Haben wir das Richtige getestet?

Erfahrungen mit Test-Gap-Analyse im Hotfix-Test, Iterationstest und Releasetest in der Praxis

Dr. Elmar Jürgens
Dr. Dennis Pagano

CQSE
Continuous Quality in Software Engineering

Bugzilla – Bug List

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Wed Aug 28 2013 11:45:48 CEST
quip?

Hide Search Description

Status: UNCONFIRMED, NEW, ASSIGNED, REOPENED **Product:** clone **Component:** clon

83 bugs found.

ID ▲	Summary
3382	Remove old filtering framework
4608	Improve progress monitoring for clone detection
3613	Make MetricOverview more flexible w.r.t. to database table names
3811	Incorrect offset reported by two-phased scanners
4610	Clone compare view does not open clone pair at correct position
1000	
1013	
1014	
872	
2397	
1824	
1945	
2199	
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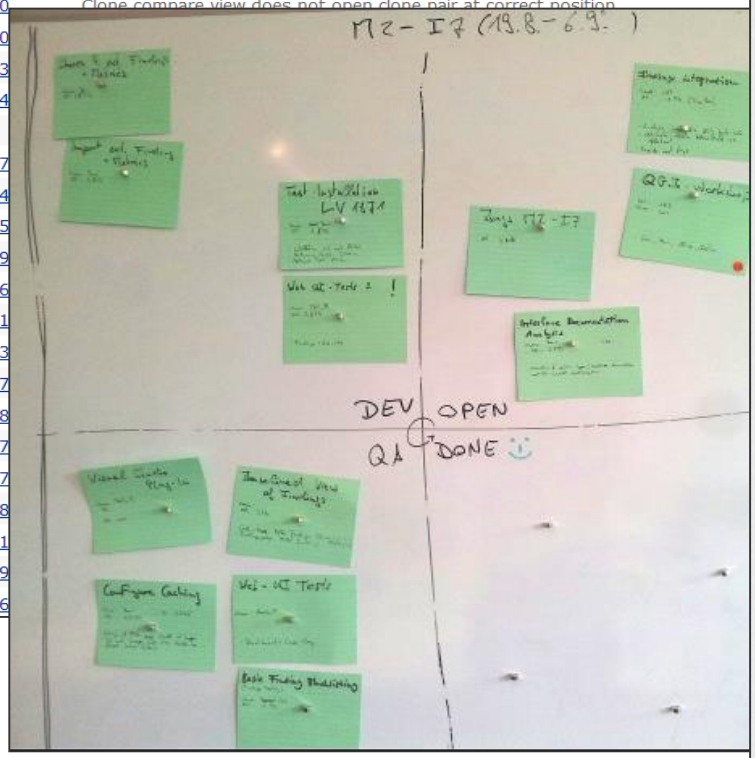


ConQAT

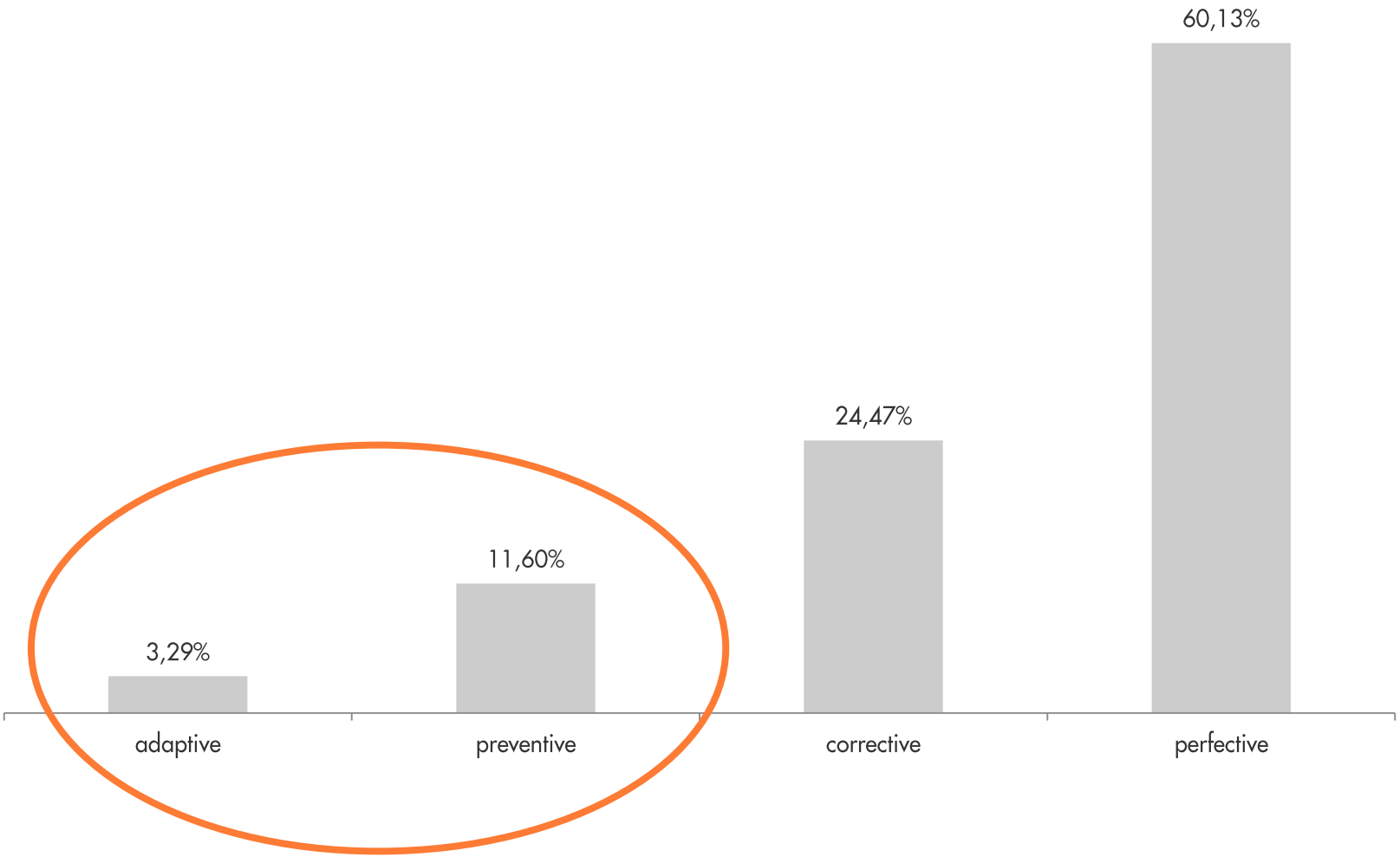
Übersicht | Aktivität | Roadmap | Tickets | Neues Ticket | Projektarchiv | Konfiguration

Tickets

Filter
Status: offen
Optionen
Anwenden | Zurücksetzen | Speichern

#	Tracker	Status	Priorität	Thema
5489	corrective	New	Normal	Cannot install ConQAT from update site on Kepler
5488	adaptive	New	Normal	Should be able to view "own" findings
5487	uncategorized	Assigned	Normal	Upload/Change of user image broken
5486	uncategorized	New	Normal	Allow for branded dists
5485	perfective	New	Normal	Enable hiding of individual findings in the IDE (e.g. after they are resolved)
5484	corrective	New	High	Visual Studio crashes after editing on findings
5483	uncategorized	Yellow	Normal	Cleanup com.teamscale.ide.prefs
5482	uncategorized	New	Normal	Filter structural clones
5481	adaptive	New	Normal	Integrate Sharepoint Analysis in MR Dashboard
5480	uncategorized	New	Normal	Teamscale connection preference page not working in Eclipse 4.3 on Mac
5479	preventive	Red	Normal	Benchmarking and selection of storage systems
5478	uncategorized	Yellow	Normal	Usability: "Open in Web Browser" should use the browser from preferences
5477	corrective	New	Normal	Fix refresh problem when setting a dashboard as default
5475	perfective	Assigned	Normal	Create UI test for "show history" in code perspective
5474	adaptive	Assigned	Normal	Enable mapping of baseline to head resources when packages are split
5473	perfective	Red	Urgent	Connection problems using svn+ssh
5472	perfective	Accepted	Normal	Display baselines in charts (as small vertical lines)
5471	perfective	Accepted	Normal	Support selection of explicit baseline for filtering
5470	perfective	Accepted	Normal	Service documentation shall also provide more detailed documentation on q
5469	perfective	Accepted	Normal	Adding/removing metrics to chart widget changes colors of other metrics
5468	perfective	Accepted	Normal	Simple metric widget shall support explicit baseline for delta value calculatio
5467	corrective	Accepted	High	The delta not found in the store!
5466	corrective	Accepted	Normal	Problems when tracking TODOs which have changed line breaks

CRs in ConQAT



Auf Basis von ca. 2000 CRs aus dem ConQAT Bugzilla

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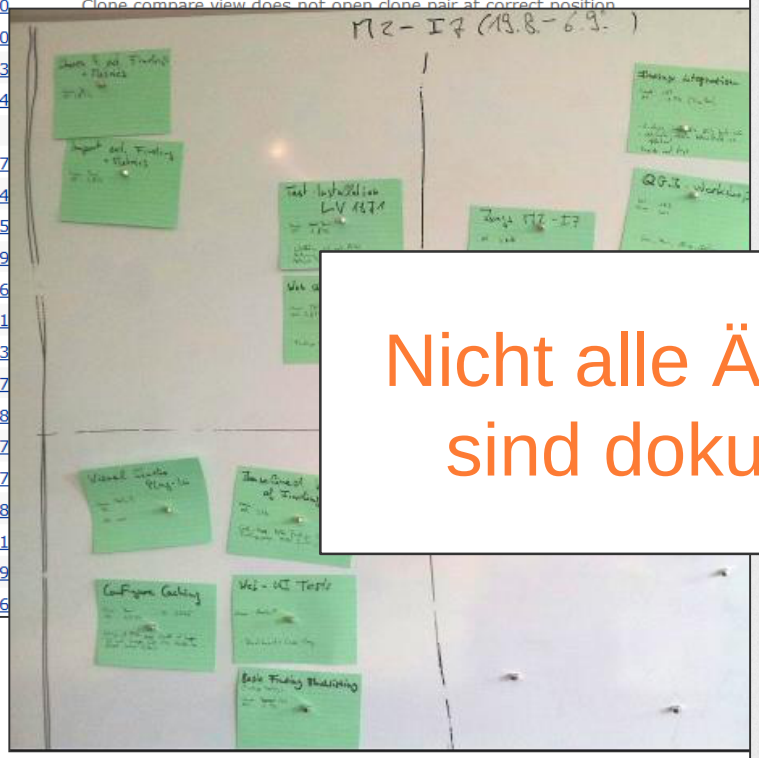

Nicht alle Änderungen sind dokumentiert!

ConQAT

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			mal	Enable hiding of individual findings in the IDE (e.g. after they are resolved)
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Wieviele Änderungen sind ungetestet?

Studie: C# System @ Munich Re

Release A: 5 Iterationen (2 Monate)

- 15% Methoden neu/geändert, 8% ungetestet

Release B: 10 Iterationen (4 Monate)

- 15% Methoden neu/geändert, 9% ungetestet

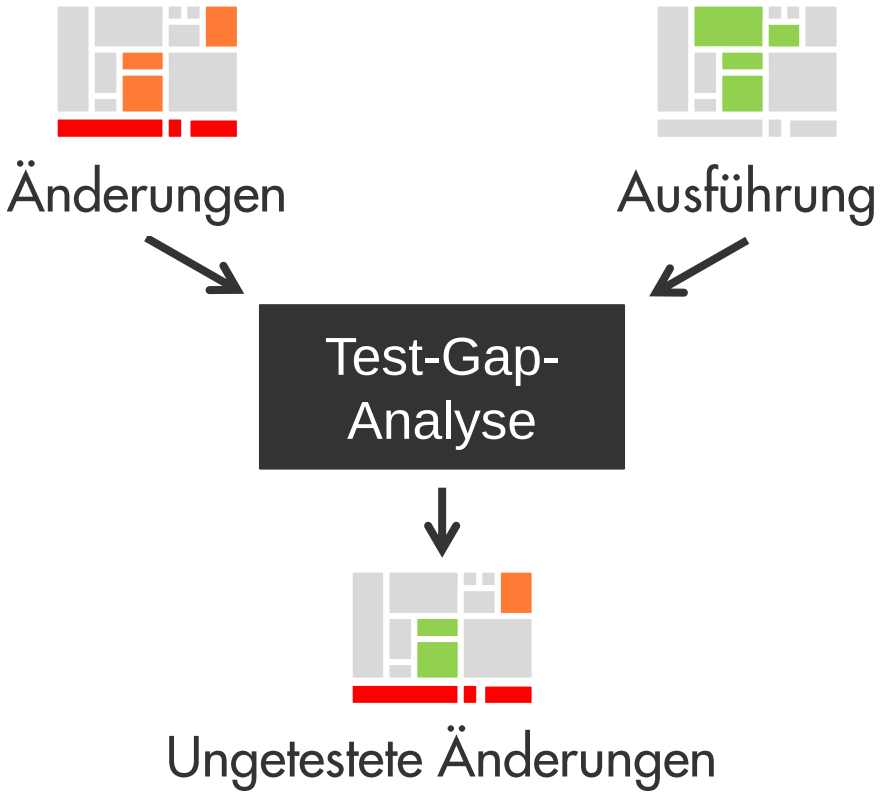
Feldfehlerwahrscheinlichkeit 5x höher für unget. Änderungen

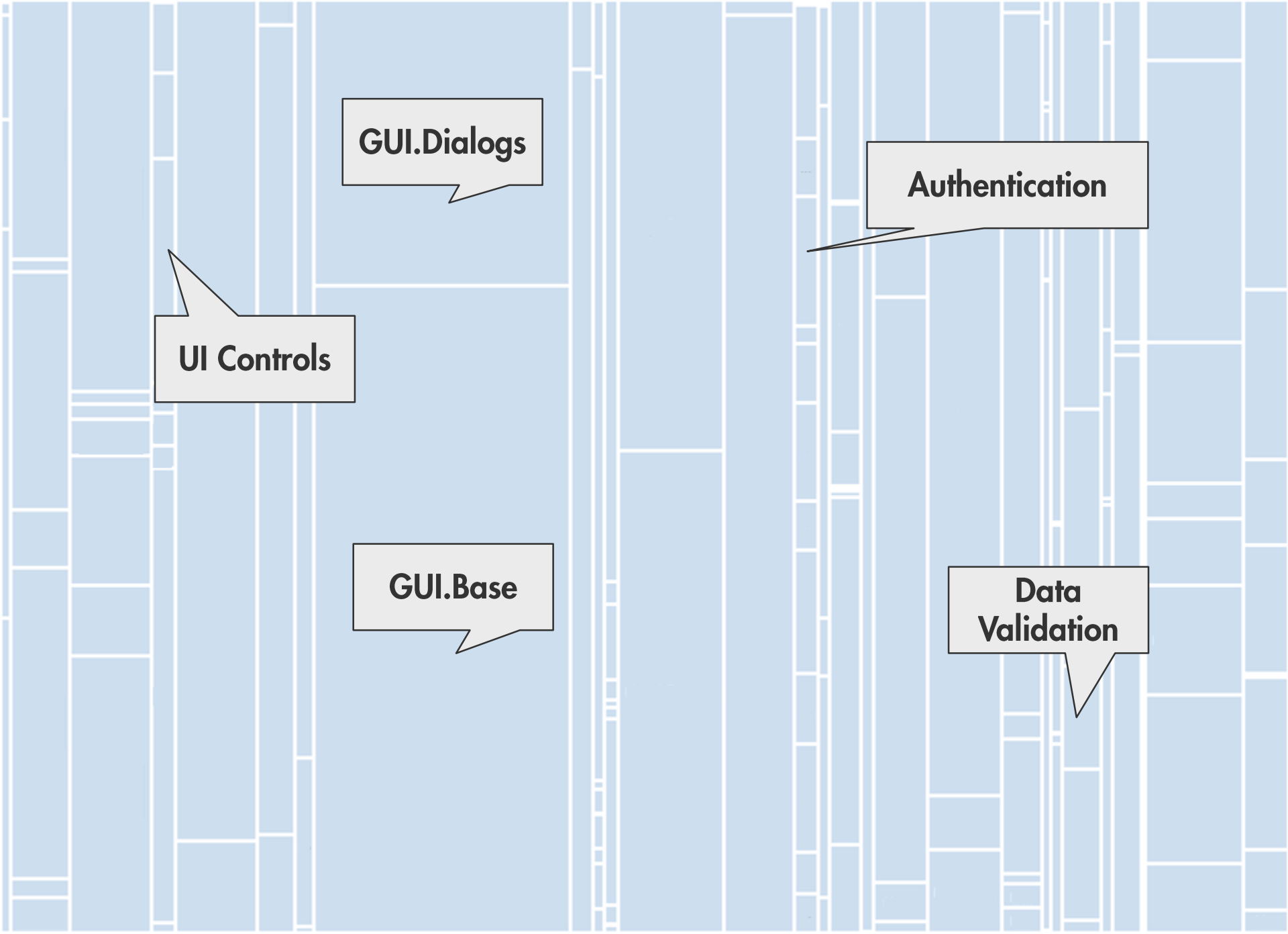
Eder, Jürgens, … *Did We Test Our Changes? Assessment btw. Tests & Development in Practice*, AST@ICSE 2013

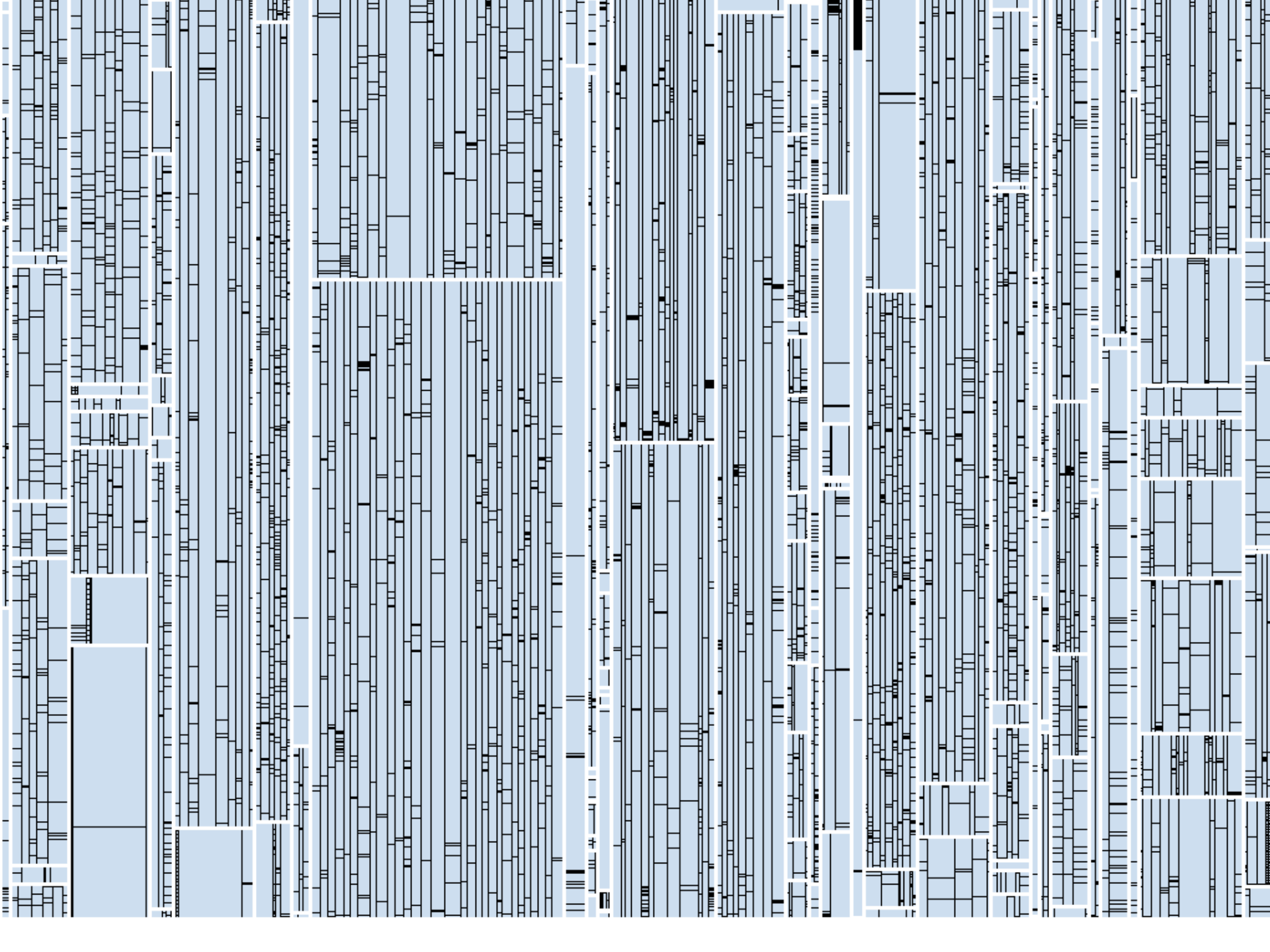
Agenda

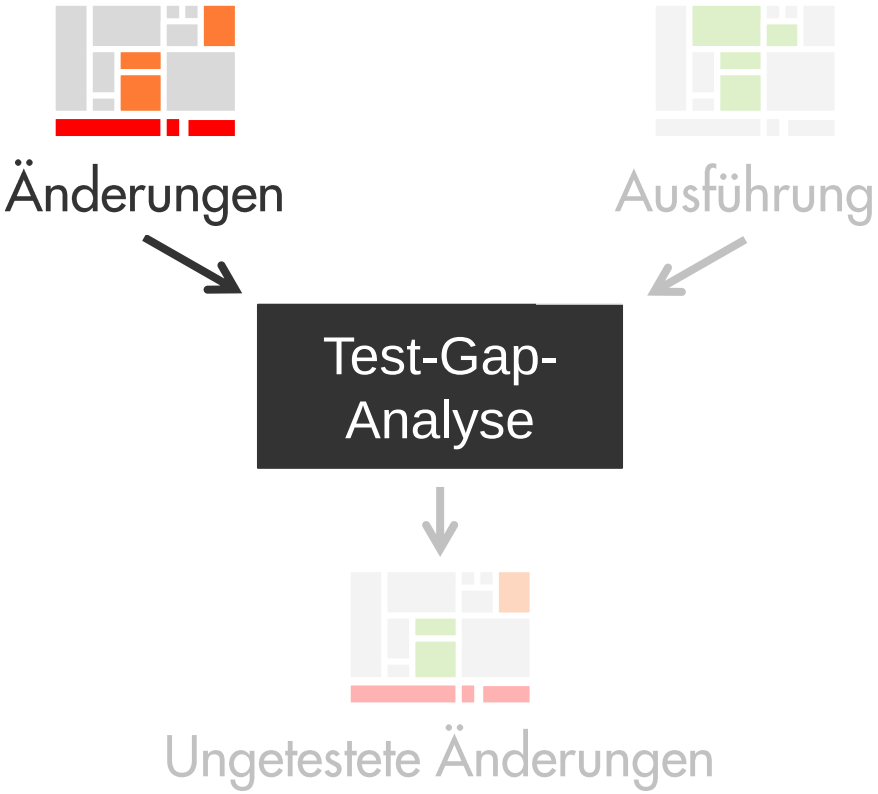
1. Test-Gap-Analyse
2. Einsatz in verschiedenen Test-Szenarien

