

Neukonzeption des DLR Software-Katalogs

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Wissen für Morgen



Software-Entwicklung im DLR

- Circa 8.200 Mitarbeiter*innen
- Geschätzte 20% davon, sind mit Software-Entwicklung befasst
- **Software-Entwicklung im DLR sehr unterschiedlich, je nach:**
 - Domäne
 - Reifegrad
 - Programmiertechnologie
 - Teamgröße



Warum braucht das DLR einen Software-Katalog?












Quelle: [1]



DLR Software-Katalog – Version 1

Suche im Feld "verantw. OE (Mnemo)" nach "SC" liefert folgende Ergebnisse:

Zeige Einträge: [1-25 **26-40**]

Name	Beschreibung	Kategorie	DLR-OE
 3DGISF	SW für Messdatenauswertung in der Strömungsmechanik Global Skin Friction Interferometry in 3D Stömungen...	Signal-/Datenverarbeitung	SC BS
 aGenTT	a generic test tool checks out, builds and deploys two differing versions of TAU, runs them and generates reports abo...	Software-Technik (CASE)	SC-VK
 ALG	Der ALG (Application Level Gateway) ist ein Security-Proxy für Grid Service zum sicheren Zugriff auf Grid-Ressourcen, di...	Kommunikation	SC-VK
 APSIM	Software zur Lärmvorhersage. Akustisches Vorhersageverfahren für tonalen Lärm....	Signal-/Datenverarbeitung	SC BS
 Catacomb	Der Catacomb WebDAV Server ist ein WebDAV-Modul für den Apache Webserver, der das Standardmodul mod_dav um einige Zusatz...	Betriebssystem	SC-VK
 dark	SW für Messdatenauswertung in der Strömungsmechanik Auswertepaket für Standard-Messverfahren am KRG...	Signal-/Datenverarbeitung	SC BS
 DataFinder	Der DataFinder ist ein Tool zur Verwaltung wissenschaftlicher Daten. Er ermöglicht die Verwaltung von Ein- und Ausgabeda...	Management (wissenschaftl./techn.)	SC BS
 DAVInspector	DAVInspector is a tool for debugging and monitoring HTTP and WebDAV capable applications. It is mainly written to help d...	Betriebssystem	SC-VK
 DLR Software Basisstandards	Intranetsystem zum Tailoring der Anforderungen an DLR Softwareentwicklungen und spezielle Bereitstellung von Software En...	Management (wissenschaftl./techn.)	SC BS



DLR Software-Katalog – Version 2

software.DLR.de



software.DLR.de

feedback & support

- All projects
- Administration and Tools
- Communication
- Control
- Knowledge and Data Management
- Signal and Data Processing
- Software Engineering
- Simulation and Modeling
- Visualization


BACARD!

Knowledge and Data Management

The Backend Catalog for Relational Debris Information (BACARD!) is the DLR's approach to a space debris database. The custom middleware components are implemented in Python using ZeroMQ and Protocol Buffer technology.




Simulation Model Library

Simulation and Modeling

Simulation Model Library (SimMoLib) is a distributed system to manage a library of simulation models. SimMoLib's main goal is to promote the preservation of knowledge that lies in simulation and calculation models and encourage reuse of those models.




Virtual Satellite

Simulation and Modeling

Designing space systems and planning space missions relies on many separated phases and disciplines. The virtual satellite aims at closing the gaps in the development life-cycle and between disciplines by using model-based systems engineering.




SUMO

Simulation and Modeling

SUMO is an open source, highly portable, microscopic and continuous road traffic simulation package designed to handle large road networks.



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Probleme von Version 1 und 2

- Fehlende Nutzerakzeptanz
- Hohe Wartungsintensität der Softwareeinträge
- Hohe Wartungsintensität des Katalogs selbst
- Kein ansprechendes Design, vor allem bei Version 1



