

Müssen wir wirklich schon wieder alles testen?

Trotz langlaufender Testsuiten Fehler schnell und zuverlässig aufdecken

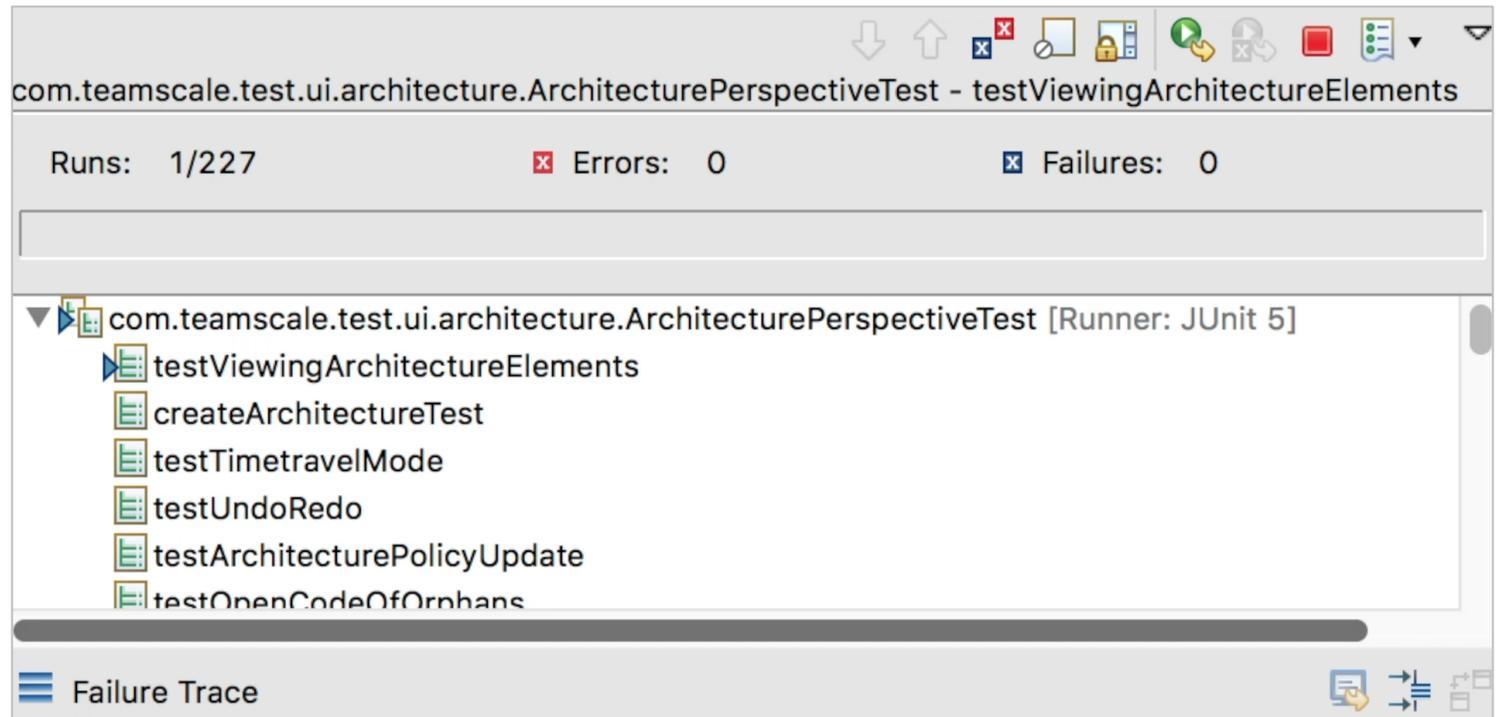
4. Juni 2019, Karlsruher Entwicklertag

Dr. Sven Amann

 Release Early & Often

 Fail Fast

 Instant Feedback



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 

Wie lange laufen Ihre Tests?



Eine Stunde?



Eine Nacht?



Eine Woche?