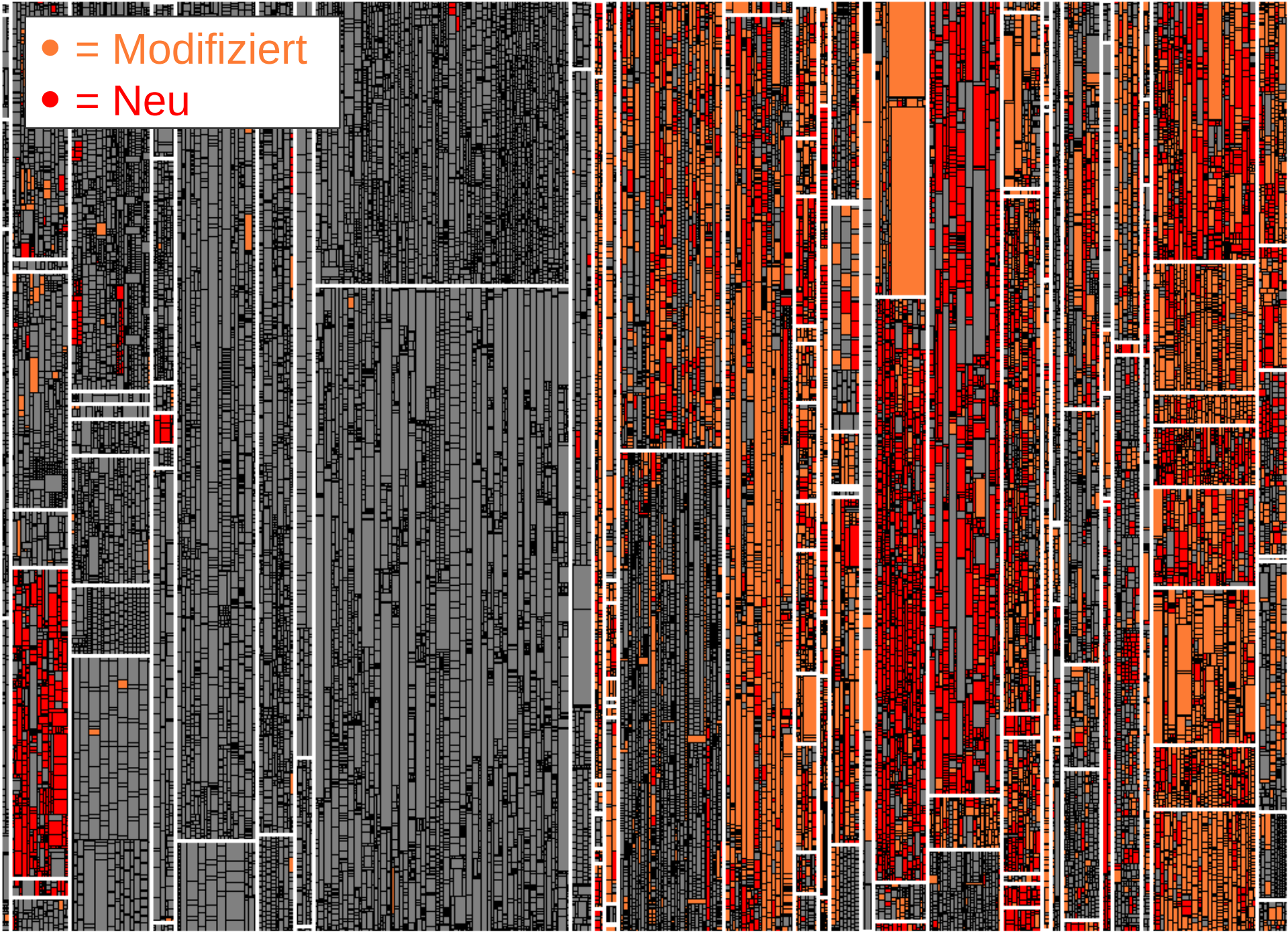
Anatomie Test-Gap-Analyse




GUI.Dialogs
Authentication
UI Controls
GUI.Base
Data
Validation




Änderungen
Ausführung
Test-Gap-Analyse
Ungetestete Änderungen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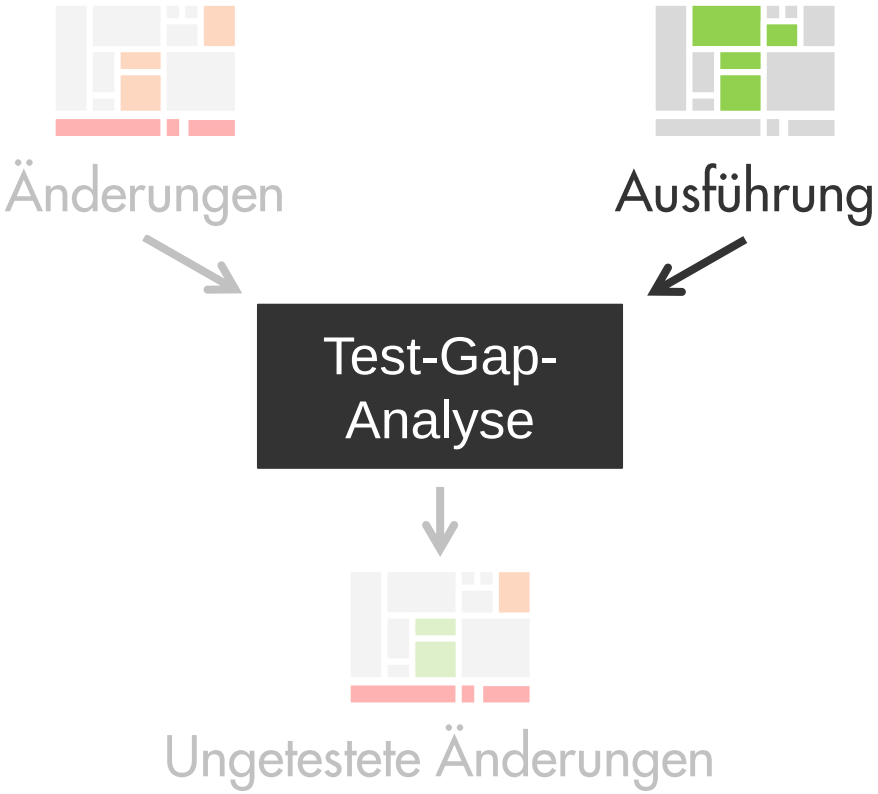
= Neu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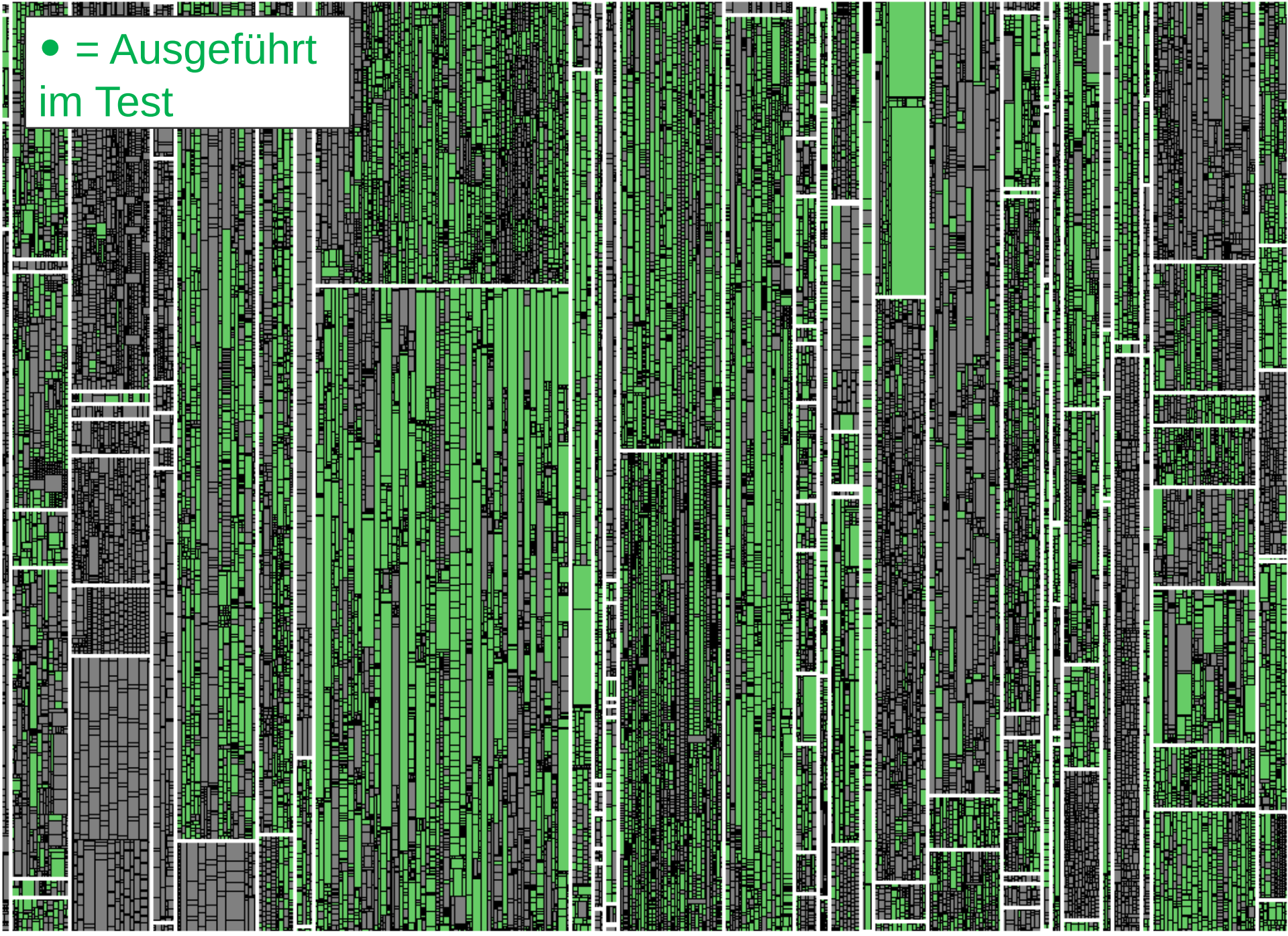
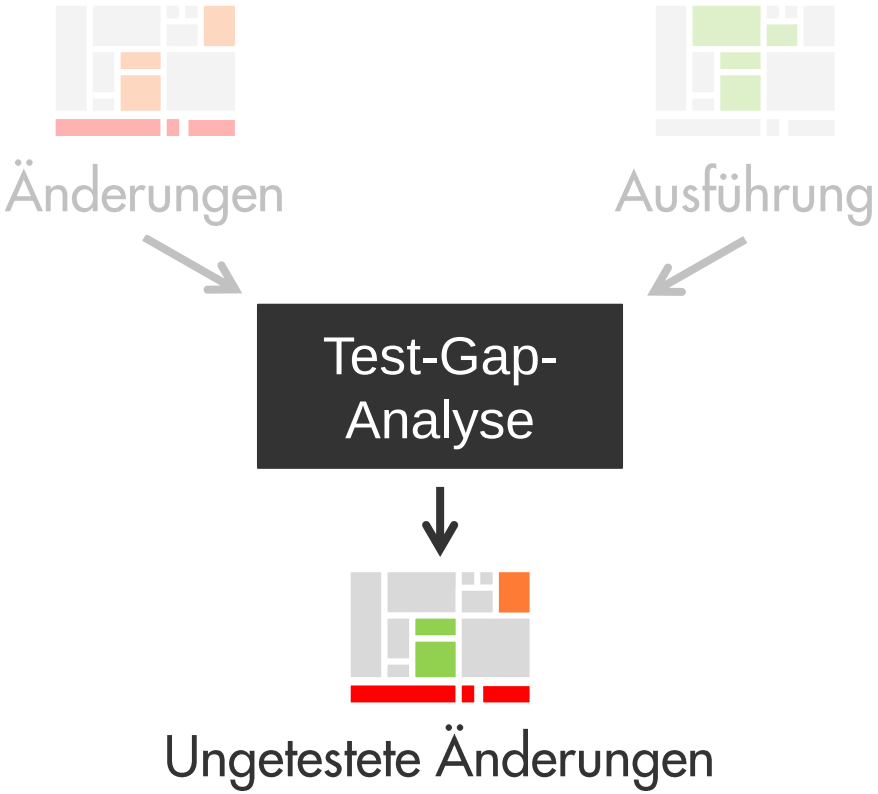
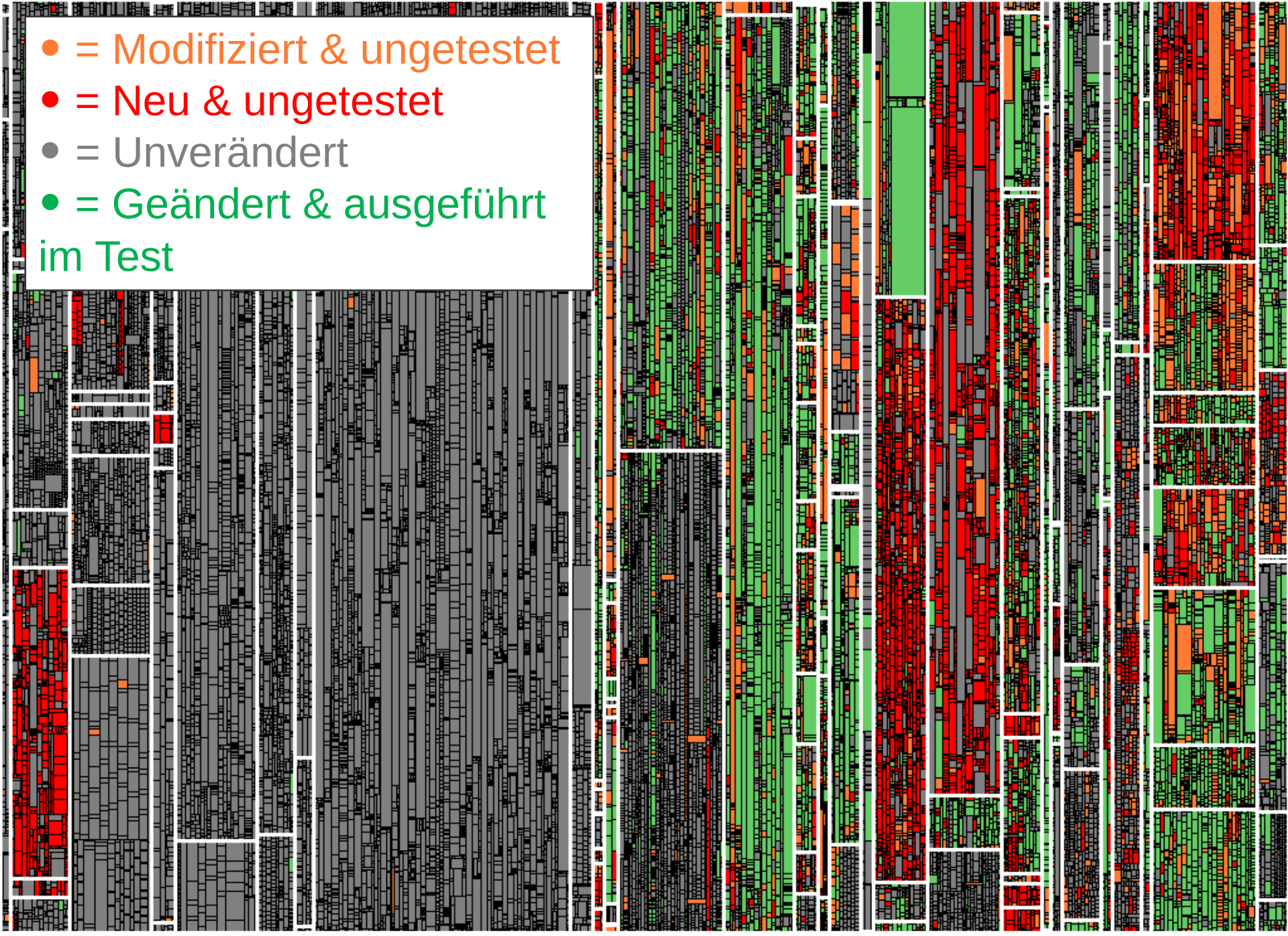
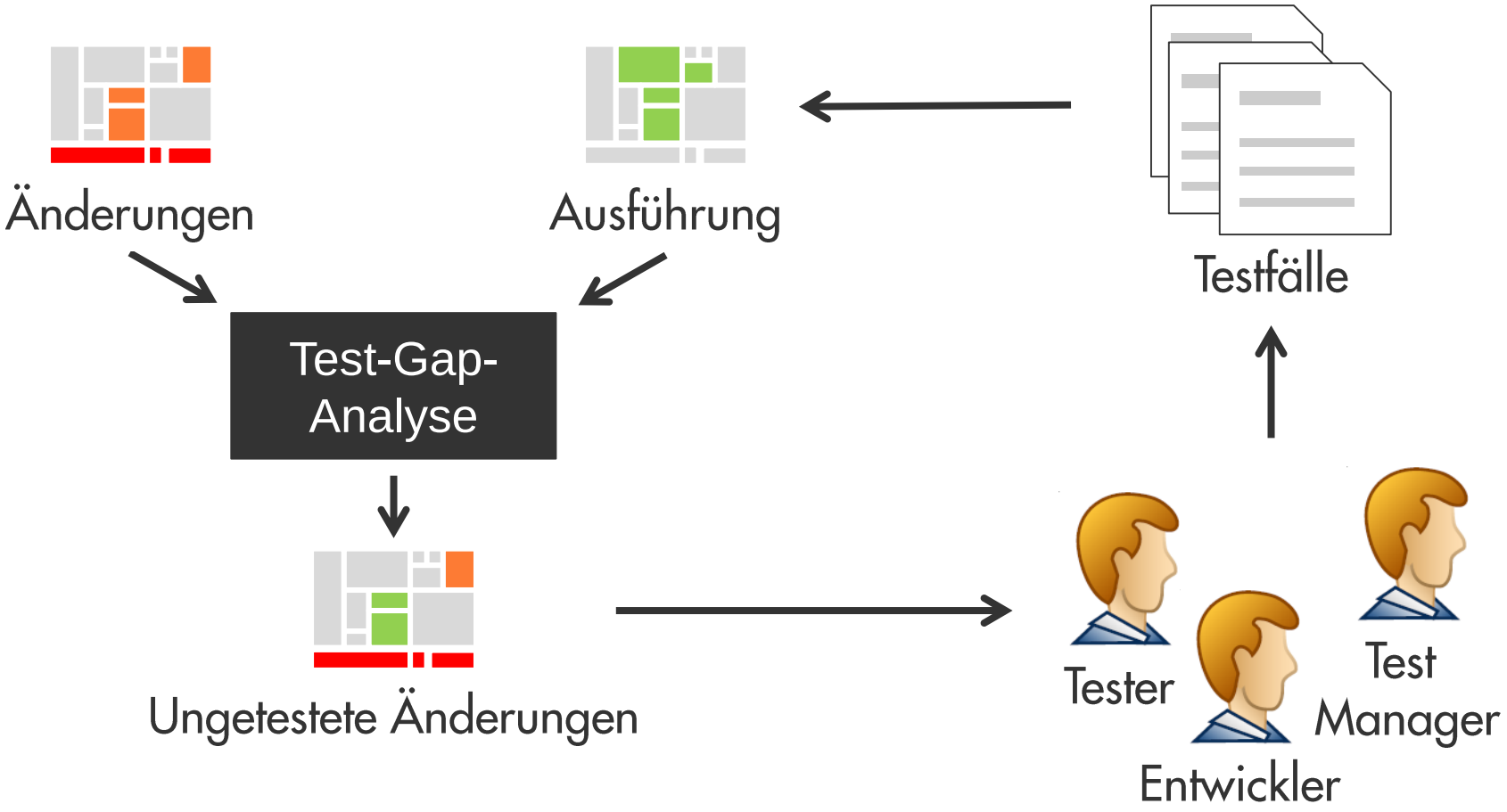
Ausführung
Test-Gap-Analyse
Ungetestete Änderungen

