

Technical and organizational measures (TOM)

In accordance with Art. 32, section 1 of the GDPR for controllers (Art. 30 Section 1, G) and processors (Art. 30 section 2, G)

Company:

belboon GmbH
Weinmeisterstraße 12-14
10178 Berlin

1. Pseudonymization / Anonymizing

The processing of personal data in such a way that the data cannot be attributed to a specific person without any additional information, as long as this additional information is dealt with in a particular way and specific technical and organizational measures exist:

1.1. IP-Adresses

- IP addresses are anonymized before they are processed and saved by anonymizing the last 8-bits of type Ipv4 IP addresses and the last 80 bits of Ipv6 IP addresses. The events are then processed. Using this process, IP addresses are no longer personal data
- Please also see attachment 1 for the TOMs of our new technical service provider, Ingenious Technologies.

2. Encryption

2.1. HTTPS-encryption

- The belboon website and customer log-in areas are automatically encrypted using HTTPS encryption
- The advertiser conversion code is HTTPS compatible
- Publishers can also integrate a HTTPS code for their creatives
- Data is transferred using an SSL encryption (SHA256) when communication occurs via HTTPS
- In addition, please also see attachment 1 in the TOMs of our technology provider, Ingenious Technologies.

2.2. Password encryption (Customer platform)

- All customer platform passwords are saved in a hashed form using a „Salts“ mechanism
- In addition, please also see attachment 1 in the TOMs of our technology provider, Ingenious Technologies.

2.3. Hard drive encryption (Laptops)

- All hard drives on staff laptops are protected with a HDD password which is embedded on the hard drive

3. Data Confidentiality

3.1. Personal access control

These are measures which are appropriate to prevent unauthorized persons from access to data processing centers which are used for processing or using personal data. Measures for access control can include building or room security – including automatic access systems, use of chip cards and transponders, control of access using a porter service and alarm systems. Server, telecom systems, network technology and similar systems are protected in locked server racks. In addition it's advisable to support access control using organizational measures (e.g. workplace instructions which ensure that the workplace is correctly secured)

- Manual locking system
 - Doorbell system with camera and voice communication
 - Key list
 - Care when selecting a cleaning service
 - Chip-card with PIN for the server center
 - Additional security locks on the server racks of the server center
 - Video surveillance of the server center
 - Logging all visitors to the server center
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- In addition, please also see attachment 1 in the TOMs of our technology provider, Ingenious Technologies.

3.2. Electronic access control

These are measures which are used to prevent unauthorized persons from accessing electronic data processing systems. Electronic access controls prevent the use of these systems by unauthorized persons. Some examples include boot-passwords, user recognition with passwords for operating systems and software products, screensavers with passwords, the user of chip cards in order to log in and the use of callback measures. Moreover, organizational measures can also be used to prevent unauthorized persons from viewing restricted information (e.g. requirements when setting up monitors, provision of information for users when choosing a "good" password)

- Login with user name and password
- Antivirus Client / Server
 - Server: Kaspersky Security Center 10.1.249
 - Clients: Kaspersky Endpoint Security 10 for Windows
- Firewall

- VPN for remote access to finance systems (LANCOM VPN 3.02)
- VPN for remote access and data center (OpenVPN, AES 256)
- Encryption of laptops
- Management of user permissions
- BIOS protection (separate password) to protect changes to the configuration of each device
- Central allocation of passwords
- Allocation of user profiles
- General data protection guidelines
- Manual desktop security
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- In addition, please also see attachment 1 in the TOMs of our technology provider, Ingenious Technologies.

3.3. Administrative access control

Measures that ensure that that only those personell with appropriate permissions can access and use data processing systems and that personal data whilst being processed, used or saved cannot be copied, changed or deleted by unauthorized persons. Administrative access control can be ensured by appropriate permission concepts which allow for a differentiated access to data. This includes a differentiation of the content of data as well as the various access functions to the data. In addition, control mechanisms and responsibilities are defined in order to ensure that permissions are managed and documented in an appropriate way to ensure they are kept up to date (e.g. during the hiring process, change of working place and when ending the working relationship). There should be special attention paid to the role and responsibilities of administrators

- Introduction of a permission concept
- File shredder
- Minimal number of administrators
- Management of user rights by the administrator
- In addition, please also see attachment 1 in the TOMs of our technology provider, Ingenious Technologies.

3.4. Seperation Control

Measures that ensure that data which is gathered for various uses is processed separately. This can be ensured through logical or physical separation of data

- Separation of a live and test environment
- Physical separation or systems, databases, data storage
- Appropriate applications for multiple clients

- Management of the permission concept
- Define database rights

- In addition, please also see attachment 1 in the TOMs of our technology provider, Ingenious Technologies.

