

# Test Gap Analyse bei der Munich RE

27.10.2016  
Uwe Proft

## 1. Kontext

2. Nutzungsszenarien

3. Evolution

4. Anliegen

# TQE

Technical Quality Engineer

Static analysis of source code

# Peer Review

Lightweight code review process

# TGA

Test Gap Analysis

Dynamic code analysis during test

# TSA

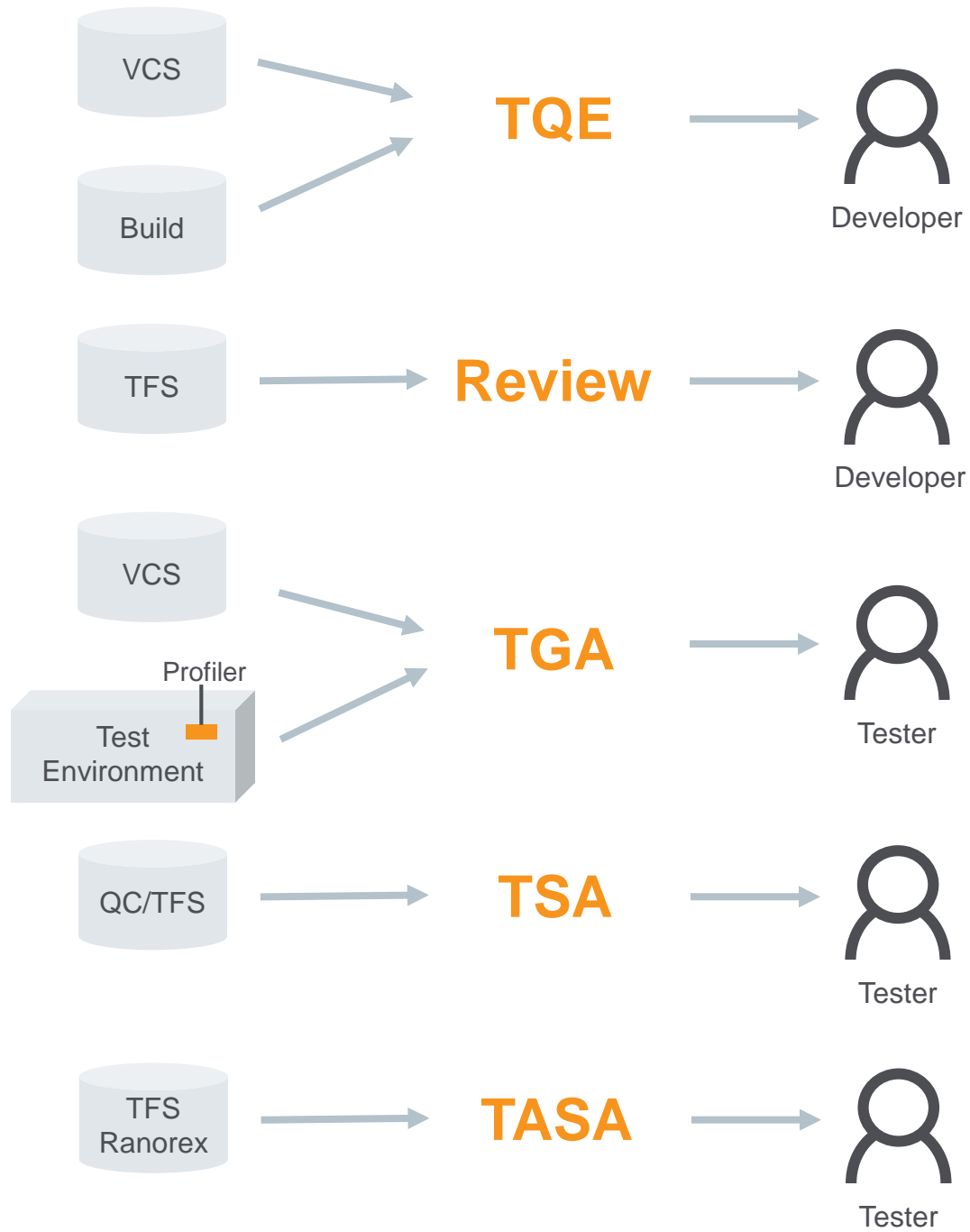
Test Smell Analysis

Natural-language analysis of test descriptions

# TASA

Test Automation Smell Analysis

Static analysis of script code