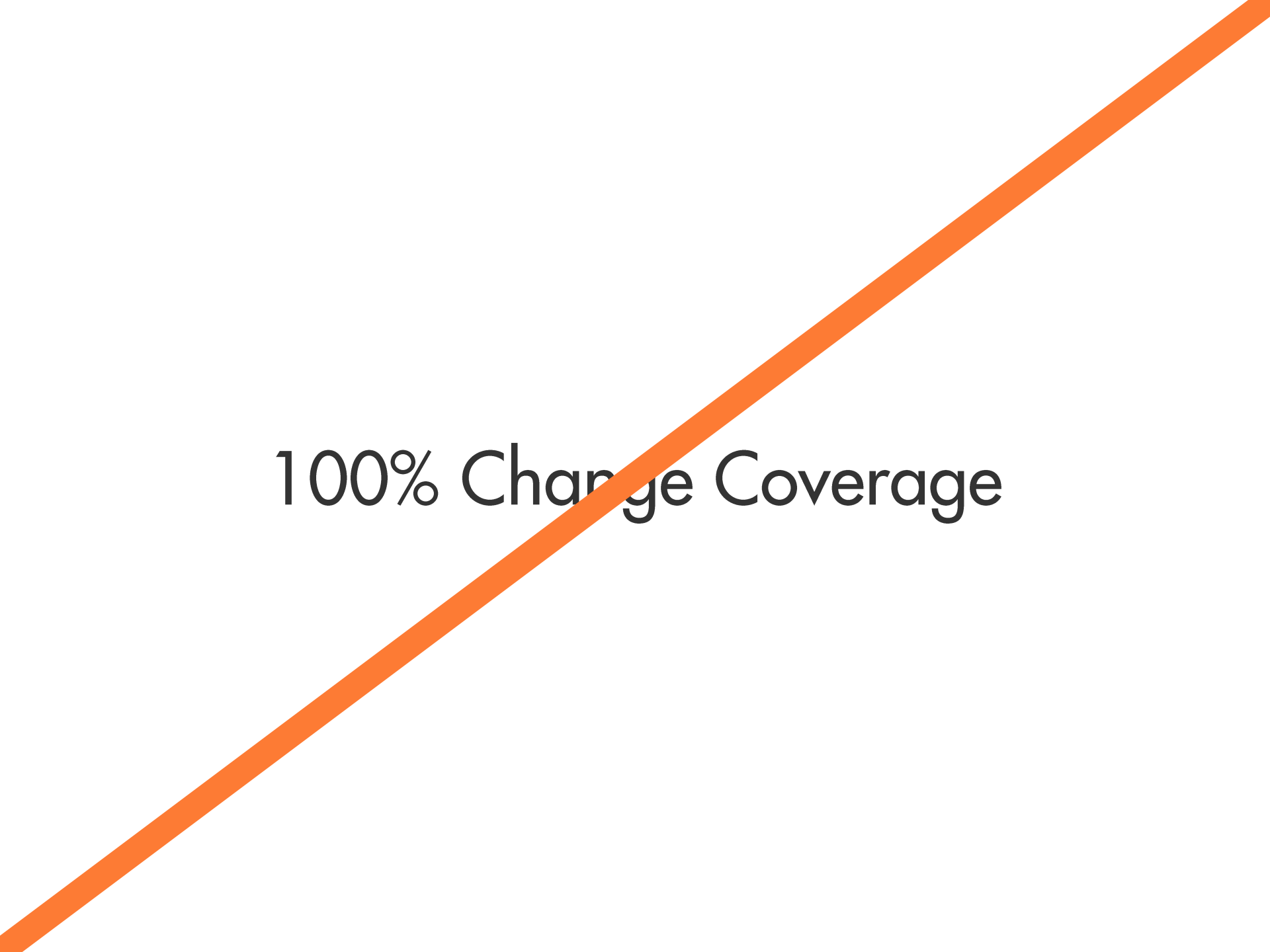

• = Ausgeführt
im Test

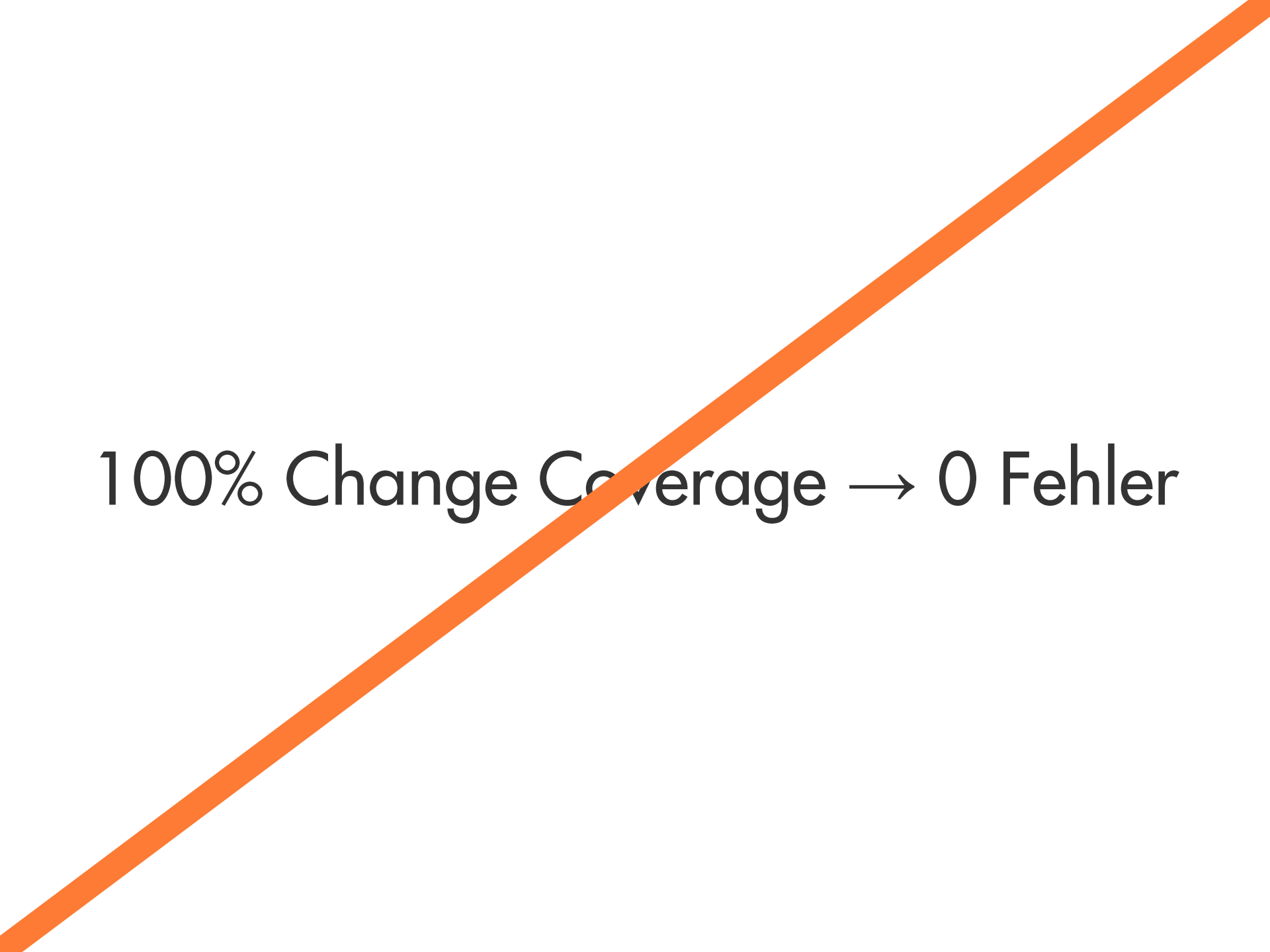

Änderungen
Ausführung
Test-Gap-Analyse
Ungetestete Änderungen


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

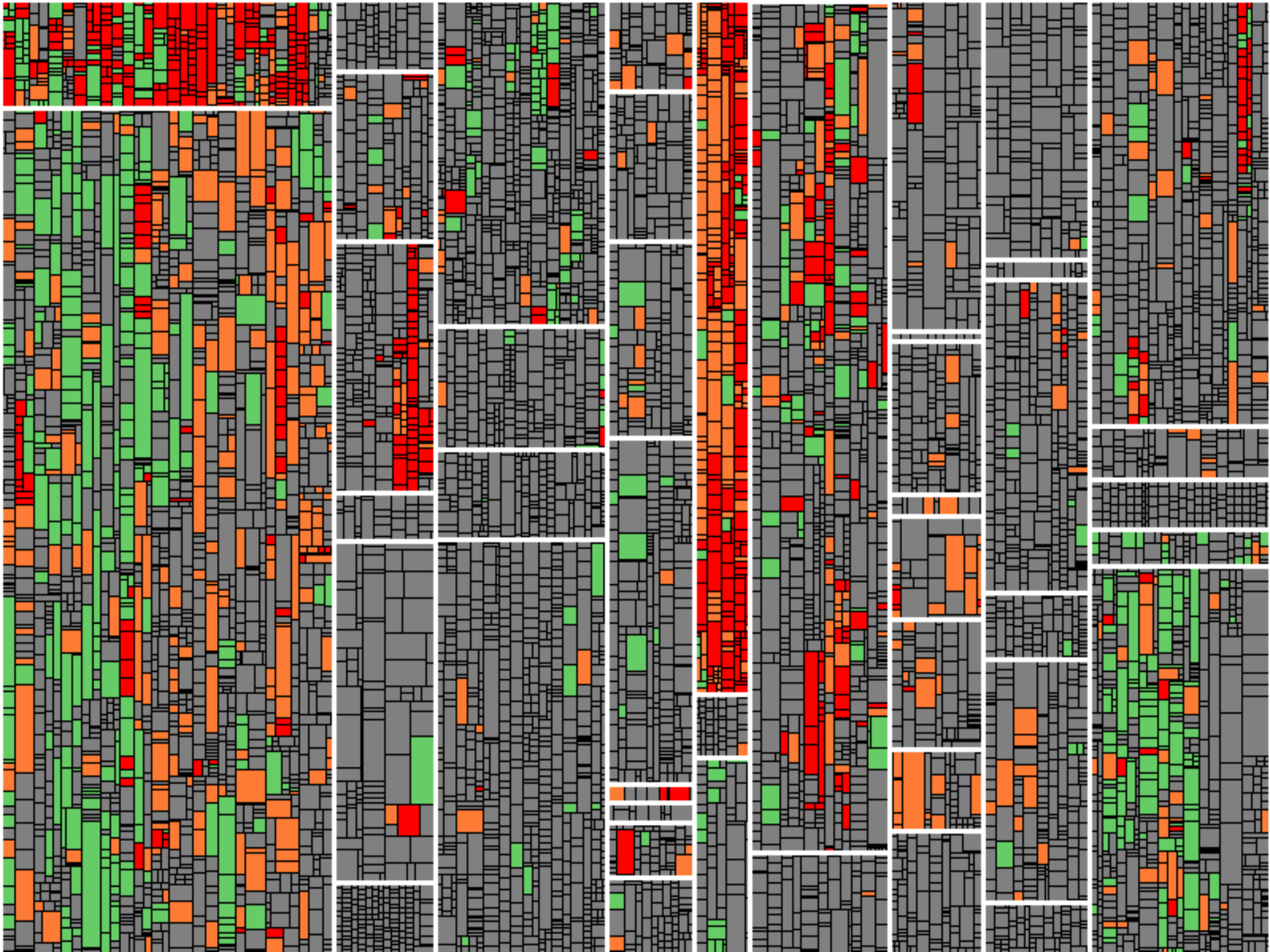
Einsatz im Testprozess

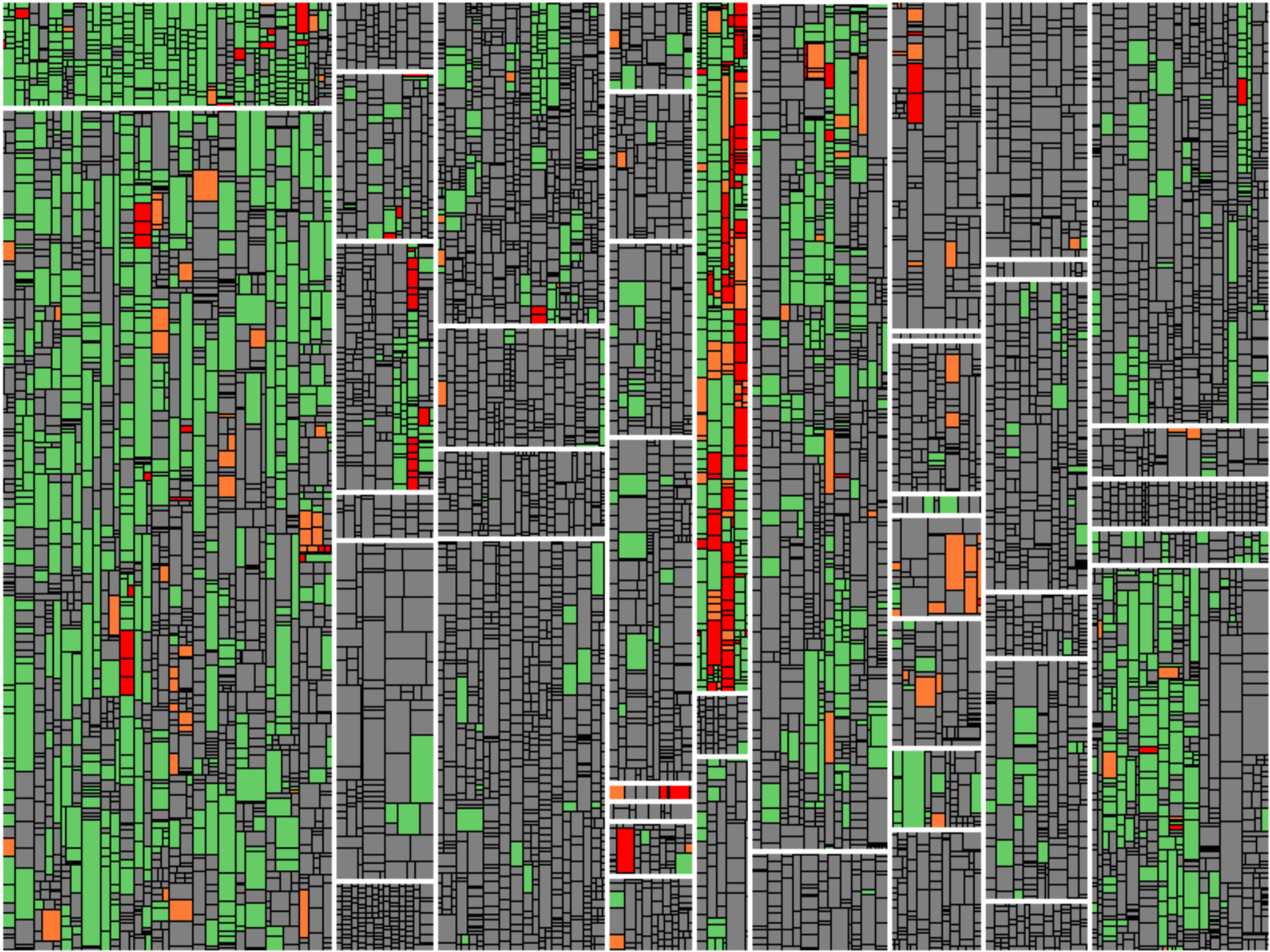


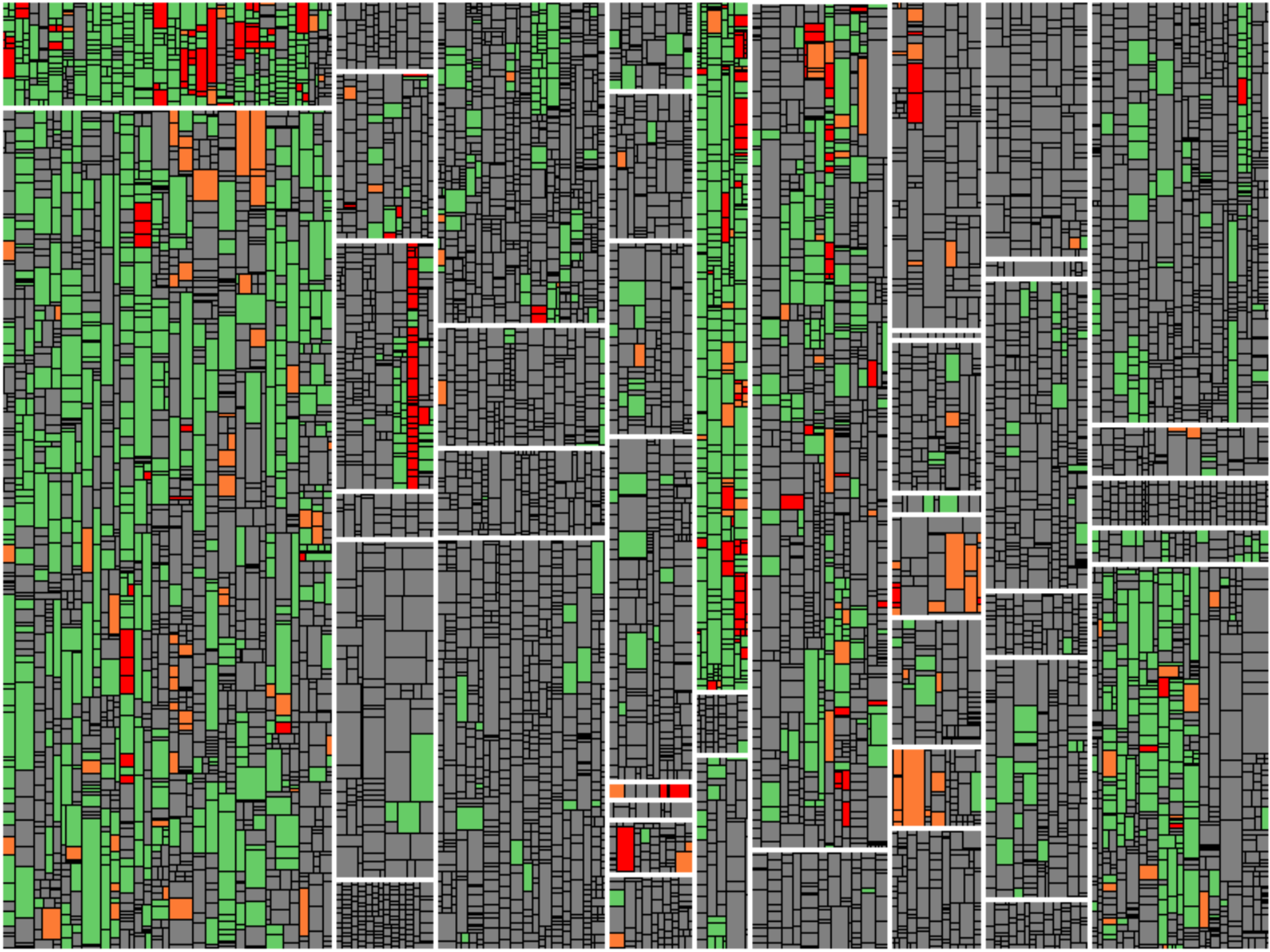

100% Change Coverage

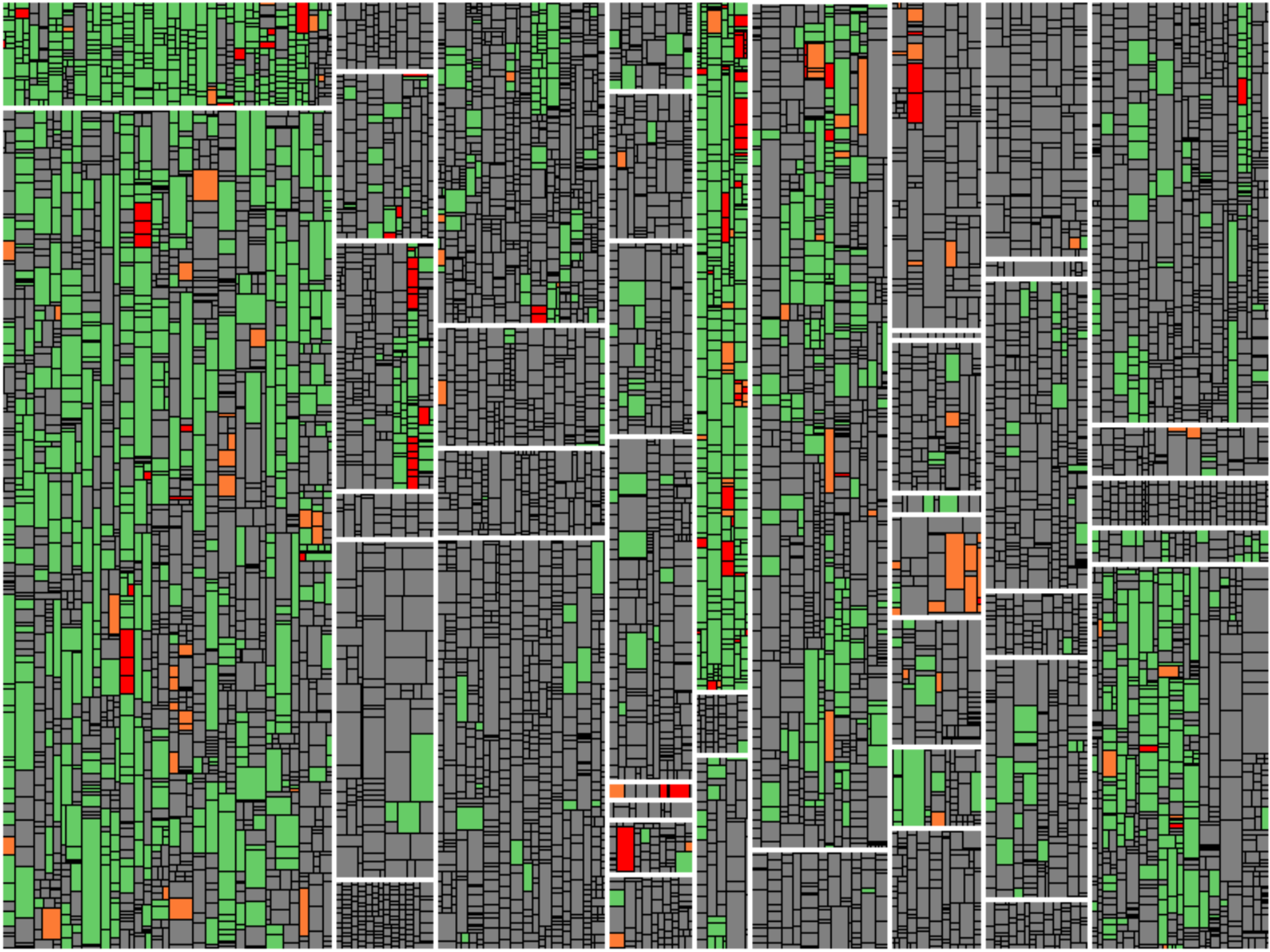

100% Change Coverage → 0 Fehler

Verschiedene Umgebungen









Interaktive Dashboards mit Teamscale

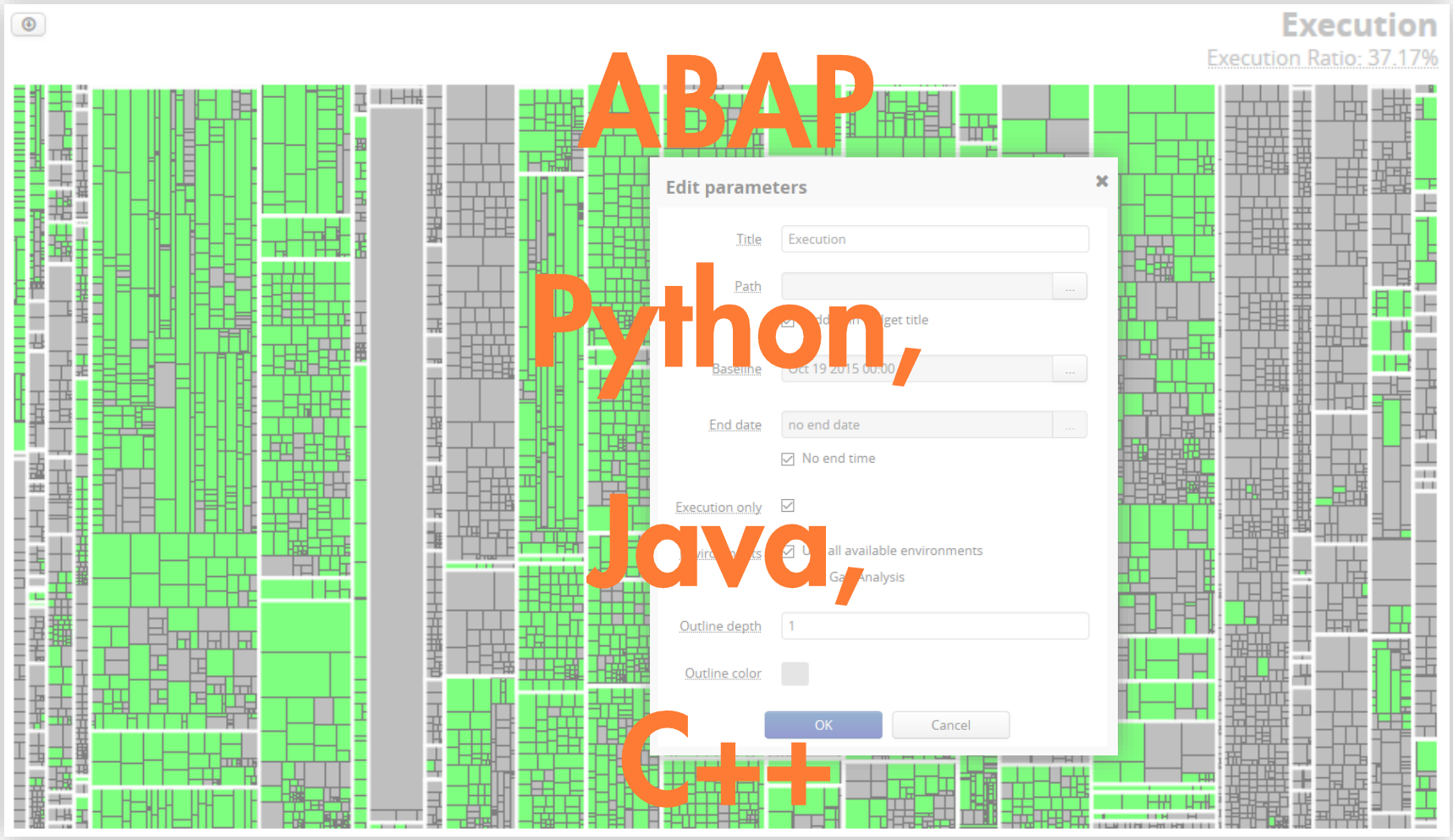
C#,

ABAP

Python,

Java,

C++



Agenda

1. Test-Gap-Analyse
2. **Einsatz in verschiedenen Test-Szenarien**