Konzeptideen für den neuen Software-Katalog

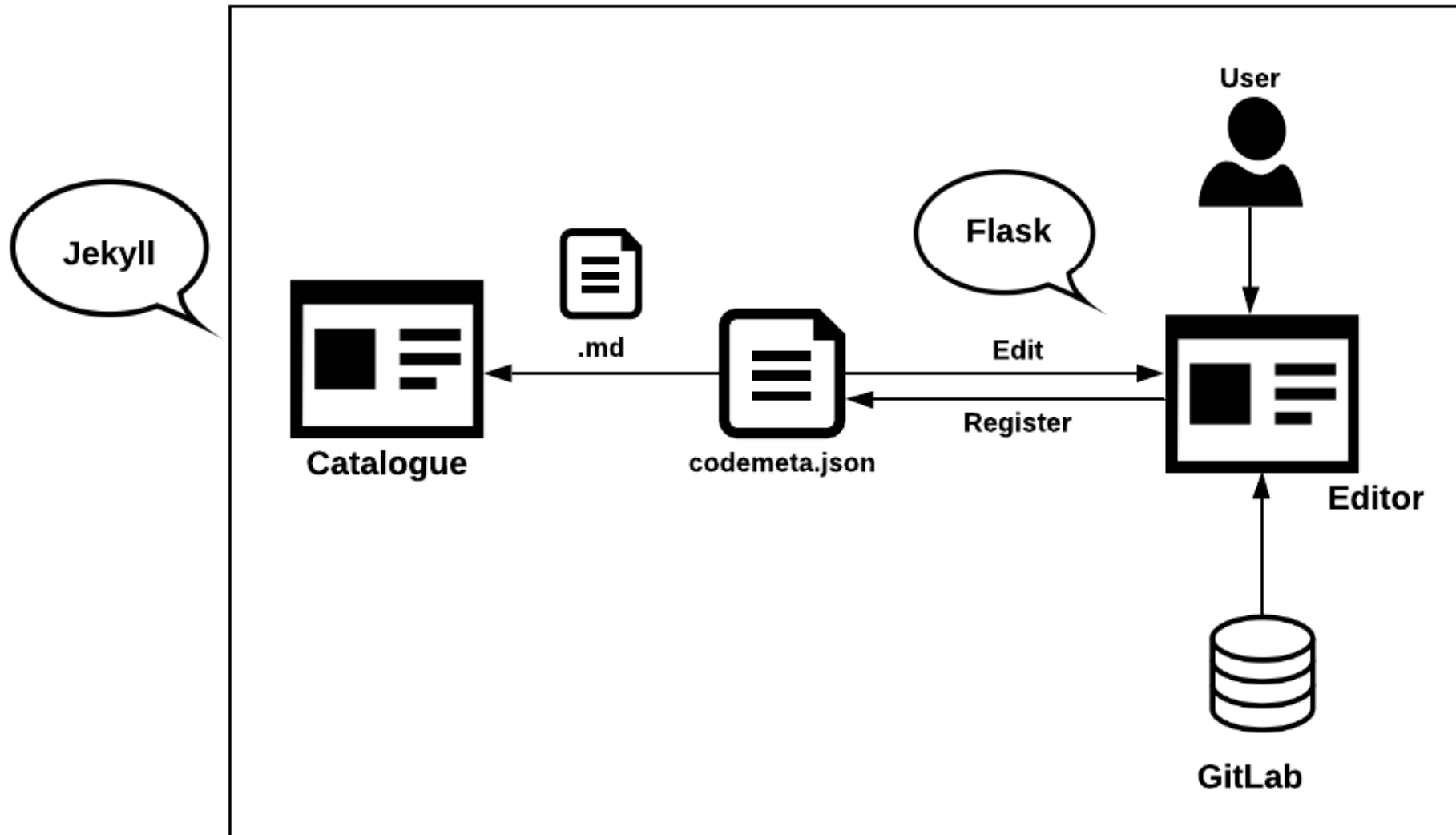
- Erkennbarer Mehrwert für den Nutzer
- Wenige Eingaben
- Geringer Wartungsaufwand
- Wenig selbst entwickeln
- Wiederverwendbarkeit erhöhen



Quelle: [2]



Konzept für den neuen Software-Katalog



CodeMeta

- Verbesserte Analysierbarkeit
- Erhöhte Transparenz
- Ermöglicht Zitierung
- Nutzbar für viele 3rd Parties

```
11  },
12  "@type": "SoftwareSourceCode",
13  "abstract": "DataFinder is a lightweight data management
14  "description": "**Features:**\n\n* Organization of ma
15  "relatedLink": "https://home.page",
16  "version": "1.0",
17  "keywords": [
18    "scientific data management",
19    "python",
20    "qt4"
21  ],
22  "developmentStatus": "<a href=\"https://www.repostatus.org
23  "citation": "10.1000/182",
24  "operatingSystem": [
25    "Windows 7"
26  ],
27  "applicationCategory": "communication",
28  "datePublished": "1992-12-12",
29  "author": [
30    {
31      "@type": "Person",
32      "email": "florian.lamprecht@dlr.de",
33      "name": "FlorianLamprecht"
34    },
35    {
36      "@type": "Person",
```



