

# KOBRA VS storage devices

German VS-NfD / NATO RESTRICTED / EU RESTRICTED



**Kobra**  
I n f o s e c



André Gimbut,  
CTO

Robert Nutsch,  
Director Business Development

Kobra Infosec GmbH



# Kobra Infosec GmbH

- 2005 Foundation of **DIGITRADE GmbH** with headquarters in Teutschenthal, Germany
- Since 2005 development and production of external encrypted hard drives to protect business and personal data
- 2024 Foundation of **Kobra Infosec GmbH** as a dedicated organizational unit with a focus on developing and marketing solutions for the protection of classified content in accordance with German VS-NfD, NATO-Restricted, EU-Restricted and higher

## HS256S

ULD  
2013



## HS256 S3

BSI-DSZ-CC-0825-2017  
2017



## KOBRA Drive VS

VS-NfD approved (NATO / EU)  
2020, 2023



## KOBRA Stick VS

VS-NfD approved (NATO / EU)  
2020, 2023



## IT Security Made in Germany (TeleTrust)

### Trustmark „IT Security made in Germany“ confirms that:

- The company headquarters is located in Germany
- The company offers trusted IT security solutions
- The products do not contain any hidden entrances
- IT security research and development of the company takes place in Germany
- The company meets the requirements of German data protection law



# KOBRA VS storage devices: Security mechanisms

## Encryption:

256-bit AES full-disk hardware encryption in XTS mode using two 256-bit crypto keys



## Access control:

Two-factor authentication via smart card and 4 to 8-digit PIN according to the principle „having and knowing“



Security

Trust Seal  
www.teletrust.de/itsmig

made  
in  
Germany

## Management of the encryption key:

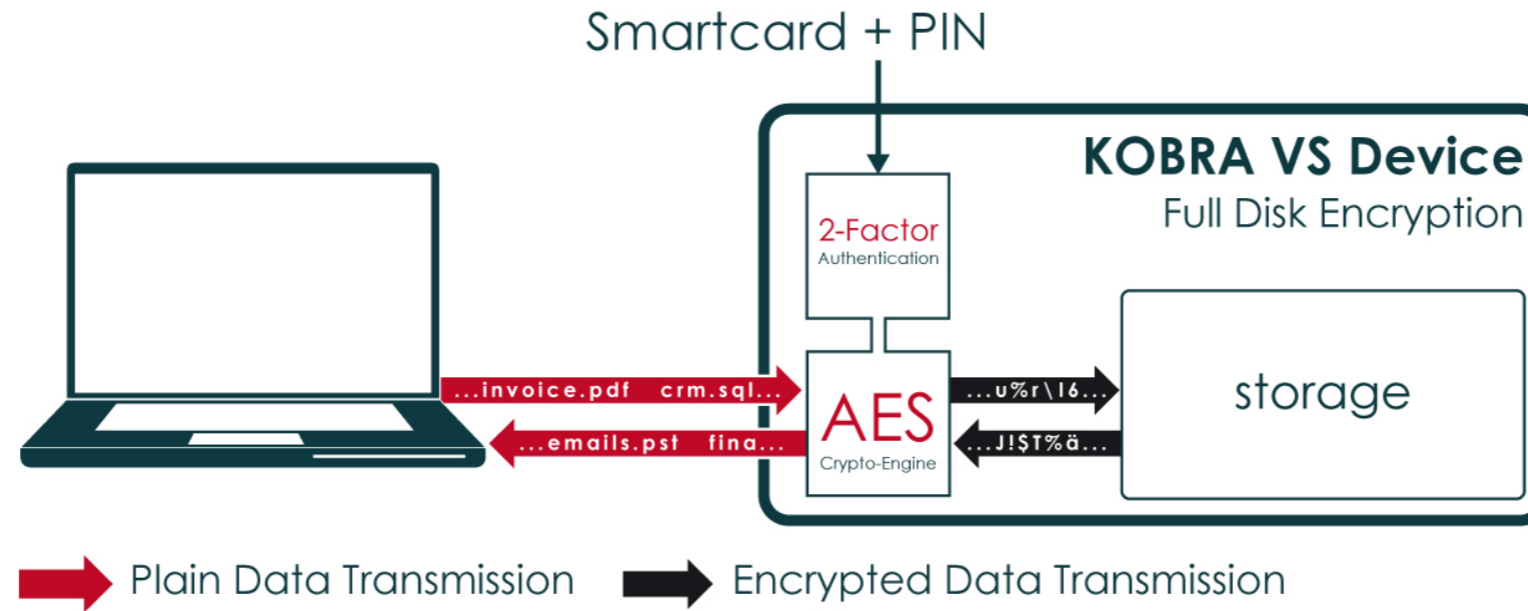
- Creation, modification and destruction by user
- HW-based random number generator
- External generation and calculation

