RESEARCH SOFTWARE NETWORK FOR THE DIGITAL HUMANITIES

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DARIAH-EU & GWDG

deRSE19 – Conference for Research Software Engineers

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WHO AM I?

- Tibor Kálmán
  - Email: *tibor [dot] kalman [at] gwdg [dot] de*
- Based:
  - Göttingen, Germany @ GWDG, **www.gwdg.de**
- Background:
  - Computer Science, Phd
- Since mid 90‘s:
  - hardware, software, software for hardware, ‘middleware‘
  - industry as well as academia
- Infrastructures
  - Services for eScience @ GWDG
  - CTO of Persistent Identifier Consortium for eResearch (ePIC)
  - co-Head of ‘e-Infrastructure‘ VCC of DARIAH-ERIC (DARIAH VCC1)

today‘s role

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AGENDA

- Our Context
  - Research Infrastructures
  - ~~Research Software~~ (s. talks on Day #1 and #2)
- Software Engineering
  - ~~Research Software Engineering~~ (s. talks on Day #1 and #2)
  - Infrastructures' View
- Our Network
  - EURISE

OUR CONTEXT

- RESEARCH INFRASTRUCTURES
- ~~RESEARCH SOFTWARE~~ (S. TALKS ON DAY #1 AND #2)

RESEARCH INFRASTRUCTURES – THEIR SUSTAINABILITY

- Research projects‘ limitations
- RIs ensure **sustainability** per se:
  - clear funding model for their different phases
  - long lifespan
  - binding legal form
    - in case of ESFRI projects: ERIC (specially established for ESFRI projects)
    - NFDI: ???
  - Common understanding that digital RIs do not have a typical project character!
- Examples:
  - Physics, Climate research, Metrology, since 2006: DH

- European Strategy Forum on Research Infrastructures (ESFRI)
  - established a Roadmap for European RIs
- **Preparatory** Phase: 2-3 y
  - EU seed funding
- (**Transition** Phase): 2-3 y
  - integrates national activities
- **Construction** Phase: 5 y
  - EU member countries share the costs
  - EU funding via research projects
- **Operational** Phase: 10+/20+ y
  - Members sustain the funding

EXAMPLE:
BRIEF HISTORY OF THE DARIAH-ERIC

- **2006**
  DARIAH @ ESFRI Roadmap
- **2008 – 2011:**
  Preparatory Phase project:
  Preparing DARIAH
- **2011 – 2013:**
  Transition Phase
  establishing the DARIAH-ERIC
  integrating national activities
- **2014-:**
  DARIAH-ERIC's construction phase
- **2020-:**
  operational phase for DARIAH-ERIC

DARIAH
Digital Research Infrastructure for the Arts and Humanities

DARIAH
Digital Research Infrastructure for the Arts and Humanities

DARIAH-ERIC

DARIAH-EU

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OUR CONTEXT #2: RESEARCH SOFTWARE

Simplified view on research software (for today's talk):

- Facilitates modern research
- Access to and use of data
- Service vs. software vs. application vs. tool vs. etc

"[…] software that is developed within academia and used for the purposes of research: to generate, process and analyse results. This includes a broad range of software, from highly developed packages with significant user bases to short […] programs written by researchers for their own use."

Hettrick, Simon (2016): "Research Software Sustainability: Report on a Knowledge Exchange Workshop"

➢ Research projects produce demonstrators/prototypes!

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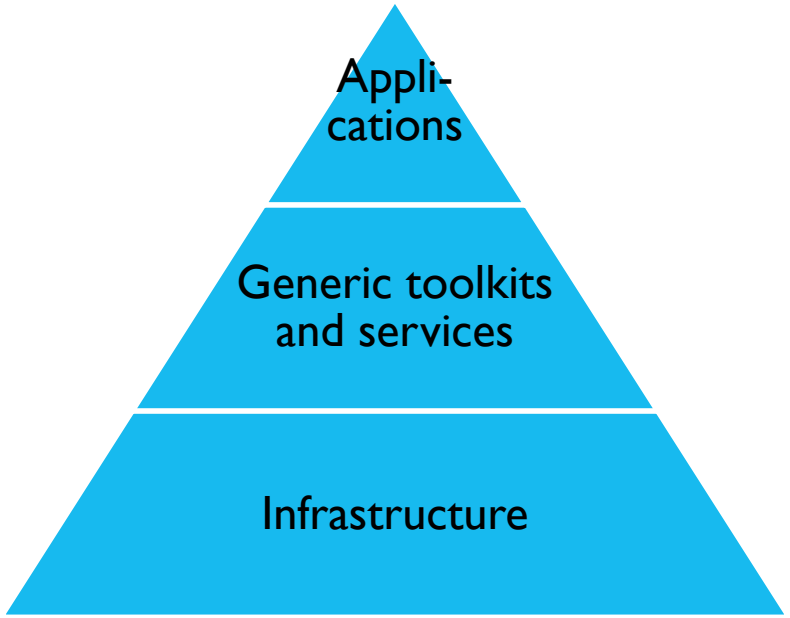
SOFTWARE ENGINEERING

