

**FAST** LTA

We secure Terabytes.



# Silent Cubes

Certified long-term data archiving with ultra-redundant hard disk storage

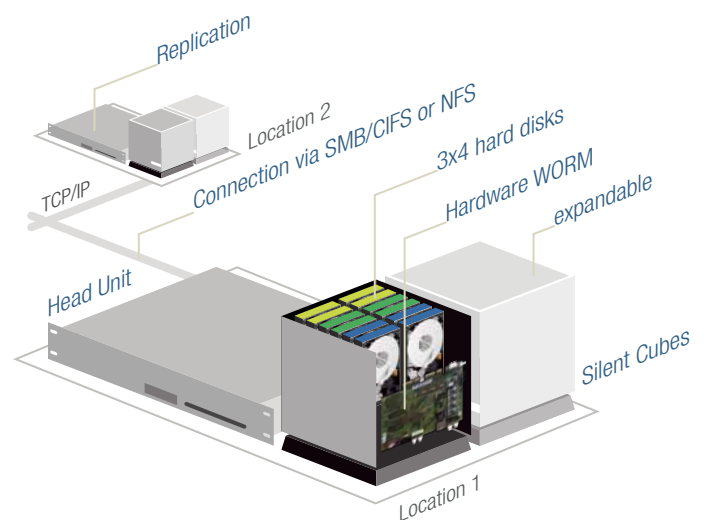
## Silent Cubes

### Safeguarding infinite data infinitely.

#### Expert long-term data storage

The Silent Cubes system is the first storage system to be explicitly and categorically developed for the secure, long-term storage of permanent data.

- Exceptionally secure against data loss, hardware malfunction and misconfiguration
- Particularly low energy and operating costs, ultra-scalable into the petabyte realm
- Full FAST LTA on-site service includes hardware replacement with zero data loss



#### FAST LTA – We secure Terabytes.

“The FAST LTA storage system is exactly what we need. You can tell right away that Silent Cubes were explicitly designed and developed for the revision-safe, long-term archiving of data.”

Robert Hans, Director of IT Infrastructure,  
Schwan-STABILO Cosmetics  
Solution: Open Text (DMS)

“From Day One, the solution and the entire project went off without a hitch, thanks to the professional and friendly FAST LTA team.”

Christian Mühlthaler, IT Manager,  
Schwarzach Hospital  
Solution: AGFA IMPAX (PACS)

We secure Terabytes.



## Perfect partnerships

Silent Cubes are in trusted use wherever large volumes of sensitive data need to be saved on a long-term, secure and economical basis.

This makes Silent Cubes the ideal complement to your software. Through our “Approved Solutions” program of hand-selected solution providers, we ensure that all systems will run at peak, seamless interoperability.

More than 50 such partnerships have been tested and approved to date – and the list just keeps growing.



More information at [www.fast-lta.de/en/solutions](http://www.fast-lta.de/en/solutions)

“We are very pleased with both the system as well as the support provided by FAST LTA, and we will definitely not hesitate to recommend Silent Cubes to others.”

Markus Tschumper, CIO,  
KESO AG  
Solution: DocuWare (DMS)

“The price/performance ratio is simply a perfect fit. Other hard disk systems are far more expensive, both to purchase as well as to operate.”