Test-Arten

Hotfix-Test

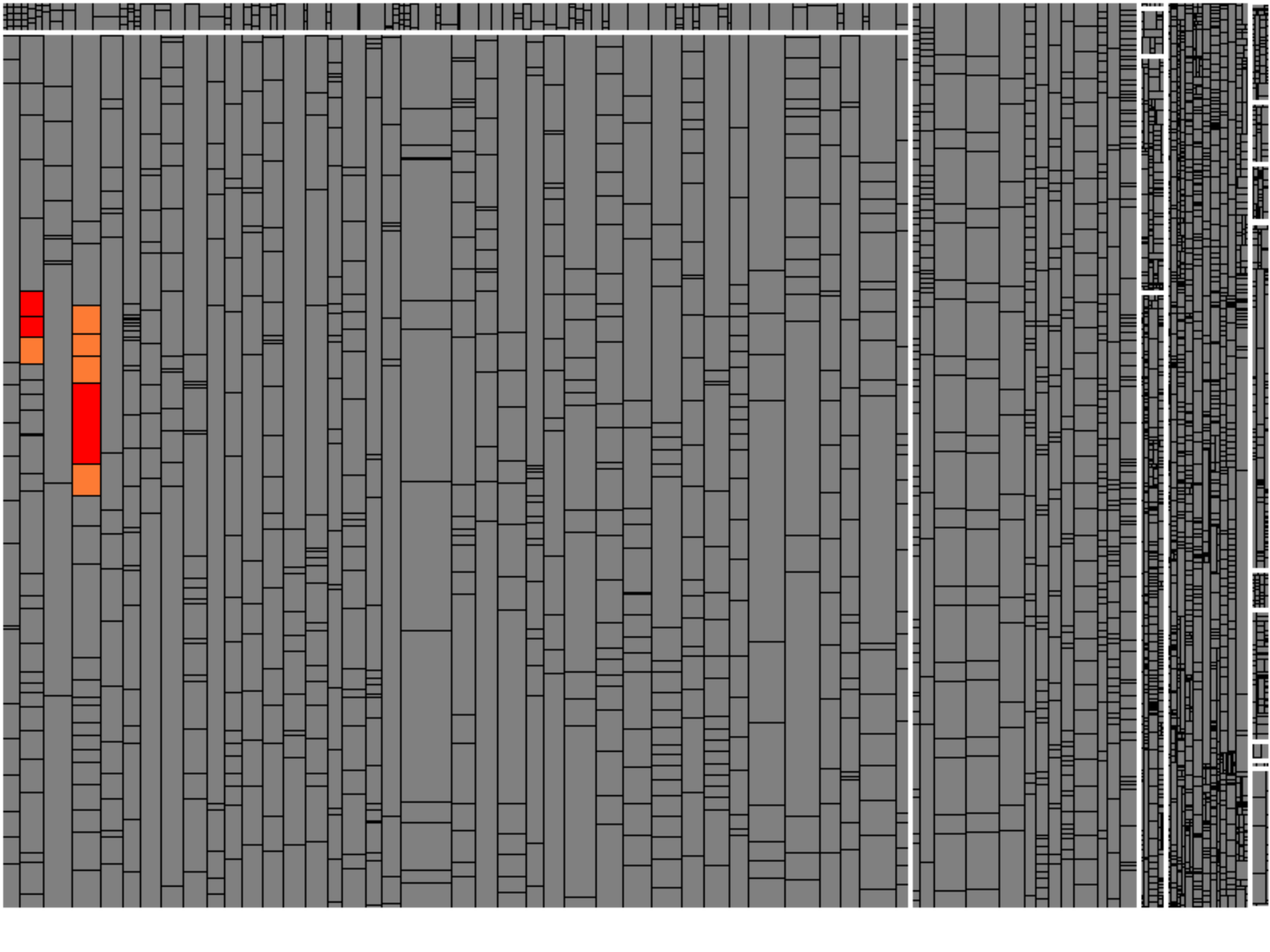
- On-Demand, wenig Zeit
- Getestet werden nur Änderungen des Hotfix

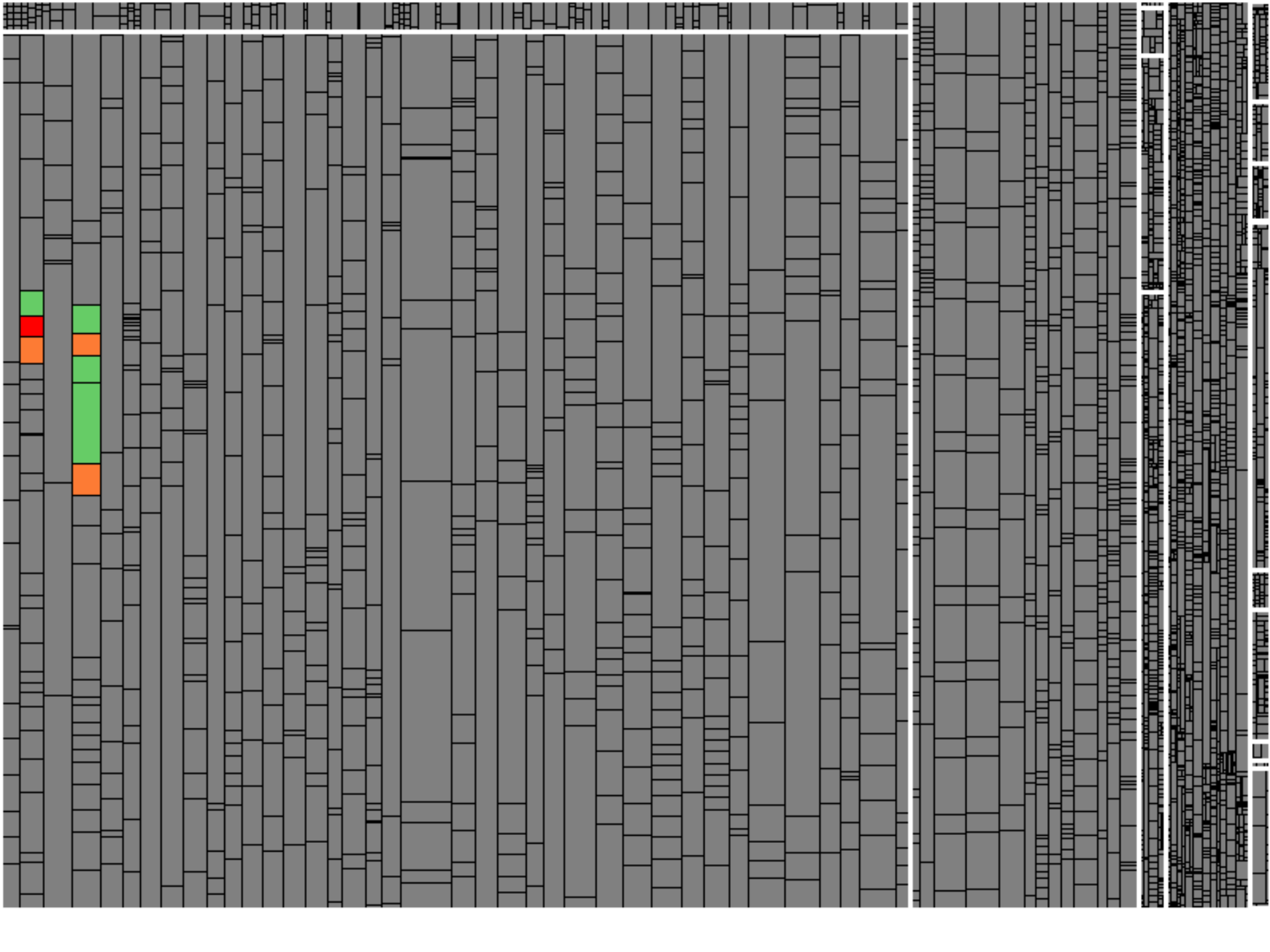
Release-Test

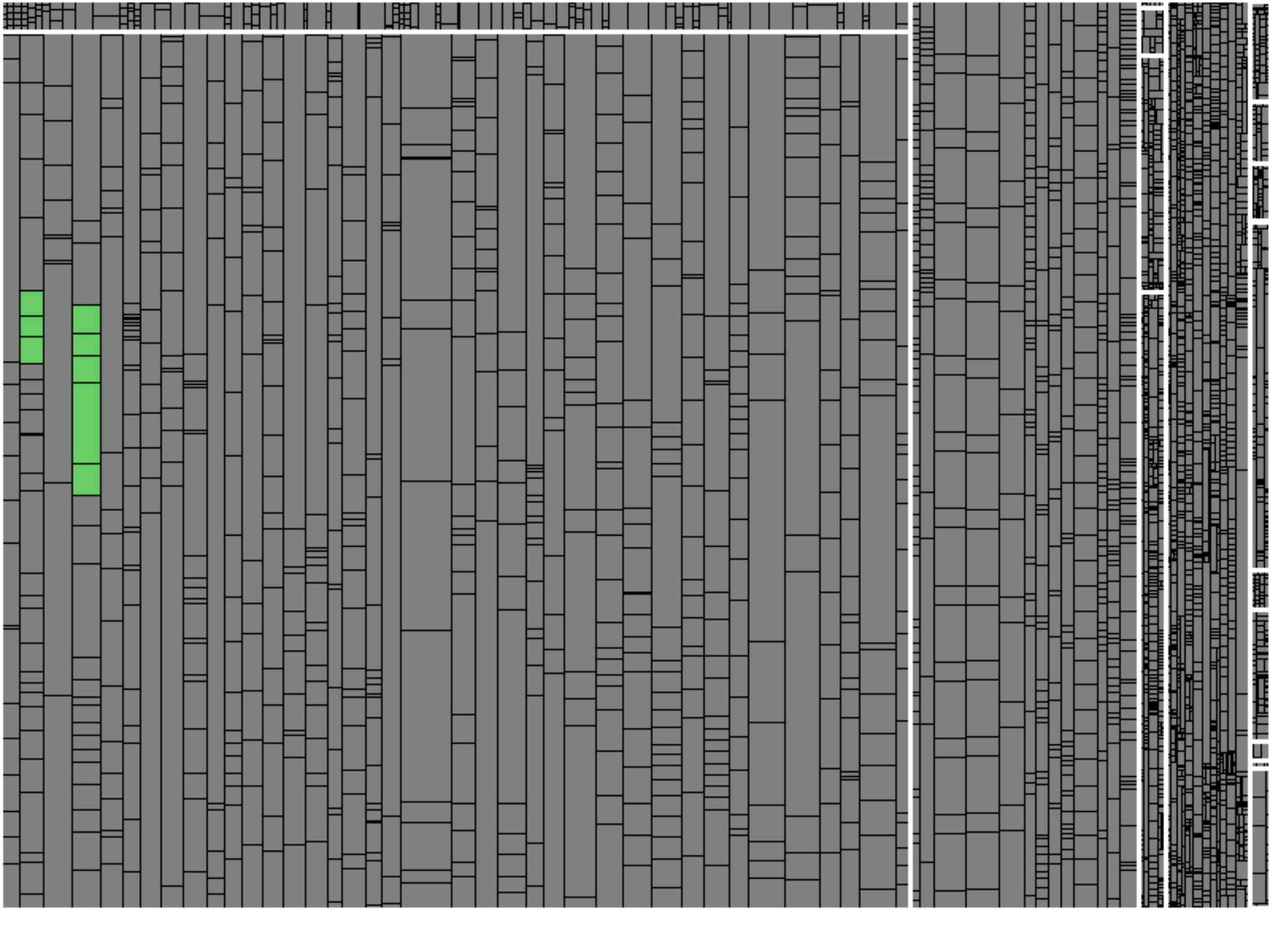
- Nur vor Release, Dauer mehrere Wochen
- Getestet werden alle Änderungen seit letztem Release

Iterations-Test

- Entwicklungsbegleitend, kontinuierlich, Iterationsdauer (2-4 Wochen)
- Getestet werden Änderungen aus der Iteration

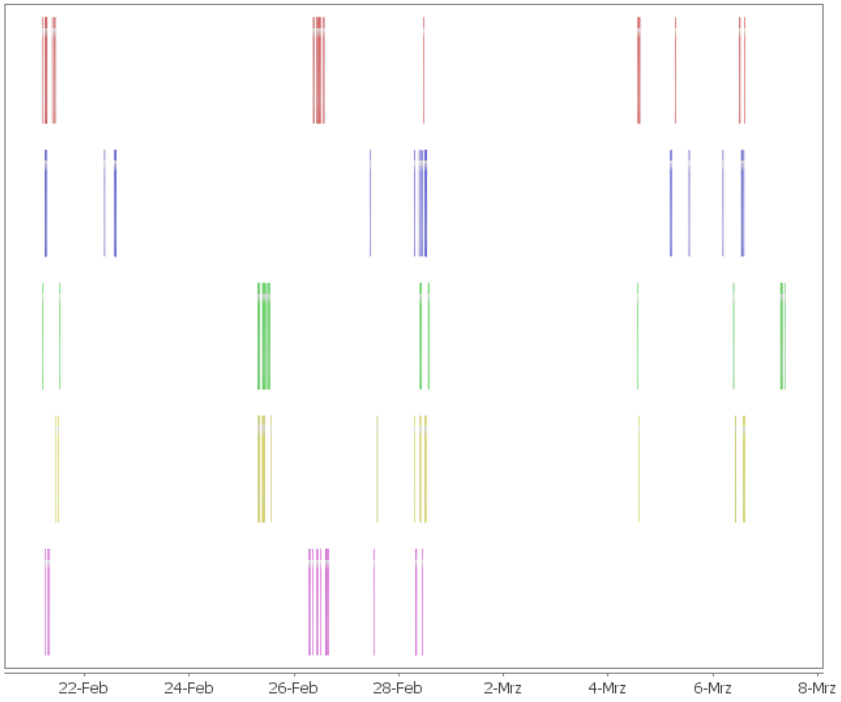


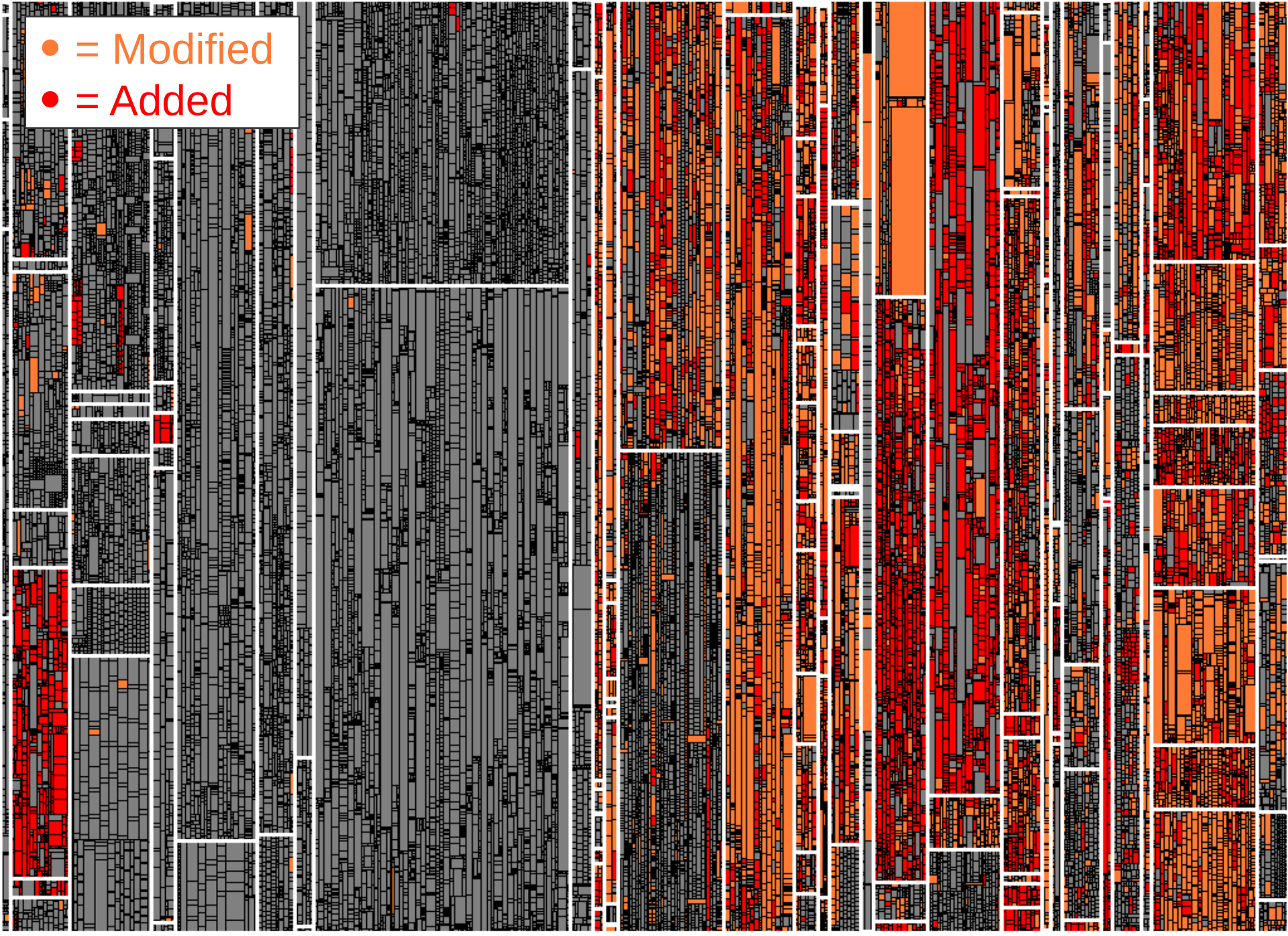




Einsatz bei Test-Factory

- 5 Tester in Indien
- Zeitraum 2 Wochen
- 143 Test-Sessions
- 6 Versionen des Systems

