

Integration Specification Documedis Medication

2024-01-10

The target groups of this document are project owners, product managers and software developers interested in adding Medication plan functionality to their individual software products using Documedis Medication, a module of the Documedis platform. Do not redistribute. For use of INDEX/Documedis customers only.

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2. Introduction

The INDEX databases published by HCI Solutions AG contain commercial and scientific information in German and French about pharmaceutical products and other products needed in the Swiss health industry; they also include the addresses of most of the service providers in the industry such as hospitals, doctors and companies. Depending on the needs of the individual user groups, the various INDEX products deliver data about 150'000-250'000 articles and 100'000 addresses. An overview of the available products can be found on our website at <https://www.hcisolutions.ch/index>

Based on the INDEX database, the Documedis platform offers various functionalities to access this data through web interfaces as software-as-a-service (SaaS) for quick and seamless integration into 3rd party applications such as Clinical Information Systems (CIS/EHR) or web platforms. In the future, it will also be the base of our existing web platforms like compendium.ch and pharmavista.ch. It supplements the existing plain data INDEX SOAP XML webservice with:

- Fully integrated software modules as web-based standalone Single Page Applications (SPA), referenced as "APP", featuring their own algorithms and advanced layouts.
- Additional PDF generators for all relevant read-only views of the SPA.
- Numerous modular microservices as web-based JSON REST interfaces, featuring all necessary interfaces to implement the functionalities of the SPA yourself, referenced as "API".

This allows you to quickly add new core functionalities to your existing software, saving the effort to download, import and update the INDEX data yourself and the need to write, test and finance your own implementation.

Documedis is split up into business domain modules, each with one or more APP and API layers and an individual documentation:

- Products: detailed product and article information including news; intelligent search variants to find products including full-text search, filtering and identa; registers for tree-based browsing.
- Medication: Medication plan viewer and editor
- CDS.CE: A risk-based Clinical Decision Support check (CDS), a medical device.
- ServiceProvider: Information about medical professionals in the Swiss Health Sector.

The modules are available from the following URLs and subsites:

| Release | Route | Comment |
|--|--------------|--|
| The main Documedis platform and the uncertified modules are available on https://documedis.hcisolutions.ch | | |
| /2020-01 | /api /app | Non-certified modules of Documedis, under strict release management. For use in noncritical business domains of 3 rd party medical information systems. Read-only product/serviceprovider information, medication editor. |
| CE-certified modules are available through https://ce.documedis.hcisolutions.ch | | |
| /cds/2021-01/ | /api | CE-certified modules of Documedis, under strict release management. |
| /cds/2021-01/ | /app | For use in critical business domains of 3 rd party medical information systems. |

The target audience for this document are business analysts and software developers interested in integrating Documedis modules in their software products. In this manual, we explain the Medication module functionalities available through the APP and the API.

3. Medication

The main objective of the Medication module is to edit medication plans in various formats, including prescriptions. A user can import, edit, replace, convert, and export medication plans. Finally, the module allows easy access to results of the separate CE-certified CDS module.

The APP offers the following functionalities in human user interface oriented formats (HTML/PDF):

- Edit, save, print and export patient-related medication plans in the CHMED format of the IG eMediplan
- Edit, save, print and export electronic prescriptions
- Display and print Clinical Decision Support checks, matching medication and patient risks using the functionality of the CE-certified CDS.CE module.

The API will offer functionalities in a JSON/REST-based machine oriented format.

To properly use these applications, they must be integrated with a medication editor in a primary system.

4. Data vs. Software-as-a-Service (SaaS)

To offer Product, Serviceprovider, Medication and CDS.CE functionality in various integration variants, supporting data and services are available both as INDEX data and the Documedis software services

(1) For medication, this means that you can therefore either download the INDEX data as usual, import it into your database and then program a suitable Medication editor yourself. This is the longest, riskiest integration process, the largest effort and highest investment cost – but allows perfect in-process integration and independence. This is strongly suggested for professional systems where the medication is a core functionality. (You can still use our Documedis Medication SaaS for testing and quality purpose / verification).

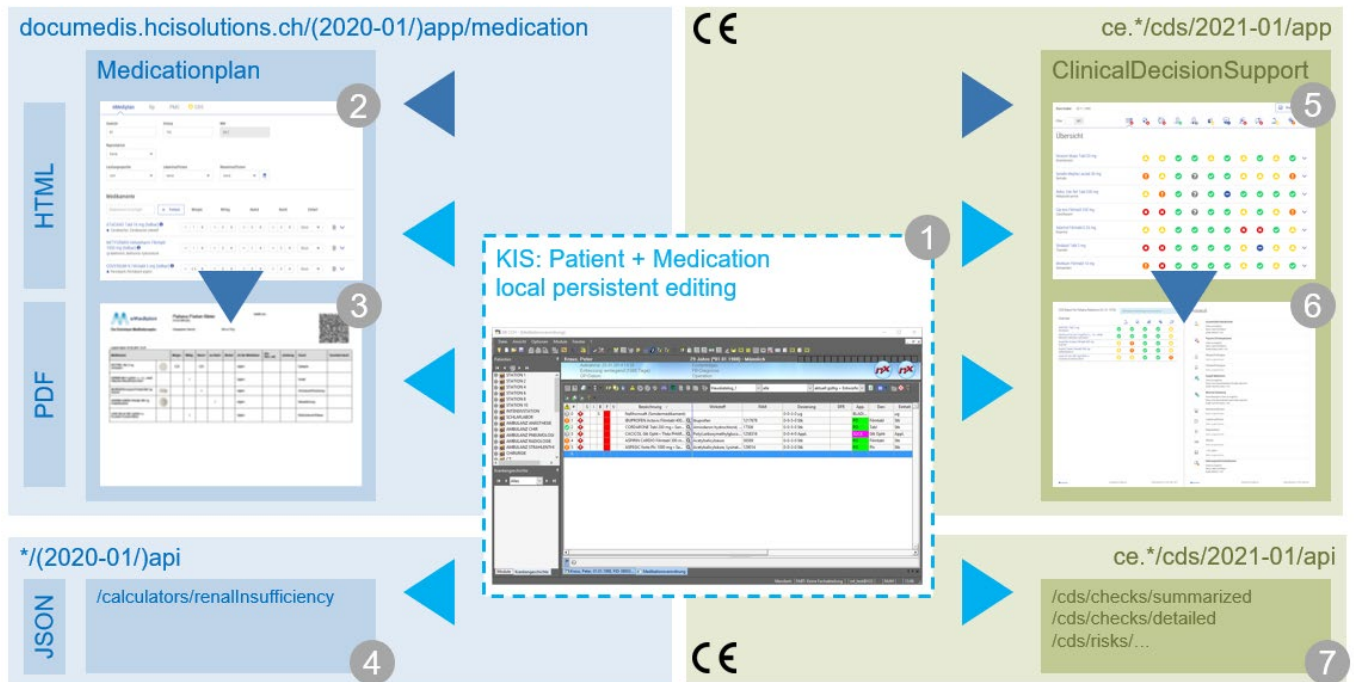
(2) However, with the SaaS Medication module of the Documedis web platform, we offer additional usage scenarios that allow for much faster integration, at low risk and low cost.

The exact scenario depends on your IT architecture and the decision on where you encode the patient, his risks and his medication:

- Normally, in a larger professional environment, this will be your local IT system (1). You only need to extend the current functionality to encode patient information (such as age, gender, height, weight) and risks based on our free, public CDSCODE list of risks (available as JSON objects through a public REST API (4)). You then call either
 - The Medication APP to generate an eMediplan in PDF format (3) or to follow up any of the other supported use-cases.
 - The CE-certified CDS.CE API (7) to get a JSON data object as the test result, either as a quick summarized check or a more detailed result. You then adjust your GUI according to the check results, using our free icon sets.
 - The CE-certified CDS.CE APP (5) to get a HTML webpage with the test result, so that you don't need any additional investment in software functionality.
 - The CE-certified CDS.CE APP (6) to get a PDF document as the result, so that you can archive/display the check result without any additional investment in software functionality.
 - *See the separate Documedis CDS.CE integration specification more further details about CDS.CE. [Integration Specification Documedis® CDS.CE](#)*
- As an alternative, for demos or for very basic use cases for users without their own medication editor (1), the (non-certified!) Medication module of Documedis includes an online editor function, the “Medicationplan” (2). This allows licensed end users to edit patients and medications online and use the CDS.CE checks (5) and CDS.CE reports (6) from the CE-certified CDS.CE module.
In that use case, please be aware that using the medication editor is not certified and not part of the CDS.CE module! The editor must be launched from inside your software, providing the necessary header fields and a token for user verification as described later in this document.
 Additionally, as the Medication module supports data posting and postback, you can also link it with your IT system, bidirectionally connecting (1) and (2). This allows an IT systems to store a patient's current

medication as a simple CHMED object, then load it into the Medicationplan tab for editing and finally save it back to the application.