## Global IT Organization

Applications: 987 (Global / Local) Decreasing

Projects: 369

### Americas

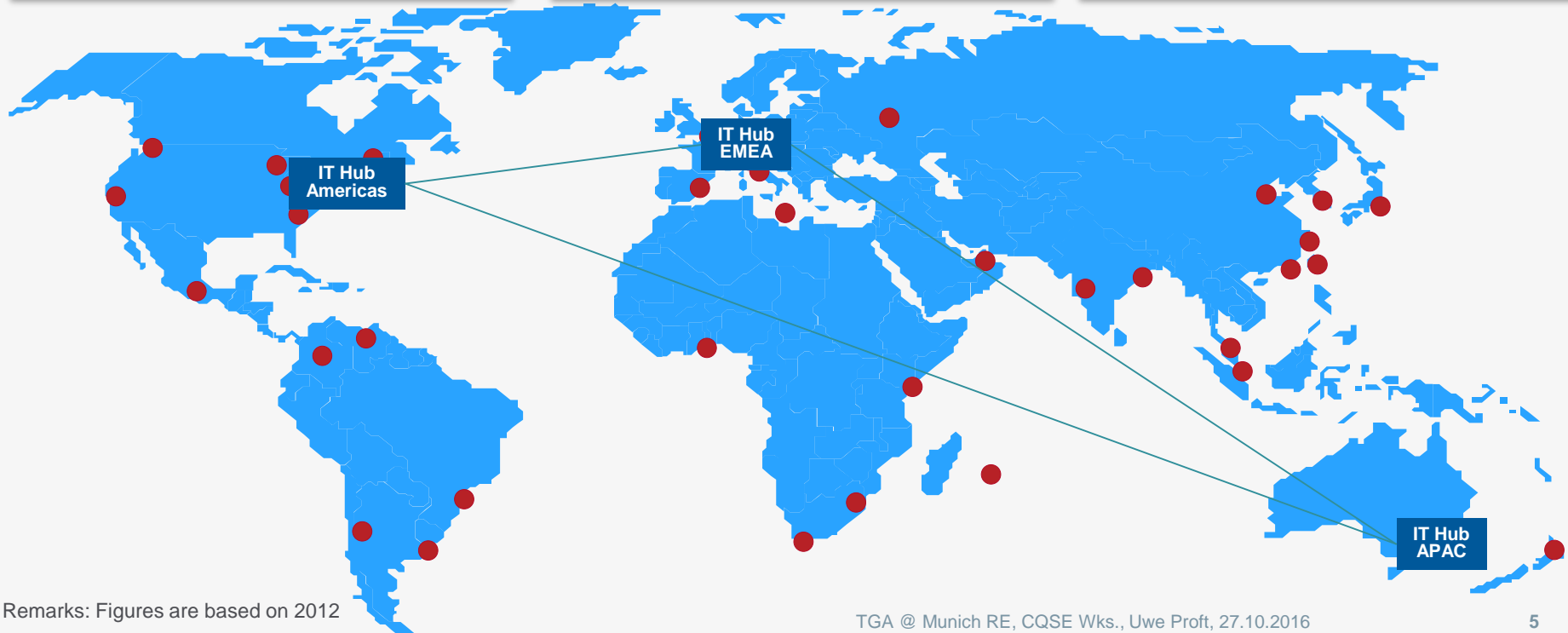
18 Locations  
~6,500 Application Users

### EMEA

13 Locations  
~7,000 Application Users

### APAC

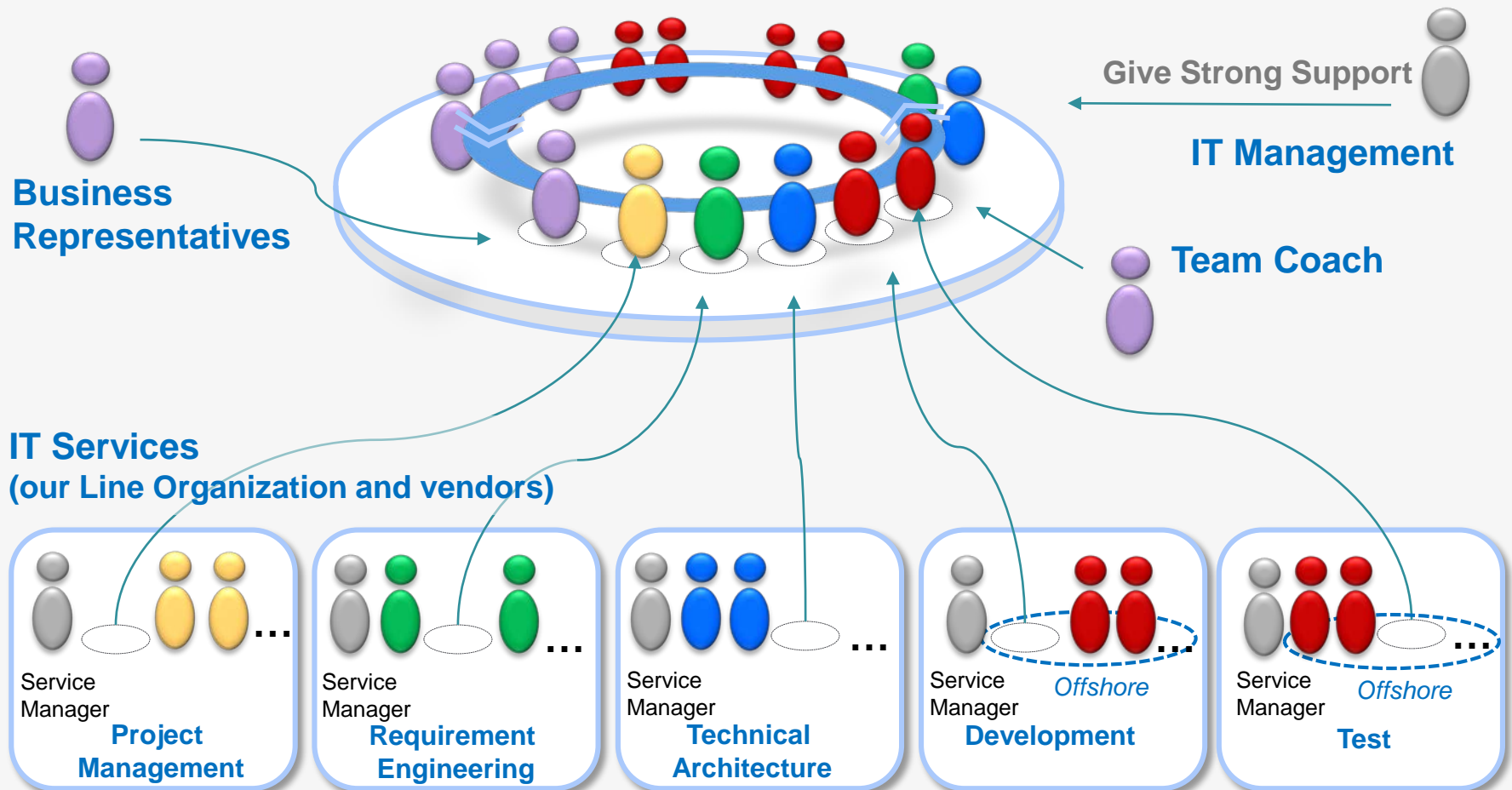
14 Locations  
~500 Application Users



Remarks: Figures are based on 2012

## Collaborative Project Team:

Taking responsibility = **our** product, **our** release, **our** success,  
**my** commitment, contribution and expertise