~~Research Software Engineering~~ (s. talks on Day #1 and #2)

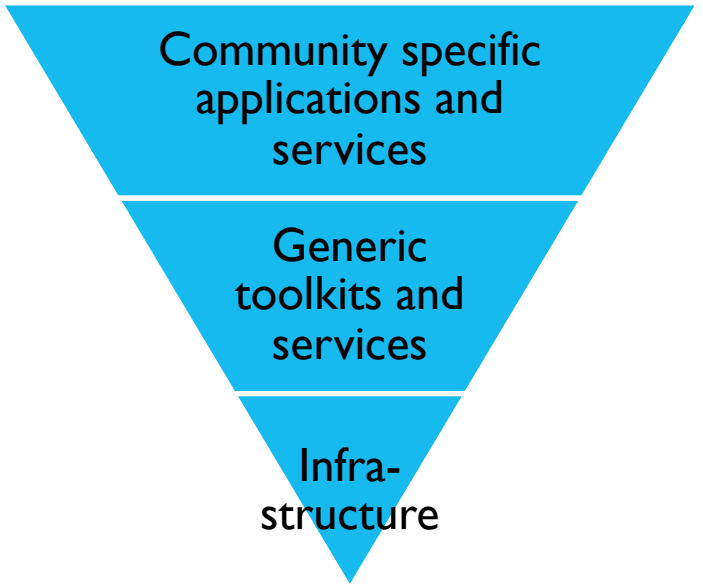
Infrastructures‘ View

DIFFERENT INTERESTS IN RESEARCH INFRASTRUCTURES

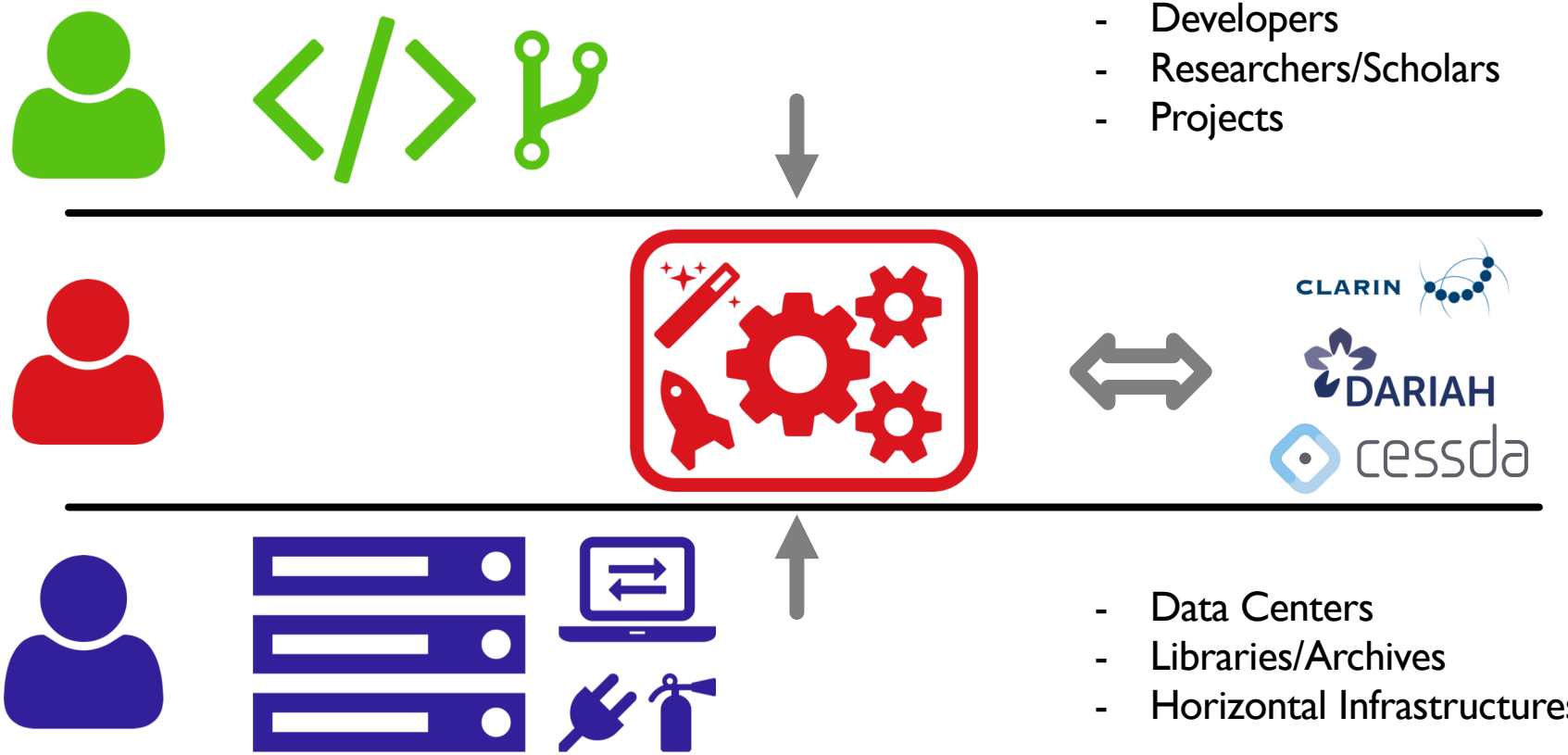
Computing- and Data Centres / Providers



Research Institutes / Scholars



BRIDGING A GAP



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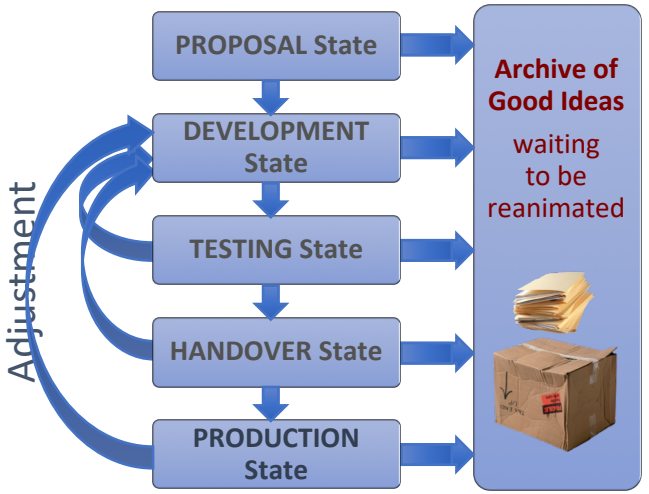
STANDARDS AND REQUIREMENTS

- Guidelines & Best Practices
- Documentation
- Quality Requirements



Guidelines for Software Quality

CLARIAH Task 54.100

Maarten van Gompel
Centre for Language & Speech Technology
Radboud University, Nijmegen
Jauco Noordzij