Use case: Anlegen eines neuen Softwareeintrags (1/3)

Eingabe der GitLab ID

→ GitLab Crawler erhebt Daten



The screenshot shows the 'Add new Project' form on the software.DLR.de website. The form includes a 'Project Id' input field and a 'SUBMIT' button. The website header features the DLR logo and navigation links for 'ABOUT' and 'TAGS'. The footer contains the DLR German Aerospace Center logo and a list of links: 'Simulation and Software Technology', 'Data Privacy Statement', 'Simulation and Software Technology - Open Source', and 'Imprint'. A small note at the bottom right states 'This site is powered by Jekyll and Flask'.

software.DLR.de

DLR

[ABOUT](#) [TAGS](#)

Add new Project

Project Id

SUBMIT

DLR German Aerospace Center

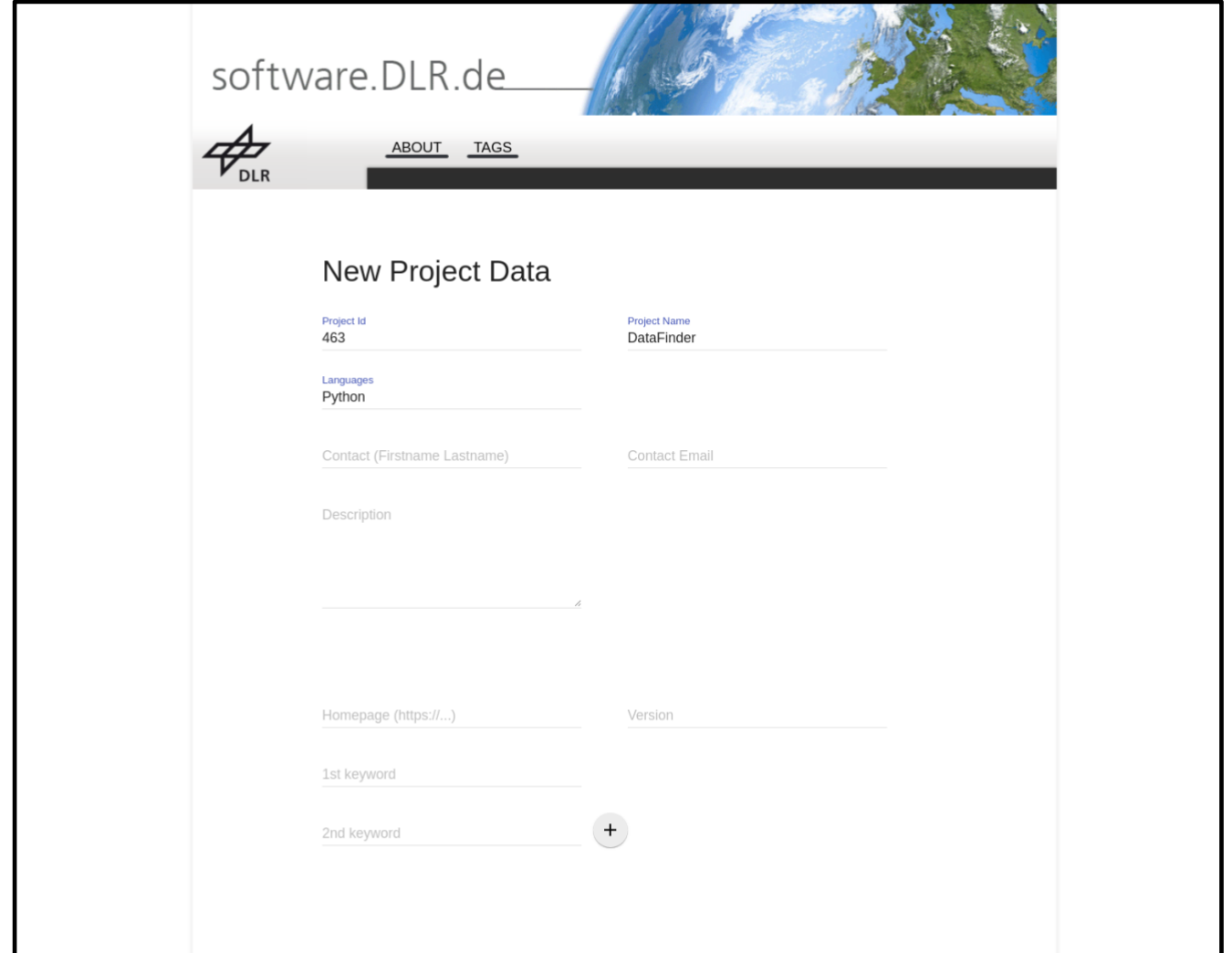
[Simulation and Software Technology](#) [Simulation and Software Technology - Open Source](#)
[Data Privacy Statement](#) [Imprint](#)

This site is powered by Jekyll and Flask


Use case: Anlegen eines neuen Softwareeintrags (2/3)

Beim Anlegen unterscheiden wir Daten, die ...


