



Lifts





Lift systems and maintenance services

The company presented itself in the field of lift systems in 1999, with its VTA951 control system, a replacement for the VRN type relay switchboard. The system was further developed and became known as type VTA971, specially designed to replace most types of relay switchboards installed in the Czech and Slovak Republics.

We have been cooperating with our customers since 2004 on entire deliveries of lifts as well as on organizing follow-up maintenance. Thanks to this cooperation and our endeavour to improve reliability and minimize problems during lift installations, we have designed standard lifts types for prefabricated flats modernizations. The technical details and design of these types is very important.

In 2009, we finished innovating electronic control elements enabling distributed lift control systems, which offered significant options for the remote management of lifts, directly from our service centre. Thanks to these distributed control systems, it is possible to remotely receive information about the settings and operating parameters of components from external suppliers that have been included in the control system. These include, for example, the door control unit from a Czech company called STROJON - výtahy s.r.o., and frequency inverters for drives from Frenic Lift (manufactured by Fuji, Japan) and Zetadyn4 (manufactured by Ziehl-Abegg, Germany).

BC-ELA, a new control system was introduced in 2013. This system is primarily intended to control modern lifts without machine rooms, but may also be used for lifts with machine rooms, where this control system is fitted into a standard type switchboard.

In 2015, the new BC-NELA control system was introduced.

Beta Control is currently operating a surveillance centre, whose workers process information received from individual lift applications using our developed control systems. This activity acts as a foundation for providing qualified technical support. We also have a service support server, which we use to offer obligatory lift inspection schedules and record lift documentation (el. diagrams, layout drawings, lift logbook) storage in electronic form. Such information is made available to maintenance technicians on their tablets. This system is called e-servis.

We also offer customers a connection to our centralized protection panel (CPP), which is operational 24/7 and may help during a lift defect. This service is available in the form of an actual rescue from a lift or as a mediation of the transfer of information regarding a lift alarm to selected and pre-trained building residents. Being connected to the CPP is especially beneficial when having Safe building elements installed together with the lift

Lift cabins

ART COLLECTION is Beta Control's designer range of lift cabins. Quality, functionality and an original and timeless look are the main assets of this range.

Lift cabin properties:

- scabin walls are made from slatted or panel profiles
- LED ceiling elements
- ventilation grilles with square, rectangular or round shapes, depending on cabin type
- one cabin wall is prepared to be fitted with a cabin tablet or push button element
- sufficient space for cables and terminal boxes
- cabin ceiling prepared for installation of cabin doors and railing
- front entrance moulding can be selected to suit each type of doors
- floor fitted with heavy-duty ALTRO PVC flooring in many optional designs
- optional elements:
 - mirror
 - handle
 - cabin colour
 - flooring colour
 - skirting boards

For more details, see the lift cabin catalogue.



Car operating panels and landing operating panels

When designing the lift control elements, we emphasised reliability, design and sufficient variability of the colour scheme. All control elements are fitted with vandal-proof buttons manufactured in various shapes and with various background colours.

Car operating panels

- standard cabin panels
 - standard short connection kit for fitting into prepared openings in the cabin frame
 - material: brushed stainless-steel
- monolith cabin panel
 - customized design and size
 - material: brushed stainless-steel, glossy stainless-steel, or powder coated

Cabin control options

- buttons with Braille
- Dallas reader to use chips to control the lift from the cabin
- it is also possible to equip the lift with an RFID reader for contactless chips



Car operating panels and landing operating panels

Blue Line



White Line



Lift doors

We offer lift doors that can be installed into all types of lift shafts. Fusing modern design and a perfect craftsmanship creates a timeless solution, suitable for modernizations of lifts in blocks of flats, but also for new elevators in public buildings and other commercial facilities.

Cabin doors

Automatic

- telescopic
 - two panels, three panels, width 600–1,200 mm
- central
 - two panels, four panels, width 600–1,200 mm
- BUS type
 - combined with manual shaft doors

Landing doors

Automatic

- telescopic
 - two panels, three panels, width 600–1,200 mm
- central
 - two panels, four panels, width 600–1,200 mm
- manual
 - single door – width 600–900 mm
 - double door – width 800–2,500 mm



Lift drives

We use the following drives in our lifts

- traction (geared and gearless)
- drum
- hydraulic

Traction drives

Traction drives are used to drive suspended lifts with counterweights. Maximum ride comfort is provided using high-quality lift mechanisms and frequency controlled drives.