Huygens ING
Reinier de Valk & Andrea Scharnhorst
Data Archiving and Networked Services (DANS)
Royal Netherlands Academy of Arts and Sciences

September 30, 2016

version 1.1

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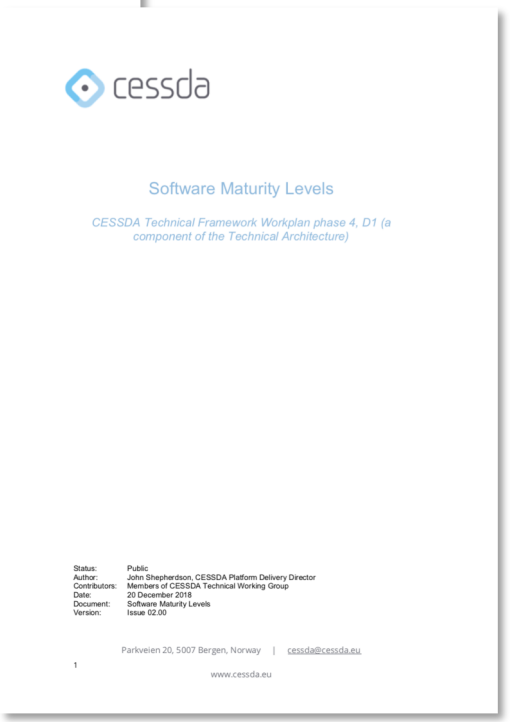

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Software Maturity Levels

CESSDA Technical Framework Workplan phase 4, D1 (a component of the Technical Architecture)

Status: Public
Author: John Shepherdson, CESSDA Platform Delivery Director
Contributors: Members of CESSDA Technical Working Group
Date: 20 December 2018
Document: Software Maturity Levels
Version: Issue 02.00

