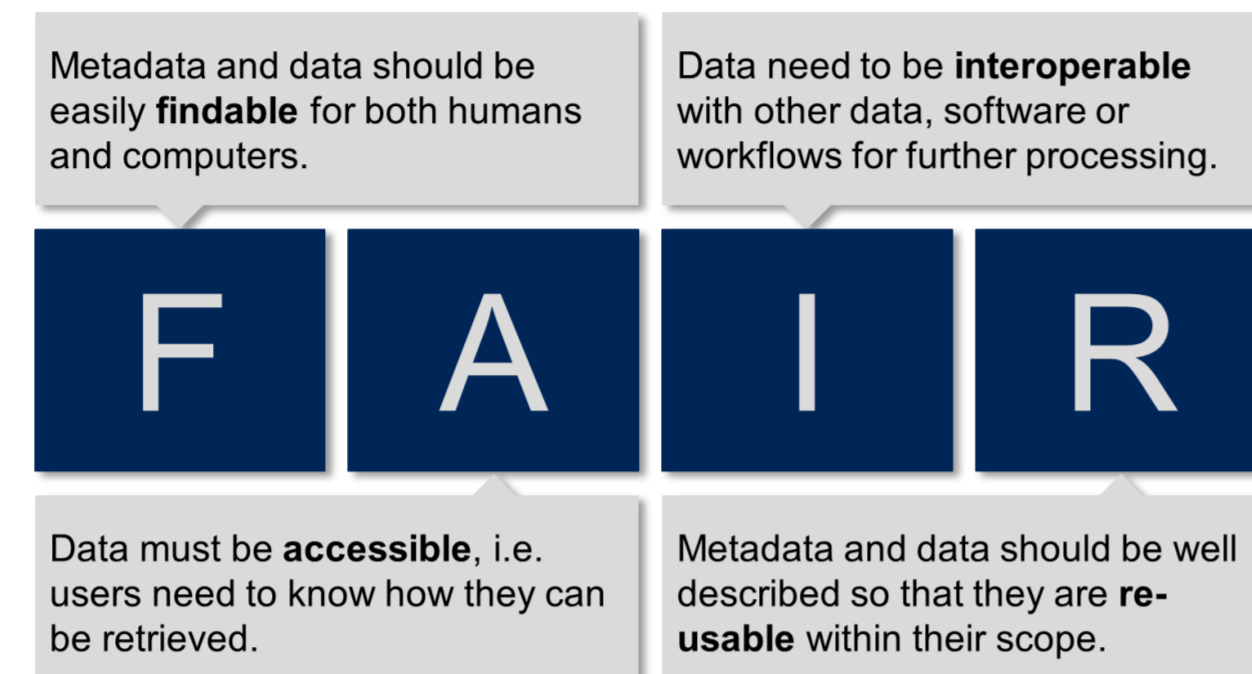
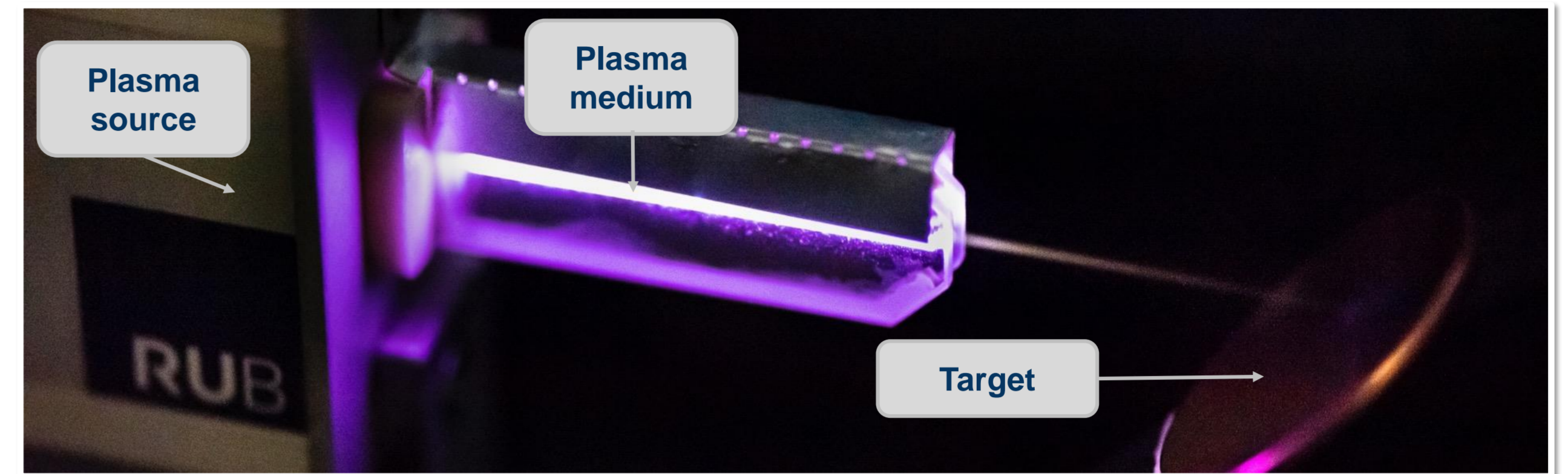