Gearless synchronous drives

The biggest advantages of gearless lift machines are their high drive efficiency and low electric operating costs, quieter operation, and increased travel speed of the lift. We use gearless ZETATOP lift drives from well-known German manufacturer ZIEHL-ABEGG. This drive offers all the benefits of a modern synchronous motor with permanent magnets. It is compact and can be installed in many ways, even into the smallest lift shafts. The quality of travel and smoothness of this drive cannot be beaten. A certified brake mechanism can be used as a safety element preventing uncontrolled or unintentional movement of the cabin (CSN EN 81-1 + A3). Using Beta Control lifts with ZETATOP drives gives you cutting-edge technology for your lift.

Geared asynchronous drive

Advantages of machines with gears are their lower purchase costs and the simple replacement of the original drive. However, their disadvantages are their higher noise emissions and increased consumption of electricity. The drive consists of a motor, gearbox, double-acting brake and traction pulley.

Drum drives

Drum drive lifts are lifts without counterweights; the load-bearing rope is wound up on the drum of the lift machine. The advantage of this drive is that it fully utilizes all available space in a lift shaft.

Hydraulic drives

The lift power of hydraulic drives is provided by an electric pump, which feeds hydraulic oil into a direct-drive hydraulic motor which is then directly or indirectly connected to the car. Lifts with hydraulic drives are most often installed in buildings with two to six floors with a lift height not exceeding 22 meters and a travel speed of max. 0,80 m/s.



Lift shafts

We offer shafts for interior and exterior lifts.

Lift shafts are dominant elements of common areas. Their technical flawlessness and modern design are very important to us. The shaft structure is variable and may be installed into any type of building.

If the lift shaft is installed onto the facade of a building, a basic requirement of such a lift is its weather-proofing. Such an installation will make the shaft a significant architectonic element of the entire building; this is why we stress the quality of its timeless design, of even the smallest detail

Interior shafts

New steel frame

- housing from safety glass – transparent or milk glass
- most often located by the staircase area, between two flights of stairs
- welded from closed steel profiles
- two-component polyurethane paint (RAL colour chart) is used for the top coat

Modernizations of existing lift shaft

- replacement of unsuitable wire mesh or wire mesh glass with Fermacell, Cetris or Diamant boards, or with safety glass
- boards can be painted in any selected colour
- located in the space of the staircase mirror, between flights of stairs, opposite the staircase, or next to the staircase

Exterior shafts

- steel structure covered in safety glass – transparent or milk glass
- weather-proofing
- elegant solution compliant with valid standards
- safe
- modern design



Lift design types

The aim of Beta Control is to offer an ideal technical solution of lifts for every building. Based on the most frequently used lift shafts, we have developed standardized solutions, which we can quickly deliver, and which will decrease the purchase price of a new lift.

Standardized solutions are designed for masonry or panel lift shafts, as well as for lifts located in steel structures. This innovative system of standardized solutions makes it possible to install a lift into any space.

The following table shows the types of lift shafts and specifications of lifts that can be installed into them. Standardized lift solutions for individual shafts are shown as cross-sections. We offer optimal technical solutions for every building.

Dimensions:

Weight		Speed	Car	Door			Cabin dimensions			Shaft dimensions		Shaft head	Pit	Type of shaft
Max. capacity	Persons	m/s	Entrance	Width	Height	Type	Width	Depth	Height	Width	Depth			
320	4	1	one	800	2000	man.+bus	800	1145	2130	1130	1420	3005	950	1
						man.+bus	870	1250	2100	1200	1500	3610	1000	2
						man.+bus	800	1220	2130	1080	1500	4100	1200	6
						telescopic	910	900		1500	1200	4000	1200	3
375	5	1	one	800	2000	man.+bus	810	1350	2100	1200	1500	3610	1000	2
						telescopic	1060	980	2130	1500	1200	4000	1200	3
						man.+bus	800	1400	2130	1170	2100	3005	950	1
400	5	1	one	800	2000	man.+bus	1060	1120	2130	1500	1200	4000	1200	3
						telescopic	910	1200		1500	1500	3880	1365	4m
450	6	1	one	800	2000	man.+bus	810	1630	2100	1130	2030	3030	950	1
500	6	1	one	900	2000	man.+bus	1000	1470	2130	1150	2100	3030	1300	5
525	7	1	one	800	2000	telescopic	910	1500	2130	1500	1800	4000	1200	4m
675	9	1	one	900	2000	telescopic	1100	1400	2130	1600	1750	4000	1200	7
800	10	1	one	800	2000	telescopic	1095	1800	2030	1500	2400	2600	1990	4m
1000	13	1	one	800	2000	telescopic	1100	2100	2130	1800	2400	3880	1380	4v

