

DECOS WHITEPAPER

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Table of content

1	INTRODUCTION	4
1.1	Description of the application.....	4
1.2	Development of new versions	4
1.3	Patches	4
1.4	Customized software.....	4
2	LICENCE POLICY.....	4
3	TECHNICAL SPECIFICATIONS.....	5
3.1	Architecture	5
3.2	System requirements	5
3.3	Development environment and Database	6
3.4	Single server hardware.....	6
3.5	Multiple server hardware	7
3.6	Approaching the files	7
4	STORAGE CAPACITY	7
4.1	Required storage capacity	7
5	SOFTWARE REQUIREMENTS FOR DECOS D5	8
6	INSTALLATION	9
6.1	Back-up procedure	9
6.2	Additional environments	10
7	LOCATIONS.....	10
7.1	Working at home.....	11
7.2	Citrix or Terminal Server.....	11
7.3	Decos D5 – work station.....	11
8	CONNECTIONS	11
8.1	Connection with a network scanner	11
8.2	Connection with a TWAIN scanner.....	12
8.3	E-mail connection.....	12
9	AUTHORISATION.....	12
10	LINKING OPTIONS.....	12
10.1	XML Import.....	12
10.2	XML Export	13
10.3	E-mail.....	13
10.4	Barcode	13
10.5	OfficeLink SDK.....	13
10.6	WebDAV	13
10.7	Web Services.....	14
10.8	Outsourcing services	14
11	COMPATIBILITY CHART	15
11.1	Webservers	15
11.2	Databases.....	15
11.3	Operating systems	16



11.4	Browsers.....	16
11.5	Word processors.....	17
11.6	E-mail clients.....	17
11.7	E-mail servers.....	17

1 INTRODUCTION

1.1 Description of the application

Decos D5 is the optimal system for document management, address management and records (archive) management on the internet or on your organization's intranet. The options, such as connections with MS Word, a scanner and e-mail, make Decos D5 a document management system with a future. Some possibilities are: scanning documents, workflow management and printing scanned documents. The program is available for MS Windows and can be run as a standalone or as a multi-user version.

1.2 Development of new versions

In order to develop new versions of Decos D5, Decos uses a shortlist of improvements and extensions which are in great demand. Several of these improvements and extensions will be incorporated in a new release. First, the new release is internally tested by Decos. This will be followed by a beta-test period, ranging from three to twelve months. After the completion of the tests, the new release will become available for all users with a valid service agreement.

1.3 Patches

In addition to new software versions, we distribute a patch every eight weeks that contains minor improvements or modifications. These patches are sent free of charge to all users with a valid maintenance agreement.

1.4 Customized software

A customer can ask for a cost estimate if a he wants a specific custom addition of the Decos D5. Decos carries out custom-code additions on a fixed price/fixed date basis. Decos will hold the copyright of every custom-code, which means it will remain the property of Decos Software Engineering. Decos will try to develop every additional software custom-code, as far as possible, which can be used as a part of a future release of the program. This offers the advantages that the new functionality will also be available for all other customers, and that the custom code will be a part of all future releases.

2 LICENCE POLICY

Decos Software Engineering BV provides the licensee with a non-transferable license for Decos D5. The number of user names (named users) that can be entered in Decos D5 corresponds to the number of licenses. These users have access to the application at all times. The total number of user names for all installations combined must remain below the agreed limit. A user name may be a full user or a view client with restricted rights.

