

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

The screenshot displays the software.DLR.de website. At the top right, there are links for "Register" and "Log In". The main header features the text "software.DLR.de" and the DLR logo. Below the header is a search bar with the placeholder text "Search here".

On the left side, there is a vertical navigation menu with the text "feedback & support" and a list of categories:

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

The main content area displays four project entries, each with a DLR logo icon, a title, a description, and a "Go!" button:

- BACARDI**: Knowledge and Data Management. The Backend Catalog for Relational Debris Information (BACARDI) 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.

On the right side, there is a "Follow us" section with links for RSS Feed, Facebook, and Twitter.

At the bottom left, there is the DLR logo. At the bottom right, there is the text "German Aerospace Center".

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

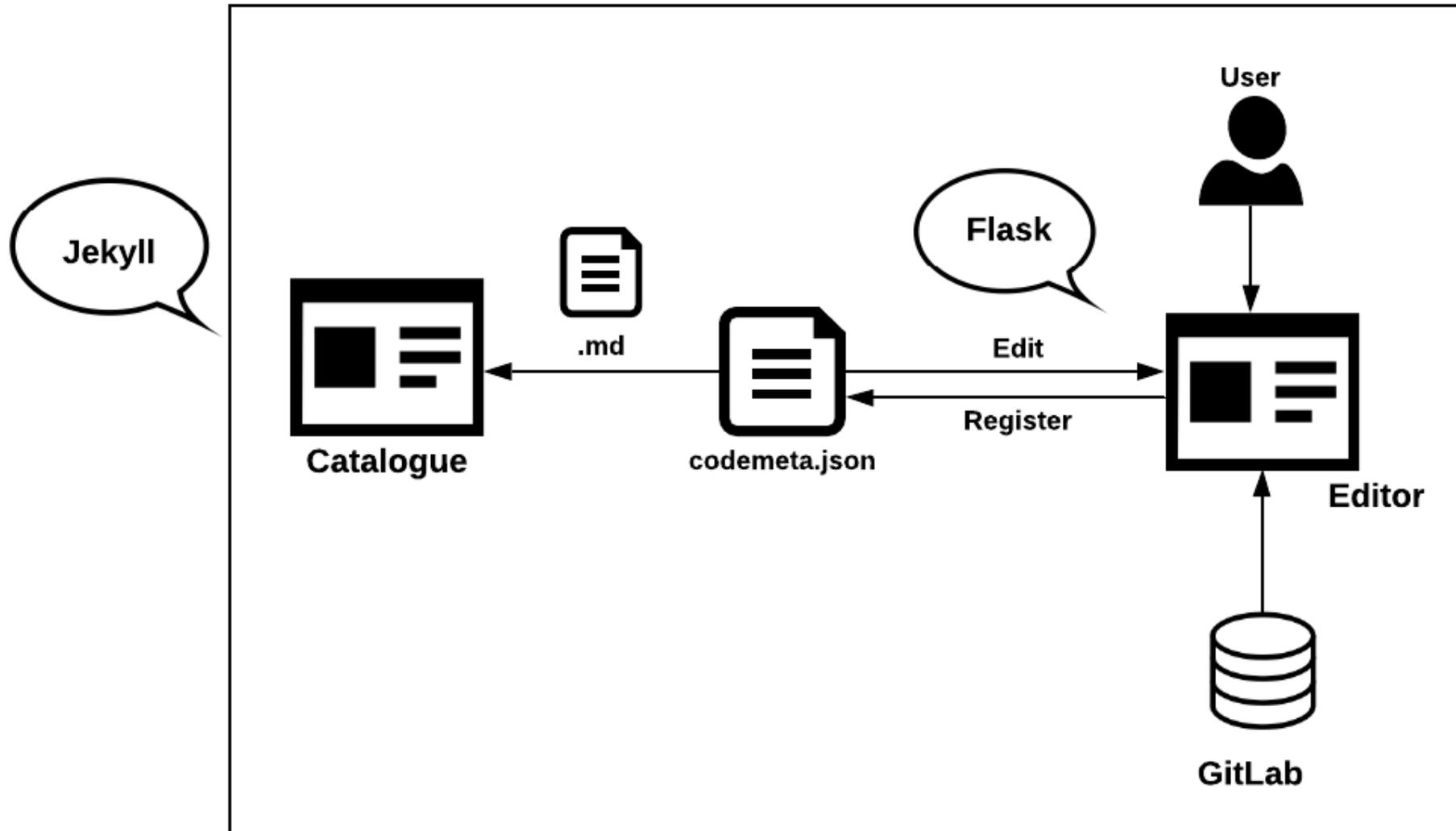
- Erkennbarer Mehrwert für den Nutzer
- Wenige Eingaben
- Geringer Wartungsaufwand
- Wenig selbst entwickeln
- Wiederverwendbarkeit erhöhen



