Functional Description
d.velop documents

1 Summary

This functional description outlines the product-specific functionalities of d.velop documents. It applies to d.velop documents systems operated either in the cloud or in an on-premises environment (with or without hybrid use of cloud services). The functional description does not provide any details about the actual scope of services booked by the customer. This scope is determined by the respective edition and operating model selected and is defined in the service description of the booked product or product bundle.

2 Definitions

Batches and batch processing

A batch refers to a collection of pages that have been imported in the import area by scanning or uploading. A batch is not automatically saved in d.velop documents, but must first be indexed during batch processing and then saved as one or more documents in d.velop documents. Batches can be processed manually or automatically.

Document separation

During batch processing, the pages of a batch can be separated into several documents, which can then be indexed and saved as individual documents in d.velop documents.

Categories, document types, dossier types

Documents and dossiers always have exactly one category in d.velop documents. Category is the generic term for the document type or dossier type. A category is defined by a set of properties. Using the category's properties, the customer can control, among other things, access authorizations and automatic dossier generation.

Properties/metadata

A document or dossier contains properties (known as metadata) that describe it in more detail. Properties are divided into "common properties" (properties that are the same for all categories) and "advanced properties" (properties that are individual and category-specific). Information about versions, history, notes and annotations are stored as metadata for documents and dossiers. Properties can be predefined by d.velop, but can also be defined by the customer.

3 Architecture

The scope of functions of d.velop documents comprises a number of services, which in turn can contain further services and which include the range of functions described in section 4. The overall product with its defined range of functions results from the interaction of these services via interfaces. A software as a service architecture is used for this purpose. This is a microservice architecture in which each microservice contains a self-contained range of functions. A service contains the user interface, the server logic and the data storage for the respective functions. These microservices are referred to as apps.

Apps provide their functions via HTTP REST and access other apps via HTTP REST.

Local database structures are required to use the product.

The user operates the product via a web client in their browser. The technical and functional administration of d.velop documents is managed in the cloud via a web-based admin interface and on-premises via a desktop client (d.3 admin).

4 Scope of functions of d.velop documents (on premises)

4.1 Scope of functions

Functional area: Incoming documents

(Batch-based) scanning (workstation or network scanner)

The customer can scan documents with local or network scanners and import them into d.velop documents as a scan batch. The customer can integrate several scanners and select them from a list.

E-mail archiving via e-mail inboxes

The customer can set up 'function mailboxes' which can be reached via a separate e-mail address. E-mails can be forwarded to these mailboxes, where they, along with their attachments, can be further processed in d.velop documents according to configured rules (directly or via manual batch processing), enriched with static metadata and saved.

If the customer uses this function as a cloud service as part of a hybrid or cloud system, then an unlimited number of function mailboxes are available.

If the customer uses the function in a purely on premises system, then exactly one mailbox is available to each user (personal mailboxes).

Barcode recognition for properties

d.velop documents can be configured to read barcode values on documents during the import process and automatically save them in defined metadata fields. The customer can treat different types and orientations of barcodes differently by defining barcode profiles. The following barcode types are supported: Codabar, data matrix, EAN-8, EAN-13, QR code, RSS-14, RSS-Expanded, UPC-A, UPC-E, Code 128, Code 93, Code 39 and ITF.

Document separation using barcodes/QR codes

The customer can configure d.velop documents to automatically set document separators based on barcodes. A barcode indicates the point at which the document is to be separated.

Read xRechnung invoices (CII and UBC types)

Documents of type CII and UBC (electronic invoices or invoices in the xRechnung XML format) can be imported with d.velop documents. These documents are displayed in the batch processing and document management areas in a human-readable format. During the import process, invoice information from electronic invoices can be evaluated via defined rules and saved as metadata for the document.

Manual document upload

Documents can be uploaded manually into d.velop documents. To do this, the customer can either select one or more documents on the hard disk and upload them or drag and drop them onto one of the following places in the user interface: Import widget on the start page (dashboard), import area of d.velop documents (technical inbound app), dossier.

Reusable templates for document import

The customer can save templates for importing documents based on previous entries and reuse them for future imports. The metadata and category entered in the template are then copied/pre-filled into the

corresponding fields when the template is used. The customer can create, rename and delete the templates, and can copy the link for sharing the template to the clipboard.