4. Integrity

4.1. Transfer protocols

Measures that ensure that personal data cannot be read, copied, changed or deleted by unauthorized persons whilst the data is electronically transferred or transported and which ensure that the stages that personal data is transferred can be defined and monitored. To ensure that confidentiality is maintained during electronic data transfer, such measures as encryption technologies and virtual private networks can be used. Measures for data transport or data movements include transport containers with locking mechanisms and rules for data protection compliant disposal of data storage

- Use of a VPN
- Use of encrypted connections (https, SSH)

- In addition, please also see attachment 1 in the TOMs of our technology provider, Ingenious Technologies.

4.2. Data input protocols

Measures that can determine whether and by whom personal data has been entered, changed or deleted in data processing systems. Data input protocols take place through a correct logging on various levels (e.g. operating systems, network, firewall, database, applications). It should be defined which data should be logged and who has access to this log and by whom and for what reason or at which timepoint it should be checked whether data should be kept and when a deletion of the logs should take place

- Technical logging of the entry, changes and deletion of data in the data center
- Viewability of entry, changes and deletion of data by individual users (not user groups) in the data center
- Assigning rights for entering, changing and deleting data using a permission concept

5. Availability, capacity and retrieval

5.1. Availability protocol

Measures that are appropriate and ensure that personal data is protected against accidental damage or loss. This could be measures such as a separate power source, climate control, fire protection, data security, safe use of data media, virus protection, RAID systems, backups etc.

- Fire hydrant in the office
 - Fire and smoke alarm system in the data center
 - External monitoring of temperature and humidity
 - USV
 - Climate controlled server room
 - Video monitoring of the data center
 - RAID system hard disc backups
 - Alarm system in the sever room
 - Security control
 - Taking care of backups
 - No connections to utilities above the server room or data center
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- In addition, please also see attachment 1 in the TOMs of our technology provider, Ingenious Technologies.

6. Use of regular monitoring, appraisal and evaluation of the effectiveness of technical organizational measures

6.1. Data protection management

- External data protection officer
- Regular employee training (at least once per year)
- Organization is in accordance with article 13 and 14 of the GDPR
- Central documentation of all processes
- Monitoring of the TOMs at least once per year

6.2. Incident-Response-Management

- Firewall
- Use of SPAM filters
- Protection of the website using DDOS protection (Cloudflare)
- Use of virus scanners

- In addition, please also see attachment 1 in the TOMs of our technology provider, Ingenious Technologies.

6.3. Outsourcing controls

Measures that ensure that data which is transferred to third parties can only be used in accordance with the service they are providing to the company. This can include the implementation of data and cooperative structures at their location or using external measures. As long as an external person is providing a service the following points should be followed:

- Check all documentation of the third party for their security measures
- Select standard service providers in advance
- Selection of service providers and due diligence (relating to data protection, GDPR compliance and data security)
- Spot checks should be made to ensure that data protection is maintained

Attachment 1

Technical and organisational measures of our new affiliate platform technology provider

Ingenious Technologies AG
Französische Straße 48
10117 Berlin
Deutschland

in accordance with the new Section 64 (3) BDSG.

The Processor (Processor) gives an assurance to the Controller (Controller) that it has taken the following technical and organisational measures under the new Section 64 (3) BDSG and the pertinent Annex:

1. Access control

Denial of access by unauthorised persons to processing facilities with which the processing is carried out.

The application servers of the Processor are hosted exclusively in the computer centres of the respective cloud services provider in the territory of the European Union; accordingly, the storage and processing of personal data is carried out exclusively in the territory of the EU. The physical access to the facilities with which personal data is processed is restricted by the respective cloud services provider exclusively to named authorised persons, so that unauthorised persons are denied access to IT systems and data processing facilities.

In the cloud, the Processor uses both *Platform as a Service (PaaS)* and also *Infrastructure as a Service (IaaS)*.

For Platform as a Service (PaaS):

The cloud provider carries out regular system updates and provides patches on the underlying physical and virtual machines.

For Infrastructure as a Service (IaaS):

The Processor carries out regular OS updates and security updates on all virtual machines of the cloud IaaS.