## User management by administrator:

- Integrate and delete users
- Read / write authorisation
- Time-out, lock-out, number of failed attempts
- Locking the administrator functions

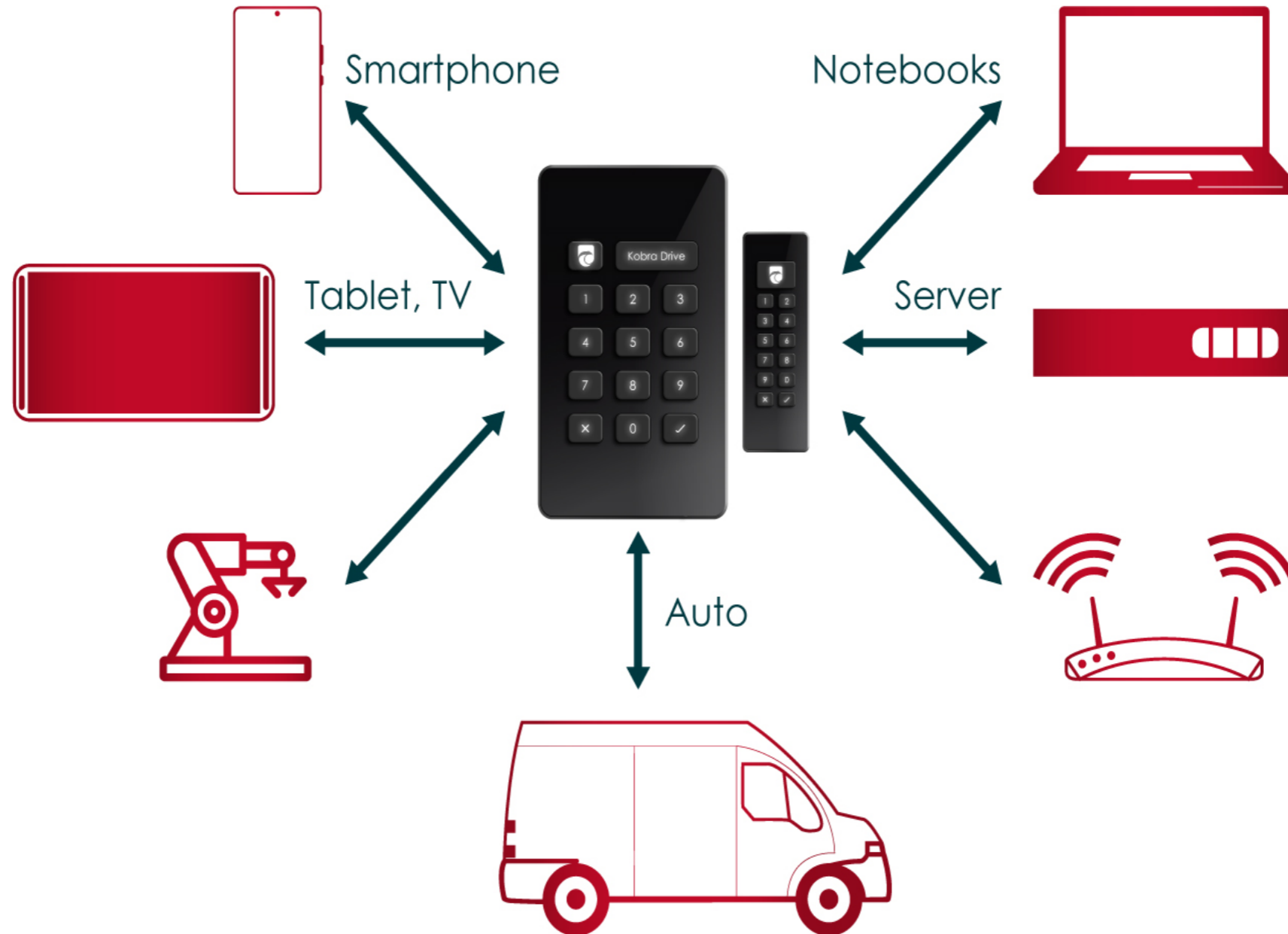


## Mobiler Zugriff auf VS-NfD Daten



- Users cannot bypass encryption
- Simple and safe
- Transparent and operating system independent