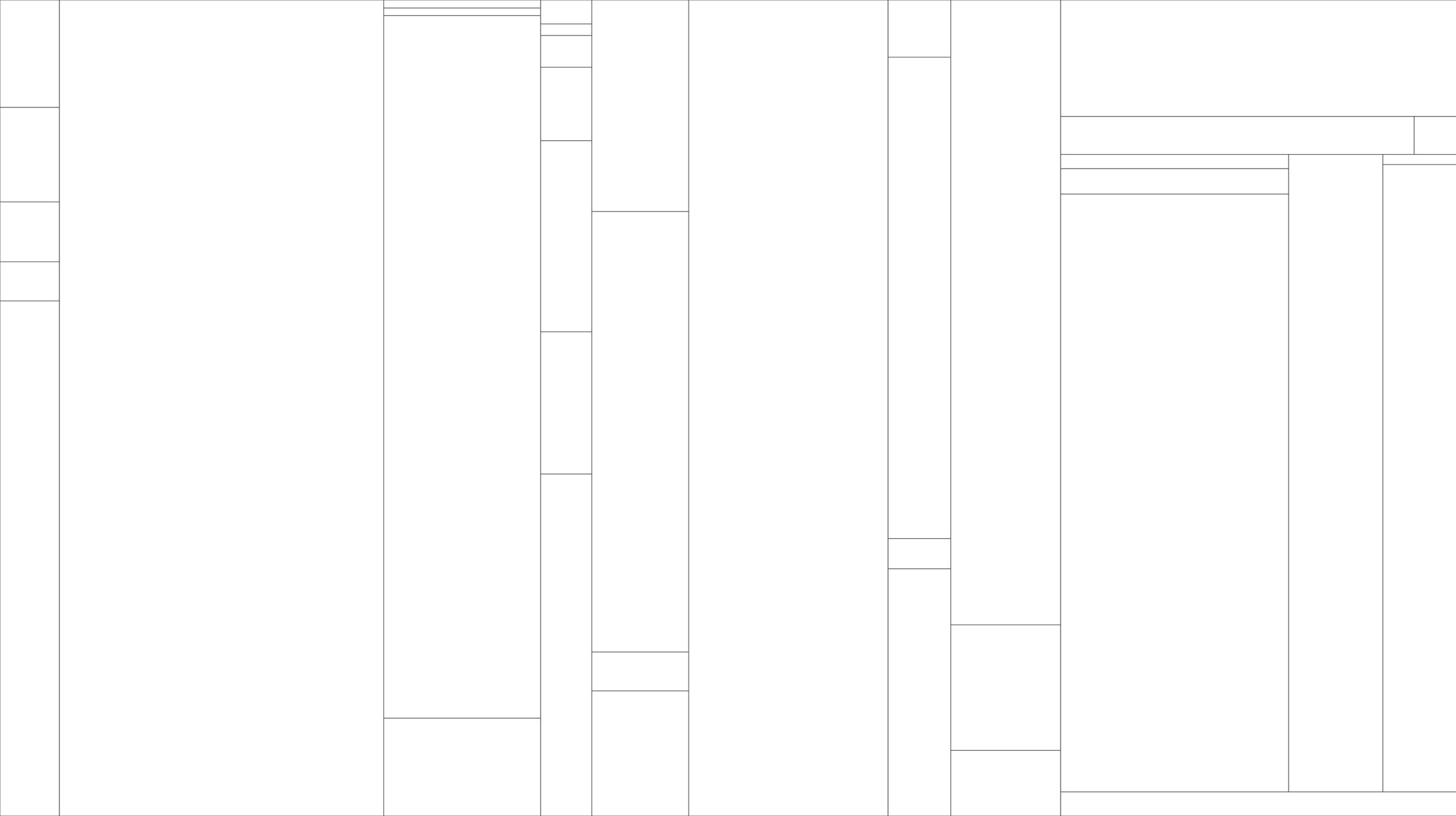


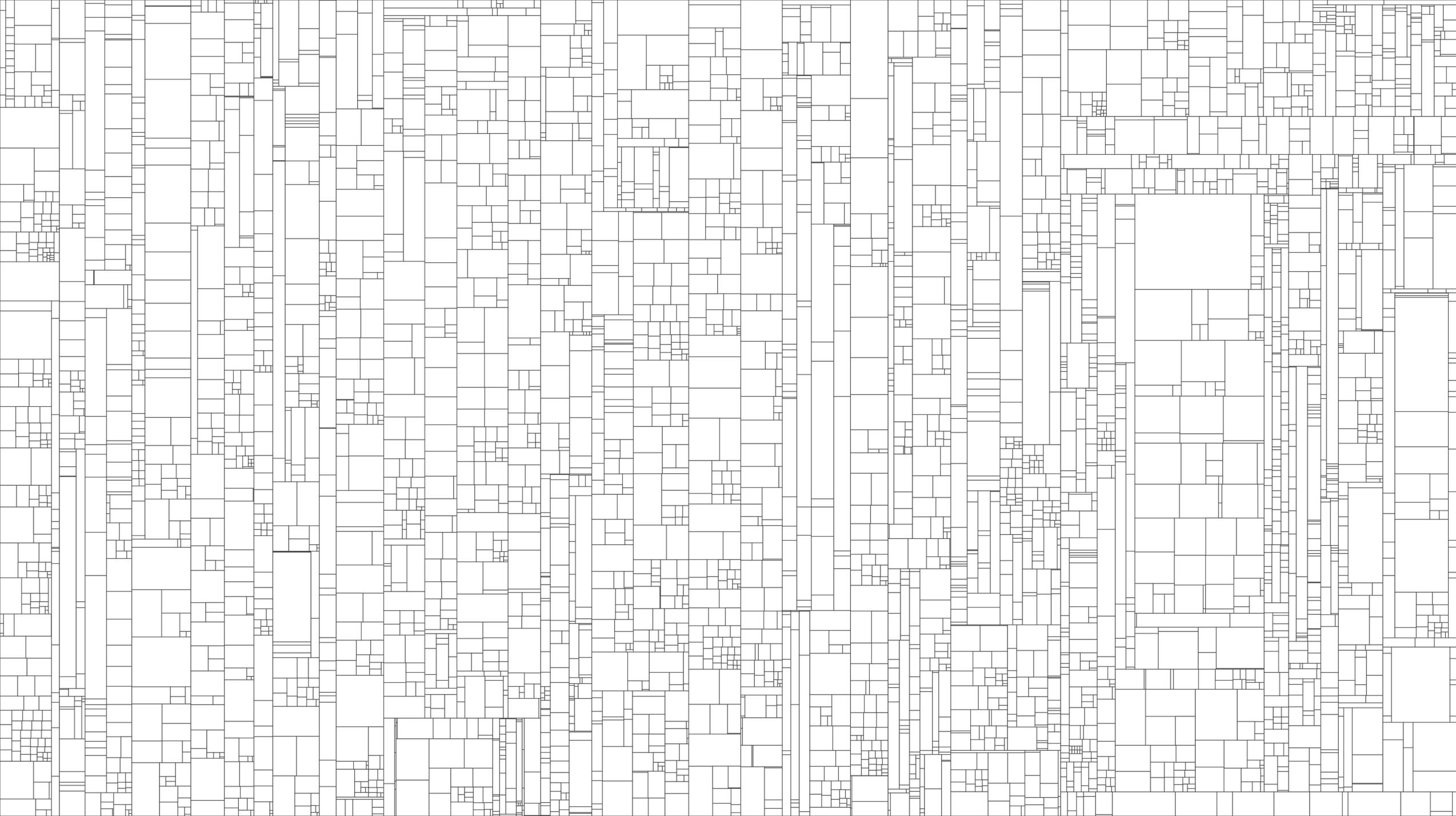
Einen Monat?

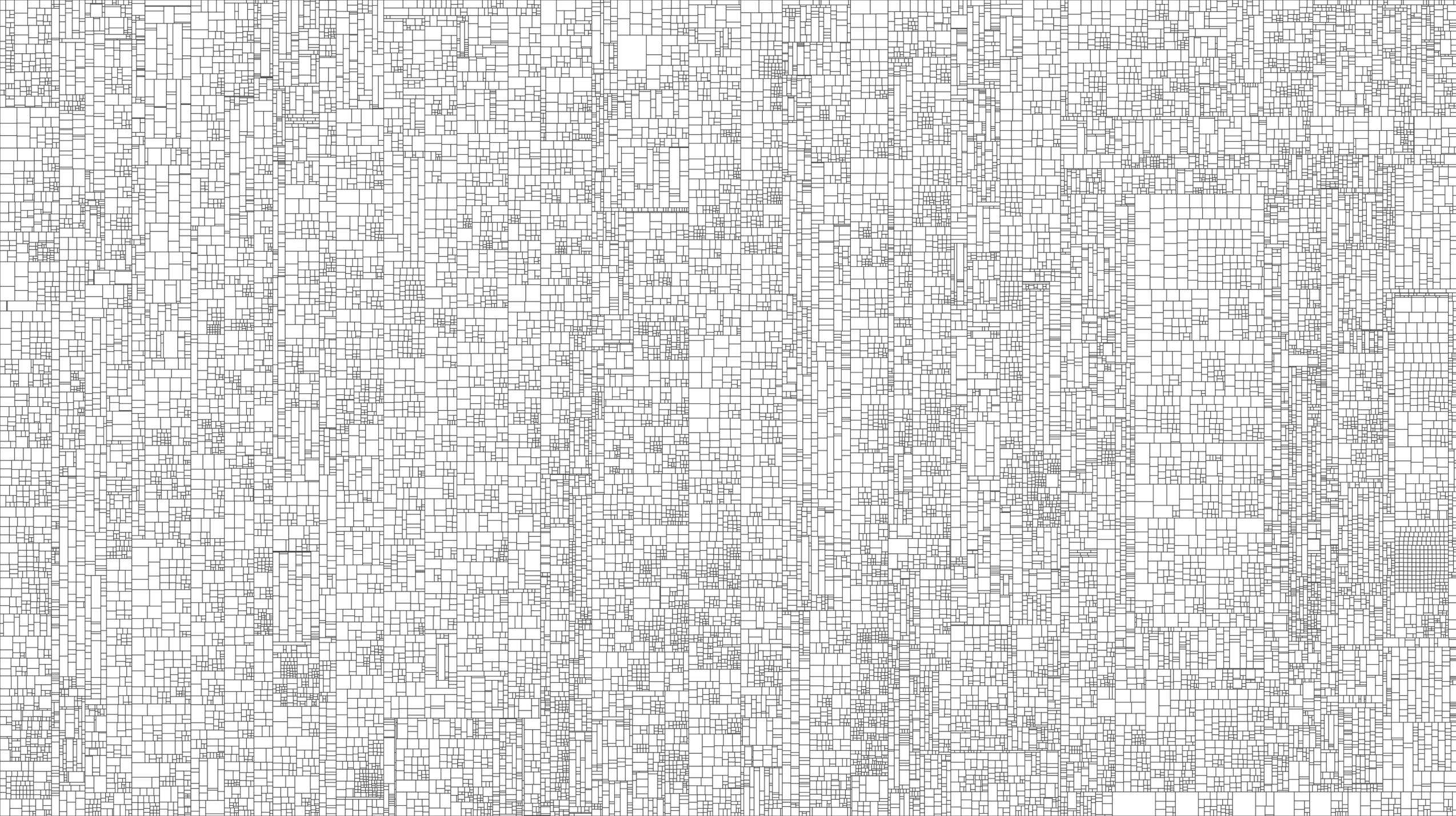


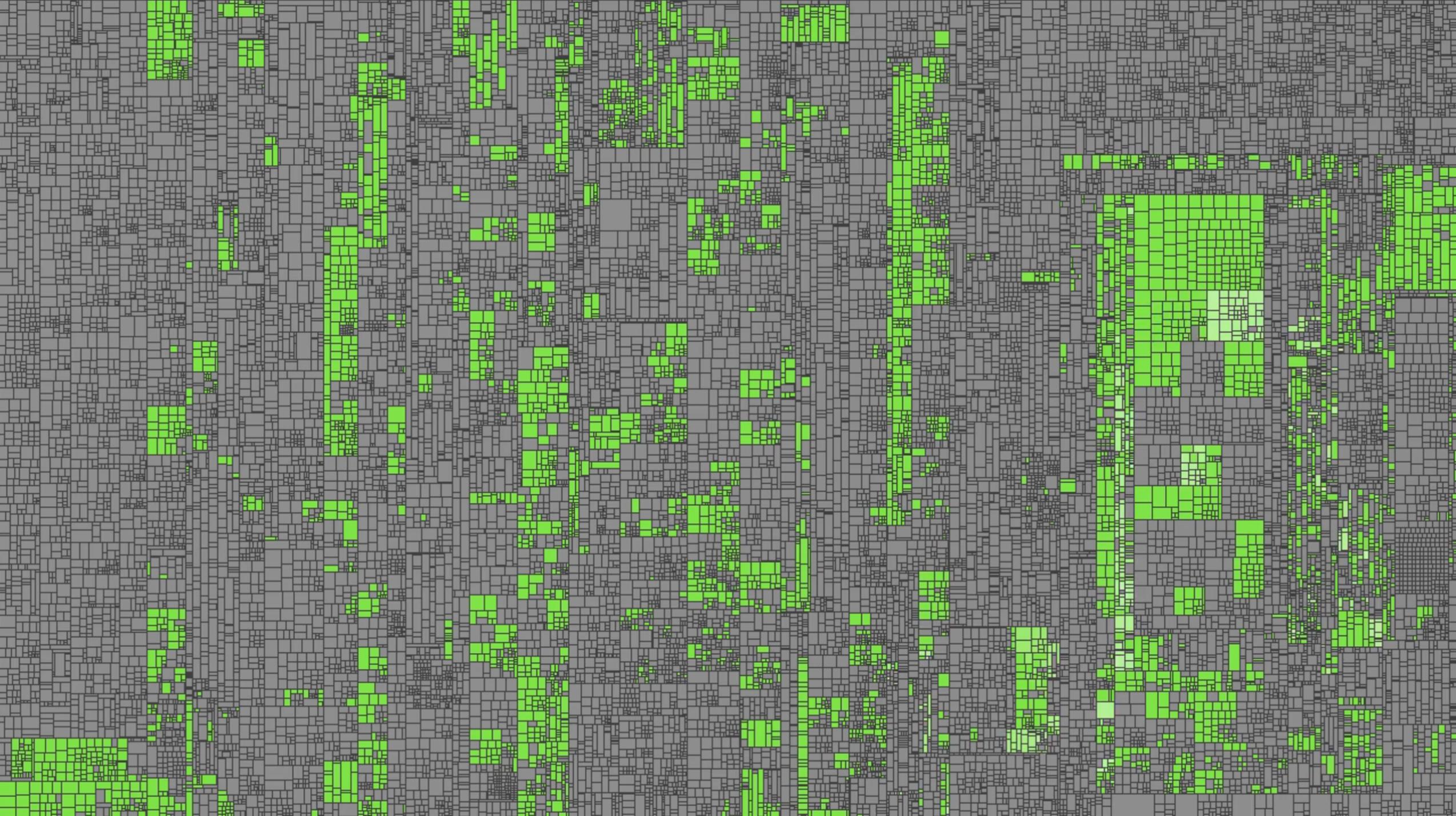
<https://www.technica-engineering.de/produkte/bits-body-electronic-test-system>

Warum laufen die Tests so lange?