## 1. Kontext

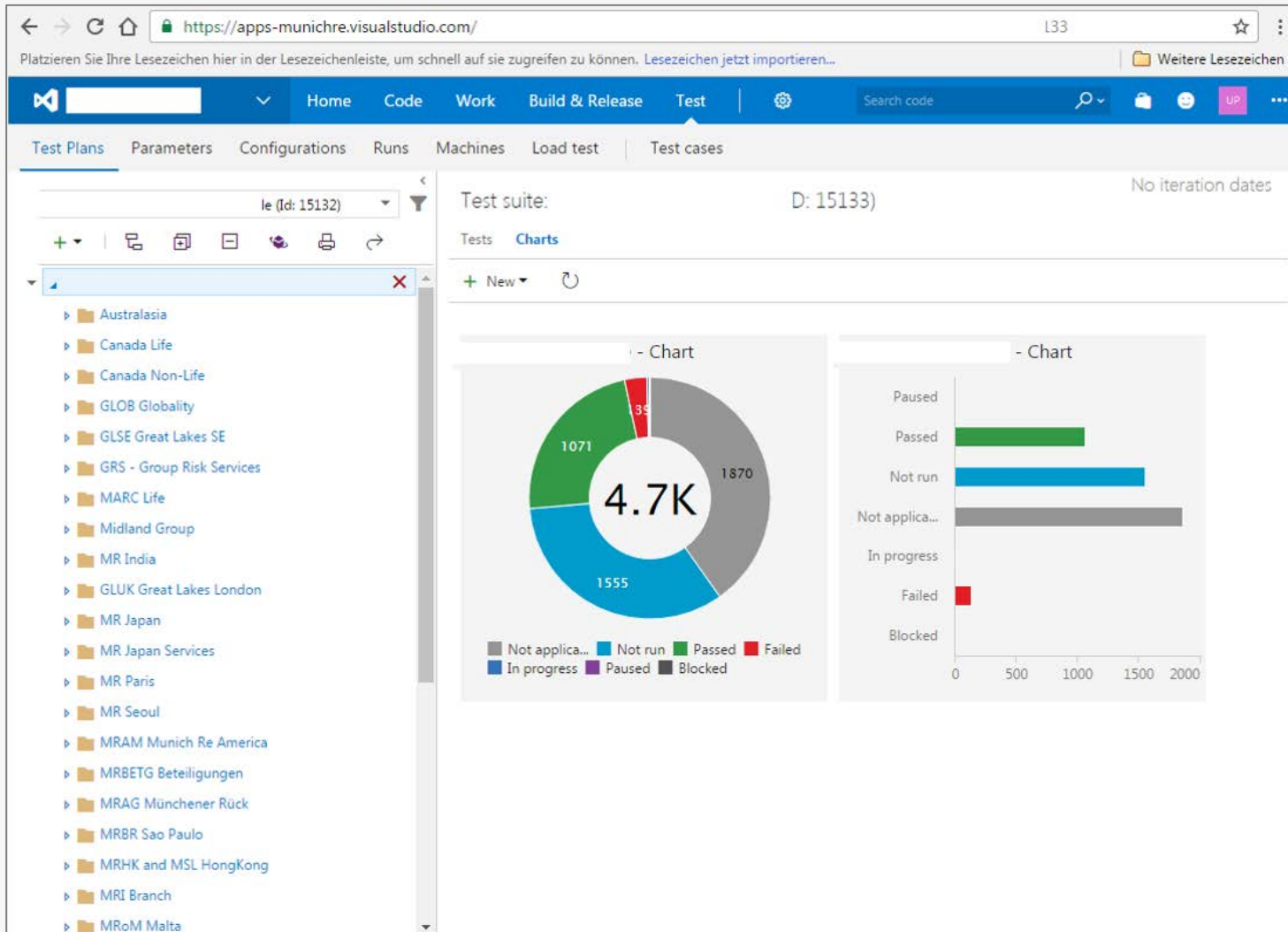
## 2. Nutzungsszenarien

- **Unterstützung klassischer Testphasen (Regression- / Release-Test)**
- Analyse von Regressionstest Suiten
- Hotfixes besser absichern
- Prozess (Kommunikations) Defizite (in Pilotphasen) aufdecken
- Slice Test Gap des Tests in Iterationen

## 3. Evolution

## 4. Anliegen

# Unterstützung klassischer Testphasen (Regression- / Release-Test)



The screenshot displays the Visual Studio Test Explorer interface. The browser address bar shows the URL <https://apps-munichre.visualstudio.com/>. The interface includes a navigation menu with options like Home, Code, Work, Build & Release, and Test. The main area shows a test suite named 'D: 15133)'. Below this, there are two charts: a donut chart and a horizontal bar chart. The donut chart shows the distribution of test results: 1870 Not applicable, 1555 In progress, 1071 Passed, and 39 Failed. The total number of tests is 4.7K. The horizontal bar chart shows the count for each status: Passed (1071), Not run (1555), Not applica... (1870), In progress (39), Failed (0), and Blocked (0).

Test suite: D: 15133) No iteration dates

Tests Charts

+ New ↻

Donut Chart Data:

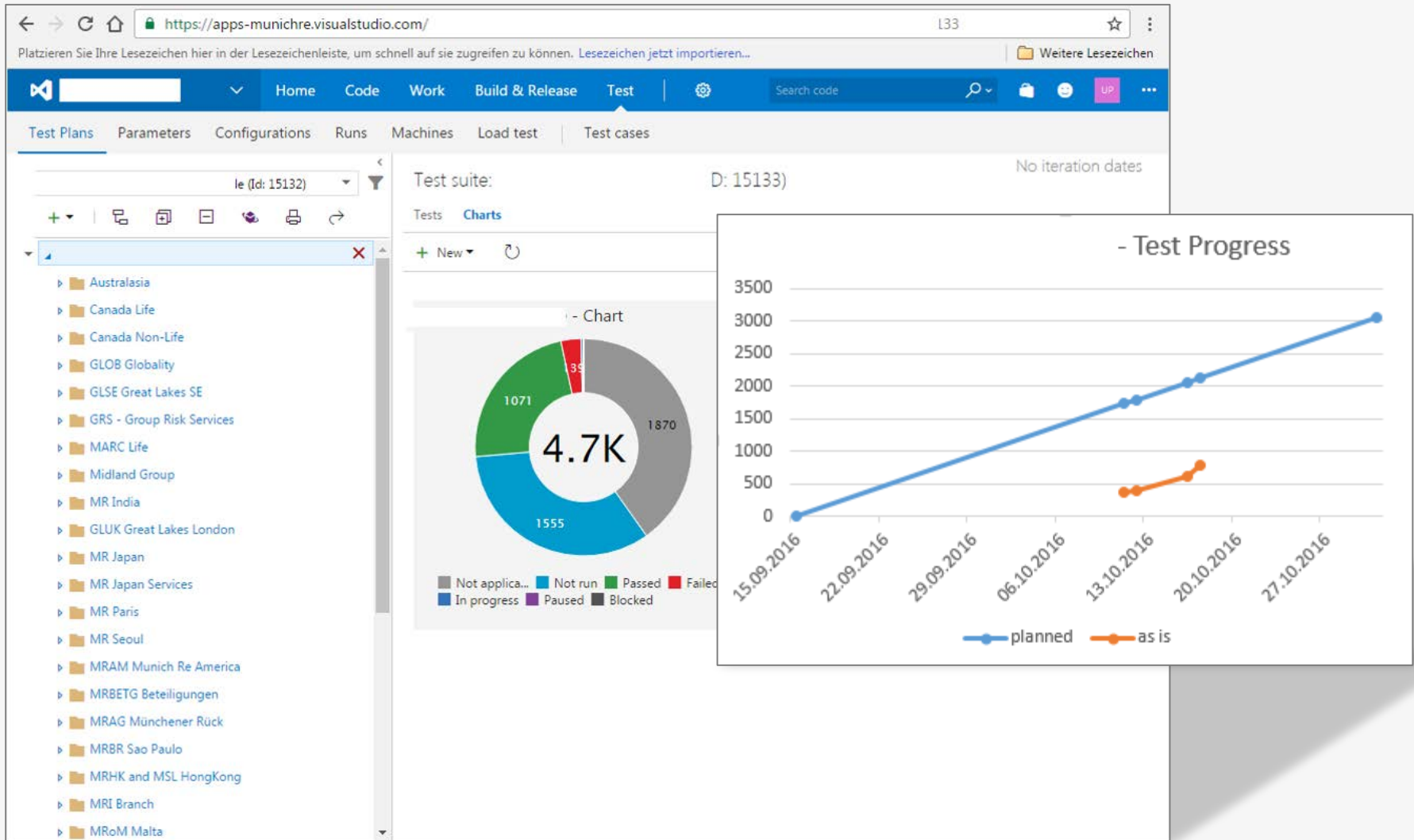
Category	Count
Not applica...	1870
In progress	1555
Passed	1071
Failed	39