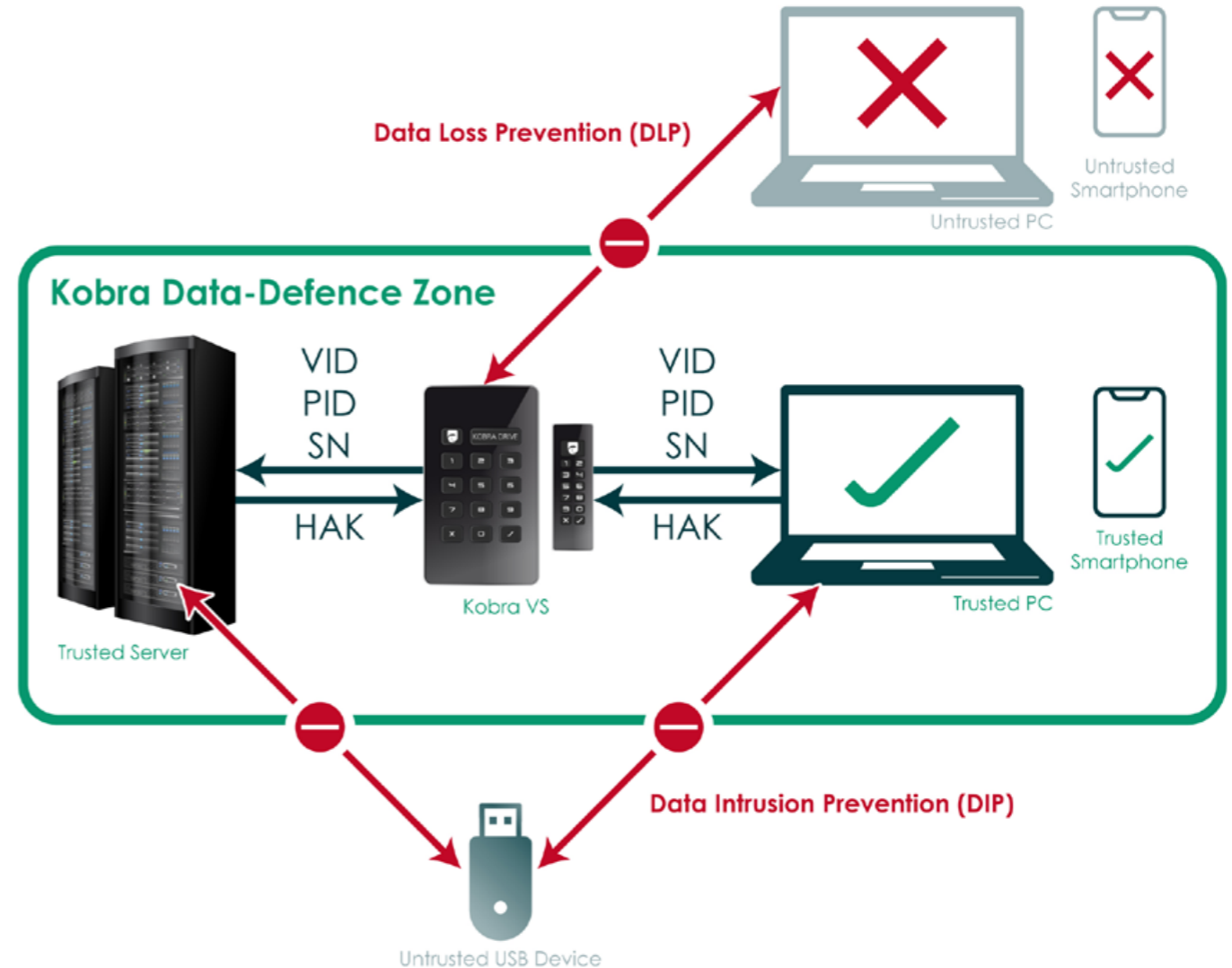
# Operating system independent



# Kobra Defence Zone

Client: Defence Company

- Secure exchange of data between protected systems
- To achieve this, interface control software (e.g. Microsoft group policies, itWess, ivanti, DriveLock, DeviceLock etc.) on all host systems is used to authorise only Kobra VS data storage devices for