Simplicity—the art of maximizing the amount of work not done—is essential.
(Agile Manifesto)



Teamscale / TS-10829

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

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)

[...]
```

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](#)

Dates

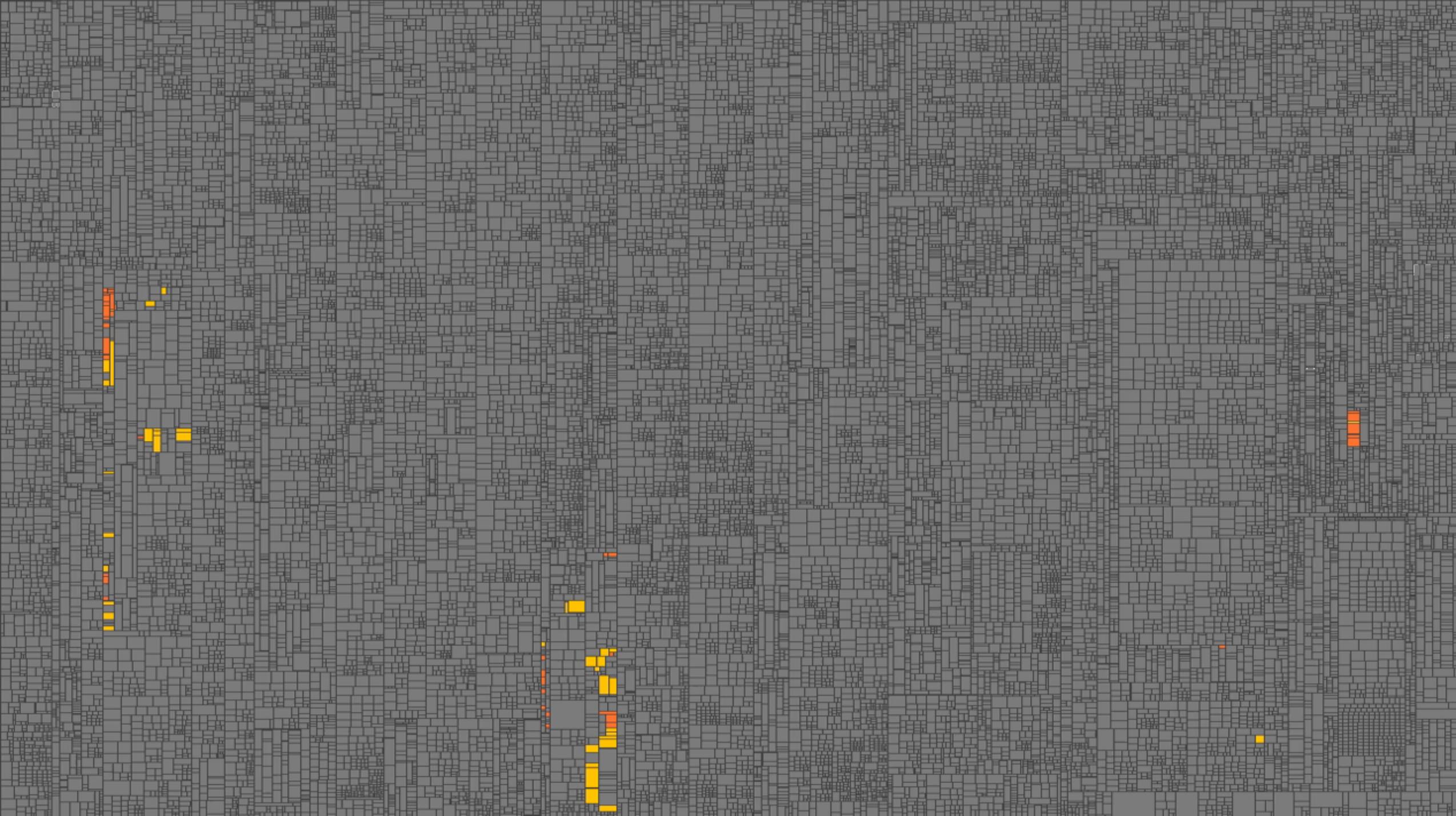
Created: 24/Nov/16 8:35 AM
Updated: 4 days ago
Resolved: 08/May/18 12:42 PM

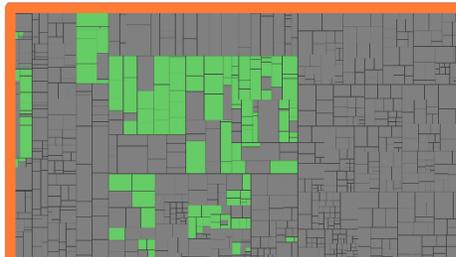
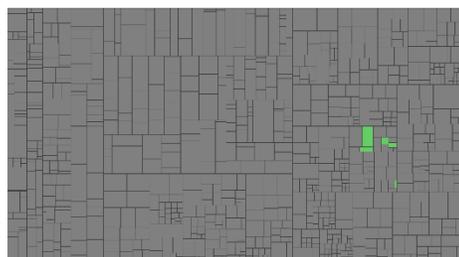
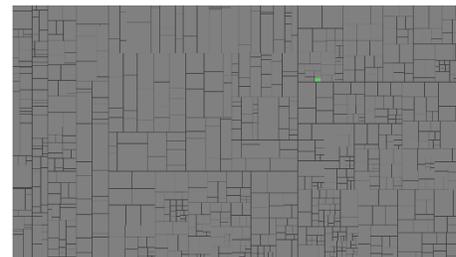
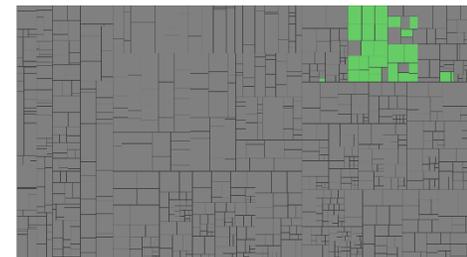
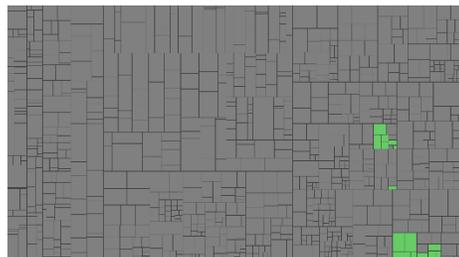
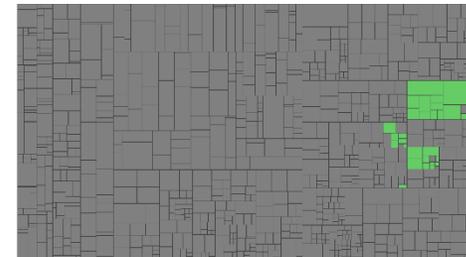
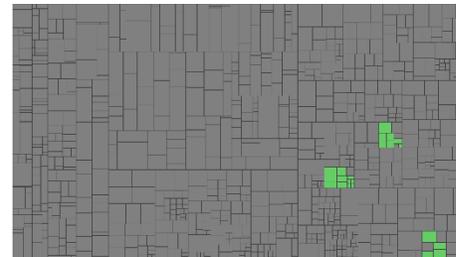
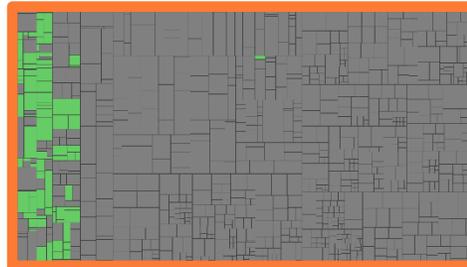
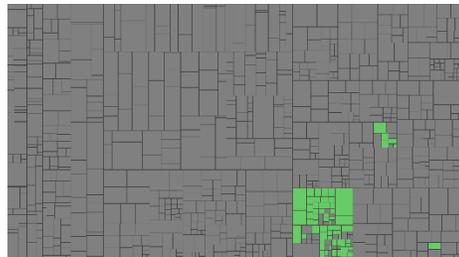
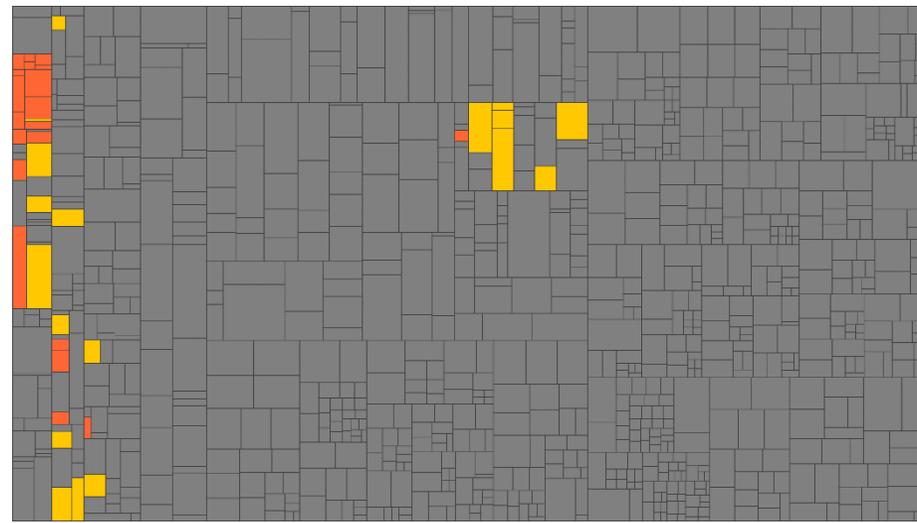
Time Tracking

Estimated: Not Specified
Remaining: 0m
Logged: 4d 1h 57m

Agile