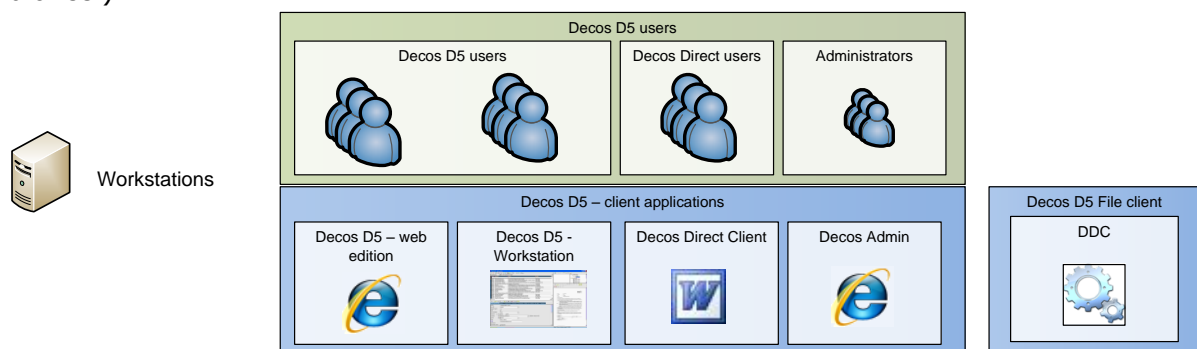
Every user can use Decos Direct, the MS Office link of Decos D5, which allows documents to be saved directly from the Office environment in the Decos database.

3 TECHNICAL SPECIFICATIONS

3.1 Architecture

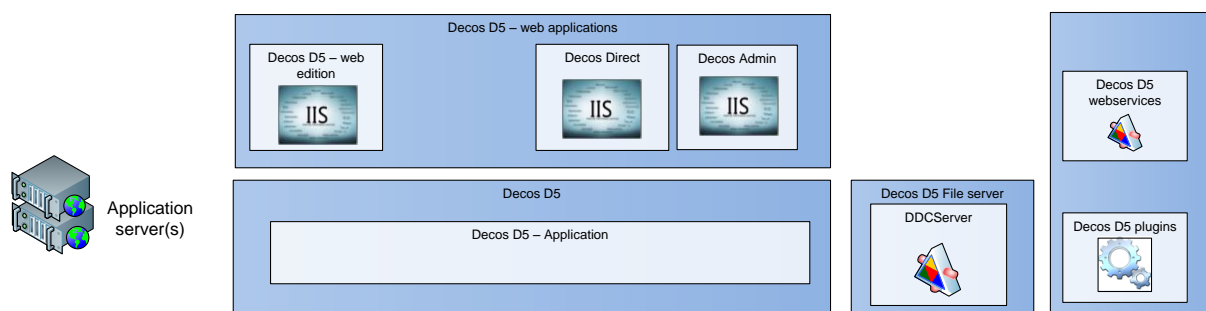
Decos D5 knows different kinds of users that are active in the Decos applications. The end users get access to the application via Decos D5 (browser) and / or Decos D5 – work station (a Windows application specially made for bulk scanning). Decos D5 is integrated with Microsoft Office, Groupwise, Lotus Notes and Windows Explorer via DecosDirect.

The administrators of Decos have access to the management application Decos Admin (via the browser):



These applications are connected to the application server, except for Decos D5 – work station that approaches the database directly.

The application server contains several web sites (for Decos D5 and for Decos Admin) and web services (Decos Direct Server, File server, public web service). The application server also contains several background services as OCR, indexing, periodical overviews and e-mailing. These components use a general application layer.



The application servers get the data from three information sources: a relational database, an index for full text search possibilities and a location for the storage of files. The full text search index can also be kept by the database server, then only two information sources are needed.

3.2 System requirements

The network that is required to run Decos D5 – web edition has to be a network which enables the use of the TCP/IP protocol.

The server operating system:

- Windows 2000 Server
- Windows 2003 Server
- Windows 2008 Server

Internet Explorer 5.5 and later versions.

The workstations which Decos D5 will run on:

- Windows 2000
- Windows XP
- Windows Vista
- Windows 7

All workstations have to be equipped with Internet Explorer 5.5 (or a later version). Decos D5 is also available for:

- MS Windows
- Linux
- Mac OSX

3.3 Development environment and Database

The application is written in Microsoft C++, Microsoft Visual Basic and Microsoft Active server Pages. Several types of databases can be used, namely Oracle 7.3.4 or a later version, Microsoft sql-server 7 or a later version and MySql 3.23 or a later version. Database licenses are not part of the Decos offer. You need to purchase a database license yourself. Every database supplier has its own license policy. Decos uses one log-in to give access to all users. The user authorisation is set in Decos.

