UNLIMITED PLM PERFORMANCE **DEVELOPED BY ISD**

PDM/PLM with HELiOS

Version 2020

System and Hardware Requirements

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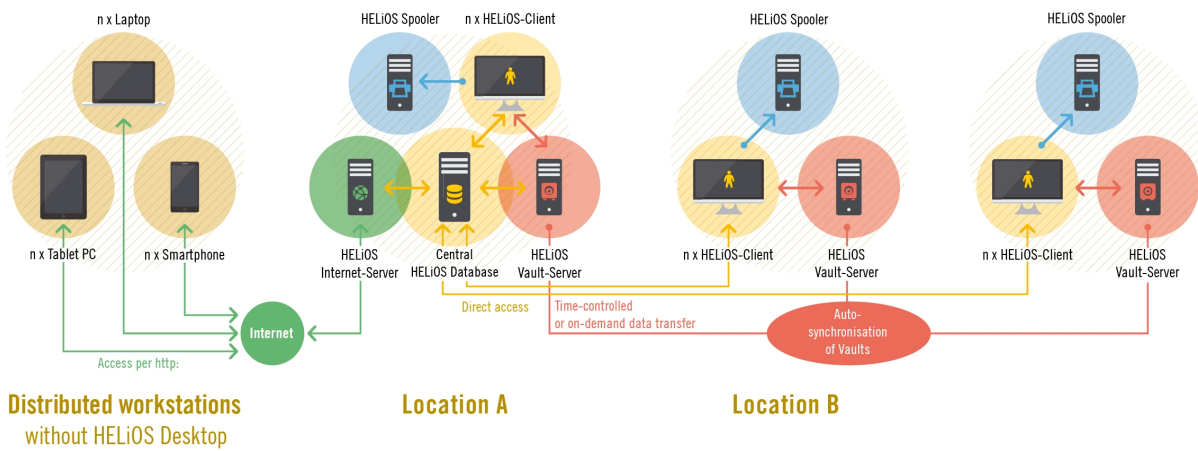isdgroup.com

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THE WORLD OF CAD AND PDM SOLUTIONS

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Architecture / System Overview

HELiOS is the PDM/PLM system for safe corporate processes. Typical use cases for PDM/PLM are:

- Central and safe management of all company-relevant documents.

- Company-wide access to product-related information via a locally installed HELiOS Client or, if desired, also without additional Client installation via the HELiOS Internet Server.

- Bringing in of external partners and suppliers as well as mobile employees via the HELiOS Internet Server.

- Company-wide control, output and conversion of drawings and documents via the HELiOS Spooler.

- Data exchange across departments with ERP systems via Standard Connectors or, if desired, as cus-tomer-spe-cific solution.

HELiOS – PDM/PLM for the entire enterprise

To ensure that you actually work with the suitable hardware and software when using HELiOS, we recom-mend read-ing the information about the different HELiOS components contained in this Whitepaper. These are:

- HELiOS Database Server

- HELiOS Vault Server

- HELiOS Client

- HELiOS Internet Server

- HELiOS Spooler and

- License Server.

HELiOS Database Server

HELiOS manages all metadata centrally in one database. For this a Database Server is required that supports and provides the corresponding data management services. You can use a Microsoft SQL Server or an Oracle Database Server as Database Server (RDBMS).

HELiOS Vault Server

HELiOS saves all utilized data (files) either to a central file system or, if desired, to the HELiOS Vault Server. Whether a HELiOS Vault Server is required also depends on the interfaces types that that are used.

The HELiOS Vault Server is an "electronic safe" for all documents in a company that prevents an immediate, uncontrolled access to security-relevant files.

Special authentication and check-in/check-out mechanisms in the background efficiently restrict access to the persons who actually have access permission, while regulating simultaneous concurrent accesses on the basis of the corresponding access type.

Furthermore, the HELiOS Vault Server provides the basis for document replication when multiple locations are involved.

HELiOS Client

HELiOS can be used integrated in a CAD system such as HiCAD or SOLIDWORKS, but also as a standalone system – the so-called HELiOS Desktop. The corresponding Client must be installed locally.

HELiOS Internet Server

Via a HELiOS Internet Server with Web Sharing you can give your customers and suppliers web-based access to projects, documents and articles. With the help of a common Internet Browser the corresponding infor-mation can be displayed, complete with graphical previews. Even within closed networks the HELiOS Internet Server can be used in a very efficient manner. For instance, it allows immediate mobile access to data and documents throughout the entire company, e.g. in the production department, warehouse, external service etc., without any special technical equipment being required.