Documedis Modules «Medication» & «CDS.CE» APP & API Integration of (ce.)documedis.hcisolutions.ch



5. Functions of the Medication module (software-as-a-service)

5.1. Using and understanding the Medication module as a user

Prerequisites: A modern browser that supports HTML5.

The Medication module is the combined offer of the Documedis API (with JSON REST API) and the Documedis APP (a HTML-based single-page application, part of the full Documedis suite). The API offers a number of web services for data exchange and conversion between software, while the APP offers a number of functionalities for data editing by end users and PDF generation. The APP offers four main functions, each on a separate tab/view:

5.1.1. Medicationplan (2) – the medication editor

The URL for a stable released medication module is <https://documedis.hcisolutions.ch/2020-01/app/patient>

This opens the medicationplan tab (2), where you can create, upload, merge, edit and save medication plans in an interactive web-based editor (to do this, you will need to call the editor from a trusted 3rd party software provider passing user information as described later in this document).

Another feature is the printing / PDF-generating of an eMediplan (3) according to the spec of the IG eMediplan. It includes a QR code with all necessary data included in CHMED format according to “www.emediplan.ch”. (You can also use the Medication editor to upload such a PDF or a scanned image of such a QR code to charge the data into the editor.)

The CHMED format of the IG eMediplan is also used when importing or saving data from this APP.

Once you start editing a medication plan, the Medication module can also call the CDS check webservice (7) from the CE-certified CDS module to permanently check your medication plan in the background.

- As soon as a risk is identified, the risk level is displayed on the CDS tab at the page top. Clicking the CDS tab will launch the CDS.CE check (5) from the CE-certified CDS module (see separate documentation) in interactive mode as a web page. There, you can navigate the different risks and print the CDS.CE check result in PDF format (6).
- If you open a medication entry in the editor, the result of the CDS.CE checks for this product will be displayed.
- The CDS.CE module needs additional licensing. Please contact hotline@hcisolutions.ch for details.

5.1.2. Prescription – the prescription editor

Very similar to the eMediplan, this editor offers a slightly different view of the medication, focused on electronic prescriptions, without patient health information. Therefore, one can e.g. select the exact article / package size to be used, the validity and the number of articles.

Depending on user authorization, one might be able to send signed electronic prescriptions to pharmacies.

5.1.3. ClinicalDecisionSupport (5) – the CDS.CE check viewer

This viewer integrates a call to the CE-certified CDS module: For each risk type and medication of the patient, the CDS.CE check shows an individual result using a standard set of icons. As a user, you can switch between the different checks and the different products. The viewer can be called in two ways:

- In interactive HTML mode, from the eMediplan (2) where the user did edit patient data
- From your own IT system (1), providing properly encoded patient and medication data in your request.

In addition, it is also possible to get the report in PDF format.

5.1.4. PrimaryCareAlgorithm

PCA.CE is a question construct that is used in pharmacies when dispensing medicines without a doctor's prescription. PCA.CE ensures appropriate counselling and ultimately safeguards the pharmacy staff. PCA.CE is a class I medical device.

5.1.5. Vaccination

The Vaccination module is the combined offer of the Documedis API (with JSON REST API) and the Documedis APP (a HTML-based single-page application, part of the full Documedis suite). The API offers a number of web services for data exchange and conversion between software, while the APP offers a number of functionalities for data editing by end users and PDF generation.

With the Vac module you can either document a vaccination or perform a Vac Check.

The digital documentation of vaccinations contains relevant questions which should be asked before vaccination and offers the possibility to document where, when and with which substance vaccinations were given.

The following vaccinations can be documented:

- Covid
- Influenza
- Tick-borne encephalitis (FSME)
- Hepatitis A
- Hepatitis A + B
- Hepatitis B
- DTPP
- MMR
- HPV
- Herpes Zoster
- Meningococci
- Pneumococci
- Varicella

To perform a Vac Check, the Vac Module (APP) provides a form with all the necessary requests (medical history, previous illnesses and vaccines already received). The result of the Vac Check is output in the certified Module CDS.CE.

The CDS.CE Vac Check supports the health care provider by checking the vaccination status of various vaccinations according to the patient data entered and by issuing vaccination recommendations with warnings. There is a general Vac Check and a specific Vac Check:

- General Vac Check: Request a general vaccination status (consider all vaccinations available in the system).
- Specific Vac Check: Request a vaccination status for a specific vaccination indication

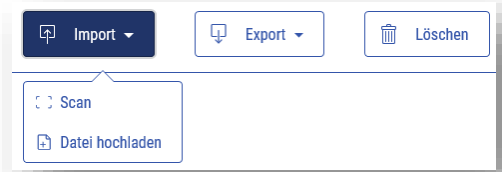
5.1.6. Care

The Care editors allows to document various services provided by pharmacies as dispense of medicaments of the class B, That are required to be documented. → Fabian.

5.1.7. A tutorial of the medication module

Use your web browser to open <https://documedis.hcisolutions.ch/2020-01/app/patient>

You arrive on the empty eMediplan (2) page. You can now either start editing your own medication plan or [import] an existing mediplan in CHMED-Format. Import by either scanning the QR code of an existing eMediplan using a 2D barcode scanner or by uploading a PDF or photo of an existing plan (there is also an Easter Egg that provides a demo CHMED by clicking the animated “scan” icon).



The top half of the page contains the data for the patient, some demographic attributes and some medical attributes. Most important are the elements that are relevant for the CDS.CE check, such as age, sex, weight, size, professional sport activities, reproduction status, liver and kidney insufficiencies and allergies.

Just open the different form sections and adjust the attributes as needed.

The bottom half of the page contains the medication. You can search and add drugs and set their posology. It is also possible to find drug replacements.

Patienteninformationen

Personalien

Vorname: Mia, Nachname: Muster

Geburtsdatum: 25.11.1930, Geschlecht: weiblich

Versichertenkarten-Nummer: 756.1234.5678.90

Kontaktdaten

Gesundheitsinformationen

Gewicht: 56, Größe: 161, BMI: 21.6

Reproduktion: Keine

Medikamente

| Medikament hinzufügen | + Freitext | Morgen | Mittag | Abend | Nacht | Einheit |
|---|------------|--------|--------|-------|-------|---------|
| ASPIRIN CARDIO Filmtabl 100 mg 1 ★ Acetylsalicylsäure | | - 0 + | - 1 + | - 0 + | - 0 + | Stück |
| BELOC ZOK Ret Tabl 25 mg 0.5 ★ Metoprolol, Metoprolol succinat, Metoprolol tartrat | | - 1 + | - 0 + | - 1 + | - 0 + | Stück |
| ZOCOR Filmtabl 20 mg 0.5 ★ Simvastatin | | - 0 + | - 0 + | - 1 + | - 0 + | Stück |
| ALDACTONE Filmtabl 50 mg 1 ★ Spironolacton | | - 1 + | - 0 + | - 0 + | - 0 + | Stück |
| TOREM Tabl 10 mg 0.5 ★ Torasemid | | - 1 + | - 0 + | - 0 + | - 0 + | Stück |

The toolbar at the top right of the page includes tools to export the medication data, either as a medication plan text file in CHMED format for later re-use or as an eMediplan PDF for printout.



In addition, you can switch between the various module functions, which are different views onto the same dataset. While you edit an eMediplan, the CDS.CE check from the CE-certified module is continuously monitoring your entries and will lit up with a colorful symbol should a dangerous risk appear.