It is important to choose a database that you are familiar with. Before Decos D5 can be installed in your organization, you have to make sure that the database software has been installed. You have to be able to manage your own database and support the final users.

Underneath, you can find an indication of the license possibilities per database supplier:

MySql: Server license, Basic, Silver Gold and Platinum costs per year. The number of Decos D5 users that can use the database server, is unlimited. Reference: <https://shop.mysql.com/>

Oracle: Oracle offers 'Named Users Plus' licences or licences per processor. With 'Named Users Plus', every Decos user is also a user of the database. With a licence per processor, the number of users is unlimited. Reference: http://oraclestore.oracle.com/OA_HTML/ibeCZzpHome.jsp

Microsoft sql-server 2000/2005/2008: Microsoft offers the possibility to purchase 'Client Access Licences' or a licence per processor. With a licence per processor, the number of users is unlimited. With 'Client Access Licences', every Decos D5 user needs to have a database licence. Reference: <http://www.microsoft.com/sqlserver/2005/en/us/pricing.aspx>

3.4 Single server hardware

Up to 50 active users can use a single server. A server with a Microsoft SQL desktop engine database can be used for a maximum of 5 active users. An Oracle/SQL-server/MySQL database will be used when there are more than 5 active users. Please note that you will also need a valid

licence for either Oracle or SQL-server.

3.5 Multiple server hardware

To support larger numbers of users, or to upgrade Decos D5, the use of more than one web server can be considered. Windows NT Load Balancing Service will control the task sharing across the web servers when two or more web servers, together with one database server, are used.

Microsoft advises against the use of cluster server in combination with IIS (Internet Information Server).

Clustering Database servers are possible as long as the used database software supports this. You need to have knowledge of this yourself.

3.6 Approaching the files

The up- or downloading of files, to or from the system, can be done in three ways. A local copy will be made and changes will be written to the server when using one of the three methods.

- Through a network share: The user approaches the file through a shared directory on the Decos server. The user needs to have the rights to read and write in this directory. It could also be a hidden share.
- Through FTP: The user approaches the file through a FTP-server which needs to be installed on the Decos server. All users approach the FTP-server through one generic account of which the username and password are encrypted.
- Through a XML Web Service: A XML Web Service is installed on the server and gives the client's pc's access to the files through the SOAP protocol. This is the most secure method, but it demands some extra requirements from the system:
 - The server needs Windows 2000 or a later version
 - The clients need Windows 2000 Service Pack 6a or a later version.

Microsoft.Net Framework needs to be installed on the clients PC's as well as on the server.

4 STORAGE CAPACITY

4.1 Required storage capacity

The table below shows the amount of storage capacity needed on the server and workstations, for the use of Decos D5 and the data files.

Required storage capacity for Decos D5	Windows 2000/2003/2008 server (32/64)**
Minimal processor (max. 10 users)	Single Pentium 4 Xeon 2.8 GHZ
Preferred processor (40 users) Double configuration*	Dual Pentium 4 XEON 2.8 GHZ
Preferred processor (100 users) Double configuration *	Dual Pentium 4 XEON 3.4 GHZ
Preferred processor (>100 users) Double configuration *	Dual of Quad Core Pentium 4 Xeon 3.4 GHZ
Minimal internal memory	2 GB

Preferred memory	4 GB (in case Oracle 6 GB)
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**Advised to use separate database and web server.*

***using a 64 Bits server IIS uses a 32 Bits mode.*

Required workstation for Decos D5	Windows 2000/XP/Vista/7*
Minimal PC processor	1 GHz
Minimal internal memory	512 MB
Preferred internal memory	768MB