Type of shaft:

1. mirrored staircase
2. masonry
3. masonry
4. high-rise buildings, double lifts, v – large (cargo), m – small (personal)
5. steel structure + masonry, old BOV lift, extended shaft towards French window, extended shaft towards cellar
6. masonry
7. masonry, new buildings, without machine room



Lift design types

Technical specifications:

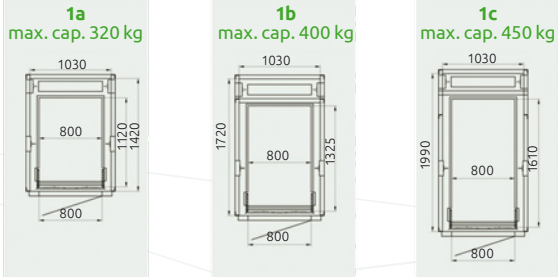
Max. capacity (kg)	320	375	400	450	500	525	675	800	1000
Number of persons	4	5	5	6	6	7	9	10	13
Speed (m/s)	1								
Sheave drive	1:1						2:1		
Max. number of stops	10	10	14	9	9	14	9	13	14
Max. lift (m)	25,2	25,2	36,4	22,6	22,6	36,4	22,6	33,4	36,4
Number of entrances	one								
Control system	BC ELA, NVTA								
Switchboard	in the control room, in the frame of (beside) the shaft doors of the last stop								
Cabin type	steel self-supporting								
Cabin decorations	customizable								
Door type	manual + automatic bus or automatic telescopic								
Door width (m)	800			900		800	900	800	
Door height (m)	2000								
Machine	synchronous gearless machine with permanent magnets								
Drive	controlled by frequency inverters with a variable frequency (VVVF)								
Sheave diameter (mm)	210 to 240								
Number of starts per hour	180								
Motor type	200.15	200.20	200.20	200.20	200.30	200.30	200.40	200.20	200.30
Rated input (kW)	3,3				4,8		7,5		
Power input (kW)	2,1	2,5	2,6	2,9	3,3	3,4	4,4	5,5	6,9
Voltage (V)	400								
Stopping accuracy (mm)	± 3								
Rope diameter (mm)	6								
Number of ropes	5	6	6	7	7	8	9	6	9



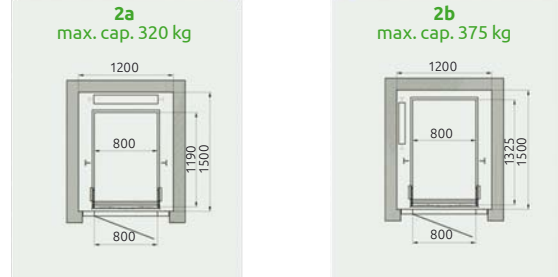
Lift design types

Table of standardized solutions:

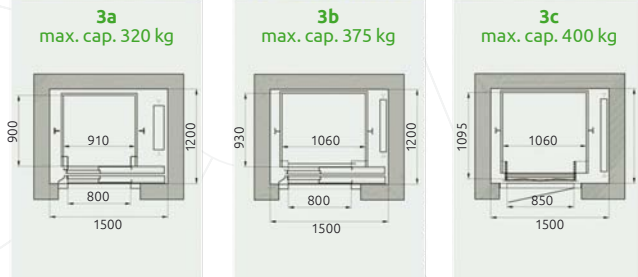
TYPE OF SHAFT 1



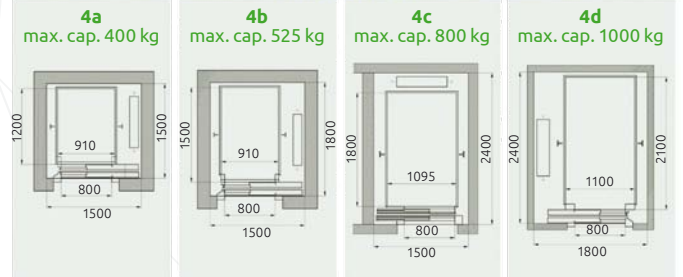
TYPE OF SHAFT 2



TYPE OF SHAFT 3



TYPE OF SHAFT 4



TYPE OF SHAFT 5, 6, 7



Beta Control lift control systems

Beta Control began developing as well as subsequently manufacturing lift control systems, control panels, emergency signalization and other electronic elements for operating lifts in 1995.