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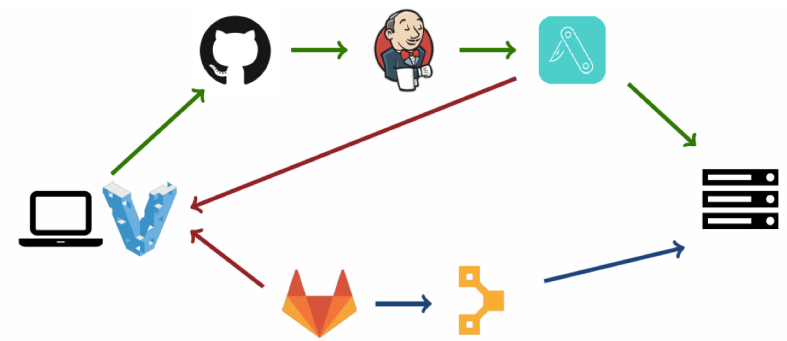
SOFTWARE ENGINEERING – INFRASTRUCTURES' VIEW

Industry Standards

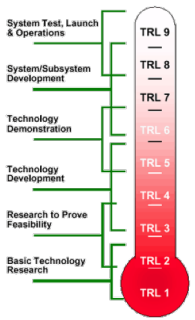
- Automation
- Testing
- Continuous X (Everything)



European Open Science Cloud

- central point of access to digital research in the 21st century
  - technical alignment and interoperability will be key
- EOSC will require Technology Readiness Level 8!
  - We must ensure the software quality of our services
  - We need to be able to provide evidence for our technical maturity
  - We have to operate the services in a reliable manner!

- Training!
  - Software Carpentry &
  - Code Refinery



OPERATIONALISATION

Operation

Software vs Service

- Running good software the right way

Operation is (also) about management

- Service Lifecycle Management
- Security Management
- Business Models
- …

Various standards exist:

- ITIL
- FitSM
- REFEDS
- SIRTIFI
- ...

OUR NETWORK

THE EURISE NETWORK

European Research Infrastructure Software Engineers' Network

- an umbrella where research infrastructures meet research software engineers
- formed by the three SSH Infrastructures CESSDA, CLARIN & DARIAH

Events:

- 1st Workshop, Berlin, Autumn 2017 – https://dhd-blog.org/?p=8685
- 2nd Workshop, Utrecht, Spring 2019 – https://dhd-blog.org/?p=11310
- Activities at RI and RSE Conferences

https://eurise-network.github.io

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THE EURISE NETWORK

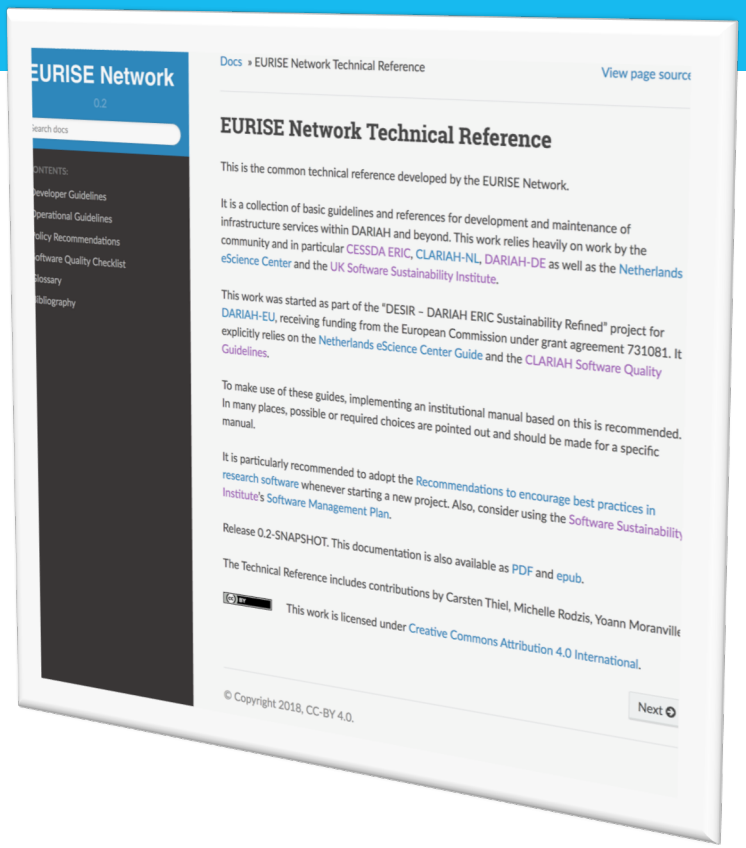
Goals

- Re-Usability of Research Software
- Infrastructure Sustainability
- Software Quality
- Training & Education

https://eurise-network.github.io

TECHNICAL REFERENCE

- First common baseline of the three infrastructres
- Collection of best practices & community standards
- Agnostic of platform/vendor
  - It does not define any technology stack, licences, or hosting services
  - Compatible with existing requirements & not-invented-here-syndrome
- For developers, maintainers and operators
  - To gauge the quality of ongoing developments
  - Better yet, use it when starting a new project