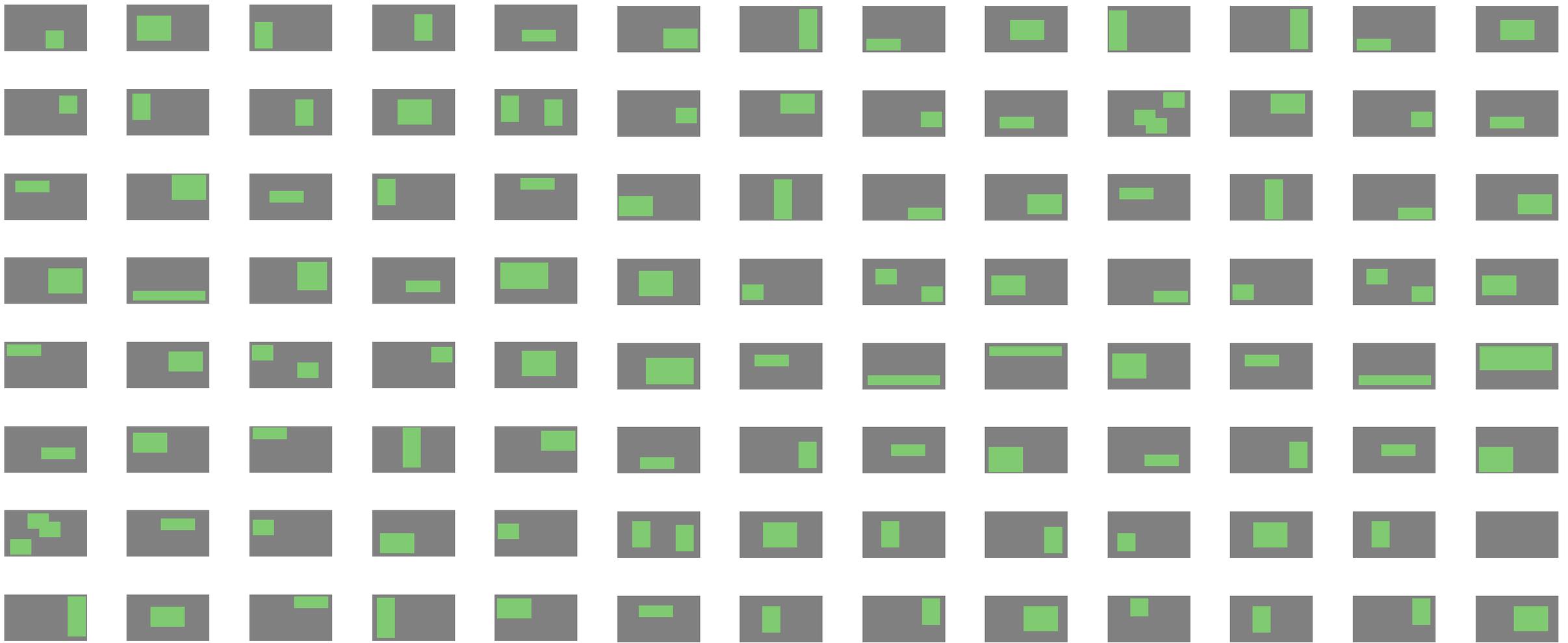
[View on Board](#)





... 4000+ Testfälle
ohne Überdeckung

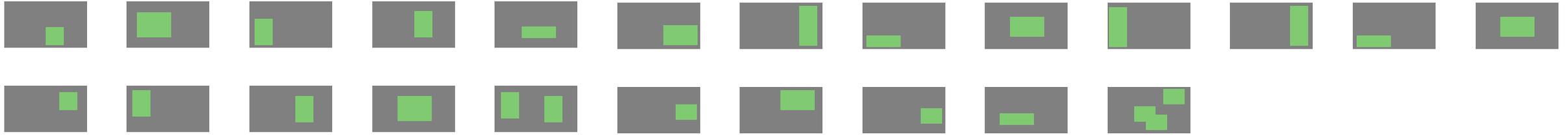
Test-Impact-Analyse



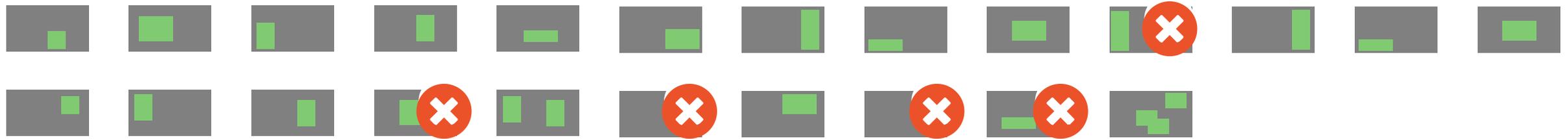
Schritt 1: Selektion betroffener Testfälle



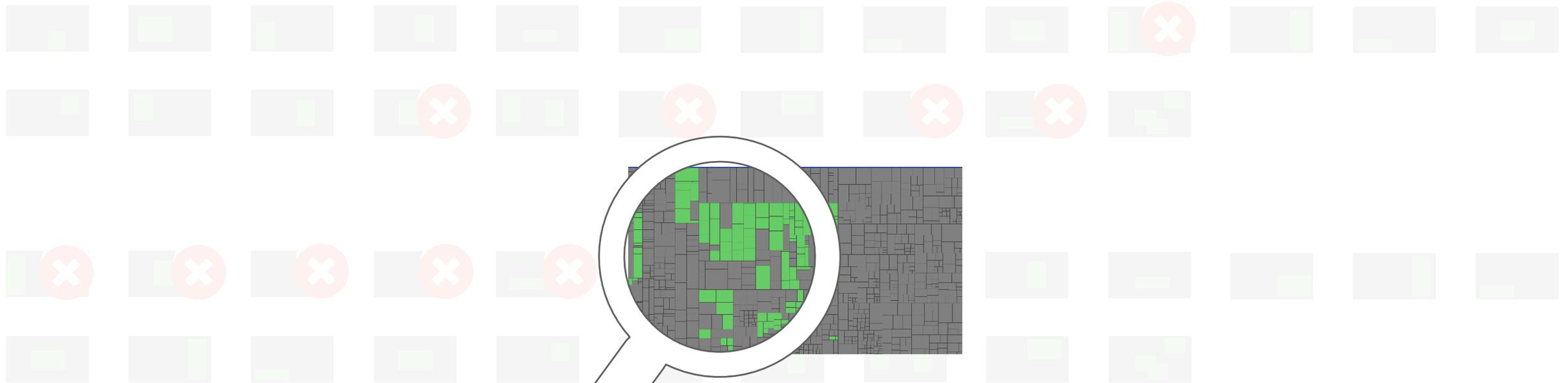
Schritt 1: Selektion betroffener Testfälle



Schritt 2: Priorisierung selektierter Testfälle

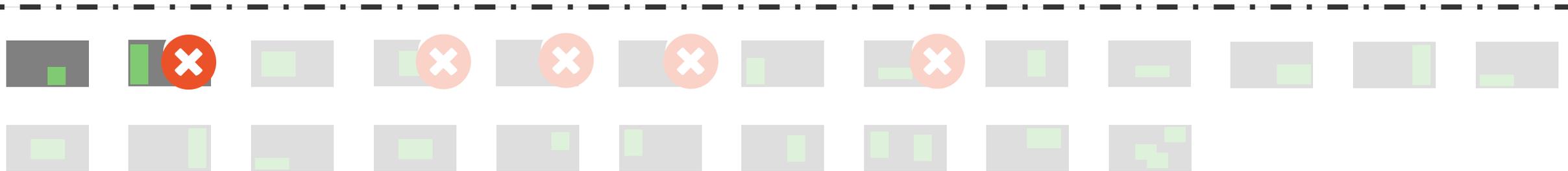


Schritt 2: Priorisierung selektierter Testfälle

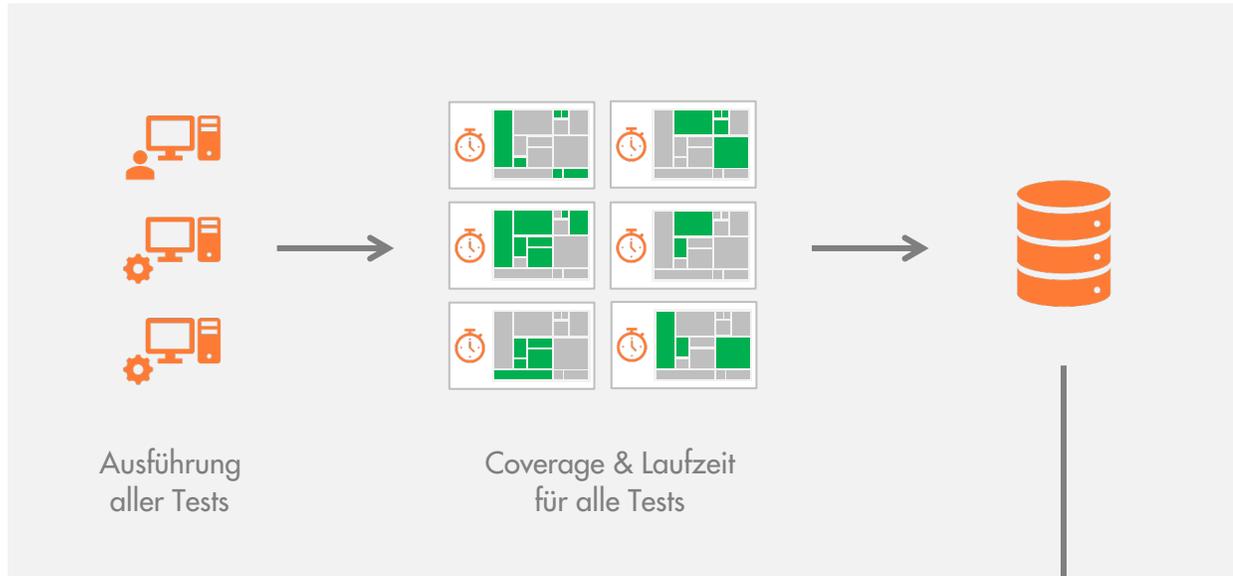


 Change coverage

 Execution time



Initiale Aufzeichnung aller Tests



Testausführung nach Änderungen

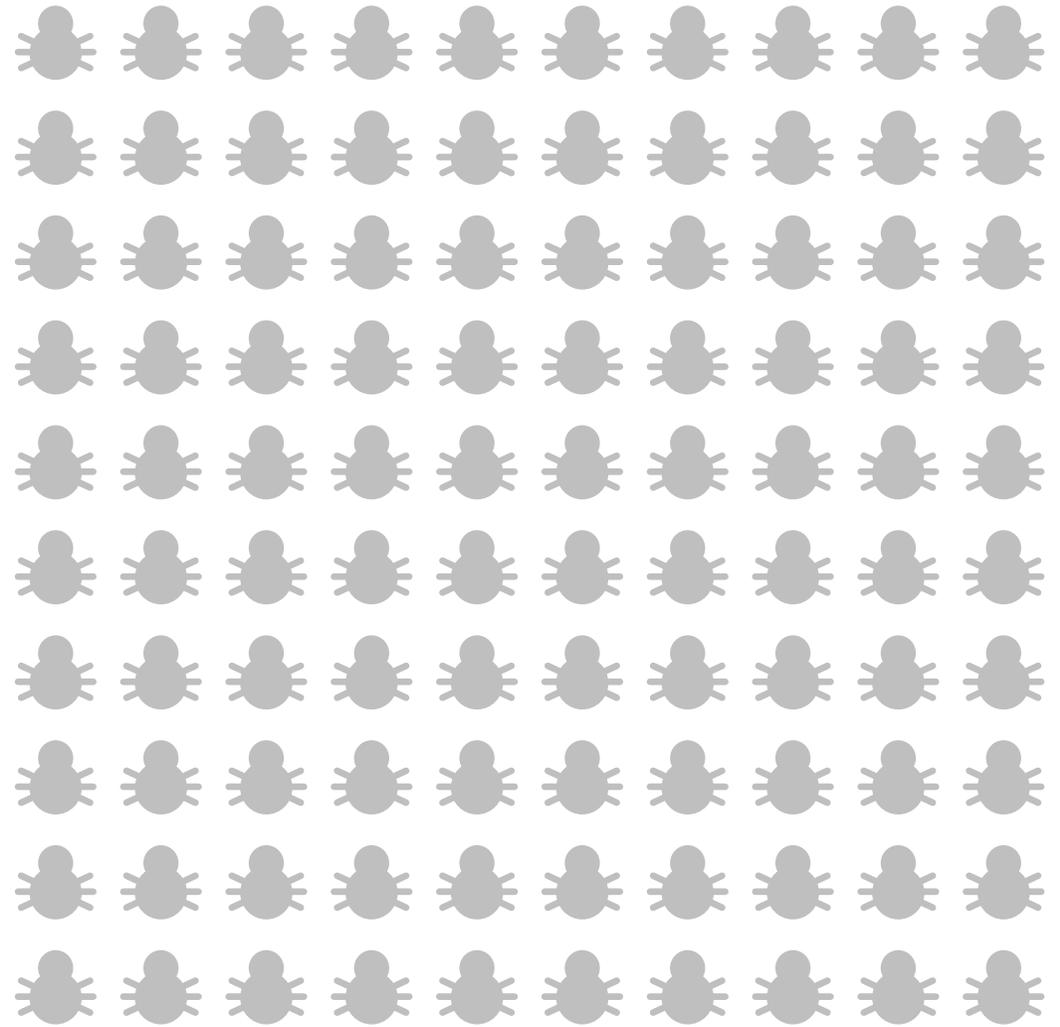
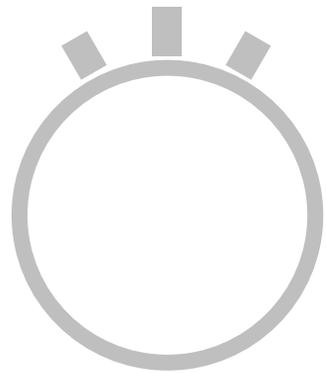


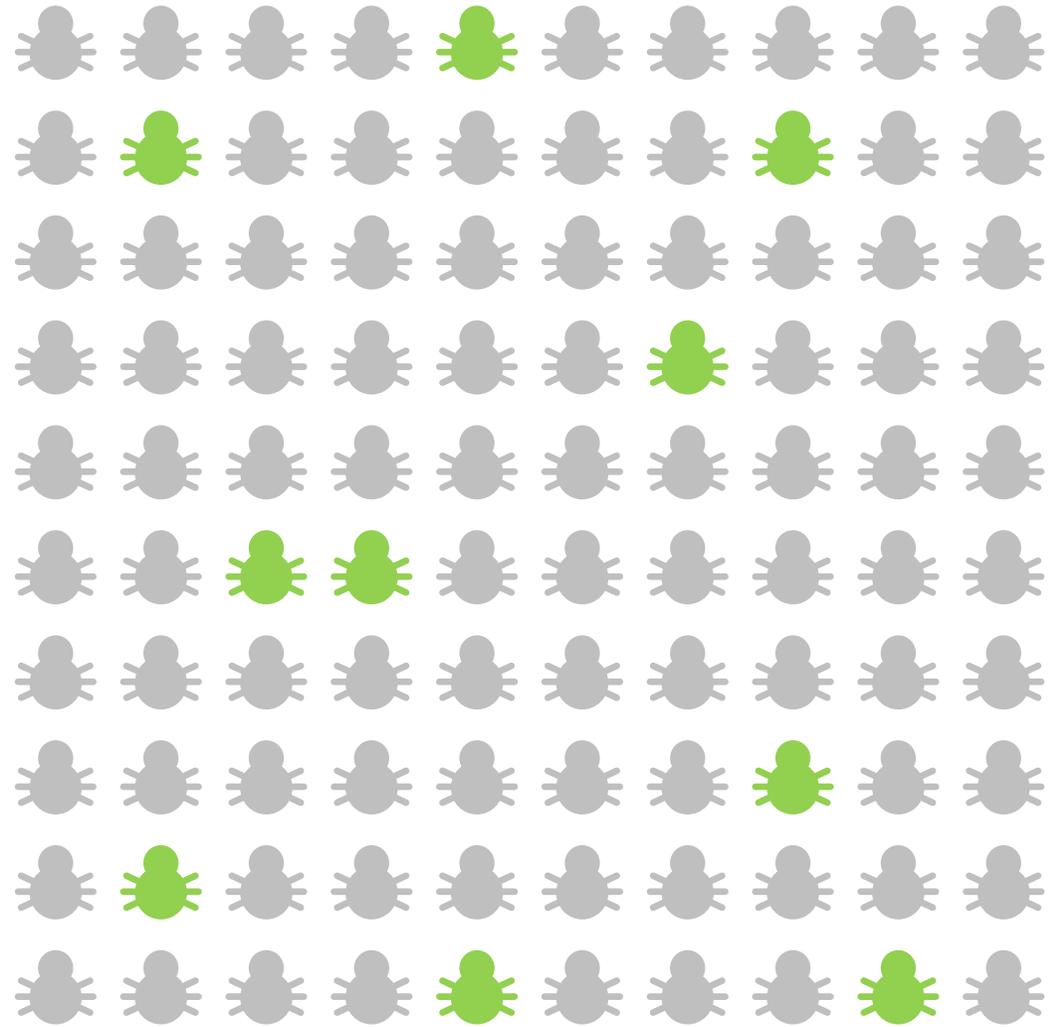
Grenzen der Test-Impact-Analyse

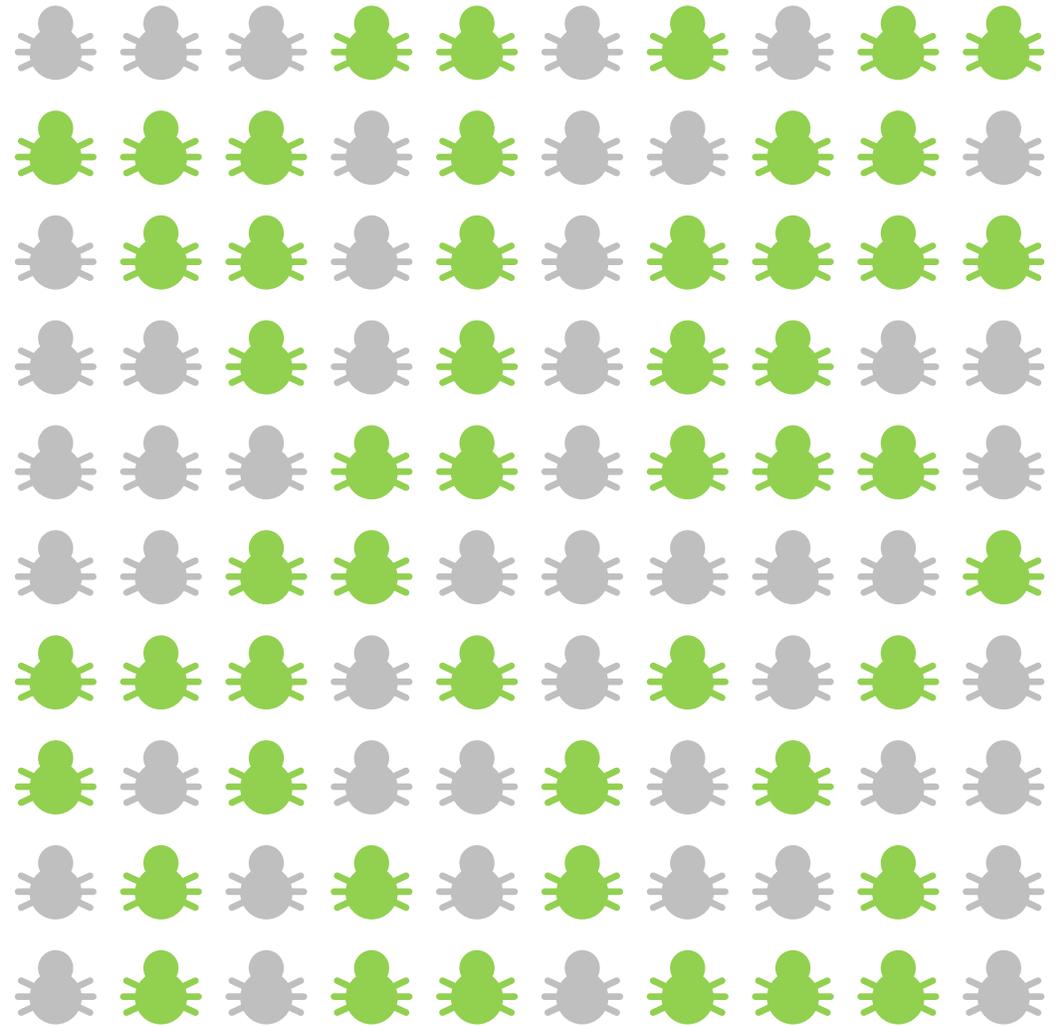
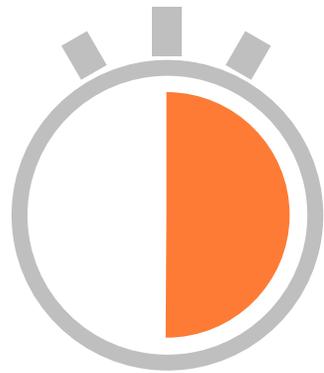
- Manche Änderungen betreffen alle Tests
 - Änderungen von Konfigurationsinformation