Description of the access control system:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Alarm system | <input checked="" type="checkbox"/> Protection of building shafts |
| <input checked="" type="checkbox"/> Automatic access control system | <input checked="" type="checkbox"/> Chip card/Transponder lock system |
| <input checked="" type="checkbox"/> Lock system with code lock | <input checked="" type="checkbox"/> Manual lock system |
| <input type="checkbox"/> Biometrical access barriers | <input checked="" type="checkbox"/> Video surveillance of the entrances |
| <input checked="" type="checkbox"/> Photo-electric barriers / Motion sensors | <input checked="" type="checkbox"/> Security locks |
| <input checked="" type="checkbox"/> Regulation of keys (Issue of keys etc.) | <input checked="" type="checkbox"/> Identity check by the porter / at reception |
| <input checked="" type="checkbox"/> Logging of visitors | <input checked="" type="checkbox"/> Careful selection of cleaning personnel |
| <input checked="" type="checkbox"/> Careful selection of security staff | <input checked="" type="checkbox"/> Duty to carry passes |

2. Data media control

Prevention of the unauthorised reading, copying, altering or erasure of data carriers.

The data is stored in logical volumes; no physical transport of these volumes takes place since the application infrastructure is operated completely by the cloud services provider. For the connection from the office to the computer centre, a VPN connection is used (encryption: AES 256). The transmission of personal data between the back end and the user UI is carried out using an SSL encryption (minimum encryption allowed: TLS 1.0). The storage of non-encrypted personal data in separate application modules takes place in one pseudonymized form, so that the assignment of data to persons can only be made over the Reference IDs. The Processor's IT administrators have no access to stored personal data since the individual data sets are encrypted through the application logic and can only be decrypted again using the application logic.

Description of the data carrier control system:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Management of the rights by the system administrator | <input checked="" type="checkbox"/> Forwarding of data in anonymised or pseudonymised form |
| <input checked="" type="checkbox"/> Number of administrators reduced to the "necessary minimum" | <input type="checkbox"/> In the case of physical transport: secure transport containers / packaging |
| <input checked="" type="checkbox"/> Preparation of an authorisation concept | <input type="checkbox"/> In the case of physical transport: careful selection of transport personnel and vehicles |

- | | |
|---|--|
| <input checked="" type="checkbox"/> Password guidelines, including password length, change of password | <input checked="" type="checkbox"/> Encryption / password protection of data carriers in laptops / notebooks |
| <input checked="" type="checkbox"/> Encryption of data carriers | <input checked="" type="checkbox"/> Secure storage of data carriers |
| <input checked="" type="checkbox"/> Physical erasure of data carriers prior to re-use | <input checked="" type="checkbox"/> Proper destruction of data carriers (DIN 32757) |
| <input type="checkbox"/> Use of document shredders and service providers (as far as possible with privacy seal) | <input type="checkbox"/> Logging of the destruction |

3. Storage control

Prevention of the unauthorised input of personal data and of the unauthorised perusal, alteration or erasure of stored personal data.

The issue and alteration of the access rights for the Processor's application administrators is carried out by the role and rights management in the application. The Processor's IT administrators have no access to stored personal data since the individual data sets are encrypted by the application logic and can only be decrypted once more by the application logic. The physical storage of the data is carried out in the cloud on the logical storage units, so that the data is thereby fragmented and split between several physical drives. For the purpose of reading, the data fragments will be recompiled by the software layers.

Description of the storage control system:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Fragmentation of the data upon storage | <input checked="" type="checkbox"/> Encryption of data carriers |
| <input checked="" type="checkbox"/> Authentication by user name / password | <input checked="" type="checkbox"/> Encryption/password protection of data carriers in laptops / notebooks |
| <input type="checkbox"/> Authentication using biometric methods | <input checked="" type="checkbox"/> Allocation of user profiles to clients |

4. User control

Prevention of the use by unauthorised persons of automated processing systems with the aid of facilities for data transmission.

The Processor's IT infrastructure is located entirely in the cloud. The IT administrators only have access via personal asymmetrical RSA keys (2048 bits); the keys are additionally protected with individual passwords. The log-ins of the IT administrators on the servers are recorded. Each issue of or change to the access rights is made in accordance with a dual control principle and is recorded. The necessity for users to have access rights is regularly

reviewed, every 90 days. The off-boarding process ensures that user accesses are promptly revoked when they leave the company. The user IDs are unambiguous and individual. The passwords have at least 8 characters and must contain numerals, special characters and also small and capital letters. The passwords must be changed after 90 days. In the password history, the last 6 passwords will be stored. Following an incorrect entry 3 times in a row, the account will be automatically blocked.

Description of the user control system:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Allocation of user profiles to IT systems | <input checked="" type="checkbox"/> Administration of the rights by the system administrator |
| <input checked="" type="checkbox"/> Authentication by user name / password | <input type="checkbox"/> Authentication using biometric methods |
| <input checked="" type="checkbox"/> Password guidelines, including password length, change of password | <input checked="" type="checkbox"/> Use of VPN technology |
| <input checked="" type="checkbox"/> Logging of accesses to applications, in particular in connection with the input, alteration or erasure of data | <input checked="" type="checkbox"/> Use of antivirus software |

5. Access control

Guarantee that the persons authorised to use an automated processing system only have access to the personal data covered by their access authorisation.