When developing our products, we aim to keep our customers satisfied, whether they are service organizations, or the end users of our lifts. In order to reach this goal, we emphasise the following criteria:

Safety

We only use components from reputable suppliers with guaranteed quality control systems. The design, development and manufacturing is done by our employees who share their expert experience with our customers. We do not compromise quality during development or manufacturing stages.

Responsibility

One of the main development goals of our products is to decrease energy demands, which means savings in electricity, operating costs and environment.

Customer support

A reasonable price policy, timely deliveries in 100% quality, the ability to create bespoke solutions, to quickly develop customer required functions, and technical support.

Efficiency

Easily adjustable intelligent control systems with minimum installation and setup requirements, minimizing the possibility of faults during installation and guaranteeing long-term system reliability.

New functions

We place great emphasis on the continual development and improvement of our products, while using cutting-edge technologies to do so. E-servis takes advantage of the on-line monitoring features of our systems, while the connection of the system with access systems in blocks of flats and many more new functions increase the levels of comfort and safety for the users of our products.



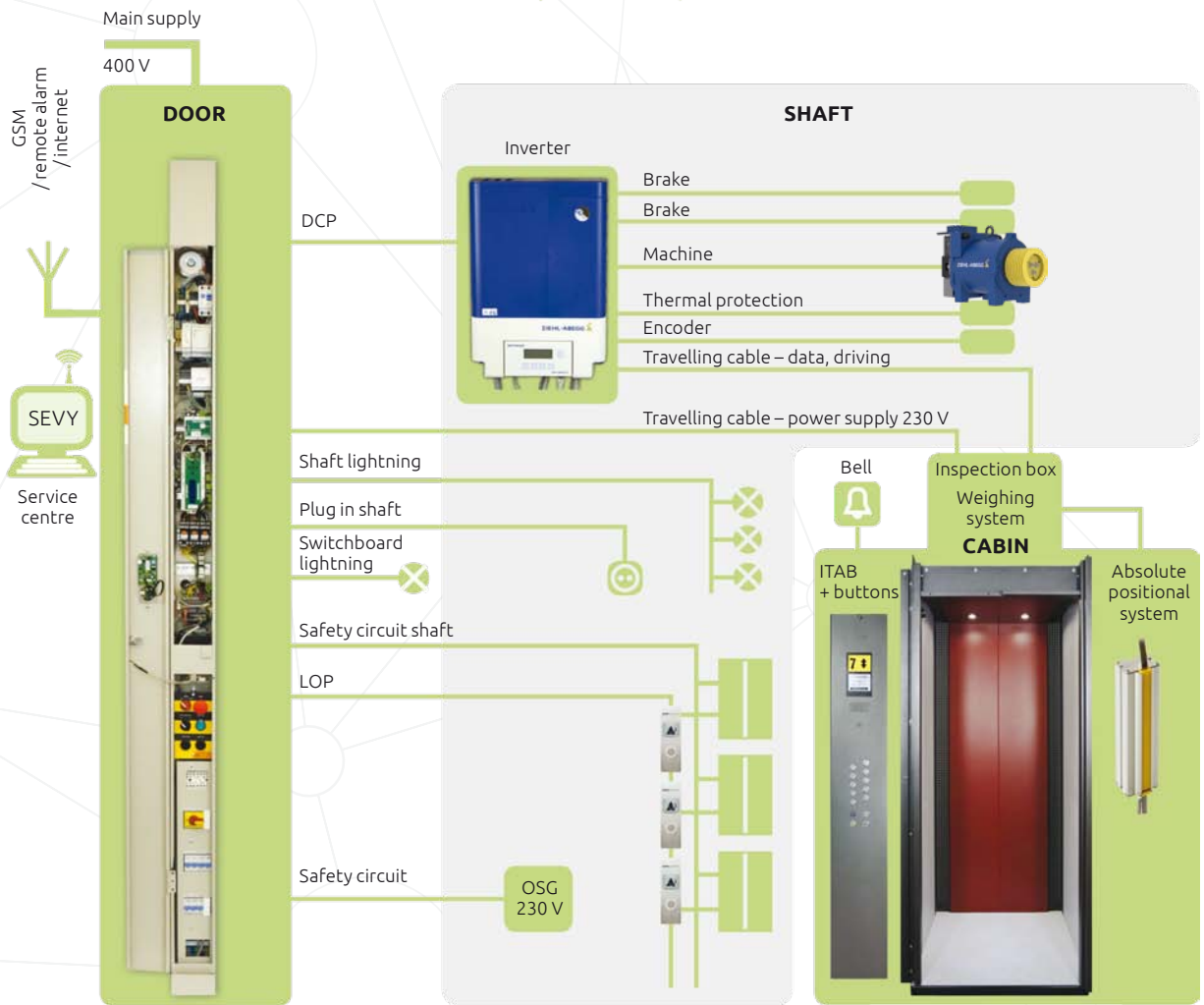
Lift control system BC-NELA



The new BC-NELA lift control system represents a comprehensive set of HW and SW products for controlling, monitoring and managing lifts. This is a state-of-the-art system for lift management, emphasising maximal reliability and operating efficiency.

Key properties:

- EN 81-20
- simple and fast installation
- comfortable setup
- komfortní nastavování
- versions with or without contactors, depending on the type of DCP protocol controlled inverter
- up to 64 stops; speed up to 4 m/s



Description of basic BC-NELA components

Kk Webmon

The lift control unit communicates with call buttons, car control electronics, and connects to the centre via GPRS or Ethernet (Kk Webman application). It collects requirements from call buttons and the cabin panel, processes them in compliance with its programming and sends commands to the VTA-CAN drive control unit. It accepts commands from the centre to adjust parameters and sends diagnostic and operating data back. The Kk Webmon lift control unit is, in the version without a machine room, located in the door frame, and, in its version with machine room, in the switchboard.