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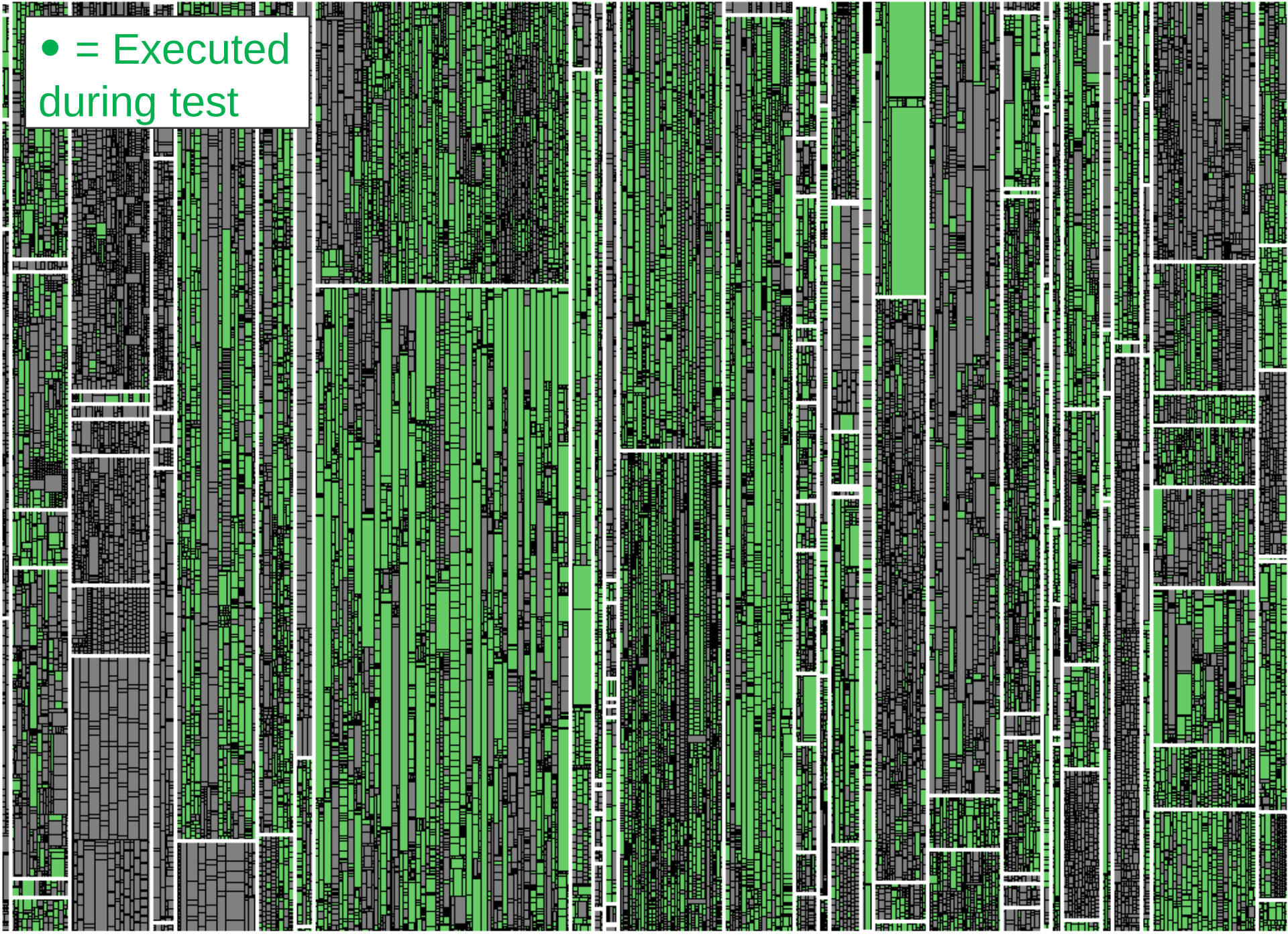
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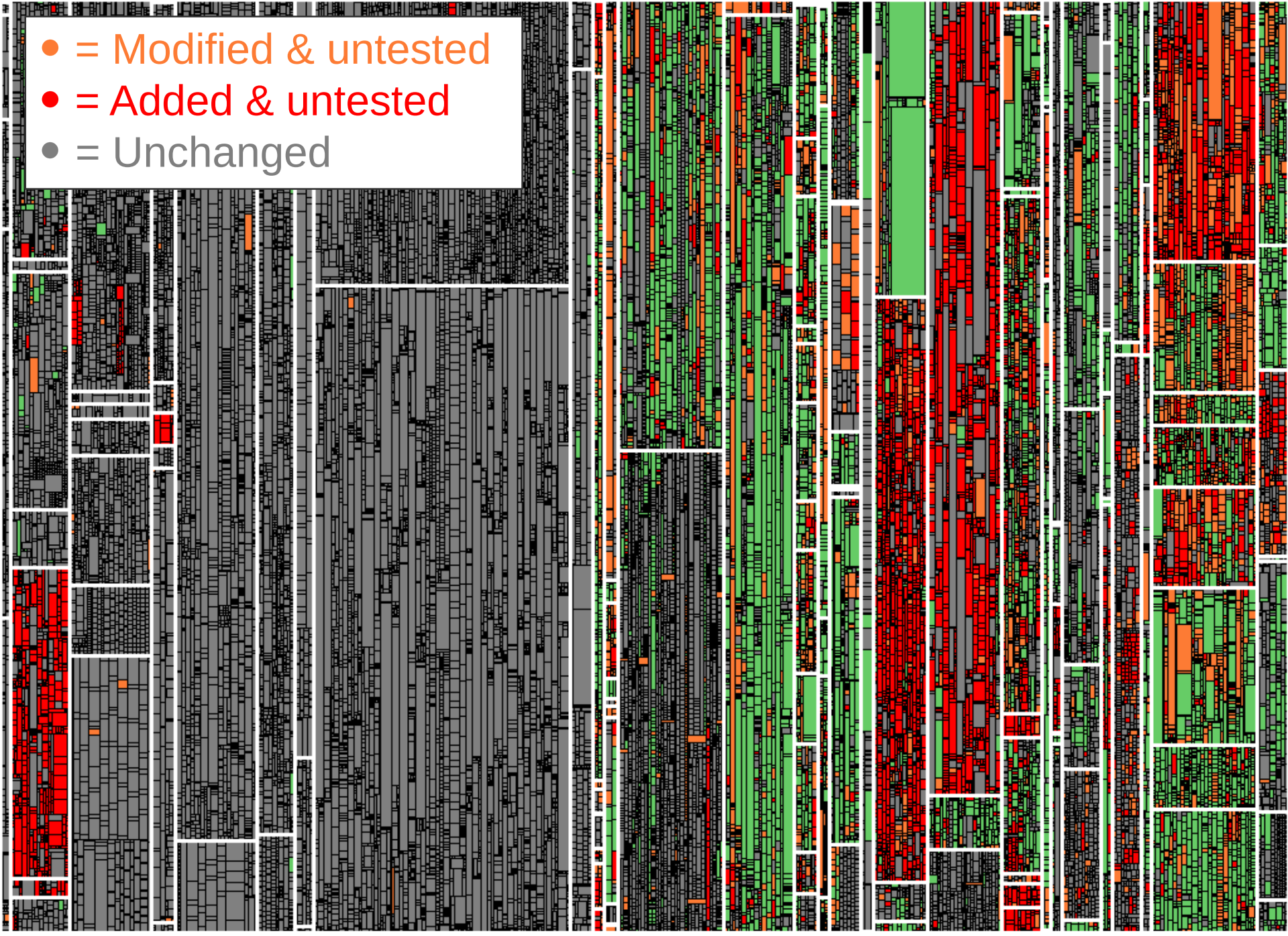
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= Added & untested
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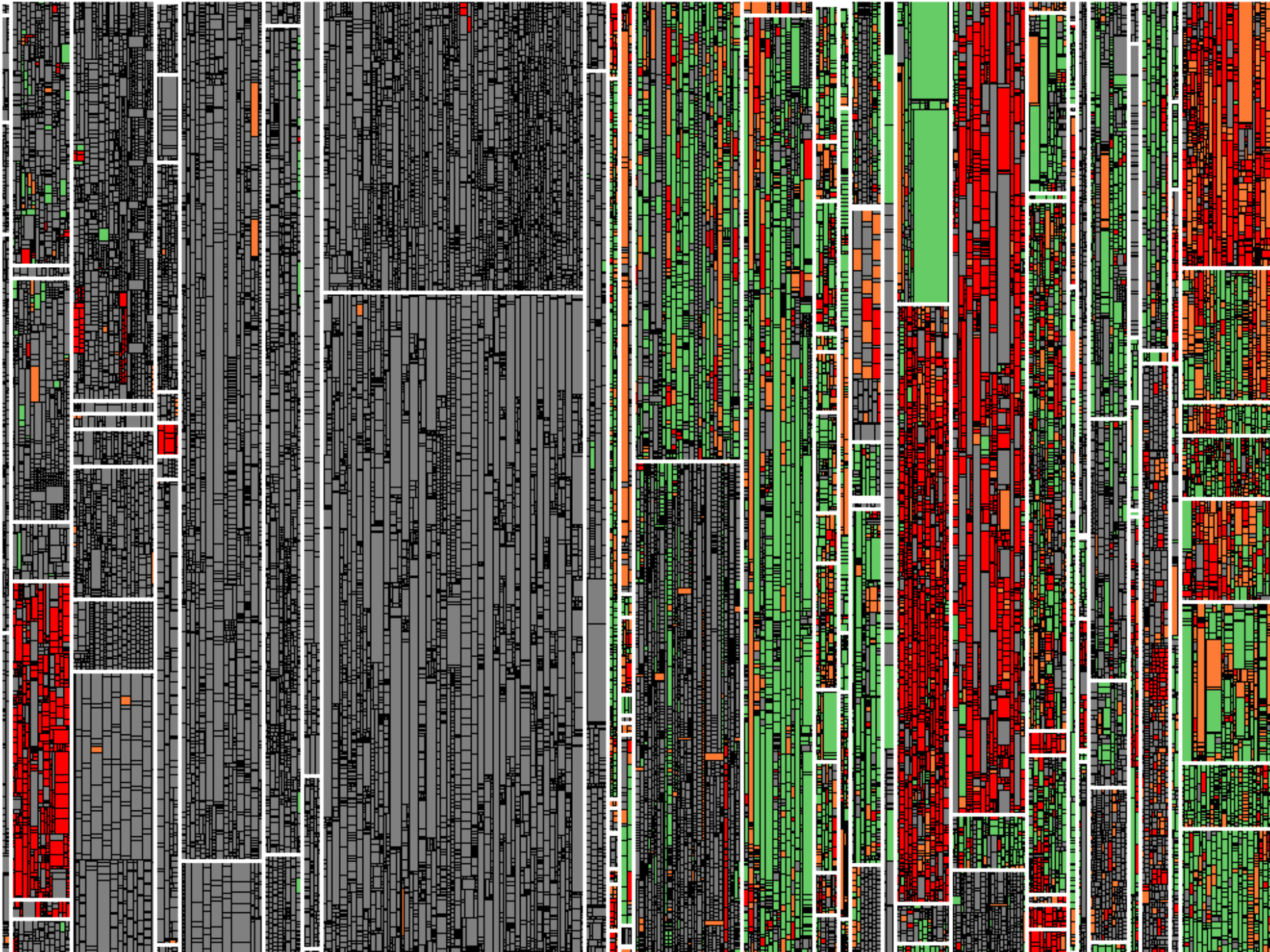
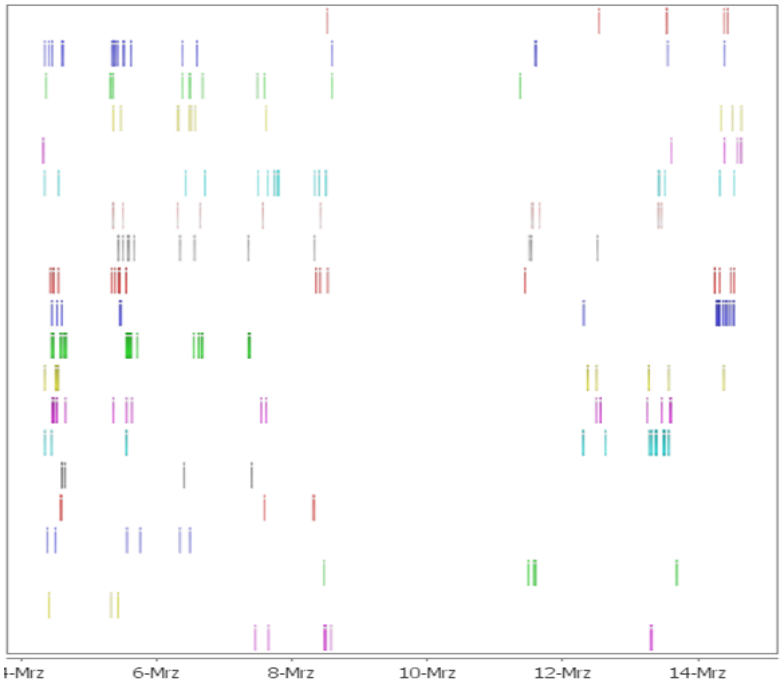
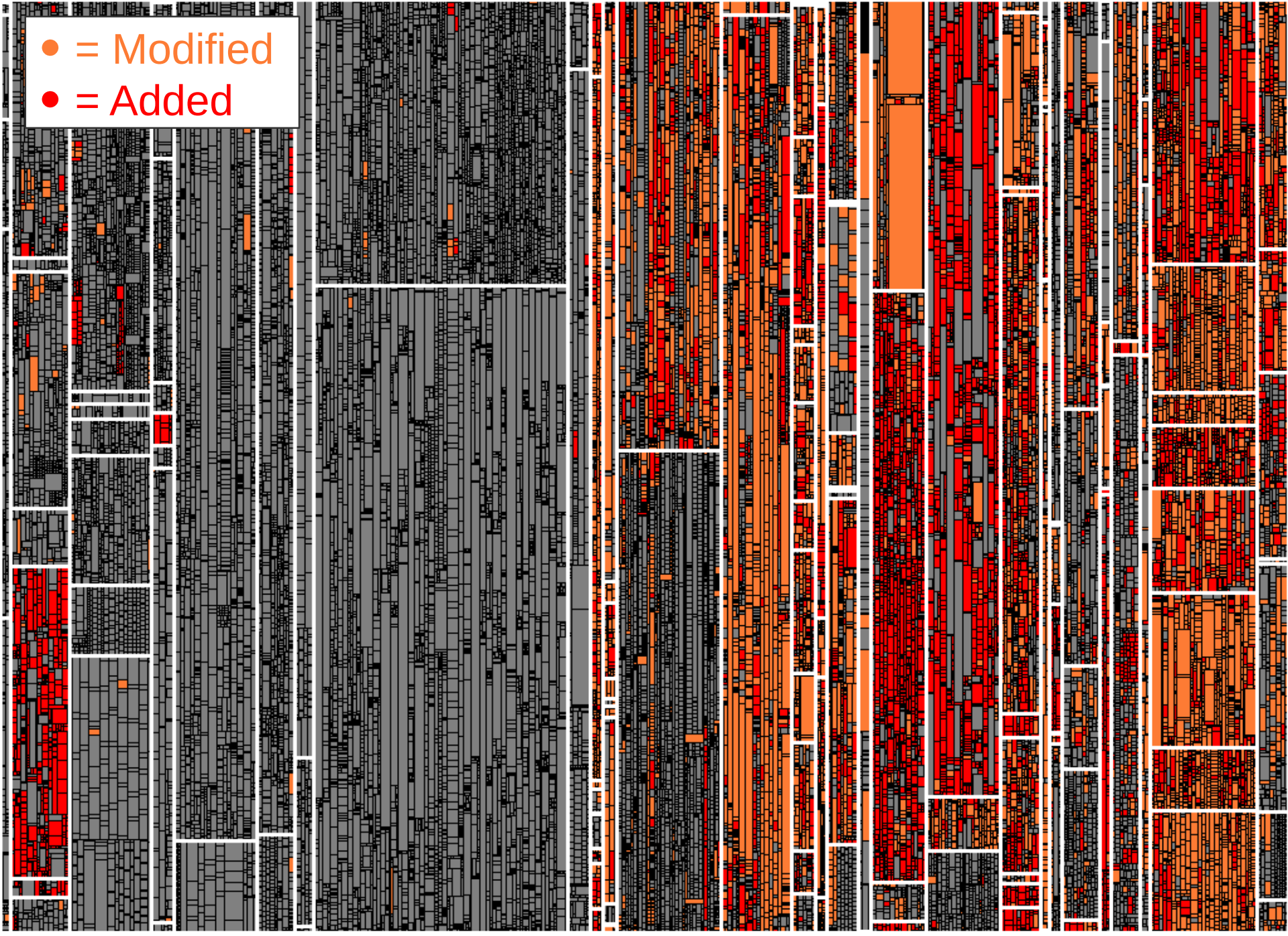


Einsatz bei explorativem Test

- 23 Tester
  - Requirement Engineers
  - Fachbereich
  - Endanwender
- Zeitraum 2 Wochen
- 307 Test-Sessions
- 8 Versionen des Systems

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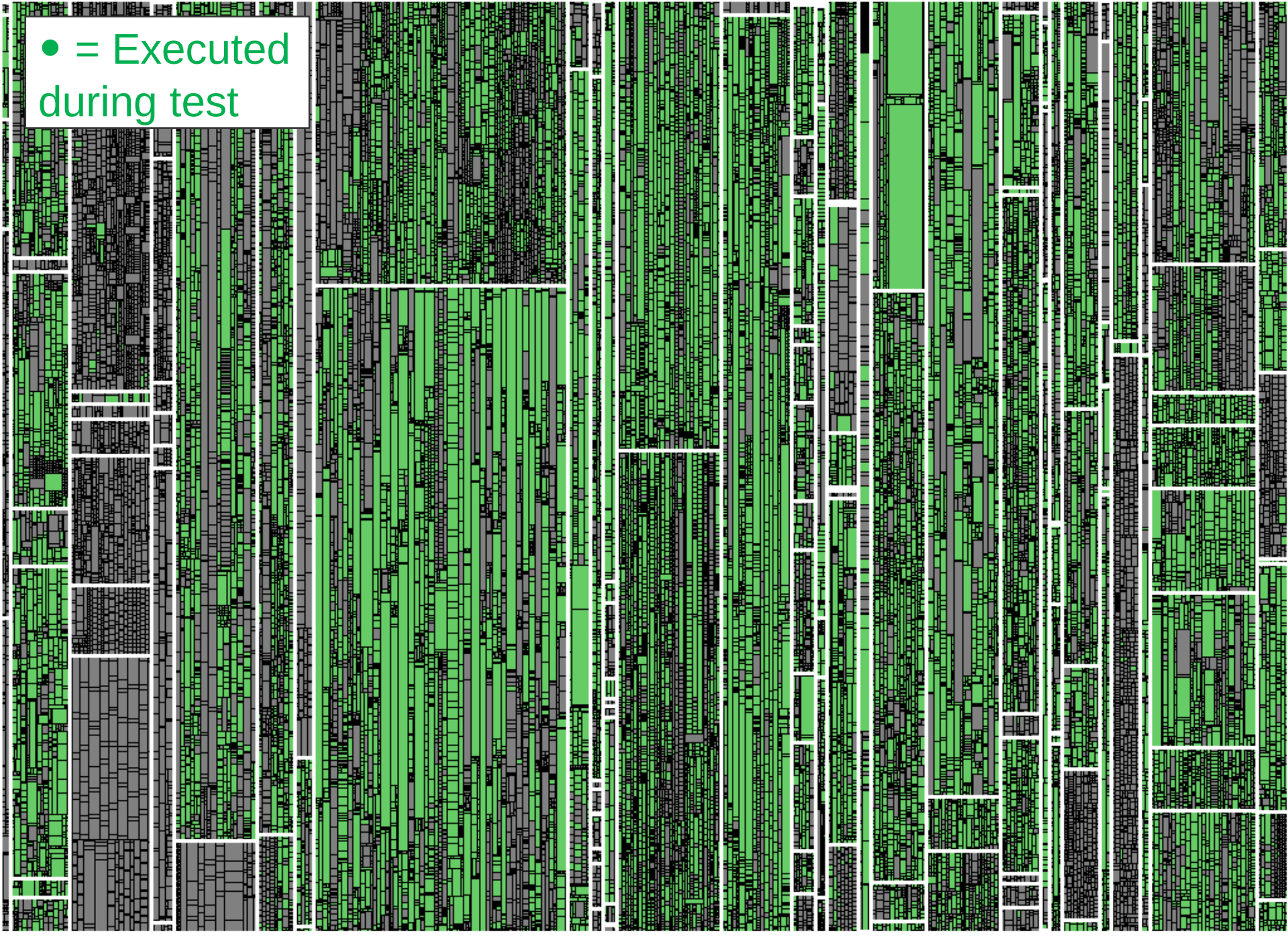
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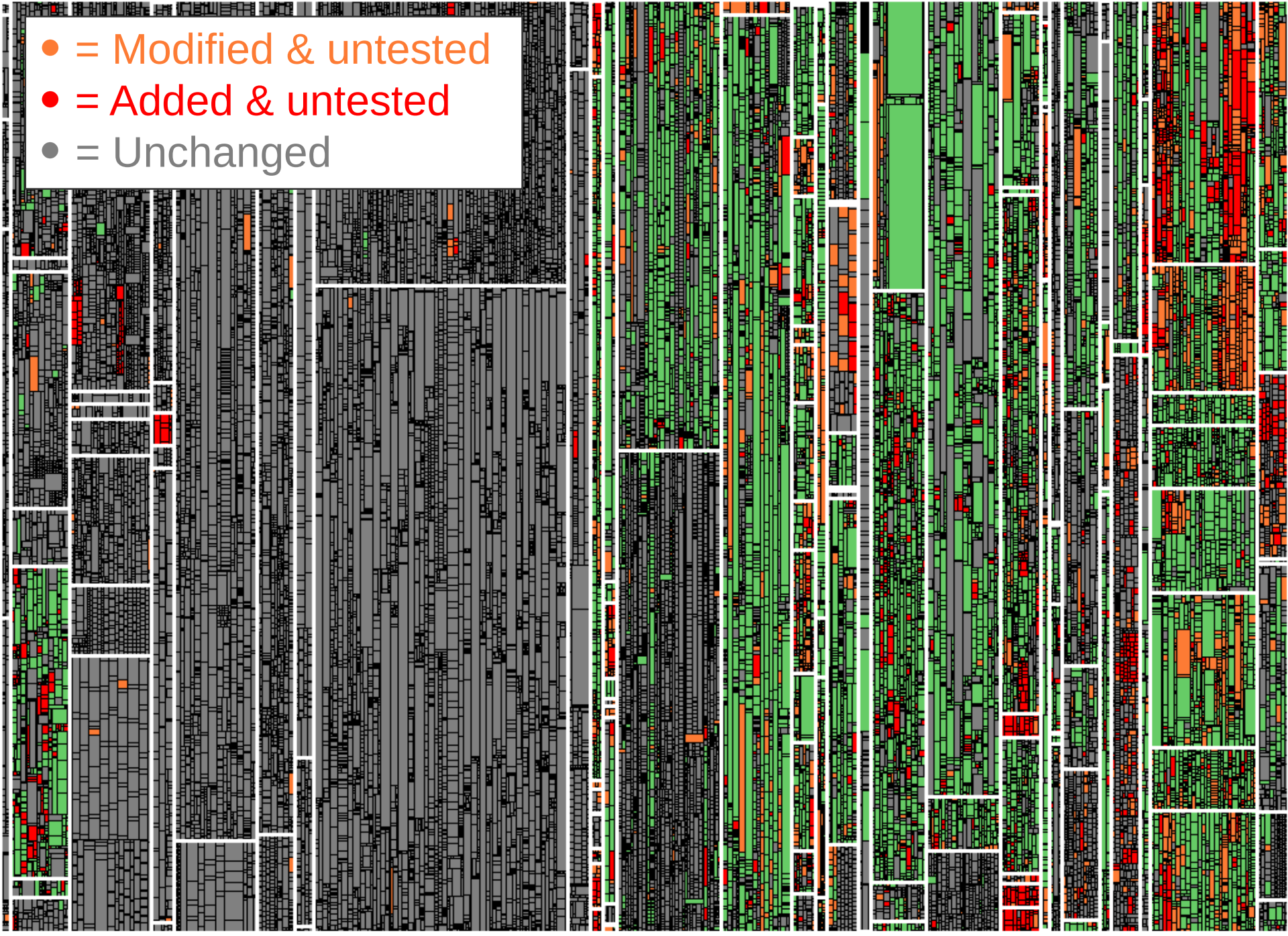
= Modified & untested
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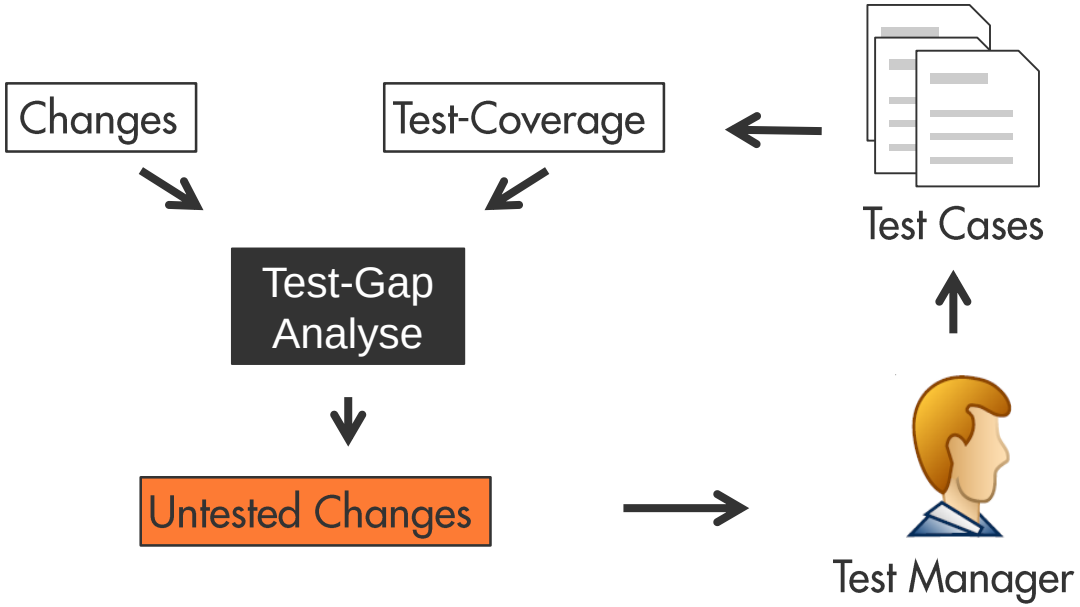
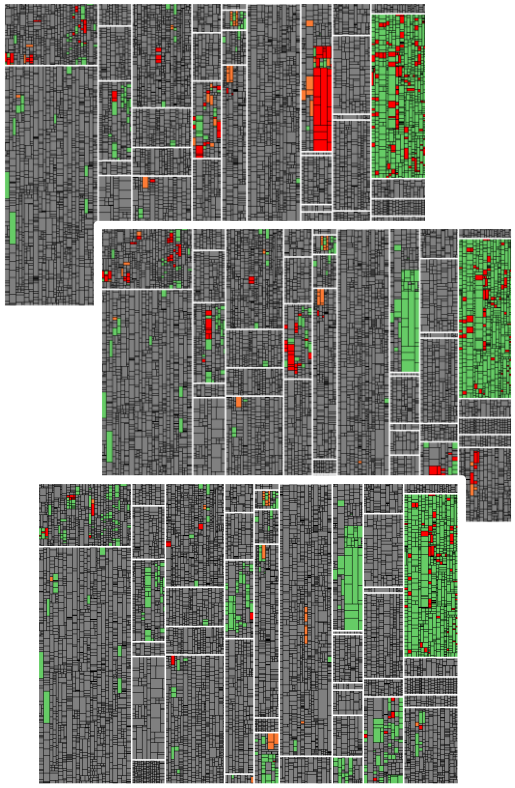
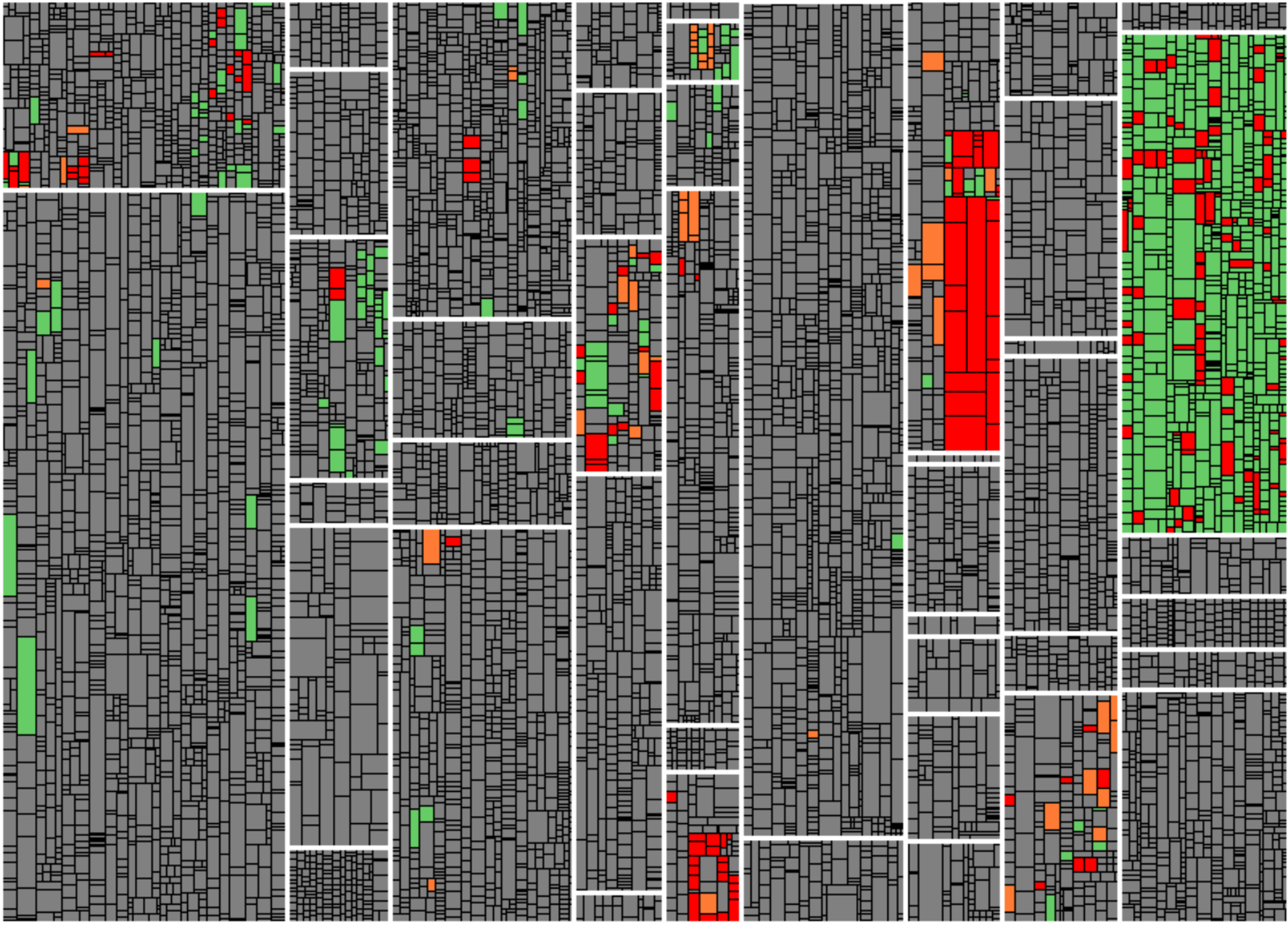
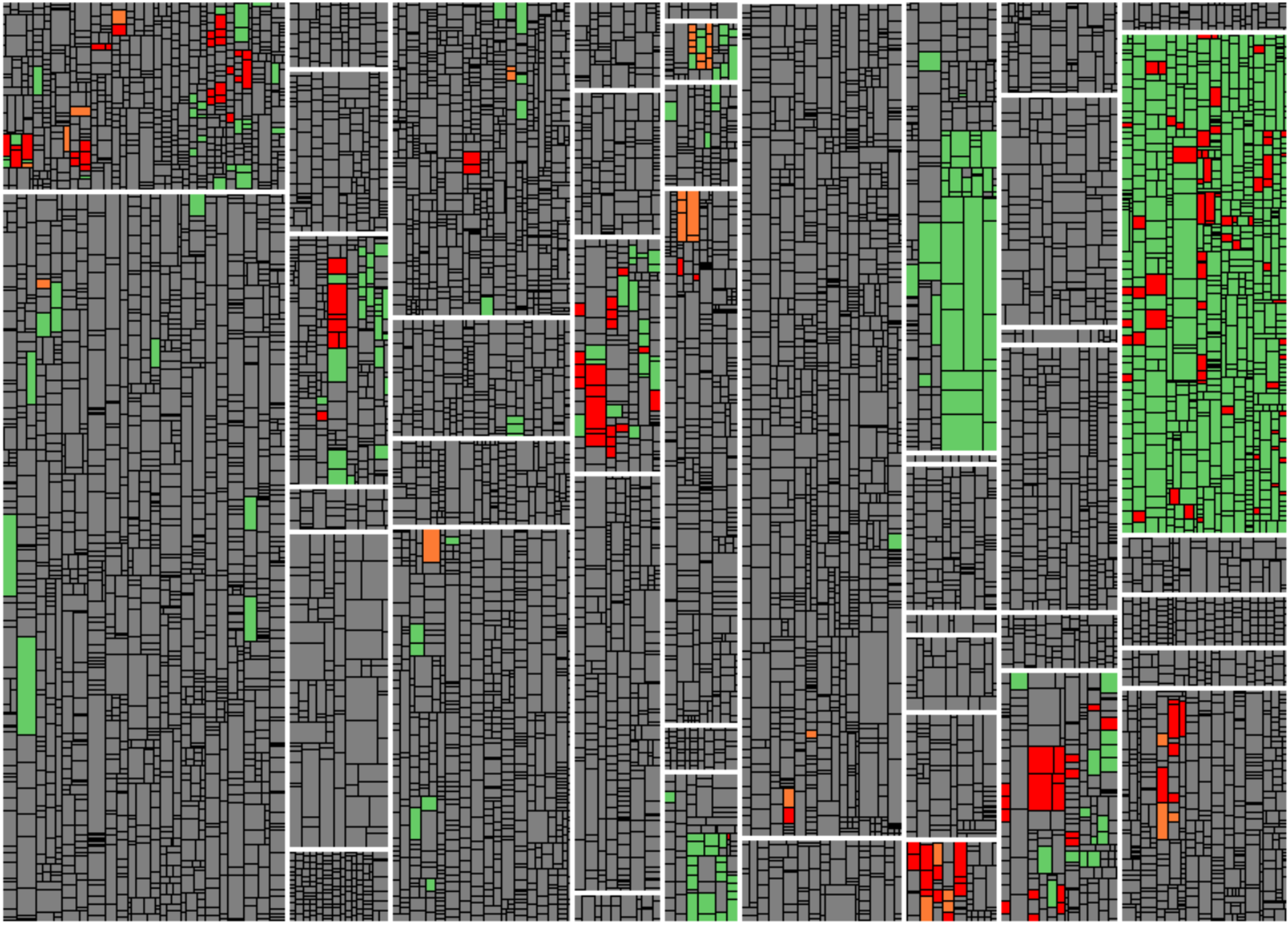
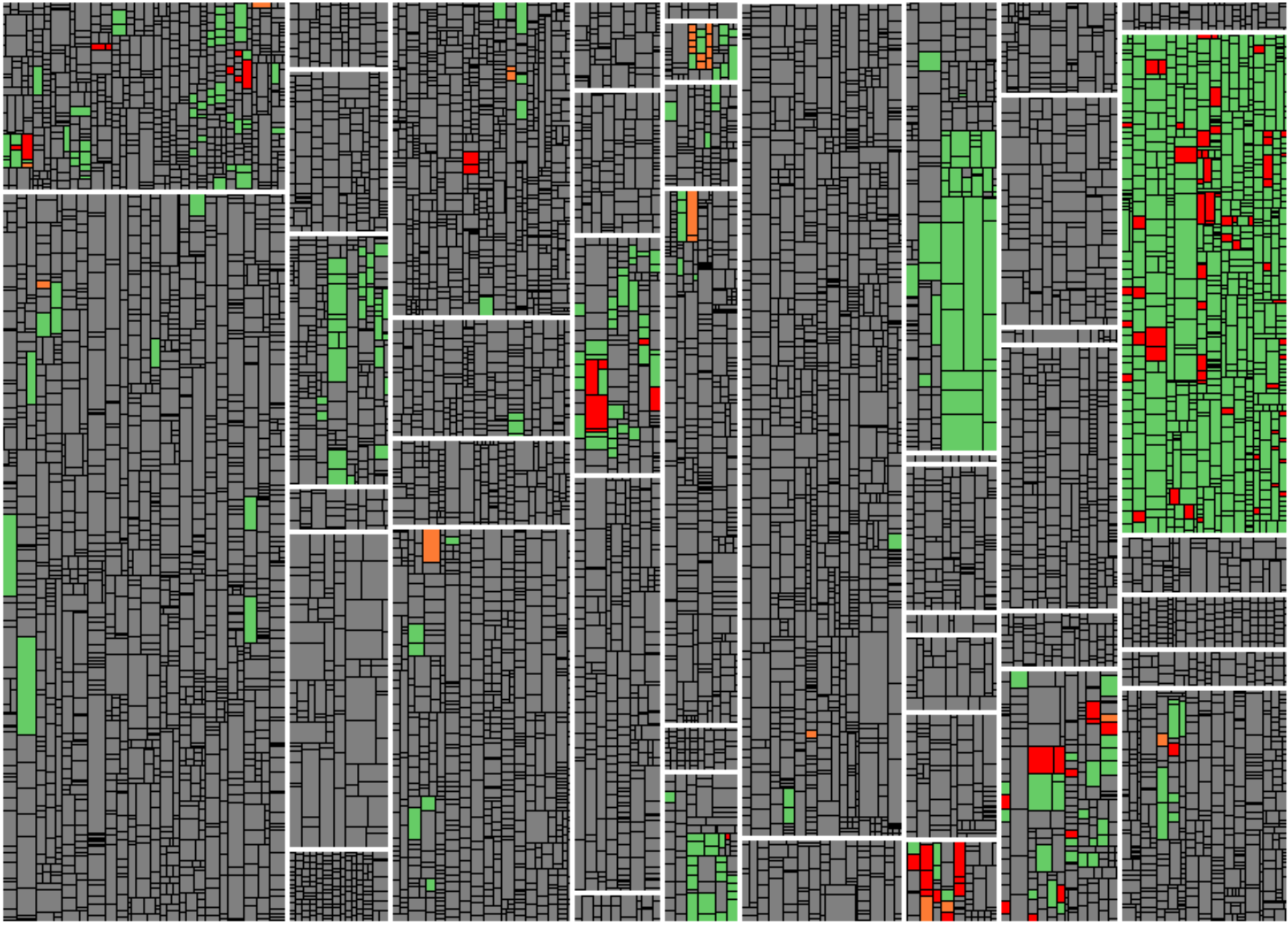
Einsatz im Testprozess: Beispiel (2)