** Both Decos D5 and MS Word are active.*

Required workstation for Decos D5 – work station	Windows 2000/XP/Vista/7
Minimal PC processor	1GHz
Minimal internal memory	768 MB
Advised internal memory	1,5 GB

Examples of database capacity (based on black/white; 300 dpi)	Hard Disk space (average)
Database with 5.000 documents, 2.000 addresses, without scanned pages	27 MB
Database with 30.000 documents, 15.000 addresses, without scanned pages	165 MB
Storage of 10.000 scanned pages	500 MB
Storage of 50.000 scanned pages	2.5 GB
Postal-code table with index (optional)	75 MB

Storage for each datatype	Hard Disk space (average)
Data for each registration	5 KB
Data for each address	1 KB
Data for each folder	1 KB
Storage of 1 scanned page with 300 dpi, TIFF CCITT group 4 compression.	50 KB

5 SOFTWARE REQUIREMENTS FOR DECOS D5

Several Decos D5 functions require the installation of other software on the server and/or computers. The relevant dependencies are listed in the table below. Your organization does not necessarily need to use all of the available functions. These functions are italicized. This concerns the minimum versions of the software.

Functionality	Software
Normal use (Windows 2000 Server)	Microsoft.Net 2.0
Normal use (Windows 2003/2008 Server)	Microsoft.Net 3.5
<i>Visual Browser</i>	<i>Microsoft.Net 3.5</i>
<i>Excel reports (server-side)</i>	<i>Microsoft.Net 3.5</i>
<i>Merge DOTX/DOTM</i>	<i>Microsoft.Net 3.5</i>
<i>Template editor</i>	<i>Visual Studio Tools for Office Runtime 2</i>

<i>Configuration editor</i>	<i>Microsoft.Net 2.0</i>
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Microsoft.Net 3.5 can only be installed on servers with Windows 2003 SP1 or higher.

Clients

Functionality	Users	Application manager
Normal application use	Microsoft.Net 1.1	Microsoft.Net 1.1
Workflow Designer	-	Silverlight 1.0
<i>Visual Browser</i>	<i>Silverlight 2.0</i>	<i>Silverlight 1.0</i>
<i>MSG templates</i>	<i>Outlook</i>	<i>Outlook</i>
<i>OTT templates</i>	<i>OpenOffice.org</i>	<i>OpenOffice.org</i>
<i>DecosDirect integration with OpenOffice</i>	<i>Sun/Novell Openoffice.org 2.4/3.0</i>	-
<i>Groupwise EML storage</i>	<i>Groupwise 7.0 SP3</i>	-
<i>Office 2007 Ribbons</i>	<i>MS Office 2007 Microsoft.Net 2.0</i>	-
<i>Excel reports (server-side)</i>	-	<i>MS Office 2..0 + 2007 Compatibility pack</i>
<i>Template editor</i>	-	<i>Microsoft.Net 2.0 Visual Studio Tools for Office 2 MS office 2003</i>

In order to use DOTX/DOTM templates, you must also install the Microsoft.Net Framework 3.5 on computers with Decos - work station.

6 INSTALLATION

The application has to be installed on a web-server. The web-server is a Windows 2000 or 2003 machine with Microsoft Internet Information Server. The database (Oracle, SQL-server or MySQL) can be installed on the same server or on a separate one. Please note that you will also need a valid licence for an Oracle or a SQL-server. The installation of Windows 2000 or Windows 2003 as well as the database platform is the responsibility of the customer. If the customer wants Decos to take care of this, it will cost extra time to complete the entire installation.

Decos D5 is usually installed on your web server within three days by one of our technical consultants. Our consultant will be delighted to advise you about the installation or automated roll-out procedure for your computers. You will receive an installation manual once the installation has been completed.

We use MSI installation files that can be rolled out via your Active Directory (Microsoft) or E Directory (Novell). We will gladly assist you if you use an alternative roll-out method. An MSI file is available for each module of Decos D5.