 - Änderungen an Testdaten
- Wenn sich die Tests selbst ändern, müssen sie erneut ausgeführt werden
- Es gibt keine Garantie, dass die selektierten Tests alle Fehler finden

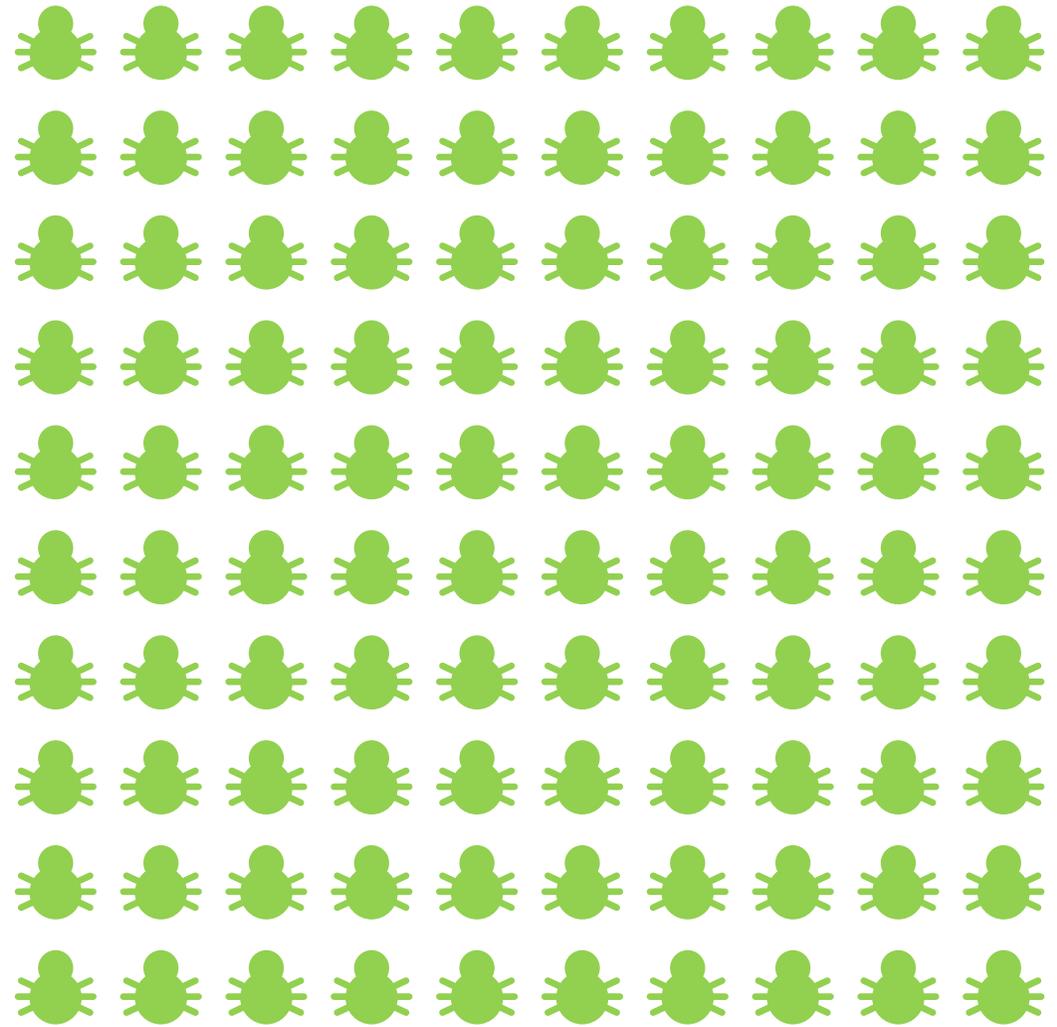
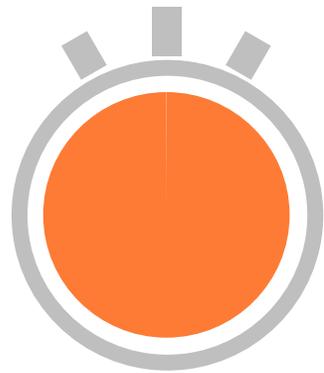
⇒ In regelmäßigen Abständen alle Tests ausführen

⇒ Hält testfallspezifische Coverage-Daten aktuell











Werden mit den selektierten Tests
die gleichen Fehler gefunden
wie mit allen Tests?

Wieviel Zeit kann mit selektierten Tests eingespart werden?

System	Alle Tests [s]
Apache Commons Collections	25
Apache Commons Lang	25
Apache Commons Math	160
Histone Template Engine	35
JabRef	120
Joda-Time	21
Lightweight-Stream-API	2
LittleProxy	155
OkHttp	97
RxJava	464
Symia Commons Math Parser	1
Teamscale	1249

System	Alle Tests [s]	Selektierte Tests [s]	Einsparung
Apache Commons Collections	25	1	98 %
Apache Commons Lang	25	3	88 %
Apache Commons Math	160	114	29 %
