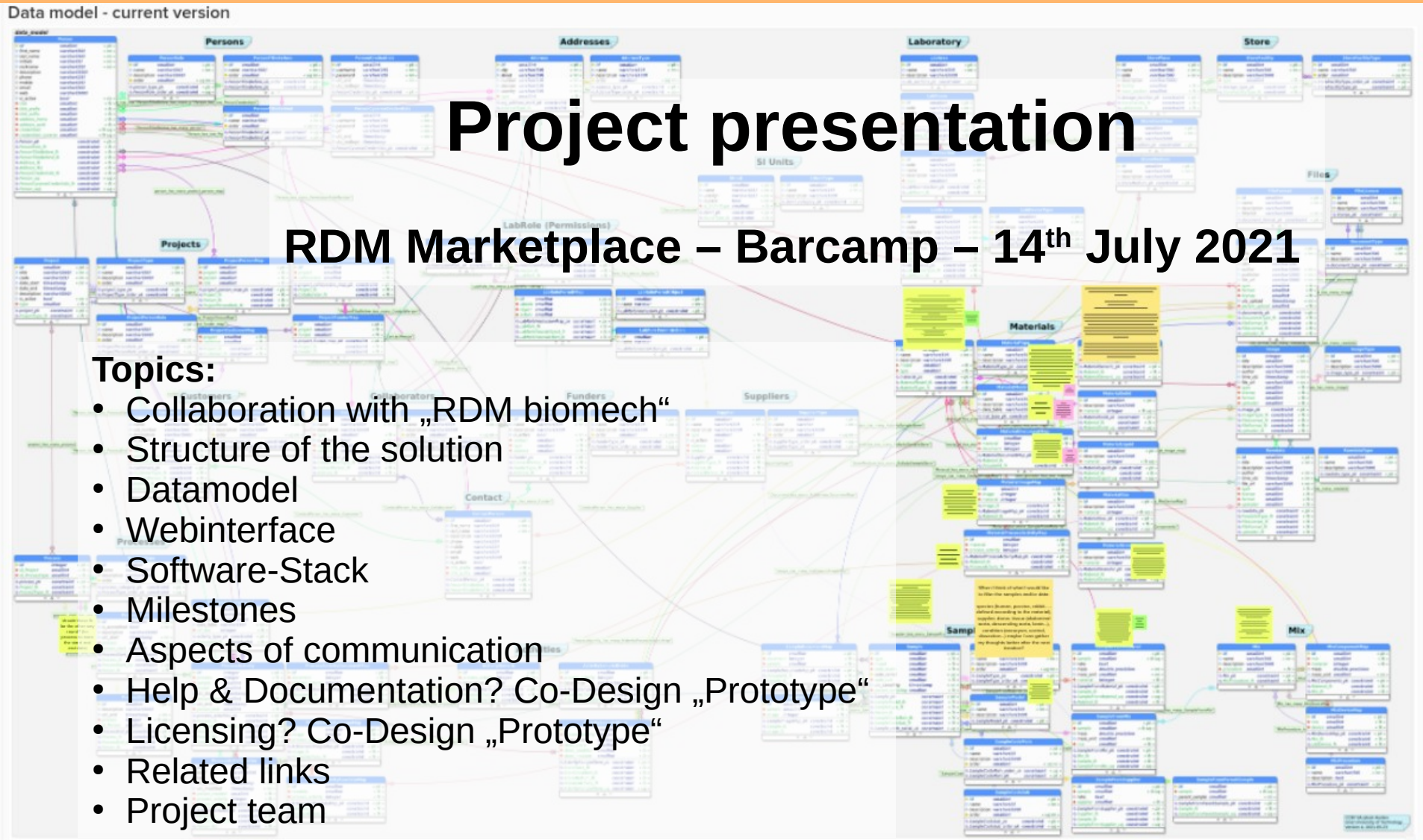
# Laboratory Notebook and Database
## LabNDB

