

Gestern lief's doch noch

Muss ich heute wirklich schon wieder alles testen?
Forschungsergebnisse & eigene Erfahrungen mit Test-Impact-Analyse

Dr. Elmar Juergens


Dank an: Florian Dreier, Stefanie Einwang, Dr. Dennis Pagano, Jakob Rott






com.teamscale.test.ui.architecture.ArchitecturePerspectiveTest - testViewingArchitectureElements

Runs: 1/227

 Errors: 0

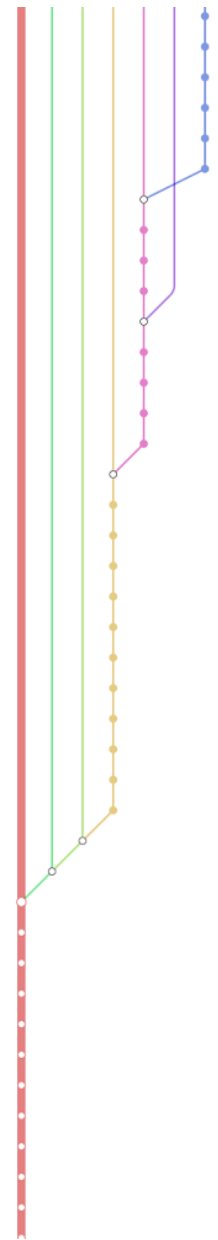
 Failures: 0

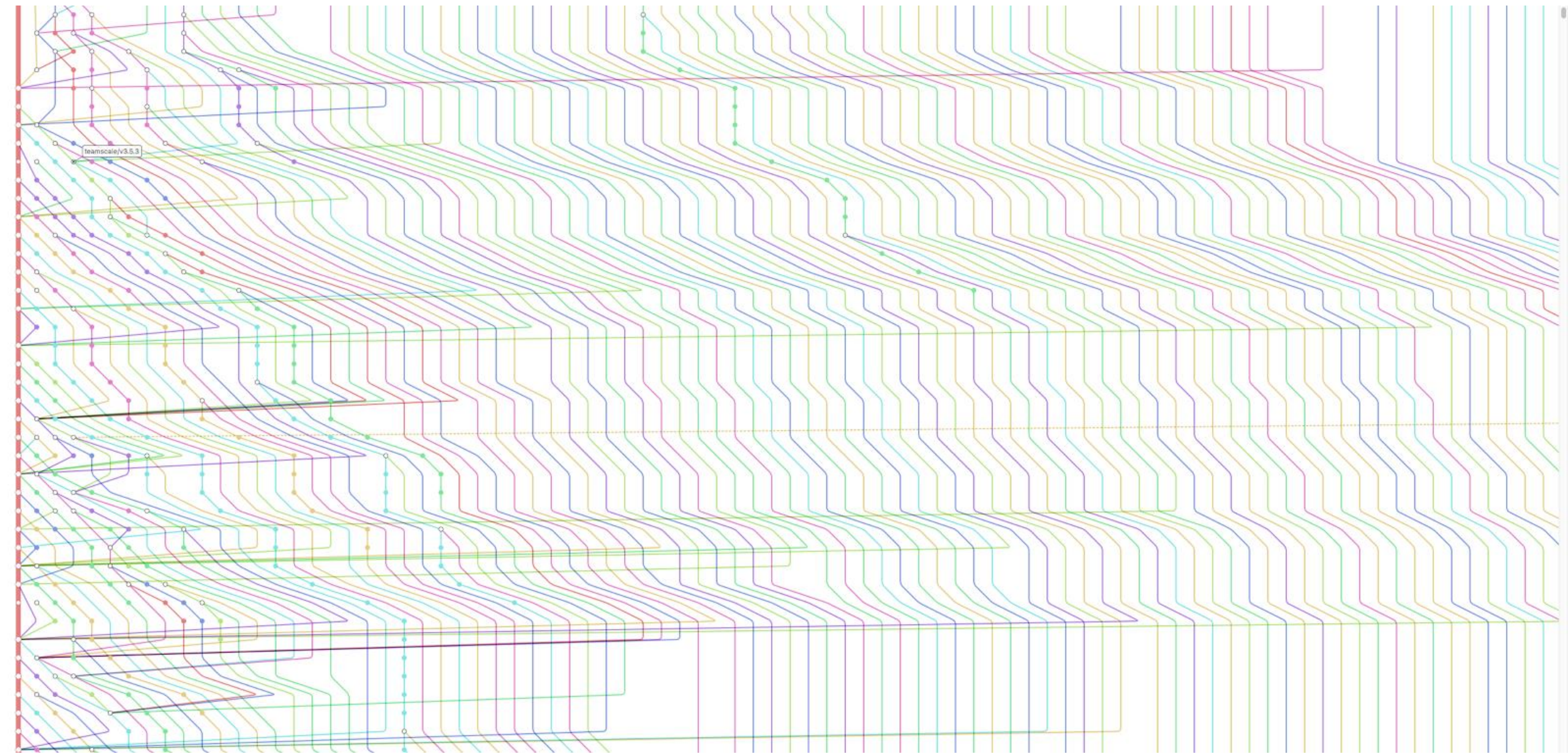
- ▼   com.teamscale.test.ui.architecture.ArchitecturePerspectiveTest [Runner: JUnit 5]
 -  testViewingArchitectureElements
 -  createArchitectureTest
 -  testTimetravelMode
 -  testUndoRedo
 -  testArchitecturePolicyUpdate
 -  testOpenCodeOfOrphans