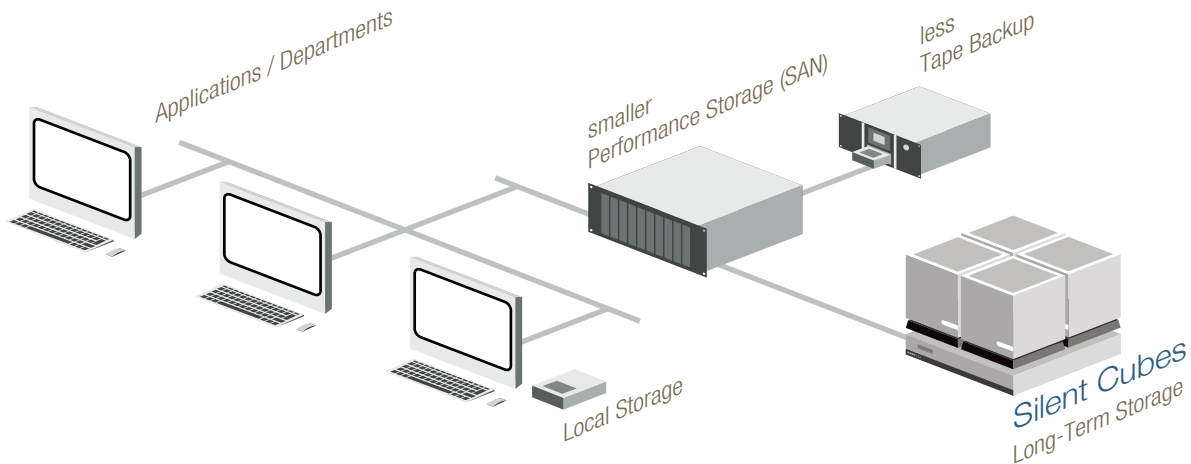
Elke Waidelich, IT Department,  
Freudenstadt General Hospital  
Solution: CHILI PACS

## Silent Cubes at Work

Silent Cubes integrate seamlessly into your network architecture

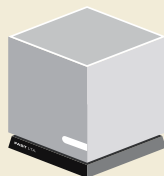
Silent Cubes help to free up your valuable online storage (SAN). Using archiving or HSM software, you then store less frequently accessed data on your specialized Silent Cubes long-term storage unit. This allows you to cut your costs by up to 80%.

- Frees your online storage of rarely-accessed data, ensures ample storage capacity
- Substantially reduced acquisition, administration and energy costs
- Reduced data volume shortens your online storage backup and restore times
- Silent Cubes archival storage is ultra-secure, easily replicated, and needs no additional backup



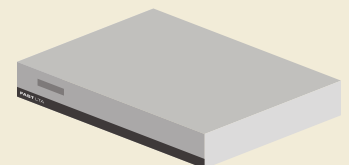
### Silent Cubes long-term storage

- WORM hard disk storage
- Net capacity: 1, 2, 4, 8 or 16 TB
- 12 energy-saving SATA hard disk drives (4 each from 3 different manufacturers)
- Accommodates the failure of up to 4 hard disks
- WORM sealing at hardware level
- Second power unit for redundant power supply
- Less than 2 watts in standby mode



### Head Unit

- Administrative unit and interface to your network
- Administrative functions via browser-based interface
- Manages up to 128 storage units with configurable virtual volumes and shares
- Connects via SMB/CIFS (with Active Directory) and NFS

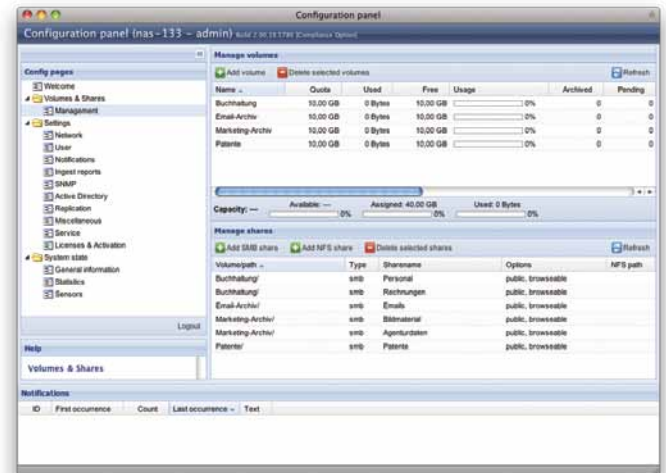


## Simple network share connection

Regardless of which archiving, DMS or HSM solution you use, and whether your archiving needs encompass medical PACS data, emails or other documents, Silent Cubes integrate seamlessly into your infrastructure.

The Silent Cubes storage system consists of a Head Unit (also available as a version for VMware® in virtual server environments) serving as the interface to your network, plus up to 128 Silent Cube storage units.