Graz University of Technology




# Project presentation

## RDM Marketplace – Barcamp – 14th July 2021

**Topics:**

- Collaboration with „RDM biomech“
- Structure of the solution
- Datamodel
- Webinterface
- Software-Stack
- Milestones
- Aspects of communication
- Help & Documentation? Co-Design „Prototype“
- Licensing? Co-Design „Prototype“
- Related links
- Project team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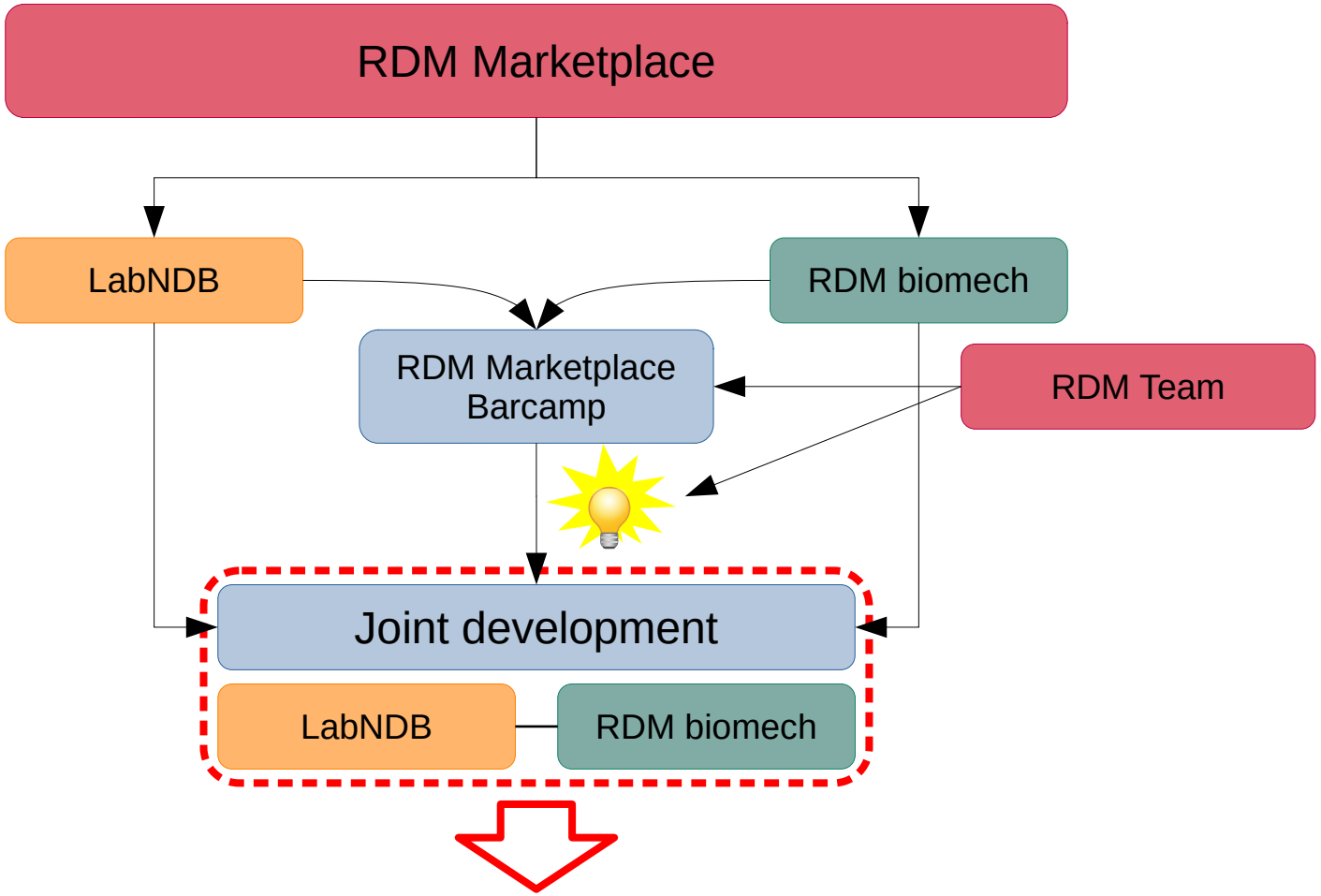
## Collaboration with „RDM biomech“