For a quick result, either use the easter egg mentioned above or copy the following text (which represents a saved CHMED example) into your clipboard:

```
CHMED16A1H4sIAAAAAAAC7WVzW6jMBSF38XbSWZsg/lbVkyqSG0HkbSbKgsHPAEIMZGBkdqIn+uuL9ZrOzBd0U7FfFnY515ffz6AOa
OEN6WQDYrOaHHHjwJFKK4URzN0cxleK74VCoSrGNIQCV02J2ROHZCuhcwhFIFilzul5gLUW5HrevFN3dwKCSpoiRHFHFOEzSjMUPZ7R
EILcbmY7MD0FIfnOppdIL/mD5PQdr4+RleZbKYRr0200Aq/NOuunkzDVHvgBSEJNfS9L2AnVc22Y9mHisSFOuk3Xmc2UGTghG1tQr4al72A
fMpe5LeDCBisbj5uFqmCriGLizzGb0xAS42ZdWSOWMhW1cSKGfPwz2xj+m7Y7fJo1ewhfb3fbbX2cJUVB/4bLTiMEEx+6a44mUqrdmtL3m0
Tnu01+8UXRJ3ADaYINbQjpFdCtUW5a+GF+FdaxyeYTEFLgPJdG/f1KNSzkD9+yub59UXmXwFnHvPCqcDfWT1m86Ft/giVA7L8EnIYMPxJ
ZEwnQy6qrMhVCyxjwAMlIdTzXTYIJ/mYk7dZUZ9EmRXikKvXl1p8khYHhDEyBe3IRPhfrgbvkv769D92dfjSxhlfhflowXdNY47yCylc4uYP9Pc
7WmM3wl7ksG+YRhij7g21Fe740AYAAA==
```

Now click the [Scan] button in the toolbar. Once the small "Scan QR-Code" window shows up, simply paste from clipboard, then click [OK]. The eMediplan will now reload with your example data. In parallel, the CDS tab will display a warning symbol a few moments later to show that there is a major risk.

Using the print icon allows you to print your medication plan in the eMediplan layout.

To see the detail results of the CDS.CE check, simply click the CDS tab to switch to the CDS.CE view. You can switch between the overview table and the details for each risk type and each product. It is also possible to enable/disable the result filter and to print the CDS.CE itself as a report in PDF format, either by risk or medication.

The screenshot shows the eMediplan interface with the CDS tab selected. The patient information is Dora Graber, born 23.11.1945. A filter is set to 'ON'. The overview table lists the following medications:

| Medication | Risk Level | Warning Icon | Dropdown |
|--|---------------------|--------------------|----------|
| Stilnox Tabl 10 mg Zolpidem, Zolpidem tartrat | Major Risk (Red X) | Warning (Orange !) | Dropdown |
| Voltaren Drag 50 mg Diclofenac, Diclofenac natrium | Major Risk (Red X) | None | Dropdown |
| Aspirin Cardio Filmtabl 300 mg Acetylsalicylsäure | Minor Risk (Grey ?) | None | Dropdown |
| Atacand Tabl 16 mg Candesartan, Candesartan cilexetil | Minor Risk (Grey ?) | None | Dropdown |
| Metformin Helvepharm Filmtabl 1000 mg Metformin, Metformin hydrochlorid | Major Risk (Red X) | None | Dropdown |
| Dafalgan Filmtabl 1 g Paracetamol | Minor Risk (Grey ?) | None | Dropdown |

5.2. Integrating the Documedis medication software into your clinical information system

For the target architecture, we strongly suggest that you manage patients, their CDS.CE risks and medication plans inside your own local IT system (1), then call our CDS.CE services (7) and viewers (5/6) as needed.

The Documedis services must be called through SSL-secured HTTP POST and GET requests, depending on the exact functionality. For the medication editor and the CDS.CE check, you must POST a specific JSON object to a defined URL and include a number of headers, either as request headers or, if impossible due to technical reasons, as FORM fields. In the latter case, you must put the JSON into a special field named documedisJSON.

The details of the specific request JSON are specified per APP and per API route URL, in this documentation and/or in the Swagger-based API docs of each API instance. The headers are defined globally.

5.2.1. General information: Request header fields for Identification/Authorization/Styling

Please use the following headers in your requests, so that we can properly identify your system and style the UI.

| Field Name | Content / Explanation |
|--|---|
| Authorization* (When used as Header field) access_token (When used as Form parameter) | Bearer token, e.g. "Bearer yourBase64TokenReceivedFromHCI" Each INDEX customer with a professional level subscription (or a software company contract) must have their INDEX login and a token. HCI Solutions AG will provide you with a token. For a token contact hotline@hcisolutions.ch . The token description will be shown in the footer of the HTML view. |
| Accept | Depending on the content type of the Documedis URL (application/json, application/pdf or text/html) |
| Accept-Encoding* | Set this to "gzip, deflate" to make sure to get compressed content. Much better for performance. |
| Accept-Language | Content language (string, de-CH / fr-CH). All data is available in German or French only. If no such header is provided, the API defaults to German content. For French, put "fr-CH". When calling the APP, this can also be part of the URL route. |
| HCI-CustomerId* | **The GLN of the INDEX subscriber using this instance. See "5.2.9 Access control" for more. |
| HCI-Index* | **The INDEX variant that shall be used by the service (e.g. "hospINDEX"). Casing is irrelevant. Used by HCI to verify with internal subscriber data (check if CustomerId has matching INDEX subscription) |
| HCI-SoftwareOrgId* | **The PartnerId of the software company responsible for this software. Must have INDEX contract. The number part of your EPNxxxxxx@hcisolutions.ch account. Might be verified by HCI with subscriber data to check if the software company indeed has the necessary access level. |
| HCI-SoftwareOrg* | **The Description of the software provider responsible for this software, must have an INDEX software provider subscription. The manufacturer of the application (e.g. "YourCompany GmbH") [base64] |
| HCI-Software* | **The name of the application instance / installation that is calling the HCI services (e.g. "KIS Unispital Bern" or "Medfolio KSSG"). Needed to identify the system in case of usage problems. Name must be known by IT-responsible of the installation operator as identified in HCI-CustomerID.** [base64]. Good practice would be to use the same string as the one stored in the token description. |
| HCI-Stylecolor1 HCI-Stylecolor2 | Only relevant for the APP: Accepts hex RGB values to set the primary and secondary custom colors (without #, e.g. "ff0000" for red). Color1 defines the h1/h3/.bg-primary colors, Color2 relates to h2/h4/hr. |
| HCI-UserId | **The validated GLN of the HealthCareProfessional or the validated (!) Swiss-Rx-Login of the user of your system or the internal identifier of the user in the system described in the HCI-Software field. For personalized functions (e.g. 7601001234567 or maxmiller@insel.ch or mm63) [base64] |
| HCI-UserName | **Display name of the user (e.g. "Max Miller") [base64] |
| HCI-UserAccessType HCI-UserAuthenticationLevel HCI-UserHealthProfession | The professional "level" of the end user using the system, depending on his qualification and the security level ("trustworthiness") of that data. See chapter "Access Control" for details. |
| *Mandatory field | **This string can be displayed by HCI to an APP end user, in the HTML or PDF footer. |

The header field values must use ASCII encoding according to the standard. Exempt are the few custom "HCI-" fields that optionally also accept [base64] encoding; these must use UTF-16 (Windows/.NET default).*

Use the base64 encoding if your values can contain characters outside the ASCII range, such as umlauts. In such a case, provide the base64-string inside square brackets (ASCII 91 for “[” and ASCII 93 for “]”) as value.

There is a special use case where you can't use pure REST and put header fields in the HTTP request due to technical reasons: when calling the APP, the Documedis HTML /PDFviewer, from your own web page. In such a case, our infrastructure supports that you can instead post all necessary “HCI-*” header fields and the token as FORM fields / key value pairs (<form method='POST' enctype='text/plain'>), using field names identical to the header fields. However, some small adjustments are necessary:

- The Authorization header field must instead be called "access_token" and contain only the token without any "Bearer" prefix (as defined in the OAuth2 RFC).
- The JSON data defining the request content can't be placed directly in the body of the request, but instead must also be transmitted as the value of another form field, per definition called "documedisJSON".
- There is no need for base64-encoding of the field values, the encoding remains as UTF-8 (which is the default for JSON).
- The “Accept-Encoding” header depends on the settings of the client browser.
- The “Accept-Language” header can be replaced by adding the language to the APP route, as the first element of the URL (e.g. <https://documedis.hcisolutions.ch/2020-01/app/fr> or /de-CH).
- The “Accept” header is not directly relevant, as it is only used in a sub use-case of the one mentioned above, when you want to generate a PDF instead of the HTML. In that case, the accept header is used only inside the JavaScript ajax call to generate the PDF.

