RSE Trainings at DLR 2.0 - What we've learned from 1.0

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Knowledge for Tomorrow

German Aerospace Center (DLR)
Software Development Background

Numbers

- More than 8000 employees

- ~20% of DLR employees involved in software development

Characteristics

- Variety of

  - Fields

  - Maturity

  - Software technologies

  - Team sizes

- "Developers" often do not have any training in software development

How to teach them software engineering?

Trainings 1.0
The Concept

Training to learn everything you need to run a software project successfully.

- Intensive two-day course
- Small groups with up to 15 participants
- Two trainers
- Trainings are offered on a yearly basis at different DLR locations across Germany
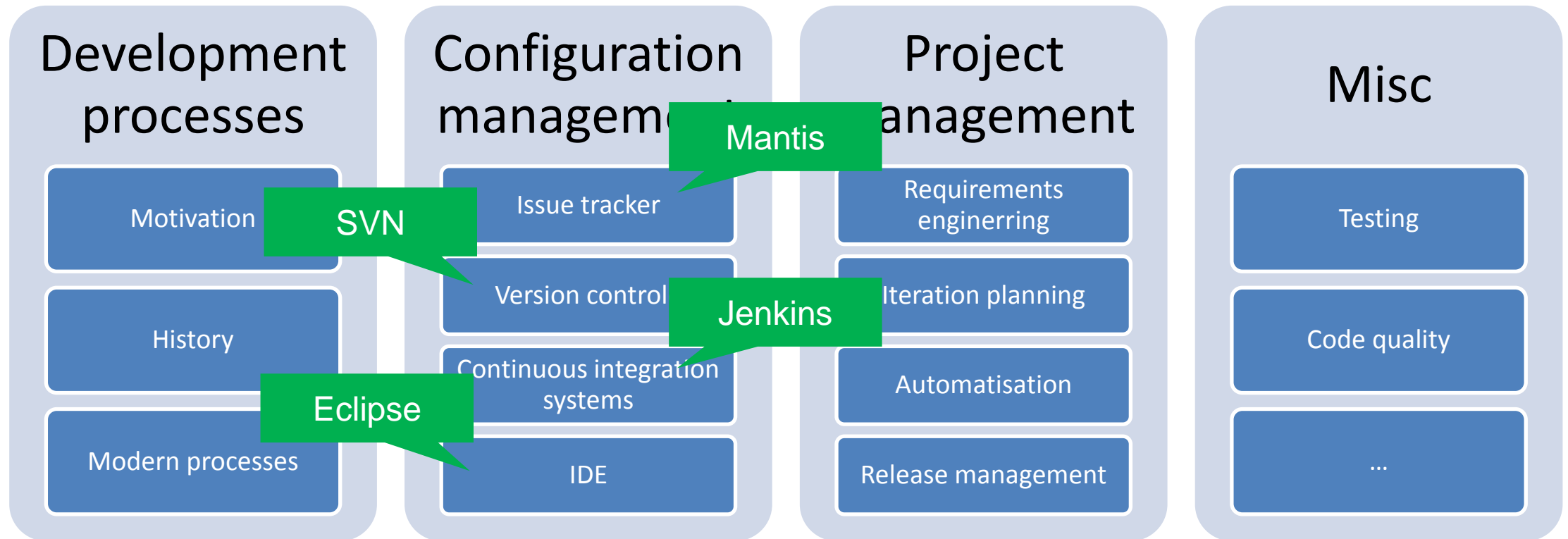- At least three trainings a year