HELiOS Spooler

The HELiOS Spooler is the automation platform for the processing of print, plot and conversion jobs by Servers or other automation tasks. The utilisation of the HELiOS Spooler offers the following advantages:

- Automatic processing of print/plot jobs with a multitude of configuration options, e.g. an automatic as-signing of printing devices according to format sizes.

- Automatic processing of conversion jobs, e.g. for an automatic creation of PDF documents. The availa-ble target formats vary depending on the utilized CAD base system.

- All jobs are handled centrally by the HELiOS Spooler, which spares the users at individual workstation a lot of work and avoids unnecessary disruptions of their daily work. A simultaneous running of multiple HELiOS Spoolers is also possible.

- Jobs can be controlled by a timer and prioritized.

- Current jobs, job statuses and job histories can be viewed as result lists. Individual jobs can be repeated at any time.

License Server

Before you can use HELiOS you need to get a license for the software. You have the following options:

- Network Licenses If you choose network (server-controlled) licensing, the license will be directly locked to the hardware of the server that centrally manages the HELiOS licenses. These licenses can be used on any work-station in your network that is connected to this Server. But Network Licenses can even be used if the work-station has no network connection to the Server. For this to happen, a license can be temporarily provided via direct checkout from the License Server as a so-called "Commuter License".

- Standalone Licenses (local licenses) Here, the activation will be directly locked to the hardware of the work-station on which your HELiOS pro-gram is installed.

To be able to use Network Licenses, a License Server must have been installed.

The License Server carries out licensing in a multi-user environment and manages them. It also provided an over-view of all licenses and regulates licensing requests of all users who wish to work with a HELiOS appli-cation.

System and Hardware Requirements

Important Notes!

Discontinuation of Windows® 7

Microsoft will cease the support for Windows by January 2020. For compatibility reasons HiCAD 2020 SP1 and HELiOS 2020 SP2 will thus be the last versions of our CAD and PDM systems which support Windows ® 7. The corresponding server operating systems (Windows Server 2008 R2 or older) will then no longer be supported either.

Discontinuation of Oracle

With HELiOS 2022 (version 2700) onwards, Oracle is no longer supported as a database platform.

System Requirements for the HELiOS Database Server

The requirements with regard to the hardware primarily depend on the specifications given by the respective RDBMS supplier (Microsoft / Oracle). Currently, following operating systems are supported:

	HELiOS 2020	HELiOS 2019	HELiOS 2018
Microsoft SQL Server 2019	✔	✔	✔
Microsoft SQL Server 2017	✔	✔	✔
Microsoft SQL Server 2016	✔	✔	✔
Microsoft SQL Server 2014	✔	✔	✔
Microsoft SQL Server 2012	✔	✔	✔
Microsoft SQL Server 2008	✔	✔	✔
Microsoft SQL Server 2005	✘	✘	✘
Oracle* Database Server 12c	✔	✔	✔
Oracle* Database Server 11g R2	✔	✔	✔
Oracle* Database Server 11g R1	✔	✔	✔
Oracle* Database Server 10g	✘	✘	✘

*With HELiOS 2022 (version 2700) onwards, Oracle is no longer supported as a database platform.

In addition, the following minimum requirements should be guaranteed for the main memory and hard disk:

	HELiOS 2020	HELiOS 2019	HELiOS 2018
Main memory	Additionally at least 4 GB main memory. With an increasing database size the working memory should be enlarged in order to guarantee optimal performance.		
Hard disk	Additionally at least 10 GB hard disk memory. The actual demand depends on the size of the database.		

ⓘ **Please note:**

- The use of virtual servers is essentially possible. Please consider to grant sufficient performance within the virtual environment.

- On the database server, HELiOS data base should be imported beforehand, for example via HELiOS Database Creator, so that clients can connect with the database.

- SQL Server Standard vs. SQL Server Express
As of late, the productive use of SQL Server Express is possible. Please note that SQL Express has limited storage size (10 GB) for each data base and provides weaker performance than SQL Standard, especially on powerful hardware. If well-equipped hardware is used for the server (multiple processors and plenty of RAM), the SQL server thwarts the performance again. On regular desktop hardware the difference between SQL Express and SQL Standard is smaller due to the accordance of express limits and system.