## Introduction

- Research in low-temperature plasma (LTP) physics is characterized by a large variety of plasma sources and measurement devices, which are often first developed in the course of the research.
- There are generally no established standards for research data management (RDM) and the required adoption of the FAIR data principles is challenging.
- Research groups at INP, RUB and CAU have joined forces to develop common RDM standards and tools.
- See also [plasma-mds.org](https://plasma-mds.org)



## Relevant metadata in LTP research

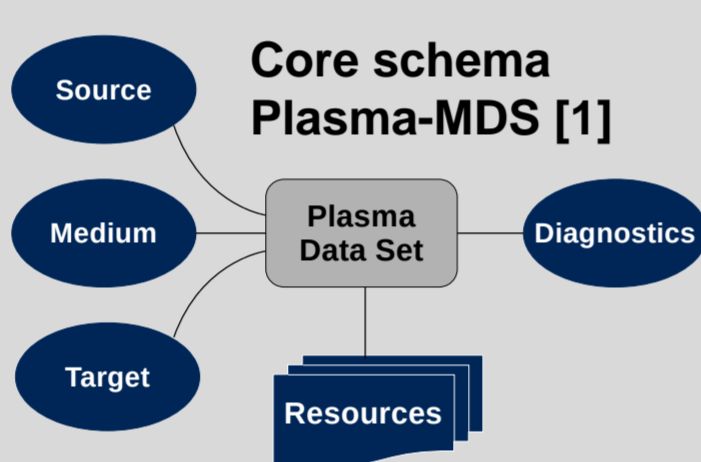


- Data is obtained by electrical/gas/plasma/surface **diagnostics**, where both experiments and simulations are taken into account.
- Re-use of datasets is often possible only with a detailed description of **source, medium, target, diagnostics** and **resources** (data files).

## Plasma-MDS community activities

### State of the art

- Metadata schemas are available for
  - Atmospheric pressure plasmas
  - Low pressure plasmas
  - Electrical measurements
  - Optical emission spectroscopy
  - X-ray photoelectron spectroscopy
  - Plasma modelling and simulations
  - ...