5.2.2. The usage of the Medication module together with your local IT system

Deep integration:

- Edit the patient and its medication in your local system, based on INDEX data and Documedis API services (e.g. the risk catalog or the allergy search of the CDS.CE module)
- Wrap the data into a CHMED object, then call the Medication APP to receive a eMediplan or eRx PDF

Light integration:

- Use your basic patient information to build a minimal CHMED object that you store in your database as a string
- Call the Medication APP to edit this CHMED inside the web browser.
- In your system, listen to the callback events from the Medication APP
- Once the user has finished editing the medication plan, s/he clicks SAVE or SEND to transmit the now completed CHMED back to your system
- Simply store this CHMED string in your database for persistence
- Call additional Documedis Medication APP functionalities to e.g. receive a eMediplan or eRx PDF

5.2.3. The usage of the CDS.CE module together in your local IT system

The following functionality is part of the separate, CE-certified Documedis module “CDS.CE”, Please use the separate user manual for further information. Some information is provided below to allow for an easier overview of the complete offerings of the Documedis platform and its various modules.

While the user is working on the current medication in his local system, the IT system might want to check the CDS.CE result continuously – or at the end of the process, when the user wants to save the plan. To do this, use the “CDS.CE check summarized” webservice (7), which will result in a global relevance value (good to display a simple major relevance result such as enabling/disabling a button or showing a warning icon) and an individual result for each desired check and product (good to display icons per product or per check in the local UI).

The complete “CDS.CE check detailed” webservice (7) can be used if you also want to display detail information about the checks in the local UI – or if you want to completely rebuild the CDS.CE check display.

If you rebuild the UI on your side, you MUST reuse the risk icons and relevance icons provided by HCI! They are available for free as SVG / ICO / PNG files. As users move between employers and different IT systems, risk-relevant iconography must be kept identical for maximum process security!

The “ClinicalDecisionSupport” tab (5) of the medication module is handy to show the result of the CDS.CE check in a webpage, with all display, layout and interactivity functions provided by our SPA. This saves considerable programming effort.

Additionally, calling the same URL route with a request header "Accept: application/pdf" will a PDF-based CDS.CE report for local storage or display.

5.2.4. The medication plan object – the core of the transmitted data

To be able to use the Medication/CDS services and viewers, the local IT system must be able to pass the medication plan to our services using [eMediplan](#). To do this, the local medication plan must use standardized identifiers for some of the data elements:

- The drugs of the patient medication must be encoded using an established identifier such as the GTIN from GS1 or the pharmacode/ArtNo or productnumber/PrdNo from HCI INDEX databases such as hospINDEX or medINDEX.
- The risks of the patient must be encoded using the free, public risk catalog CDSCODE available from HCI Solutions AG as part of a free INDEX software company contract or directly through the Documedis API, under the public URL <https://documedis.hcisolutions.ch/2020-01/api/cds/risks>

All other data can be converted on the fly to fit into the CHMED object (dateOfBirth, gender etc.)

Alternatively, use the Documedis Medication Editor to put together the patient data, then save/send it to the calling system as a simple string in CHMED format.

The CHMED object itself is available as an open source specification. In its core, it is a JSON object of the patient/medication data. For transmission, it can be compressed and encoded and a header is added to identify the version details. This results in being a single string for transmission and allows inclusion in QR codes.

There exists a PDF documentation of the object and software library for Microsoft Windows (written in C#, source available on request) to help construct and serialize/deserialize the object. All necessary information is published on the of the IG [eMediplan](#).

The tutorial above contains an example CHMED object that you can simply copy&paste for reuse

5.2.5. System requirements for the APP

The viewer function of the CDS.CE check result is a pure HTML based webpage. Therefore, it has some system requirements:

- The browser (or embedded browser component) must support HTML5 and JavaScript. Documedis supports the latest version of Google Chrome, Mozilla Firefox, Safari and Microsoft Edge. For embedded browser support please contact hotline@hcisolutions.ch.
- The minimum screen size to display the HTML page must be 1440x900 pixel. Optimum performance is achieved with FullHD resolution (1920x1080 pixel). APP and API for "Medicationplan" (2/3/4)

APP

The medication editor usage is primarily aimed at limited systems, exchange and collaboration efforts between different environments - and CDS.CE demo purposes. In these cases, the flow is going from (2) to (3)/(5).

However, you can also attach the eMediplan to your system (e.g. for demo purposes parallel to the direct way or because the local IT system does not yet hold all necessary data for an automatic check).

Therefore, when calling the eMediplan externally, our APP makes it possible to post a CHMED object to the editor, so that the user can start working on a medication plan that is already more or less complete, e.g. she might only need to add the patient risks if these aren't supported on the local system.

If your user needs to merge two (or three) medication plans, you can send/post multiple CHMED values.

It is also possible to get the final contents of the page back in CHMED format, using the default javascript postMessage mechanism: If you provide a targetOrigin parameter, the Export>Save button will generate a javascript postMessage that you can intercept from your calling application by using an event listener (the Message will have an e.data.action == 'send' and an e.data.mode == 'MedicationPlan'). This way a IT system can exchange medication data with the MAF both ways if needed.

Finally, you can adjust the appearance of the UI to your needs by providing a list of HTML element IDs that shall be hidden. This might be handy if you don't want the user to change patient data, but only edit medication or if you want to hide some of the Import/Export/Delete buttons.

In addition, the same URL is used to generate the PDF version of the eMediplan for printout or storage.

URL: <https://documedis.hcisolutions.ch/2020-01/app/patient>

| HTTP HEADER fields | Type | Values | Content |
|--------------------|--------|------------------------------|--|
| Accept: | string | text/html or application/pdf | The format of the CDS.CE check response, HTML or PDF |

| HTTP POST JSON object | Type | Values | Content |
|-----------------------|------------------------|---|--|
| medication* | string | CHMED16A... | CHMED-string of the patient medication |
| checks | array of 0...n checks | The desired CDS.CE checks and the display level threshold. | Default / if empty or missing: all risks / all levels Only relevant if all tabs or CDS. tab is to be displayed |
| check | string | e.g. allergySubstance, interaction | The name of the check (see chapter 5). Default / if empty or missing: error |
| hideAbove | int | e.g. 400 | The highest risk display level to display (see chapter 6). Use this to minimize overalerting. If the value is set, the check returns a relevance "rlv" result of null/empty for the selected check type; it will therefore hide all risks lower than the threshold defined by this value. Default / if empty or missing: all levels |
| elementsToHide | array of 0...n strings | ["Patient", "ActionImport", "ActionDelete"] | HTML identifiers (id) of the UI elements that shall be hidden [selectable if marked with class="hideable"]. |
| tabs | array of 0...n strings | medication, prescription, , clinicaldecisionsupport, | The tabs that you want to display (0...5). |
| targetOrigin | string | Asterisk ("*") for a WinForms App Website host URL for a Web App | The targetOrigin value of your calling system, used to send back the edited CHMED object using the javascript.postMessage mechanism |

| | |
|---|---|
| <p>Input: JSON</p> <pre>{ "medication": "CHMED16...", "checks": [{ "check": "interaction", "hideAbove": 400 }, { "check": "posology", "hideAbove": 200 }], "elementsToHide": ["Patient", "ActionImport", "ActionDelete"], "tabs": ["medicationplan", "clinicaldecisionsupport"] }</pre> | <p>Output: WebViewer</p> <p>Single Page Application: Complete interactive webpage (HTML/CSS/JS)</p> <p>Checks are purely optional and only needed if you want to include CDS.CE functionality.</p> <p>The HTML elements with the IDs "Patient", "ActionImport" and "ActionDelete" are to be hidden. Only the tabs "medicationplan" and "clinicaldecisionsupport" are visible.</p> |
|---|---|

If your software is unable to do a proper REST call and you are resorting to use a FORM POST request instead, remember to put the JSON into a field called documedisJSON as part of your key-value pairs in the form.

The Documedis Medication APP also includes a merge functionality to consolidate up to three existing medication plans. To use this, simply provide a MedicationsToMerge array of CHMED strings instead of the usual single Medication.

| HTTP POST JSON object | Type | Values | Content |
|-----------------------|-----------------------|----------------------------------|--|
| medicationstomerge | array of 1..3 strings | ["CHMED16Ax...", "CHMED16Ay..."] | Array of up to 3 CHMED strings to be consolidated by the merge UI functionality. |

As mentioned, the Documedis Medication APP provides a PDF printout of the medication plan, using the standardized layout defined by the Verein eMediplan. To use this, simply change the "Accept" header field from text/html (for the webpage) to application/pdf (for PDF). In this case, you can also provide two optional additional data elements, "logo" and "organization", to further style the service provider block in the header of the eMediplan pdf. This block has a width of approx. 6 cm and a height of 2 cm. You can freely combine the two elements and play with the proportions yourself to optimally use the available space.

| HTTP POST JSON object | Type | Values | Content |
|-----------------------|--------|---|---|
| logo | string | CHMED16A... | base64-encoded image file in either JPG or PNG file format. Maximum accepted file dimensions are 120dpi, 6x2 cm (270px * 90px). Remember: the smaller the faster... |
| organization | string | Dr. Max Müller Praxisweg 1 3000 Bern Tel. 031 123 4567 | Organization identification information, such as contact data (name, address, email, phone, etc.) according to your needs. If you want to transmit line breaks, they must be escaped inside the string using "\n". |

API

The Documedis API does currently not offer any Medication specific methods.