Individually configurable volumes (reserved storage areas) and network shares (with variable access rights) ensure problem-free interoperability with software solutions.



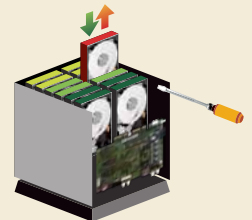
The user interface allows you to create as many volumes and shares as needed (with access rights) for connecting to different solutions and departments.

## Compliance Option



- Revision-safe storage (e.g. compliant with such guidelines as GDPdU, GoBS, RöV, etc. in Germany, Austria and Switzerland)
- Authentication by electronic receipt (512-bit SHA-2 hash coding)
- Volume types with retention periods, versioning and RW/RO triggers
- Archiving reports with digitally-signed timestamp

## Maintenance contract



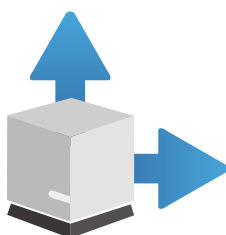
- On-site service for hardware replacement with 0% data loss of any data in Silent Cubes storage units
- Includes all software updates, replacement parts (hard disks, etc.), technician and travel expenses
- Standard contract term: 5 years (longer terms at fixed conditions available)

## Silent Cube Advantages



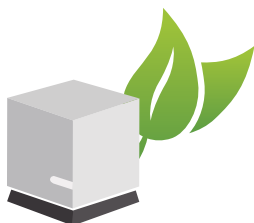
### Highest security

- WORM hardware reliably seals data
- 12 hard disks: 4 each from 3 different vendors
- Compensates for up to 4 hard disk failures
- Regular self-check (Digital Audit)



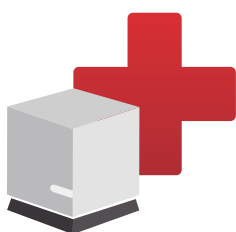
### Scalable & modular

- Scalable from 1 TB into the petabyte realm
- Expandable at any time in the future
- Conceived for 19-inch rack mounts
- Includes software for second site replication



### Saves energy & costs

- Certified for revision-safe storage
- Less than 2 watts of energy per storage unit in standby
- Low investment and operating costs (TCO)
- Minimal installation and maintenance costs



### Worry-Free Full Service

- On-site service by FAST LTA or partners
- Includes all software updates
- Includes all hardware replacements
- Flexible terms, fixed service costs

While conventional hard disk drives are unable to fully exclude user errors, the FAST LTA WORM Controller protects all data against deletion or overwriting at the very lowest hardware level.

To protect against epidemic disk failure, each Cube features 4 hard disks from 3 different manufacturers.

Silent Cubes' quadruple redundancy coding makes it more secure than a mirrored RAID 6 configuration – at a far better gross/net ratio.

The Digital Audit regularly and automatically checks all data within each storage unit – bit-by-bit – enabling the early detection and rectification of errors.

Silent Cube storage systems are scalable to 2000+ terabytes. You can add storage units at any time and thus keep up with your needs as they grow.

Silent Cubes feature a compact, award-winning design and have been devised for 19-inch rack mounts.

Replicating a Silent Cubes installation at a second location protects against total loss of a system, for instance due to fire or water damage.

The system includes the necessary software at no extra charge.

Silent Cubes are certified as CAS (Content Addressed Storage) for revision-safe storage and thus meet various relevant legal stipulations (including the GDPdU, GoBS, RöV in Germany, Austria and Switzerland) – at a truly hard-to-beat price. Their low operating and energy costs are the ultimate icing on the cake.

In standby mode, Silent Cubes use less than 2 watts per storage unit – making its power and cooling needs lower than any other long-term storage solution on the market today.

Personnel expenditures on Silent Cubes installation, maintenance and expansion are extraordinarily low, yet another plus for your IT budget.

FAST LTA offers comprehensive service within the scope of its Silent Cubes service contract. Should any problems arise, FAST LTA or certified partners will replace any affected components on-site with absolutely no loss of any long-term data stored on your storage units.