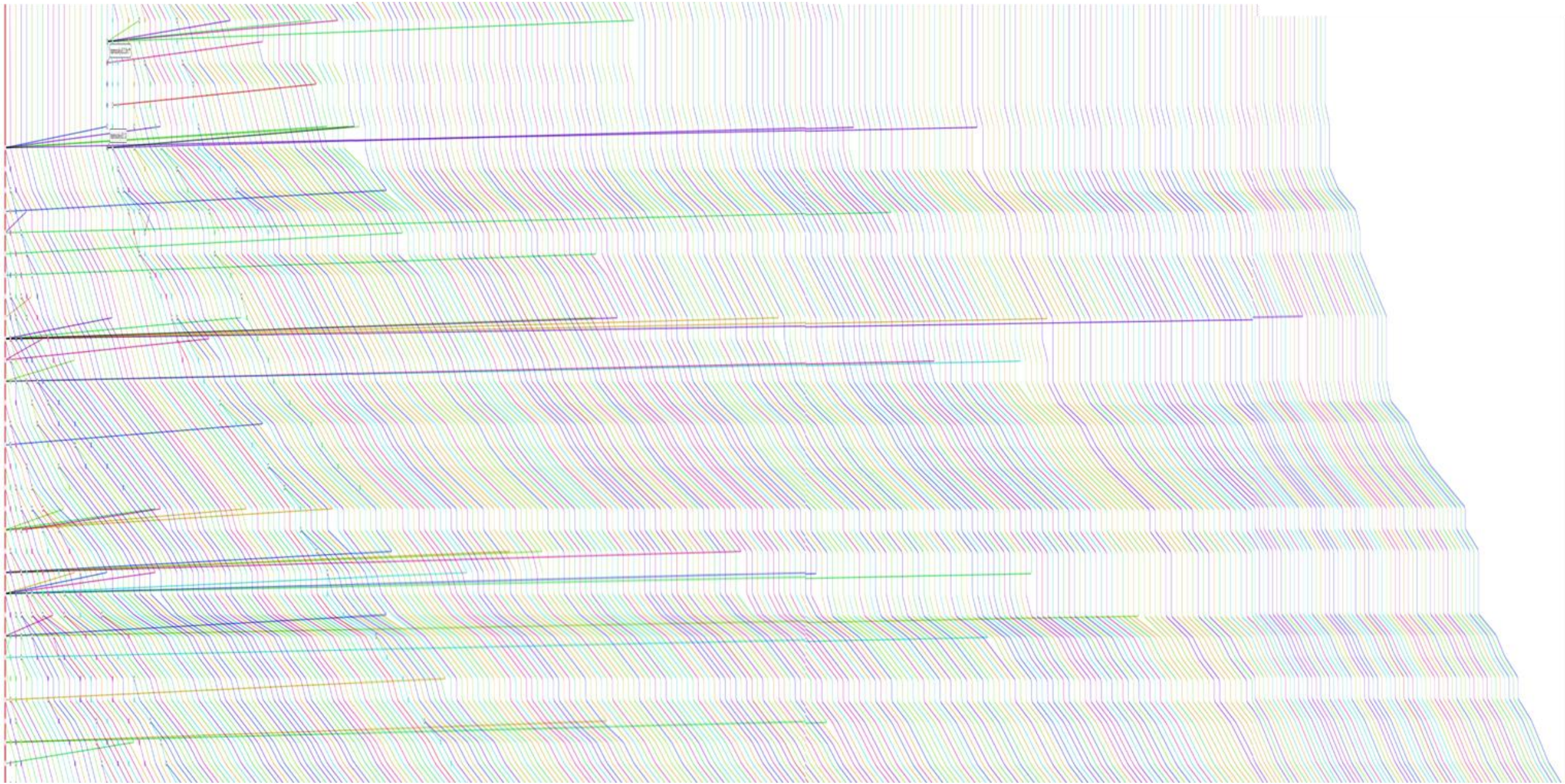
 Failure Trace



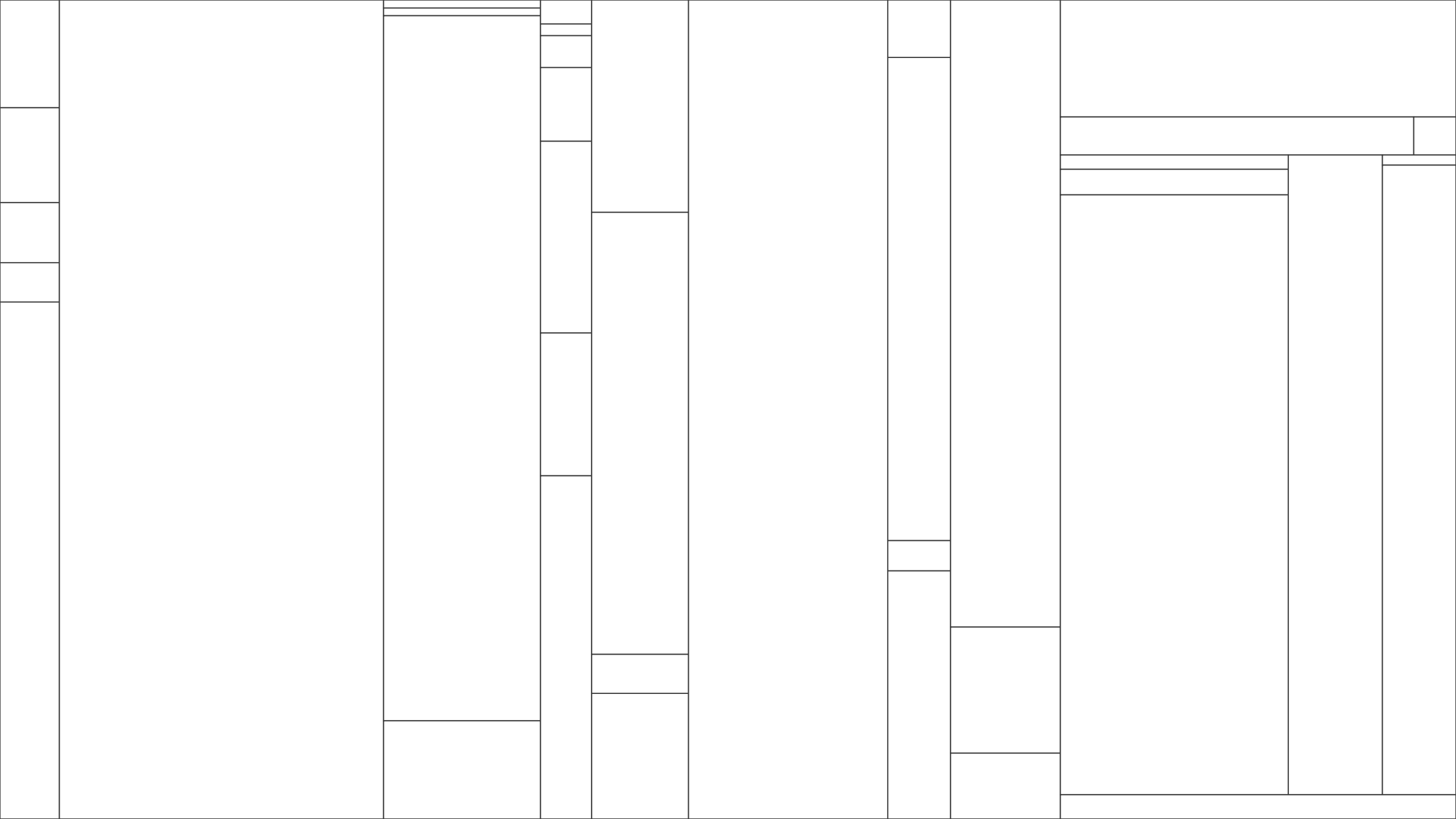


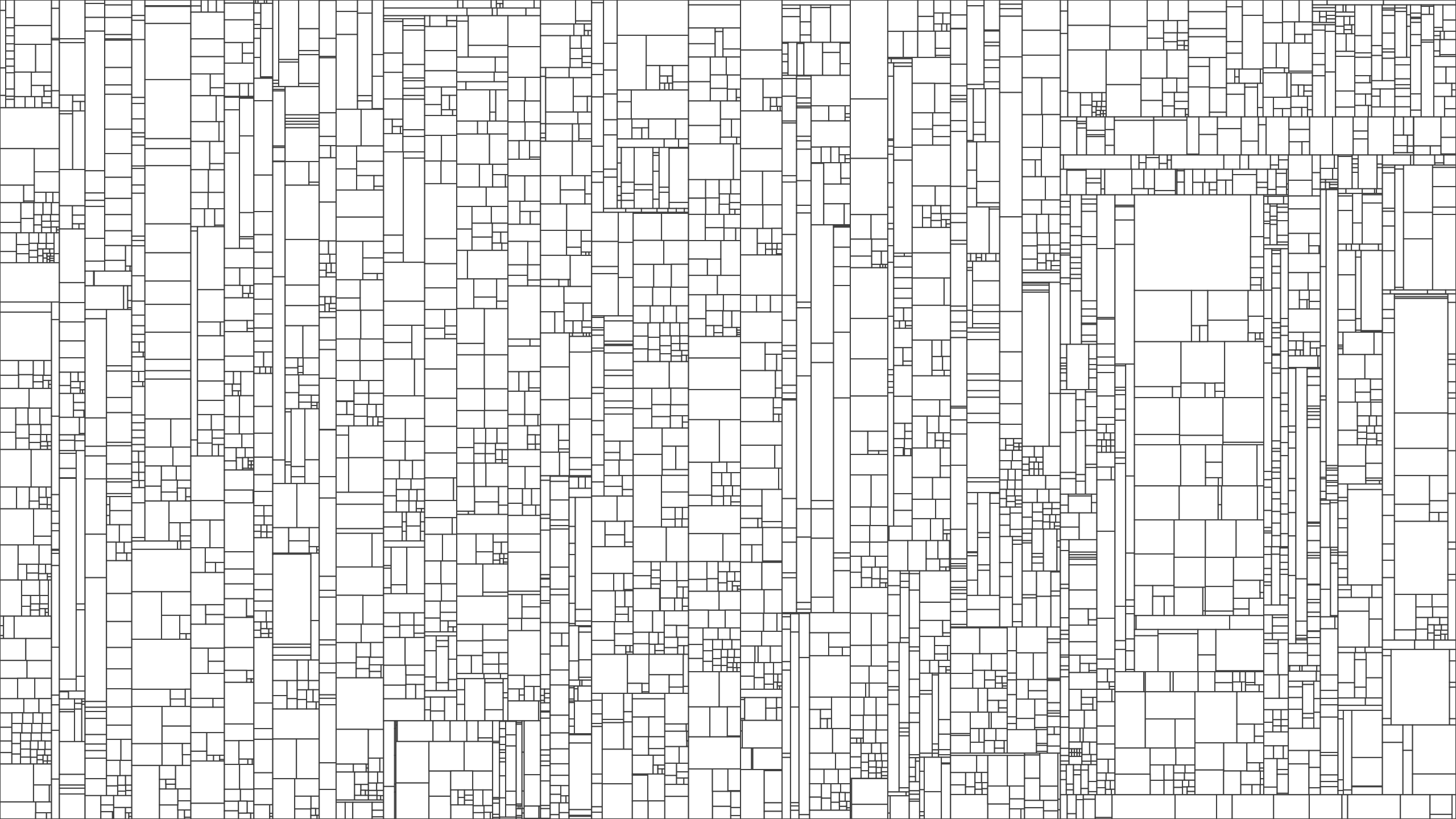


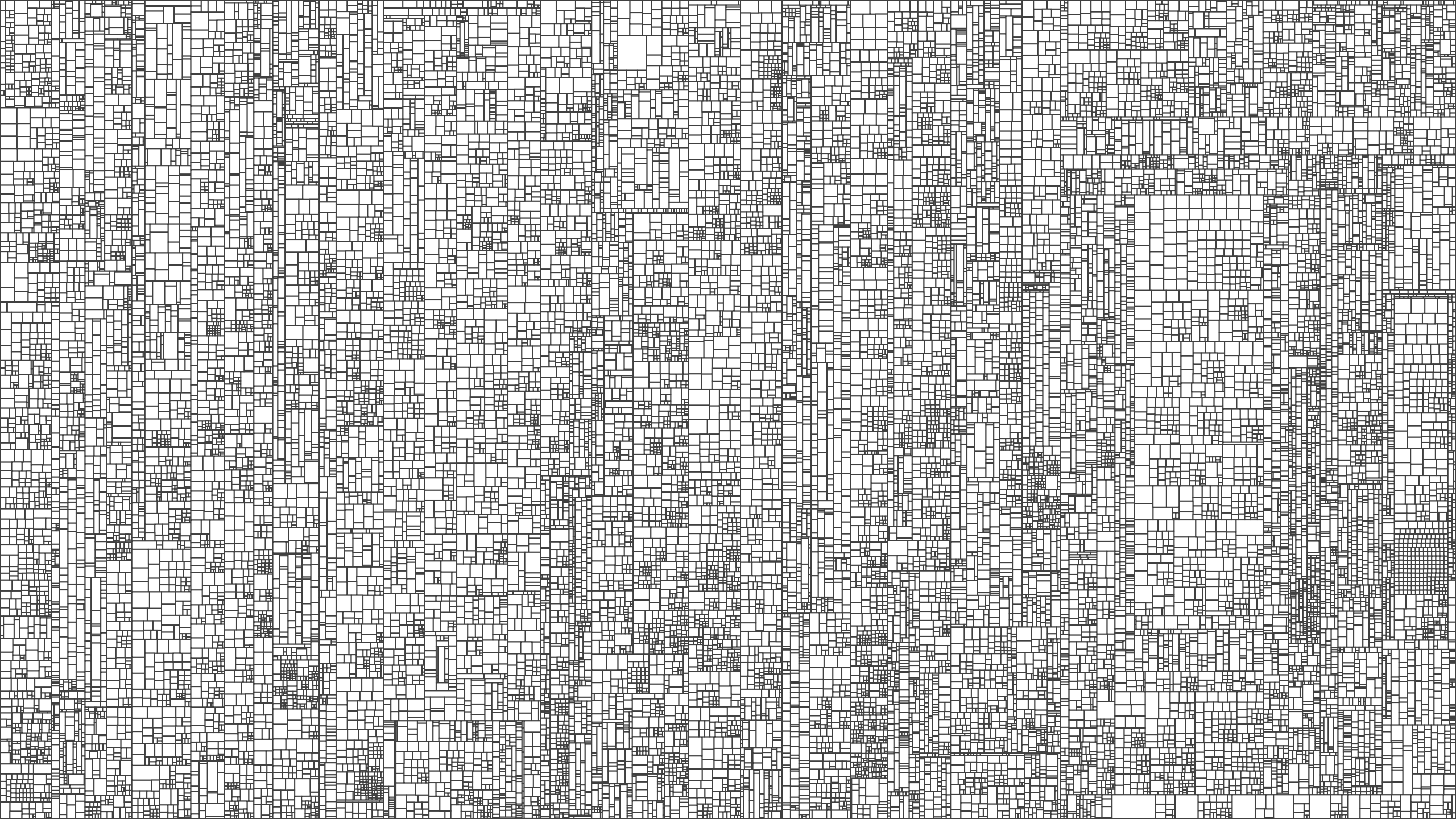


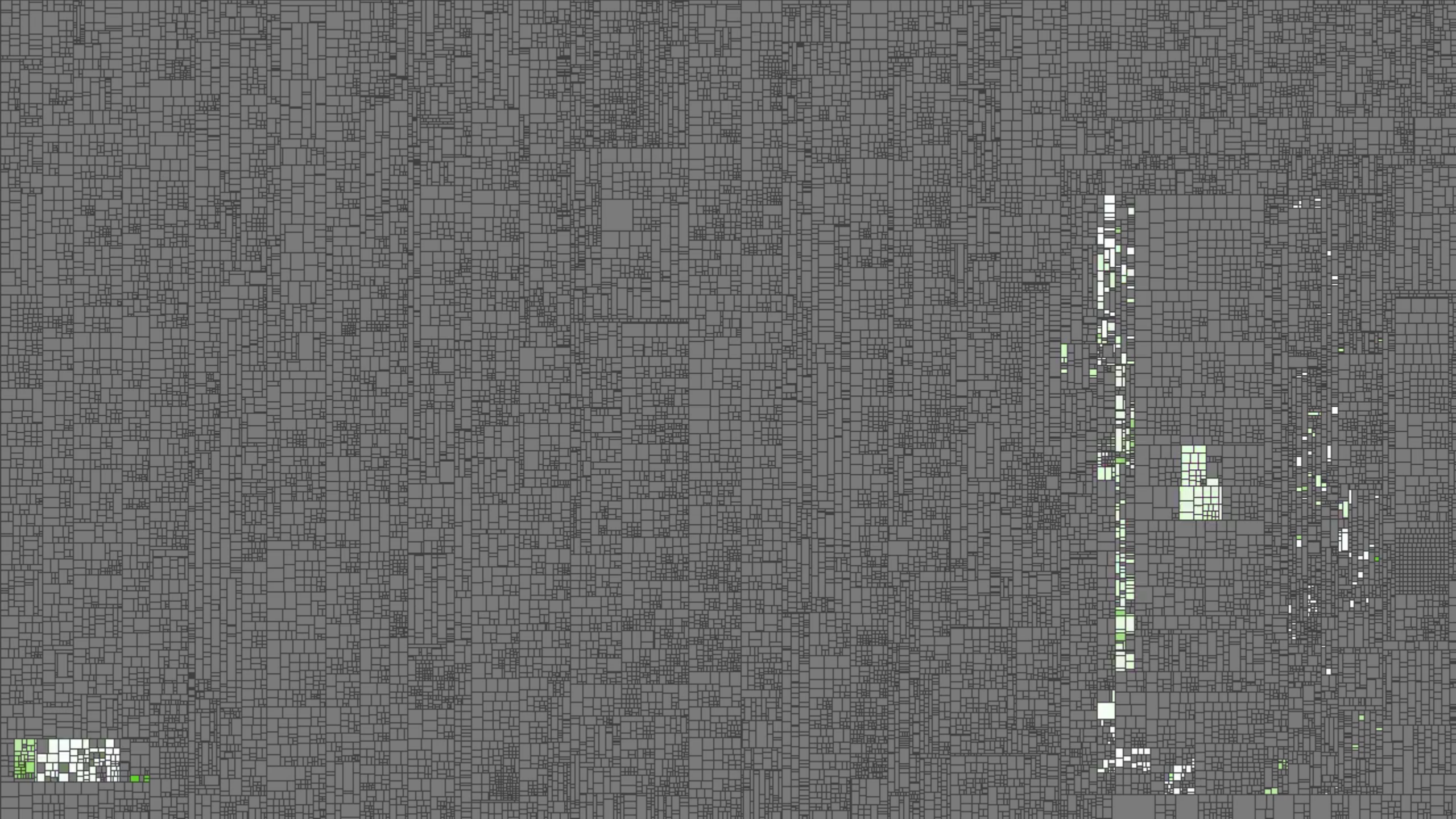














Data Flow Analysis can not handle java lambdas (logs many errors currently)

- Edit
- Comment
- Assign
- More ▾
- Back to New



Details

| | | | |
|-------------------|---|----------------|--|
| Type: | ■ Bug | Status: | DONE (View Workflow) |
| Priority: | ↑ High | Resolution: | Green |
| Component/s: | Backend | Fix Version/s: | Teamscale 4.3 |
| Labels: | dataflow java | | |
| Affected Version: | master | | |
| Merge Request: | https://git.cqse.eu/cqse/teamscale/merge_requests/2734 | | |
| PDash Task: | #4886 | | |

People

| | |
|-------------|--|
| Assignee: | Andreas Sewe Assign to me |
| Reporter: | Rainer Niedermayr |
| QA-Contact: | Alexander von Rhein |
| Votes: | 2 Vote for this issue |
| Watchers: | 3 Start watching this issue |

Description

Analysis profile: Java
 Repository: JabRef, start revision 9efd23b71871747fe5e18e915e637891d7e55b6d

```

ERROR : An error occurred while trying to construct a CFG for function 'null' in element src/main/java/net/sf/jabref/exporter/layout/format/DOI
[STATEMENT: lambda expression: null (lines 33-33)
]
Tokens: doi . getURL ( )