System Requirements for the HELiOS Vault Server

The HELiOS Vault Server can either be installed as 32-Bit or 64-Bit application. The minimum requirements are as follows:

	HELiOS 2020	HELiOS 2019	HELiOS 2018
Processor (CPU)	X86 or AMD64 Architecture with SSE2 Support		
Main memory	Additionally at least 1 GB main memory		
Hard disk	The required hard disk space depends on the volume of arising data use (files). A safety margin should be considered.		
Operating system	Microsoft Windows 7 or Microsoft Windows Server 2008 R2 or higher		

Please note:

- If you work with only interfaces to HiCAD and/or Microsoft Office, the use of HELiOS Vault Servers is optional. Other interfaces must be used in conjunction with the HELiOS Vault Server.

- The needed hard disk space can also be distributed on multiple volumes.

- We recommend the use of RAIDs in order to ensure failsafe performance.

System Requirements for the HELiOS Client

The HELiOS Desktop (Client) can either be installed as 32-Bit or 64-Bit application. The minimum requirements are as follows:

	HELiOS 2020	HELiOS 2019	HELiOS 2018
Processor (CPU)	X86 or AMD64 Architecture with SSE2 Support		
Main memory	Additionally at least 2 GB main memory		
Hard disk	Additionally at least 2 GB free hard disk memory		
Operating system	Microsoft Windows 7 or Microsoft Windows Server 2008 R2 or higher		

The interfaces that are available for the HELiOS Clientare listed in a Compatibility Matrix.

ⓘ **Please note:**

- When interfacing the HELiOS Desktop with other applications, for instance with a CAD system or Office product, please consider the minimum requirements of each system manufacturer.

- If you want to use an integrated viewer, the hardware requirements of respective viewer manufacturer must be considered.

- Before you can use the HELiOS Client you require a HELiOS Database Server as well as an appropriately configured ODBC connection.
  Dokumente (im .pdf-Format) zur Installation des Datenbanksystems und zum Import und Export der Datenbank finden Sie im ISD Wiki unter Product Know-how > Documentation > HELiOS.

- Current information for hardware requirements can be found via www.isdgroup.com at Support > ISD Wiki > Product know-how > FAQ.

Compatibility Matrix for Interfaced Applications (HELiOS)

Below you find a list of possible interfaces for the HELiOS Client:

	HELiOS 2020	HELiOS 2019	HELiOS 2018
CAD system			
HiCAD 2020	✔	✘	✘
HiCAD 2019	✔	✔	✘
HiCAD 2018	✔	✔	✔
HiCAD 2017	✘	✔	✔
HiCAD 2016	✘	✘	✔
HiCAD 2015 or older	✘	✘	✘
AutoCAD 2021	✔ (as of SP1)	✘	✘
AutoCAD 2020	✔	✔ (as of SP1)	✘
AutoCAD 2019	✔	✔	✔ (as of SP2)
AutoCAD 2018	✔	✔	✔
AutoCAD 2017	✔	✔	✔
AutoCAD 2016	✔	✔	✔
AutoCAD 2015	✘	✔	✔
AutoCAD 2014	✘	✔	✔
AutoCAD 2013 or older	✘	✘	✘
AutoCAD Mechanical 2018-2020	✔	✔ (as of SP1)	✘
Inventor 2021	✔ (as of SP1)	✘	✘
Inventor 2020	✔	✔ (as of SP1)	✘
Inventor 2019	✔	✔	✔ (as of SP1)
Inventor 2018	✔	✔	✔
Inventor 2017	✔	✔	✔
Inventor 2016	✔	✔	✔
Inventor 2015	✘	✔	✔

	HELiOS 2020	HELiOS 2019	HELiOS 2018
Inventor 2014	✗	✓	✓
Inventor 2013 or older	✗	✗	✗
Navisworks 2021	✓ (as of SP1)	✗	✗
Navisworks 2020	✓	✓ (as of SP1)	✗
Navisworks 2016 - 2019	✓	✓	✓ (as of SP1)
Navisworks 2015	✗	✓	✓ (as of SP1)
SOLIDWORKS 2020	✓	✗	✗
SOLIDWORKS 2019	✓	✗	✓ (as of SP2)
SOLIDWORKS 2018	✓	✗	✓
SOLIDWORKS 2017	✓	✗	✓
SOLIDWORKS 2016	✓	✗	✓
SOLIDWORKS 2015	✗	✗	✓
SOLIDWORKS 2014	✗	✗	✓
SOLIDWORKS 2013 or older	✗	✗	✗
CAE-SYSTEM			
EPLAN Electric P8 Version 2.8	✓	✓ (as of SP1)	✗
EPLAN Electric P8 Version 2.7	✓	✓	✓
EPLAN Electric P8 Version 2.6	✓	✓	✓
EPLAN Electric P8 Version 2.5	✓	✓	✓
EPLAN Electric P8 Version 2.4	✓	✓	✓
Zuken E3 Version 2019	✓	✓ (as of SP2)	✗
OFFICE			
Office 2019	✓	✓ (as of SP1)	✗
Office 2016	✓	✓	✓
Office 2013	✓	✓	✓
Office 2010	✓	✓	✓
Office 2007 or older	✗	✗	✗