However, it might be handy to use the /risks API of the CDS.CE module to properly encode your patient risks.

5.2.6. APP and API for "Prescription" and "Polymedicationcheck"

Prescription and polymedicationcheck are separate views of the same object like the medicationplan, therefore the basic usage remains completely identical.

APP

Everything works just like the medicationplan tab described in the previous chapter.

In this context however, it might be desirable to control the number of available module tabs and the starting tab for the module. This allows you to e.g. only display a PMC, but nothing else. To achieve this, you must:

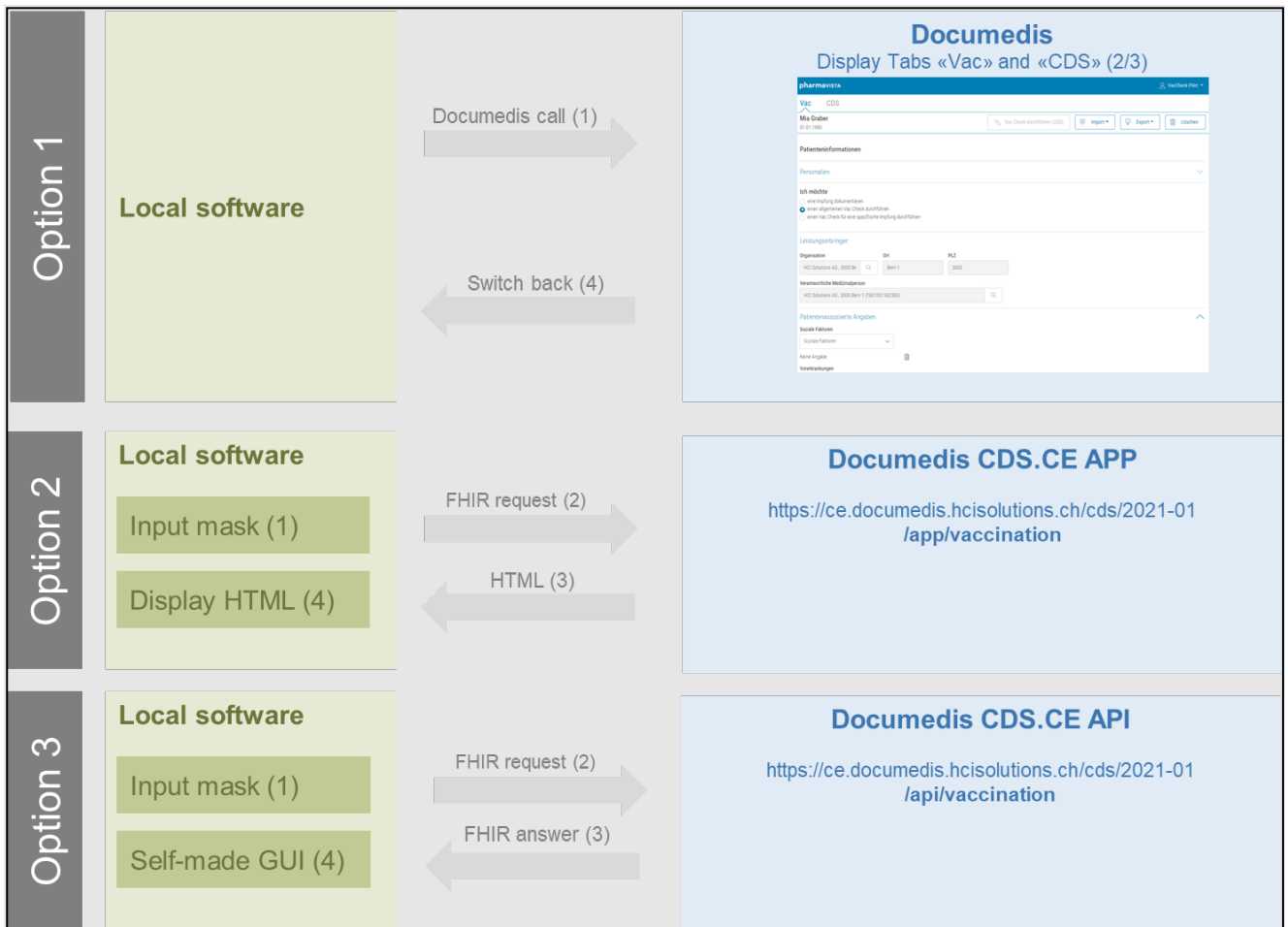
- Add the desired start tab name to the end of the URL route, e.g. <https://documedis.hcsolutions.ch/2020-01/app/patient/prescription>
- Inside the JSON object, list all tabs to be displayed (e.g. only "polymedicationcheck")

Additionally, Documedis provides PDF printouts variants for both tabs. To use them, simply change the "Accept" header field from text/html (for the webpage) to application/pdf (for PDF).

API

There are no additional API methods necessary for prescription and polymedicationcheck, everything works exactly like the medicationplan.

5.2.7. Vac Check



| Option 1 (light integration - APP) | Option 2 (deep integration -API) | Option 3 (deep integration -API) |
|---|---|--|
| <ol style="list-style-type: none"> 1. Documedis call with the tabs «Vac» and «CDS» 2. Enter the data in Documedis in the tab «Vac» 3. Display the results in Documedis in the tab «CDS» 4. If the consultation is finished, switch back to local system | <ol style="list-style-type: none"> 1. Enter the Data in self-made input mask of local system. 2. Local system sends a FHIR request to CDS APP 3. CDS APP sends HTML answer back 4. Display HTML in local system | <ol style="list-style-type: none"> 1. Enter the Data in self-made input mask of local system 2. Local system sends a FHIR request to CDS API 3. CDS API sends structured data back 4. Display structured data in self-made GUI in local system |

Light integration - APP

For this option everything works like the integration of the medication described in the previous chapters. Only the URL changes. For the latest stable release of the vaccination module please use <https://documedis.hcisolutions.ch/2020-01/app/vaccination>

Deep integration - API

For option 2 and option 3 see the document Integration Specification Documedis CDS.CE (<https://www.hcisolutions.ch/de/tecdoc>).

5.2.8. Hin Sign prescription checker

A separate view is available to check the validity of a signed prescription using Hin Sign. This view is available without a special login. The prescription module also provides the following functionalities (requires a Hin login and special rights)

- Document the dispensation of a prescription
- Invalidate a prescription
- Undo an action on a prescription

This module is accessible using the following URL: <https://documedis.hcisolutions.ch/2020-01/app/prescription>

| HTTP POST JSON object | Type | Values | Content |
|-----------------------|--------|----------|---|
| QrCodeContent | string | https:// | The entire QR Code content (containing the signature + chmed) |

| | |
|--|---|
| <p>Input: JSON</p> <pre>{ "qrCodeContent": "https://.... " }</pre> | <p>Output: WebView</p> <p>Single Page Application: Complete interactive webpage (HTML/CSS/JS)</p> |
|--|---|

5.2.9. APP and API for "ClinicalDecisionSupport CDS.CE" (5/6/7)

All CDS.CE functions must directly use the CE-certified Documedis CDS.CE module. Please refer to the separate user manual on how to integrate the CDS.CE APP and API directly into your IT system.

5.2.10. Access control

Each INDEX customer with a professional level subscription (or a software company contract) must use his INDEX login to generate access tokens for his organization on the INDEX website. It is a good practice to generate separate tokens for each instance using Documedis and use proper descriptions. The token description will be shown in the footer of HTML and PDF views in the APP.

Depending on your current contract details, HCI might also provide you directly with a token.

If you call Documedis and provide a token, it must either match with the one stored on our backend for the HCI-SoftwareOrgId or the HCI-CustomerId field provided in the request.

HCI-CustomerId must contain the identifier of the INDEX subscriber using this software instance:

- If the end user has an INDEX login, this is the numeric part of his INDEX username (e.g. "12345" for a login such as epn12345@hcisolutions.ch). This applies to e.g. hospINDEX or careINDEX or to demo systems of software companies. The token is validated against this ID.
- If the end user does not have an INDEX login, but only has a subscription, either directly (pharmINDEX) or through a software company as reseller (medINDEX), this is the GLN of the pharmacy or the doctor/practice. The token is validated against HCI-SoftwareOrgID.