6.1 Back-up procedure

Decos is not responsible for data protection. However, we recommend that you include the Decos database and Decos data (registrations, linked documents, etc.) in your current back-up procedure. Our consultant will be glad to contribute ideas concerning the policy of your

organization. Both the main application and the links are stored in a single directory in order to simplify the back-up process.

6.2 Additional environments

Decos recommends that your organization use a production environment as well as a test environment. We can assist you if your organization works in accordance with an OTAP model and you would like to have an additional environment alongside your production environment. An additional website and an additional database are created in this case. The overview below describes the advantages and disadvantages of different test situations:

Situation 1: Test books in production environments	
Advantages	Fast and simple
Disadvantages	- Only possible to practice with book and item profile. - Impossible to modify settings application-wide.
Extra installation time	None
Additional hardware	None

Situation 2: Test environment, separate test database, and additional (test) website on same server	
Advantages	Settings can be modified. End users do not notice this.
Disadvantages	- The E-mail module, OCR module, and Publication module cannot be used. - A new version of Decos cannot be tested in the test environment without having a direct effect on the production environment. - Intensive use (large reports, etc.) affects performance.
Extra installation time	Half day to entire day
Additional hardware	Additional database and additional website

Situation 3: Complete test system	
Advantages	New version of Decos, including all components and modules, can be tested.
Disadvantages	None
Extra installation time	1 to 2 days Comment: one additional installation day is required to set up a test environment including the work station, AdminTool, and scanning.
Additional hardware	Additional web server and an additional database, if applicable

7 LOCATIONS

Decos D5 can be installed at more than one location, if you have a company licence. These locations may each have more databases. The only limit is the one defined in your license agreement. Users may have access to one or more databases.

7.1 Working at home

When the application is used on the internet, any PC with a web-browser can be used to contact the server. This way an employee can easily consult the incoming documents (including scans) at home or at a branch-office of the organization. The employee can perform all tasks that are permitted within the rights set for his user account. Even when the Decos D5 does not run on the internet, employees can access the program. An additional advantage is that the documents are stored on the company file server. The risk of unauthorised distribution of company information is therefore minimized. The best security is offered when a direct modem or ISDN connection with a call-back function, is used.

7.2 Citrix or Terminal Server

Decos D5 can run on a Citrix Terminal Server or a Microsoft Windows Terminal Server. A separate server must be used for this purpose. The terminal server cannot be combined with the web server or database server due to technical reasons. The advantage of using a terminal server is that significantly less bandwidth per computer is required for users who access the application with a slow connection (an ISDN connection, for example). For direct access to the web server (without a terminal server therefore), we recommend a bandwidth of 64 Kbps per person. If you use the scan module, we recommend 256 Kbps per person. With the latest Citrix version, only 10-15 Kbps per user is required to use the application.

Recommended for direct server access	64 kbps per person
If the Scan module is also used	256 kbps per person
Latest Citrix version	15 kbps per person

7.3 Decos D5 – work station

Decos D5 – work station is the user-friendly application for rapid input of a large number of data. The application speed is realized thanks to a direct database access. Decos D5 – work station is also extremely suitable for bulk scanning. The built-in scan viewer offers a simple and clear solution for working with scans. Decos D5 – work station offers the frequent user substantial time-saving in data entry.

8 CONNECTIONS

8.1 Connection with a network scanner

Decos D5 supports the use of network scanners that store scans on a network share as TIFF files. There is a scan-module interface for the HP Digital Sender. When using the HP network scanner, a service has to be installed under Windows NT or 2000 on the web-server to establish the connection with the scanner. After installing this service, the server has to be re-booted.

Scanner type	Double sided scanner with automatic paper feeder for 50 pages
Resolution	600 dpi x 600 dpi, single sided
Scan speed*	z/w 46 pages per minute, fc 29 pages per minute
Scan settings	Text files and text/photo files
Max. document size	216x297 mm
LAN-interface	1 Ethernet 10/100Base-TX port, 1 open EIO slot

Service	3 year ServicePack
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8.2 Connection with a TWAIN scanner

It is possible to use TWAIN compatible scanners for the scanning of documents in Decos D5 irrespective the hardware interface (USB, SCSI etc.) used to establish the connection.