Edit pages during import

Before saving them in d.velop documents, the customer can edit imported documents during batch processing. Page editing includes rotating, moving and deleting. By setting document separators, the customer can determine how many and which of the pages are to be saved as individual documents in d.velop documents. Document separation can also be configured so that a document is always separated after a defined number of pages.

Optical character recognition (OCR)

When PDF documents are imported and where technically feasible, the system automatically carries out optical character recognition (OCR) to generate machine-readable text from text that is not machine-readable. The OCR data is stored with the document and thus enables functions such as full-text searches of scanned documents.

Automatic storage in the document management system

By configuring import profiles and DMS settings, the customer can specify that incoming documents are automatically saved in d.velop documents according to defined rules (i.e. without further manual effort required) and sorted into the correct dossiers.

Job-based conversion and pre-processing of documents

The customer can convert, prepare and automatically index CI data (coded information) and NCI data (non-coded information) before importing. Different modules can be combined to suit the customer's particular requirements. Different file types can be handled differently. Documents can be converted into different formats (e.g. into archival graphic formats). TIFF files can also be aligned with a background form. Likewise, properties can be individually determined from files and dossier link files can be created.

The following file formats can be processed: PDF and PDF/A; TIFF; Postscript; PCL; XML; AS400; text files (with property determination); print lists (with compression); NCI data (scanning systems); Office documents.

The customer can configure how the source files are processed. For this purpose, the customer's own processing procedures are compiled from the existing modules, which are known as process chains.

The modules DCZUGFERD, DCMULTIPAGE, DCFORMULAR and CONVERT can be purchased.

AI-based automatic separation of document batches

The customer can have document separators set automatically by using one of d.velop's own AI models. This service attempts to recognize the points in a batch of pages where a new (logical) document starts and sets the document separator there. The recognition accuracy depends on the type of document and is below 100%. It may be necessary to check the separation manually.

For on-premises systems, this function is only available as a cloud service via a hybrid connector and must be set up accordingly by the customer.

AI-based automatic categorization of documents

The customer can have a document's category determined automatically using one of d.velop's own AI models. The service attempts to identify the category of the imported document and saves the category in the document properties. The three most likely categories are offered for selection, with the most likely category preselected. The recognition accuracy depends on the type of document and is below 100%. It may be necessary to check the category manually.

For on-premises systems, this function is only available as a cloud service via a hybrid connector and must be set up accordingly by the customer.

Import via REST API (interface)

Documents can be imported and the associated categories and properties transmitted via a documented public programming interface (Public REST API).

Create Microsoft 365 Office documents

d.velop documents can be configured such that the customer can create documents from Microsoft 365 (Word, Excel, PowerPoint) directly from d.velop documents (in the context of a dossier or without context) and save them in d.velop documents. In addition, the documents can be edited directly in the browser using a Microsoft 365 integration.

For on-premises systems, this function is only available as a cloud service via a hybrid connector and can be purchased by the customer in addition to d.velop documents.

Scan from mobile devices

Documents can be captured using a mobile device's camera via the browser-based d.velop documents web application and saved directly to the system.

4.1.1 Functional area: Document management and archiving

Document storage

Documents and their metadata can be saved in d.velop documents.

Versioning and version overview

Documents are automatically versioned when new document versions are released. Each release that contains a change results in a new version. By deleting the current version, a previous version can be used as the basis for making further edits. A version with the status "Processing" cannot be restored after deletion. The customer can display an overview of all versions and open certain versions to view them individually.

Digital dossier generation (also automatically based on document properties)

The customer can configure (hierarchical) dossier trees in d.velop documents. A dossier serves as a logical bracket for a set of documents. Dossiers can contain documents or other dossiers. A dossier may be contained in one or more other dossiers. Dossiers can be manually created and then manually linked into other dossiers, or d.velop documents can be configured so that incoming documents automatically create matching dossiers based on their document properties if they do not already exist. Dossiers can have properties in the form of metadata and can also pass these on to incoming documents.

