

# Cost-effective secure mobile work with storage and authentication device approved for classification levels EU Restricted and NATO Restricted

André Gimbut, CTO  
DIGITTRADE GmbH



## DIGITTRADE GmbH

- founded: 2005      headquarter: Teutschenthal
- since 2005 development and production of external encrypted hard drives to protect business and personal data
- since 2013 development of the communication platform Chiffry for tap-proof telephony and encrypted sending of pictures, videos, contacts as well as voice and text messages via smartphones

### HS256S

ULD  
2013



### HS256 S3

BSI-DSZ-CC-0825-2017  
2017



### KOBRA Drive VS

VS-NfD approved (NATO / EU)  
2020



### KOBRA Stick VS

VS-NfD approved (NATO / EU)  
2020



# IT Security Made in Germany (TeleTrustT)

## 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“



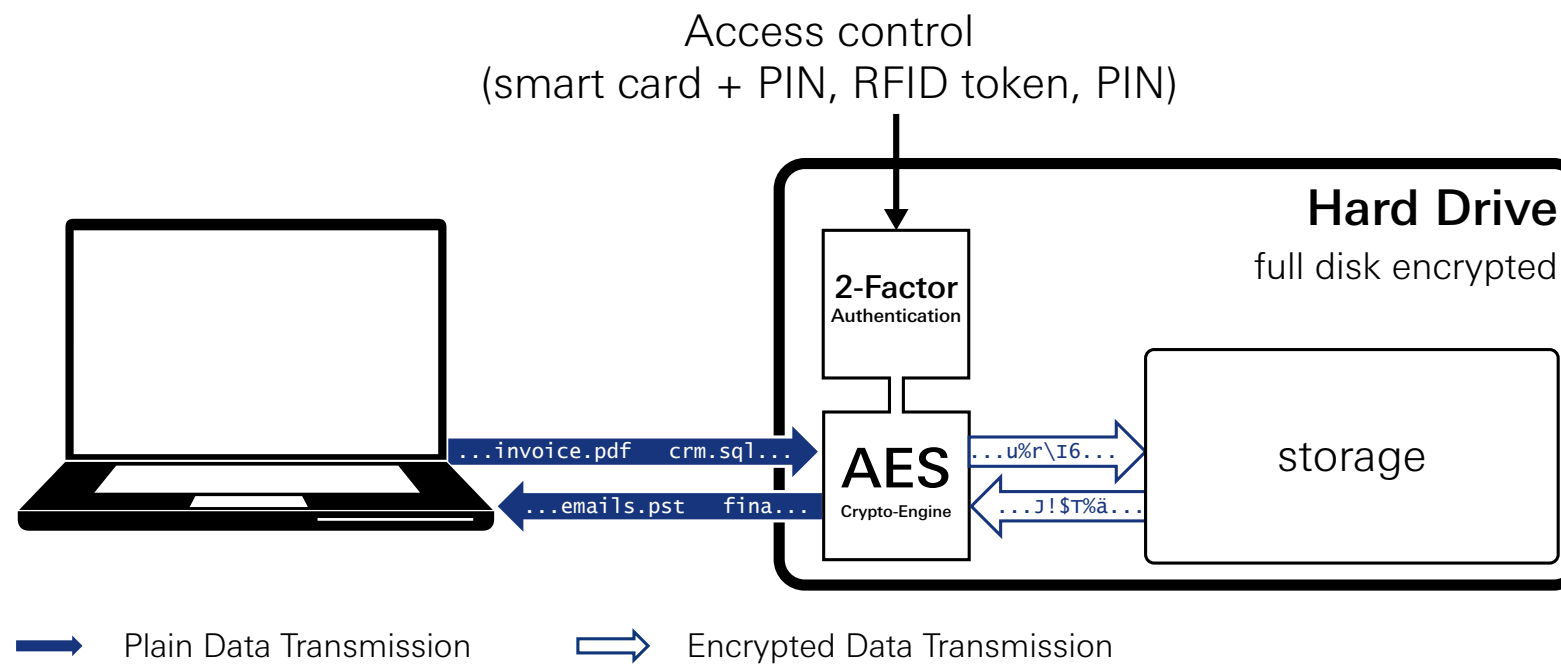
### Management of the encryption key:

- 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

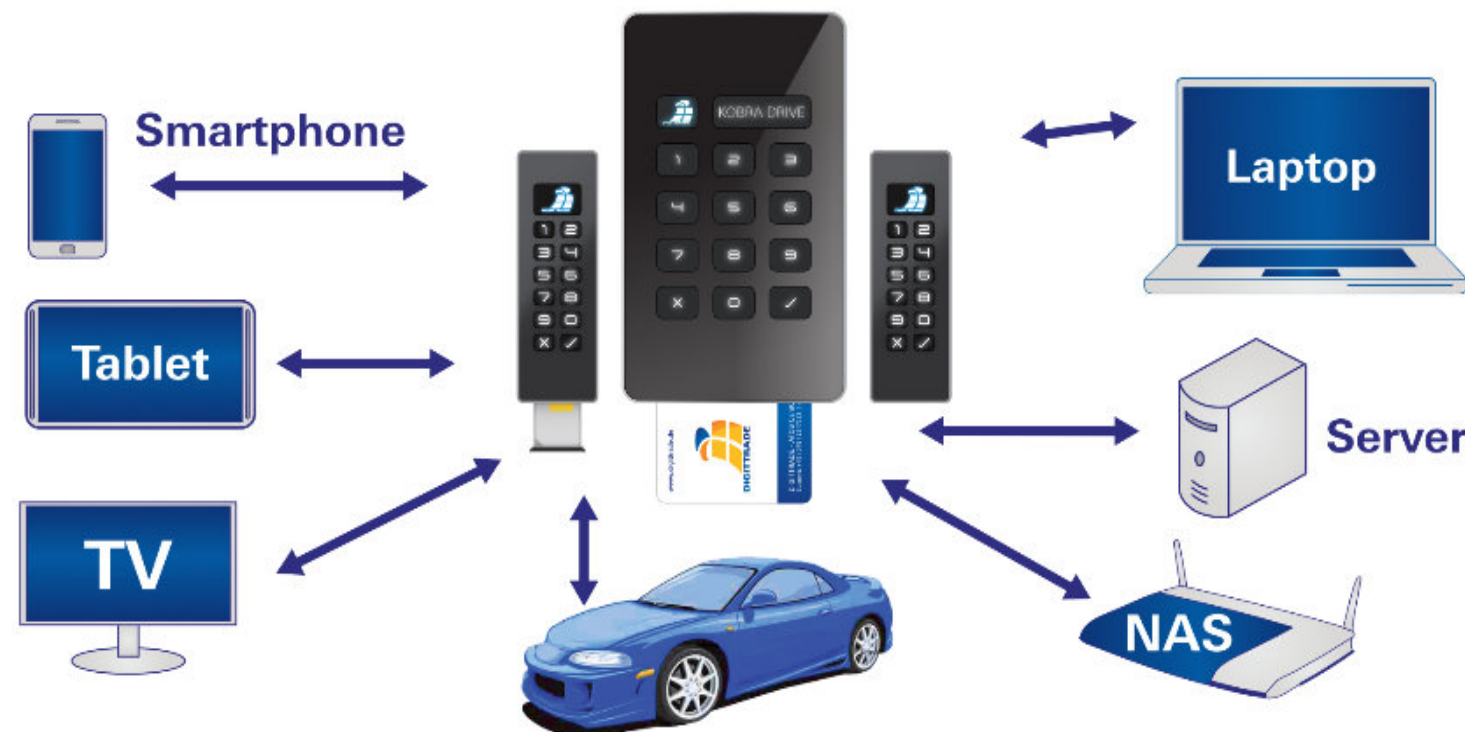
## Mobile access to EU Restricted / NATO Restricted data