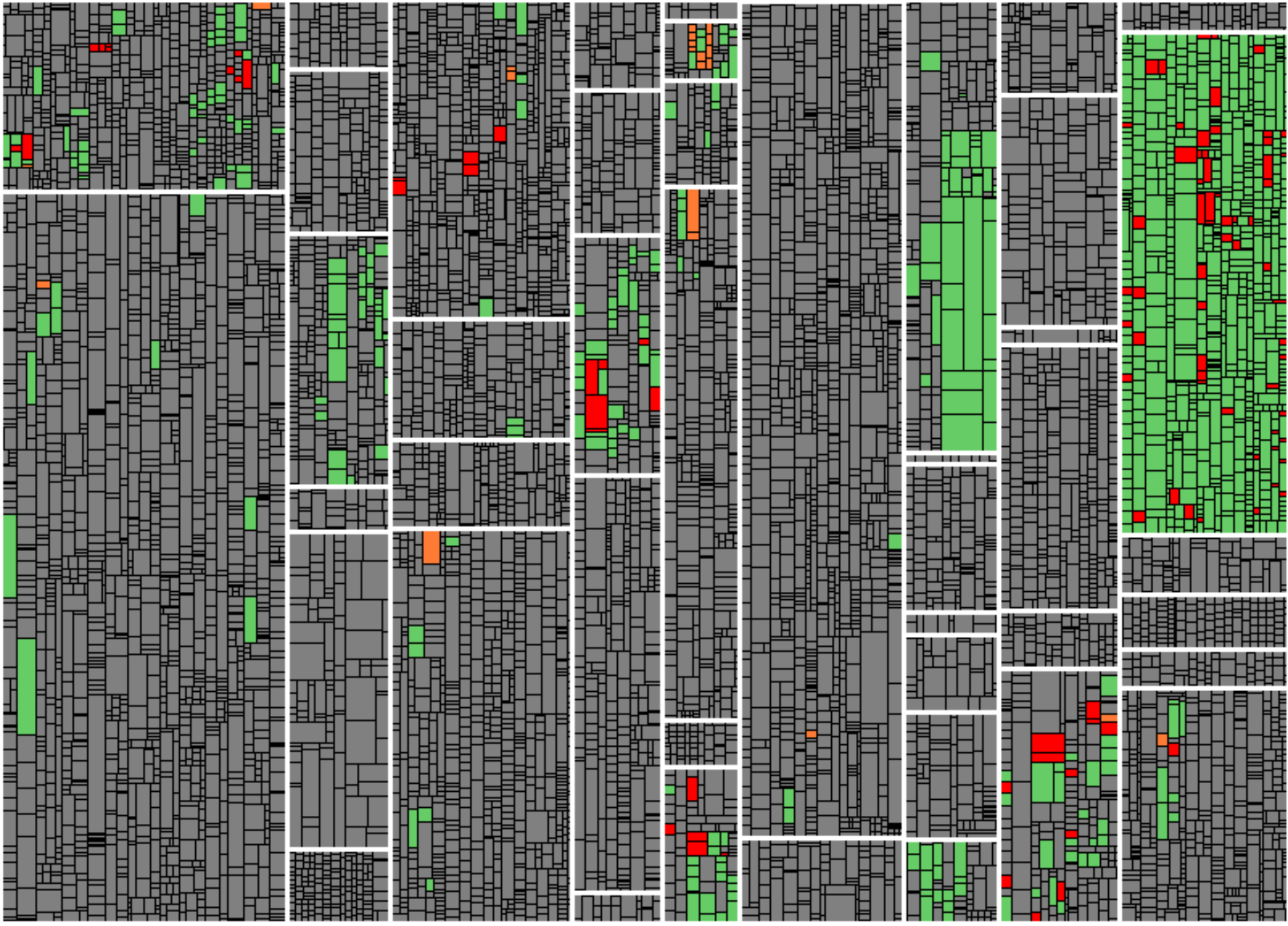


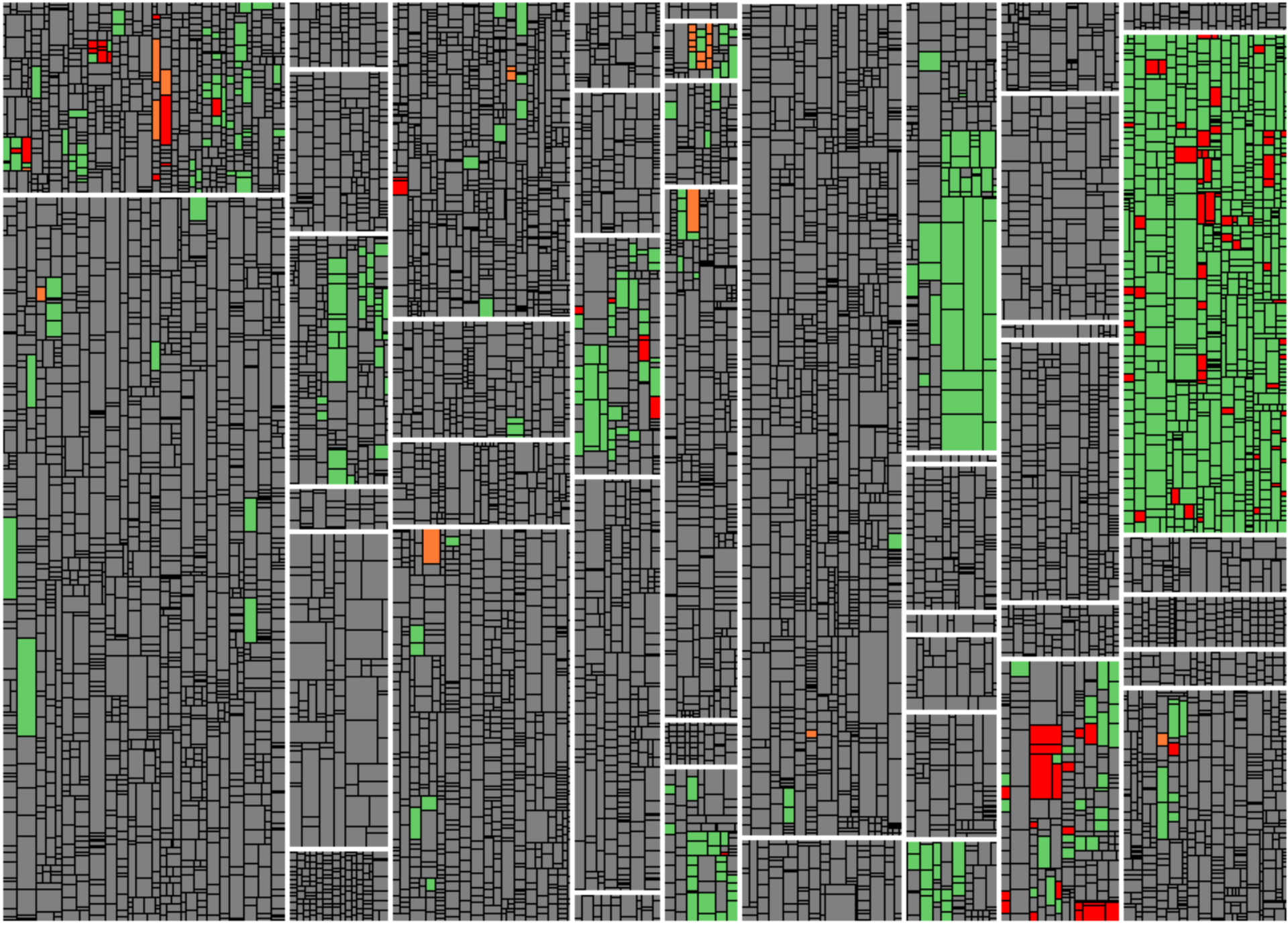


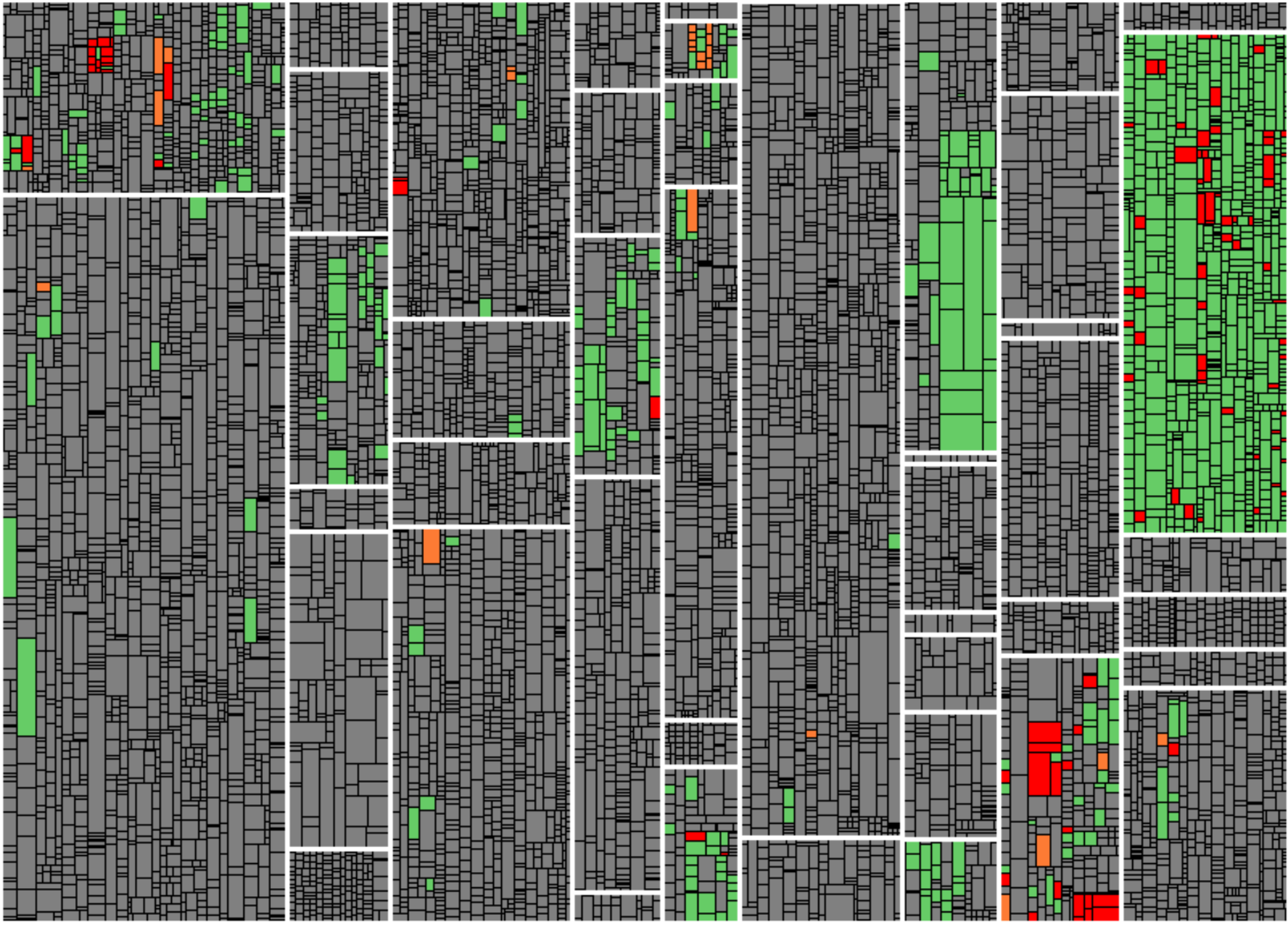


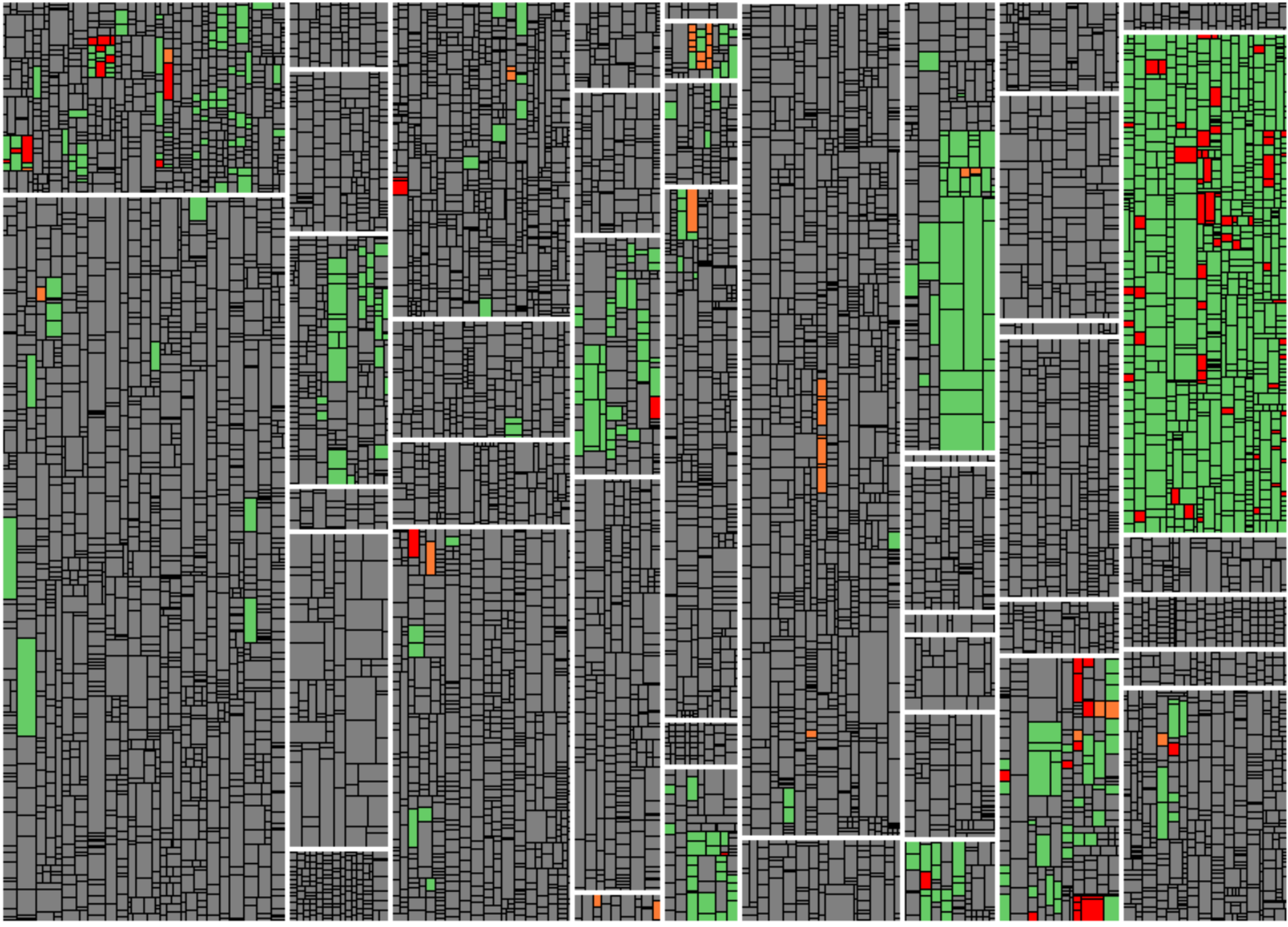


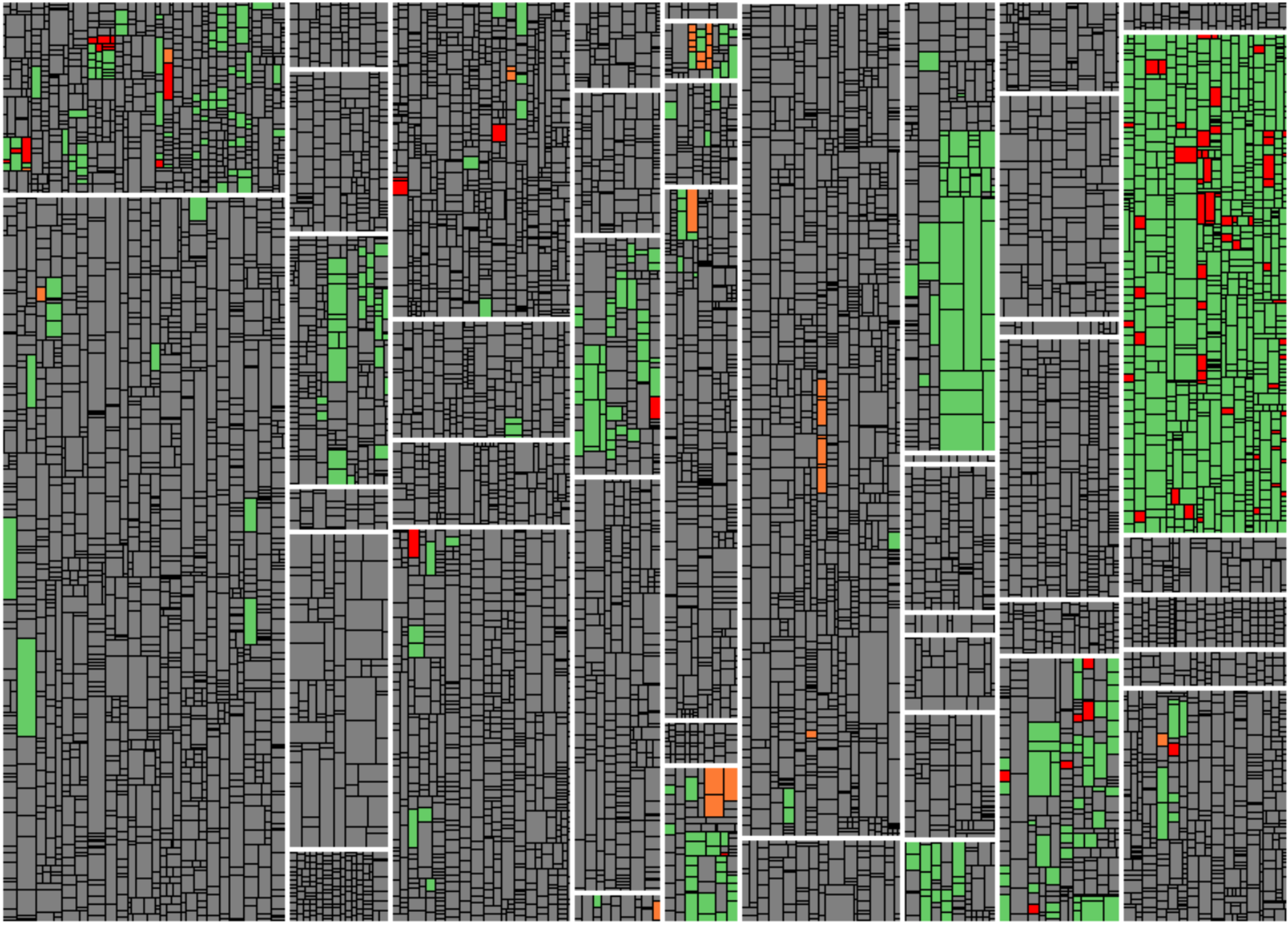




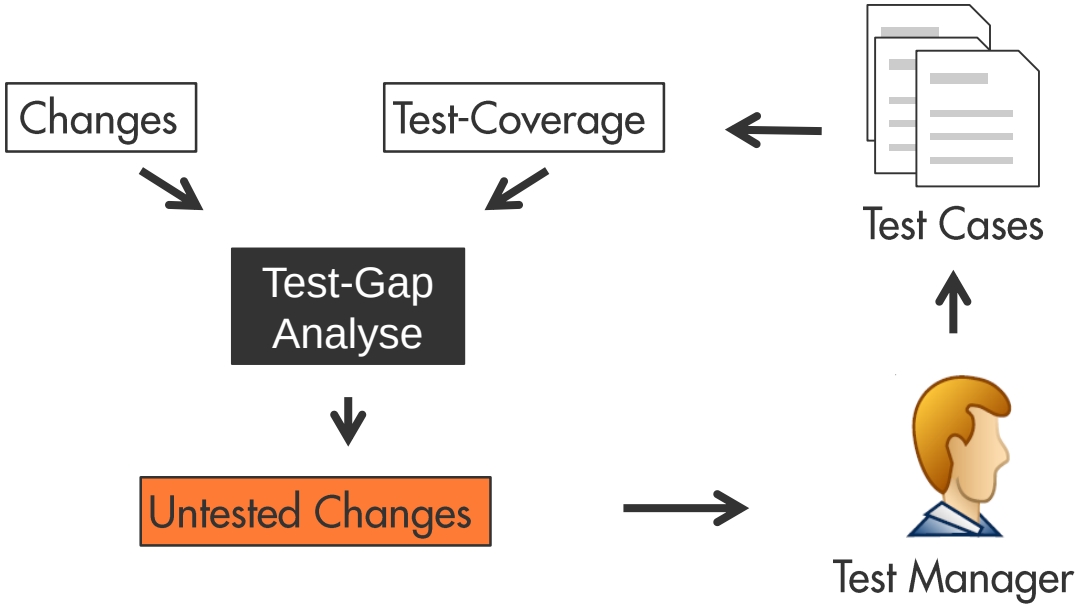


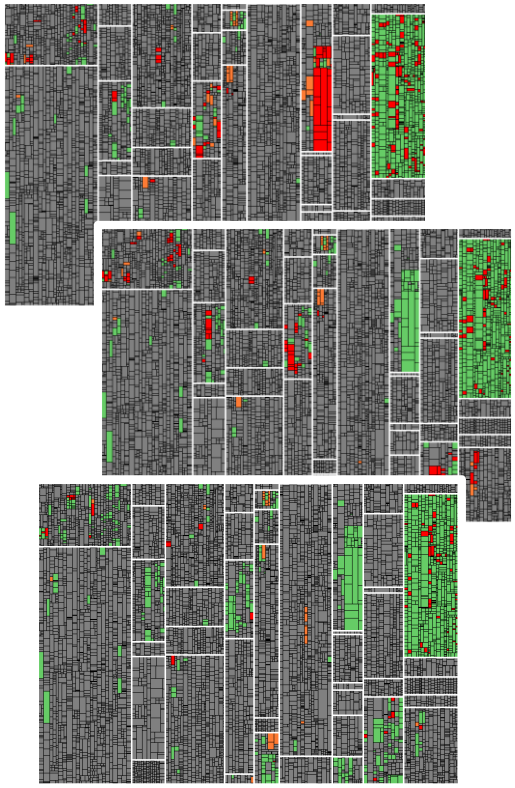


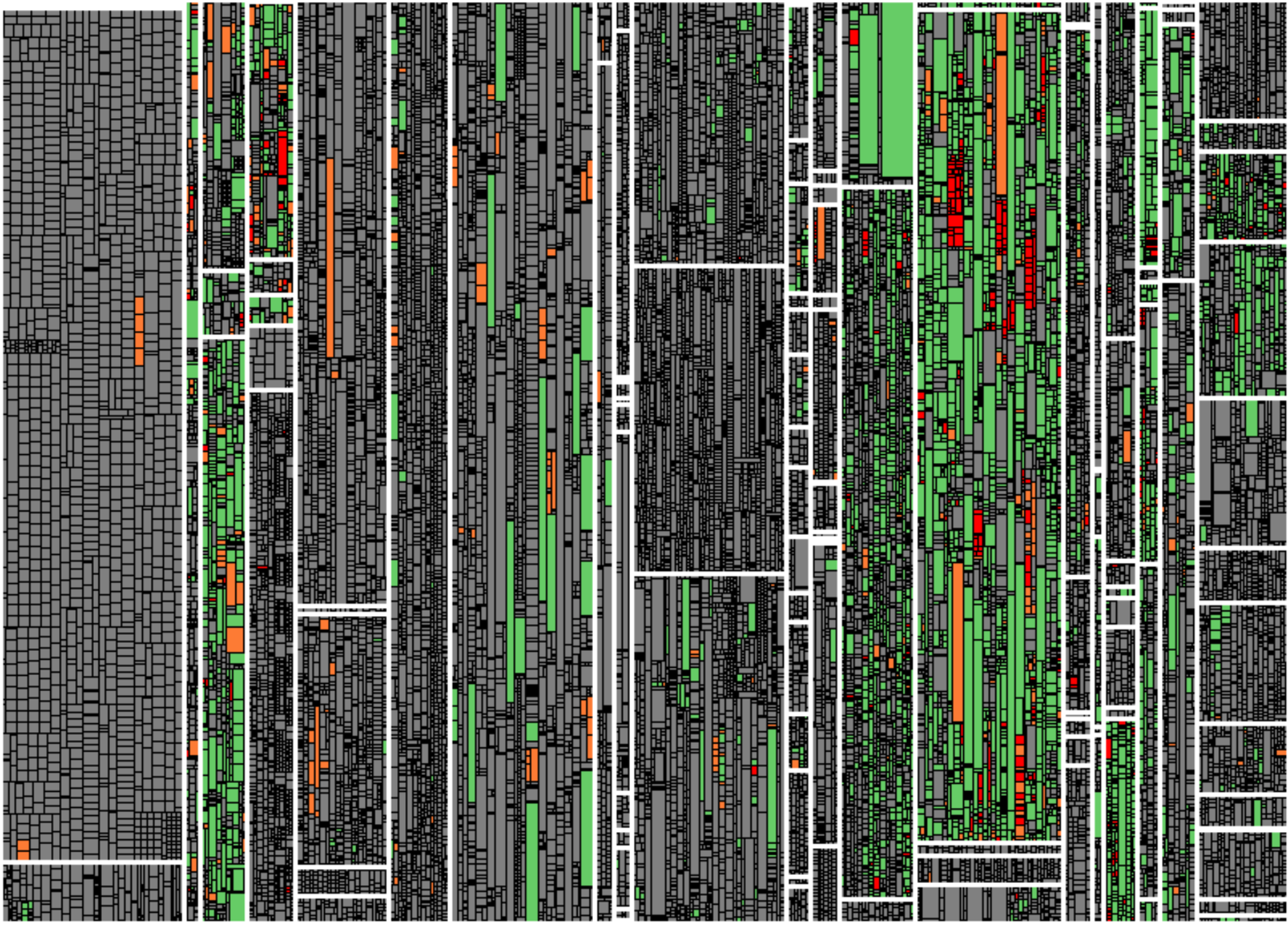


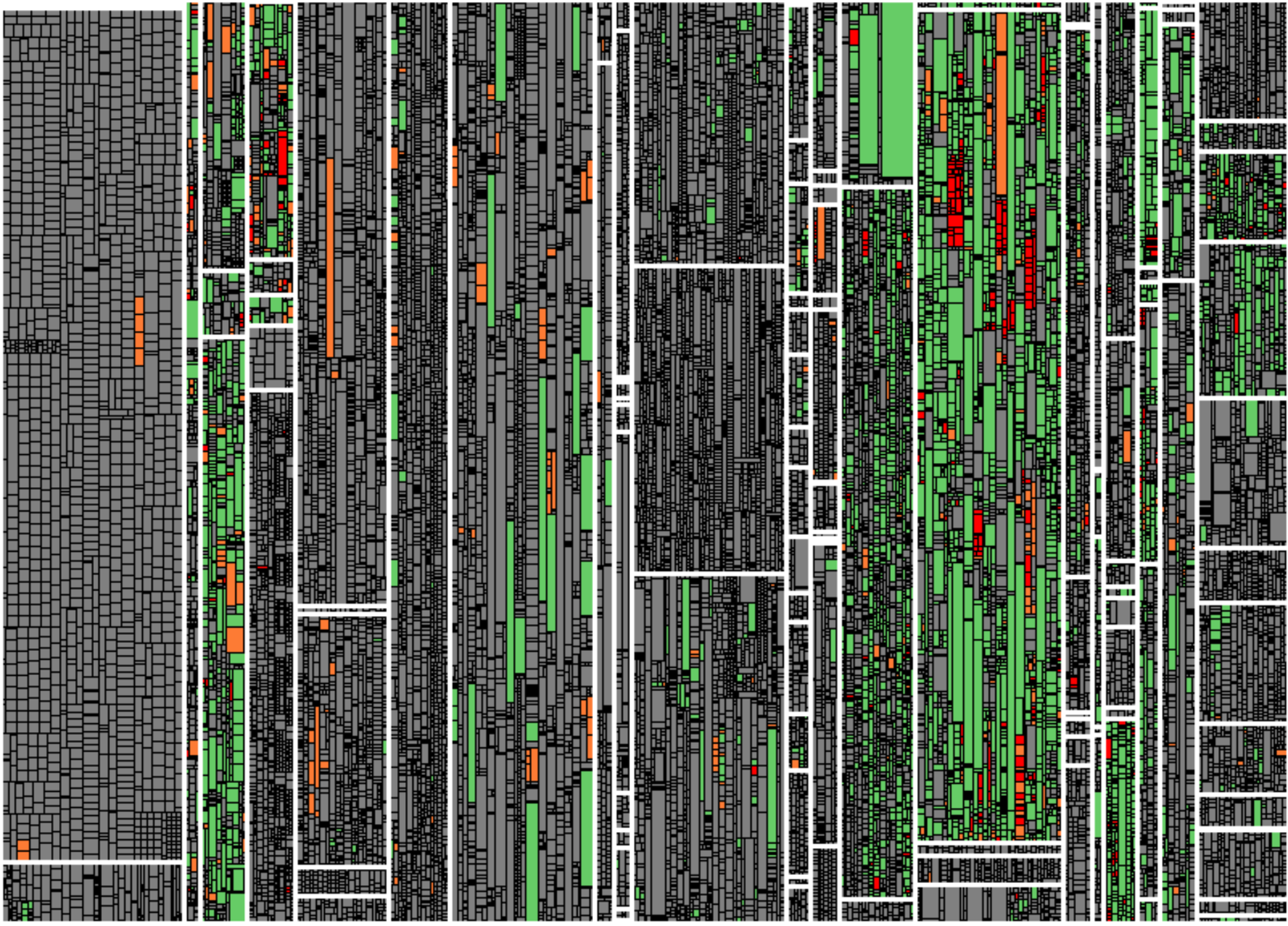


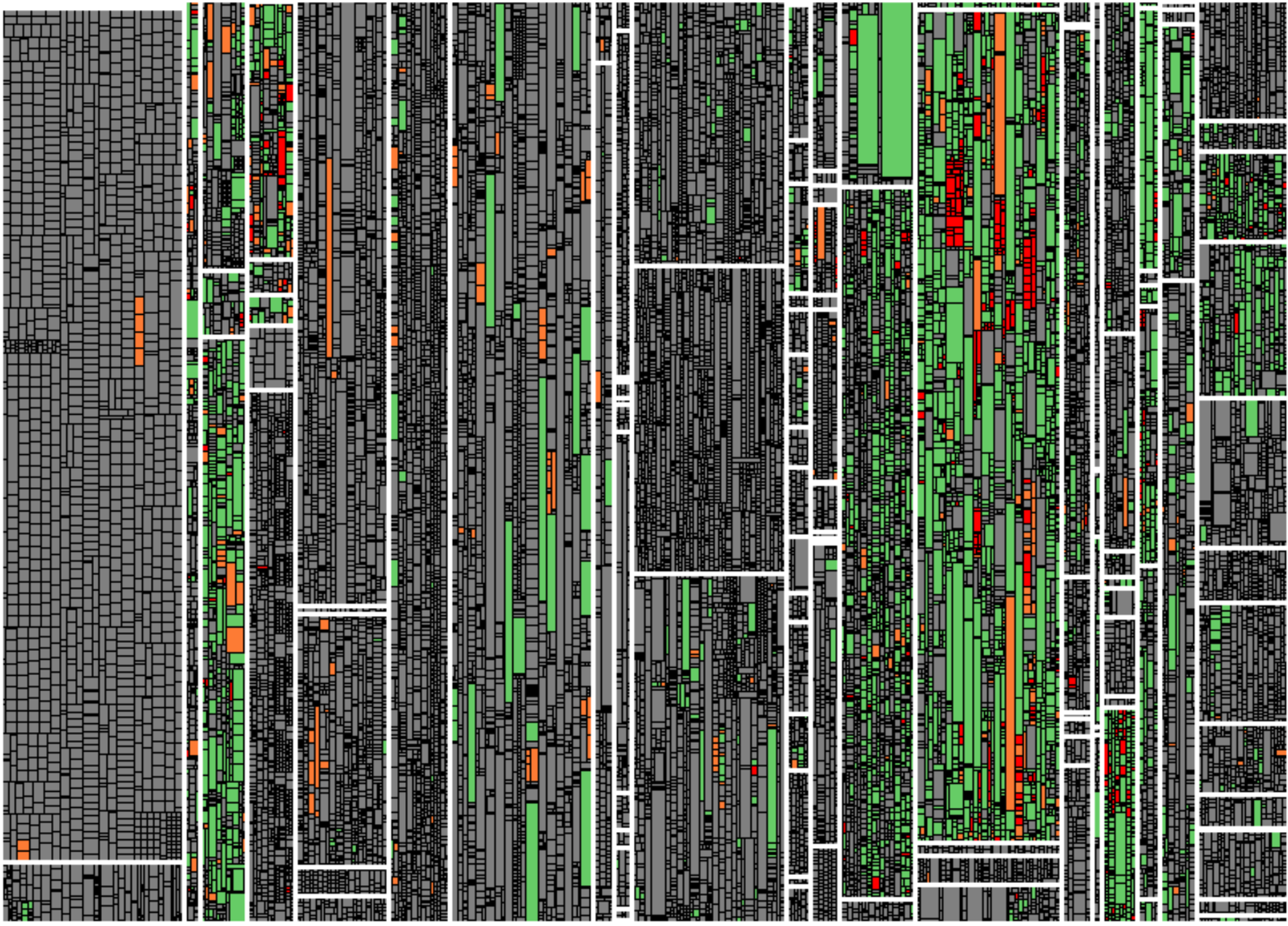
Einsatz im Release-Test: Beispiel (3)

