



“Establishing RSE departments in german research institutions”

*Rene Caspart, Bernd Flemisch, Florian Goth, Jan Linxweiler, Frank Löffler,
Dominic Kempf, Philipp Schäfer, Robert Speck, Alexander Struck*

de-RSE position paper: Establishing RSE departments in german research institutions

What has been done:

- Community Input at de-RSE23
- Text production is almost completed
- Survey to learn about existing RSE departments

What we are looking for

- any type of feedback on the paper
- small scale contributions
- co-authors! (not much work involved!)

Core ideas for the position paper

- Target audiences of the paper
 - **Local Decision Makers**
 - Line managers/group leaders convincing local decision makers
 - Funding Agency decision makers
 - (to a lesser extent) local grass roots movements
- Focus topics
 - RSE **Institutions** instead of individuals
 - Statement how a **central** RSE department is beneficial
- Much narrower focus than position 001

Structure of the paper

- Motivation
 - International comparison and national pioneers
 - How to support existing RSE potential
- Vision of an ideal RSE department
 - Network of decentralized RSEs and a central RSE department
 - Nine potential service components of a central RSE department
- Existing Implementations incl. survey
- Realization
 - Funding options
 - Conceptionalization
 - Installation of the department
 - Staff acquisition

Summary - Motivation

- Introduce RSE terminology
- Refer to national and international pioneers
- Show benefits of institutionalized RSE
- Highlight staff (hiring & qualification) issues

Summary - Vision

- *Idea:* Describe how an RSE department could look like without being constrained by existing structures/funding etc.

Summary - Vision

- *Core Concept:* We are not advocating to fully centralize RSE activities within an institution. Support existing expertise the best way possible instead.
- We instead advocate a *Hub and Spokes* model:
 - The “Hub” is the central department that we are presenting.
 - The “Spokes” are distributed, e.g. domain-specific RSE subunits or individuals.

Summary - Vision

- *Core Concept:* We do not define the best possible RSE department, because we believe that it highly depends on existing structures in the institution.
- We instead identified a total of nine service components for an RSE department that could be offered. Individual concepts might mix and match these into their individual service portfolio.

Summary - Vision

Component 1: Foster a Network of RSEs

- Identify and leverage existing RSE potential
- Professionalize RSE work through exchange
- Proliferate knowledge across the network
- Strengthen RSE identity among researchers
- Facilitate RSE onboarding procedures

Summary - Vision

Component 2: Consultation Services

- Give researchers practical advice on RSE topics
- Gateway into all the other service offers
- Can be “one-off”, mentoring or for a whole project
- Help proposal writing (e.g. SMPs)
- Improves the quality of RS at the institution as a lot of advanced knowledge is missing among researchers

Summary - Vision

Component 3: Development Services

- Gives access to SD to many researchers that otherwise do not have it
- Allows to build institutional knowledge and memory about software (countering labour turnover)
- Provisioning of highly specialized expertise
- Makes small scale projects feasible by pooling resources

Summary - Vision

Component 4: Teaching Services

- Organize RSE training events
- Ensure teaching material is reused and shared
- Tailor courses to requirements by researchers

Summary - Vision

Component 5: Create a network of institutional partners

- A lot of institutions touch upon software: computing center, HPC, library, RDM facilities, large scale devices, policy makers etc.
- An RSE department can ensure that Research Software is on the agenda and a RS strategy is established

Summary - Vision

Component 6: RSE Infrastructure Provisioning

- Evaluate, pilot and host new tools and platforms at much lower delay than typical IT services
- Multiplier role for RSE IT services
- Unique point of entry for RSEs

Summary - Vision

Component 7: Research Software Engineering research

- An RSE department is a valuable resource to an SE department conducting RSE research
- The RSE department itself could also publish about meta aspects of its RSE work

Summary - Vision

Component 8: Software Maintenance Service

- Similar to long term data preservation, long term software preservation will likely become a thing
- The current system makes long term maintenance close to impossible
- An RSE department with long term funding can fill this gap **iff best practices are followed**
- Funding schemes for this are t.b.d. - may need to be a “pension system” (continuous influx)

