



# **DINI/nestor-WS5: Werkzeuge Breakout-Session: Metadaten in der Praxis**

Moderation: Florian Krämer & Dominik Schmitz

# Breakout-Session “Metadaten in der Praxis”

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## Rolle von Metadaten im Forschungsdatenmanagement

- Erschließen fremder Datenbestände
- Wiederauffinden von fremden oder auch nur eigenen Daten
- Sinnvolle und korrekte Nachnutzung.

**Praxis?** Wenige Daten konsequent durch Metadaten beschrieben.

### Gründe

- hoher Aufwand
- fehlende, in den Forschungsprozess integrierte **Unterstützung durch Werkzeuge**

## Session-Inhalt

Werkzeuge für das effektive und effiziente Metadatenmanagement

### Drei Beiträge

- Metadatenservice zur flexiblen Integration (F. Krämer, RWTH Aachen University)
- Docuteam Packer – Vorbereitung LZA (M. El-Saad, ETH Zürich)
- Projekt MASi Metadata Management for Applied Sciences (R. Müller-Pfefferkorn, TU Dresden)



# Ein Metadatenservice zur flexiblen Integration in bestehende Forschungsumgebungen

Florian Krämer & Dominik Schmitz

# Forschungsdatenmanagement an der RWTH Aachen

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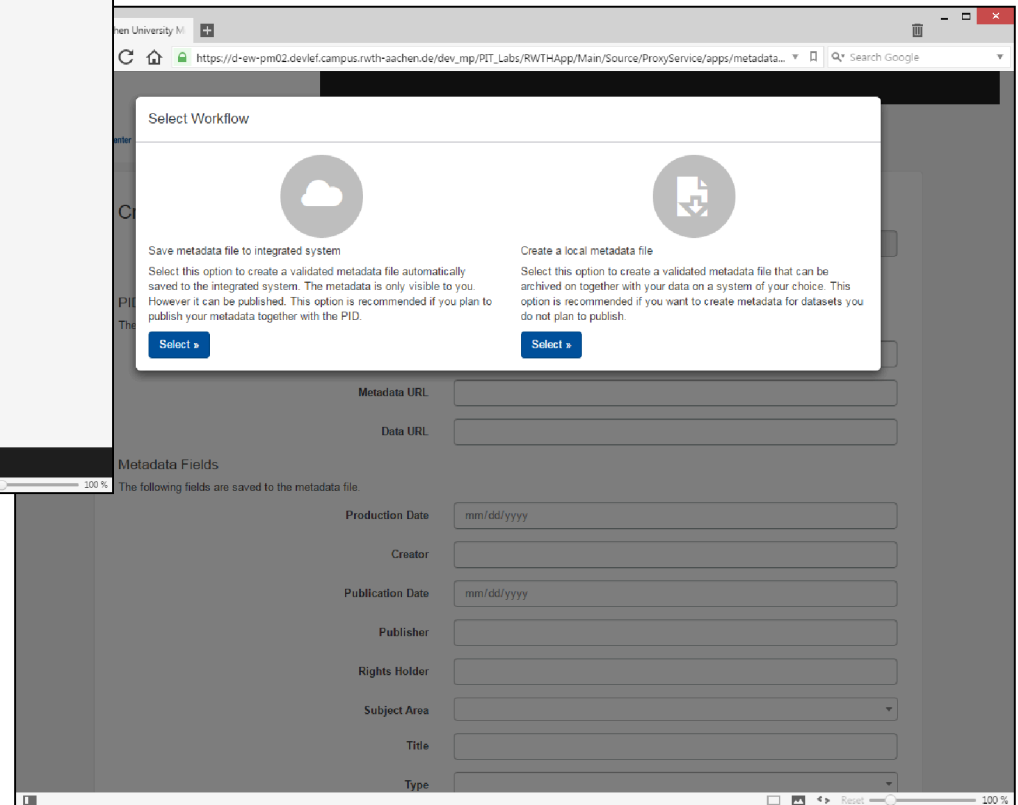
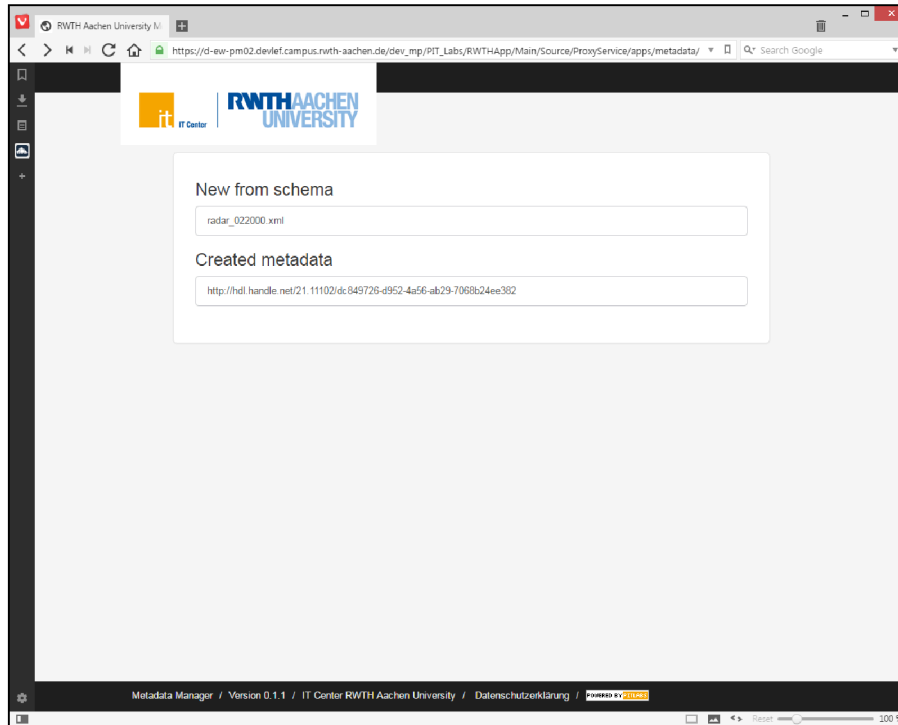
- Projektgruppe mit Mitgliedern aus
  - Universitätsbibliothek
  - Forschungsförderung
  - IT Center
- Ziel:  
Etablierung eines strukturierten und nachhaltigen Forschungsdatenmanagements an der RWTH Aachen
- Maßnahmen:
  - Beratungsangebot für Forschende
  - Weiterbildungsangebote zum Thema FDM
  - **Verbesserung der technischen Infrastruktur**