connection and data exchange by means of the USB parameters VID and PID
- In addition, access to only predefined Kobra VS data storage devices can be restricted via the USB parameter serial number. These measures already protect the systems in the KDZ.



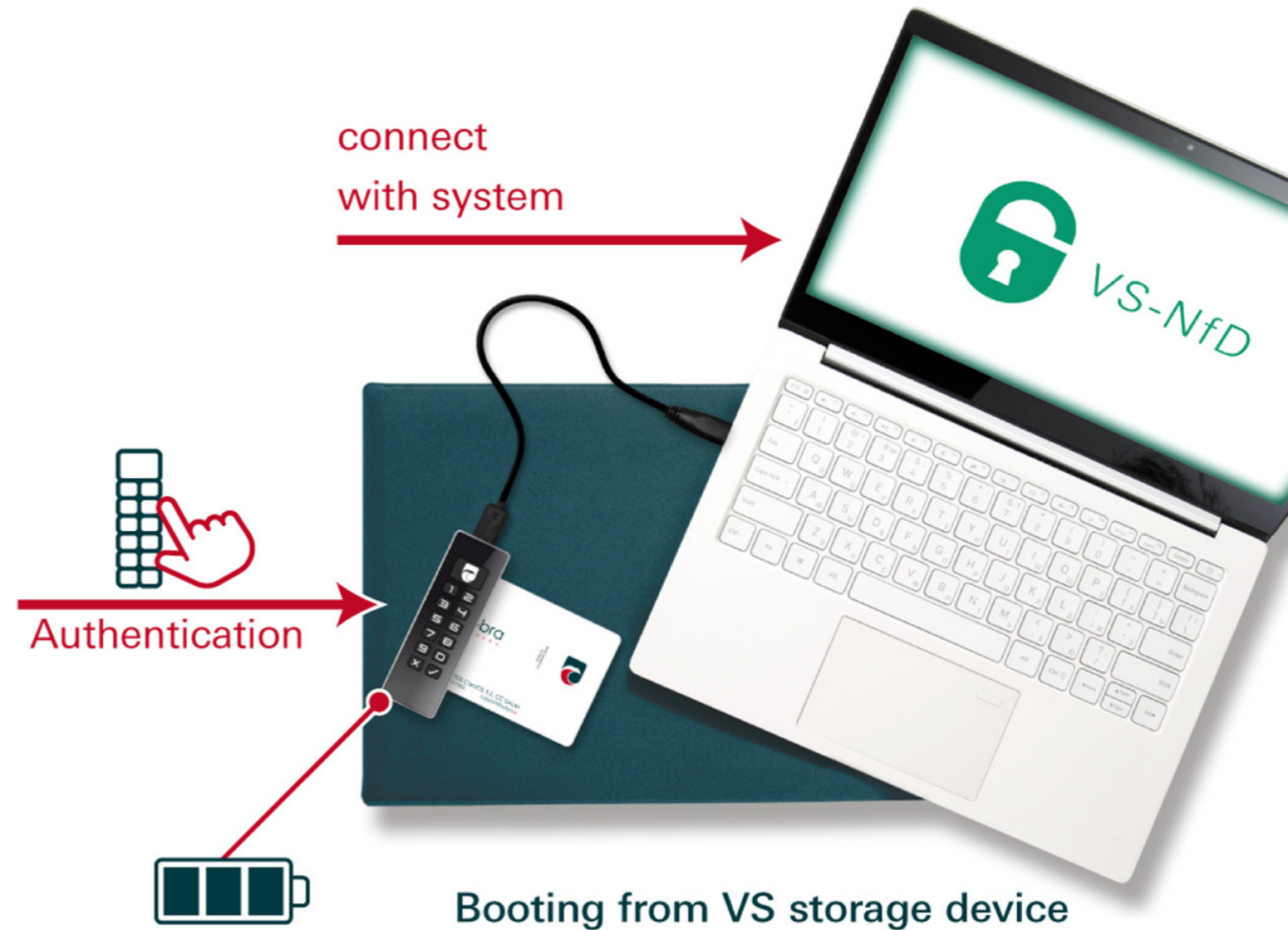
**1. Interface control:**  
 VID: USB Vendor-ID  
 PID: Produkt-ID  
 SN: Serial number