Horizontal Bar Chart Data:

Category	Count
Paused	0
Passed	1071
Not run	1555
Not applica...	1870
In progress	39
Failed	0
Blocked	0



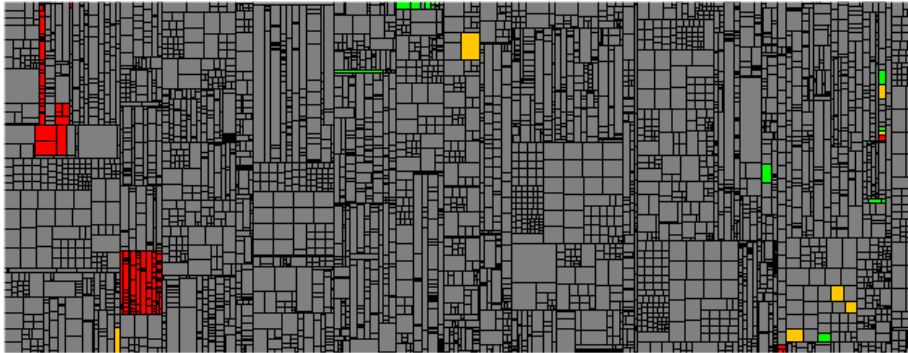
# Unterstützung klassischer Testphasen (Regression- / Release-Test)



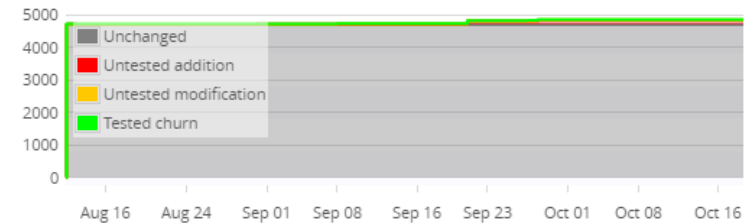
# Unterstützung klassischer Testphasen (Regression- / Release-Test)