Occurred in src/main/java/net/sf/jabref/exporter/layout/format/DOICheck.java:32-32 (com.teamscale.index.dataflow.DataFlowFindingsSynchronizer.c
org.conqat.engine.core.core.ConQATException: Could not find any rule that applies to the following entity list:
[STATEMENT: lambda expression: null (lines 33-33)
]
Tokens: doi . getURL ( )
Occurred in src/main/java/net/sf/jabref/exporter/layout/format/DOICheck.java:32-32
    at org.conqat.engine.sourcecode.dataflow.heuristics.ControlFlowCreator.findApplicableRule(ControlFlowCreator.java:164)
    at org.conqat.engine.sourcecode.dataflow.heuristics.ControlFlowCreator.transformOneStep(ControlFlowCreator.java:139)
    at org.conqat.engine.sourcecode.dataflow.heuristics.ControlFlowCreator.transform(ControlFlowCreator.java:92)

[...]

ERROR : An error occurred while trying to construct a CFG for function 'null' in element src/main/java/net/sf/jabref/exporter/layout/format/DOI
[STATEMENT: lambda expression: null (lines 31-31)
]
Tokens: doi . getDOI ( )
Occurred in src/main/java/net/sf/jabref/exporter/layout/format/DOIStrip.java:30-30 (com.teamscale.index.dataflow.DataFlowFindingsSynchronizer.c
org.conqat.engine.core.core.ConQATException: Could not find any rule that applies to the following entity list:

```

Dates

| | |
|-----------|--------------------|
| Created: | 24/Nov/16 8:35 AM |
| Updated: | 4 days ago |
| Resolved: | 08/May/18 12:42 PM |