**2. Host authentication:**  
 HAK: Host authentication key

# Secure Mobile Workspace

Client: German machine builder

- Integrated power supply enables pre-boot authentication
- Encrypted installation of operating systems on Kobra VS storage devices
- Flexible change of purpose from laptop/PC
- pSLC memory recommended to ensure longest possible lifetime
- When the storage device is disconnected from the PC, the data remains encrypted and is stored only on the Kobra VS storage device.





# Geo-Redundant Backups

Client: German aviation company

- Protects data against unauthorised access
- Offers full control over sensitive and personal data
- Several Kobra VS storage devices can be operated with one smart-card
- Secure backups of e.g. project-based developer laptops with NATO Restricted and EU Restricted content
- Cost-effective secure geo-redundant storage of backups for disaster recovery



# Server system migration

Client: Federal authority

Windows Server 2008

Windows Server 2022

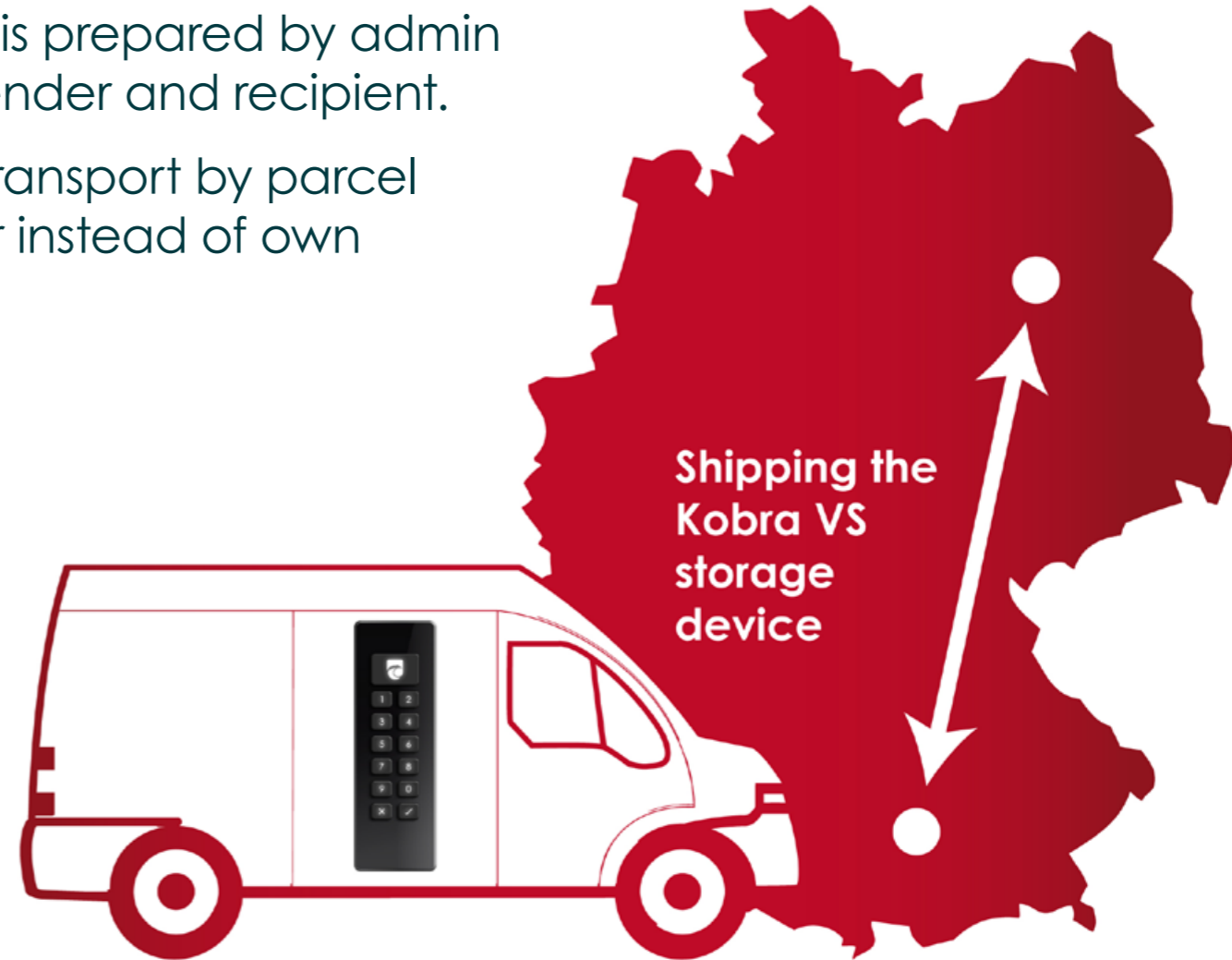
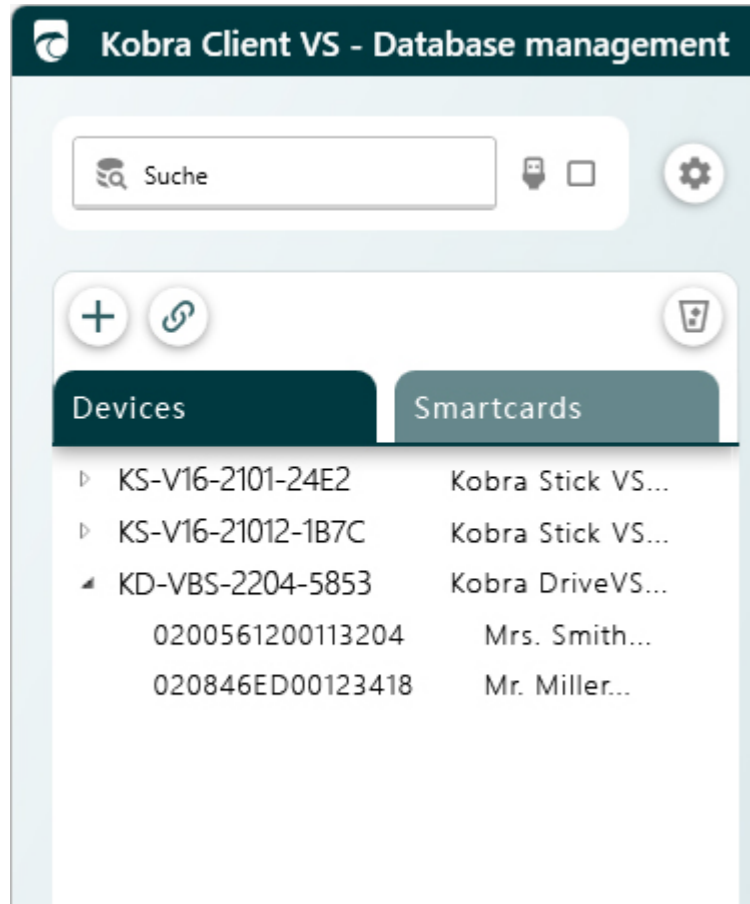


