
NeBULA™ Hospital

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PRODUCT SHEET

HIS Integration

NeBULA™ Hospital is used to integrate medical video and photo recordings with the existing hospital infrastructure. Integration can be done using HL7, DICOM or XML protocols.

Remote viewing

Any user can log-in to the NeBULA™ archive from any hospital PC.

Future proof

NeBULA™ is digital by design. This means that a limited set of hardware needs to be supported and that software updates can extend the performance of the installation.

Safe

Recordings from NeBULA™ are always safely stored. Even when the hospital network shows a performance break, the data will be available, either on the hard disk of the client, or on the NAS.

NeBULA™ Video Center

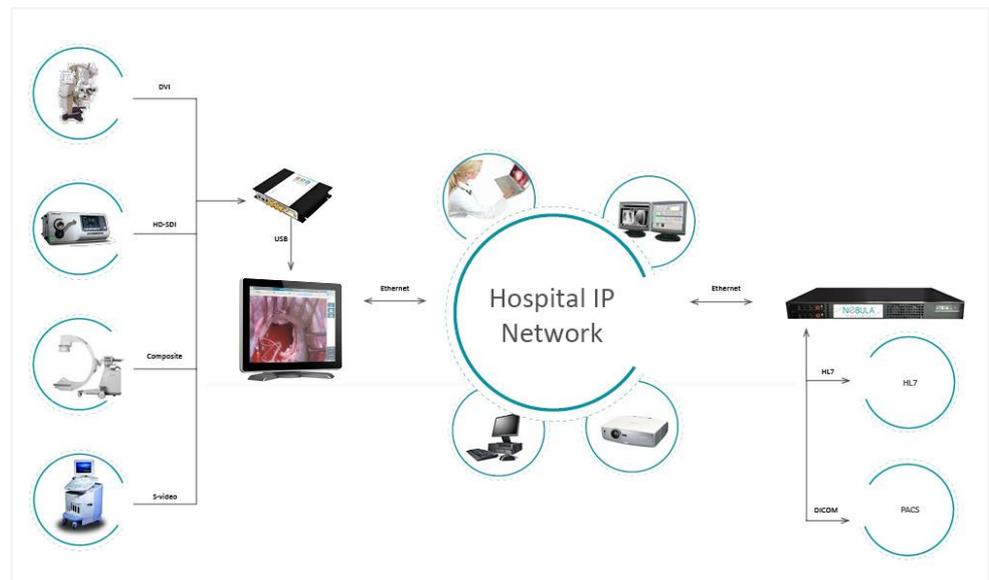
The preconfigured NeBULA™ Video Center is a unit that takes care of all the HIS integration using only a single IP connection.

NeBULA™ Hospital

NeBULA™ is a documentation platform for medical video sources. The product is available as software running on a local PC (NeBULA™ Personal) or in an integrated version (NeBULA™ Hospital). The integrated version has several benefits including centralized recording, remote reviewing of recordings and PACS integration. When these features are required, NeBULA™ Hospital is the answer.

NeBULA™ Hospital integrates with the existing systems in order to keep the footprint of a new system as low as possible. The protocols for integration follow the IHE standards.

Depending on the hospital, integration can be done based on DICOM, HL7 or XML.



Features

Central storage

NeBULA™ Hospital stores recordings of video or still images to a set of disks in the hospital network. A direct communication with the NAS (Network Attached Storage) is provided using either CIFS or NFS. NeBULA™ can make use of this storage and this system can be used as a vendor neutral archiving system.

In case of network overload, it might be difficult to reach the network storage system. NeBULA™ can buffer the recordings in the cache memory of the application and only release the images when the network recovers. This way an image can never get lost. When the NAS is unavailable, the images remain available on the hard disk of the NeBULA™ workstation.

¹ A bigger view is available on the last page

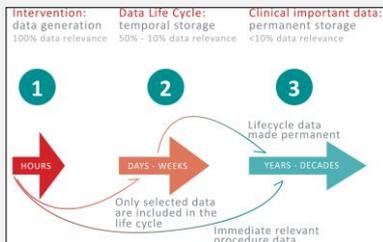
Disk capacity might be a real issue when multiple physicians will be recording HD videos over a period of time. NeBULA™ Hospital incorporates data lifecycle management which automates disk management.

Based on a set of rules, images can be compressed or deleted after a certain period. Automatic transfer to PACS is also possible.

What is: Data Life cycle Management

Active maintenance avoids the dilemma between unlimited recording and limited storage. The key idea here is to only keep the information that is still potentially relevant.