Time Tracking

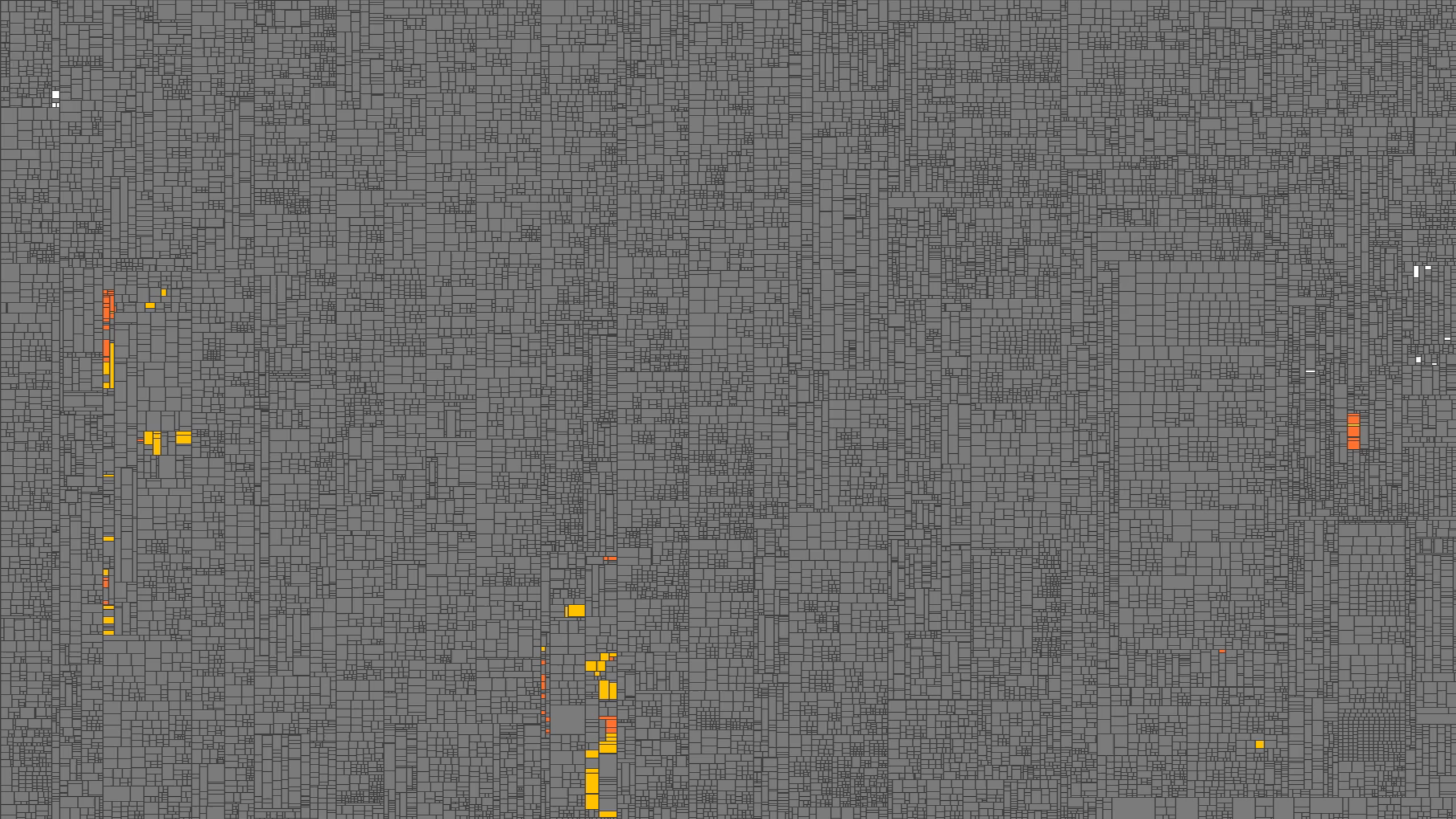
| | |
|------------|--|
| Estimated: | <div style="width: 100%; height: 10px; background-color: #ccc;"></div> Not Specified |
| Remaining: | <div style="width: 100%; height: 10px; background-color: #ccc;"></div> 0m |
| Logged: | <div style="width: 100%; height: 10px; background-color: #4CAF50;"></div> 4d 1h 57m |

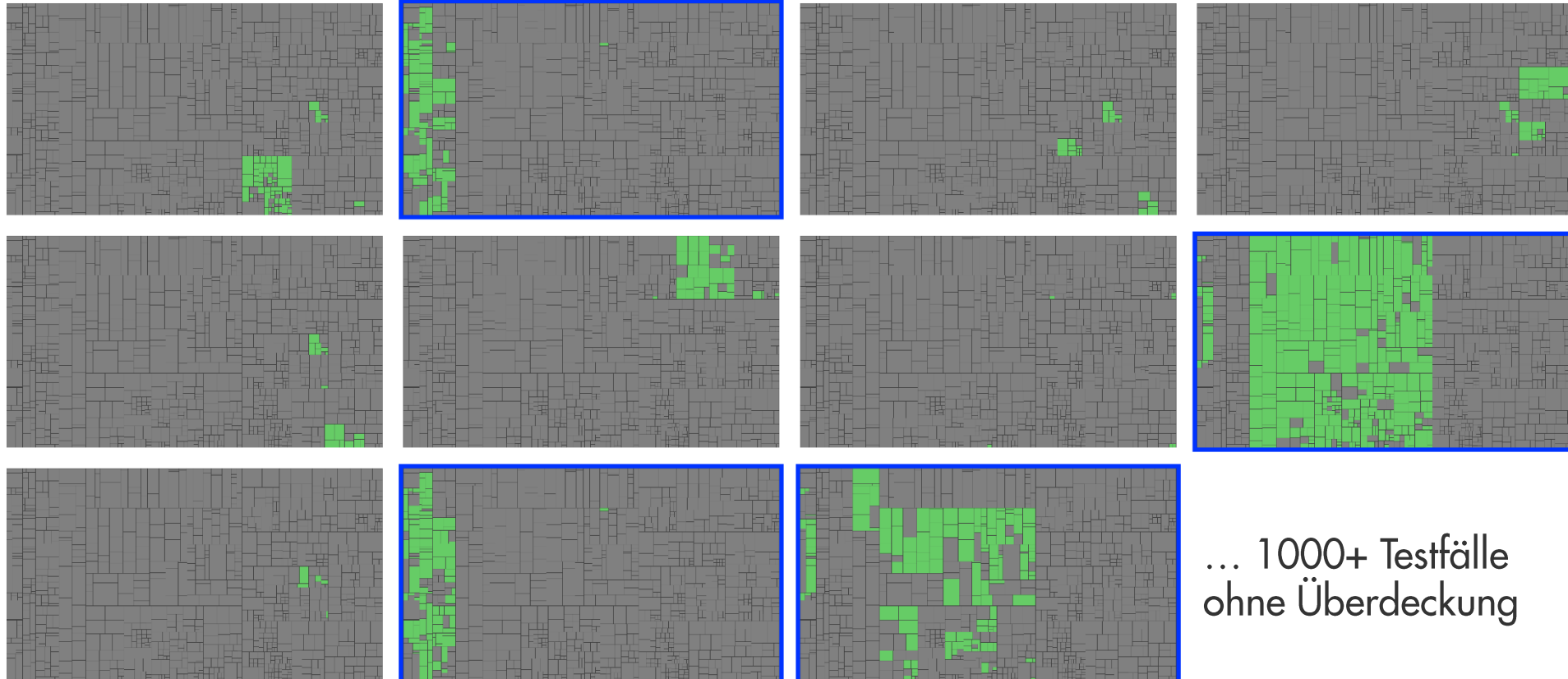
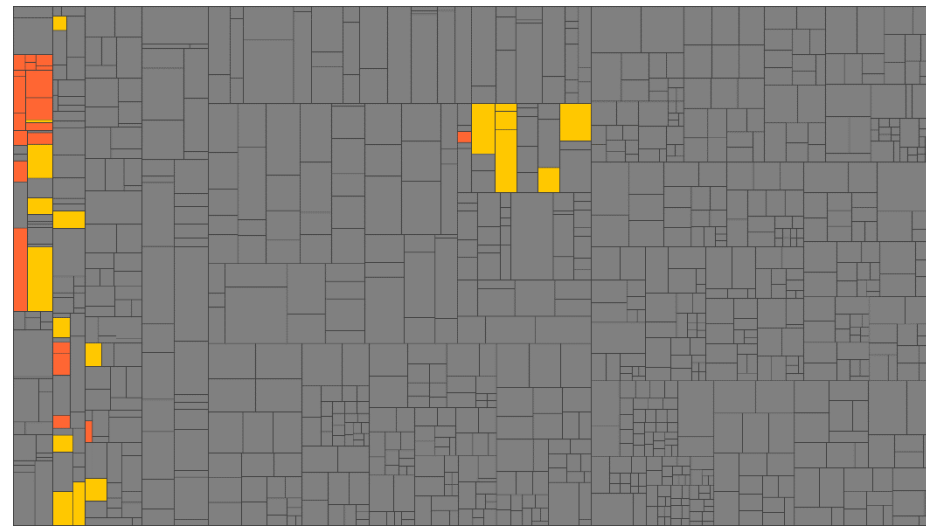
Agile

[View on Board](#)