Summary - Vision

Component 9: RSE Outreach

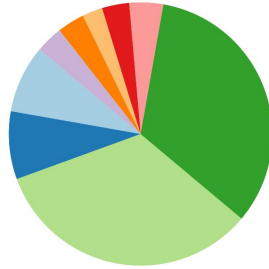
- Connectioning local RSEs with regional, national, international RSE activities
- Contributing to the global RSE efforts will help instigate the change in the academic system that will strengthen all other service components

Summary - Existing implementations

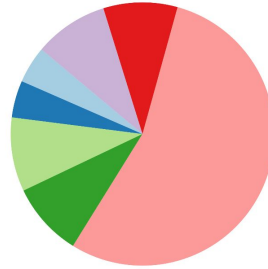
- We prepared a survey asking existing departments
 - how their service portfolio is split between the components
 - whether the components correctly represent their department
- We received 12 responses from Germany, the UK and the US
- There was no “missing” component
- We identified two types: With development services and those without

Summary - Existing implementations

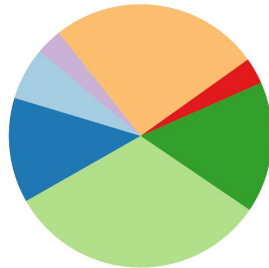
Kompetenzzentrum Digitale Forschung
Friedrich Schiller University Jena



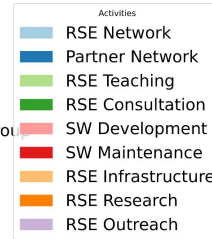
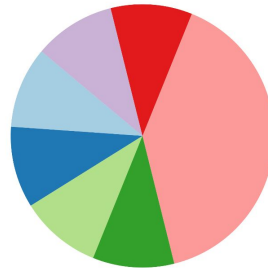
Scientific Software Center
Heidelberg University



Research Software Engineering
The University of Reading



Research Software Engineering Group
Princeton University



Summary - Realization

Funding possibilities:

- Ordinary budget positions (Haushaltsstellen)
- Overhead of third-party funding
- Explicitly requested persons months in externally funded projects (Pay per Use)
- Dedicated RSE Calls

In reality, we will always have a mix. Also, some service components are basic needs, some are project-specific.

Summary - Realization

Transition pathway 1: Low hanging fruits to establish RSE structures:

- Local RSE network activities showing potential
- Pooling existing materials for training

Summary - Realization

Transition pathway 2: Conceptualization

- Localization of the department
 - Use existing structures
 - Discussions with stakeholders
- Set a Service Portfolio
- Governance Structure
- Communicate the concept to decision makers

Summary - Realization

Transition pathway 3: Installation of the department

- Advocate to start with (at least) two positions
 - An RSE coordinator role
 - A central RSE providing services
- Prioritize service portfolio
- Internal marketing of the department

Summary - Realization

Transition pathway 4: Department growth

- Strategies to expand from the original two positions
- Enhancement of the service portfolio along the way

Summary - Realization

Outsourcing

- Alternative administrative setup
- Avoids many administrative hurdles (WissZeitVG, pooling of funding), creates others (overhead on both sides, governance)
- No recommendation, just the mention

Summary - Realization

Staff acquisition

- Key role in establishing and growing RSE departments
- Educational programs to train potential candidates

Summary - Success Stories

Throughout the paper, we have a recurring theme:

- Success Stories to exemplify what we describe
- Will be layouted with boxed
- Are still missing quite a bit

Authorship

Make yourself a co-author...

- This is a community paper that aims for adoption as de-RSE position
- There should be as many as authors as possible as long as these people are from our community and support what we write!
- We therefore have minimal bars: Make one accepted PR.
- To reward people that put in substantial work, there is a tier 1 authorship

... today

- We have marked GitHub issues that we think are easy to work on
- Some require adding a small paragraph, some more chore work.

Our session today!

You can:

- pick an issue and work on it - alone or in teams
- talk to us about feedback that you have
- provide us with your experience (if you already have established an RSE department or similar in you institution)