## remaining Test Gap for

Test Gap: 92.21%

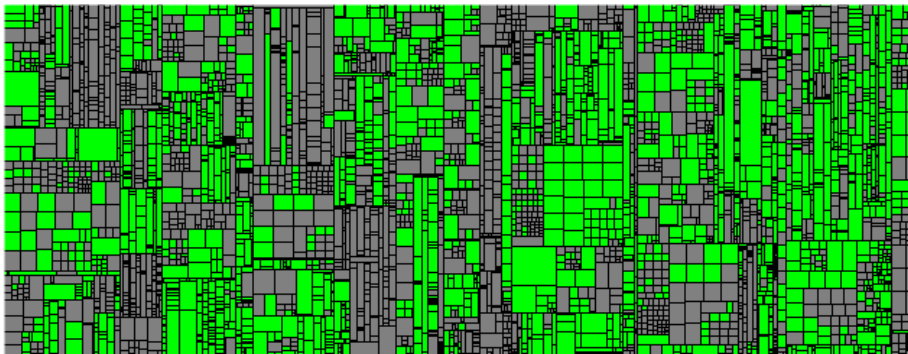


## Test Gap Trend Chart for

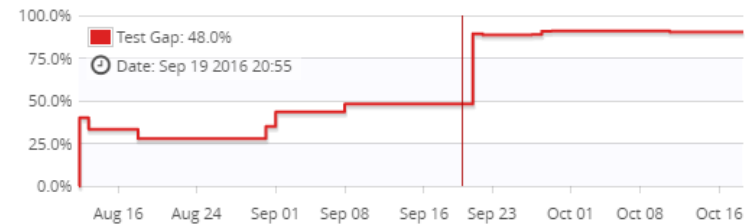


## code reached by test exec so far for

Execution Ratio: 48.19%



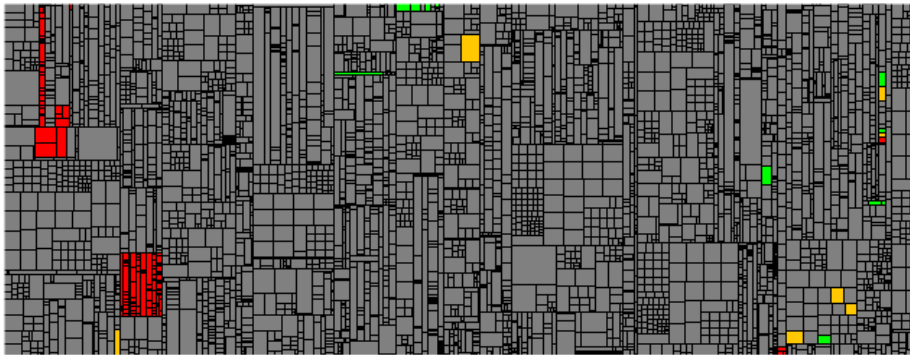
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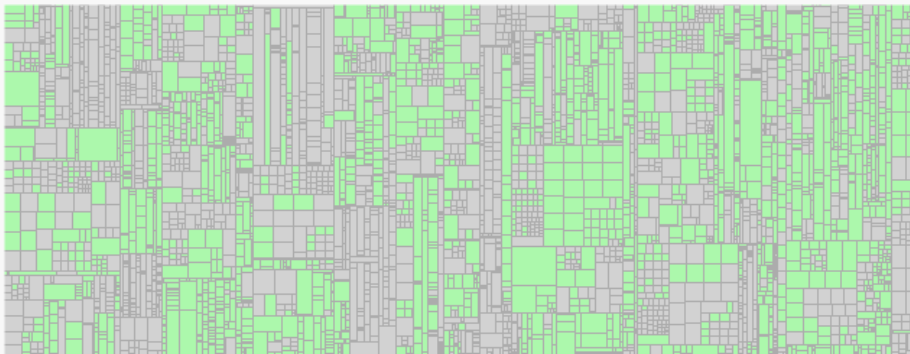


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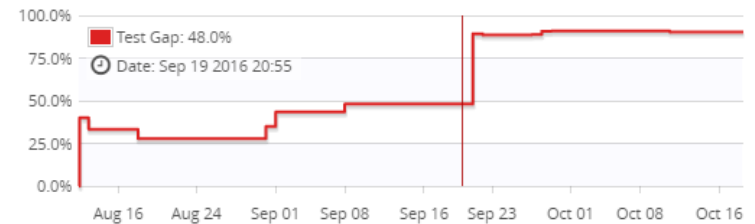


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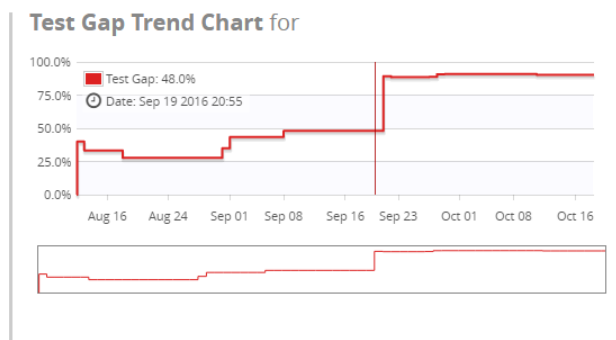
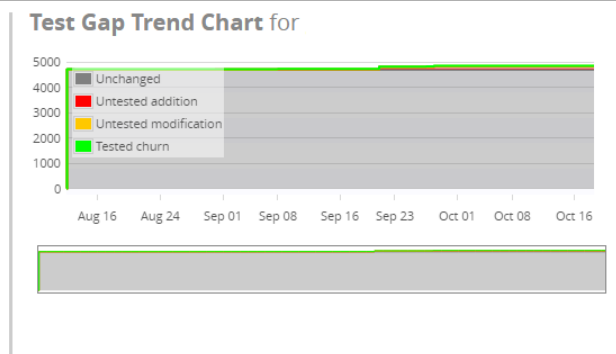
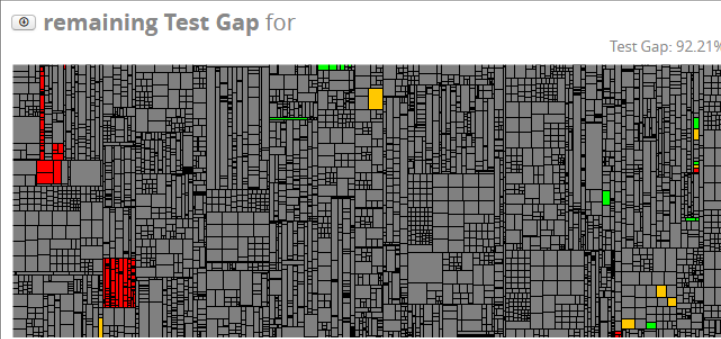
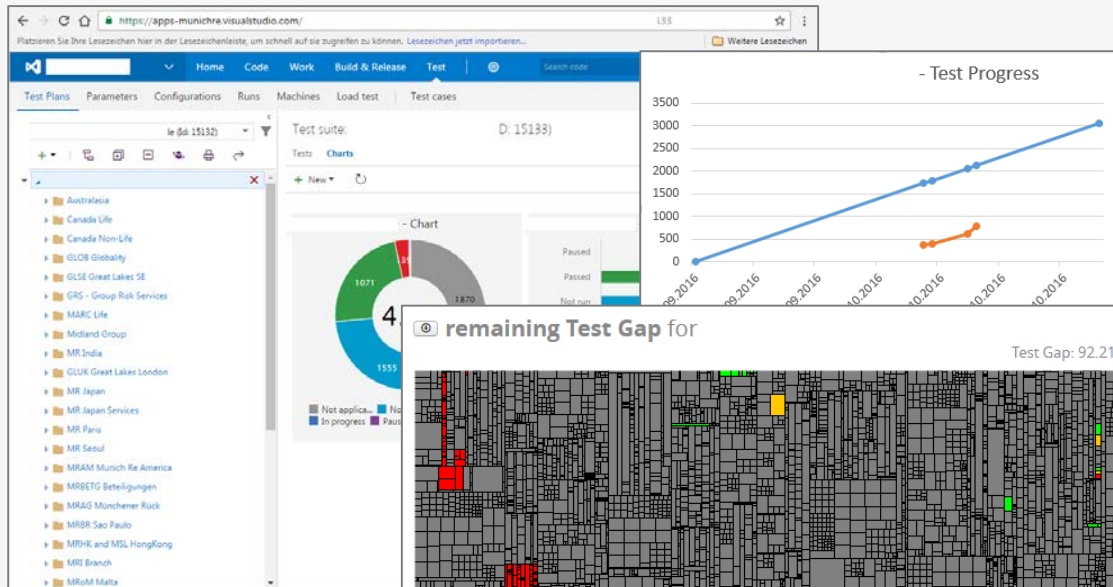
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## Test Gap Trend Chart for