Histone Template Engine		32	7 %
JabRef		41	66 %
Joda-Time		1	94 %
Lightweight-Stream-API		1	68 %
LittleProxy		150	3 %
OkHttp	97	76	21 %
RxJava	464	171	63 %
Symia Commons Math Parser	1	1	0 %
Teamscale	1249	197	84 %

Im Durchschnitt
64%
Einsparung

Welcher Anteil fehlerhafter Builds wird
in begrenzter Zeit erkannt?

System	1 %	2 %	5 %	10 %
Apache Commons Collections	84 %	97 %	100 %	100 %
Apache Commons Lang	94 %	96 %	98 %	99 %
Apache Commons Math	80 %	86 %	92 %	93 %
Histone Template Engine	88 %	88 %	88 %	88 %
JabRef	96 %	96 %	96 %	96 %
Joda-Time	98 %	99 %	99 %	100 %
Lightweight-Stream-API	61 %	91 %	95 %	97 %
LittleProxy	74 %	77 %	80 %	80 %
OkHttp	91 %	91 %	91 %	97 %
RxJava	92 %	95 %	95 %	95 %
Symia Commons Math Parser	78 %	86 %	89 %	89 %
Teamscale	92 %	96 %	97 %	97 %

Gilt das auch für echte Fehler in Systemen?

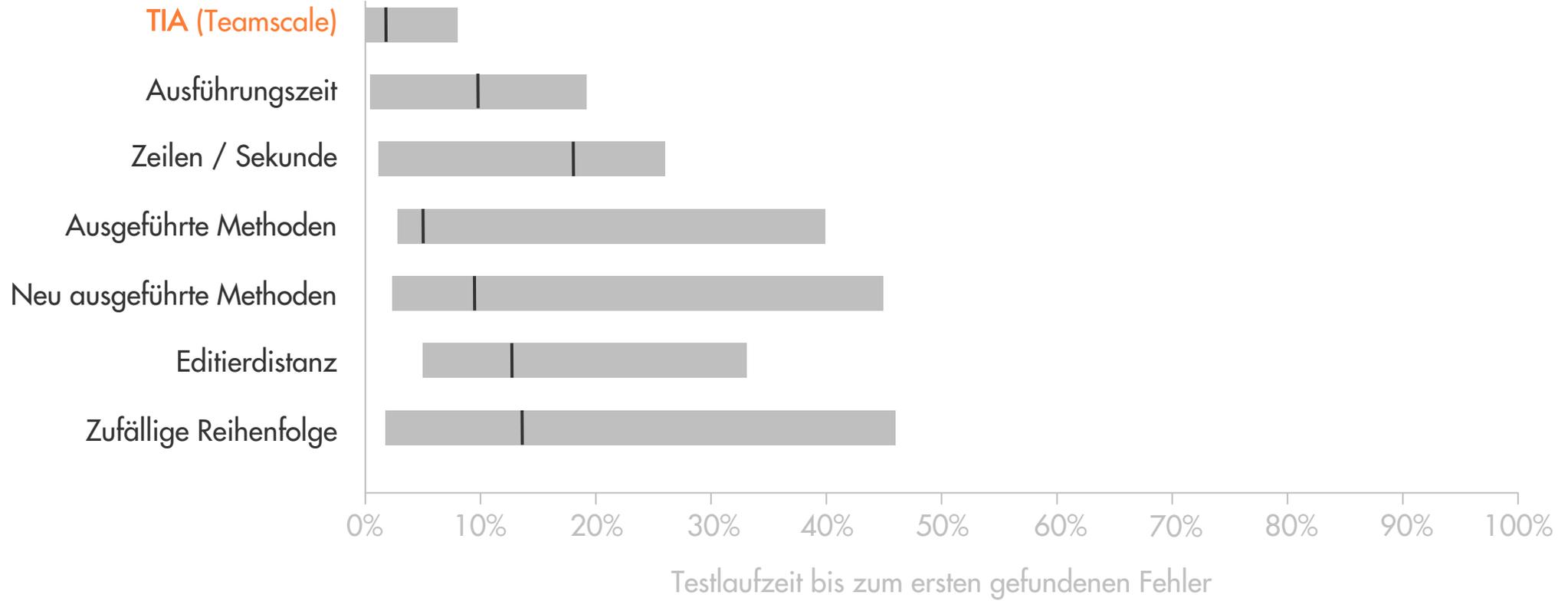


?

Gibt es nicht einfachere Verfahren?



100+