- Sep. 2020: proposal
- Oct. 2020: proj. awarded
- Jan. 2021: project start
- Feb. 2021: barcamp
- Feb. 2021: joint devel.
- Jul. 2021: barcamp
- Dec. 2021: project end
- Jan. 2022: future ???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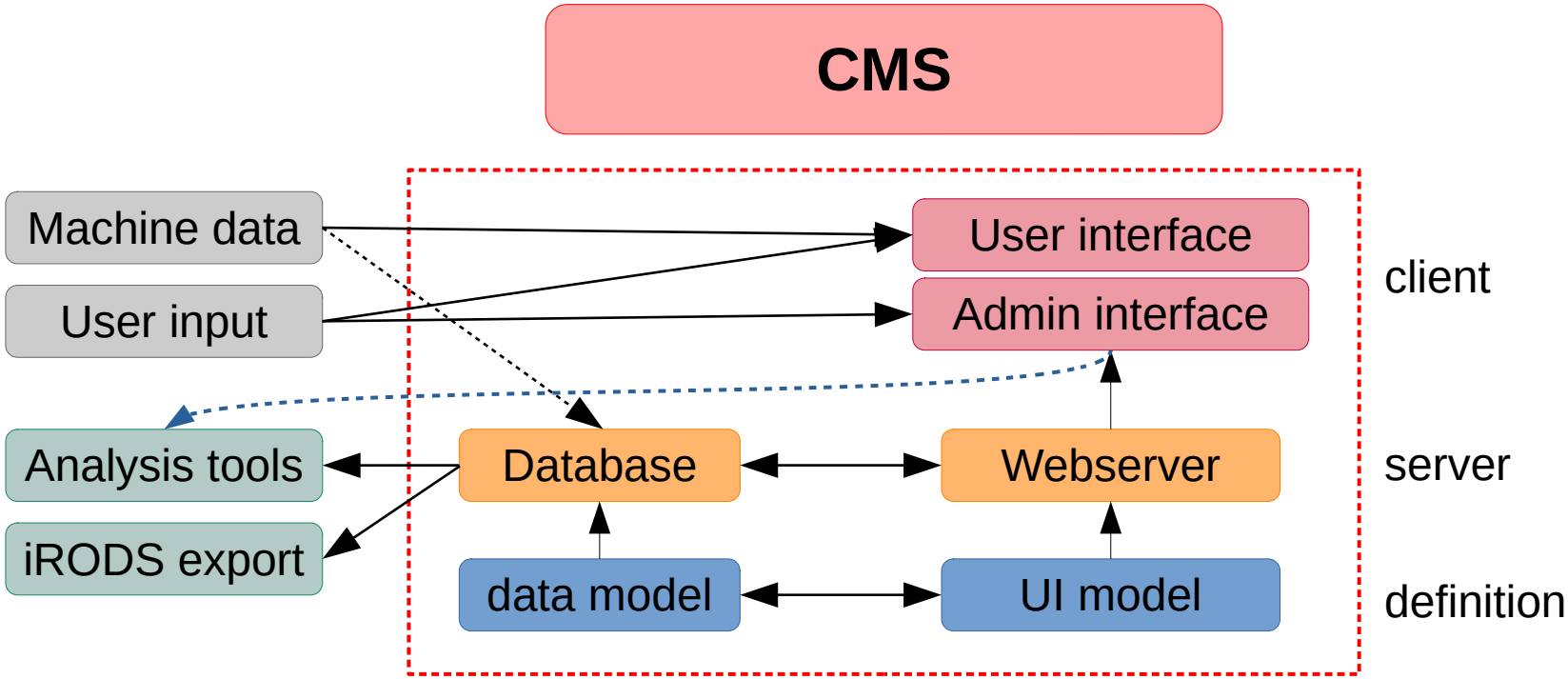
# Structure of the solution