Software updates and hardware costs, such as hard disks, are also fully covered.

The system's integrated monitoring (email, SNMP) provides instant web browser access to system status at all times and keeps FAST LTA informed by email, allowing us to proactively ensure the smooth and secure operation of your system.

## Tailored to Your Needs

Complete, compact, revision-safe:

### Silent Cube Compact

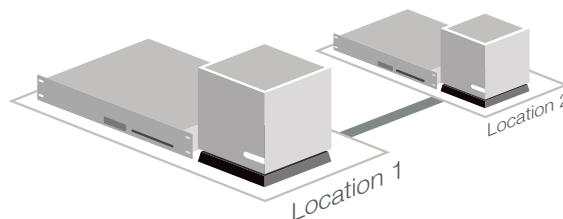
- 3-in-1 revision-safe archival storage
- Fast and easy network share connection
- Compatible with all Approved Solutions
- 1, 2 or 4 TB net capacity (expandable)



Modular, flexible, energy-saving:

### Silent Cubes System

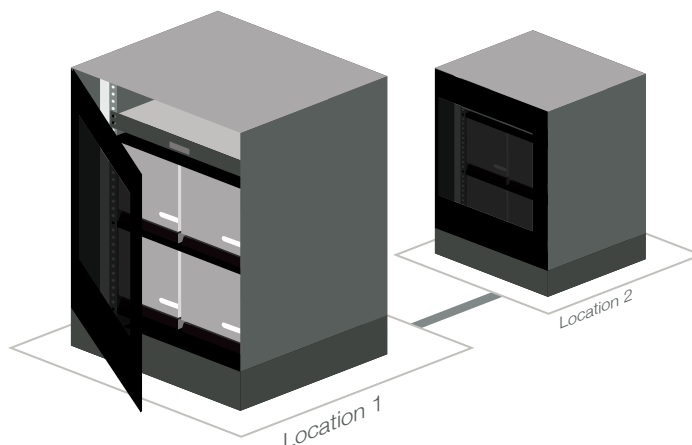
- Modular long-term archiving system
- Head unit (server or VMware version) connects via network share
- Scalable at any time up to 2048 TB (net)
- Less than 2 watts of energy per storage unit in standby mode



Secure, cost-efficient, space-saving:

### Silent Cubes rack-mounted

- High storage density: 650+ TB in full rack
- Low energy use & heat generation
- Highly scalable up to 2048 TB (net)
- Replication to second location possible at any time





## Profile

## Applications

Net capacity: 1, 2 or 4 TB  
expandable via 2 Cube ports  
Files: up to 60, 80 or 120 million  
Head Unit: integrated, with SSD memory  
Compliance Option: included  
Replication: possible at any time with  
no additional software needed

Best suited for smaller and medium  
amounts of data, e.g.:

- DMS/ECM
- HIS/RIS file archiving
- Modality archiving
- Email archiving

Net capacity: 4, 8 or 16 TB per unit  
Scalability: any time, up to 2048 TB  
Head Unit: server or VMware version  
Compliance Option: optional  
Replication: possible at any time with  
no additional software needed  
Power consumption: < 2 watts per unit (standby)

Applicable for archiving needs requiring  
maximum flexibility, e.g.:

- Archiving data from multiple departments
- Email archiving
- HSM architectures
- PACS archives

Net capacity: 128 TB per half rack, short  
672 TB per full rack, long  
Scalability: any time, up to 2048 TB  
Head Unit: server or VMware version  
Compliance Option: optional  
Replication: possible at any time with  
no additional software needed

For archiving large data volumes,  
freeing your universal storage, e.g.:

- Replacing tape libraries
- Archiving image and video data
- Central archive for multiple locations
- Long-term storage for data processing centers

## Facts and Figures

### Silent Cube Storage Unit

#### Product

Hard disk-based storage unit with WORM hardware

#### Capacity

Number of hard disks: 12 (any 8 will fully restore all data)