Simple and safe

Transparent and operating  
system independent

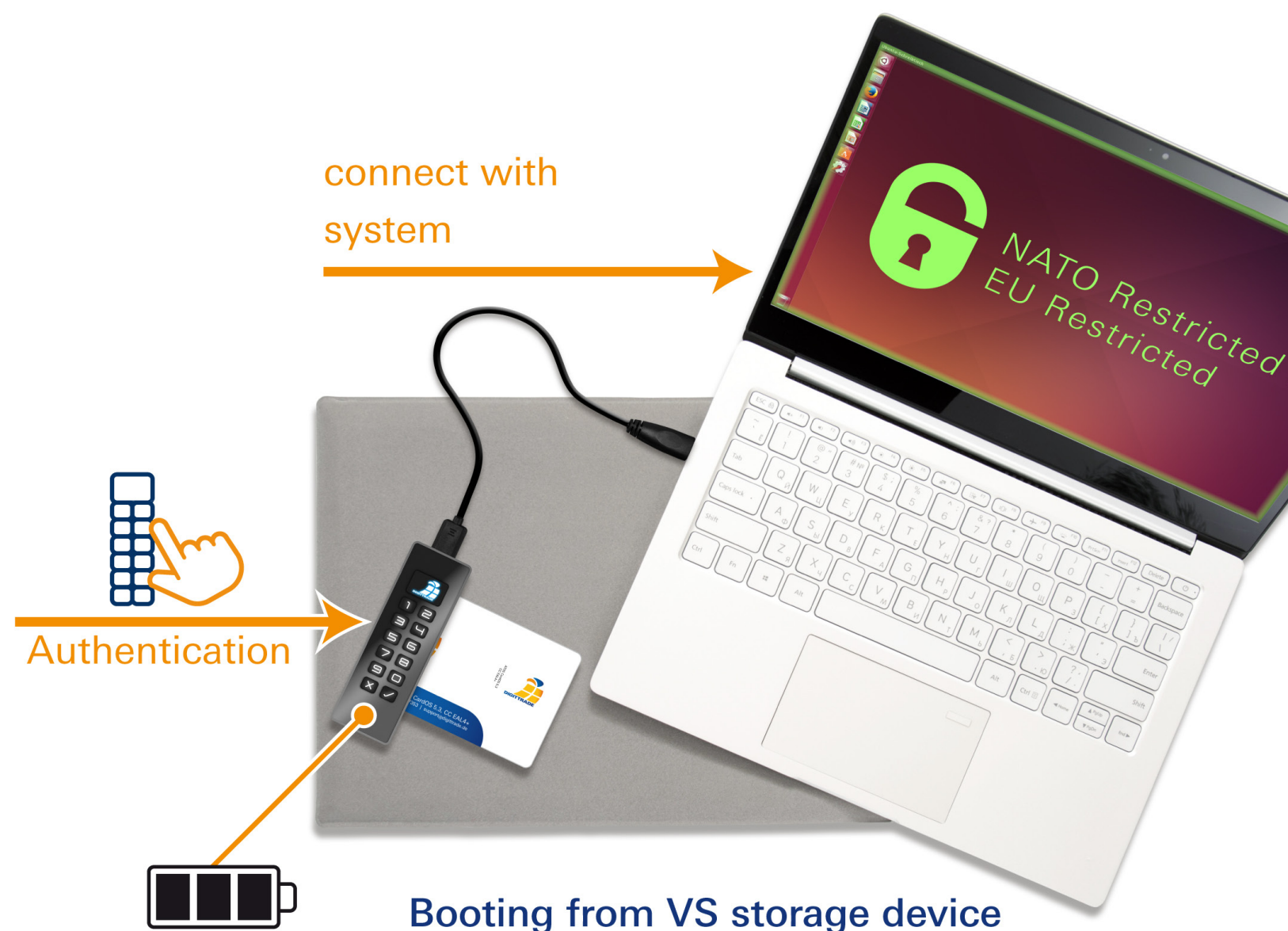
Users cannot bypass  
encryption



## Use as an encrypted boot device

**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.



# Compare Igel UD-Pocket with Kobra VS



| ✓                                                                 | Igel UD-Pocket | Kobra VS |
|-------------------------------------------------------------------|----------------|----------|
| Mobil Workspace on every PC/Notebook                              | ✓              | ✓        |
| Long operation life time                                          | ✓              | ✓        |
| Lower cost than fat- and thin-clients and PC/notebook             | ✓              | ✓        |
| Secure 2FA Authentication                                         | -              | ✓        |
| Supports PKI based Smartcards                                     | -              | ✓        |
| Integrity protection by HW Write protection                       | -              | ✓        |
| Encrypted Storage for OS and User Data                            | -              | ✓        |
| Approved by BSI for for EU Restricted and NATO Restricted content | -              | ✓        |

# Advantages of using the Kobra Stick VS with IGEL OS

## Two-factor Pre-Boot authentication

- Protects Igel OS from manipulation and prevents attackers from starting the operating system
- Protects configuration information

## Passwortless Single Sign On

- User only has to remember his PIN, all further authentication can be done by the smartcard
- Kobra VS driver is already fully integrated into Igel OS
- Smartcard reader of Kobra VS can be used for PKI-based authentication of the VPN connection
- Smartcard reader can be forwarded to target VM and used for further authentication procedures
- Smartcard can be Employee ID Card



**The combination of Kobra Stick VS and IGEL OS has been well tested and works out of the box**

## Secure backup storage

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 smartcard
- 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 2019