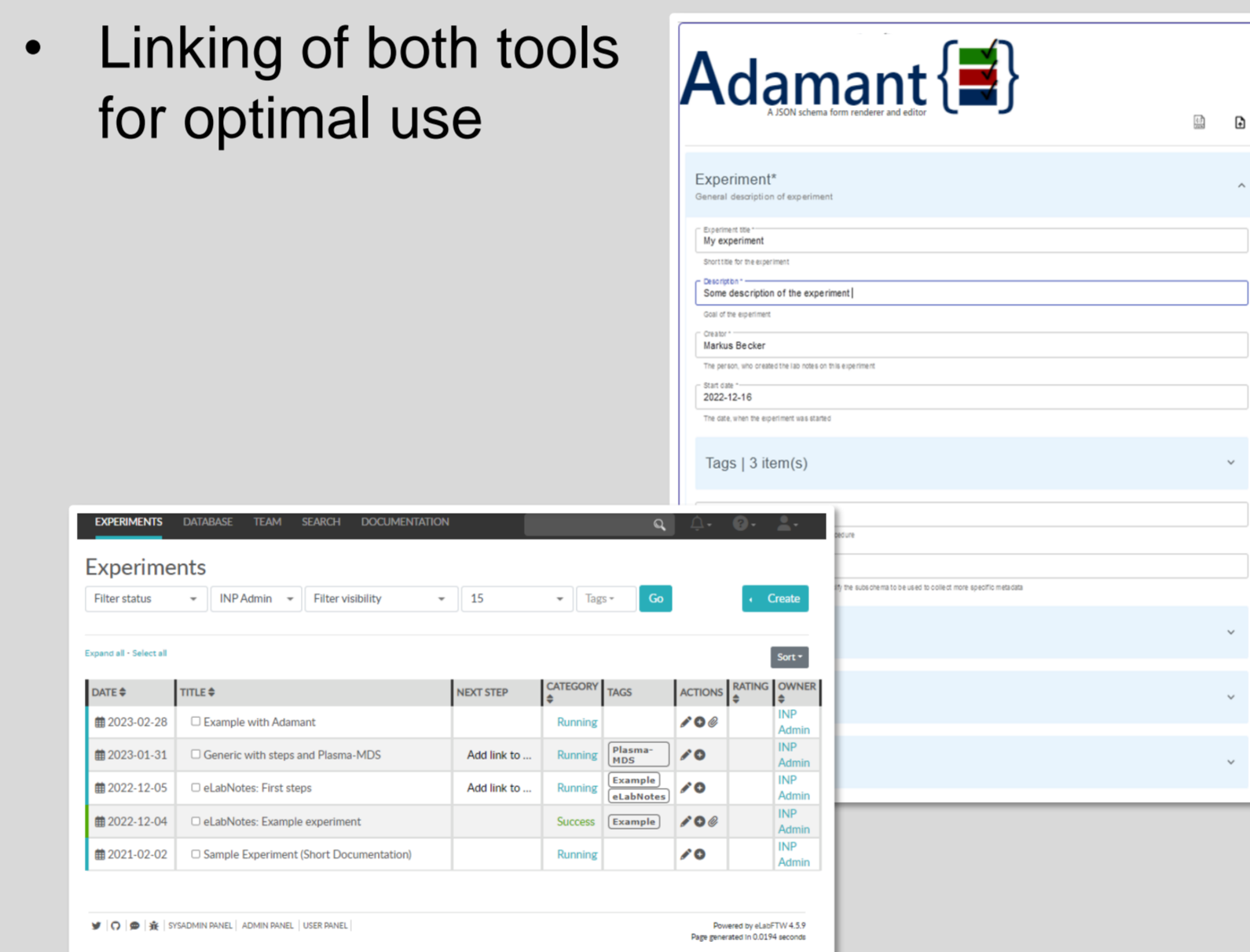


<https://github.com/plasma-mds/>  
<https://www.elabftw.net>

[1] Steffen Franke *et al.* *Scientific Data* 7 (2020) 439, DOI: [10.1038/s41597-020-00771-0](https://doi.org/10.1038/s41597-020-00771-0)