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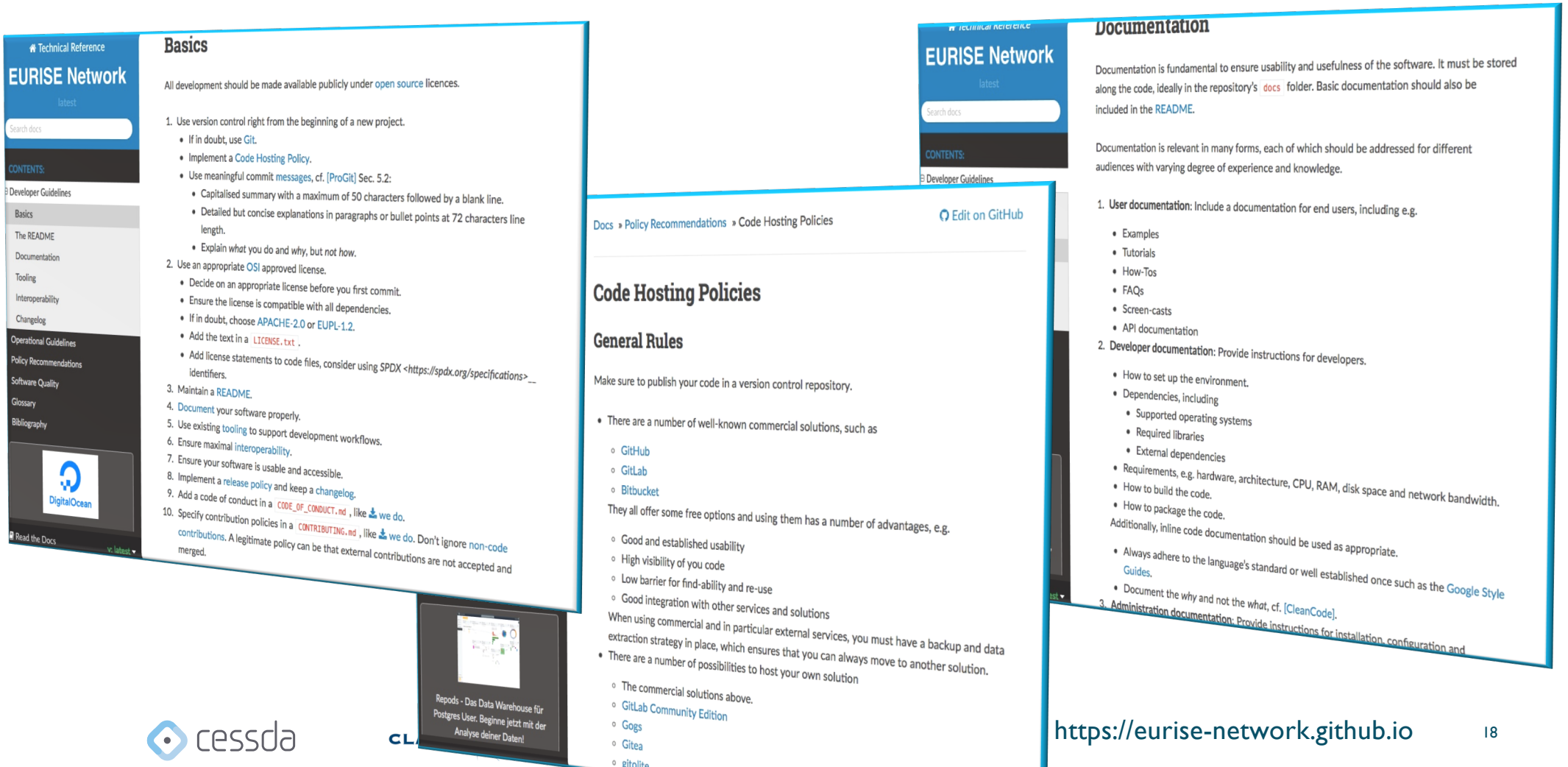
TECHNICAL REFERENCE (CONT'D)



QUESTIONS?

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