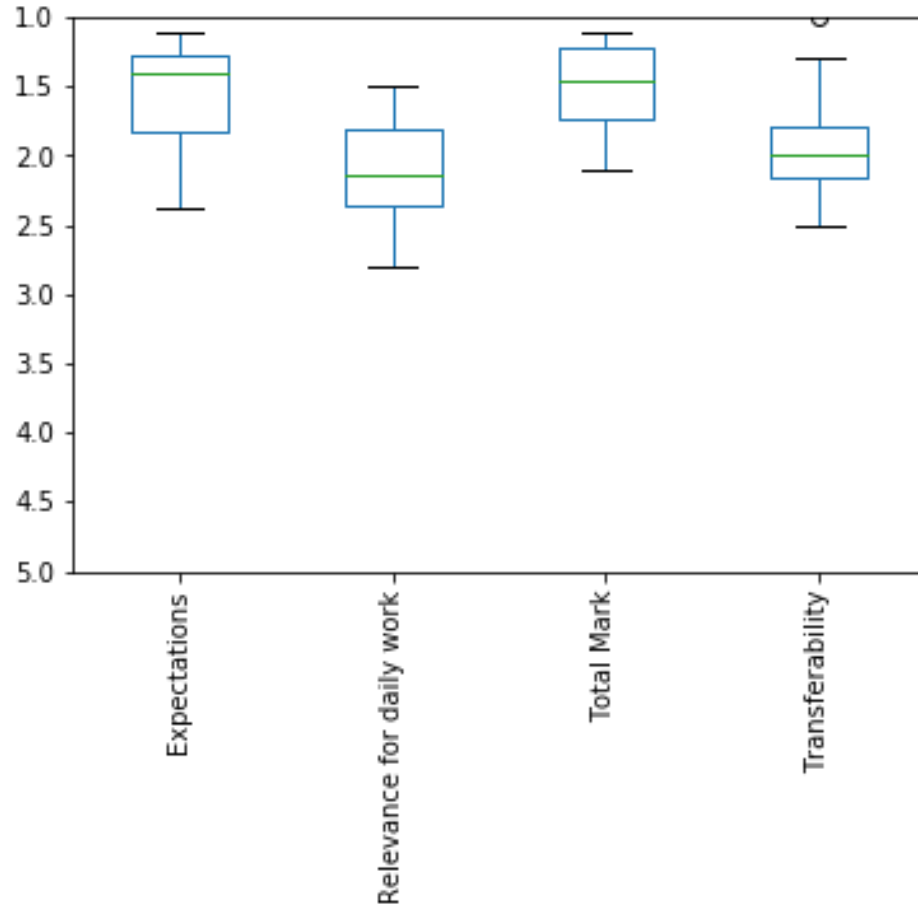- Hands-on experience on the basis of a complete example project

Trainings 1.0
Content

Adaption to project necessary

Development processes

- Motivation
- History
- Modern processes

Configuration management

- Issue tracker
- Version control
- Continuous integration systems
- IDE

Mantis

SVN

Jenkins

Eclipse

Project management

- Requirements enginerring
- Iteration planning
- Automatisation
- Release management

Misc

- Testing
- Code quality
- …

DLR

Trainings 1.0
Feedback

- Good training
- Great mix of theory and praxis

- Too much content
- Overwhelming
- More than I need right now

- Too much basics

Trainings 1.0
Lessons learned

- No "one size fits all"
  - Focus on role / maturity level of software

- Mix theory and practice
  - Consistent example project
  - Provide documentation

- Reusability of tooling

- (Even) Less text on slides, instead provide central information

- Pool of interchangeable trainers

Trainings 2.0
The Concept

Training to learn everything you need to run a <u>sustainable</u> software project successfully.

- Two courses
    - Base
    - Extension

- Small groups with up to <u>20</u> participants
- Two trainers
- Trainings are offered on a yearly basis at different DLR locations across Germany
- At least three trainings a year

- Aligned with DLR SE guidelines

- Re-use existing training materials (internal + external)

Starting 2018

Trainings 2.0
The Base Course

Training to learn everything you need to run a <u>small</u> sustainable software project successfully <u>on your own</u>.

- Maturity level 1
- One day
- Every developing scientists should attend
- Based on carpentries + own material of short trainings

Content
1. Introduction in DLR SE guidelines and sustainability
2. Git/GitLab, single user
3. Making an example script shareable/sustainable

Goal
- Become an scientific developer with basic knowledge about RSE

Trainings 2.0
The Extension Course

Starting 2019

Training to learn everything <u>your group</u> needs to run a sustainable software project successfully.