If the token is valid, we do completely trust your software. This makes you responsible for the contents of all header fields, especially for the HCI-UserAccessType which defines access to critical functionalities such as Rx mode and extended information access.

The content of the field "HCI-UserAccessType" is a three-element code such as e.g. "A-SOFT-dent":

- The first element denotes the general professional level of the user in the medical field. It can be either:
 - A: Academic medical user, permitted by law to prescribe or dispense medication (doctor, pharmacist, dentist, vet)
 - B: Other medical professional, not allowed to prescribe medication (e.g. nurse, physio etc.). Default.
 - C: Service or group account / company or organization "machine" user
 - D: Public user / Anonymous
- The second element (HCI-UserAuthenticationLevel) denotes the authentication level of the user in your system, the level of trust that you have into the authenticity of the user information that you provide to Documedis. This allows us to clearly separate functionalities for more general access (e.g. access to additional documents for a drug) from others that require a very high level of trust (e.g. sending a prescription to a pharmacy).
 - SIGN: The user provided a qualified digital signature according to federal Swiss law (SR 943.03)
 - HARD: The user identity was verified using physical means (HPC Smartcard, RFID or HIN VPN)
 - COMP: The user identity was issued using a company process (e.g. Windows Account / AD)
 - SOFT: The user identity was verified a user/password-based identity provider
 - NONE: The user is anonymous
- For the third (and optional) element (HCI-UserHealthProfession), the [IHP] element, please provide the health profession of the user using the [refdata](#) (Index of Health Professions), using the refdatabase code as published on refdata.ch

Examples (UserAccessType/UserAuthenticationLevel/UserHealthProfession):

- B/SOFT/nurse: A nurse logged into your system using a username/password
- C/SOFT/nurse: Multiple station personnel that log into your KIS with a single shared Windows account
- A/SOFT: A pharmacist logged into your system using Swiss-Rx-Login, but you aren't providing IHP info
- A/HARD/doctmed: A doctor that access your system through a HIN gateway
- A/SIGN: An academic professional that you verified using a qualified digital signature.

5.2.11. Request error codes

Request may fail due to a number of reasons. In such a case, the various HTTP error codes (401, 403 etc.) are used to give a precise error information. In addition, in some cases the response includes additional error details. The online API docs feature a detailed description of the possible errors and the error object model: <https://documedis.hcisolutions.ch/api/docs/>

5.2.12. Error handling / Offline behavior

There can be cases that the APP or the API are not available due to downtime or a technical issue. Therefore, if your software can not connect to one of our URL endpoints or if the endpoint returns a HTTP status other than 200 (OK), you SHOULD use the provided icon “Service not available” to tell to the end user that the service is currently unavailable.



We suggest using short timeouts, e.g. 2 seconds, when connecting to our service (ideally in an async mode). This assures that availability issues are quickly visible and that the issuing system isn't blocked.

5.2.13. SLA / Availability / Performance

Through the SLA that is part of the INDEX contract giving access to Documedis, we will guarantee an availability of 99.5%. Based on our platform experience, an uptime of 99.9% can be expected, but is not guaranteed. Service time is 7x24h. Maintenance windows are in the nights from Saturday to Sunday.

To check current Documedis APP availability, please verify current uptime status using our external monitoring available through <http://stats.pingdom.com/t7myjtazclq9> (this service tests service availability 1x/minute and is also used for internal alerting and monthly uptime reporting).

Incident response time is 1 hour during office hours (0800h-1700h) on workdays (Monday-Friday), except on public holidays in the Canton of Berne. Response time is the amount of time between your incident report arriving by [e-mail](#) or phone (Tel. 058 851 2600) in our Hotline and their acknowledgement.

Incident resolution time is 8 hours during office hours (0800h-1700h) on workdays (Monday-Friday), except on public holidays in the Canton of Berne. Resolution time is the amount of time between your incident report arriving by [e-mail](#) or phone (Tel. 058 851 2600) in our Hotline and the resolution of the incident.

Module Performance: Due to the connected nature of the internet, we are unable to guarantee any end-to-end performance values. We do however target the following performance values as measured using the Example Winforms application “DID” (provided in the “Additional tools” section below) running on a machine in our local intranet:

On the Documedis API:

- 200 ms per call for most methods

On the Documedis APP:

- 1000 ms to get a HTML view
- 2000 ms to generate a PDF

5.2.14. Support organization

HCI Solutions AG does NOT provide end-user support for the Documedis modules.

HCI Solutions AG does only provide customer support to the technical contacts mentioned in the INDEX contracts or the internal CRM tool. Typically, these contacts are the operational SPOC of the software house and/or the INDEX end user such as a hospital, care home, pharmacy or medical practice.

If a customer or a software provider encounters a bug in the software that is attributable to the Documedis module or the data that it is based on, a bug report *must* be supplied directly to [e-mail](#)

5.2.15. Additional tools

We provide a number of supporting software tools to help developers to quickly setup a solution.

Easter eggs in the Documedis medication APP

In the SCAN modal dialog of the medication editor "eMediplan", you can:

- Click the scanner icon to paste a hardcoded valid example CHMED16A
- Click the label under the text input to paste your current clipboard content.

Swagger API documentation

The REST API of Documedis provides JSON responses to your requests. The complete API is documented using a state-of-the-art auto generated web interface, based on the popular Swagger style. This allows you to play around with the API, enter example data, execute requests, get real data and see curl examples of your requests. Using 3rd-party add-ons, you can even generate client POCOs directly from this.

Example Winforms application "DID / Documedis Integration Demo"

The free [source code](#), On-Demand (To get the source code, please contact our [Hotline](#)) for a Windows Forms based "Pseudo-KIS" (including C# source code) shows a typical integration of the Medication and CDS.CE services into a 3rd party desktop application. You can select between three example patient records (hardcoded in the app.config), while the app does a background CDS.CE check for the respective patient and displays the check result as a large colorful relevance icon based on our free icon set (included in the solution). Clicking this relevancy icon will open the standalone CDS.CE check viewer of Documedis. Clicking the PDF icon will download the CDS.CE report as a PDF.

In addition, there is the possibility to edit a record using the Medication editor (and you can even click the "send" button in the Documedis medication editor to send the edited eMediplan back into the example application).

Example Web application

A small standalone <https://prod2.e-mediat.net/DocumedisDemos/did.html> that can be run as a SPA. It works similar to the Winforms application, but the example patient records are hardcoded in the HTML. After selecting a patient, an AJAX call does a summarized CDS.CE check and displays the result. Clicking the result will then open a separate webpage that shows the CDS.CE check viewer provided by Documedis. You can also edit the patient record in the Medication editor and send the modified version back to the SPA. Clicking the PDF icon will download the CDS.CE report as a PDF.

Do not forget to change the example headers to your own values!

The SPA is hosted under our legacy e-mediat domain to be able to demonstrate cross-domain communication.

Postman project

[Postman](#) is a handy tool to explore REST APIs such as Documedis.

5.3. Integrating Hin Sign into your clinical information system

The HIN Sign electronic prescription signature enables doctors to issue digital prescriptions - securely and in compliance with legislation. Pharmacies can enter and validate them automatically with the QR code. This makes processes in practices and pharmacies safer and more efficient. For more information about it, please refer to <https://www.hin.ch/de/services/hin-sign/ordonnance-electronique-hin/>.

The following features are available for the electronic prescription

- Creation of Signature
- Revocation of Signature: in case of error for example, it is possible to make an ePrescription invalid
- Dispensation of medicines
- Cancellation of an event (revocation or dispensation)
- Verification of signature
- Print of ePrescription
- Send prescription to pharmacy

In Documedis, as always, you have 2 integration options

- Integration using the Documedis web graphical interface, known as light integration
- Integration via our API routes, which allows you to benefit from all Documedis functions in complete transparency for your users, called deep integration.

A detailed explanation of both approaches is provided in the next two chapters but below is a summary of the different features available depending on the level of integration

| | Light integration | Deep integration | Security |
|-----------------------|-------------------|------------------|--|
| Creation | Available | Available | Documedis header (+ Token) EPDG Token |
| Revocation | Available | Available | Documedis header (+ Token) EPDG/ACS Token |
| Dispensation | Available | Available | Documedis header (+ Token) ACS Token |
| Cancellation of event | Available | Available | Documedis header (+ Token) EPDG/ACS Token |
| Print | Available | Available | Documedis header (+ Token) |
| Send | Available | Not Available | |

5.3.1. Light Integration

This scenario works in a very similar way to medication, it is sufficient to post a defined payload (containing the prescription) on a Documedis url and the user carries out the actions he needs in the Documedis front end.