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## 1. Kontext

## 2. Nutzungsszenarien

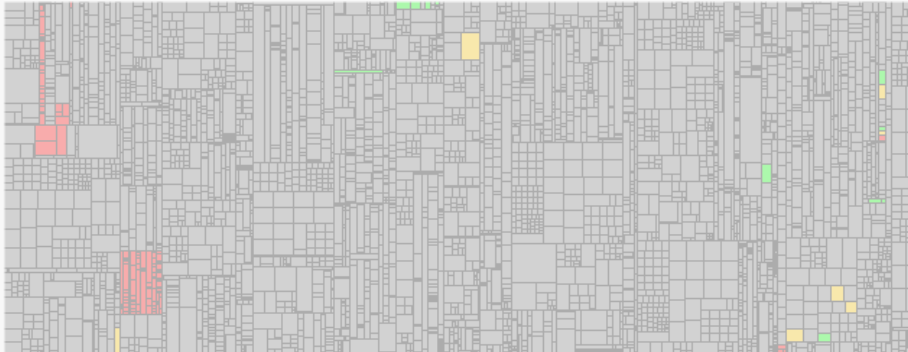
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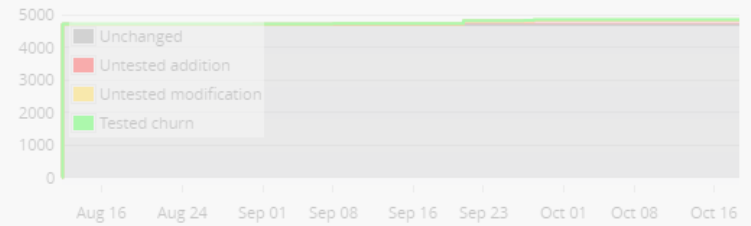
## 4. Anliegen

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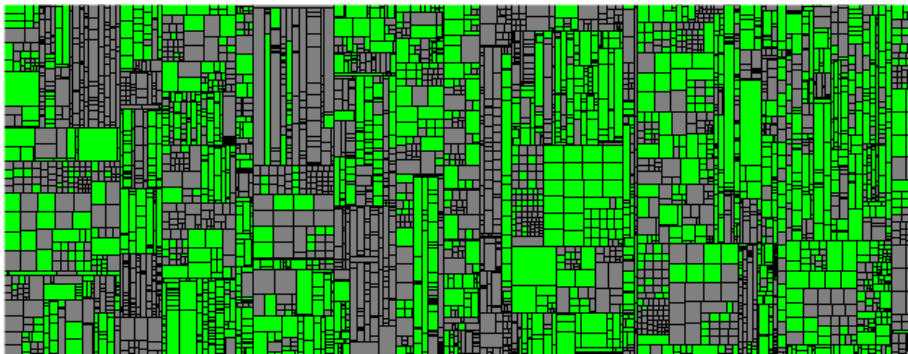


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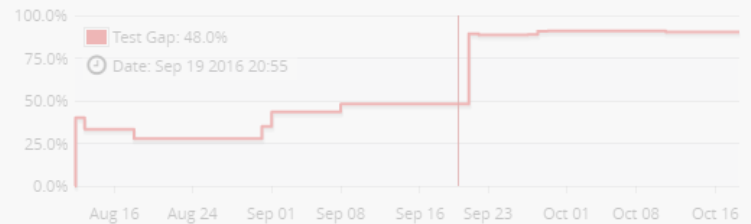