Status concept for documents and dossiers

Dossiers and documents can be classified into different processing stages: Processing, Release or Archive. When a document or dossier with the status Processing is released, it is set to the status Release. If there was already a previous version of this document with the status Release, this version is automatically set to the status Archive. If this most recent version is deleted, the statuses of the documents and dossiers change in the reverse order to what is described above.

Manage categories and metadata

With d.velop documents, documents and dossiers can be classified into categories and assigned metadata. d.velop documents offers an administration area for managing these categories and metadata. In this area, properties can be created, edited and deleted and datasets can be assigned to them. The customer can create, edit and delete categories for documents (document types) and dossiers (dossier types) and assign properties to them. Retention periods can be defined for categories, deletion locks can be set up, the title can be generated dynamically and permissions can be configured.

Define retention periods

For categories in d.velop documents, retention periods can be defined that depend on a date property of the category as selected by the customer. The configuration can be set so that the documents are deleted automatically after the retention period has expired. Deletion can be prevented during the retention period.

Activity logs

For a dossier or document, all changes to the file or to properties can be tracked in a log and filtered by time period and keywords. The log also records changes to any retention periods or deletion blocks defined for a category.

Edit with check-in and check-out

A document or dossier can be checked out for editing so that it cannot be edited by others. After editing, the document or dossier can be checked in and released for editing by others. A document that is currently being edited can also be checked out by another editor, thus withdrawing the original editor's ability to edit the document. This behavior can be configured by the customer.

Full-text search in documents (also using OCR)

If there is a text extract for a document, the document's properties and contents can be searched using keywords. Dossiers can only have their properties searched using keywords. For machine-readable PDF documents, the system can show the location(s) of the search word.

Metadata search and search filter

The customer can search for documents and dossiers and narrow down their search results by faceting and filtering by metadata.

Search in dossier trees

The customer can search in dossier trees by navigating through the trees starting from a specific dossier and the contents of dossiers can be displayed.

Reusable search templates and search history

For recurring searches, search templates can be defined that contain properties as well as full-text search criteria. These templates can be organized into a personal folder tree and shared with other users via a link. Search templates can be watched and the customer can be notified by e-mail of any changes to the content of a search template's result set.

Lists of favorites for dossiers and documents

Documents and dossiers can be added to favorites to enable faster access. Favorites can be grouped thematically into lists. Favorites can be accessed via the favorites widget on the start page (dashboard) as well as from the user's personal area. Changes to the lists of favorites can be watched and the customer can be notified of changes by e-mail.

Automatic PDF/A generation for long-term archiving

For incoming documents, a copy in the archival PDF-A format is automatically generated and saved as a dependent document to the original document. File formats that can be automatically converted to PDF-A are as follows: doc, docx, dot, dotx, xls, xlsx, xlsb, ppt, pptx, pot, potx, jpeg, tif, bmp, gif, png, heic, pdf, txt, msg, eml, zip, rar, dgix, dgia, dgim. If the original document is a true duplicate of the automatically generated PDF-A document, the generated document is discarded to avoid duplicates. No PDF-A document is generated for other file formats, such as HTML files.

For on premises systems: d.velop documents contains one server instance of the rendition service. The customer can purchase further instances for a fee.

Viewer for different file formats

Documents in d.velop documents can be viewed directly in the web client. This function is offered for the following file types: pdf, jpeg, bmp, tif, msg, eml, txt, doc, docx, dot, dotx, xls, xlsx, xlsb, ppt, pptx, pot, potx. It is technically possible to include viewers for other file formats via an extension point in the API.

PDF editing (annotations, markups, drawings, freehand notes, rotating, templates)

PDF documents can be marked up and annotated. Known as redlining, these markings are displayed on the document, can be shown and hidden and are saved separately from the document (no change to the original document).

The following information can be added, edited and deleted: Notes/comments, text, freehand drawings, highlighting (areas), geometric shapes, arrows, images. Annotations and combinations of annotations can also be saved as templates and shared with other users.

When annotating texts, the customer can decide whether changes should always be saved automatically or only manually.

The file format in which the annotations and markups are saved (R1) is a proprietary file format that is only used by d.velop internal viewers and is not compatible with external solutions.

Note function for documents and dossiers

Notes can be added to documents and dossiers. The notes indicate who created them and the creation date on the document in question.