# Unser Ansatz

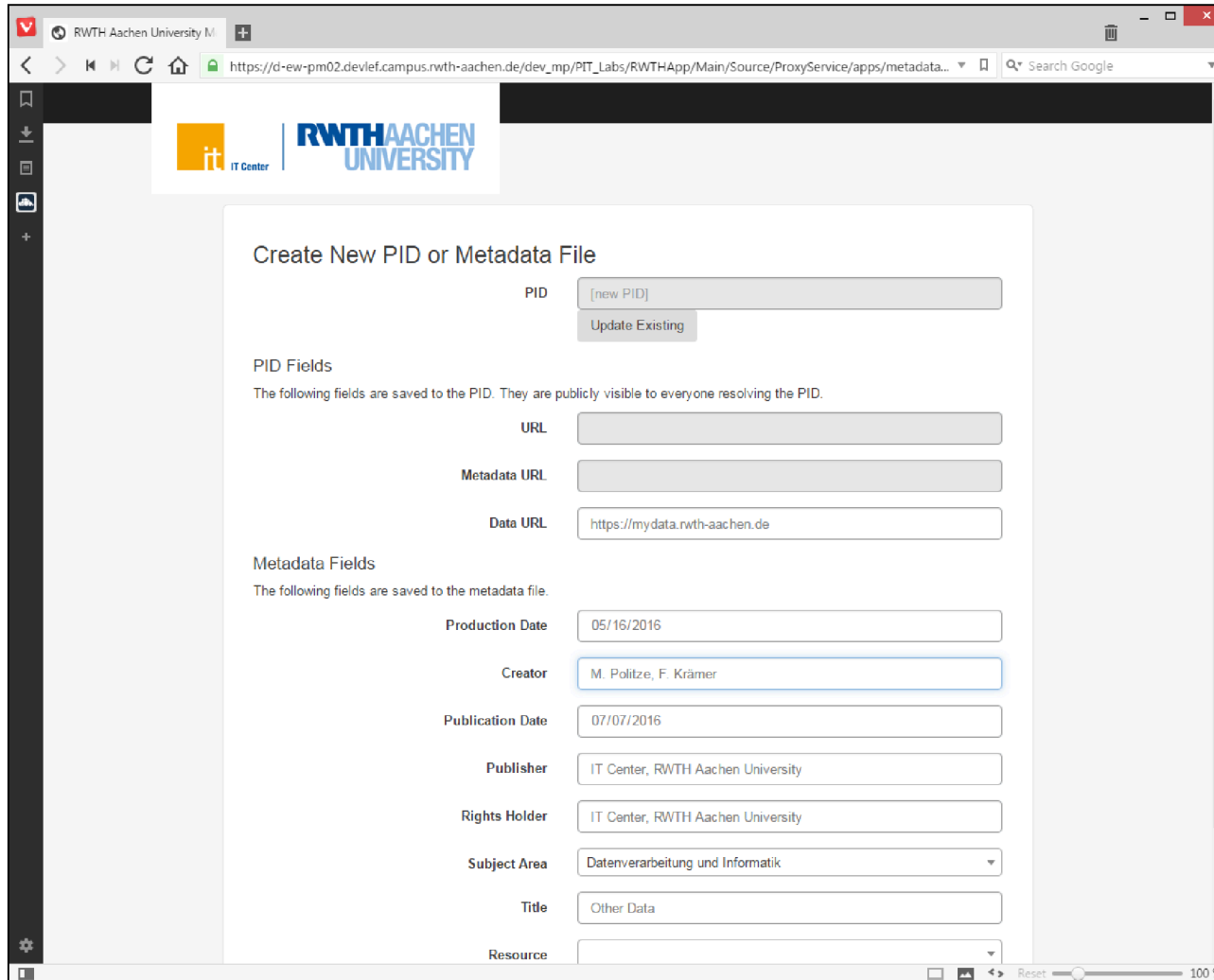
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- Angebot eines Werkzeugs zur Erzeugung und Speicherung von Metadaten, das
  - in bestehende IT-Umfelder der Forschenden integrierbar ist;
  - einfach zu benutzen ist;
  - in allen Phasen des Forschungsdaten-lifecycles genutzt werden kann;
  - interoperable mit anderen Werkzeugen ist;