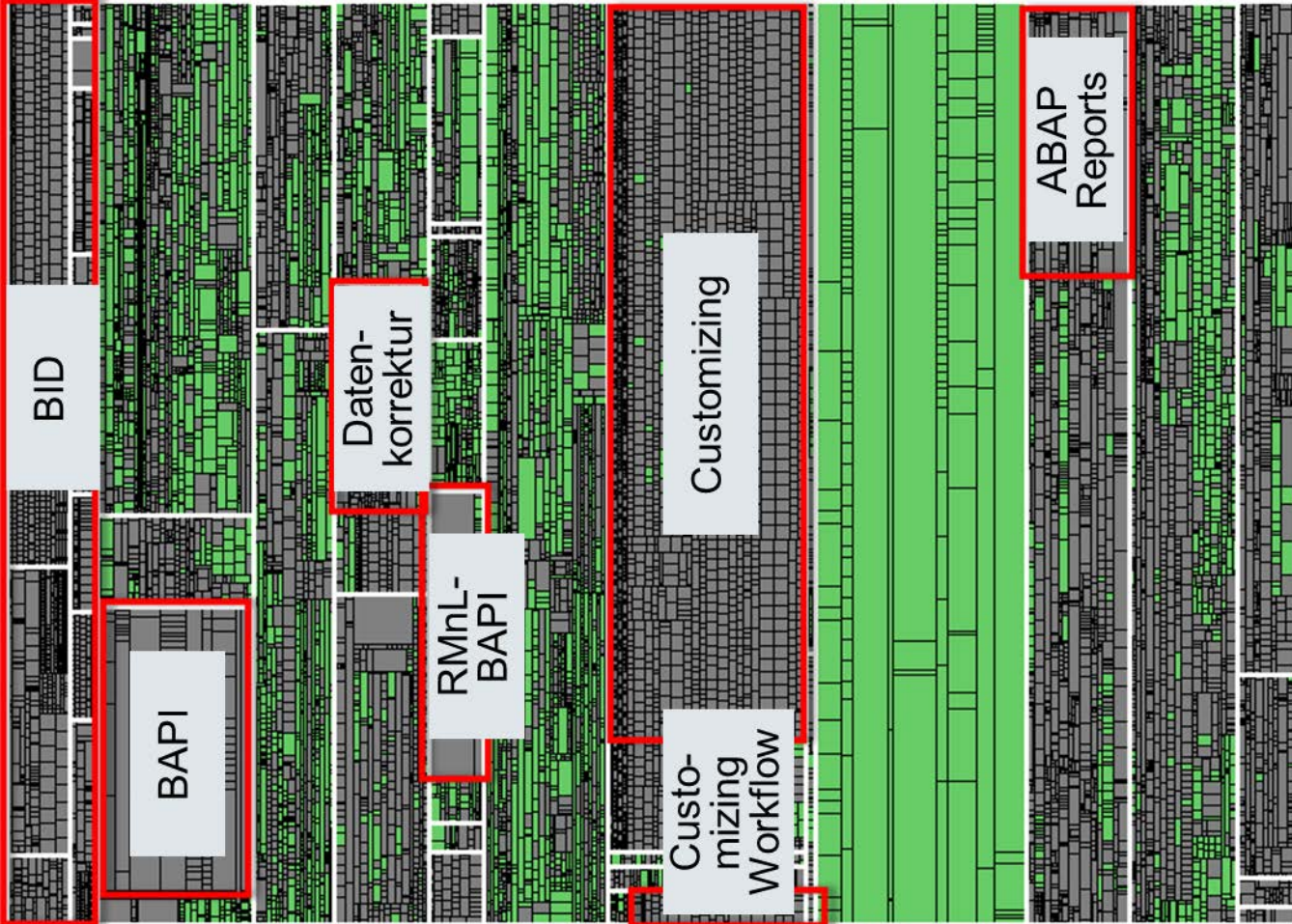
## code reached by test exec so far for

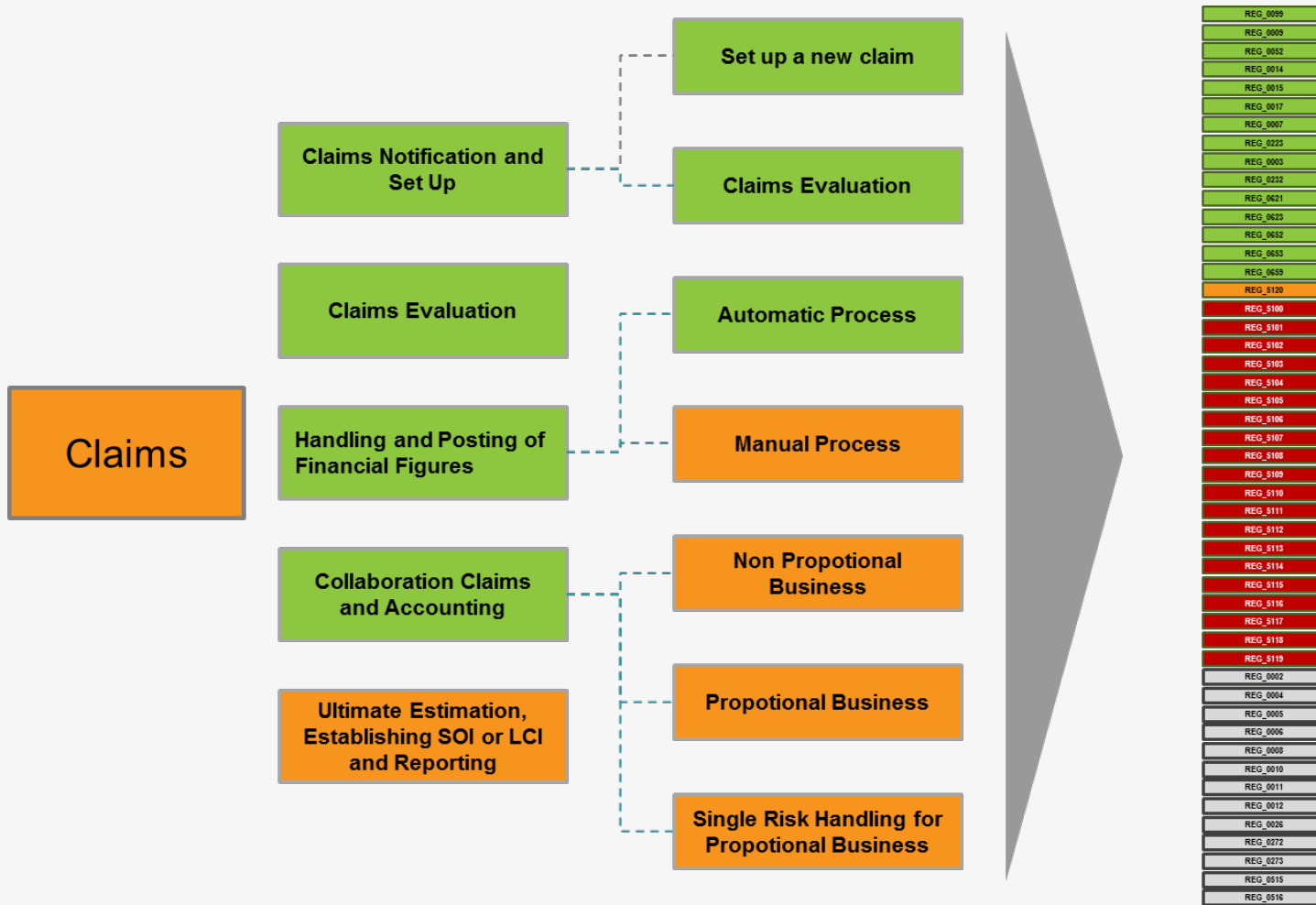
Execution Ratio: 48.19%



## Test Gap Trend Chart for