CMS … content management system
UI model … user interface model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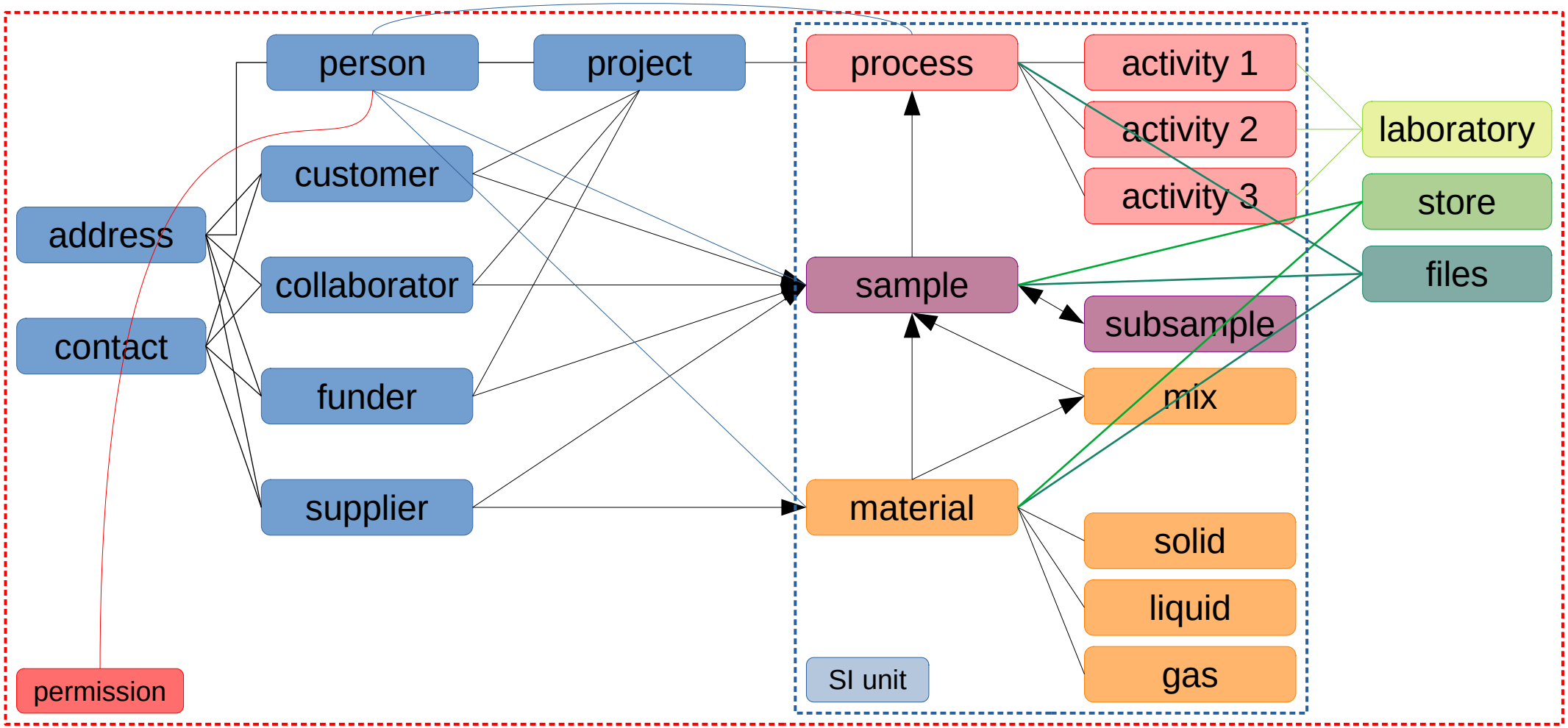
## Data model (database)