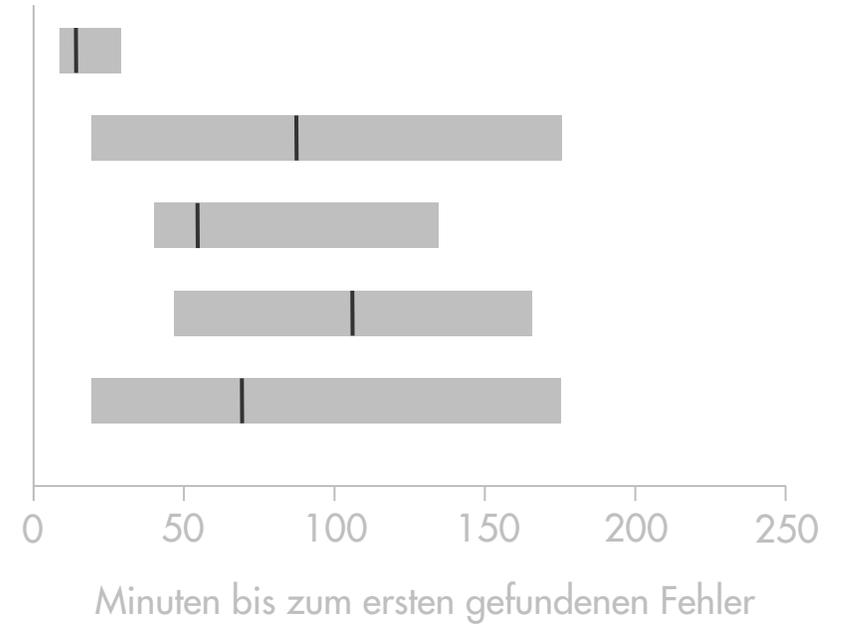


HIL-Test



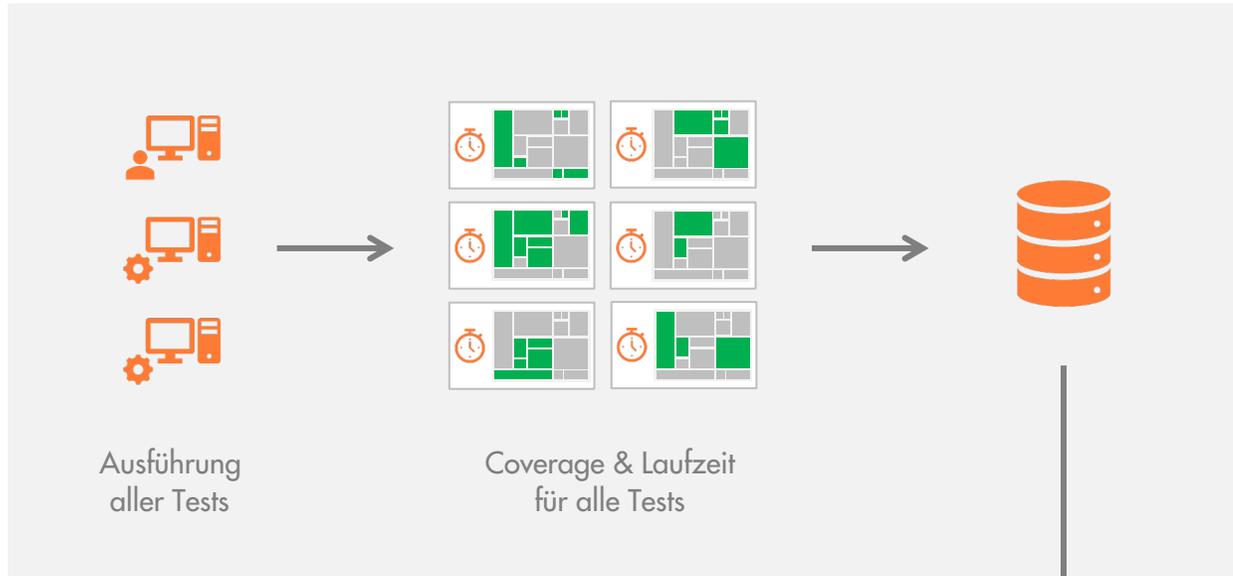
TIA (Teamscale)

- Ausführungszeit
- Ausführungszeit (absteigend)
- Methoden / Sekunde
- Zufällige Reihenfolge



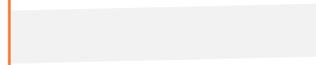
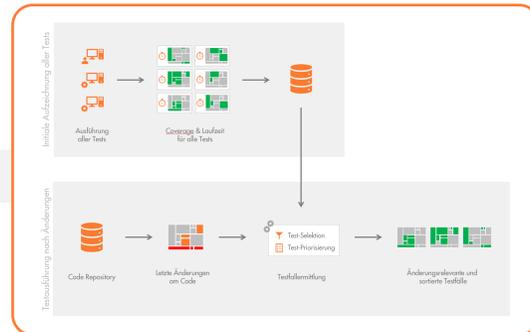
Test Intelligence

Initiale Aufzeichnung aller Tests

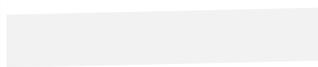


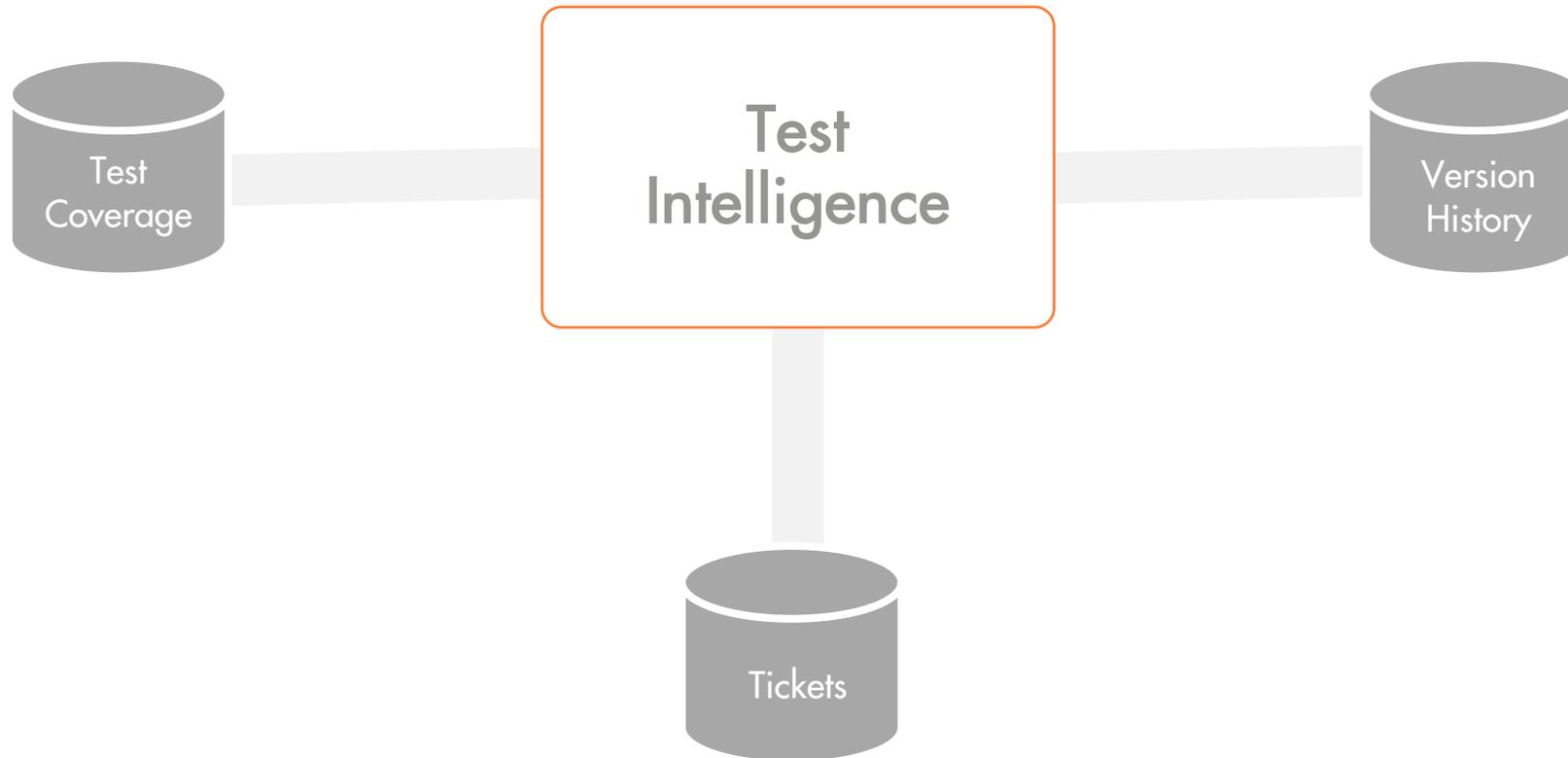
Testausführung nach Änderungen



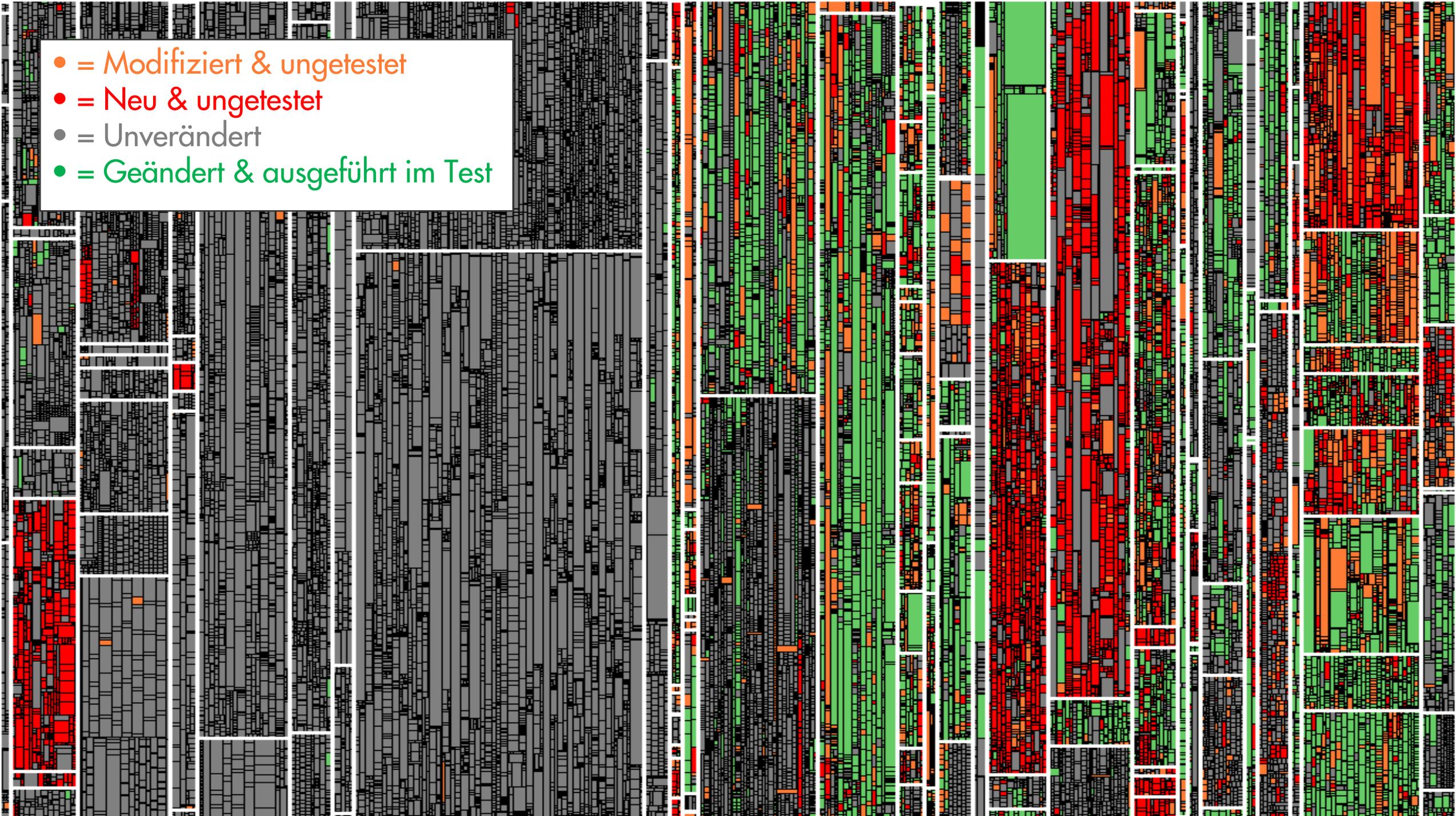








- = Modifiziert & ungetestet
- = Neu & ungetestet
- = Unverändert
- = Geändert & ausgeführt im Test



Issue # ▼	Subject	Done		Test Gap
🔗 TS-10549	Undo/Redo for web-based architecture editor	Done		0% 
🔗 TS-10784	Fix long method finding in TaintAnalysisRunner	Done		0% 
🔗 TS-10923	Implement metric 'Nesting Depth' for Simulink	Done		29% 
🔗 TS-11364	External findings are not registered during first upload	Done		14% 