- Kobra Drive VS with up to 16TB storage on one storage device
- Protects data against unauthorised access
- Offers full control over sensitive and personal data
- Several Kobra VS storage devices can be operated with one smart card
- Secure transport of data to new location

# Simplified data transport

Client: Federal authority

- Storage device is prepared by admin for access by sender and recipient.
- Cost-effective transport by parcel service provider instead of own staff



Serial number	Public key	Write permission	Status	State	Label	Open	Delete
0200561200113204	DDCA7A670C53CBFFF3305A5C4...	<input type="checkbox"/>	✓	✓	Mrs. Smith - Berlin	↕	🗑️
020846ED00123418	B5F440AB675845C705E13E022D...	<input checked="" type="checkbox"/>	✓	✓	Mr. Miller - Munich	↕	🗑️







# Airgap bypass

Client: Federal authority



- Activated write protection against unwanted leakage of information
- Administrator can define two smartcards: Smartcard 1 for work in the NATO Restricted Area (read and write) and Smartcard 2 for VS-NfD Area (read only).

Serial number	Public key	Write permission	Status	State	Label	Open	Delete
0200561200114337	ACFCB593D10C57F0AE6251A98B...	<input checked="" type="checkbox"/>	✓	✓	Nato-Restricted		
020056120011100D	9E9B5DB30CA47491719C58E35F...	<input type="checkbox"/>	✓	✓	VS-NfD		







# Use as data diode

Client: Federal authority



- Activated write protection against unwanted leakage of information from higher classified systems to lower classified systems.
- Administrator can define two smartcards: Smartcard 1 for work in the NATO Restricted and EU Restricted area (read and write) and Smartcard 2 for secret area (read only).

Serial number	Public key	Write permission	Status	State	Label	Open	Delete
0200561200114337	ACFCB593D10C57F0AE6251A98B...	<input checked="" type="checkbox"/>	✓	✓	VS-NfD		
020056120011100D	9E9B5DB30CA47491719C58E35F...	<input type="checkbox"/>	✓	✓	Secret		

# Deposit of source code

Client: Software company

- Instead of depositing mountains of papers full of source code at the notary (which is not possible in many cases), it is stored on the Kobra VS storage device.
- The smartcard can be deposited at the notary under certain conditions
- The client can demand access to the smartcard
- Mountains of paper stacks no longer have to be exchanged or updated, but source code is updated on the Kobra VS storage device.
- This application option saves a lot of space, energy and is very sustainable as well as environmentally friendly



# Log data from vehicles

Client: Vehicle manufacturer

- Log data from emergency vehicles (aircraft, helicopters, utility vehicles, ships) are stored on Kobra VS storage devices after use and transported for evaluation.



# Secure Software Deployment

Client: Transportation company

- Software is copied from the source system to the Kobra VS storage device and transported to the place of use/vehicle.
- The software/firmware is then transferred/installed/updated on the target system.
- Protection of the integrity and confidentiality of software systems and configurations during transport, especially in the case of larger physical distances.