# Vorstellung des Werkzeugs



# Vorstellung des Werkzeugs: Integrierter Workflow I



RWTH Aachen University M

https://d-ew-pm02.devlef.campus.rwth-aachen.de/dev\_mp/PIT\_Labs/RWTHApp/Main/Source/ProxyService/apps/metadata... Search Google

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### Create New PID or Metadata File

PID

#### PID Fields

The following fields are saved to the PID. They are publicly visible to everyone resolving the PID.

URL

Metadata URL

Data URL

#### Metadata Fields

The following fields are saved to the metadata file.

Production Date

Creator

Publication Date

Publisher

Rights Holder

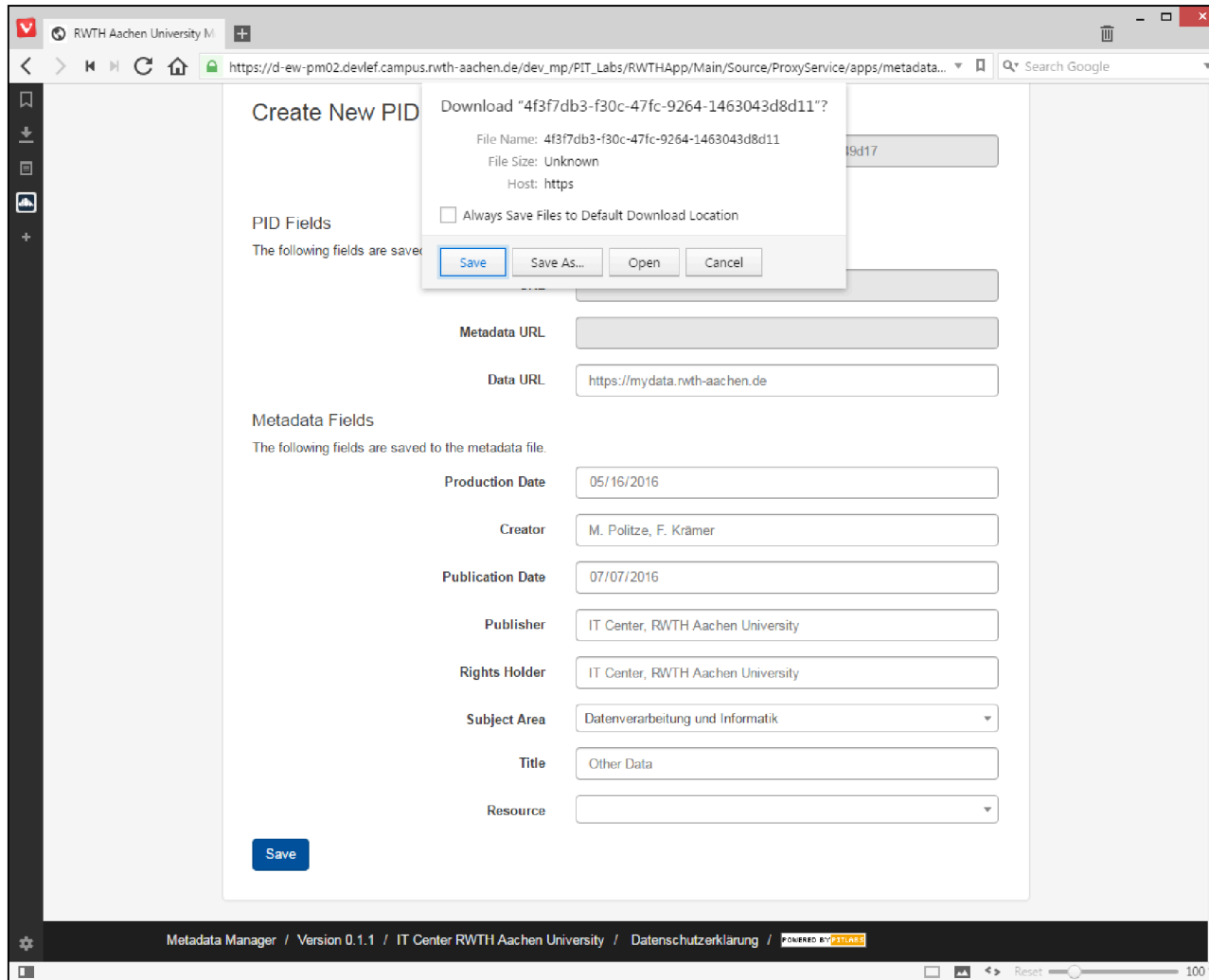
Subject Area

Title

Resource

Reset 100%

# Vorstellung des Werkzeugs: Integrierter Workflow II



The screenshot displays the 'Metadata Manager' web application interface. The main content area is titled 'Create New PID' and contains several sections:


- PID Fields:** A section with the text 'The following fields are saved to the PID file.' followed by a text input field containing '19d17'.
- Metadata URL:** A text input field.
- Data URL:** A text input field containing 'https://mydata.rwth-aachen.de'.
- Metadata Fields:** A section with the text 'The following fields are saved to the metadata file.' followed by several form fields:
  - Production Date:** 05/16/2016
  - Creator:** M. Politz, F. Krämer
  - Publication Date:** 07/07/2016
  - Publisher:** IT Center, RWTH Aachen University
  - Rights Holder:** IT Center, RWTH Aachen University
  - Subject Area:** Datenverarbeitung und Informatik (dropdown menu)
  - Title:** Other Data
  - Resource:** (dropdown menu)

A blue 'Save' button is located at the bottom left of the form area.

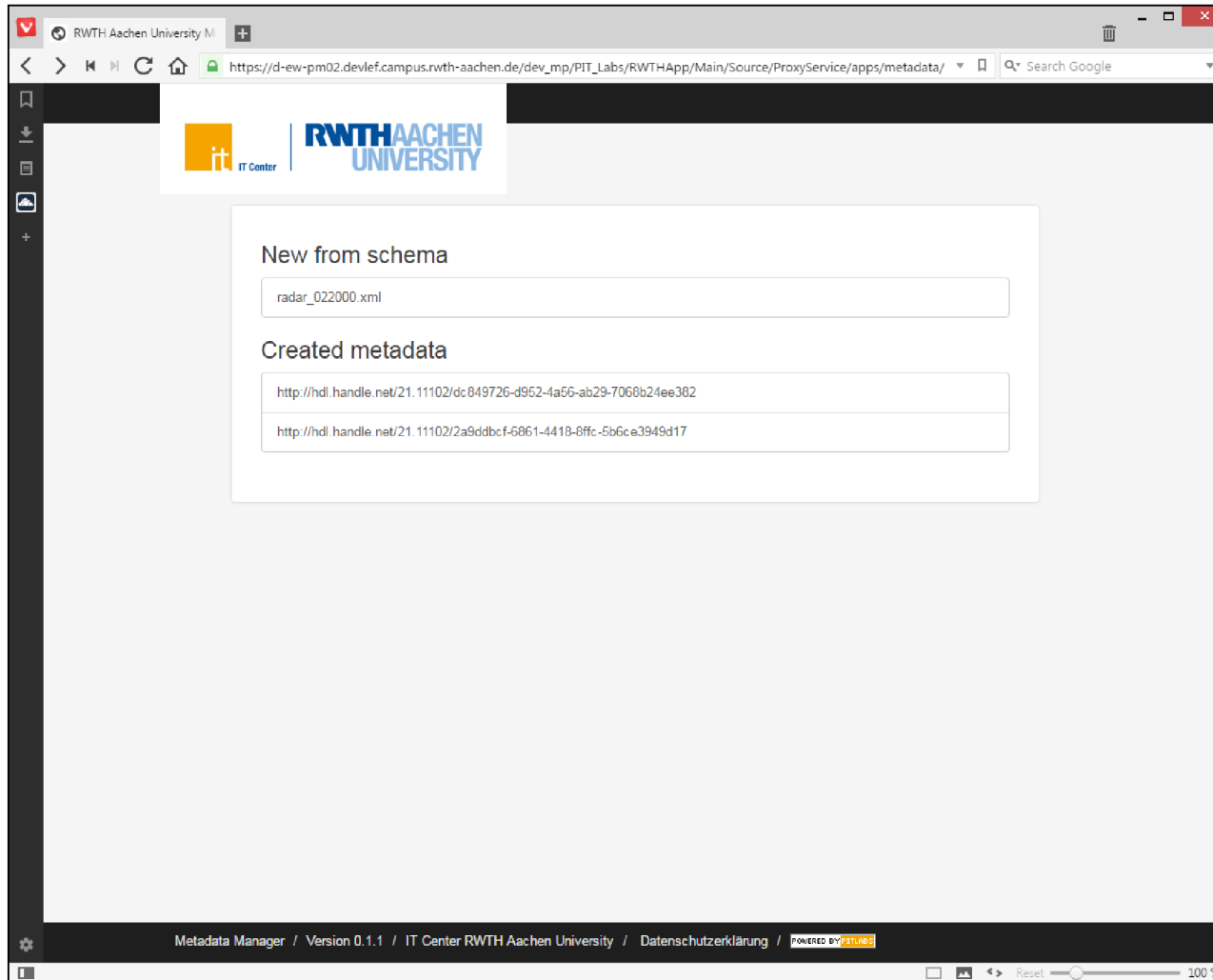
Overlaid on the top right of the form is a download dialog box titled 'Download "4f3f7db3-f30c-47fc-9264-1463043d8d11"?' with the following details:

- File Name: 4f3f7db3-f30c-47fc-9264-1463043d8d11
- File Size: Unknown
- Host: https
- Always Save Files to Default Download Location
- Buttons: Save, Save As..., Open, Cancel

The browser's address bar shows the URL: [https://d-ew-pm02.devlef.campus.rwth-aachen.de/dev\\_mp/PIT\\_Labs/RWTHApp/Main/Source/ProxyService/apps/metadata...](https://d-ew-pm02.devlef.campus.rwth-aachen.de/dev_mp/PIT_Labs/RWTHApp/Main/Source/ProxyService/apps/metadata...)

The footer of the application contains the text: Metadata Manager / Version 0.1.1 / IT Center RWTH Aachen University / Datenschutzerklärung / 

# Vorstellung des Werkzeugs: Integrierter Workflow III

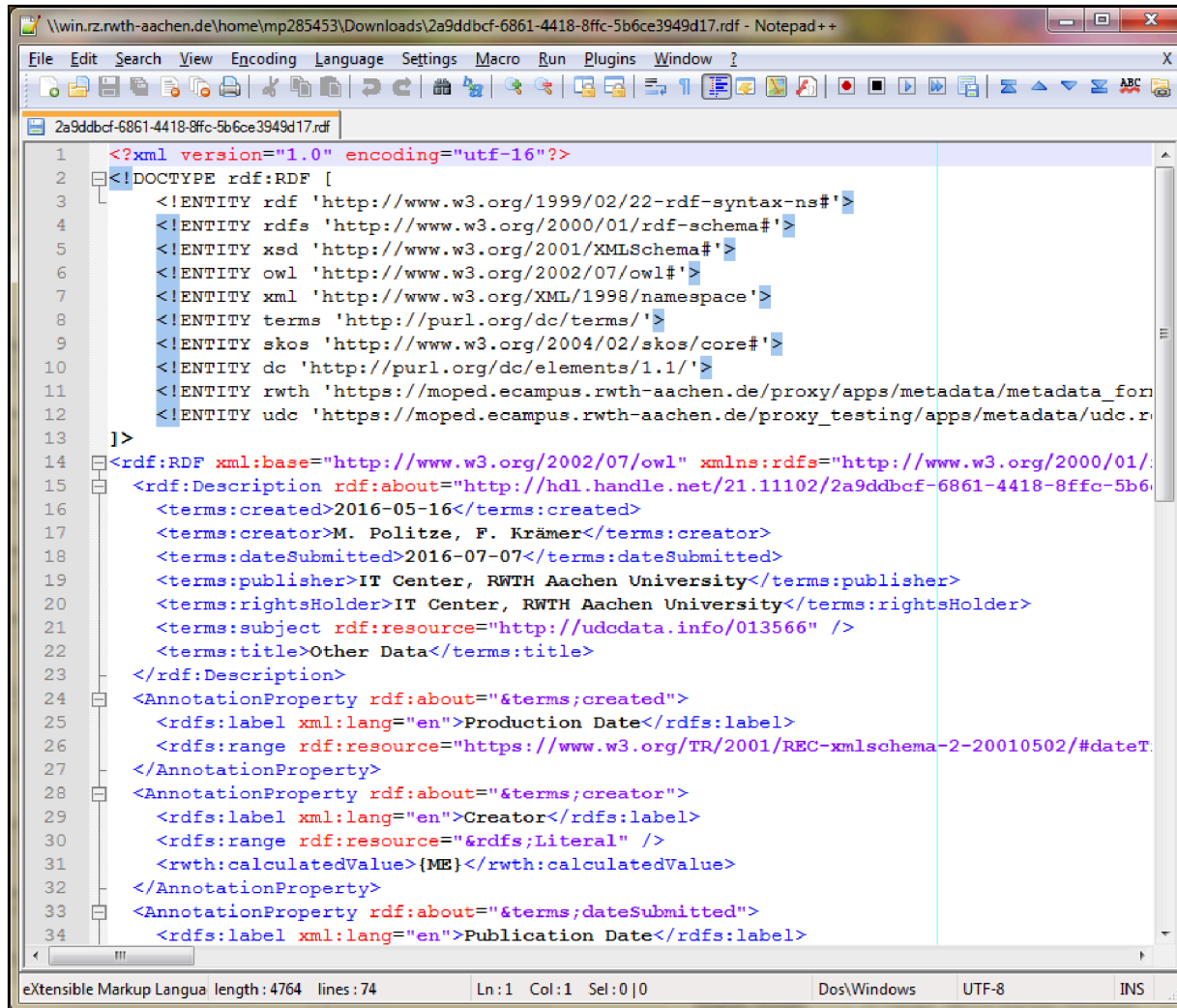


The screenshot shows a web browser window displaying the Metadata Manager application. The browser's address bar shows the URL: `https://d-ew-pm02.devlefcampus.rwth-aachen.de/dev_mp/PIT_Labs/RWTHApp/Main/Source/ProxyService/apps/metadata/`. The page header includes the IT Center logo and the RWTH Aachen University logo. The main content area features a white box with the following sections:

- New from schema**: A text input field containing the value `radar_022000.xml`.
- Created metadata**: Two text input fields containing the following URLs:
  - `http://hdl.handle.net/21.11102/dc/849726-d952-4a56-ab29-7066b24ee382`
  - `http://hdl.handle.net/21.11102/2a9ddbcf-6861-4418-8ffc-5b6ce3949d17`

The footer of the application displays: `Metadata Manager / Version 0.1.1 / IT Center RWTH Aachen University / Datenschutzerklärung / POWERED BY PIT.LABS`. The browser's status bar at the bottom shows a zoom level of 100%.

# Vorstellung des Werkzeugs: Integrierter Workflow IV



```
1 <?xml version="1.0" encoding="utf-16"?>
2 <!DOCTYPE rdf:RDF [
3   <!ENTITY rdf 'http://www.w3.org/1999/02/22-rdf-syntax-ns#'>
4   <!ENTITY rdfs 'http://www.w3.org/2000/01/rdf-schema#'>
5   <!ENTITY xsd 'http://www.w3.org/2001/XMLSchema#'>
6   <!ENTITY owl 'http://www.w3.org/2002/07/owl#'>
7   <!ENTITY xml 'http://www.w3.org/XML/1998/namespace'>