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

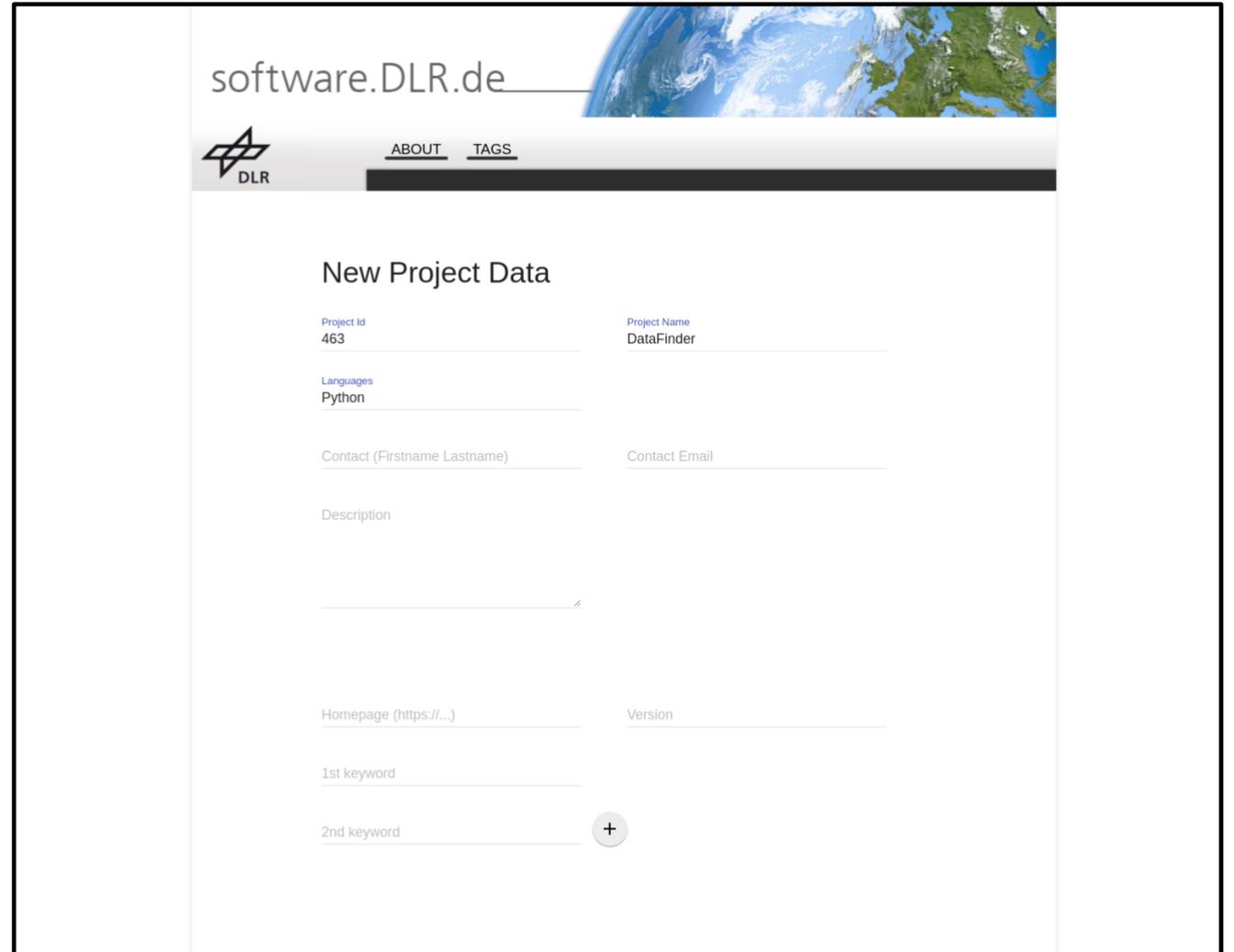


The screenshot shows the website software.DLR.de. At the top left is the DLR logo. To its right are navigation links for 'ABOUT' and 'TAGS'. The main heading is 'Add new Project'. Below this is a form with a label 'Project Id' and a text input field. A 'SUBMIT' button is positioned below the input field. At the bottom of the page, there is a footer with the DLR logo and the text 'German Aerospace Center'. Below this, a dark bar contains four links: 'Simulation and Software Technology', 'Simulation and Software Technology - Open Source', 'Data Privacy Statement', and 'Imprint'. At the very bottom, a small red text line reads 'This site is powered by Saleel 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