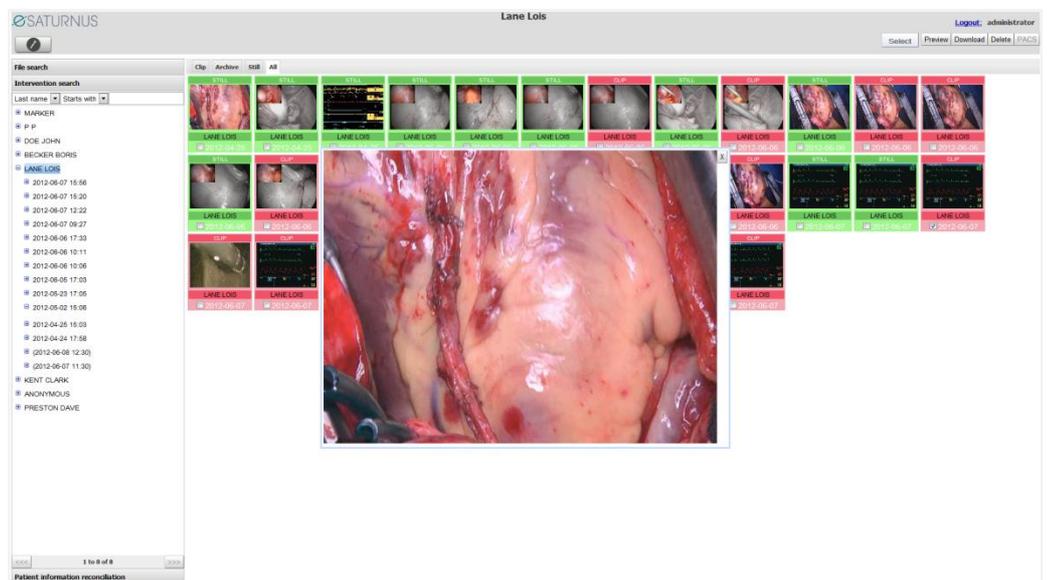
As a rule of thumb, it is safe to say that over 50% of all NeBULA™-generated content loses its medical relevance after a couple of weeks, around ten percent remains medically relevant for a period of multiple months, and only a very small fraction should remain accessible for several years.



In practice, typical measures taken include transcoding older recordings to more space-efficient codecs, transferring them to secondary file servers, removing them once they are old enough, etc. In other words, archived data are pushed through a *life cycle*.

Remote review

Users can log into the central storage via a webbrowser. There they will be able to do review or consultation, based on the images generated by NeBULA™. Among the possibilities are download for offline use, transfer to the PACS and delete. An extended search function enables the user to find the right recording among a large number of stills and videos.



Based on user and group management rules, nurses, general practitioners, surgeons, OR managers and administrative personnel, can use NeBULA™ archive to view a selection of images which is relevant to their needs.

The integrated media player provides users with an instant preview. On the basis of these images, users can make their selection: delete, send to PACS, download.

HIS integration

NeBULA™ Hospital integrates seamlessly with the hospital information system. HIS integration is configured on the NeBULA™ Video Center. In standard situations, no configuration of the hospital IT is needed.

The integration of patient databases or worklists, enhances the hospital workflow. The system can be adapted to the situation of the hospital. Following options are available:

- DICOM Modality Worklist Query for building NeBULA™ worklists
- NeBULA™ Hospital dicomizes any recording and implements DICOM-store.
- HL7 messaging (file- as well as socket based) can also be used for organizing the NeBULA™ workflow.
- XML-based API's

Hardware: NeBULA™ Video Center

Integration, video processing, preview generation, ... takes place on one hardware device called the NeBULA™ Video Center. This hardware device is connected through only one IP-address and can be placed anywhere in the hospital. In most cases, this will be in the data center of the hospital.



Because NeBULA™ Hospital is tightly integrated with the existing IT-infrastructure, the costs for installation and maintenance are significantly lower.

Maintenance

Back-up

NeBULA™ Video Center is completely backed-up for easy disaster recovery. Even in those cases where the hardware needs to be replaced (due to e.g. fire or water damage) it can be made operational in a very limited amount of time.

Monitoring and alerting

NeBULA™ Video Center continuously monitors the health of NeBULA™. The service staff receives alerts by email in case of detected or predictable system malfunction. Routine maintenance jobs and most emergency interventions are carried out remotely.

Installation

Easy

eSATURNUS delivers the NeBULA™ Video Center as a preconfigured unit. Based on a list of questions that is filled in by the hospital through the local distribution partner, all HIS integration can be prepared.

Only one static IP-address is needed for the NeBULA™ Video Center.

Link to storage

NeBULA™ Video Center has a connection to the NAS of the hospital. The system supports both CIFS as NFS for the file transfer. This setup can be pre-configured on the NeBULA™ Video Center.

Technical specifications

NeBULA™ Video Center Specs

Number of video modalities recording simultaneously	Up to 25 NeBULA™ clients
Dimensions	44cm x 29cm x 4,5cm
Rack	1U, 19"
Power consumption	60W

Remote NAS

Minimal	500 GB
Maximal	Unlimited
Connection	CIFS or NFS

Networking requirements

Network

Network interface	1000Base-T with IP v4
Management network interface	100Base-T with IP v4
Monitoring and alerting	Acces to SMTP server
Remote access	On-demand VPN