- Maturity level 2+3
- 1.5 days
- Knowledge of Base course required
- Every long term member of development project(s) should attend
- Based on existing DLR training material

Content
- Extensions based on DLR SE guideline (Maturity level 2-3)
    - Advanced Testing, CI, Release Management, etc.
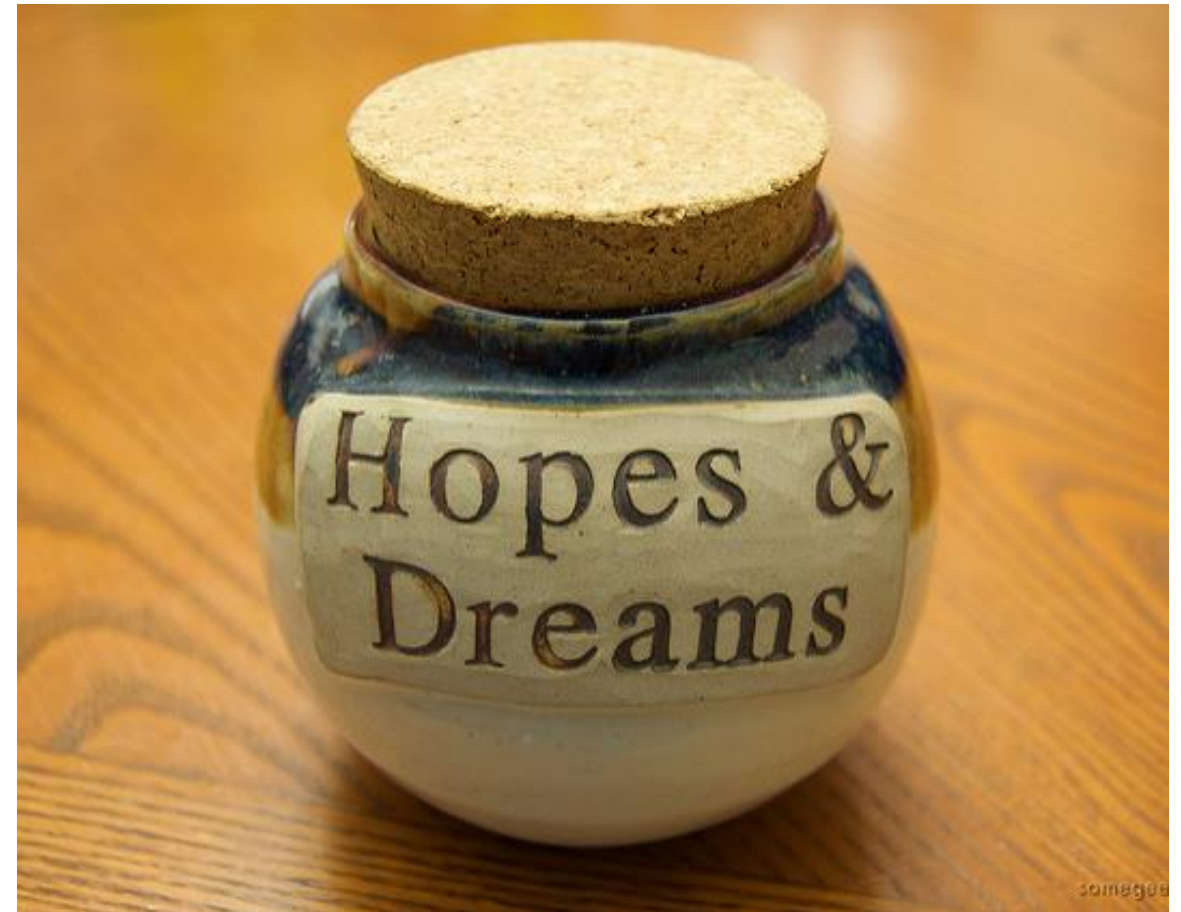- Additional focus on collaboration, (technical) project leadership

Goal
- Become a local RSE

Trainings 2.0
Hopes and Dreams

- Modular toolbox
  → Adaptable to requirements / roles / …

- Qualification of multipliers *(see "The Carpentries")*
- Establish mentoring program
- Decentralization

- Reach everyone in DLR

- RSE Community

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Questions?

If you have any more questions, just ask us here, or via mail:

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