The screenshot shows the 'New Project Data' form on the software.DLR.de website. The form is titled 'New Project Data' and contains several input fields:

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

The form is displayed on a page with a header containing the DLR logo and navigation links for 'ABOUT' and 'TAGS'. The background of the page features a satellite image of Earth.

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

Development Status
Concept

Citation (DOI)

Windows
 Linux | Unix
 macOS
 iOS
 Android
 Real Time OS
unlisted OS

Application Category
Communication

Date Published (YYYY-MM-DD)

SUBMIT

 German
DLR 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: 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



DLR

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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DLR

Use case: Anzeige eines einzelnen Softwareeintrags

software.DLR.de

DLR

ABOUT KEYWORDS

All software entries on DLR
Open Source Software

DataFinder
COMMUNICATOR

License
BSD 3-clause

Programming Language
Python

Development Status
repo status [Contact](#)

Operating System
Windows 7

- 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

German DLR Aerospace Center

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

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

Konzeptideen für den neuen Software-Katalog

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

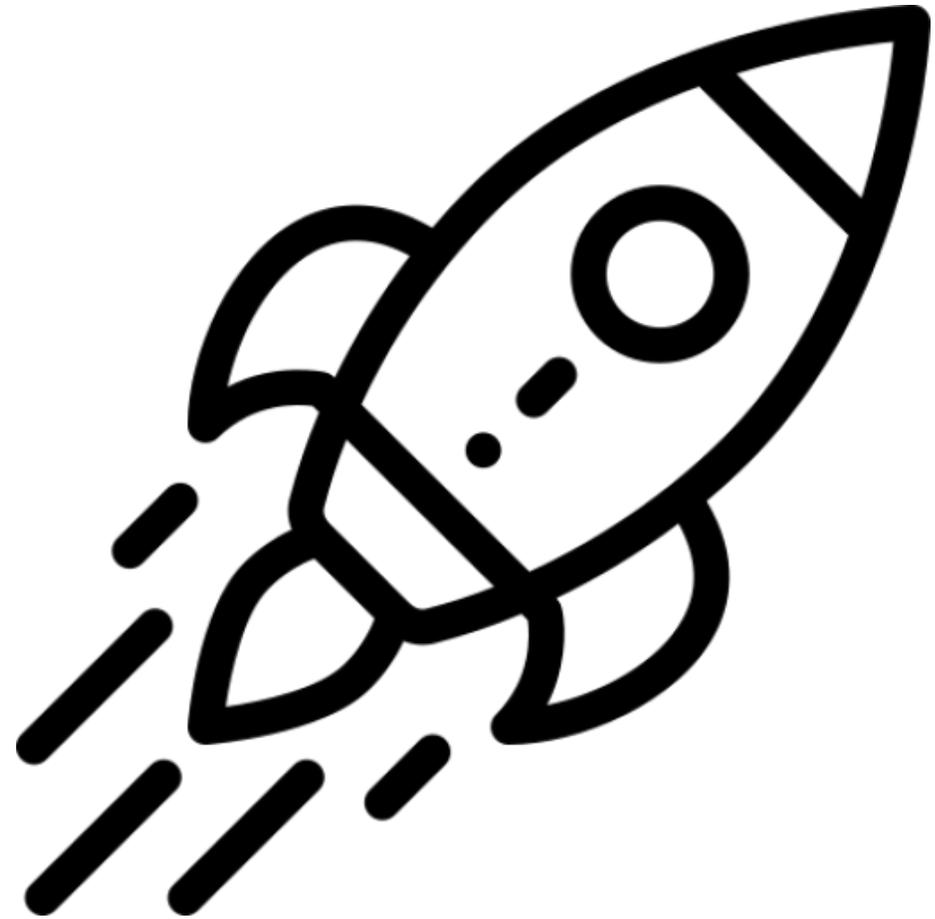


Quelle: [2]



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