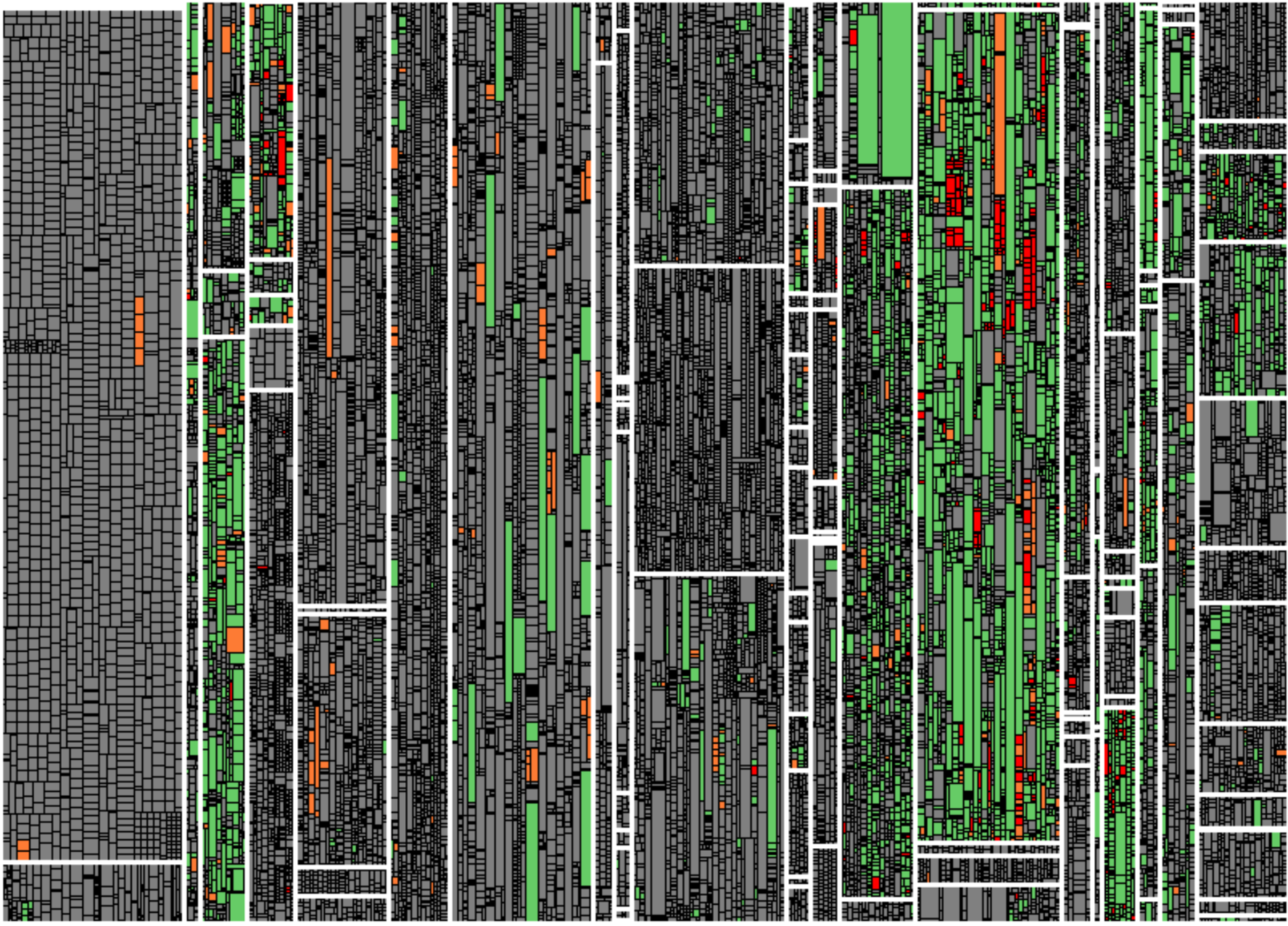


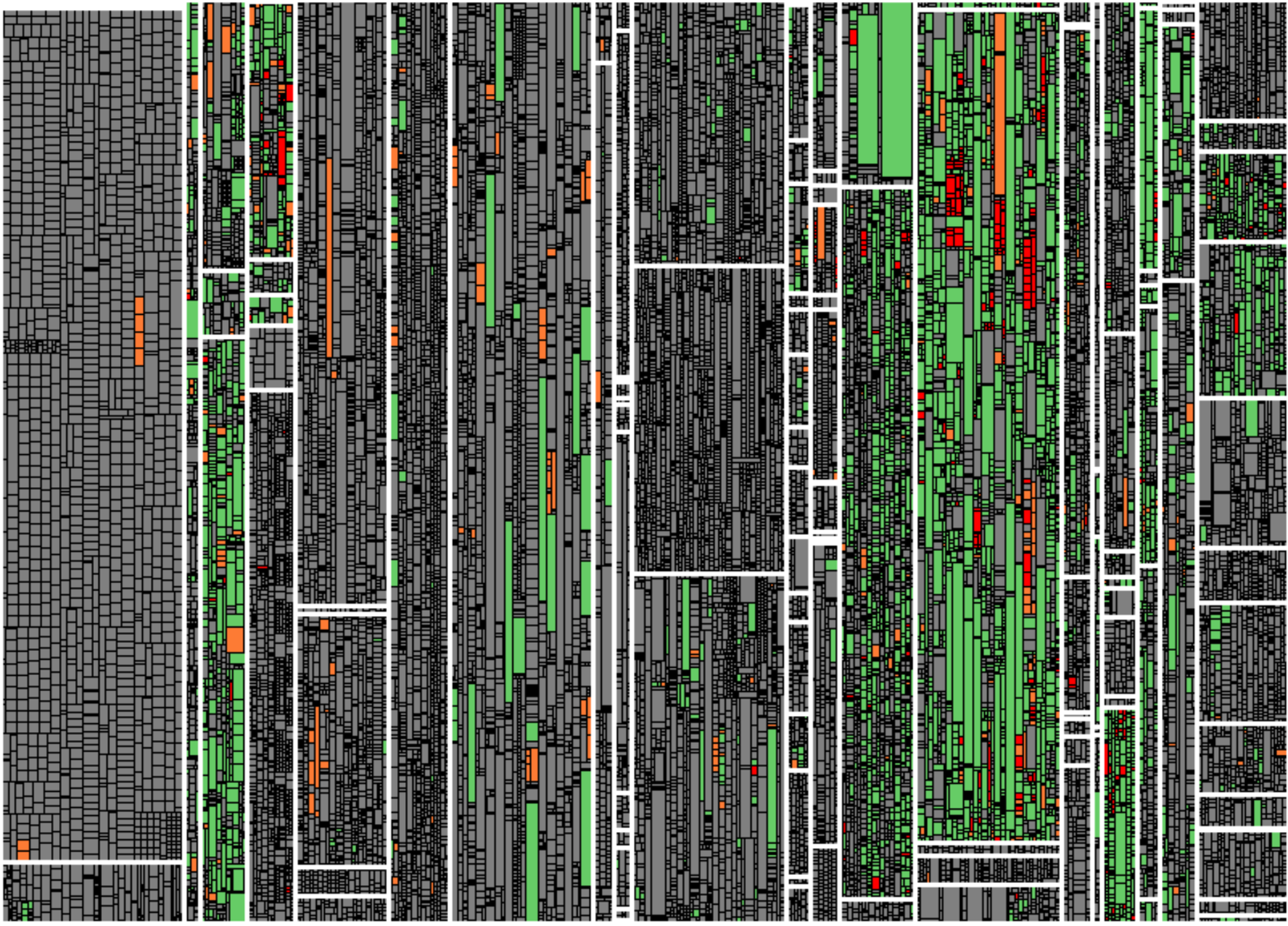


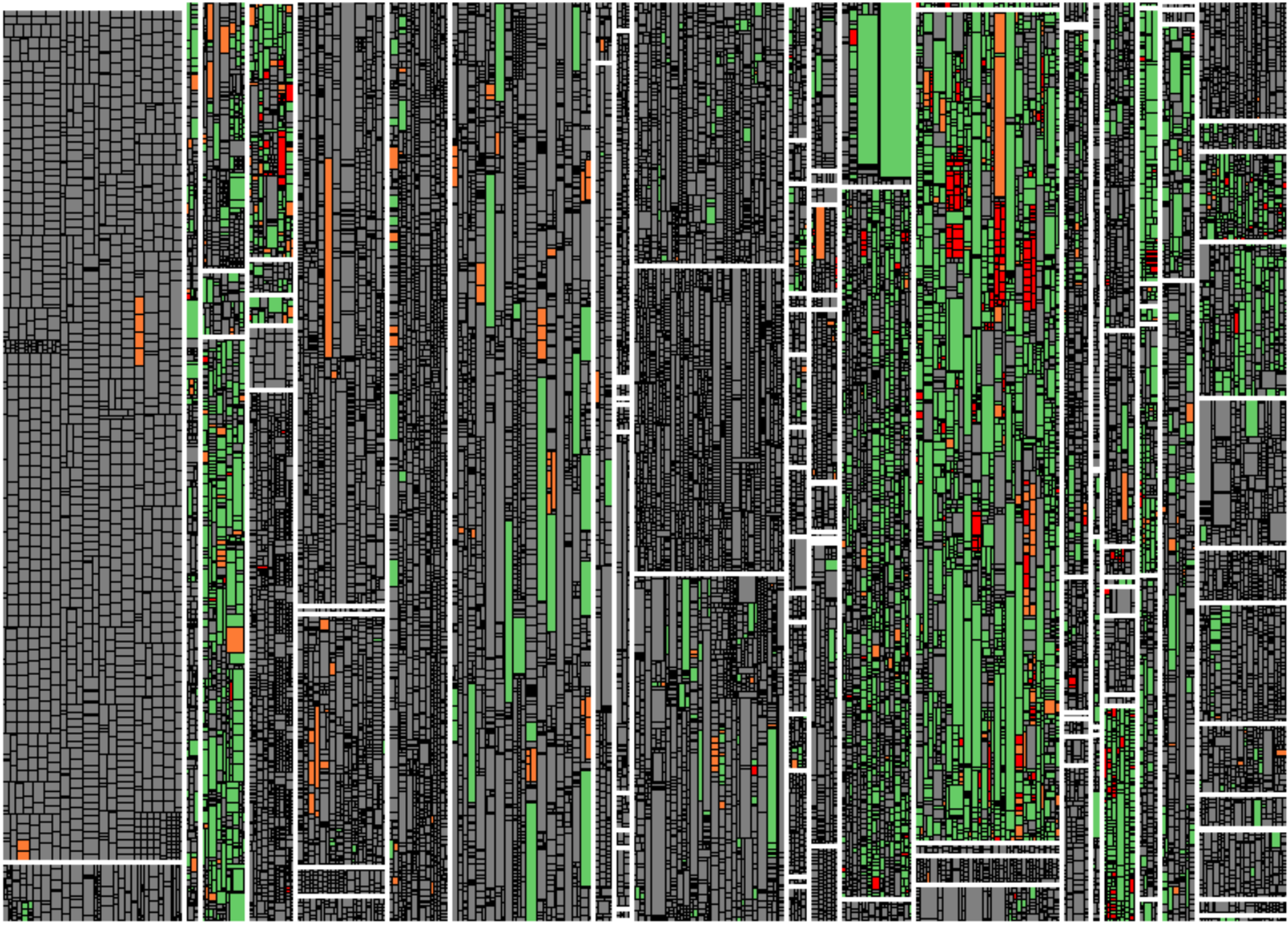


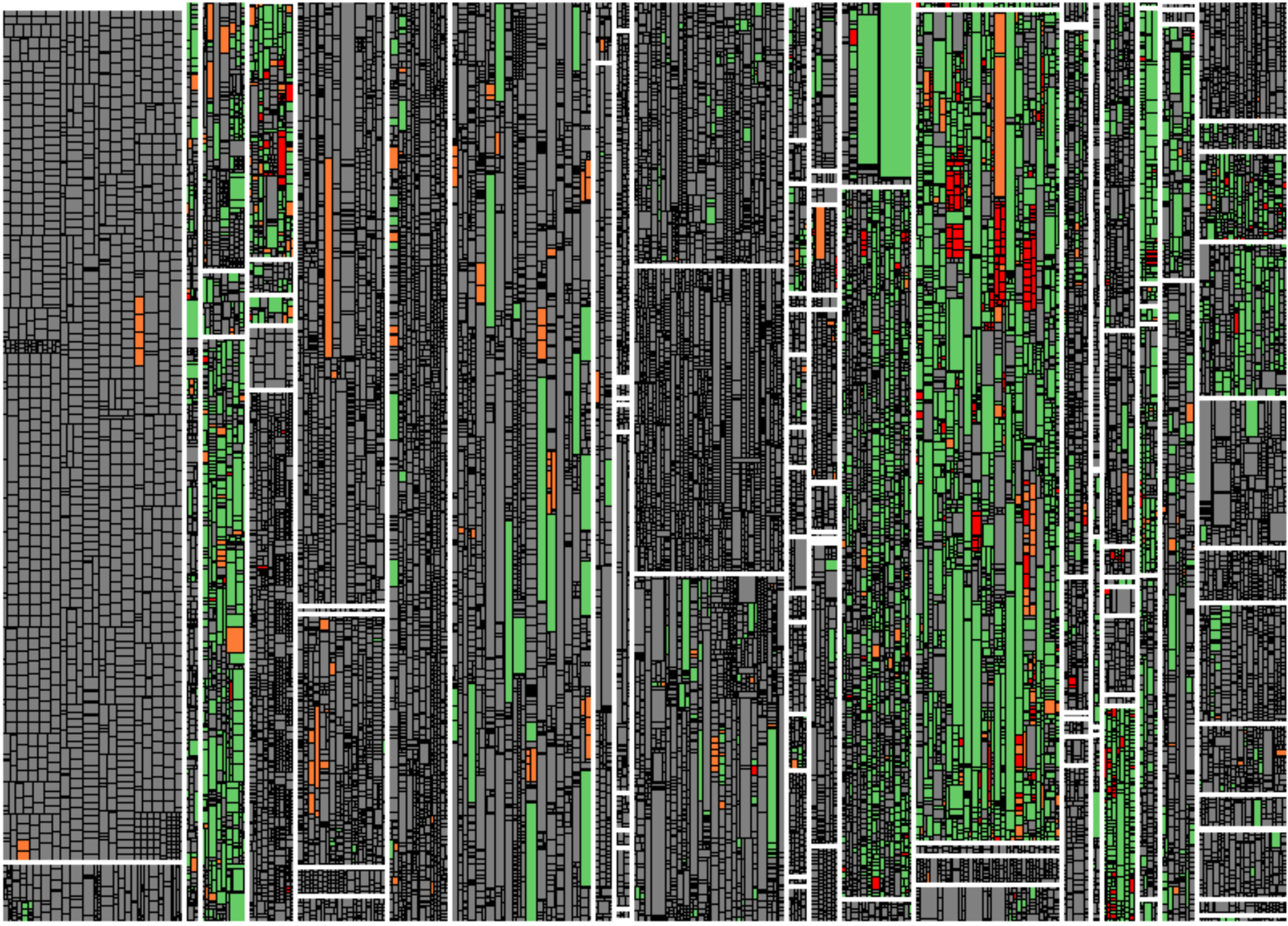


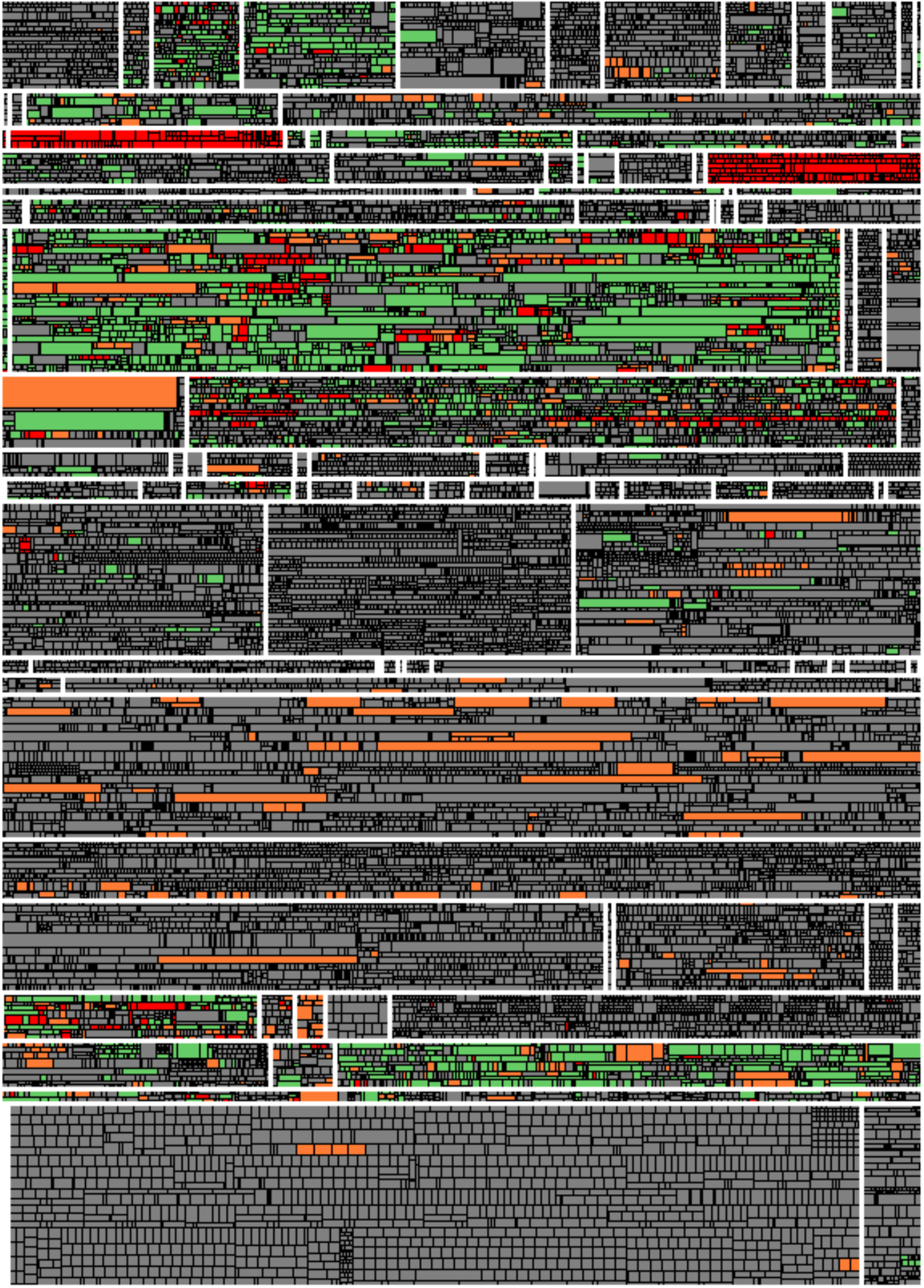


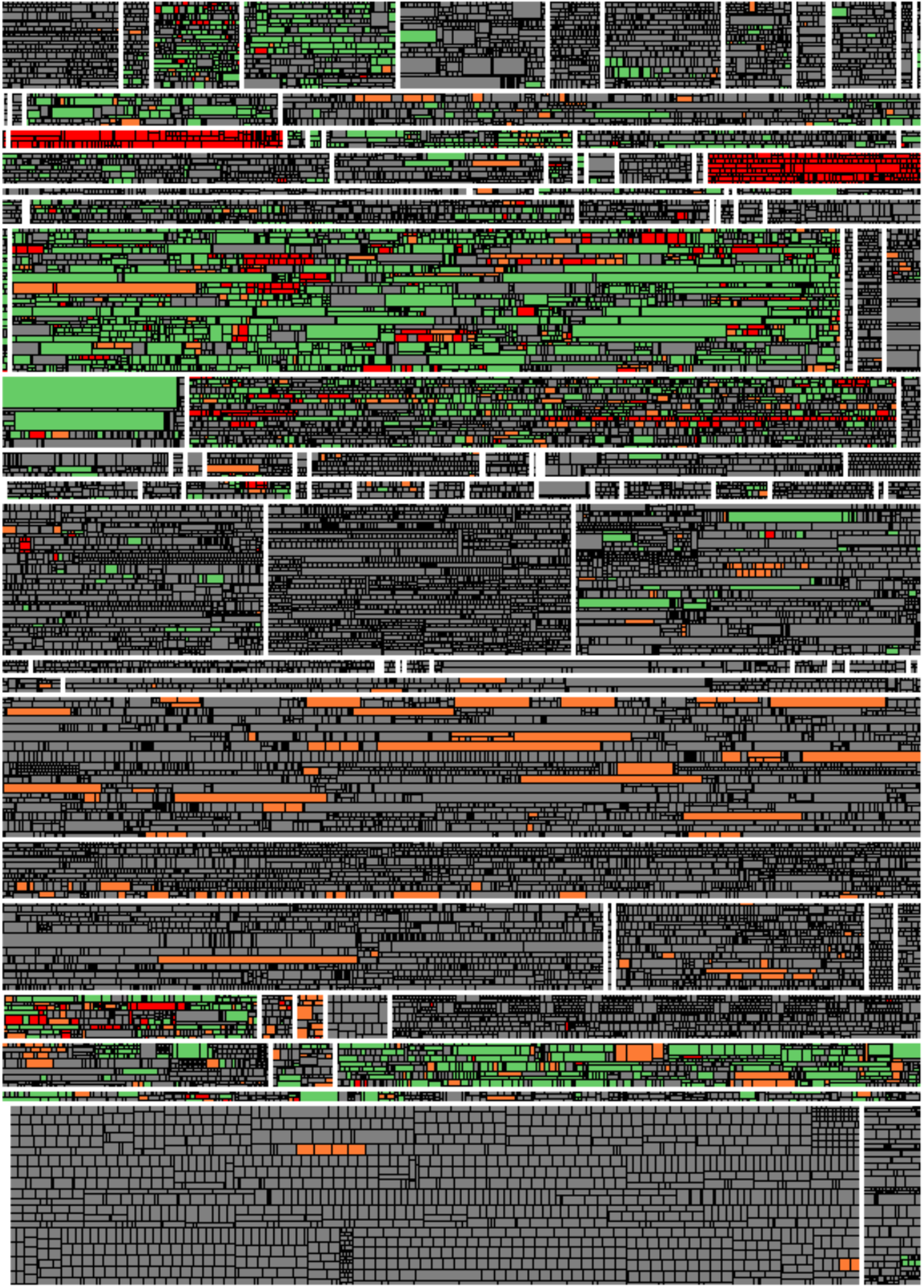


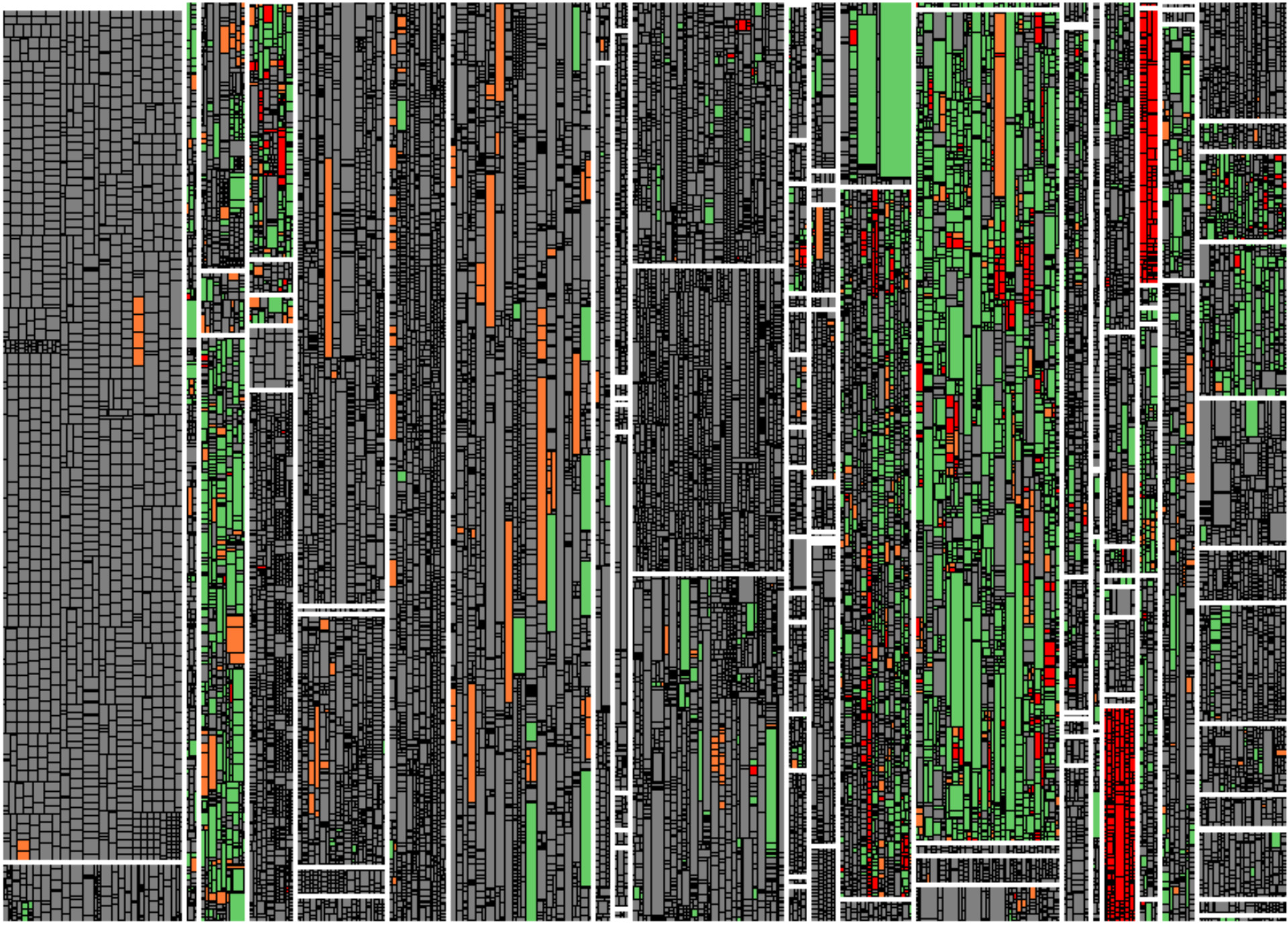


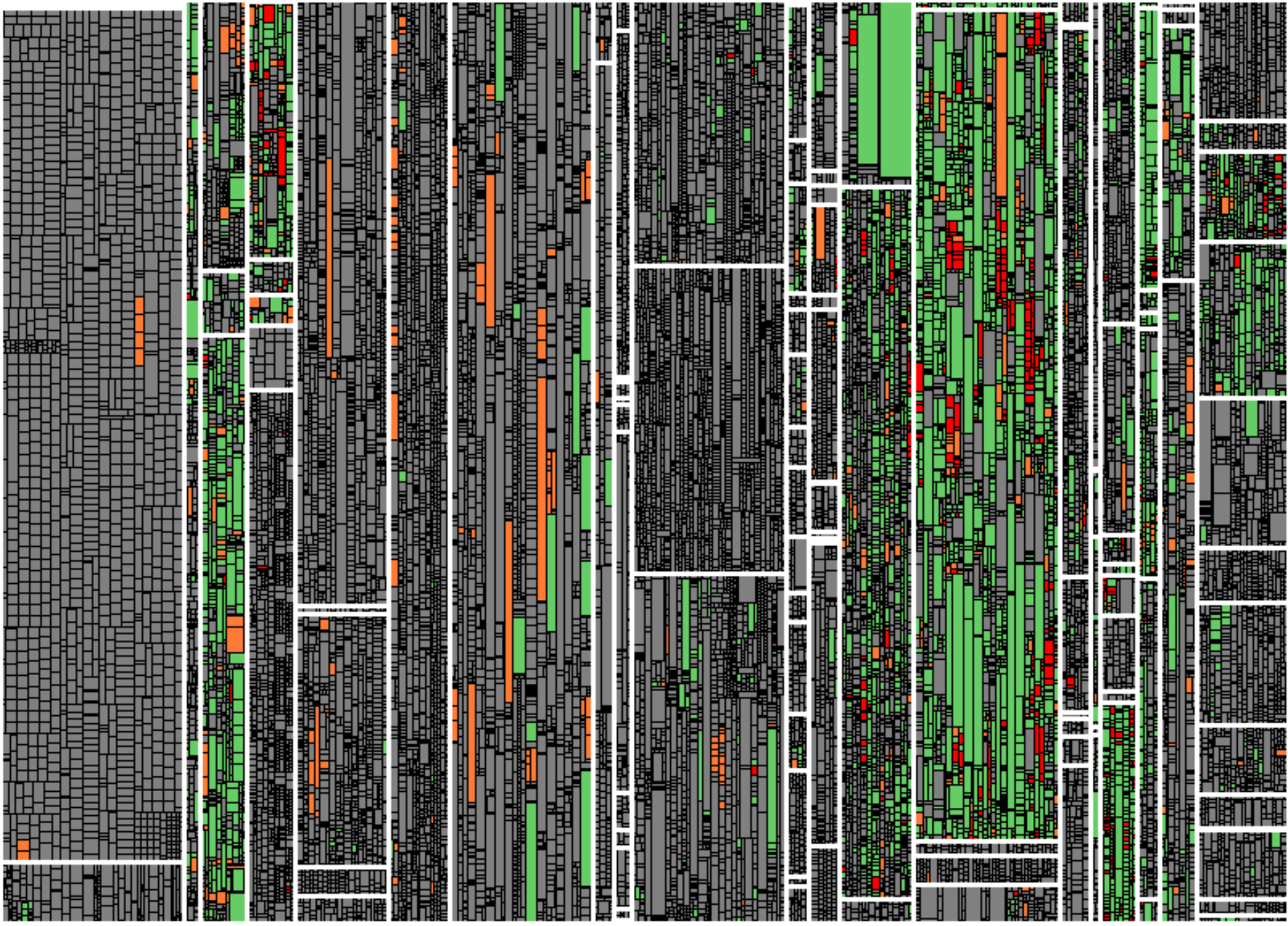


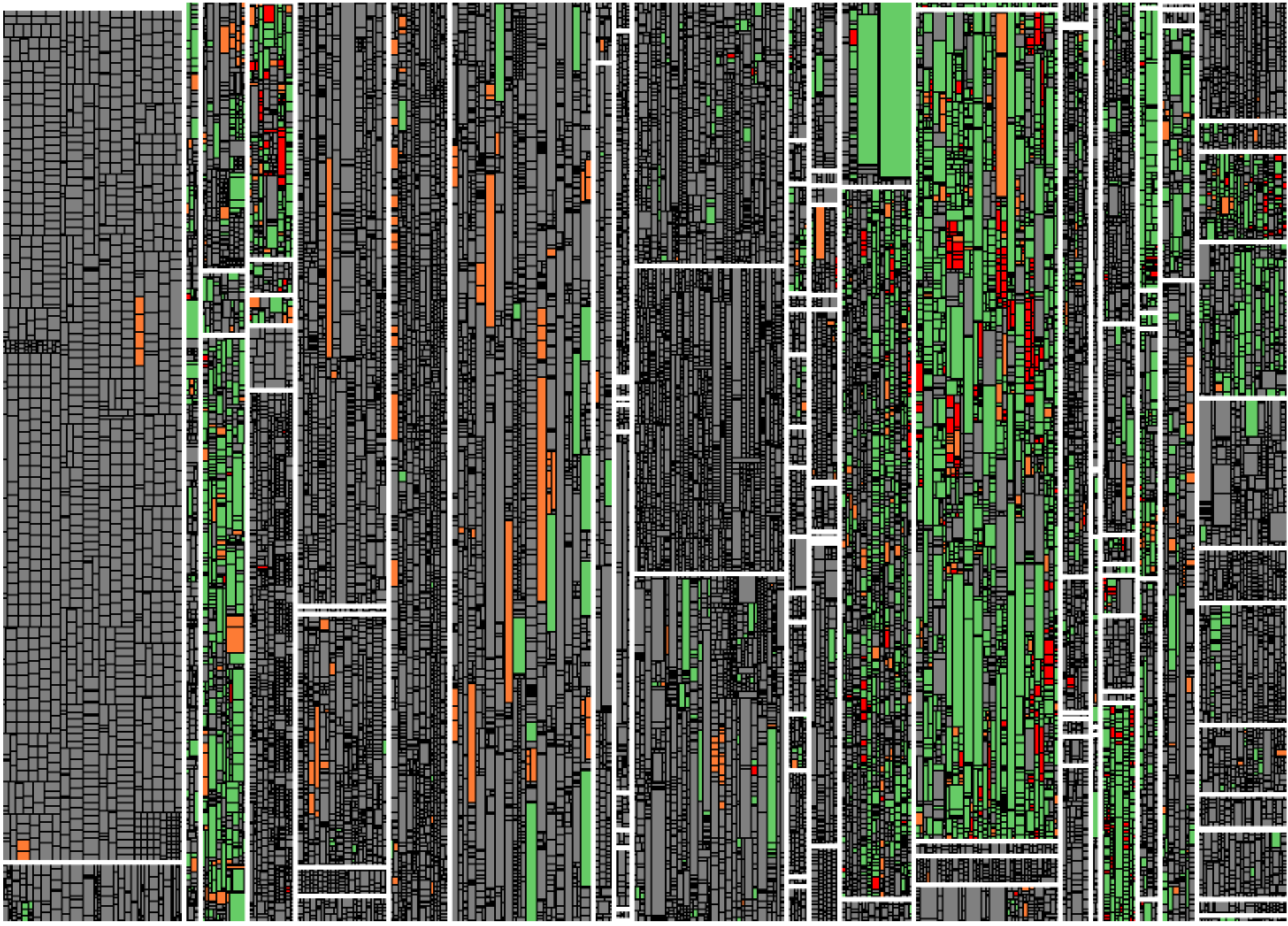


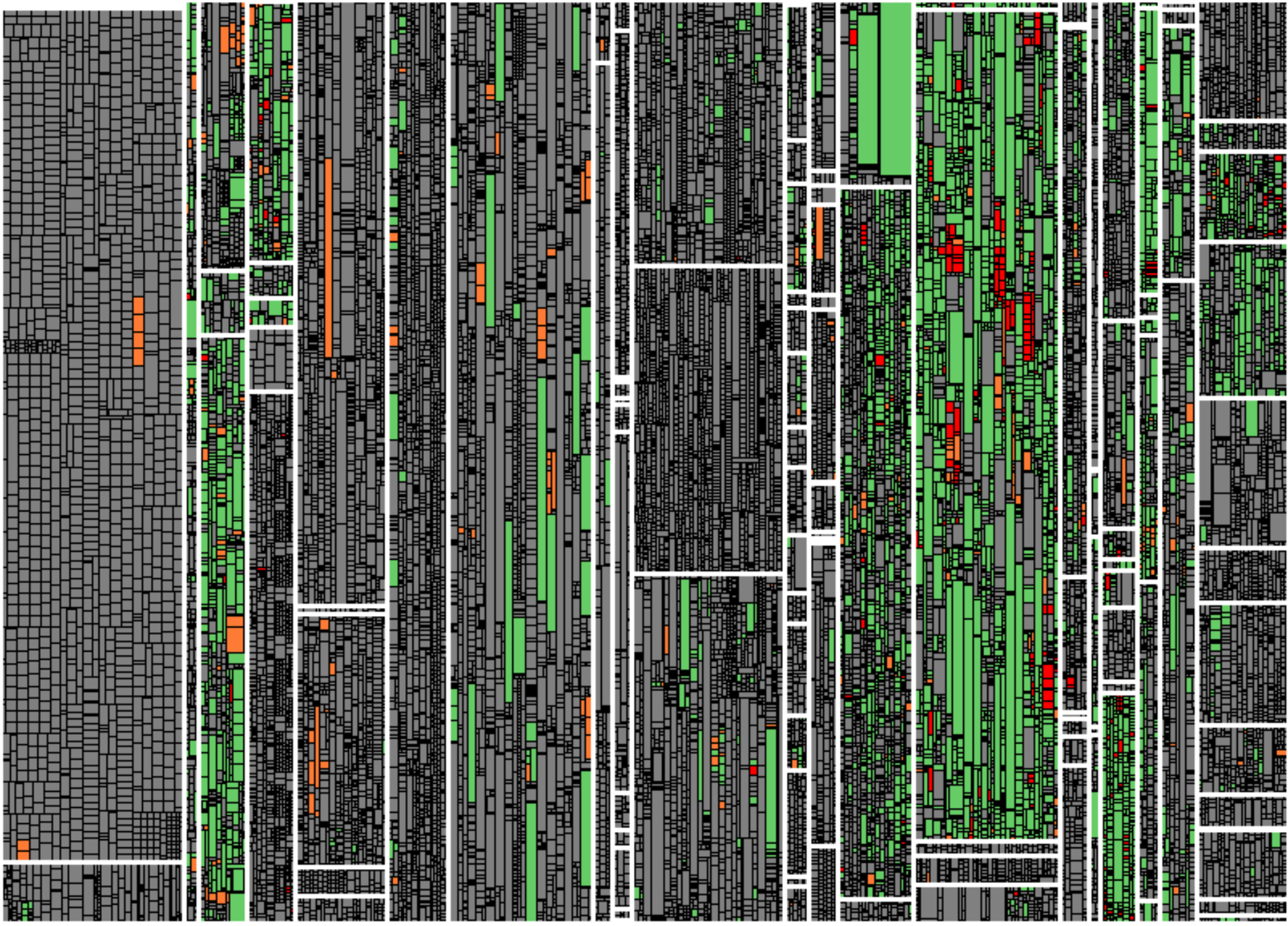


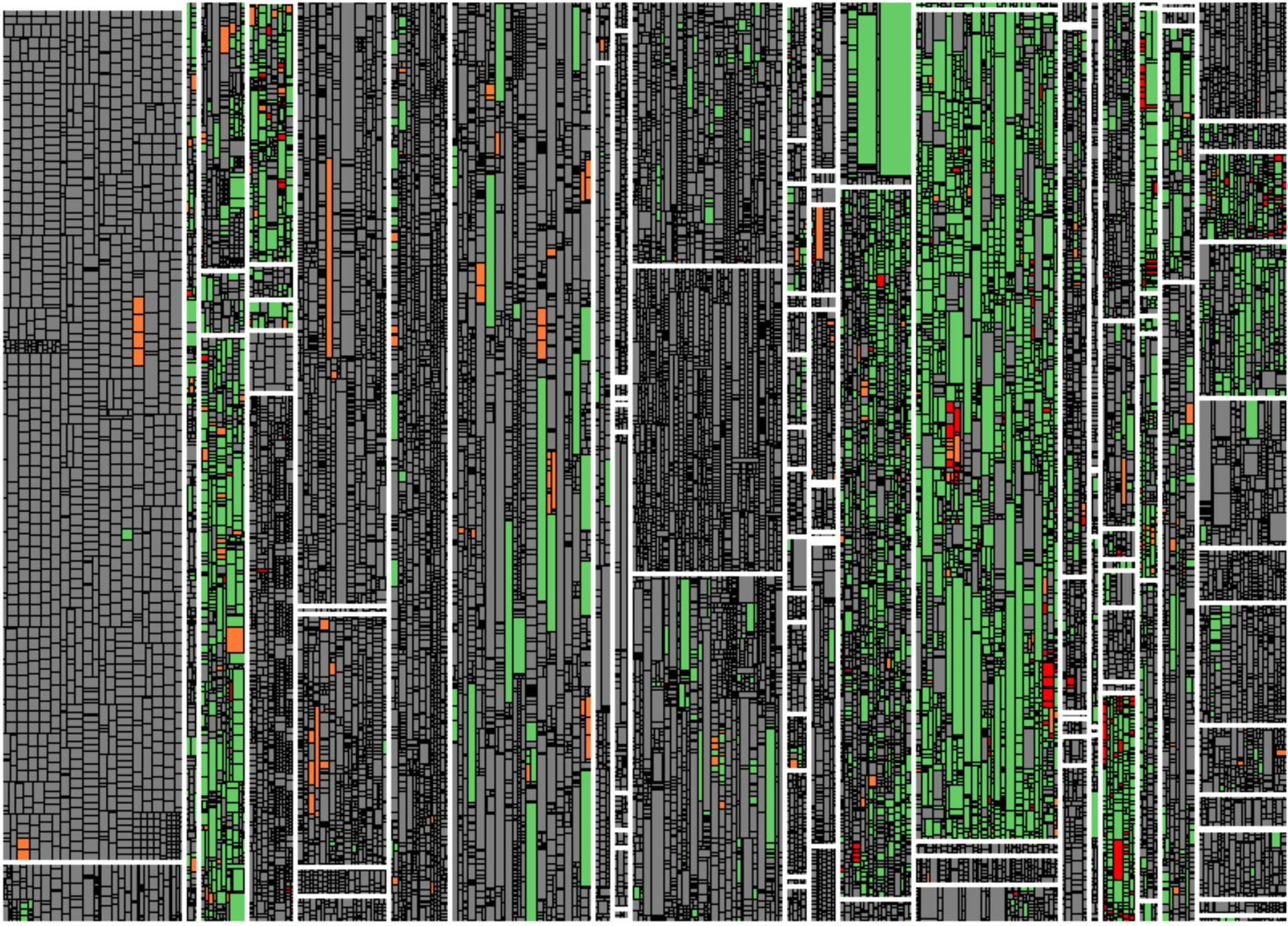


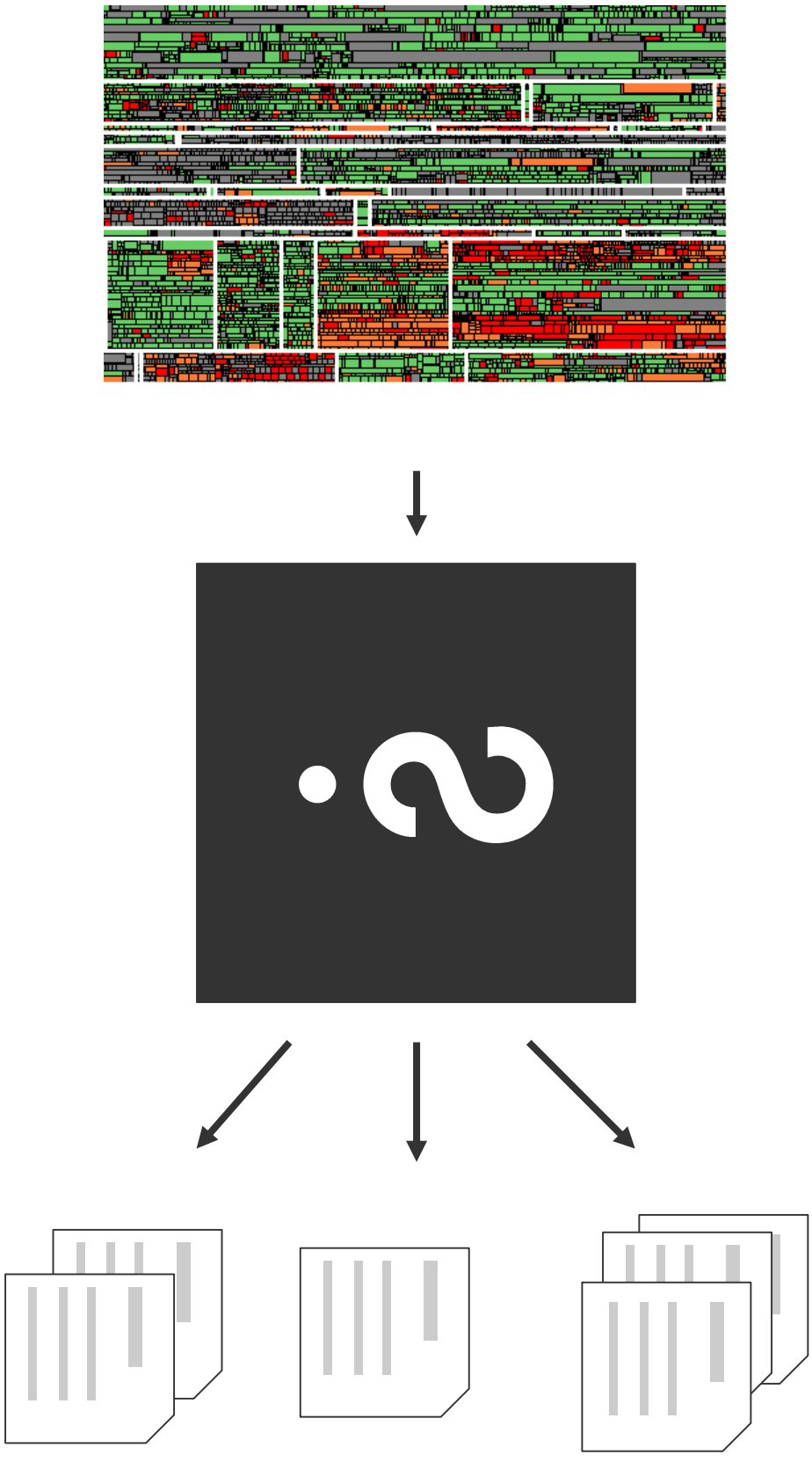


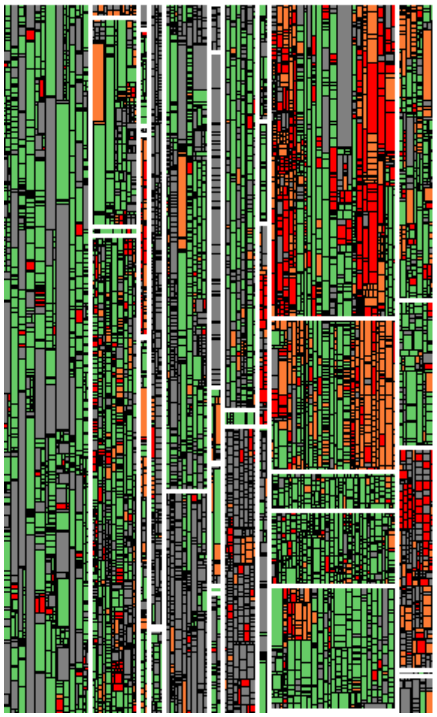


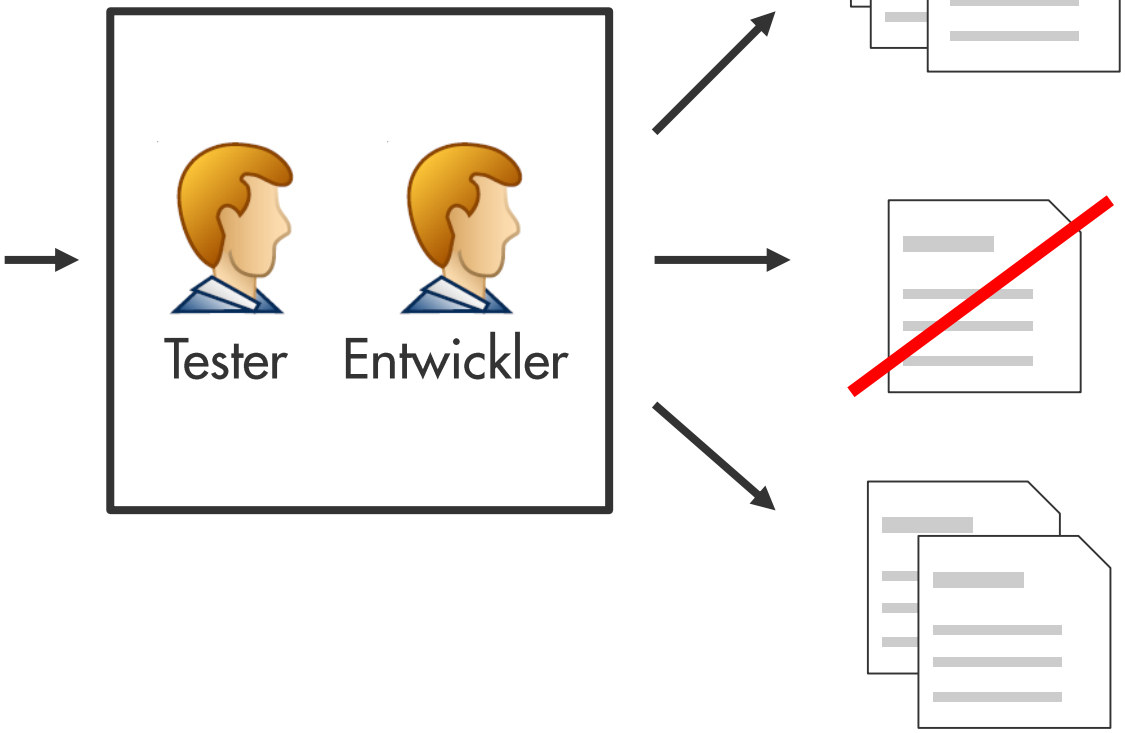











Tester
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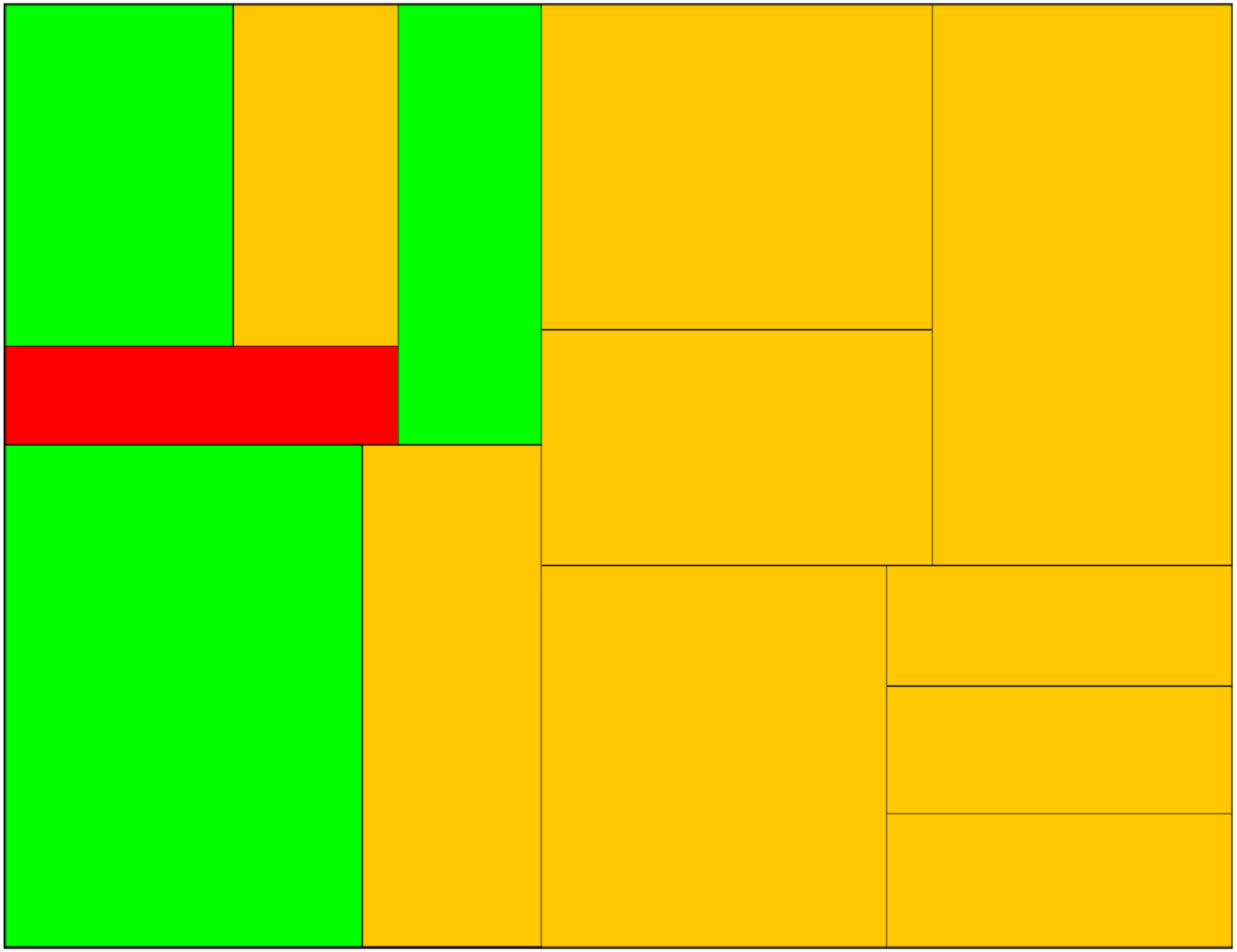
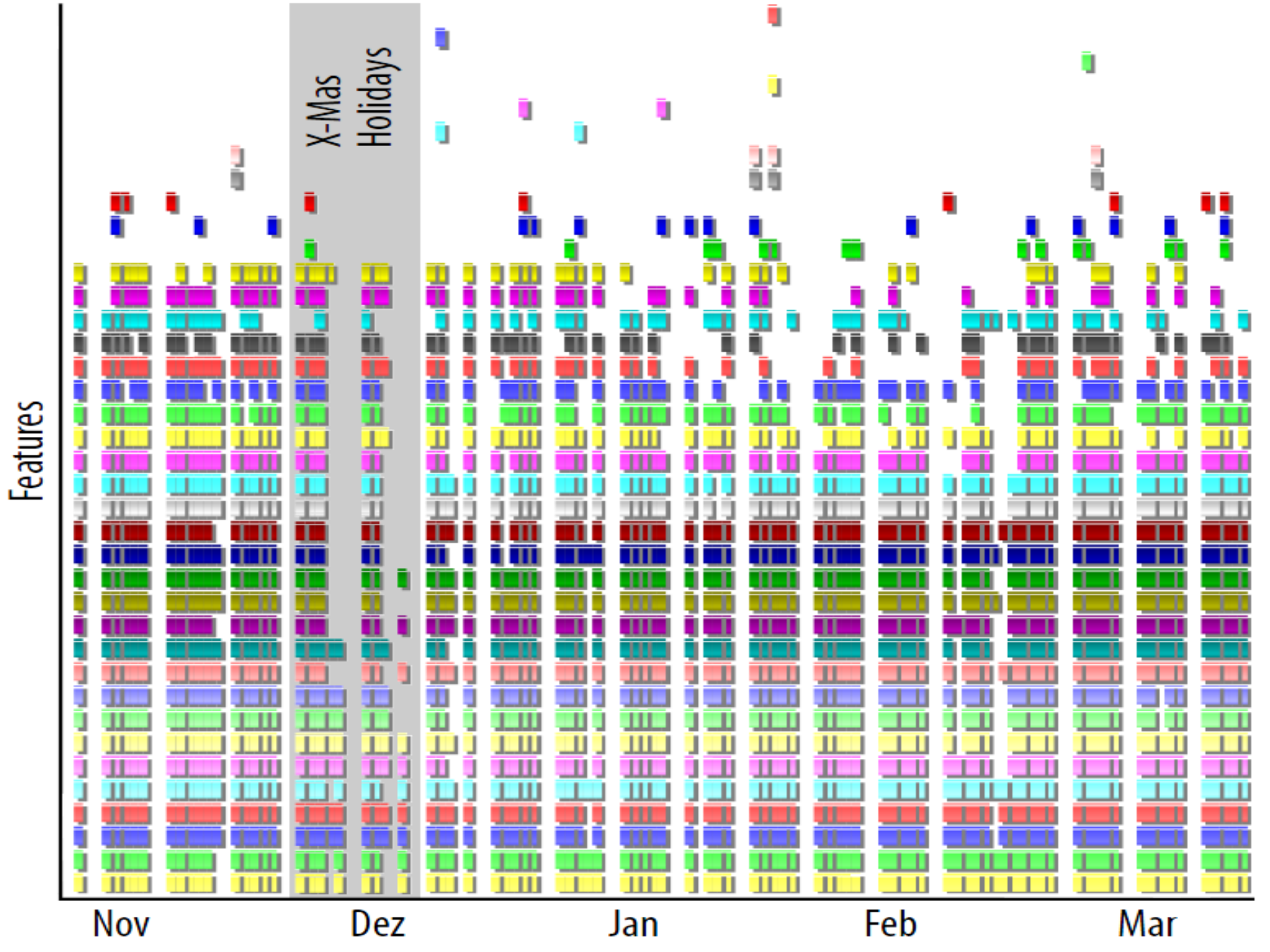
Feature Coverage

Revision	Acti...	Author	Date	Message
24178		veihelm...	Montag, 25. April 2016 13:55:07	CR:#7707: REEP-RATING Closure compiler warning fixes
24177		veihelm...	Montag, 25. April 2016 13:42:41	CR:#7707: REEP-RATING Closure comment fix
24176		kinnen	Montag, 25. April 2016 13:30:14	CR:#9702: REEN
24175		kinnen	Montag, 25. April 2016 13:28:40	CR:#9593: REEN
24170		streitel	Montag, 25. April 2016 13:02:55	CR:#9684: ELLOW fixing compiler warning
24169		streitel	Montag, 25. April 2016 11:43:53	CR:#9684: ELLOW
24168		streitel	Montag, 25. April 2016 11:37:10	CR:#9684: REEN with Andi
24167		pawelka	Montag, 25. April 2016 11:28:47	CR:#7707: ixing checkType warnings
24166		kinnen	Montag, 25. April 2016 09:15:58	Merged 2.0 x -> trunk
24165		haas	Freitag, 22. April 2016 18:27:50	CR:#9697: ELLOW: Fix UI test (by using a new test case). Fix issue with Assume nodes in GFCs (they have no tok...
24163		baumeis...	Freitag, 22. April 2016 17:32:30	CR:#9399: ED, incorporated review comment.
24162		goeb	Freitag, 22. April 2016 17:21:26	CR:#9622: djust handling of commit timestamps
24159		baumeis...	Freitag, 22. April 2016 17:08:18	CR:#9399: REEN, incorporated review comment.
24158		pawelka	Freitag, 22. April 2016 17:06:18	CR:#0: Fixin architecture assessing if [ENTF] is clicked even if no element was deleted.
24157		pawelka	Freitag, 22. April 2016 17:05:01	CR:#7707: ixing type check warning
24152		chasapis	Freitag, 22. April 2016 16:35:39	CR:#9731: et minimum value for number input 0, because number of days cannot be negative.
24149		baumeis...	Freitag, 22. April 2016 15:49:19	CR:#8487: ELLOW, incorporated review comments.
24148		haas	Freitag, 22. April 2016 15:40:30	CR:#9697: ED: Temporarily disable refactoring suggestions in UI tests
24147		haas	Freitag, 22. April 2016 14:29:05	CR:#9697: ELLOW: Improve data flow analysis for refactoring suggestions: * FOR, FOR EACH and WHILE loops (...
24146		haas	Freitag, 22. April 2016 14:22:48	CR:#9697: ELLOW: Only consider candidates that have statements (i.e. not only META shallow entities, which occ...