Lift drive inverter

The used Frenic Lift and Zetadyn frequency inverters control the gearbox with an asynchronous drive or a gearless synchronous drive.

Asynchronous motors may control inverters using pseudo-vector commands (without an encoder) or directly via vector commands (with an encoder).

In the version without a machine room, the drive inverter of the lift is located in the shaft.

FRENIC LIFT

An exceptionally robust inverter with a high overload capacity, developed specifically for lift systems.



ZETADYN 4

A inverter suitable for installation into switchboards or onto a wall in a machine room or lift shaft. This makes it possible to operate lift drives without contactors.



ITAB III button panels

The ITAB III car control unit detects selections from the cabin button panel, controls position signalization, confirms selections and car lighting, and automatically controls doors.

Test run box

Separate controls for test runs, STOP and bell buttons.

Pitbox for pits

Combined controls for shaft lighting, STOP switch and 230 V power point.



Emergency lift signalization

Kk Cemol (GSM)

Emergency signalization from the lift car to the monitoring centre, or to the mobile phone of the emergency unit via GSM. In the Czech Republic, a special T-Mobile SIM card may be delivered for use with Beta Control lift applications.

Ateus 2N (land line, in CZ – JTS)

A communication module for a landline. It is usually used in public buildings with a permanent gate service, where the landline is connected into the switchboard.

BC-ELA.RC

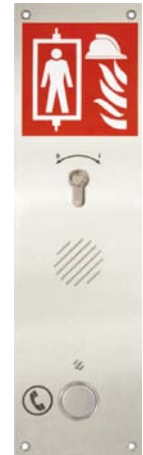
Local lift service communication (machine room, cabin roof, pit).

BC-FFF.PPP

Communication between the cabin and an assigned landing during fire.

Shaft components

Caller buttons with cables and connectors, safety circuits (STOP buttons, doors, OR, etc.), and shaft lighting.



Lift backup sources

- Emergency signalization backup.
- Emergency rescue signalization backup.
- Emergency backup for moving to landing during blackouts.
- Lift evacuation backup.

Kk Webrman

An SW application running on a server located in the centre, available through the Internet, which deals with monitoring the reliability and safety of lift operations (user and service diagnostic data), processes alarm events (emergency signalization, defects), and prepares reports for technical support and user and maintenance diagnostic reports.