8   <!ENTITY terms 'http://purl.org/dc/terms/'>
9   <!ENTITY skos 'http://www.w3.org/2004/02/skos/core#'>
10  <!ENTITY dc 'http://purl.org/dc/elements/1.1/'>
11  <!ENTITY rwth 'https://moped.ecampus.rwth-aachen.de/proxy/apps/metadata/metadata_for'
12  <!ENTITY udc 'https://moped.ecampus.rwth-aachen.de/proxy_testing/apps/metadata/udc.r
13 ]>
14 <rdf:RDF xml:base="http://www.w3.org/2002/07/owl" xmlns:rdfs="http://www.w3.org/2000/01/
15   <rdf:Description rdf:about="http://hdl.handle.net/21.11102/2a9ddbfc-6861-4418-8ffc-5b6
16     <terms:created>2016-05-16</terms:created>
17     <terms:creator>M. Politze, F. Krämer</terms:creator>
18     <terms:dateSubmitted>2016-07-07</terms:dateSubmitted>
19     <terms:publisher>IT Center, RWTH Aachen University</terms:publisher>
20     <terms:rightsHolder>IT Center, RWTH Aachen University</terms:rightsHolder>
21     <terms:subject rdf:resource="http://udcdata.info/013566" />
22     <terms:title>Other Data</terms:title>
23   </rdf:Description>
24   <AnnotationProperty rdf:about="&terms;created">
25     <rdfs:label xml:lang="en">Production Date</rdfs:label>
26     <rdfs:range rdf:resource="https://www.w3.org/TR/2001/REC-xmlschema-2-20010502/#dateT
27   </AnnotationProperty>
28   <AnnotationProperty rdf:about="&terms;creator">
29     <rdfs:label xml:lang="en">Creator</rdfs:label>
30     <rdfs:range rdf:resource="&rdfs:Literal" />
31     <rwth:calculatedValue>{ME}</rwth:calculatedValue>
32   </AnnotationProperty>
33   <AnnotationProperty rdf:about="&terms;dateSubmitted">
34     <rdfs:label xml:lang="en">Publication Date</rdfs:label>
```

# Vorstellung des Werkzeugs: Privater Workflow I

RWTH Aachen University M

https://d-ew-pm02.devlef.campus.rwth-aachen.de/dev\_mp/PIT\_Labs/RWTHApp/Main/Source/ProxyService/apps/metadata... Search Google

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### Create New PID or Metadata File

PID

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The following fields are saved to the PID. They are publicly visible to everyone resolving the PID.