# Read Only Windows / OS

Client: Space & Defence

- Activated write protection against unwanted leakage of information from higher-rated systems to lower-rated systems
- Faster booting due to flash memory
- No modification of system data possible
- Processed information is not persistently stored on the Kobra VS storage device at any time
- Easy update of the software systems by exchanging the data carriers via simple postal dispatch



## Two-factor authentication for:

- E-mail encryption
- VPN access
- Cloud access
- Windows or Linux login
- Digital signing of documents and files



# KOBRA Client VS

Kobra Client VS
ⓘ - □ ×

**Device information**

Product name	Storage Capacity
Kobra Stick VS	16 GB
Serial number	Firmware version
KS-V16-2403-0003	1.2.5
Write protection	Formatting status
Write protection	Formatting status

Settings
Advanced settings
Presets

<p>Write protection ⓘ</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>Off</span> <span style="background-color: #28a745; color: white; padding: 2px 10px; border-radius: 5px;">On</span> </div>	<p>Power Bypass ⓘ</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <span style="background-color: #dc3545; color: white; padding: 2px 10px; border-radius: 5px;">Off</span> <span>On</span> <span>Extended</span> </div>	<p>Simulate keypress ⓘ</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <span style="background-color: #dc3545; color: white; padding: 2px 10px; border-radius: 5px;">Disabled</span> <span>Enabled</span> </div>
<p>Lockout ⓘ</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>Off</span> <span style="background-color: #28a745; color: white; padding: 2px 10px; border-radius: 5px;">On</span> </div>	<p>Lock On Eject ⓘ</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>Off</span> <span style="background-color: #28a745; color: white; padding: 2px 10px; border-radius: 5px;">On</span> </div>	<p>Self Format ⓘ</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>Off</span> <span style="background-color: #28a745; color: white; padding: 2px 10px; border-radius: 5px;">On</span> </div>
<p>Admin-PIN ⓘ</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>Off</span> <span style="background-color: #28a745; color: white; padding: 2px 10px; border-radius: 5px;">On</span> </div>	<p>PIN Entry ⓘ</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>Device only</span> <span style="background-color: #28a745; color: white; padding: 2px 10px; border-radius: 5px;">Dual</span> </div>	<p>Timeout ⓘ</p> <div style="display: flex; align-items: center;"> <input style="width: 40px; text-align: center; border: 1px solid #ccc;" type="text" value="11"/> <span style="margin: 0 5px;">+ -</span> <span>Minutes</span> </div>
<p>Quick Login ⓘ</p> <div style="display: flex; justify-content: space-between; width: 100%;"> <span>Off</span> <span style="background-color: #28a745; color: white; padding: 2px 10px; border-radius: 5px;">On</span> </div>	<span style="margin-right: 10px;">Save</span> <span>Discard</span>	

Database Device Label

Connect
 ⚠ Database not connected
None
✎

Changes
Save
Discard

Add smartcard
 

 Smartcard table ⓘ

Serial number	Public key	Write permission	Can delete DEK	Status	State	Label	Open	Delete
0200561200112E51	C54E82E3136BA37A14CF49...	<input type="checkbox"/>	<input checked="" type="checkbox"/>	✓		✎	⬆	🗑
0200561200112E55	D65A59608CECE6CA38DC9...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	✓		✎	⬆	🗑
020052B800111213	BCF463F0A51D3BA987A5B...	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	✓		✎	⬆	🗑

Smartcard-Reader: Ready, Serial number: 0200561200113443
⚙



# Thank you for your attention

Contact:

Kobra Infosec GmbH  
Ernst-Thälmann-Str. 39  
D-06179 Teutschenthal

Phone: +49 345 231 73 53

Fax: +49 345 613 86 97

eMail: [info@kobra-infosec.de](mailto:info@kobra-infosec.de)

Web: [www.kobra-infosec.de](http://www.kobra-infosec.de)