SEVY

An SW application running on the Beta Control server dealing with organizing the maintenance of lifts compliant with valid standards in the Czech Republic.

Other components

Access systems, secured switchboards.



E-servis

E-servis is a set of outputs from electronic applications, which makes it possible for the head of lift maintenance or a maintenance technician in charge to access information about the quality of the lift operation, maintenance inspection history or any unauthorized tampering with the lift systems. Thanks to e-servis, the lift owner can easily access inspection logs and operating data.

The e-servis service is provided based on data that is provided by the Kk Webrman and SEVY applications.

Kk Webrman

- collects information from connected lifts
- access into the user environment via a login (user name, password)
- an optional e-mail dispatch if a lift event occurs (information, warning, error messages, defects)
- the head of maintenance has an overview of lift defects on his mobile phone before the defect is reported by a customer
- optional reporting of collected data:
 - an overview of lifts with repeated problems – suitable when dealing with maintenance technicians who, during routine inspections, may preventively check potential defect causes
 - an event overview for specific lifts – an easier and more operational search for dynamic defects, checks of maintenance events
 - an overview of defect frequency during the last 3 months – the maintenance technician has an overview, of which of the assigned lifts has had a defect since its last expert inspection
 - an overview of rescues within a given period of time
 - an overview of movement onto each floor, or the use of specific users (VIP lifts)
 - an overview of the use of the lift during specific hours

SEVY

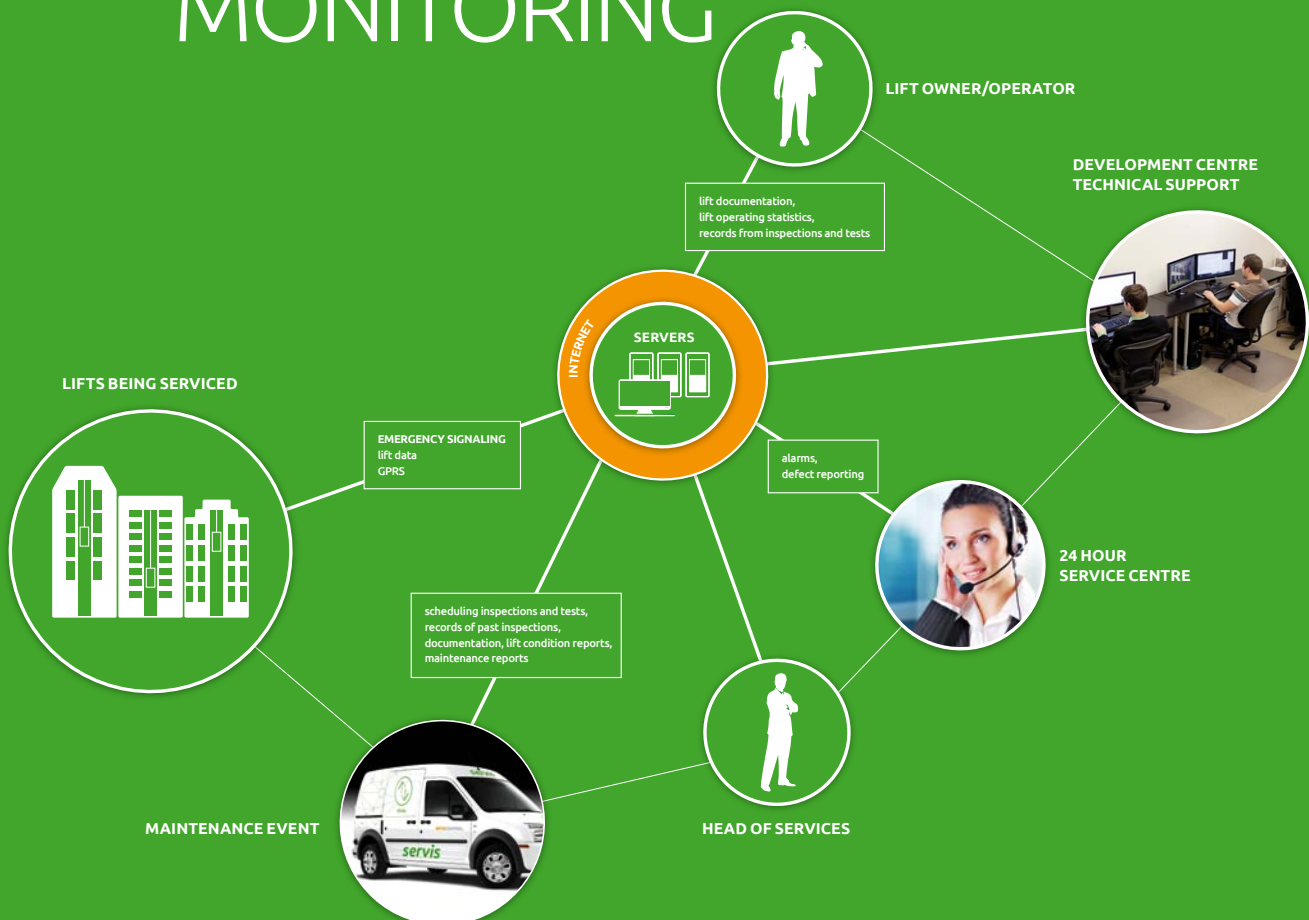
- access to the user environment via a login (user name, password)
- helps divide the lifts between individual technicians and their free capacity
- plans lift inspections
- makes it possible to maintain inspection records and reports of lifts in maintenance
- makes it possible to store lift documentation (lift logbook, wiring documentation, layout drawings) and store the contact information of the person responsible for the lift
- time filtering of data – weeks, months, etc.
- filters lift data – all lifts, specific lift, lift with frequent defects, etc.
- lift data may be viewed on a smart phone or tablet
- customer access to lift information via internet or e-mail