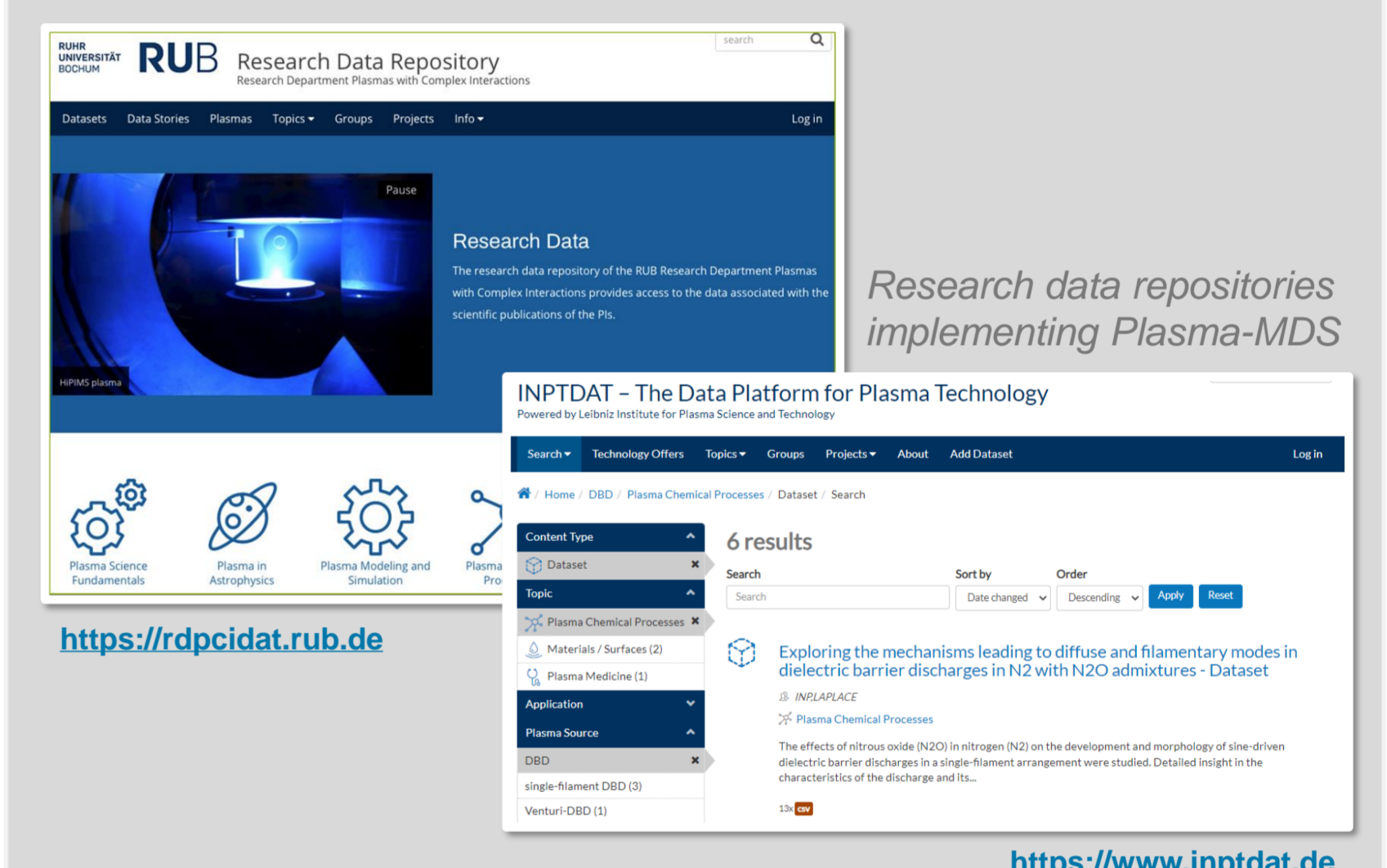
### Tool development and maintenance

- Adamant for schema-compliant metadata capture
- eLabFTW for instruments database and documentation using templates
- Linking of both tools for optimal use



### Your benefits

- Re-use schemas for your own experiments
- Contribute to the further developments with your expertise and user experience
- Share your own schemas / templates
- Publish your digital data with metadata



## Example RDM application [2]

- RDM workflow integrating Adamant and eLabFTW to facilitate the collection of standardized metadata already before starting the diagnostics.
- The job request workflow involves two users:
  - The **requester** (researcher) who requires a service with a certain instrument.
  - The instrument **operator** who is expert of an instrument and performs the diagnostics.
- The requester provides the information required to execute the job (e.g. sample description), while the operator can add metadata related to the instrument and the diagnostics.
- The researcher completes the entire experiment description with information on plasma source, medium, target and diagnostics.
- Tailored metadata schemas for each part ensure the complete and consistent provision of information.

[2] Ihda Chaerony Siffa *et al.* *F1000Research* 11 (2022) 475, DOI: [10.12688/f1000research.110875.2](https://doi.org/10.12688/f1000research.110875.2)