URL

Metadata URL

Data URL

#### Metadata Fields

The following fields are saved to the metadata file.

Production Date

Creator

Publication Date

Publisher

Rights Holder

Subject Area

Title

Type

100 %

# Vorstellung des Werkzeugs: Privater Workflow II

RWTH Aachen University M

https://d-ew-pm02.devlef.campus.rwth-aachen.de/dev\_mp/PIT\_Labs/RWTHApp/Main/Source/ProxyService/apps/metadata... Search Google

**IT Center** | **RWTHAACHEN UNIVERSITY**

### Create New PID or Metadata File

PID

**PID Fields**  
The following fields are saved to the PID. They are publicly visible to everyone resolving the PID.

URL

Metadata URL

Data URL

**Metadata Fields**  
The following fields are saved to the metadata file.

Production Date

Creator

Publication Date

Publisher

Rights Holder

Subject Area

Title

Type

Reset 100%

# Vorstellung des Werkzeugs: PID-Integration

The image displays two screenshots of a web application interface for PID integration, likely developed by the IT Center at RWTH Aachen University.

**Top Screenshot: Enter PID OTA Modal**

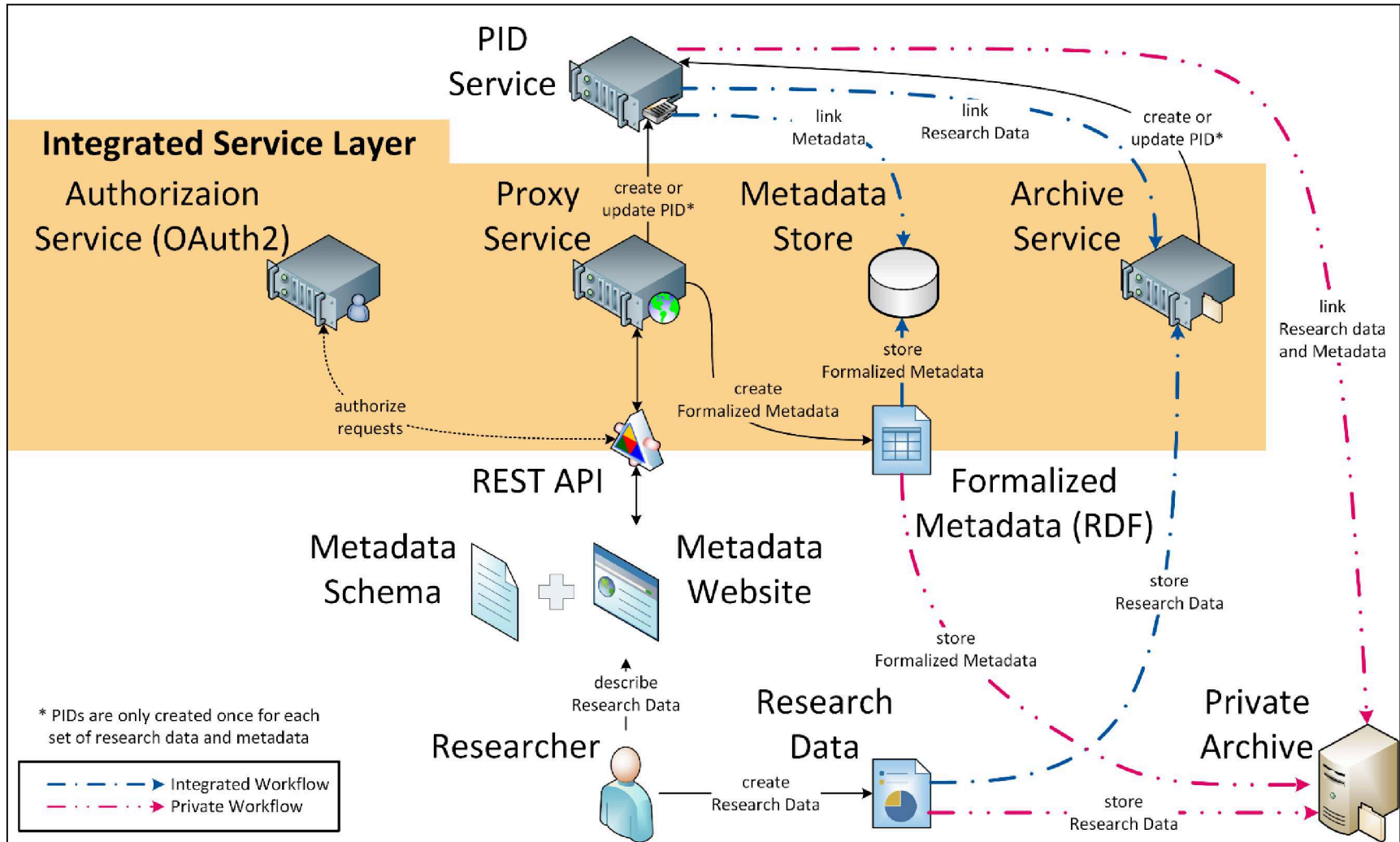
This screenshot shows a modal dialog titled "Enter PID OTA". The dialog contains the text "Please enter PID OTA to edit an existing PID." and a text input field with the value "RtNjgtODUzOS1MDAxNjlnZTAwMmYlLjJleHAuOm51bGwslmhdCl6MTQ2NTM5NDcyNH0wRH90XS1\_Q7aADrdkij\_TNBYamBgrnZ66tVIT2fpw". An "OK" button is visible at the bottom right of the dialog. The background shows a blurred view of the "PID Fields" section of the application.