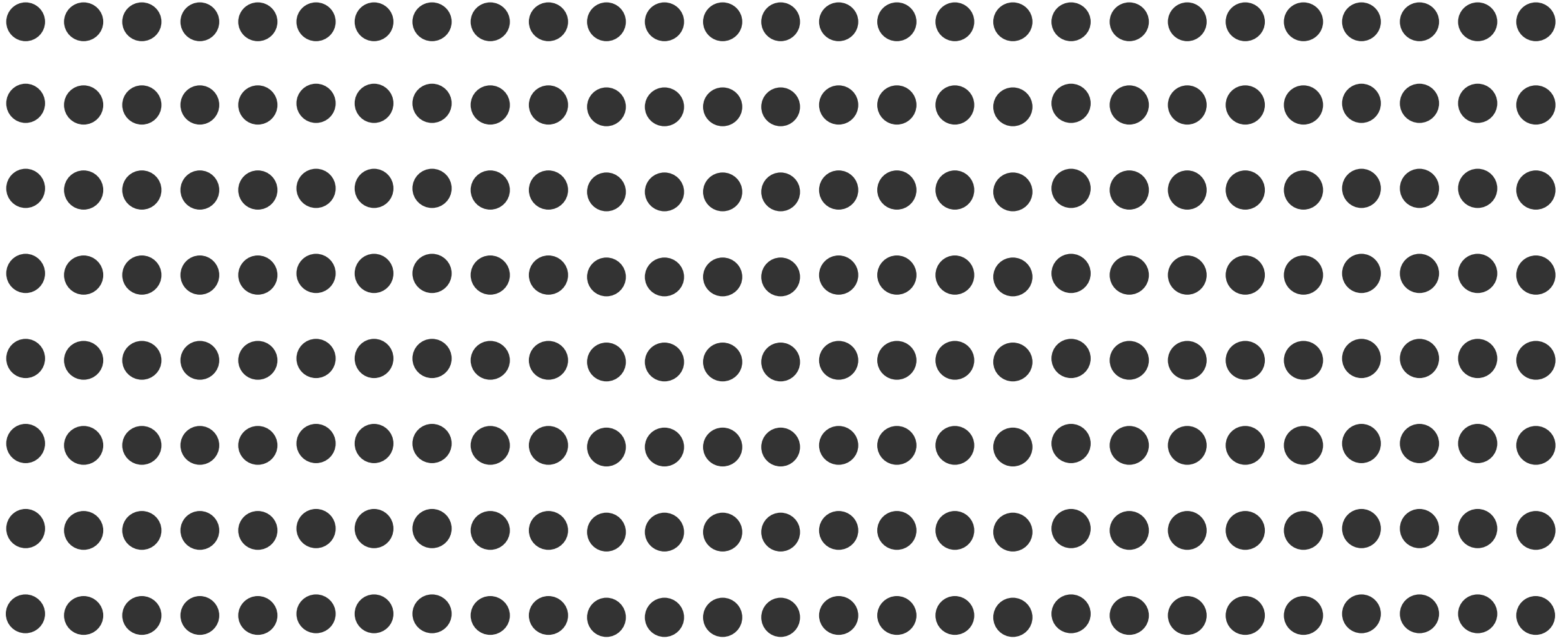
Gitlab CI

Projects ▾
More ▾
⋮

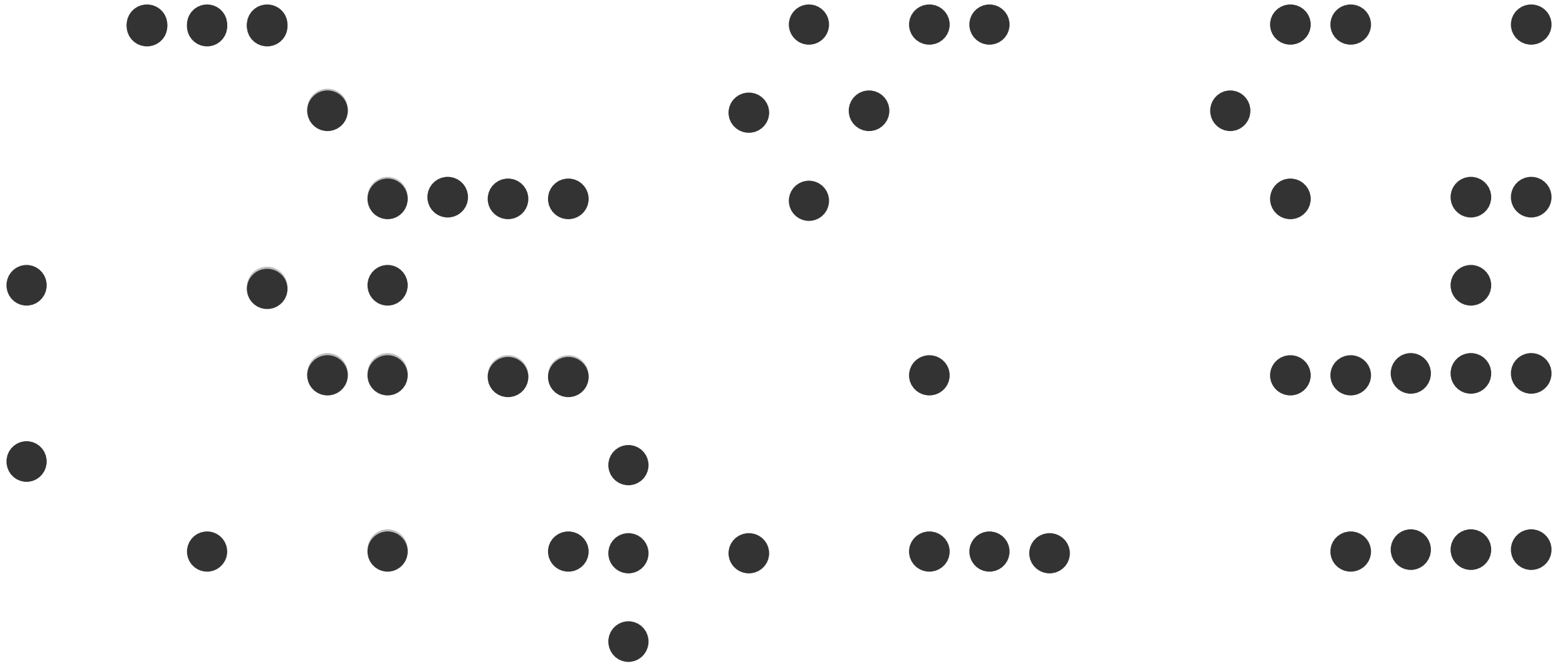




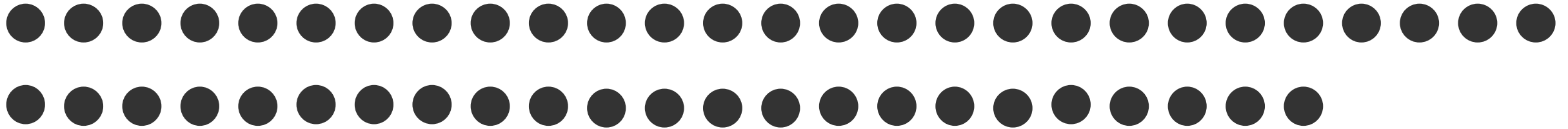
... 1000+ Testfälle
ohne Überdeckung



Schritt 1: Selektion betroffener Testfälle



Schritt 1: Selektion betroffener Testfälle

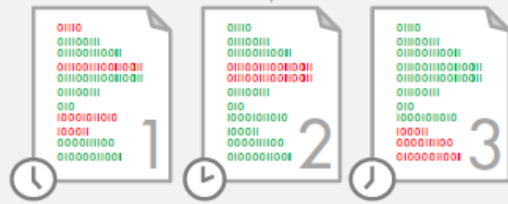




Alle Tests



Testumgebung



Testfallspezifische
Coverage und Laufzeiten



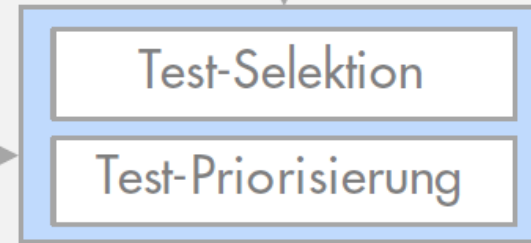
1



Versionskontrollsystem



Änderungen



Änderungsrelevante,
geordnete Teilmenge
der Tests



2

Grenzen von Test-Impact-Analyse

- Manche Änderungen betreffen alle Tests
 - Änderungen von Konfigurationsinformation
 - Änderungen an Testdaten
- Wenn sich die Tests selbst ändern, müssen sie erneut ausgeführt werden
- Es gibt keine Garantie, dass die selektierten Tests alle Fehler finden

⇒ In regelmäßigen Abständen alle Tests ausführen

⇒ Hält testfallspezifische Coverage-Daten aktuell



EINSPARUNG DURCH AUSFÜHRUNG DER IMPACTED TESTS

| Studienobjekt | Laufzeit (ms) | | Ersparnis |
|----------------------------|---------------|----------------|-----------|
| | Alle Tests | Impacted Tests | |
| Apache Commons Collections | 25.277 | | |
| Apache Commons Lang | 24.987 | 3.111 | 87,55% |
| Apache Commons Math | 160.391 | 114.042 | 28,90% |
| Histone Template Engine 2 | 34.603 | 32.204 | 6,93% |
| JabRef | 119.849 | 40.721 | 66,02% |
| Joda-Time | 20.782 | 1.297 | 93,76% |
| Lightweight-Stream-API | 1.523 | 480 | 68,48% |
| LittleProxy | 155.334 | 150.406 | 3,17% |
| OkHttp | 96.671 | 76.457 | 20,91% |
| RxJava | 464.018 | 170.575 | 63,24% |
| Symia Commons Math Parser | 528 | | |
| Teamscale | 1.249.088 | | |

Einsparung bei Erkennung aller fehlschlagenden Tests schwankt stark

PROZENTUALER ANTEIL ERKANNTER FEHLERHAFTER
SYSTEMVERSIONEN NACH ANTEIL TESTZEIT

| Studienobjekt | 1% | 2% | 5% | 10% |
|----------------------------|-------|-------|-------|--------|
| Apache Commons Collections | 84,25 | 96,58 | 99,83 | 100,00 |
| Apache Commons Lang | 94,23 | 96,43 | 98,49 | 99,31 |
| Apache Commons Math | 80,20 | 85,92 | 91,55 | 92,96 |
| Histone Template Engine 2 | 88,46 | 88,46 | 88,46 | 88,46 |
| JabRef | 95,71 | 95,71 | 95,71 | 95,71 |
| Joda-Time | 98,10 | 98,61 | 99,11 | 99,87 |
| Lightweight-Stream-API | 60,76 | 90,73 | 94,74 | 97,25 |
| LittleProxy | 74,29 | 77,14 | 80,00 | 80,00 |
| OkHttp | 90,70 | 90,70 | 90,70 | 96,51 |
| RxJava | 91,89 | 94,59 | 94,59 | 94,59 |
| Symia Commons Math Parser | 78,46 | 86,15 | 89,23 | 89,23 |
| Teamscale | 91,86 | 95,93 | 96,57 | 96,57 |

Einsparung bei Erkennung erster fehlschlagender Test sehr stabil!