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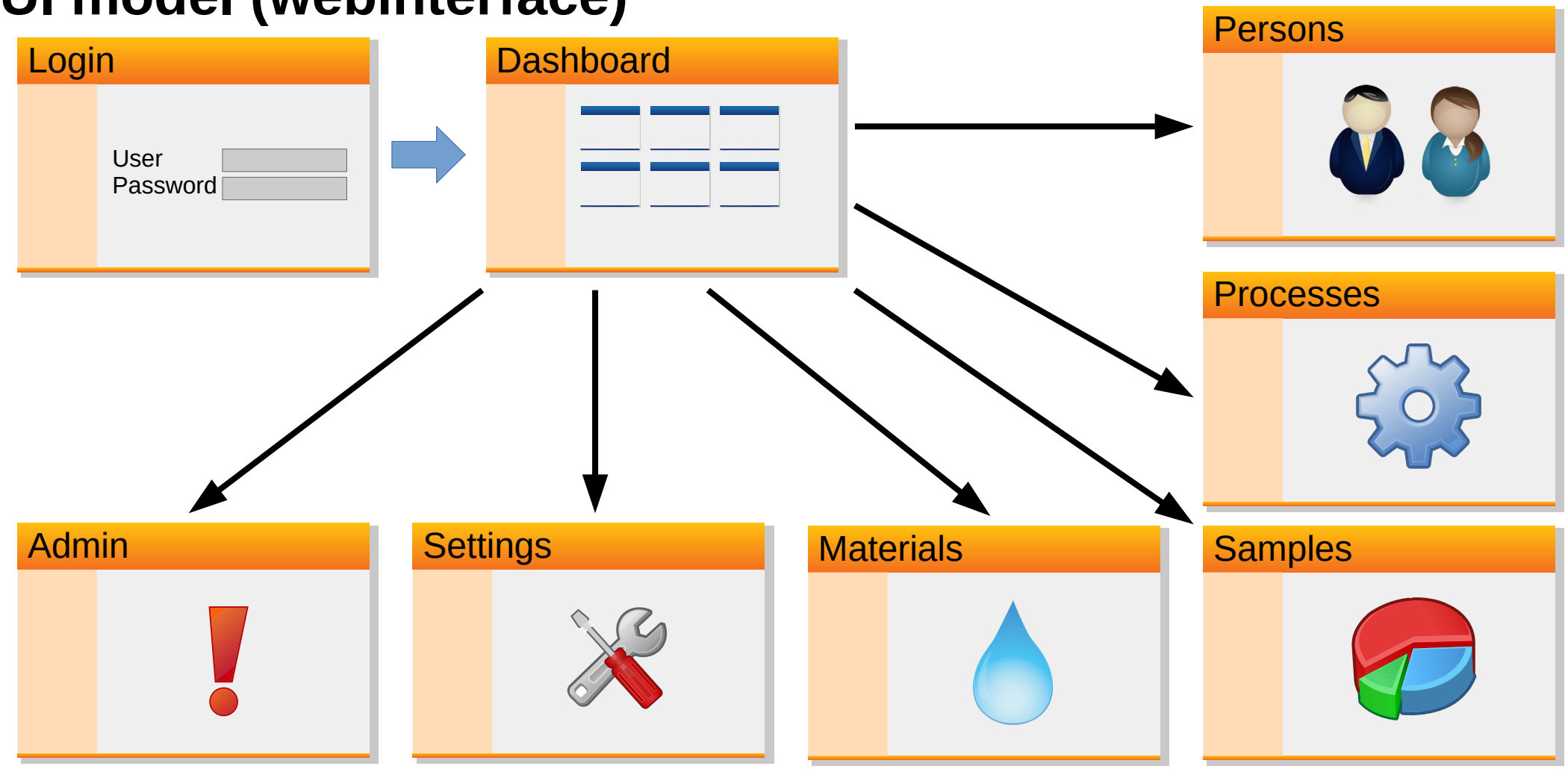
## UI model (webinterface)



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# Software-Stack

| Software | Subject | Purpose |
|---|---|---|
| pgModeler | Design | design datamodel |
| LibreOffice | Design | design user interface model |
| MURAL | Design | collaborate on data- and user interface model |
| Django | Development | define datamodel and webinterface (python) |
| Gitlab | Development<br>Deployment | source code version control, deploy solution |
| postgreSQL | Deployment | database server, host data structure and data |
| gunicorn | Deployment | WSGI enabled web server, host the webinterface |
| apache2 | Deployment | web server, publish the webinterface (reverse proxy) |
| Debian 10 | Deployment | virtual machine OS, host all required services |