### Workflow scheme

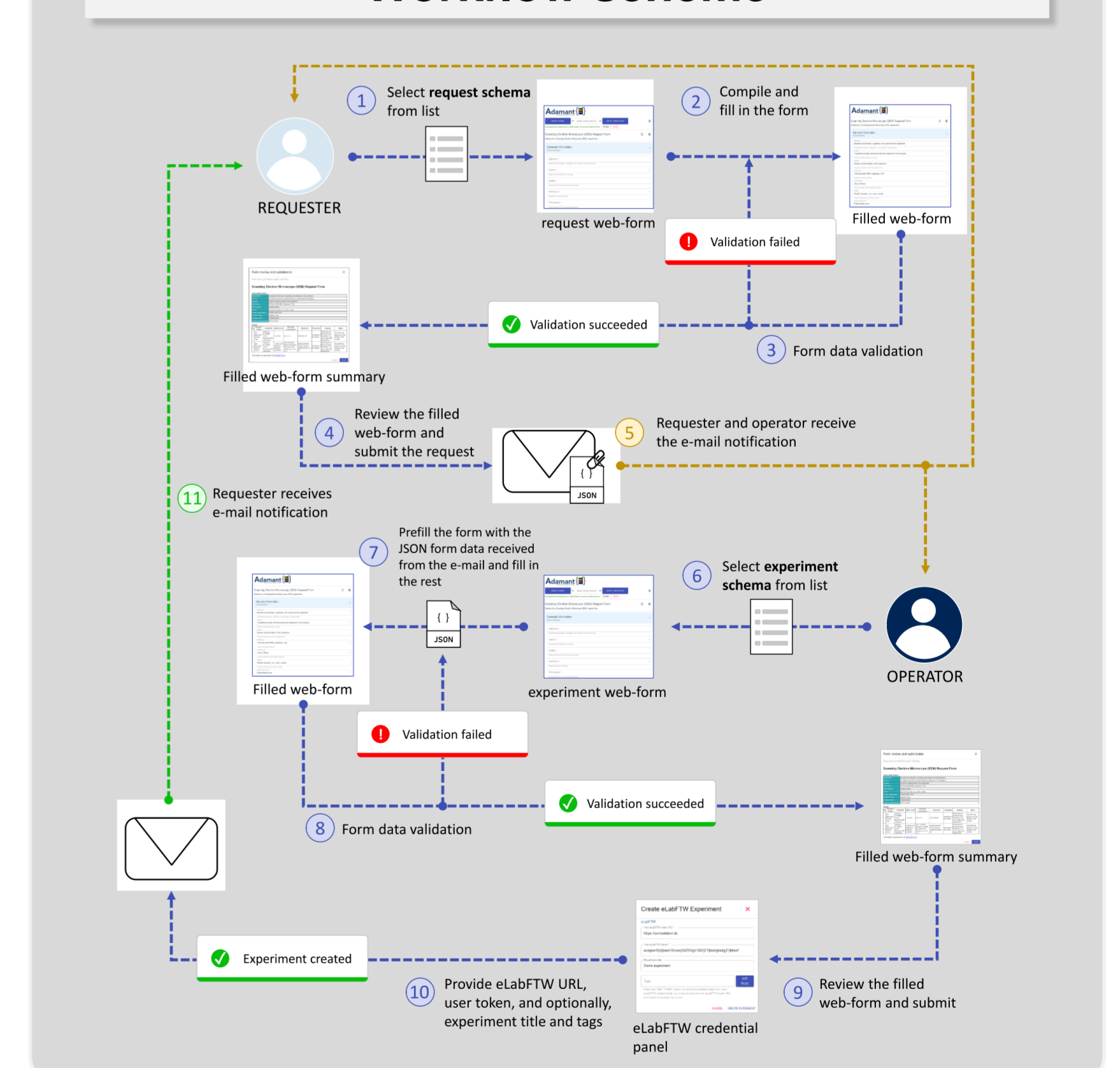


Figure taken from [2]

## Announcements

**Verhandlungen**  
der Deutschen Physikalischen Gesellschaft e.V.

**AKJDPG 2: Hacky Hour (joint session AKJDPG/AGI)**  
Thursday, March 23, 2023, 14:00–18:15, ZEU/0148

14:00 AKJDPG 2.1 Adamant: A JSON-Based Metadata Editor for Researchers —  
Ihda Chaerony Siffa, Marjan Stankov, and Markus M. Becker

- Regular Metadata Workshops**
- Every 3rd Friday in month
  - [Join mailing list](#)
  - [Read more](#)

**2nd Workshop on FAIR Data in Plasma Science**

DATE AND PLACE  
May 03–04, 2023, Ruhr University Bochum, virtual participation possible

TOPICS  
Practical Research Data Management | Electronic Lab Notebooks | Databases and Standards | Research Software | Sensors and Automation | Many Others

PROGRAMME AND REGISTRATION  
<https://www.plasma-mds.org/ws-fair-data-plasma-science-2.html>

## Supporting structures

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