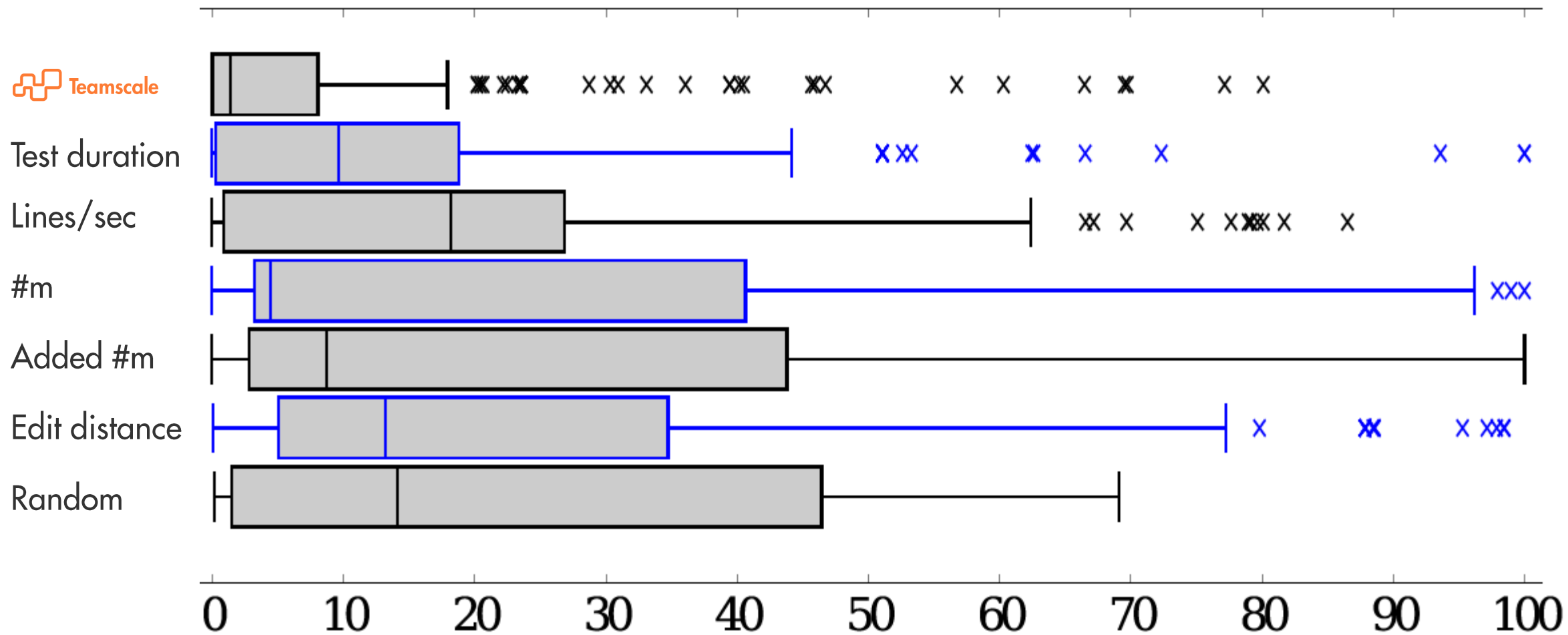


80% der fehlerhaften Builds in 1% der Zeit erkannt

90% der fehlerhaften Builds in 2% der Zeit erkannt









<https://www.technica-engineering.de/produkte/bts-body-electronic-test-system/>



Evaluierung im HIL-Test



<https://www.technic-engineering.de/produkte/bts-body-electronic-test-system/>

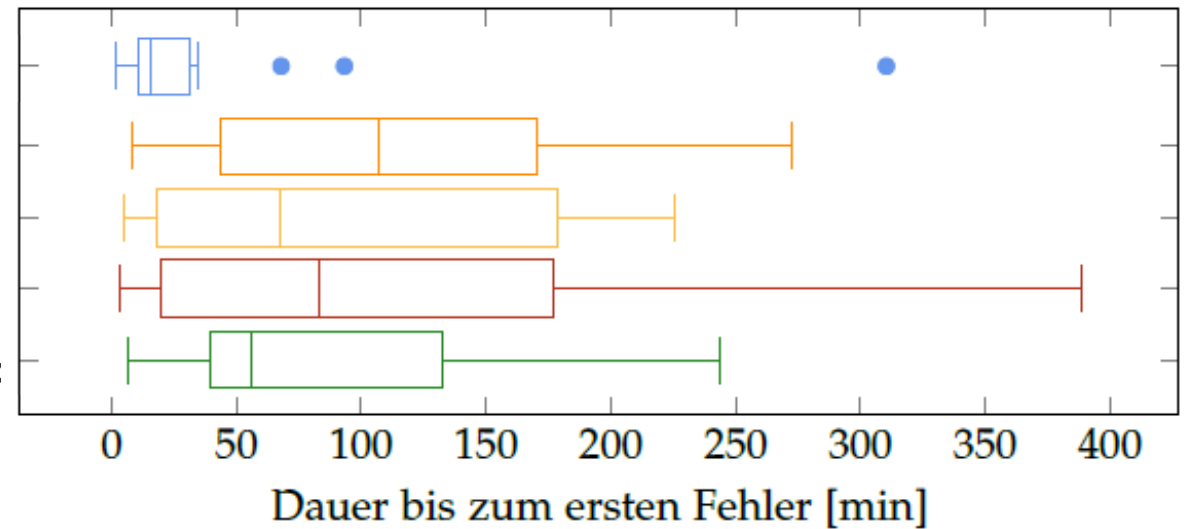
 Teamscale

#m / sec

Random

Duration

Duration desc

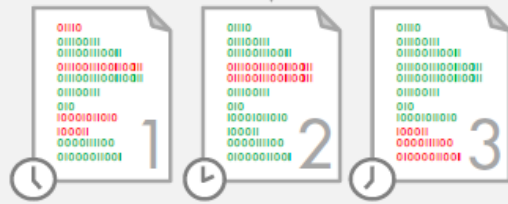




Alle Tests



Testumgebung



Testfallspezifische
Coverage und Laufzeiten



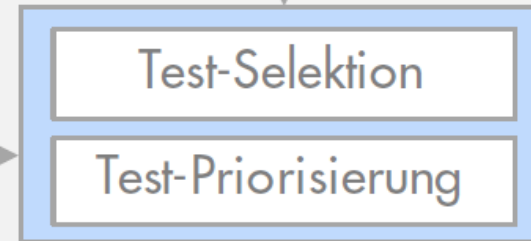
1



Versionskontrollsystem



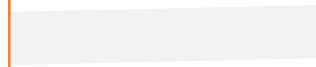
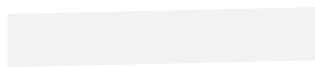
Änderungen