8.3 E-mail connection

The e-mail connection is installed on the Windows server, where the Decos D5 web server is also located. The e-mail connection requires the following additional tools:

- Access to an IMAP4-compliant mail server
- 1 extra mailbox on the IMAP4 mail server
- Access to a SMTP server for outgoing e-mail

9 AUTHORISATION

Decos D5 recognizes several levels of security. Access for reading, modifying or deleting files, can be assigned per user or user group.

Different levels of access can be appointed, even for administrators. This makes it possible to share the administrator tasks between several people.

Decos D5 uses the security that Windows offers. The web server can be configured in a way that only authorized users or user groups have access to the website.

Decos D5 can be used with the Simple Object Access Protocol (SOAP), at which data exchange is very secure.

10 LINKING OPTIONS

Decos D5 has a comprehensive set of options that enable it to be linked to external applications. This allows Decos D5 to be used as a central document repository in an optimal manner. An overview of the linking options:

- XML Import
- XML Export
- E-mail
- Barcode
- OfficeLink SDK
- Decos .NET SDK
- WebDAV
- Web Services

10.1 XML Import

Decos D5 can be expanded with a flexible XML import module that allows every XML format to be imported. Using XSL (eXtensible Stylesheet Language), any XML document can be converted into an import format specified by Decos.

Thank to this format, every desired type of record (or internal field) can be filled with a value from the source document. The XML Import option of Decos also allows you to import hierarchical structures such as folders with multiple documents and files, or addresses with multiple contact persons. In addition to metadata, you can also import files (scans, Word documents, etc.) into Decos D5 using the XML Import option. The XML Import uses a directory with files, but can also be fed with our Barcode or E-mail module.

10.2 XML Export

It is also possible to export data from Decos D5 to another application. A selection can be made using the comprehensive selection and reporting options and then exported to an XML format. This export includes linked physical files, such as scans or Office documents. All physical files can also be converted to a standard format (PDF), ensuring easy access from any application. The export selections can be performed at set times.

10.3 E-mail

It is also possible to record XML descriptions (with a reference to linked files, if applicable) in Decos D5 per e-mail. These attachments (XML + other files) are then placed in the import directory of the XML Import service. This is a solution if there is no network access from the external application to the Decos server (if the source is a website that runs outside the firewall, for example). The e-mail route guarantees the safety of the Decos server without compromising the linking options.

10.4 Barcode

Scanner output can also be used as input for the XML module. During scanning, the barcodes on a document are identified and the scan is placed together with an XML file with recognized barcodes in the import directory of the XML Import service. Using the flexible XSL format, parts of barcodes can be used as meta fields in Decos, enabling indexation that is practically automatic.

10.5 OfficeLink SDK

Software developers can use the Decos OfficeLink SDK. This is an API based on .NET/COM that unlocks other options within DecosDirect. Documents with metadata can be recorded in Decos via a SOAP interface (client-side), for example. This is possible with or without a user interface. The required metadata can be sent along by the invoking application, or the default data entry screens of DecosDirect can be used.

10.6 WebDAV

The WebDAV protocol ensures that the World Wide Web becomes a readable and writable medium. It allows files to be managed and edited on a web server. The link between Decos D5 and WebDAV ensures that Decos D5 Components can be installed directly on the web server. They no longer need to be installed on the client. The implementation of WebDAV client allows Books from Decos D5 to be displayed as directories in Windows Explorer, and documents to be opened and edited via this interface.

10.7 Web Services

Web Services allow a service on a server to be called up remotely from a client computer. Decos uses SOAP, an XML-based protocol, for Web Services. Via a link with Web Services, Decos allows information or programs to be used on other computers even though these are not installed on the user's own computer.

10.8 Outsourcing services

The Outsourcing Services department of Decos Software Engineering BV provides links, conversions, and other customized solutions. Since the conditions differ for each solution and existing infrastructure, our engineers will gladly inform you about the various possibilities.