- ... eingegeben werden müssen
- ... angeboten werden, aber editierbar sind
- ... angezeigt werden, aber nicht änderbar sind



software.DLR.de

 [ABOUT](#) [TAGS](#)

New Project Data

<small>Project Id</small> 463	<small>Project Name</small> DataFinder
<small>Languages</small> Python	
<small>Contact (Firstname Lastname)</small>	<small>Contact Email</small>
<small>Description</small>	
<small>Homepage (https://...)</small>	<small>Version</small>
<small>1st keyword</small>	
<small>2nd keyword</small>	

Use case: Anlegen eines neuen Softwareeintrags (3/3)

Beim Anlegen unterscheiden wir Daten, die ...

- ... eingegeben werden müssen
- ... angeboten werden, aber editierbar sind
- ... angezeigt werden, aber nicht änderbar sind

The screenshot shows the final step of creating a new software entry. The form includes the following fields and options:

- Development Status:** A dropdown menu currently set to "Concept".
- Citation (DOI):** An empty text input field.
- Operating Systems:** A list of checkboxes for "Windows", "Linux | Unix", "macOS", "iOS", "Android", "Real Time OS", and "unlisted OS".
- Application Category:** A dropdown menu currently set to "Communication".
- Date Published (YYYY-MM-DD):** An empty text input field.
- SUBMIT:** A button to submit the form.

At the bottom, the DLR logo and "German Aerospace Center" are displayed. Below this is a footer section with links to "Simulation and Software Technology", "Data Privacy Statement", "Simulation and Software Technology - Open Source", and "Imprint". The footer also states "This site is powered by Jekyll and Flask."


Use case: Anpassen eines Softwareeintrags

- **Aktuell:** Nur durch Modifikation der codemeta.json oder der Markdown-Datei
- **TODO:** Später durch ein Formular

```
6   development_status: <a href="https://www.repostatus.org
7   license: Placeholder License
8   resources:
9   - <a href=https://gitlab-ee.sc.dlr.de/DataFinder/Data
10  summary: DataFinder is a lightweight data management ap
11  tags:
12    - scientific data management
13    - python
14    - qt4
15  operating_system:
16    - Windows 7
17  category: communication
18  ---
19  # DataFinder
20
21  **Features:**
22
23  * Organization of managed data objects within a hierarc
24  * Standardizes and restricts data structure
25  * Defines required and optional meta data of collection
26  * Import of data files into different storage locations
27  * Support of standardized file transfer mechanisms, e.g
28  * Flexible configuration to fit the available infrastru
```



Use case: Anzeige der Softwareeinträge


software.DLR.de


ABOUT
KEYWORDS


All software entries on DLR
Open Source Software

- Communication (4)
- Control (2)
- Knowledge and data management (8)
- Signal and data processing (1)
- Simulation and modeling (14)
- Software engineering (1)
- Visualisation (1)
- Visualization (2)


AutoPage Collection of DLR Open Source Software




simulation and modeling
CPACS – A Common Language for Aircraft Design
The Common Parametric Aircraft Configuration Schema (CPACS) is a data definition for the air transportation system.
License: BSD 3-clause **Tags:** aircraft modeling, python



simulation and modeling
TIGL
The TIGL Geometry Library can be used for easy processing of geometric data stored inside CPACS data sets.
License: Apache License 2.0 **Tags:** aircraft modeling, library, python



simulation and modeling
Virtual Satellite 3
Designing space systems and planning space missions relies on many separated phases and disciplines. The virtual satellite aims at closing the gaps in the development life-cycle and between disciplines by using model-based systems engineering.
License: Eclipse Public License 1.0 **Tags:** concurrent engineering facility



simulation and modeling
nfe
The Network Flow Environment (NFE) is a tool suite to model tactical ATFCM processes within the European ATM System. Thereby considered short-term ATFCM measures are slot allocation and pre-flight sequencing.