24144		ashutoshb	Freitag, 22. April 2016 12:51:47	CR:#9090: ixed the GUI-test.
24143		chasapis	Freitag, 22. April 2016 12:01:28	CR:#8022: ixed nesting depth issue
24142		baumeis...	Freitag, 22. April 2016 11:57:54	CR:#8487: ELLOW, incorporated review comments.
24141		baumeis...	Freitag, 22. April 2016 11:53:47	CR:#8487: ELLOW, incorporated review comments.
24140		chasapis	Freitag, 22. April 2016 11:44:35	CR:#8022: dded functionality to all widgets that use a SingleMetricParameter, so that when the user edits the par...
24138		baumeis...	Freitag, 22. April 2016 11:37:24	CR:#8487: ELLOW, renamed metric rules editor.
24137		baumeis...	Freitag, 22. April 2016 11:36:31	CR:#8609: ELLOW, fix build.
24136		baumeis...	Freitag, 22. April 2016 11:18:17	CR:#8609: ELLOW, added new notification utils method.
24135		gibtner	Freitag, 22. April 2016 11:03:51	CR:#9364: hanged status of files to YELLOW
24134		gibtner	Freitag, 22. April 2016 10:49:59	CR:#9364: ommitTrackingService: - corrected comment - refactored: extracted methods
24133		baumeis...	Freitag, 22. April 2016 09:55:00	CR:#8609: ELLOW, renamed tempalte parameters.

Test Gap Treemap for pinta

Showing issue 10296 Test Gap: 76.92%

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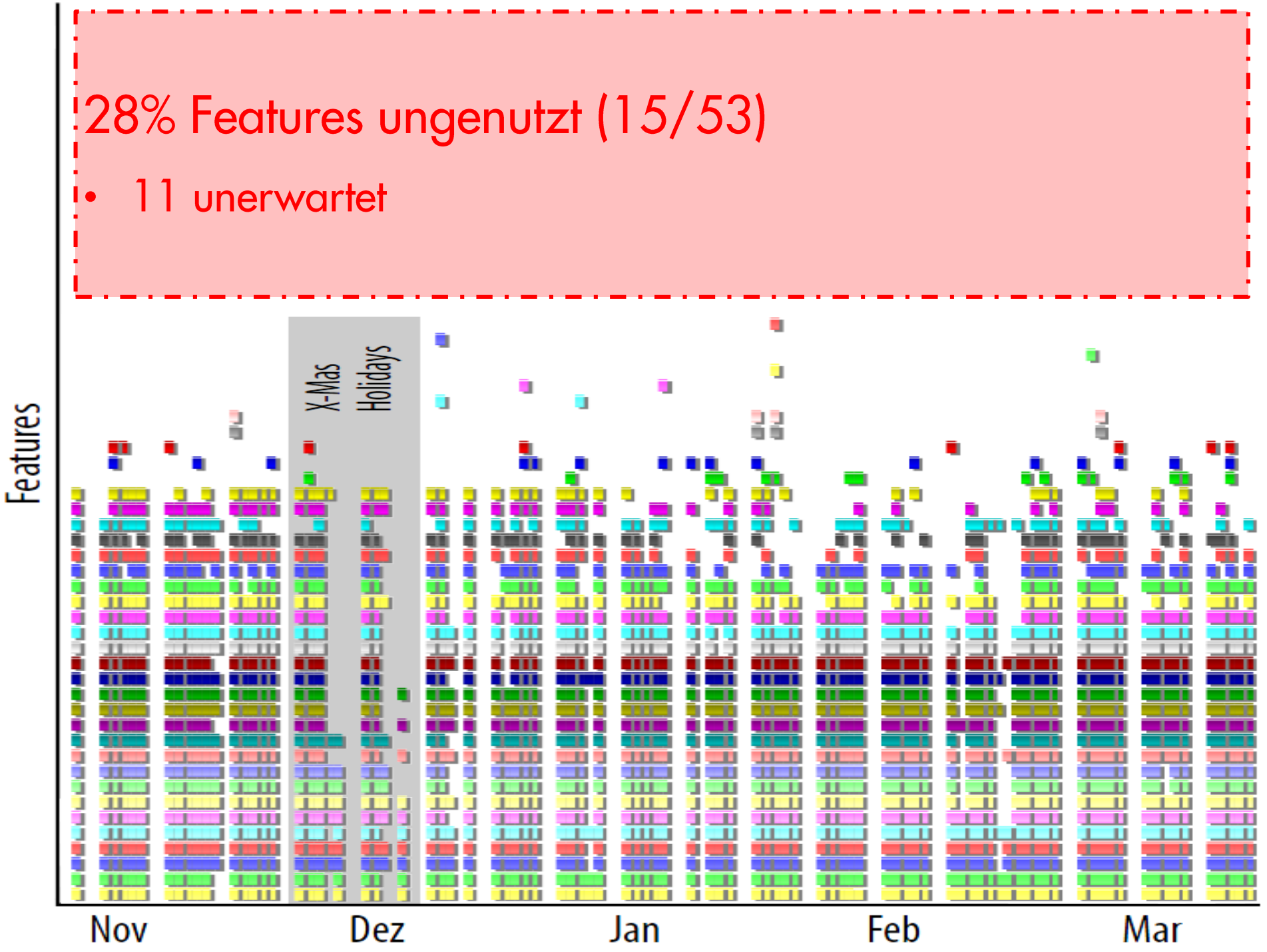
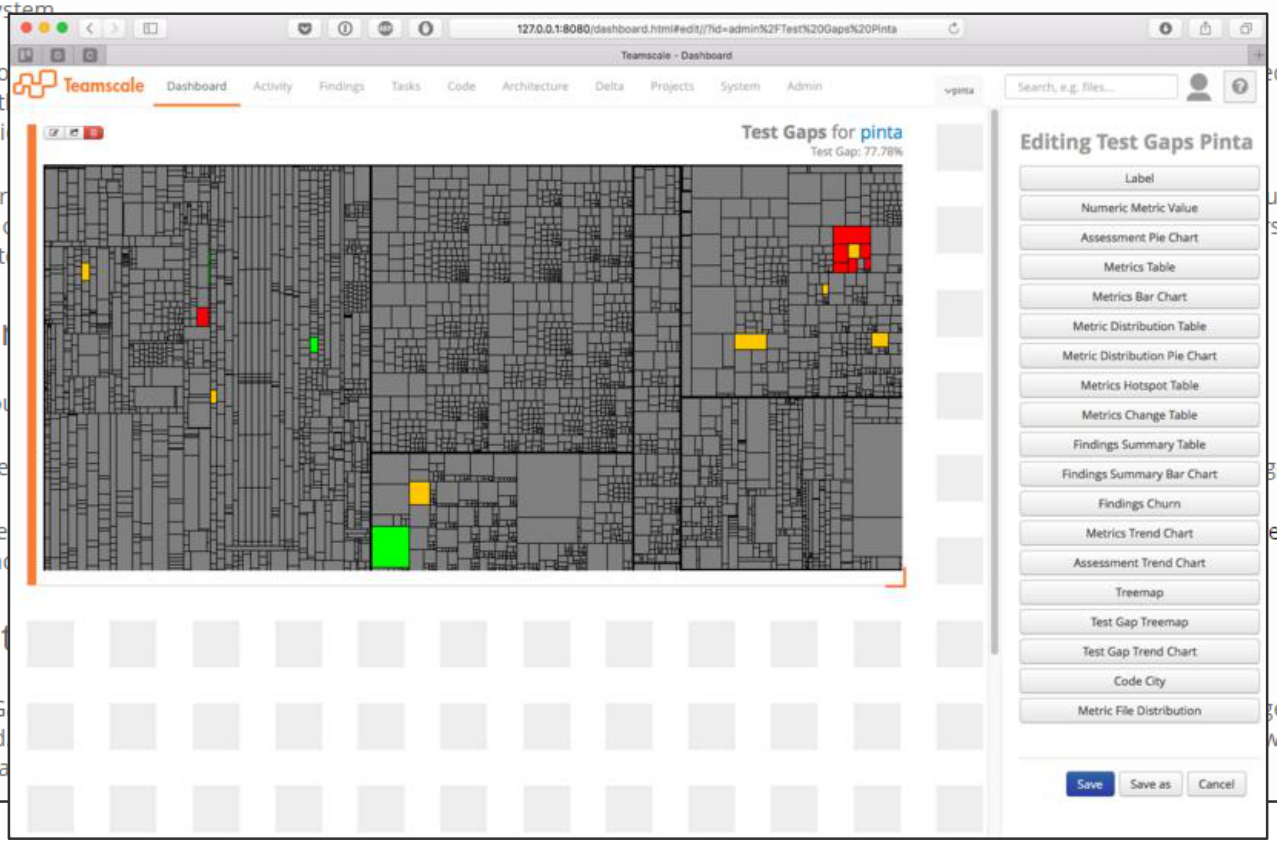


https://www.cqse.eu/en/blog

Bridge your Test Gaps with Teamscale

Posted on 04/27/2016 *by* Dr. Dennis Pagano

Many companies employ sophisticated testing processes, but still bugs find their way into production. Often they hide among the subset of changes that were not tested. Actually, we found that untested changes are five times more error prone than the rest of the system.



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Software Quality Blog

Testing Changes in SAP BW Applications

Posted on 04/29/2015 *by* Dr. Andreas Göb

As my colleague Fabian explained a few weeks ago, a combination of change detection and execution logging can substantially increase transparency regarding which recent changes of a software system have actually been covered by the testing process. I will not repeat all the details of the Test Gap Analysis approach here, but instead just summarize the core idea: Untested new or changed
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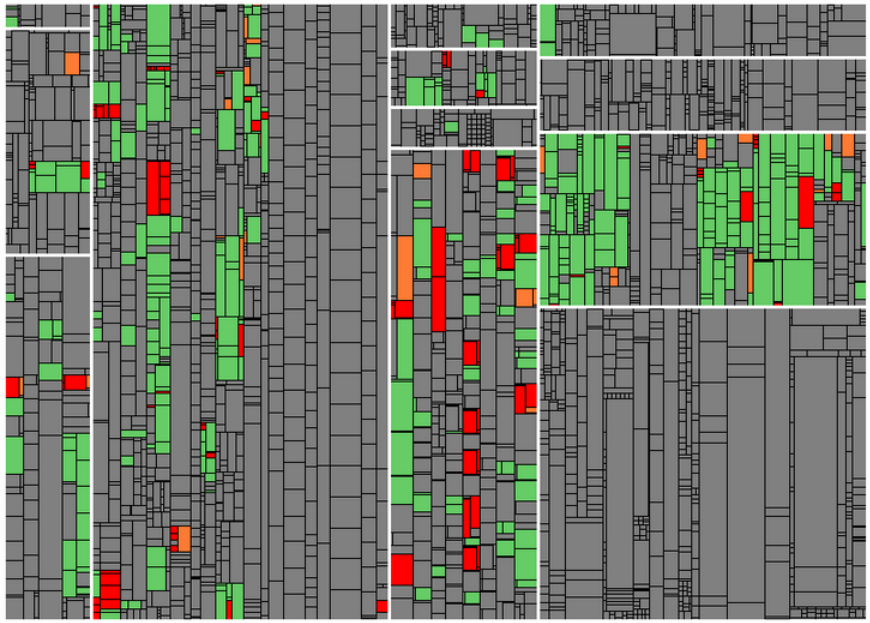

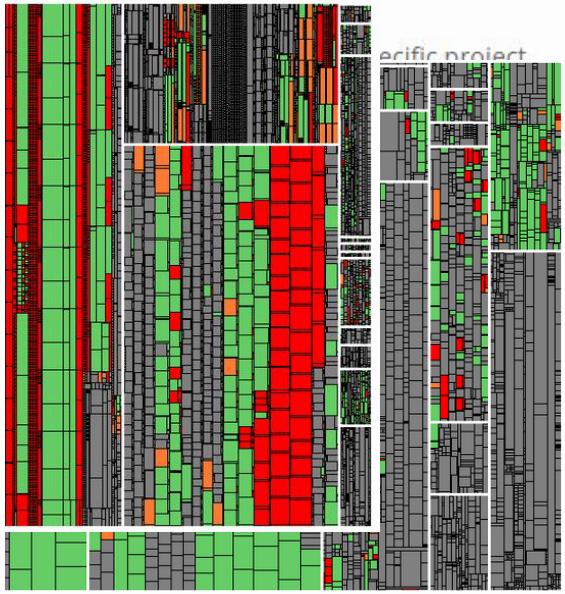

Figure 1: Test Gaps in Manually Maintained ABAP code only

https://www.cqse.eu/en/blog/testing-changes-in-sap-bw/

Fazit

Änderungen am Code sind guter Fehlerprädiktor.

Test-Gap-Analyse macht Änderungen und Testaktivitäten transparenter und ermöglicht es ***ungewollt*** ungetestete Änderungen zu vermeiden.

Wir unterstützen gerne bei der Evaluierung und Einführung.

Kontakt

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