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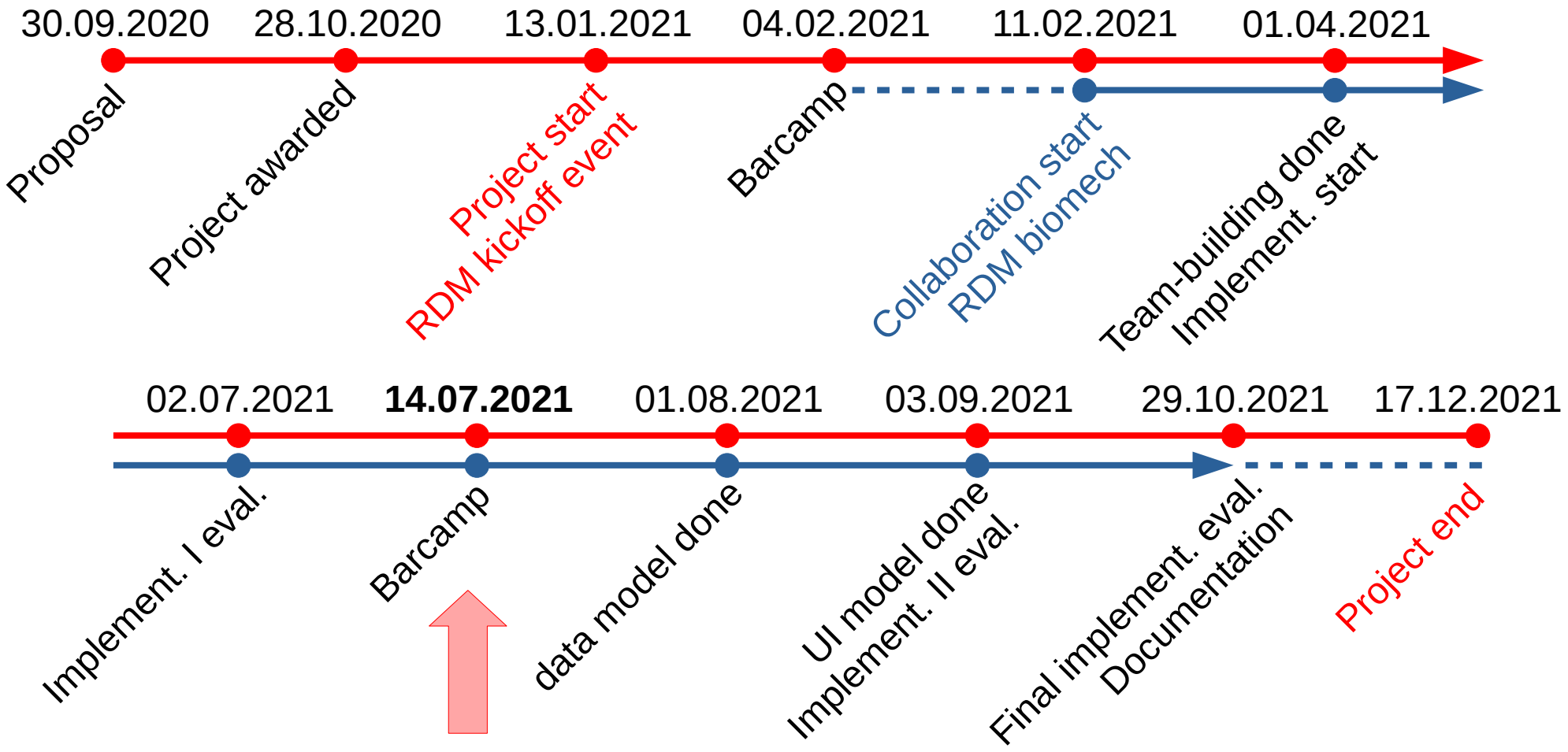
## Milestones