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Use case: Anzeige eines einzelnen Softwareeintrags

software.DLR.de

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ABOUT KEYWORDS

All software entries on DLR Open Source Software

DataFinder

COMMUNICATION

• Communication (4)
• Control (2)
• Knowledge and data management (8)
• Signal and data processing (1)
• Simulation and modeling (14)
• Software engineering (1)
• Visualisation (1)
• Visualization (2)

DataFinder is a lightweight data management application developed in Python that primarily targets the management of huge data accumulations, often encountered in the scientific field.

Features:

- Organization of managed data objects within a hierarchical structure which is determined by a free-definable data model
- Standardizes and restricts data structure
- Defines required and optional meta data of collections and imported data files
- Import of data files into different storage locations
- Support of standardized file transfer mechanisms, e.g., WebDAV, POSIX
- Flexible configuration to fit the available infrastructure

Tags: python, qt4, scientific data management

Contact

- John Doe

External resources

- Repository

Last modified: 2019-03-12 00:00:00 +0100

License
BSD 3-clause

Programming Language
Python

Development Status
repo status [Contact](#)

Operating System
Windows 7

German DLR Aerospace Center

Simulation and Software Technology
Data Privacy Statement
Simulation and Software Technology - Open Source
Imprint

This site is powered by [hugo](#) and [netlify](#).

Konzeptideen für den neuen Software-Katalog

- Erkennbarer Mehrwert für den Nutzer ?
- Wenige Eingaben ✓
- Geringer Wartungsaufwand ✓
- Wenig selbst entwickeln ✓
- Wiederverwendbarkeit erhöhen ✓

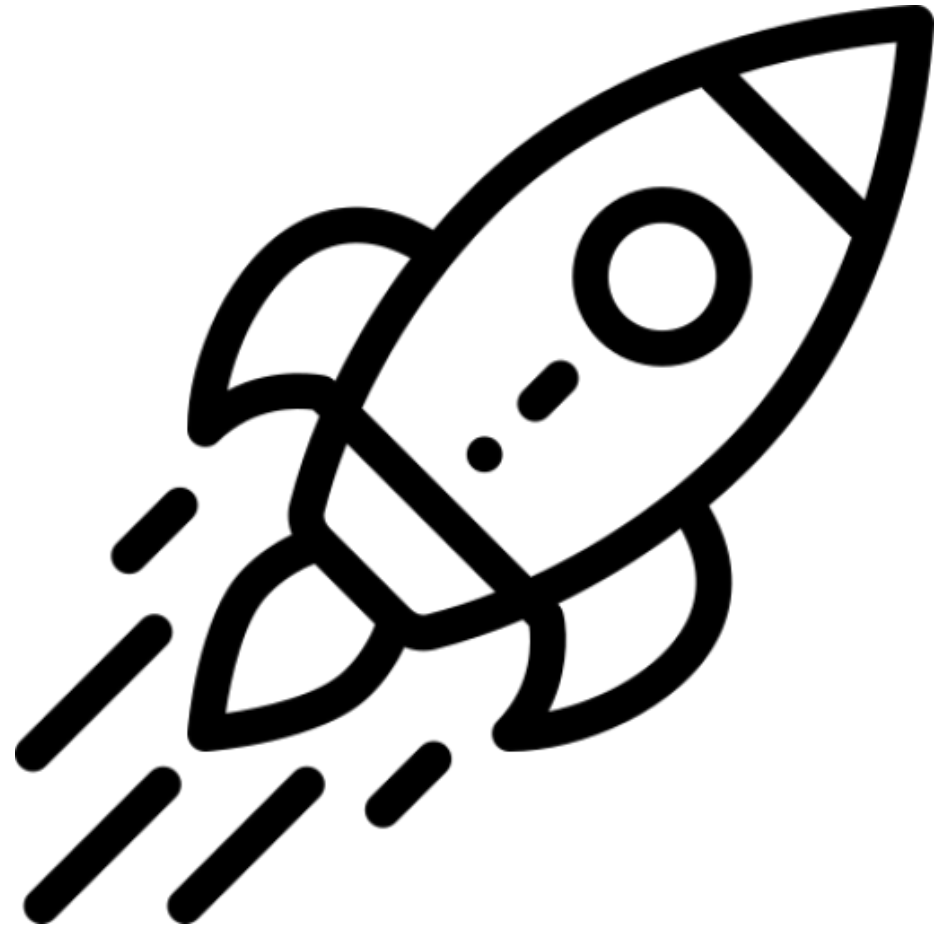


Quelle: [2]



Ausblick und Zukunft

- Umsetzen des Prototypen in erste Nutzerstudie
- Mehrwert des Katalogs an die Nutzer kommunizieren



Quelle: [3]



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Vielen Dank!

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Wissen für Morgen