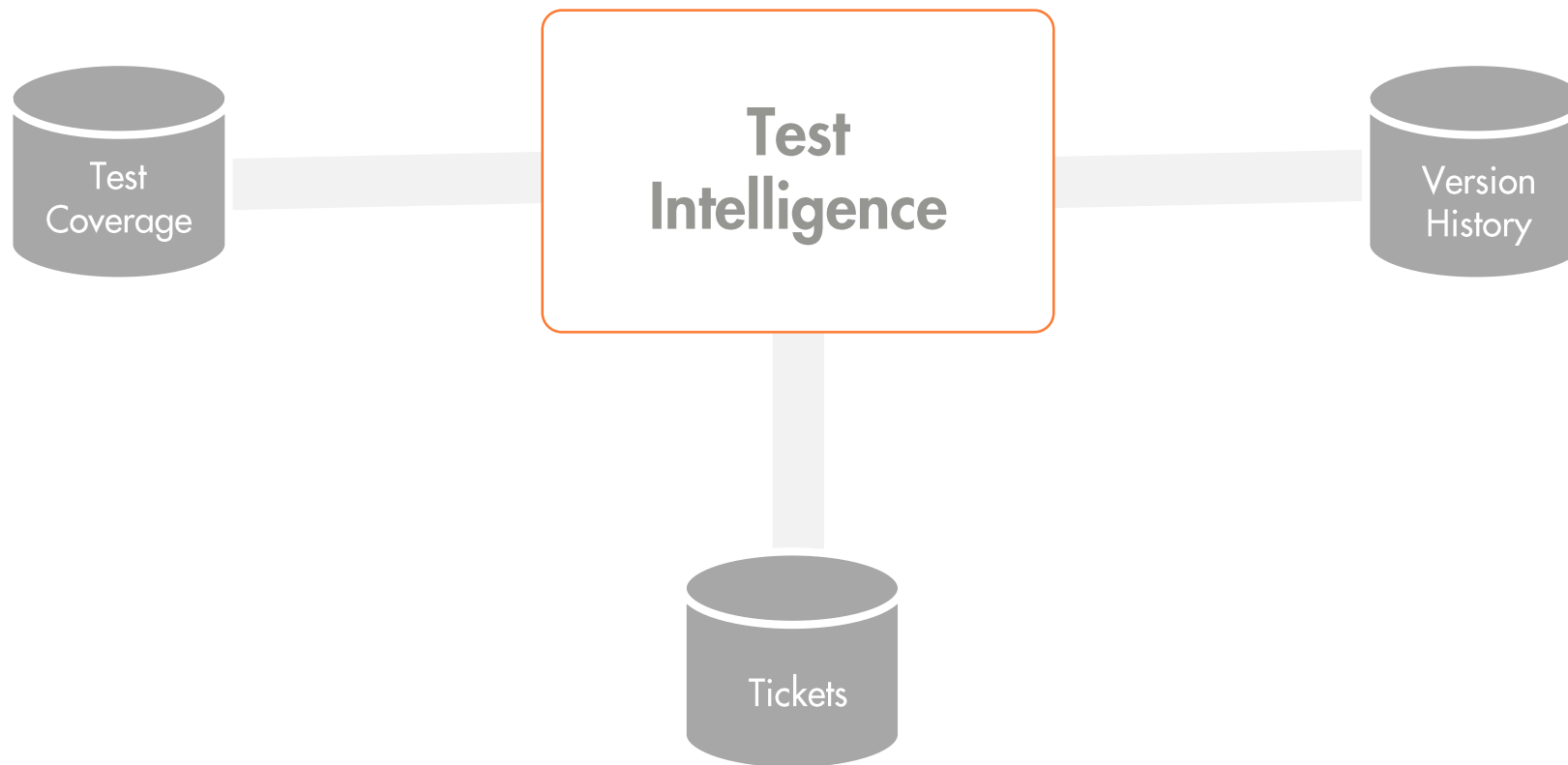


Änderungsrelevante,
geordnete Teilmenge
der Tests

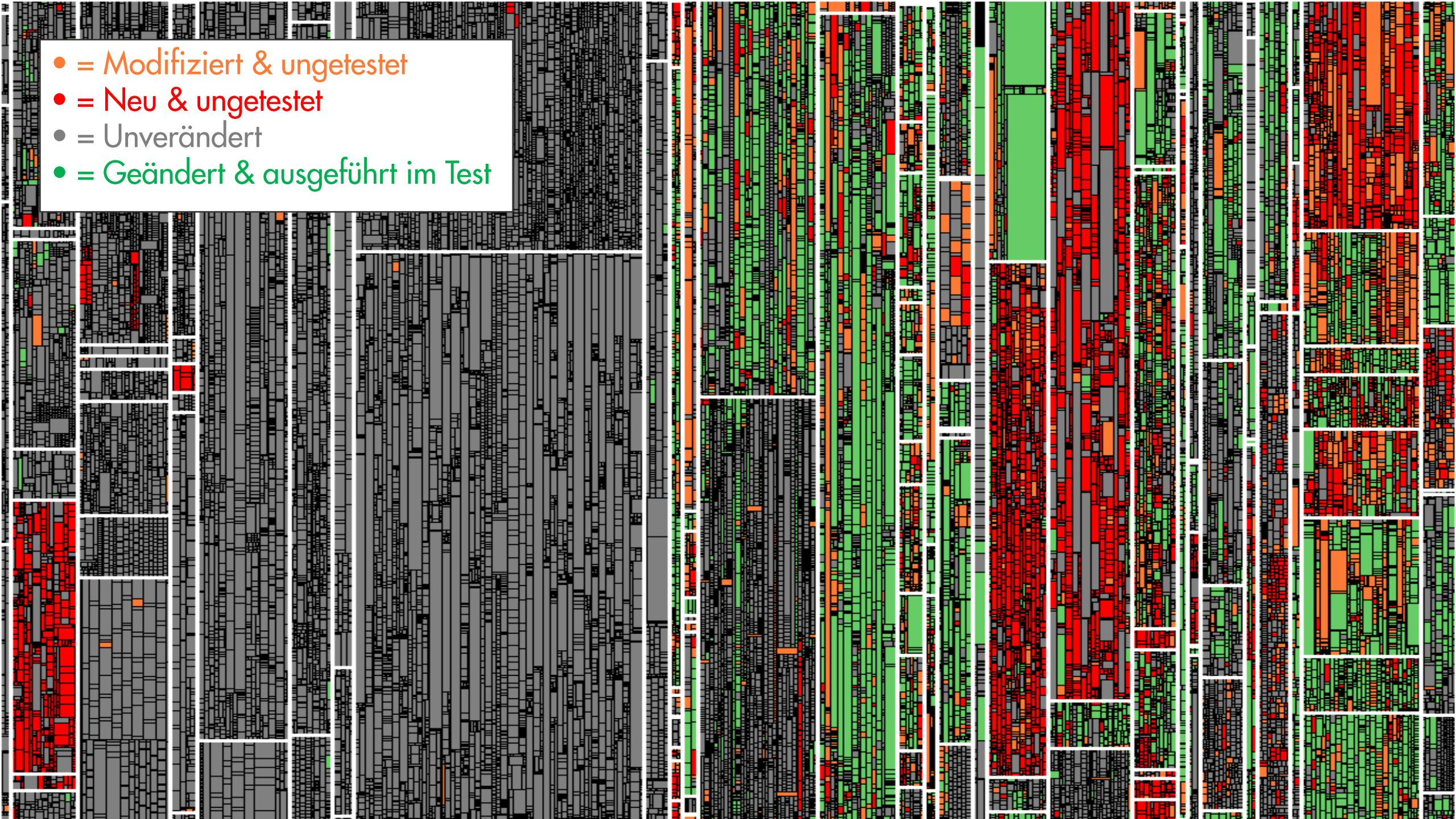











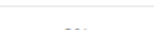

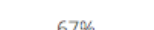
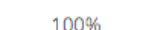
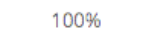

2





- = Modifiziert & ungetestet
- = Neu & ungetestet
- = Unverändert
- = Geändert & ausgeführt im Test



| Issue # | Subject | Ticket Coverage |
|--------------------------|--|---|
| TS-13689 | Undo/Redo for web-based architecture editor | 70%  |
| TS-13701 | Implement metric 'Nesting Depth' for Simulink | 35%  |
| TS-13704 | Fix long method finding in TaintAnalysisRunner | 100%  |
| TS-13714 | External findings are not registered during first upload | 100%  |
| TS-13727 | Manual test coverage upload during development | 100%  |
| TS-13731 | Tool for transferring Finding Blacklists and Tasks (w/ Findings) between instances | 100%  |
| TS-13734 | Cannot set/alter alias without reanalysis | 100%  |
| TS-13735 | Fetch parent relationship of TFS Work Items | 100%  |
| TS-13742 | Show data timestamp in project analysis warning | 100%  |
| TS-13766 | Get rid of ESLintFindingsSynchronizer and TSLintFindingsSynchronizer blocks | 76%  |
| TS-13769 | Show summary row in test perspective > issue view | 0%  |
| TS-13772 | Get rid of TestGapSynchronizer block | 100%  |
| TS-13775 | Remove Dataflow Blocks | 67%  |
| TS-13778 | Remove structuring block | 100%  |
| TS-13779 | Get rid of Bootstrap Wells | 100%  |

Done Issue TS-15286 - Allow upload of backups to S3 storage

Creator:  Andreas Sewe (on May 23 2018 16:00)

Last update: May 29 2018 15:54

Assignee:  Andreas Sewe

Parent: Issue TS-14733

| project | Type | Priority | Resolution | Fix Version | Component |
|---|----------|----------------|------------|---------------|-----------|
| TS | Feature | Normal | Green | Teamscale 4.3 | Backend |
| Affected Version | Customer | Customer Issue | Epic Name | Freshdesk URL | |
| Merge Request | | | PDash Task | QA-Contact | |
| https://git.cqse.eu/cqse/teamscale/merge_requests/2963/ | | | | kinnen | |

Description

This is part of TS-14733. Initial goal for 4.3 (as the feature freeze is soon) is to support special `{{s3}}` URI as *Path to backup.zip*.

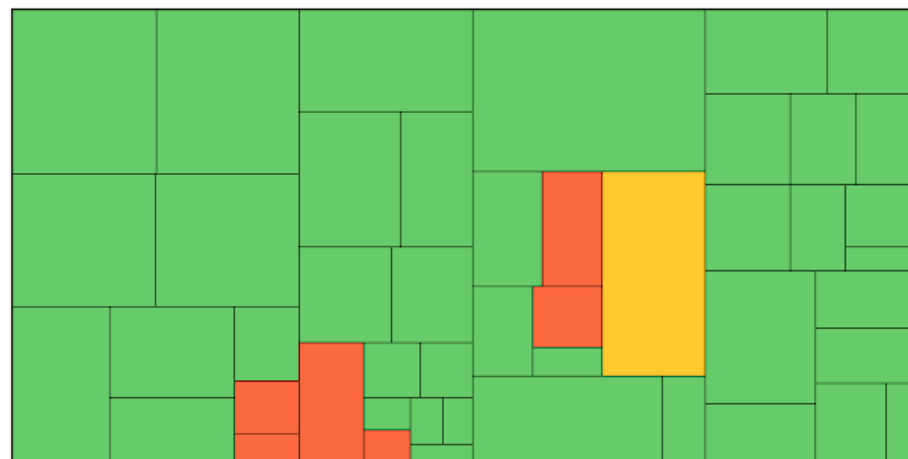
Credentials can be stored either in the URI or (if possible) under *Admin > Settings > System Accounts*.