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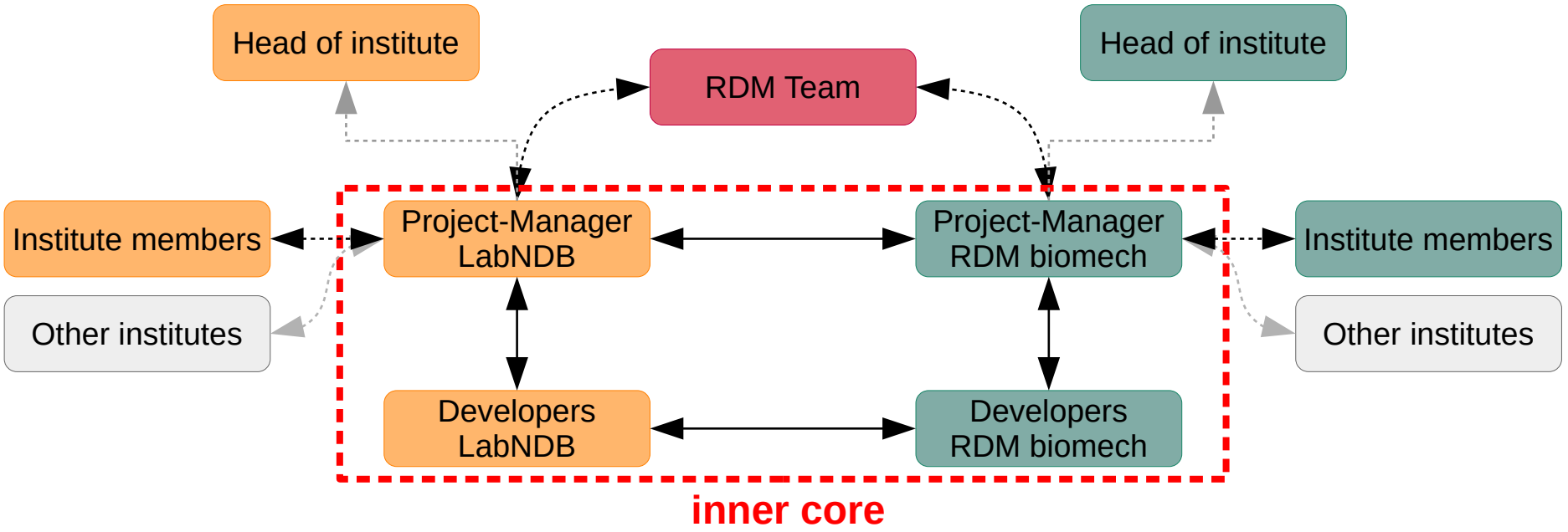
# Aspects of communication - channels




mainly one-directional, sparsely
bi-directional, continuously
bi-directional, on demand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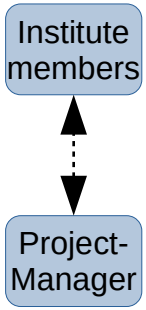
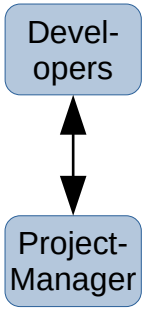
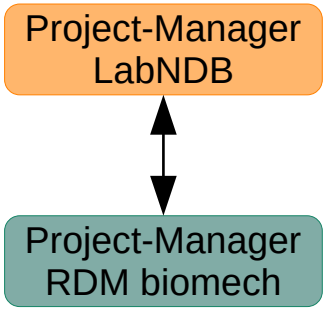
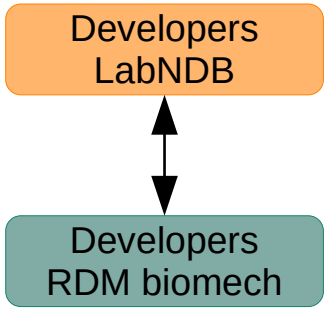
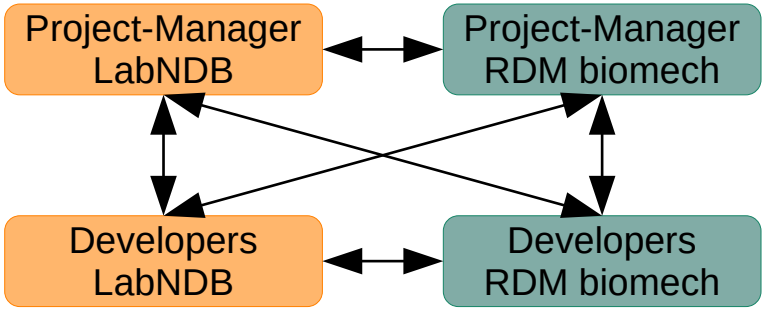
## Aspects of communication – main situations