The symbol does not always mean that the respective product is not compatible. It can also mean that the interactions between this product and the HELiOS Client have not been sufficiently tested by the ISD yet.

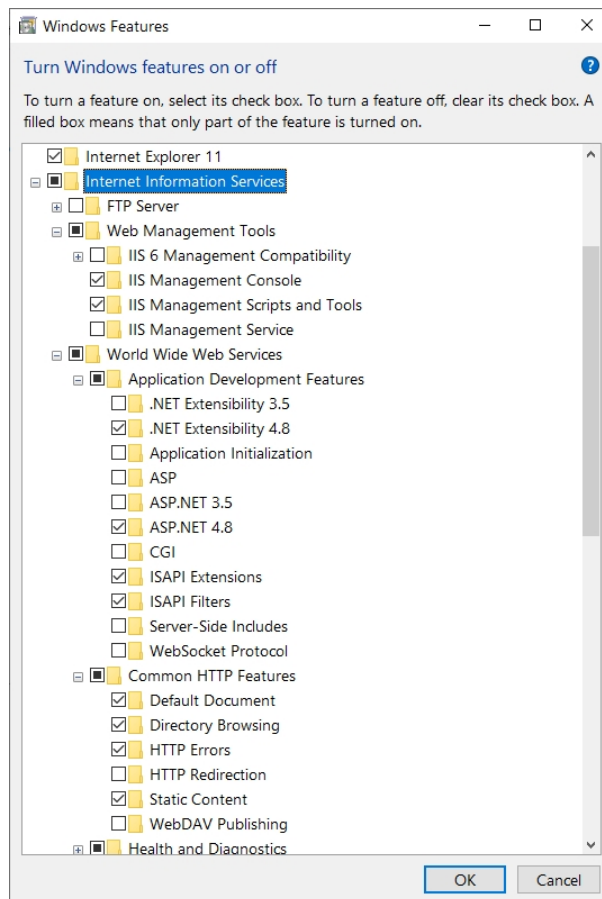## System Requirements for the HELiOS Internet Server

For the HELiOS Internet Server, similar system and hardware requirements as for the HELiOS Desktop apply:

	HELiOS 2020
Processor (CPU)	X86 or AMD64 Architecture with SSE2 support
Main memory	Additionally at least 4 GB main memory
Hard disk	Additionally at least 2 GB free hard disk memory
Operating system	Microsoft Windows 10 or Microsoft Windows Server 2016