Basic agenda

- an address book – addresses of installed lifts, operators and lift owners
- lift database – addresses of lift installations, basic lift information – lift information, documentation, the person responsible, maintenance technician, the inspection technician, and the inspection schedule
- records – prescribed records of operation and expert inspections, expert and inspection tests, who did them and when, discovered defects, and solutions
- reports – generating reports of undertaken inspections and tests in a selected period
- offers – lists of issued offers, filtered by the offer source and the date of sending
- repairs – repair records, may be filtered, e.g. repairs of defects reported by customers, repairs of defects discovered during inspections, etc. Every defect includes information about who reported it, a defect description, its solution including materials used, the name of the maintenance technician who fixed the defect and how long it took him. The agenda also records planned and actual repair dates.

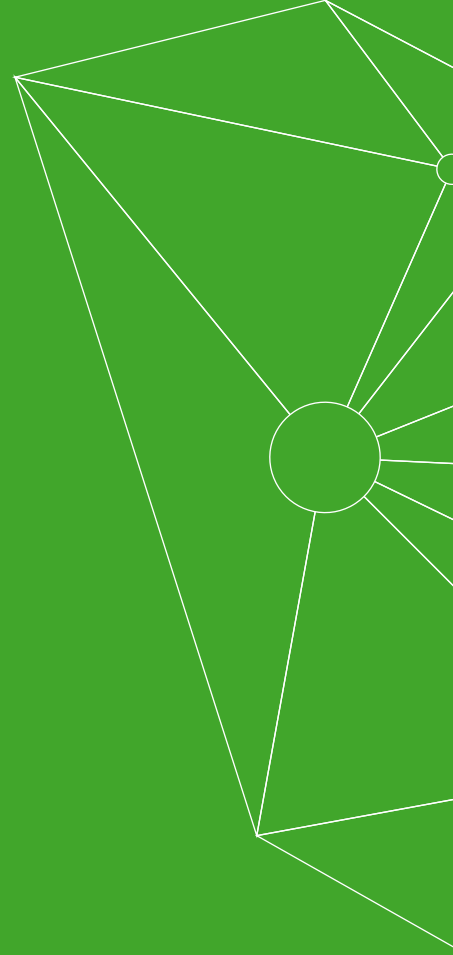
E-SERVIS AND LIFT MONITORING



References







Beta Control s.r.o.

Černého 829/58, 635 00 Brno-Bystrc, Czech Republic
IČ: 60696052, DIČ: CZ60696052

Telephone: +420 546 223 491, +420 515 511 201 (reception desk, operator)

Fax: +420 546 223 470

Website: www.betacontrol.cz

Beta Control LLC

50 Davids Drive Hauppauge, NY 11788 USA

Website: www.betacontrolusa.com



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