Watch documents and dossiers (with change notifications)

The customer can receive e-mail notifications about changes to the contents of documents, dossiers, search results and lists of favorites.

Merge and export PDF documents

Multiple PDF documents can be combined into one PDF document. The compiled document can then be downloaded and/or stored in d.velop documents. The compiled document can be edited (remove or rearrange pages and documents) and then its properties defined when it is saved it again.

4.1.2 Functional area: Task management

Create, display, assign, forward, edit, remind, or automatically accept tasks

Tasks (relating to documents and dossiers or without a specific context) can be created, displayed, assigned, forwarded, marked as read or unread, edited, completed, reminded or automatically accepted. The customer can receive tasks personally or through a group to which they belong. The customer can track their activities as part of task management.

Monitor and administer task lists

With the proper permissions, the customer can monitor the task lists of other users and forward tasks (individually or collectively) to other users as desired.

As the owner of a specific context/workflow, the customer can view all tasks in this context/workflow and forward tasks to other users (individually or collectively) or remind the recipients to complete the task.

Task notifications

Users receive an e-mail notification when they have received a new task or when the reminder period for the task has expired. You also have the option to remind them by e-mail when the task has been completed or the due date has passed.

Delegation rules for documents and processes

The customer can use rules to control which users are allowed to see and edit their tasks on their behalf when they are absent. The customer can set up different delegation rules for different contexts/workflows.

4.1.3 Functional area: Connecting systems and data

Connect third-party systems (ERP, CRM and others) via the API

d.velop documents offers an extensive public REST API, which can be used to connect and integrate other systems and proprietary developments. The exact scope of functions of the API is described in the documentation of the public API, which is publicly available on the d.velop service portal. d.velop reserves the right to make changes to this documentation over time.

Central Integrated Master Data Management

d.velop documents enables customers to centrally provide master data from external systems on the d.velop platform as business objects. These business objects can be freely modeled and consist of entities with defined properties, which can be delivered and queried via REST API. Using a web interface or API, data models can be configured and access permissions controlled. This allows other d.velop products and solutions to flexibly access uniform and consistent master data. To ensure security and availability, defined usage limits apply, which are described in the API documentation.

Configurable Master Data-Based Attribution

d.velop documents offers the ability to automatically enrich documents and files with master data. Through a web interface, dynamic value sets for properties can be configured, which are provided from a central master data management system. This allows document properties to be automatically filled with matching master data during creation or editing. In addition, the solution enables the import and export of configurations for transfer to other systems. For suggested values of document properties, a limit of maximum 100 entries per value set applies.

Integration in Microsoft 365 Outlook

Functions of d.velop documents can be integrated in a Microsoft 365 Outlook desktop client using a COM add-in in the Outlook client. This enables the customer to simultaneously file multiple items directly into predefined document repositories and categories. E-mails can be opened in another application (e.g. an ERP system). The customer can define a central folder where items are immediately moved when they are saved in the d.3 repository. The customer can search for a search term within the context of an e-mail, for example to find the customer dossier that matches the e-mail directly in the d.velop documents repository.

Functions of d.velop documents can also be used in the web client of Microsoft 365 Outlook and in the "new Outlook". In contrast to the COM add-in, the scope of functions of the web add-in in these clients does not include multi-location storage of e-mails or a direct search for search terms in d.velop documents.

Integration in Microsoft 365 Office

Provided that the customer has configured the necessary add-in, the customer can save documents directly in d.velop documents from Microsoft 365 Office. The customer can also manage Office templates in d.velop documents and use them from Microsoft 365 Office.

Integration in HCL Notes

The customer can use d.velop documents functions in IBM Notes via a COM add-in. The customer can simultaneously store multiple items directly in predefined document repositories and categories. The customer can open e-mails in another application (e.g. an ERP system). The customer can also define a central folder where items are immediately moved when they are saved in the d.velop documents repository. The

customer can search for a search term within the context of an e-mail, for example to find the customer dossier that matches the e-mail directly in the d.velop documents repository.

Connect portals via the API

The customer can use the open interface (public REST API) to connect their own portal solutions for provisioning or uploading documents. A fee is charged for using the open interface (public REST API) to connect portals and make documents available to users who do not have access to d.velop documents.