| situation |  |  |  |  |  |
|---|---|---|---|---|---|
| type | F2F | F2F | F2F/async. | F2F | Conference (SCRUM-Meeting) |
| frequency | 1-2/m. | 1-2/m. | 1-2/month | ~2/week | every 2 weeks |
| tools | Personal | Webex | Webex/Mural | Phone/Personal | Webex Teams/Mural |
| importance | 1 | 2 | 3 | 3 | 3 |
| shared informa-tion | gather-ing infor-matio | review of current and up-coming tasks | Project organization, (structure, milestones, time-plan) | Exchange of experience, self organization, distribution of workload | Project organization (structure, milestones, timeplan), review, distribution of tasks, general discussion |



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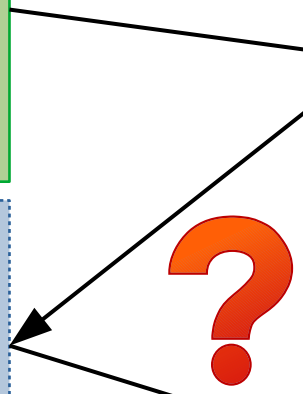
# Help & Documentation? Co-Design „Prototype“

**Requirements:**
- Data input (tooltip help)
- Workflow help (formfill help)
- Source code documentation
- General documentation
- Other requirements?

**Locations:**
- Webinterface (CMS)
- Website
- File system (shared?)
- Other locations?

**Stakeholders:**
- Users
- Developers
- Project funder
- General public or others?



**Formats:**
- Open formats:
  - web content: Markdown, HTML
  - documents: ODF, Latex
  - source code: Doxygen, TexDoc, ...
- Proprietary formats:
  - documents: pdf, doc, xls, …
- Other formats?

**Access:**
- Protected
- Restricted share
- Public share
- Other access restrictions?



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# Licensing? Co-Design „Prototype“

**Project data:**

Documentation

Reports

Presentations

Source code

Database content

Other materials?

**Who decides?**

**Available licenses:**

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General Public License (GPL)

Open Database License (ODbl)

Other licenses?



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# Related links:

**Licenses:**

Creative Commons (CC): https://creativecommons.org/

Free Document License (FDL) and General Public License (GPL): https://www.fsf.org/

Open Database License (Odbl): https://opendatacommons.org/licenses/odbl/

**Software:**

Django: https://www.djangoproject.com/

PostgreSQL: https://www.postgresql.org/

Apache: https://www.apache.org/

PgModeler: https://pgmodeler.io/

MURAL: https://start.mural.co/

LibreOffice: https://de.libreoffice.org/

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# The project team

**Prof. Markus Krüger**
*Head of institute*
Project owner and supervisor

**Jakob Harden**
*Junior scientist*
LabNDB project management,
IT-support

**Lukas Briendl**
*Junior scientist*
Support and knowledge for material database

**Matthias Lenz**
*Laboratory manager*
Support for laboratory processes and workflows,
quality management, IT-support

**Mathias Eisner & Barbara Schmid**
*Project developers*
Implementation, testing, documentation


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# Laboratory Notebook and Database
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## Who are we?

Institut für Materialprüfung und Baustofftechnologie mit angeschlossener TVFA für Festigkeits- und Materialprüfung, IMBT/TVFA [2060]
*Institute of Technology and Testing of Construction Materials*

## How to get in contact with us?

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LabNDB: +43 (316) 873 – 7655, jakob.harden@tugraz.at
Homepage: https://www.tugraz.at/institute/imbt-tvfa/home/

## Where are we?

Inffeldgasse 24/I, 8010 Graz, Austria
Campus Inffeldgasse - BTZ


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