⌵ Affected files (15)

⌴ Test Gap Treemap

May 28 2018 13:40–now | Test Gap: 14.89%

Coverage sources: **All**

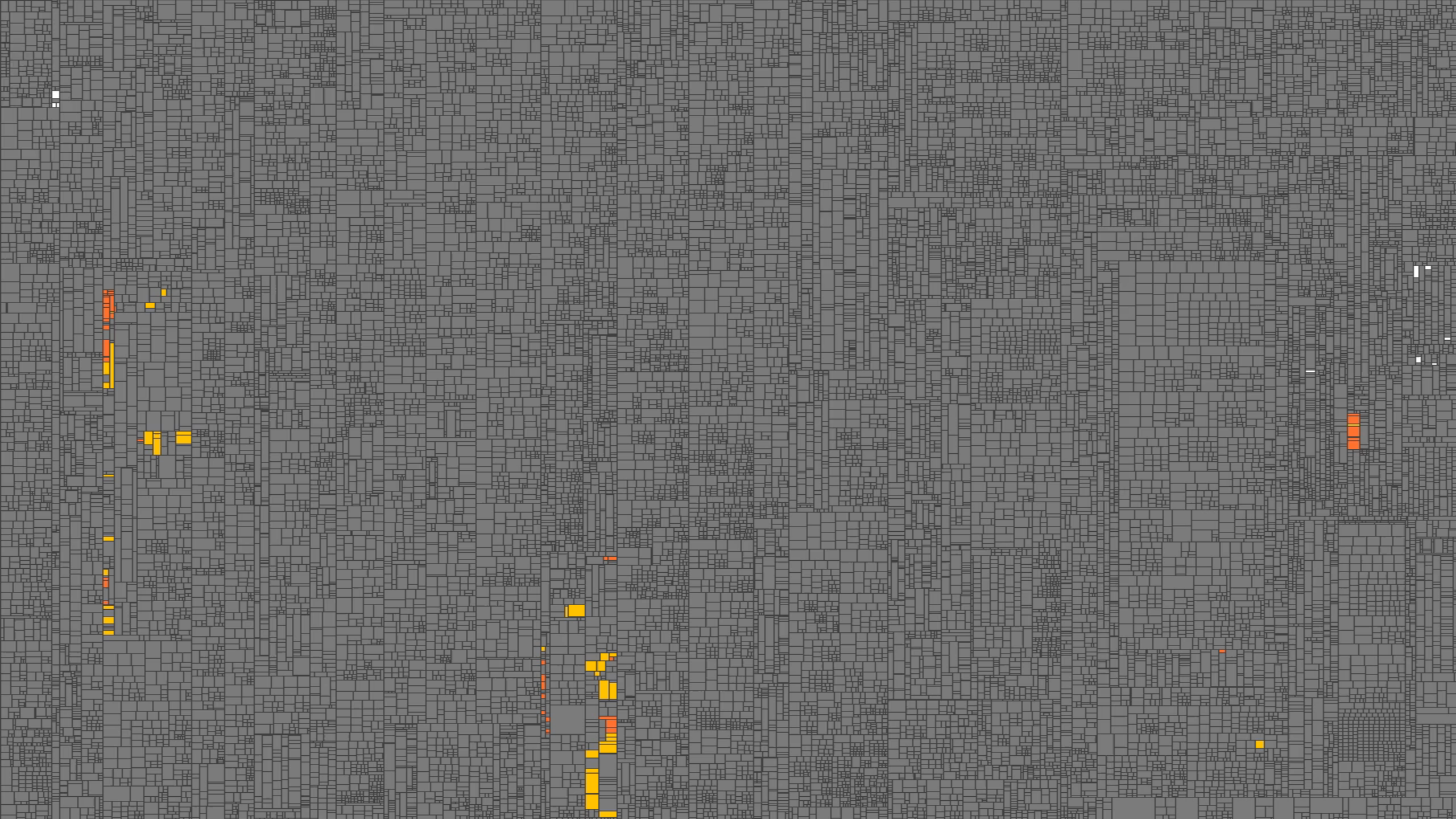


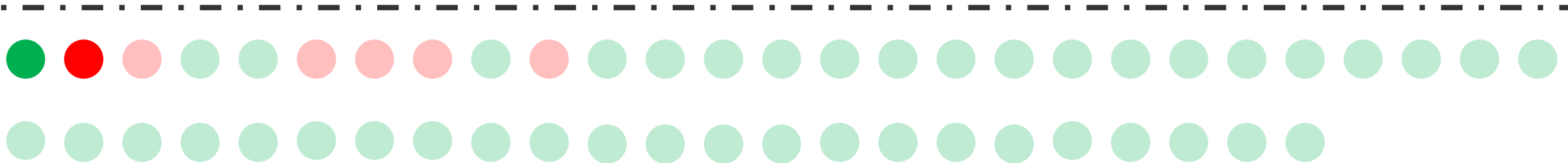
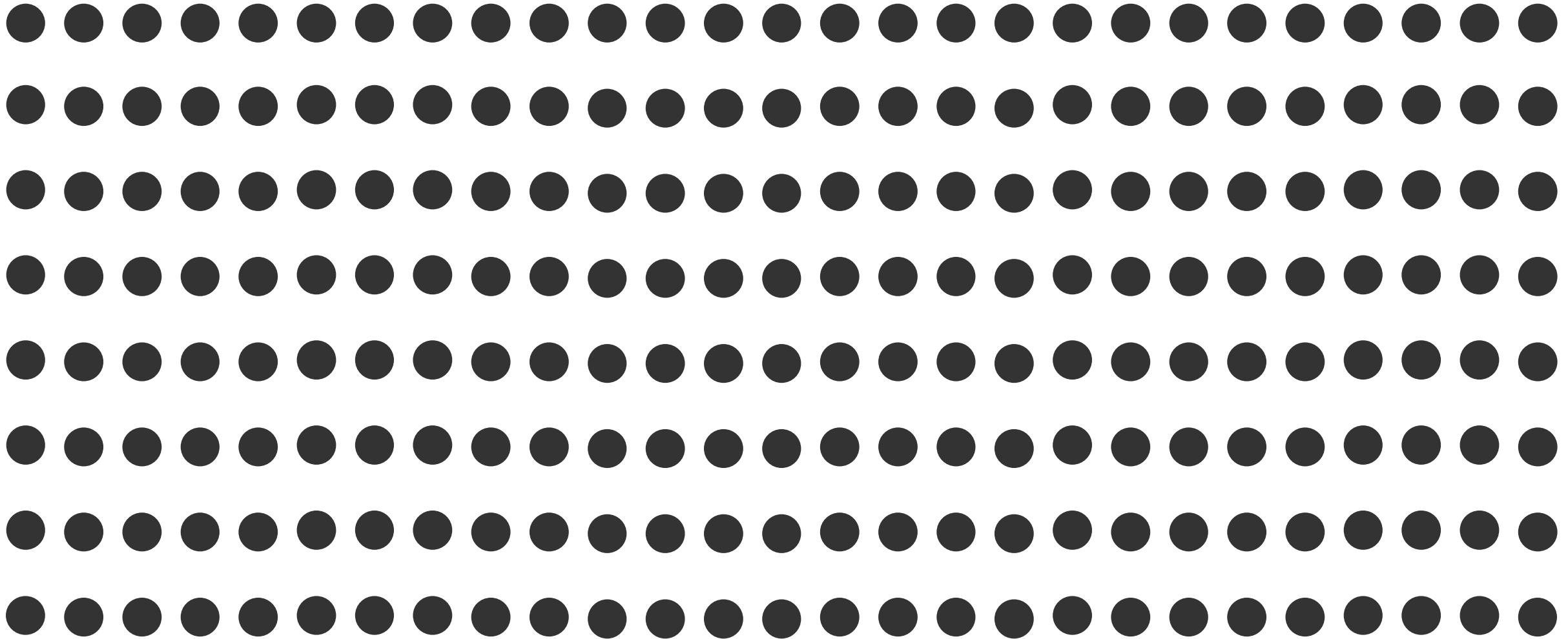
Associated repository changes (7)



Merge branch 'cr/15286_allow_backups_to_s3' into 'master'
CR#15286 Allow upl...
by Thomas Kinnen in revision 23d333c8 in branch master (Gitlab)
Merged from cr/15286_allow_backups_to_s3 0 2
Files: 7 added, 3 changed, 1 deleted
Findings: 0 4

May 29 2018 15:54







80% der fehlerhaften Builds in 1% der Zeit erkannt

90% der fehlerhaften Builds in 2% der Zeit erkannt



Kontakt – Ich freue mich auf Diskussionen 😊



Dr. Elmar Jürgens · juergens@cqse.eu · +49 179 675 3863

CQSE GmbH
Lichtenbergstraße 8
85748 Garching bei München
www.cqse.eu