The Microsoft Internet Information Server (IIS), at least version 10.0 with ASP.NET 4.8 support, is also required. This is an integral part of Windows, but must be installed/activated separately before installing the HELiOS Internet Server.
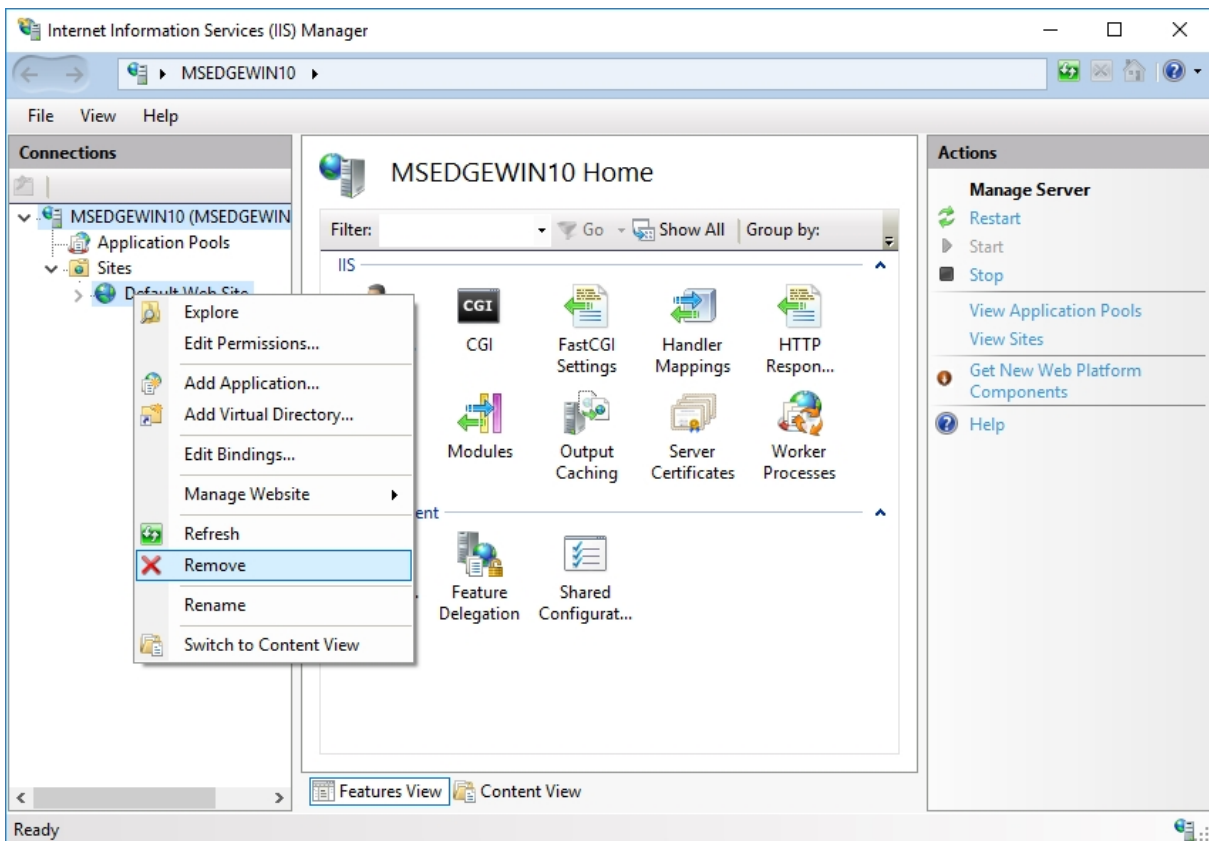
Proceed as follows:

Choose **Control Panel > Programs and Features** and, at the top left of the window, select **Turn Windows features on or off**. In the Windows Features dialogue window, choose **Internet Information Services > Web Management Tools**, and **Internet Information Services > World Wide Web Services > Application Development Features** and activate the checkboxes as shown below:

A **"Default Web Site"** with Port 80 may already have been installed in the IIS Manager. In this case the HELiOS Internet Server (for which Port 80 has also been preset) cannot be executed properly. It is therefore recommended to remove this Default Web Site here.

Choose **Control Panel > Administrative Tools > Internet Information Services (IIS) Manager**. Right-click Default Web Site in the tree structure on the left hand side.

If a **required** website is already using Port 80, you need to select a different Port for the HELiOS Internet Server.

ℹ️ **Please note:**

- Besides IIS, HELiOS Client (HELiOS Desktop) must be installed.

- IIS URL Rewrite from https://www.iis.net/downloads/microsoft/url-rewrite must be installed.

- For the live operation of the HELiOS Internet Server, a (sub)domain including a valid SSL certificate and port forwardings are required.

- HELiOS Internet Server must use the same user that is required to access and use the HELiOS Desktop.

- To operate the HELiOS Internet Server, a number of website configurations in the Internet Information Server are required. Parallel operation with other products on the IIS is not supported.

System Requirements for the HELiOS Spooler

HELiOS Spooler is, in principle, a 64 Bit application. The main memory should be at least as large as the main memory for the utilized Client systems. This ensures that all data to be processed by the HELiOS Spooler (i.e. the data transmitted from the Client systems to the HELiOS Spooler can be handled successfully.

	HELiOS 2020	HELiOS 2019	HELiOS 2018
Processor (CPU)	AMD64 Architecture with SSE2 support		
Main memory	Additionally at least 2 GB main memory		
Hard disk	Additionally at least 4 GB free hard disk memory		
Operating system	Microsoft Windows 7 or Microsoft Windows Server 2008 R2 or higher		

ⓘ Please note:

- HELiOS Spooler runs on a separate Plot Server system.

- HELiOS Spooler requires locally installed CAD, electrical engineering or Office applications for that plot and conversion orders are carried out. Please note that the use of these applications requires respective licenses and that the hardware requirements of each system supplier must be considered as well.