Creating/printing/sending a signature

In this case, it is sufficient to use the Documedis medication prescription module as described in the previous chapter. The functions are available in the export function. If necessary, Documedis will require the user to authenticate himself with his HIN 2-factor login. The authorisation will also be automatically taken over by Documedis. Bi-directional communication is also supported, please refer to the previous chapter

In the case of direct transmission to a pharmacy, if the selection of the pharmacy has already been made in the primary system, you can indicate this directly to Documedis in order to avoid the user having to do it again. To do this, use the "Rcv" field of the medication/patient in the CHMED (https://emediplan.ch/wp-content/uploads/2022/04/eMediplan_CHMED16A_V1.6.pdf) and insert the GLN of the pharmacy.

Verification/Revocation/Dispensation/Cancellation of event

In this interface, the user will be able, depending on his rights, to carry out the various actions mentioned above on the prescription. Once again, Documedis will take care of authentication and authorisation via the Hin and AdSwiss services.

URL: <https://documedis.hcisolutions.ch/2020-01/app/prescription>

The necessary headers are the same as those described in chapter 5.2.1

| | |
|---|--|
| Input: JSON <pre>{ "qrCodeContent": "https://eprescrip...", "targetOrigin": "...", "organization", "..."} </pre> | Output: WebView Single Page Application: Complete interactive webpage (HTML/CSS/JS) |
|---|--|

| HTTP POST JSON object | Type | Values | Content |
|-----------------------|--------|---|---|
| qrCodeContent* | string | https://eprescription.hin.ch/#CHMED16A1... | The entire signature (content of QRCode) |
| targetOrigin | string | Asterisk ("*") for a WinForms App Website host URL for a Web App | The targetOrigin value of your calling system, used to send back the actions and results using the javascript.postMessage mechanism |
| organization | string | Dr. Max Müller Praxisweg 1 3000 Bern Tel. 031 123 4567 | Optional: Only used if the prescription is printed again Organization identification information, such as contact data (name, address, email, phone, etc.) according to your needs. If you want to transmit line breaks, they must be escaped inside the string using "\n". |

5.3.2. Deep Integration

This scenario allows you to integrate the prescription signature into your primary system completely silently. However, you are responsible for implementing all authentication and authorisation logic using Hin and AdSwiss end points.

Verification/Creation/Revocation/Dispensation/Cancellation of event

The routes for using the features Creation/Verification/Revocation/Dispensation/Cancellation of event are described in our swagger : <https://documedis.hcisolutions.ch/2020-01/api/docs/index.html>

| HinSign | | ^ |
|---------|--------------------|--|
| POST | /sign/hin/verify | Validate an Hin Signature. |
| POST | /sign/hin/sign | Sign a CHMED. |
| POST | /sign/hin/revoke | Revoke a prescription. |
| POST | /sign/hin/dispense | Dispense a prescription. |
| POST | /sign/hin/cancel | Cancel a prescription signature event. |

You will find detailed descriptions of all payloads and responses; it is even possible to test the routes.

Sign and print

To sign and print a CHMED, you must use a dedicated route

URL: <https://documedis.hcisolutions.ch/2020-01/app/prescription/sign-and-print>

The necessary headers are the same as those described in chapter 5.2.1

| Input: JSON | Output: PDF file |
|--|------------------|
| <pre>{ "medication": "CHMED16A1p...", "organization": "...", "printReceiver", true/false, "epdgToken", "..."} </pre> | |

| HTTP POST JSON object | Type | Values | Content |
|-----------------------|--------|---|---|
| medication * | string | CHMED16A1 | The CHMED containing your prescription |
| targetOrigin | string | Asterisk ("*") for a WinForms App Website host URL for a Web App | The targetOrigin value of your calling system, used to send back the actions and results using the javascript.postMessage mechanism |
| organization | string | Dr. Max Müller Praxisweg 1 3000 Bern Tel. 031 123 4567 | The content to be displayed as the creator. If it is empty, Documedis will generate it automatically based on the GLN specified in the Auth field of the CHMED. (see number 1 below) If you want to transmit line breaks, they must be escaped inside the string using "\n". |
| printReceiver | bool | true/false | The value "true" means that the receiver (field patient.rcv) should be displayed under "Pharmacy". (see number 2 below) |
| epdgToken | string | | The auth handle generated from EPDAuth Service from ADSwiss |

eRezept

22.09.2022

Das ist ein elektronisches Rezept. Die verbindlichen Daten sind einzig im QR-Code enthalten.

Um das Rezept auf die Gültigkeit zu prüfen und einlösen zu können, muss zwingend der QR-Code gescannt werden.

Patient

Dora Graber, 23.11.1945, weiblich
Untermattweg 8, 3000 Bern

Ersteller

Demo Organization
Untermattweg 8
3000 Bern
hotline@demo-organization.com

1

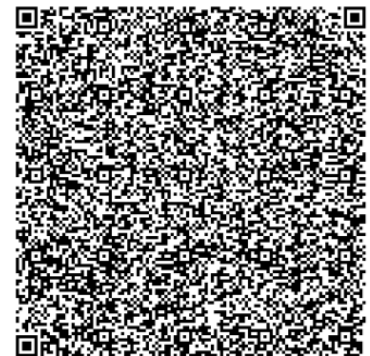
Apotheke

Versendet an:
Amavita Apotheke Bahnhof Bern

Christoffelunterführung
3011 Bern

GLN: 7601001378483

2



Print

If you have a signature and want to reprint the corresponding PDF, you can use the normal Documedis route to print a PDF and replace the content of the "medication" field in the payload with the HIn signature (<https://eprescription.hin.ch....>), in this case you can use the "printReceiver" parameter as in previous chapter

6. Appendix

6.1. APP UI integration: Receiving notification from the viewer

The APP viewer uses JavaScript to send feedback to the calling system. If the viewer is integrated in an application (as a new browser tab of a web application or an embedded browser control in a desktop application), the application can therefore receive data from the Documedis module.

Use the parameter “targetOrigin” to decide how you want to receive the feedback:

- If you have a desktop application with Documedis in an embedded browser, use a star/asterisk (“*”). The JavaScript code of the viewer will then issue a `window.external.documedisReceiveMedication` (object) call. Depending on the embedded browser control, you can then add a listener to it for this method.

If you have a web application with Documedis in a new browser tab, use the origin of your webpage (e.g. “myapp.mycompany.com”).

The JavaScript code of the viewer will then issue a HTML5 `parent.postMessage` (object) call.

You can then add an Event listener to your webapplication and parse the messages.

You will find below an example of event handler to be define in the page of your web application calling Documedis.

```
<script>
    // Create IE + others compatible event handler
    var eventMethod = window.addEventListener ? "addEventListener" : "attachEvent";
    var eventer = window[eventMethod];
    var messageEvent = eventMethod == "attachEvent" ? "onmessage" : "message";

    // Listen to message from child window
    eventer(messageEvent, function (e) {
        console.log('parent received message!: ', e.data);
    }
    }, false);
</script>
```

The transmitted object (`e.data`) is a very simple JSON object, including message type and value.

```
{
  action: "action", // the action send, tabChanged
  mode: "mode", //the current tab selected
  data: "chmed",
  pdf: "pdfFileBase64Encoded" // Not always set
};
```

Depending on the selected tab the following actions are available and returns data back to the system which is integrating Documedis. These actions are

- send => the content of the tab has to be saved
- sign => a signature has been requested
- tabchanged => the user changed the active tab

6.1.1. The action “send”

In the case of this action, the property “mode” always contains the tab active at the time of the click on the action.

| Tab / Button | Save (Speichern) | Covid Certificate Vaccination | Covid Certificate Quick test |
|--------------|----------------------------|----------------------------------|---------------------------------|
| Medication | data : chmed pdf : null | N/A | N/A |
| Prescription | data : chmed pdf : null | N/A | N/A |
| Vaccination | data : chmed pdf : null | data : null pdf : Vaccination | data : null pdf : Covid test |

6.1.2. The action “sign”

In the case of this action, the property “mode” always contains the tab active at the time of the click on the action.