#### Storage capacity

gross/net: 6/4 terabytes\* (500GB hard disks)

12/8 terabytes\* (1TB hard disks)

24/16 terabytes\* (2TB hard disks)

Hard disks: SATA; 4 hard disks from 3 different vendors per Cube, circumvents epidemic failure

#### Network

Interface: 1000/100/10Base-T,  
10Base-T link in standby mode

#### Features

WORM: Patent-pending WORM technology

Redundancy: Quadruple redundancy with Erasure Resilient Coding

Data integrity: Automatic, regular self-checks (Digital Audit) with SHA-512 hash codes, detects hard disk errors at the bit level and initiates automatic repair

File system: FAST LTFS virtual file system, optimized for WORM storage, revision security, faster access to millions of files

#### Power consumption

Standby mode: < 2 W, redundant power supply

Continuous operation: < 100 W

#### Physical data

Dimensions (WxHxD): approx. 22 cm x 22 cm x 23 cm

Weight: approx. 13 kg

19" rack mount: 4 or 6 per rack base,  
6 HU in height (with mount)

### Silent Cube Compact

#### Product

Hard disk-based, revision-safe WORM archival storage

#### Capacity

Number of hard disks: 12 (any 8 will fully restore all data)

#### Storage capacity

gross/net: 1.5/1 terabytes\* (128GB hard disks)

3/2 terabytes\* (256GB hard disks)

6/4 terabytes\* (500GB hard disks)

Hard disks: SATA; 4 hard disks from 3 different vendors per Cube, circumvents epidemic failure

#### Network

Interface: 2x 1000/100/10Base-T for expanding with add. storage units  
1x 1000/100/10Base-T for connecting to company network  
10Base-T link in standby mode

#### Features

WORM, redundancy, data integrity, file system is identical to that of the Silent Cube storage unit

Compliance Option: included

#### Head Unit (integrated)

Internal memory: 60/80/120 GB SSD  
for software and cache

Display: Color touch screen

#### Power consumption

Standby mode: < 2 W, redundant power supply

Continuous operation: < 100 W

#### Physical data

Dimensions (WxHxD): approx. 22 cm x 22 cm x 23 cm

Weight: approx. 8 kg

19" rack mount: 4 or 6 per rack base,  
6 HU in height (with mount)

\* 1 terabyte =  $10^{12}$  bytes = 1,000,000,000,000 bytes

## Head Unit

### Product

Central administrative unit and network interface for Silent Cubes

### Models

- Head unit with 1TB cache (net), 19", 2 HU
- Head unit for VMware® for virtual server environments under VMware vSphere Hypervisor™ (ESXi)
- Head unit integrated in the Silent Cube Compact

### Network requirements

Interfaces: 2x 1000/100/10Base-T

### Power consumption (server version)

Continuous operation: < 90 W

### Physical data

Dimensions: 19", 2 HU

## Cube Manager Software

### Product

Administrative and monitoring software pre-installed on head unit

### User interface

AJAX-based, called up in active web browser

### Volumes and shares

Individually configurable WORM volumes  
SMB/CIFS and NFS shares with configurable access rights

### Users and groups

Admin, Monitor and Support users, Active Directory Support

### Network connection

Dynamic (DHCP) or static

### Replication

Integrated functions for asynchronous replication to a second location

### Notifications

Email reports

### Migration

Integrated functions for migrating a head unit and Silent Cube to new hardware

### Monitoring

Automatic, configurable status reports via email and/or SNMP

## Compliance Option

### Product

Cube Manager software extension

### Functions

- Supports revision-safe storage (pursuant various guidelines including GDPdU, GoBS and RöV in Germany, Austria and Switzerland)
- Authentication via electronic receipt (512-bit SHA-2 hash coding)
- Configurable retention periods (can be extended at any future point)
- Volume types with retention periods, versioning and RW/RO triggers
- Post-retention date deleting of data paths
- Archiving reports with digitally-signed timestamp
- Revision-safe migration to new Silent Cubes