**Bottom Screenshot: Create New PID or Metadata File Form**

This screenshot shows the main form titled "Create New PID or Metadata File". The form includes the following fields and sections:

- PID:** A text input field containing "21.11102/8e5e0e05-5425-4a68-8539-b00169fe002f" and an "Update Existing" button below it.
- OTA:** A text input field containing "eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJpc3MiOiJodHRwczovLzNoeXJlcG9pbnQ".
- PID Fields:** A section with the text "The following fields are saved to the PID. They are publicly visible to everyone resolving the PID." containing:
  - URL:** A text input field.
  - Metadata URL:** A text input field.
  - Data URL:** A text input field containing "http://mydata.rwth-aachen.de".
- Metadata Fields:** A section with the text "The following fields are saved to the metadata file." containing:
  - Production Date:** A text input field containing "05/24/2016".
  - Creator:** A text input field containing "M. Politze, F. Krämer".
  - Publication Date:** A text input field containing "05/09/2016".
  - Publisher:** A text input field containing "IT Center, RWTH Aachen University".
  - Rights Holder:** A text input field containing "IT Center RWTH Aachen University".

# Private und Integrierter Workflow



# Metadata Schema in RDF, OWL und XML

---

```
...
<!ENTITY rdf 'http://www.w3.org/1999/02/22-rdf-syntax-ns#'>
<!ENTITY rdfs 'http://www.w3.org/2000/01/rdf-schema#'>
<!ENTITY terms 'http://purl.org/dc/terms/'>
<rdf:RDF>
...
  <AnnotationProperty rdf:about="&terms;creator">
    <rdfs:label xml:lang="en">Creator</rdfs:label>
    <rdfs:range rdf:resource="&rdfs;Literal" />
  </AnnotationProperty>
  <AnnotationProperty rdf:about="&terms;dateSubmitted">
    <rdfs:label xml:lang="en">Publication Date</rdfs:label>
    <rdfs:range
      rdf:resource="https://www.w3.org/TR/2001/REC-xmlschema-2-20010502/#dateTime" />
  </AnnotationProperty>
  <ObjectProperty rdf:about="&terms;subject">
    <rdfs:label xml:lang="en">Subject Area</rdfs:label>
    <rdfs:range rdf:resource="http://udcdata.info/078887" />
  </ObjectProperty>
  <AnnotationProperty rdf:about="&terms;title">
    <rdfs:label xml:lang="en">Title</rdfs:label>
  </AnnotationProperty>
...
</rdf:RDF>
```

# Beschreibung eines Datensatzes in RDF, OWL und XML

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```
...
<rdf:RDF>
  <rdf:Description
    rdf:about="http://hdl.handle.net/21.11102/df8f04ac-d698-483e-bb24-cb135112737b">
    <terms:created>2016-05-24</terms:created>
    <terms:creator>M. Politze, F. Krämer</terms:creator>
    <terms:dateSubmitted>2016-06-09</terms:dateSubmitted>
    <terms:publisher>IT Center, RWTH Aachen University</terms:publisher>
    <terms:rightsHolder>IT Center, RWTH Aachen University</terms:rightsHolder>
    <terms:subject rdf:resource="http://udcdata.info/013566" />
    <terms:title>Some Data</terms:title>
  </rdf:Description>
...
</rdf:RDF>
```

# Geplante Erweiterungen

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- Nutzung des Systems als Interface für die PID-Registrierung
- Bereitstellen von Metadaten für Archiv- und Publikationsdomäne
- Durchsuchbarkeit der gespeicherten Metadaten
- Beispielskripte zur automatisierten Übertragung existierender Metdatensätze
- **Akzeptanz schaffen!**

**Vielen Dank  
für Ihre Aufmerksamkeit**