- The main memory should be at least dimensioned as large as the main memory of the client system deployed. Thus it is guaranteed that the data (which is transferred from the client systems to HELiOS Spooler) can be processed accordingly.

- Besides the client operating systems for Windows, the above mentioned server operating systems can be used as well. It depends on the license terms for the Microsoft OS used by your company whether a server operating system can be used or not. Here, the number of permitted simultaneous connections is deciding here.
  As of Windows 7, 20 simultaneous logins are approved. In this case, you need to assure that apart from the current logins sufficient logins are available for each Client computer's Print Client.

System Requirements for the License Server

We use the Software Sentinel RMS© from gemalto© for licensing. The license server is in principal a 32 Bit application.

The minimum requirement for running a license server is as follows:

	HELiOS 2020	HELiOS 2019	HELiOS 2018
Processor (CPU)	X86 or AMD64 Architecture. Recommended: 2 GHz Processor		
Main memory	Additionally at least 1 GB main memory		
Hard disk	Additionally at least 2 GB free hard disk memory		
Operating system	Microsoft Windows 7 or Microsoft Windows Server 2008 or higher		

Please note:

- The license server need not be installed on a separate server or server operating system.

- A static IP address is required for the correct operation of a license server. When using a virtual server, a static MAC address is required.

- The license server must not be installed on the same computer with HELiOS Desktop, because both products share system information with regards to the licensing.

- Internet access is needed for the license server due to activation and deactivation.

Operation in Virtual Environments

HELiOS Client

Generally, the HELiOS Client can be operated on Virtual Machines (VM). If you use integrated viewers, the hardware requirements of the respective viewer manufacturer must be considered.

The HELiOS Client can also be used as a terminal application.

HELiOS Spooler

Generally, the HELiOS Spooler can be operated on Virtual Machines (VM). However, limitations may occur with regard to simultaneously installed CAD system, electrical engineering software or Office applications.

With regard to graphics functionality, performance and integration of printers, too, limitations may occur in virtual environments.

License Server

The license management system based on Sentinel RMS© by the company gemalto© can, generally, also be used in virtual environments.

Network licenses on Virtual Machines (VM)

If you want to use/activate/deactivate the network licenses on virtual machines, please observe the following points:

- A static MAC address is required
- A static IP address is recommended or required when using Commuter Licenses
- Before copying or changing a virtual machine, deactivate the network licenses, since the UUID (Universal Unique IDentifier) of the VM will change due to the copying process, and cannot be deactivated afterwards any more. This also applies to the starting of the VM on a different host.

Multiple HELiOS Servers on One Computer

The following rules apply with regard to simultaneously installed, different HELiOS Server components on the same computer:

- The HELiOS Database Server, the HELiOS Vault Server and the ISD License Server can in principle be installed and operated together on one computer. However, the Database should not be located on the same RAID system as the user data of the HELiOS Vault Server. The Vault requires large hard disks, while the Database requires fast hard disks.

- Microsoft recommends not to install the MS SQL Server on a computer that is at the same time a domain controller.

- The HELiOS Spooler with the integrated applications for conversion and printing should always be in-stalled on an own (if required, a virtual) machine.

- The same applies to the HELiOS Internet Server.

- None of the two above mentioned products should ever be combined with a Database Server, Vault Server or File Server.

- The HELiOS Vault Server can be installed together with the MS SQL Server (or Oracle Database Server) on one machine, if the amount of data does not exceed a certain limit and the resources (especially RAM) on the machine are sufficient. A Vault Server can be moved subsequently to a different computer at any time.

Network Requirements

To avoid loss of performance we recommend the operation of HELiOS in a 1 GBit network or networks with an even higher bandwidth. Generally, the bandwidth affects the provision of the user data (e.g. CAD docu-ments) which need to be transmitted from the central storage directory or the HELiOS Vault Server, respec-tively, to the cor-responding Clients.

Also, the latency of the connection between the HELiOS Clients and the HELiOS Database Server should be well below 5 ms; otherwise, the reactivity of the HELiOS Clients will be slowed down significantly.

Backup

You as a customer are responsible for regular data backup. The following data must be backed up:

- The HELiOS Database on the Database Server.

- The HELiOS Document storage directory or the Document and Management areas when using a HELiOS Vault Server. If multiple HELiOS Vault Servers are used (for a working across different locations), all HE-LiOS Vault Servers must be backed up.

If you use a HELiOS Vault Server please ensure that the time difference is as small as possible at the time of the backup of the HELiOS Database or the HELiOS Vault Server, respectively.

PDM/PLM with HELiOS

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