The monitoring of the authorisation concept at the application level is the responsibility of the Controller. The necessary UI for the management of the roles and the access rights will be provided by the Processor. Amendments are to be logged. The issue and alteration of the access rights for the Processor's application administrators will be carried out by the same role and rights management in the application.

Description of the access control system:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Preparation of an authorisation concept | <input checked="" type="checkbox"/> Management of the rights by application administrators |
| <input checked="" type="checkbox"/> Number of administrators reduced to the "necessary minimum " | <input checked="" type="checkbox"/> Password guidelines, including password length, change of password |
| <input checked="" type="checkbox"/> Logging of accesses to applications, in particular in relation to the input, alteration and erasure of data | <input checked="" type="checkbox"/> Client separation |

6. Transmission control

Guarantee that it is possible to check and establish to which points personal data is transferred or provided or can be transferred or provided with the aid of data transmission facilities.

No data is passed on, since the infrastructure is operated entirely at the cloud provider. For the connection from the office to the computer centre, a VPN connection is used (encryption: AES 256). The transmission of personal data between the back end and the user UI is carried out using an SSL encryption (minimum encryption allowed: TLS 1.0). The storage of non-encrypted personal data in separate application modules takes place in one pseudonymized form, so that the assignment of data to persons can only be made over the Reference IDs.

Description of the control of onward transmission:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Provision of dedicated circuits and VPN tunnels | <input checked="" type="checkbox"/> Forwarding of data in anonymised or pseudonymised form |
| <input type="checkbox"/> E-mail encryption | <input type="checkbox"/> Preparation of an overview of regular retrieval and transmission processes |
| <input type="checkbox"/> Documentation of the recipients of data and of the time periods of the planned provision and agreed erasure periods | |

7. Input control

Guarantee that it is retrospectively possible to investigate and ascertain which personal data has been entered or altered in automated processing systems at which time and by whom.

The alterations are logged in the same database in which the data to be altered is also stored. Thus, the same rules apply for the log data as for the data itself. The log files of the application servers do not leave the protected network and are erased after 30 days. Only the Processor's IT administrators have access to the protected network. Access is gained via the asymmetric RSA system with a 2048 bit key length (individual keys).

Description of the input control system:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Logging of the entry, alteration and erasure of data | <input type="checkbox"/> Preparation of an overview showing which data can be entered, altered or erased using which applications |
|--|---|

- Traceability of the entry, alteration or erasure of data through individual user names (not user groups)
- Retention of forms from which data has been transferred to automated processes
- Grant of rights for the entry, alteration or erasure of data on the basis of an authorisation concept

8. Transport control

Guarantee that the confidentiality and integrity of the data is protected both in the transmission of personal data and also in the transport of data carriers.

No data or data carriers are transported, since the infrastructure is operated entirely at the cloud services provider. For the connection from the office to the computer centre, a VPN connection is used (encryption: AES 256). The transmission of personal data between the back end and the user UI is carried out using an SSL encryption (minimum encryption allowed: TLS 1.0). The storage of non-encrypted personal data in separate application modules takes place in one pseudonymized form, so that the assignment of data to persons can only be made over the Reference IDs.

Description of the transport control system:

- Provision of dedicated circuits and VPN
- Forwarding of data in anonymised or pseudonymised form
- E-mail encryption
- Preparation of an overview of regular retrieval and transmission processes
- In the case of physical transport: careful selection of transport personnel and vehicles
- During the physical transport: secure transport containers / packaging

9. Recoverability

Guarantee that the systems used can be recovered in the event of any failure.

Regular back-ups of the data will be prepared. The back-ups will be stored in the same protected network in which the data itself is processed. The physical storage of the back-ups is carried out in the cloud environment on the dedicated logical storage units.

Description of the recoverability system:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Uninterruptable power supply (UPS) | <input checked="" type="checkbox"/> Air conditioning facilities in server rooms |
| <input checked="" type="checkbox"/> Equipment for the monitoring of temperature and humidity in server rooms | <input checked="" type="checkbox"/> Protected multiple mains sockets in server rooms |
| <input checked="" type="checkbox"/> Fire and smoke alarm systems | <input type="checkbox"/> Fire extinguishers in server rooms |
| <input checked="" type="checkbox"/> Alarm signal in the case of unauthorised access to server rooms | <input checked="" type="checkbox"/> Preparation of a back-up & recovery concept |
| <input checked="" type="checkbox"/> Testing of data recovery | <input checked="" type="checkbox"/> Preparation of an emergency plan |
| <input checked="" type="checkbox"/> Retention of data back-ups in separate logical storage units | <input checked="" type="checkbox"/> Server rooms not located below sanitary facilities |

10. Reliability

Guarantee that all functions in the system are available and that any malfunctions arising are reported.