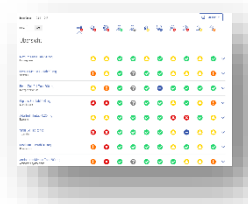
| Tab / Button | Save with Hin Sign Signature | Send prescription to pharmacy |
|--------------|---|---|
| Prescription | data : signature (contains CHMED) pdf : the prescription | data : signature (contains CHMED) pdf : the prescription |

6.1.3. The action “tabChanged”

The action “tabChanged” is fired on each tab change, the “mode” contains the new tab selected. The properties “data” and “pdf” are not used.

6.2. Example eMediplan

If you need some initial example data, you can find it in the demo applications or you can use the fictive test example below. It includes a large number of medications with various risks.



CHMED16A1H4sIAAAAAAAACr2VXY+iMBSG/4rp7epOWz4E7tYlZpqMs0SdudiNFwhnhADFILb1/Df9xTEzMV
 m1KyRiLZvT9vnnvGDPgQShSkEo4h3I9DksgHjEL2VlhuTp2H2U4QYkChMfwwhzTWvE2lgbKD2CiHhM40OyVB
 JAB7wIBllfoN24GDQT/SHcoGpRQ7X1O1x94EpNB7iC12YsBmkJRCb4fNOcSax3+q1BxEpwUSCuLRIVIEPt
 5IDMMMZth17BQRtVm1rqXeCdZY/MksaPkjk+S0TfsPpytm7UmCKt2m9V+B+3M1zBHEFcn/SJSzJPrqd0w74eZ
 bZ3GWbNumjaXNEIjheoW1JsR12TMxMhZ3C1gYn5IN+6rqSwxU8Ipc0aU4wcDfbUqOx9mYgFVa4SP8fQzHTK
 89S/eLXu3PT6PDMNX2XZRaQuXZbyRIAT6iamWlUrBd2wu60233PMmCKNMcx8tIYxyx24z+m/Od4xnOH3YSa
 iqtLyc0zANRu9LOclrlZRREss6yh6+gfoxhauO49wUI53FnYk3yNQ1njLKzDEb39fVIJRZKqpSDB4GuILK8UXIYXs
 5tOnaN0F+h6vd/QB5XlcZ5L9AVrtQiBqPs8sdvhGs9re/P/b3FTFVuXu7EtPiN30PznPq/5NM9iop6upyUMbHY/vO
 pMvLT1Vcl5imkMeaSHeWUQKFntFVvFOlabPBYtleo3989RfO+4LHULdCW5s55ZiaO+JsqzPYp5lf6Lca0MXB
 WL0SCxVE12CSfMXUPEELf4HAAA=

6.3. Example request to print eMediplan PDF

The following is the raw example data, usable to create a test case in Postman. The request is only this big because it contains a small embedded logo. Just remove the "logo" element from the JSON to shorten your request.

Curl Beispiele:

- Print Mediplan
- Show eMediplan in Editor
- Print Prescription
- Show Prescription
- Print Sign Prescription
- Merge eMediplan

The examples can be found here: [Examples](#) as soon as they are validated I will host them under <https://index.hcisolutions.ch/docs>.

URL (for HTTP POST)

<https://documedis.hcisolutions.ch/2020-01/app/patient/medicationplan>

Headers (adjust according to your organization ID)

Content-Type:application/json
 Accept:application/pdf
 Authorization:YOUR_OWN_TOKEN_HERE
 HCI-CustomerId:7649
 HCI-Index:hospindex
 HCI-SoftwareOrgId:7649
 HCI-SoftwareOrg:HCI Solutions
 HCI-Software:Documedis

Body (continues on the next page...)

```
{
  "medication":
  "CHMED16A1H4slAAAAAAAAAC72VTY/aMBCG/8rK10I3NvmA3EojtqiWjQjdQysOIZkiUYIdOU4livLfdxwD3dMiKELCYvJ6PH7
  mVWLvSRirHLgi/p5MnuMtEJ8EQsakR2aHxycZr0GiMA4wjDcR7fQp7bMBSk/AU5zzWY9ESgLoBJR/5ZUJvuZqZ6IZ32CQA
  oZhJrgujOEcUr1zMKvVHLjRQglb4ls9skil/3tPpphitz0TOCij6JndZSYkRzPPkn0II28kzQ4Bu4xna7alSaI626b5a6CbuVLXCLIS
  Lf3k+fYEdNLzTQ7TIPXOc3TdtW2XS95gpZxZQrzcjIptTGzGlgCtjYnzDzgzPplgZ0SZtFh32L4w8RALYXxYcoXUhdGBJhvfBZ
  6FIf+x9Gxm+1JtPyO6ctis6i1hZFI1xI4Rz+xVRGjFP7QIVRdtahZm7LP6zBOCs1/sIzQiw3drrP/5n3HeoY3gEpCXefict6BPdW
  fWnHZaMykWSpbJLi8RvIv1e4PBwOb4pNz2JP+SsU6hqPqUVtj3r3dTmMZZHzWvCHxwesoEp8QUrYXA5vj9yboL/D1m5/gD
  5v6gLKPyDrKua8wWPvcsdvBK39Po6P/X5BXCWq1ytXHXbT9+M8r/7uZLZT2bapLwemzPPcOxNHl5/KWCuc5FCmmkw/RE
  kGW73S3JynG6vrCrUveDSZqLup/3WwtJhPqc8GnzCw9NGz2OIWOHovs3F3RbdvfmCmRgwIAAA=",
  "organization": "Untermattweg 8, 3027 Bern",
```


7. Version History

| Version | Änderungen | Datum | Autor |
|---------|--|------------|-------|
| X2.1 | Initial Release | 05.10.2016 | twa |
| X2.2 | Added relevance 70 and 500, added display order; updated check names | 21.11.2016 | twa |
| X2.3 | Redesign of CDS request and response. NULL relevance for check results above threshold Renamed REL to "RLV" and risk ID to "check" Example request | 16.12.2016 | twa |
| X2.4 | The individual CDS "checks" are now "check types". Added icon for "Check not Available". Minor corrections. | 21.02.2017 | twa |
| X3.0 | Major rewrite for new UI and documedis.hcisolutions.ch architecture | 22.06.2017 | twa |
| X3.1 | Some minor changes in header fields (*GLN > *Id), document restructured | 30.06.2017 | twa |
| X3.2 | Critical change: "Potential risks" added to relevancies, renumbered display levels! Print Mediplan as PDF New tabs prescription and polymedicationcheck Changed naming from "partner" to "serviceprovider" | 25.08.2017 | twa |
| X3.3 | Allow base64 encoding on selected header fields Added optional logo/organization fields for mediplan PDF view | 22.09.2017 | twa |
| X4.0 | Major rewrite, split into two separate modules (Medication / CDS.CE) | 03.12.2017 | twa |
| V1.0 | Updated for initial release. Mirroring CDS.CE doc whenever possible. Added appendix example request. | 01.03.2018 | twa |
| V1.1 | Minor fixes | 04.07.2018 | twa |
| V1.2 | Added "ElementsToHide" functionality to hide certain UI elements. | 12.12.2018 | twa |
| V1.3 | Optimized "HCI-Stylecolor" explanations | 07.01.2018 | twa |
| V1.4 | Added "merge" functionality | 16.10.2019 | twa |
| V1.5 | Added Electronic Patient Dossier | 21.12.2020 | ccr |
| V1.6 | Added 7.1. APP UI integration: Receiving notification from the viewer | 20.07.2021 | ccr |
| V1.7 | Added 6.2.9 Hin Sign Prescription Refactor all URL's (every url is version specific) Change release management (no "state of the art" version anymore) Added 6.1.6. Lindaaff Added 6.1.7. PrimaryCareAlgorithm Added 6.1.8. Vaccination Added 6.1.9. Covid Added 6.1.10. Care | 30.05.2022 | ccr |
| V1.8 | Description added Added 6.1.6. Lindaaff Added 6.1.7. PrimaryCareAlgorithm Change 6.2.5 isn't a moving target correct url deposited 6.2.14 http://stats.pingdom.com/t7myjtazclq9 | 14.08.2022 | dca |

| | | | |
|-----|---|------------|-----|
| 1.9 | overall revision of the document | 21.09.2022 | dca |
| 2.0 | <ul style="list-style-type: none">• Revision and extension of examples• URL update | 23.09.2022 | dca |
| 2.1 | <ul style="list-style-type: none">• Chapter 5.2.5 and 5.2.6 supplemented• Chapter 5.3 reposted | 10.10.2022 | dca |
| 2.2 | <ul style="list-style-type: none">• Additions to the Vac Check integration• Removal LINDAAFF & Covid | 10.01.2024 | aan |