4.1.4 Functional area: Collaboration

Forward tasks

With d.velop documents, users can forward one or more tasks they have received to other users who have access to d.velop documents. The tasks are then removed from the task list and appear in the task list of the person to whom the tasks were forwarded.

Share/forward batches (document import)

Imported batches can be forwarded to another person who has access to d.velop documents. The user has the option to create a task with a task text for this person. The original user also retains access to the batch. A batch can only be processed by one person at a time. If a batch is being processed, other persons will receive a corresponding notification message when they attempt to process the batch.

Share search/import templates using links

The customer can copy the link to saved search/import templates to the clipboard and share it with any other user of d.velop documents. These users can then also use the search/import templates and save them as their own templates.

Absence function with delegation rules

In their user profile, a user can configure their time off and out of office message, as well as the start and end of their time off. They also have the option to name another d.velop documents user as a delegate. This authorized delegate then has access to the tasks sent to the absent user(s) and can edit them.

Share/release task lists

The customer can share their task list with one or more other users or groups in d.velop documents. These users/groups then have access to the tasks that are personally assigned to the customer. Tasks assigned to the customer via a group are not accessible to persons with whom the task list was shared, unless these persons are also in the same group and can access the group tasks this way.

4.1.5 Functional area: Configuration, infrastructure and security

Customizing options through entry points for scripts

The customer can respond to events and execute custom, script-based logic at various defined entry points in the product. A public API provides opportunities to query information from the DMS or execute actions in the DMS. In this way, it is possible to customize how the product works.

Integrated user management (with mass import)

The customer can create and delete users in d.velop documents. The customer can organize these users into user groups and create and delete these groups. The customer can organize several user groups into what are known as 'global groups'. The customer can search for entries by keyword within the list of users and groups. The customer can export/back up their created users and groups and restore these exports/backups later.

Role-based and property-based entitlement management

In d.velop documents, the customer can assign access permissions for documents and dossiers on the category level. The objects to be authorized can be further restricted/filtered based on further properties of the category. These permission profiles can be assigned to user groups to give the users the corresponding permissions.

Can be used with different devices (smartphone, tablet, PC)

The user interfaces of d.velop documents have a responsive design that allows them to be correctly displayed in a browser on mobile devices such as smart phones or tablets.

Multiple languages and translation option

d.velop documents can be used in the following languages: German, English, Chinese (simplified), Croatian, Czech, Danish, Dutch, French, Italian, Polish, Serbian, Slovakian and Spanish. The language displayed is determined by the selected browser language. The customer also has the option to translate custom-created categories and properties into these languages.

Two-factor authentication

Two-factor authentication via a TOTP-compatible authentication app can be configured for logging in to d.velop documents.

Basic and advanced health monitoring

The customer has the option to monitor the basic health of their system: the customer can use a web interface, receive e-mail and SMS notifications, and set global maintenance times.

Further basic functions can be implemented using PowerShell programming. Monitoring is carried out from the monitor computer and not from the agent: directory monitoring (file age and number of files), monitoring of free storage space, monitoring of web services and the network (ping), creation of SQL queries.

Beyond this, d.velop documents provides you with advanced functions for health monitoring. These are as follows: sending of status reports; management of groups of computers with group-specific e-mail notification functions; group-specific maintenance periods; monitoring of log files, management of system availability rules; support for other monitoring systems; automatic monitoring of various d.velop components; starting, stopping and restarting of services and programs in the process manager.

Single sign-on (SSO)

The customer can set up single sign-on for d.velop documents using OpenID Connect, or using Kerberos in a purely on-premises system.

Active Directory (AD) integration (via ADFS, LDAP) (with filter function)

The customer can control user access management for d.velop documents from an external Active Directory. Filters can be used to restrict the users and user groups of the Active Directory.

Authentication using additional identity providers

The customer can connect further identity providers for authentication, which enables them to manage their users' authentication data outside of d.velop documents and use this data to log in to d.velop documents.

4.2 Technical requirements

For on-premises / hybrid operation, the system requirements under "Technical information" in the link apply.
https://serviceportal.d-velop.de/de/products/dvelop-documents