The IT infrastructure and the functionality of the application are permanently monitored at several levels. In the case of faults, qualified staff are alerted. Faults are remedied in accordance with the emergency plan.

Description of the reliability system:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Monitoring of the IT infrastructure and of the application at several levels | <input checked="" type="checkbox"/> Fire and smoke alarm systems |
| <input checked="" type="checkbox"/> Alarm given by e-mails and SMS | <input checked="" type="checkbox"/> Equipment for the monitoring of temperature and humidity in server rooms |
| <input checked="" type="checkbox"/> Preparation of an emergency plan | <input checked="" type="checkbox"/> Server rooms not located under sanitary facilities |

11. Data integrity

Guarantee that personal data stored cannot be damaged through malfunctions of the system.

In the application logic, extensive rules are implemented to check and guarantee the data integrity. In the database, data integrity is, inter alia, ensured through normalisation concepts and constraints.

Description of the data integrity system:

- Rules for verifying the data when entered and when any changes are made
- Constraints on database objects
- Data normalisation

12. Commission control

Guarantee that personal data which is processed in commission can only be processed in accordance with the instructions of the Controller.

The selection of sub-processors is to be made with the greatest care; the processing of the data is carried out on the basis of the contract with the Processor in accordance with Art. 28 General Data Protection Regulation.

Description of the commission control system:

- Selection of the Processor under aspects of care (in particular in relation to data security)
- Previous examination of the security measures taken by the Processor and documentation of the same
- Written instructions to the Processor (e.g. by data processing contract)
- Imposition of an obligation on the staff of the Processor to observe data secrecy
- Processor has appointed a data protection officer
- Destruction of data following the end of the commission must be ensured
- Effective control rights agreed vis-à-vis the Processor
- Ongoing monitoring of the Processor and its activities

13. Availability control

Guarantee that personal data is protected against destruction or loss.

The back-ups are stored in the same protected network in which the data is also processed. No data carriers leave the protected network. The physical storage of the data is carried out in the cloud on the logical storage units, so that the data is thereby fragmented and split between several physical drives. In the reading process, the data fragments are recompiled by the software layer. Only the Processor's IT administrators have access to the network. Access is gained through the asymmetric RSA system with a 2048 bit key length (individual keys).

Description of the availability control system:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Uninterruptable power supply (UPS) | <input checked="" type="checkbox"/> Air conditioning facilities in server rooms |
| <input checked="" type="checkbox"/> Equipment for the monitoring of temperature and humidity in server rooms | <input checked="" type="checkbox"/> Protected multiple mains sockets in server rooms |
| <input checked="" type="checkbox"/> Fire and smoke alarm systems | <input type="checkbox"/> Fire extinguishers in server rooms |
| <input checked="" type="checkbox"/> Alarm signal in the case of unauthorised access to server rooms | <input checked="" type="checkbox"/> Preparation of a back-up & recovery concept |
| <input checked="" type="checkbox"/> Testing of data recovery | <input checked="" type="checkbox"/> Preparation of an emergency plan |
| <input checked="" type="checkbox"/> Retention of data back-ups at a secure, out-sourced location | <input checked="" type="checkbox"/> Server rooms not located below sanitary facilities |

14. Separability

Guarantee that personal data collected for different purposes can be processed separately.

When storing the customer data, logical client separation applies; in the processing of this data, physical client separation applies. Productive and test systems are physically separated from each other. The storage of non-encrypted personal data in separate application modules takes place in one pseudonymized form, so that the assignment of data to persons can only be made over the Reference IDs.

Description of the separability system:

- | | |
|---|--|
| <input type="checkbox"/> Physically separate storage on separate systems or data carriers | <input checked="" type="checkbox"/> Logical client separation (by the software) |
| <input checked="" type="checkbox"/> Preparation of an authorisation concept | <input type="checkbox"/> Encryption of data sets which are processed for the same purpose |
| <input type="checkbox"/> Provision of the data sets with purpose attributes / data fields | <input type="checkbox"/> In the case of pseudonymised data: Separation of the allocation file and storage on a separate, secured IT system |
| <input checked="" type="checkbox"/> Determination of database rights | <input checked="" type="checkbox"/> Separation of productive and test systems |