM or LTE in combination with our Software-as-a-Service offers an easy to handle direct and secure connection.

The external communication between server and systems is encoded, using the most sophisticated encryption available, currently symmetrical AES with 256 Bit.

The internal communication between the main processor and the micro-processors on the CAN-bus is encoded by the elliptic asymmetrical ECC with 233 Bit.



System Security

All types of authentication methods are supported, including PIN, RFID cards, a.e. Legic, Mifare or HID. For advanced security, the latest biometric methods are available.

Combining fingerprint and finger vein readers in the "morphosmart", the highest security requirements are met. This is certified by the American FBI, the French CNIL and the German BSI for government use in their respective countries.

More than 20 different alarm notifications are available. Either on the interface as optical and acoustic warning, or as pop-ups on your terminal application, as well as automated e-mails to the person in charge. Four alarm lines can be freed up for security or police use via potential-free alarm contacts. These alarms can also be configured as pop-ups.

Variation

Wall mounting is the space-saving mounting method of choice for small systems with few compartments and a depth of 250 mm.

For larger systems with several or deep compartments of 500 mm, the system should be **standing and fixed** to the floor.

A **mounting frame** out of **stainless steel** is the elegant alternative for medium-sized specialist systems and is particularly suitable for prestigious entrance areas.

A high security version is also available with design changes, such as the stainless steel front for the small drawers in a thickness of 8 mm.



Wall system with 7" LCD- unit with 1m-drawern in the high-security version



Locker system with 10" control unit, RFID-Card reader, various L-depots and M-depots



Stainless steel mounting frame with 10" control unit, finger vein reader with various 1m- depots and drawers.

Lockers as well as drawers can be equipped with a **5 volt** or **12 volt** charging station. Charging terminals of **230 volts** are only available in lockers.

The 5 volt and 12 volt connections can be additionally monitored electronically. It is detected whether the corresponding device is connected, being charged and/or already fully charged. This ensures that only fully charged devices will be handed out.



drawer 1m/4 with cordless charging function using Qi-Standard



drawer 1m/2 with USB charging plug for small devices



drawer L/6 for protective equipment with integrated RFID detection and 12 volt charging socket



depot L with standard power socket, network connector and additional shelf

Weapon compartments

Task: All existing weapons and their ammunition are supposed to be monitored and automatically managed by a locker system. The existing armory had to be used, which was designed for only half of the actual weapons stored.

In addition, handguns should only be assigned individually to employees. Long weapons only to the members of each duty shift.

The ammunition should be stored separately from weapons and follow the same output criteria. A visual inspection should be possible.

Solution: All weapons were labeled with RFID tags. Due to the lack of space, different sizes of ecos drawers were used.

The ammunition was kept in lockers with transparent panes of the type ecos depot to allow a visual inspection.

The handguns and ammunition magazines were provided individually with access rights to the employees.

The long weapons were divided into groups of objects and assigned via group permission to multiple employees of a shift.



Mailbox system



Task: A mailbox system had to be developed with an access-protected space for the automated distribution of external post and confidential internal documents.

For safety concerns it was not allowed to use the IT infrastructure of the company.

Due to data protection requirements (postal privacy) the recipient had to remain anonymous as far as possible. His personal data was not allowed to be stored locally in the system.



Solution: Lockers were used of the product range ecos depot. The system is self-sufficient and informs the user via GSM-modem about their post.



The post office of the company or other internal staff can distribute post or other documents to the compartments and then enter the cell phone number of the recipient. The recipient will receive a SMS from the PO Box system including an access PIN, the compartment number and a message about the deposited object.



With a valid access card and the received PIN, the receiver can pick up his mail or documents at the system.



Luggage locker system

Task: In the parking garage of an airport, vandal-resistant lockers in different sizes for traveling and carry-on luggage had to be installed. Some selected compartments should have a 230 volt power supply. One compartment should even enable storing sets of golf clubs or ski equipment.

The compartments should have no individual payment units, but a central control unit that accepts coins, banknotes and later even credit cards.

Reopening the compartments should only take place centrally via barcode tickets. The use of single keys per compartment should be omitted.

The control unit should allow the use of a tariff system after time periods and days of the week.

Solution: To be safe against vandalism, lockers from our product range ecosafe were used. These are produced with a 6 mm double-sided steel door with double locking bolts that satisfy these requirements perfectly.

The control software is integrated into the corporate network, so that the monitoring and billing can be easily performed from a remote workstation.

An integrated communication unit enables direct contact with headquarters for customers with questions or problems.



Pass-through compartments

Task: In an amusement park the newest attraction, an ultramodern roller coaster, was put into operation.

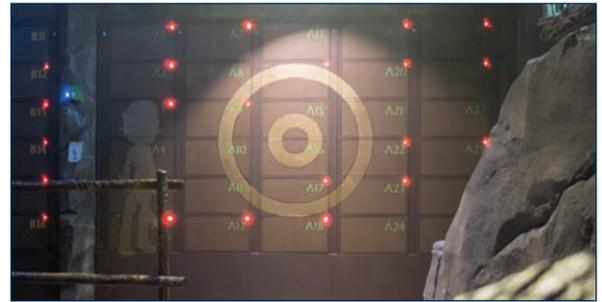
For safety reasons, the German TÜV, the Association for Technical Inspection made restrictions that no bags may be kept when riding the rollercoaster.

The customer required a solution for visitors to store their bags easily and safe. After ride, the bags have to be hand out automatically to the visitors.

Solution: The vestibule of the ride was separated into two areas with a system of 138 pass-through compartments of the type ecos depot size L-2/3. Both, the entrance area as well as the exit area were equipped with 4 barcode reading stations.

The barcode on the entrance ticket can be used to deposit the baggage in a free compartment before boarding the roller coaster. When leaving the ride at the exit area, luggage can be retrieved automatically on the opposite of the passthrough compartments.

Currently about 5,000 pieces of luggage are stored daily.



Pass-through compartments "ecos depot" of the size L-1/3 for automated document handoff.

These compartments are used for controlled and efficient receipt and return of freight forwarding documents to truck drivers.



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