🔗 TS-11942	Manual test coverage upload during development	Done		43% 
🔗 TS-12050	Tool for transferring findings blacklists and tasks	Done		50% 
🔗 TS-12262	Cannot set or alter alias without reanalysis	Done		0% 
🔗 TS-13151	Fetch parent relationship of TFS work items	Done		0% 

Issue # ▾	Subject		Test Gap
TS-14421	Get rid of TestGapSynchronizer block	Done 	0% 
TS-14733	Remove Dataflow blocks	Done 	22% 

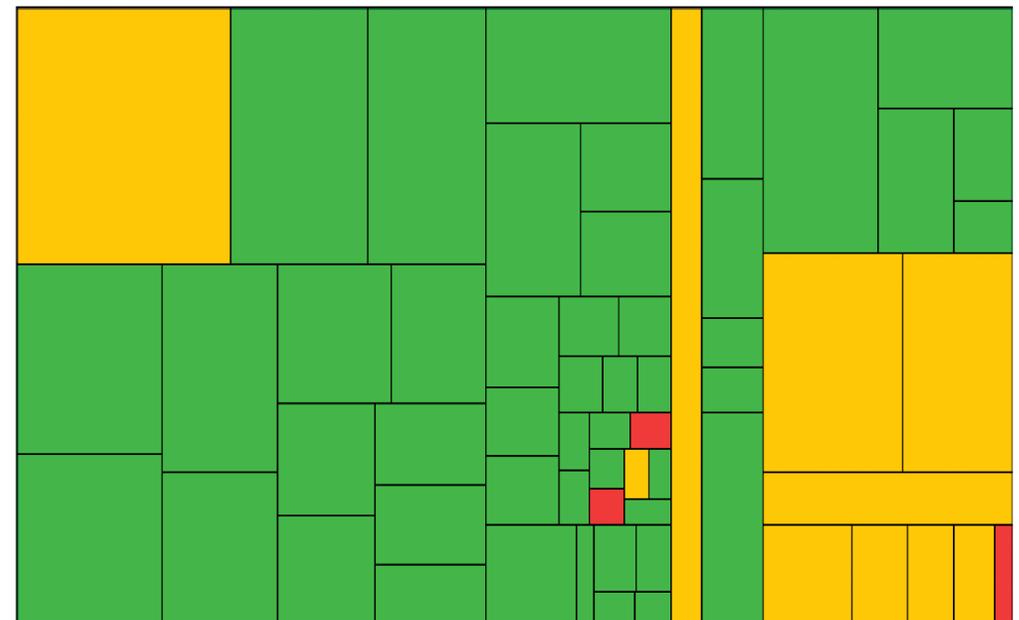
Done Issue TS-14733 - Remove Dataflow blocks

Creator:  (on Apr 06 2018 19:44) Last update: Aug 24 2018 09:32

Assignee: 

Project	Type	Priority	Resolution	Fix Version
TS	Maintenance	Normal	Green	Teamscale 4.5
Component	Labels	Affected Version	Customer	Customer Issue
Backend	Performance			
Epic Name	Freshdesk URL	Merge Request		
		https://git.cqse.eu/cqse/teamscale/3621		

Aug 15 2018 12:37–Now | Test Gap: 22%



Kontakt



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81249 München