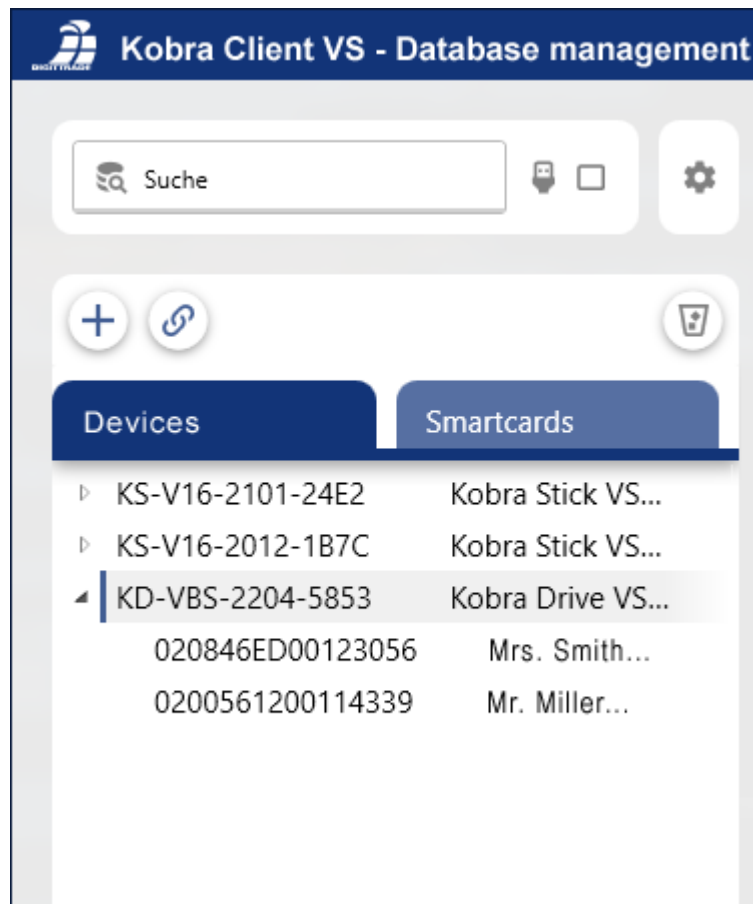


- Kobra Drive VS with up to 16TB storage on one storage device
- Protects data against unauthorised access
- Offers full control over sensitive and personal data
- Several Kobra VS storage devices can be operated with one smart card
- Secure transport of data to new location

## 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              | Type            | Write permission                    | Status | State | Label               | Open | Delete |
|------------------|-------------------------|-----------------|-------------------------------------|--------|-------|---------------------|------|--------|
| 020846ED00122E04 | 806C72F295A6956A27B1... | ATOS CardOS 5.3 | <input type="checkbox"/>            | ✓      | ✓     | Mrs. Smith -Berlin  | ↑    | 🗑️     |
| 020846ED00122E05 | DBD7A4A1D45F9F91ABB...  | ATOS CardOS 5.3 | <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              | Type            | Write permission                    | Status | State | Label           | Open | Delete |
|------------------|-------------------------|-----------------|-------------------------------------|--------|-------|-----------------|------|--------|
| 020846ED00122E04 | 806C72F295A6956A27B1... | ATOS CardOS 5.3 | <input checked="" type="checkbox"/> | ✓      | ✓     | Nato-Restricted | 📁    | 🗑️     |
| 020846ED00122E05 | DBD7A4A1D45F9F91ABB...  | ATOS CardOS 5.3 | <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              | Type            | Write permission                    | Status | State | Label                | Open | Delete |
|------------------|-------------------------|-----------------|-------------------------------------|--------|-------|----------------------|------|--------|
| 020846ED00122E04 | 806C72F295A6956A27B1... | ATOS CardOS 5.3 | <input checked="" type="checkbox"/> | ✓      | ✓     | NATO / EU Restricted | ⬆    | 🗑      |
| 020846ED00122E05 | DBD7A4A1D45F9F91ABB...  | ATOS CardOS 5.3 | <input type="checkbox"/>            | ✓      |       | Secret               | ⬆    | 🗑      |

# Use on smartphones as a data storage device

Client: State Police Authority, Technology Partner



- Use on smartphones, tablets, notebooks as NATO Restricted and EU Restricted data storage device
- Authentication via smartcard and PIN, e.g. for VPN or cloud access

## Two-factor authentication for:

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



# Thank you for your attention

Contact:

DIGITTRADE GmbH  
Ernst-Thälmann-Str. 39  
06179 Teutschenthal

Phone: +49 345 231 73 53

Fax: +49 345 613 86 97

Email: [info@digittrade.de](mailto:info@digittrade.de)

Web: [www.digittrade.de](http://www.digittrade.de)



  
**RV-Nr. 21413**  
**Available**  
**at KdB**

**EU RESTRICTED**  
**NATO RESTRICTED**  
**VS-NfD**