11 COMPATIBILITY CHART

This document describes the compatibility between Decos D5 and other operating systems, word processors, browsers, e-mail clients and servers, and databases.

Explanation			
	Compatible		Not compatible
			Unknown




















11.1 Webservers

Decos D5 can be installed on these web servers.

	MS Windows	Linux
Microsoft IIS 4 (Windows NT4)		-
Microsoft IIS 5 (Windows 2000)		-
Microsoft IIS 6 (Windows 2003)		-
Microsoft IIS 7 32 Bits (Windows 2008)		-
Apache 1.3.x		
Apache 2.0.x		

11.2 Databases

Listed below are the databases supported by Decos D5, along with the operating systems on which these databases run:

	MS Windows	Linux	Unix
Oracle 8.x			
Oracle 9.x			
Oracle 10.x			
Oracle Express			
MS SQL Server 7		-	-
MS SQL Server 2000		-	-
MS SQL Server 2005		-	-
MS SQL Server 2008		-	-
MySQL Server 3.23			

MySQL Server 4.0.x	✓	✓	✓
MySQL Server 4.1.x	✓	✓	✓
MySQL Server 5.0.x	✓	✓	✓
MySQL Server 5.1.x	✓	✓	✓

11.3 Operating systems

The limitations for the operating system alone relate primarily to file access and compatibility with Decos D5 – work station and the AdminTool.

	MS Windows	Linux	Mac OSX
View files	✓	✓	✓
Link files	✓	✓	✓
Merge files (RTF)	✓	✓	✓
Merge files (DOT) ⁱ	✓	✗	✗
Merge files (OpenXML)	✓	✓	✓
Merge files (ODF)	✓	✓	✓
Update files	✓	✓	✓
Decos D5 – work station ⁱ	✓	✗	✗
Decos Document – AdminTool ⁱ	✓	✗	✗
Decos Document – web admin	✓	✓	✓

11.4 Browsers

Functions for the input, navigation, and viewing of metadata listed according to each browser

	Internet Explorer	Mozilla FireFox	Safari	Opera	Chrome
View registrations	✓	✓	✓	✗	✓
Create registrations	✓	✓	✓	✗	✓
Update registrations	✓	✓	✓	✗	✓
Delete registrations	✓	✓	✓	✗	✓
Large lookup table ⁱ	✓	✗	✗	✗	✗
Letter search table	✓	✓	✓	✗	✓
Dynamic menu structure	✓	✗	✗	✗	✗

11.5 Word processors

Functionalities of word processors in combination with Decos D5.

	Microsoft Word	OpenOffice	Word Perfect
Merge RTF templates	✓	✓	✓
Merge DOT templates ⁱ	✓	✗	✗
Template editor ⁱ	✓	✗	✗
DecosDirect functionality ^{i iii}	✓	✓	✗

11.6 E-mail clients

Compatibility of various e-mail clients with Decos Direct

	Outlook 2000, XP, 2003, 2007	Groupwise client 6.5 or higher (Windows)	Lotus Notes
Link e-mails via DecosDirect ⁱ	✓	✓	✓

11.7 E-mail servers

Compatibility of e-mail servers with the e-mail link of Decos D5

	Microsoft Exchange ⁱⁱ 2000, 2003,2007	Novell Groupwise ⁱⁱ	Lotus Domino ⁱⁱ
Record e-mails	✓	✓	✓
Record attachments	✓	✓	✓
Exclude directories	✓	✓	✓

For these functions an installation on work stations is necessary. For other parts only a webbrowser is needed.

-
- ⁱ The software must be installed on the user's computer in order to execute these functions. Only a web browser is required for the other components.*
 - ⁱⁱ Op alle e-mail servers moeten SMTP en IMAP worden geactiveerd om de koppeling met de e-mail service tot stand te kunnen brengen*
 - ⁱⁱⁱ DecosDirect in combinatie met Open Office is beschikbaar op Windows clients.*