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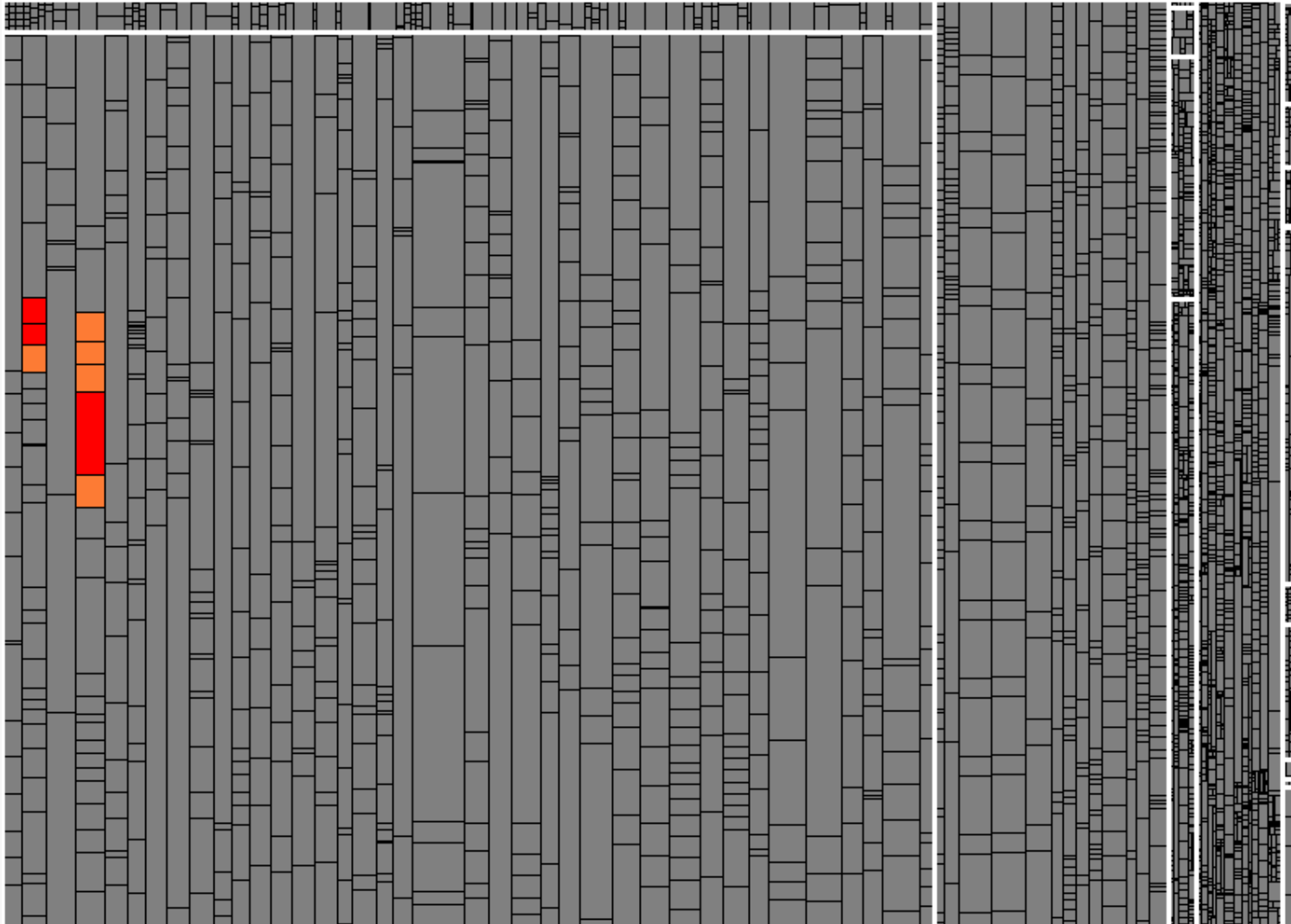
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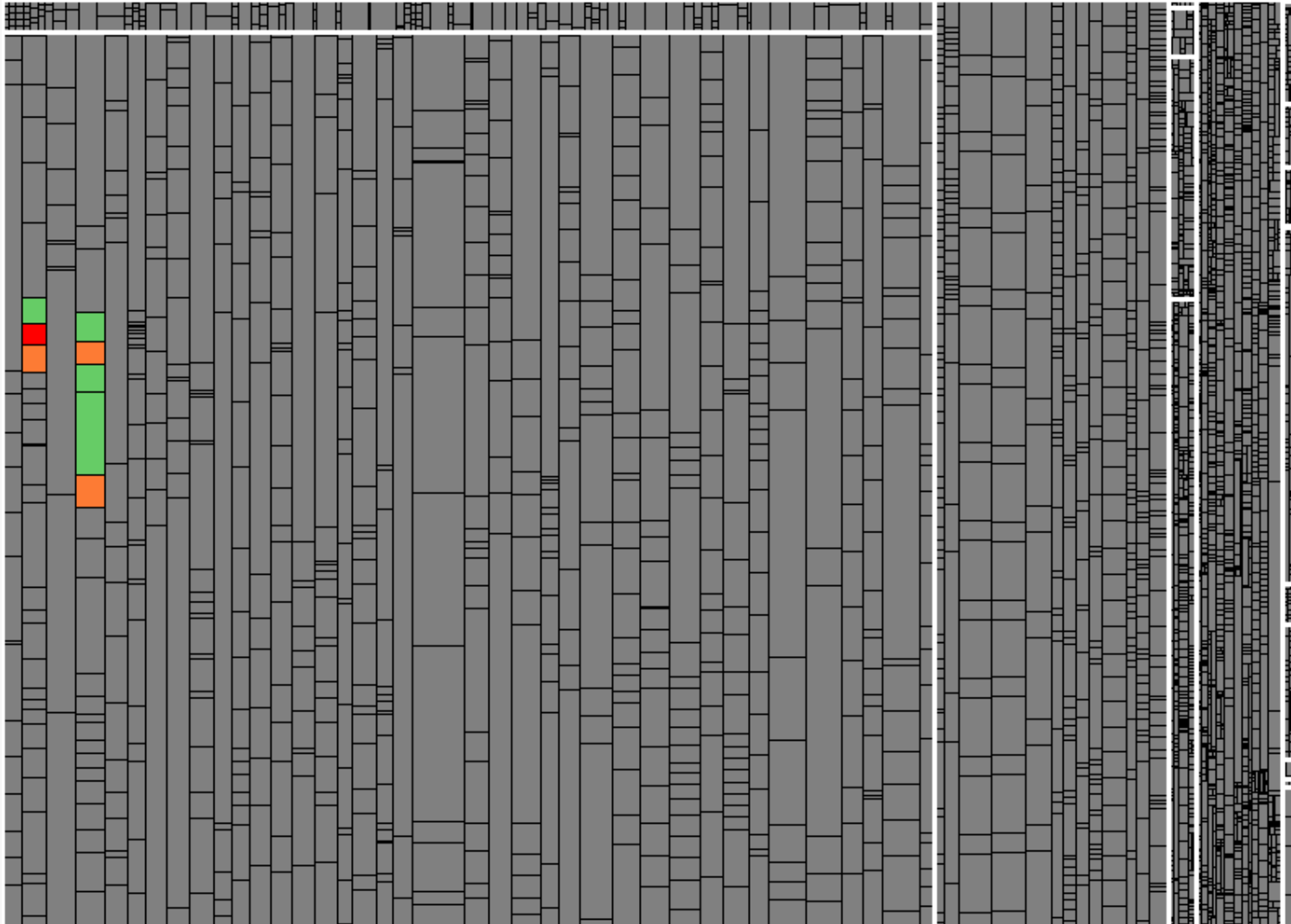
## 3. Evolution

## 4. Anliegen

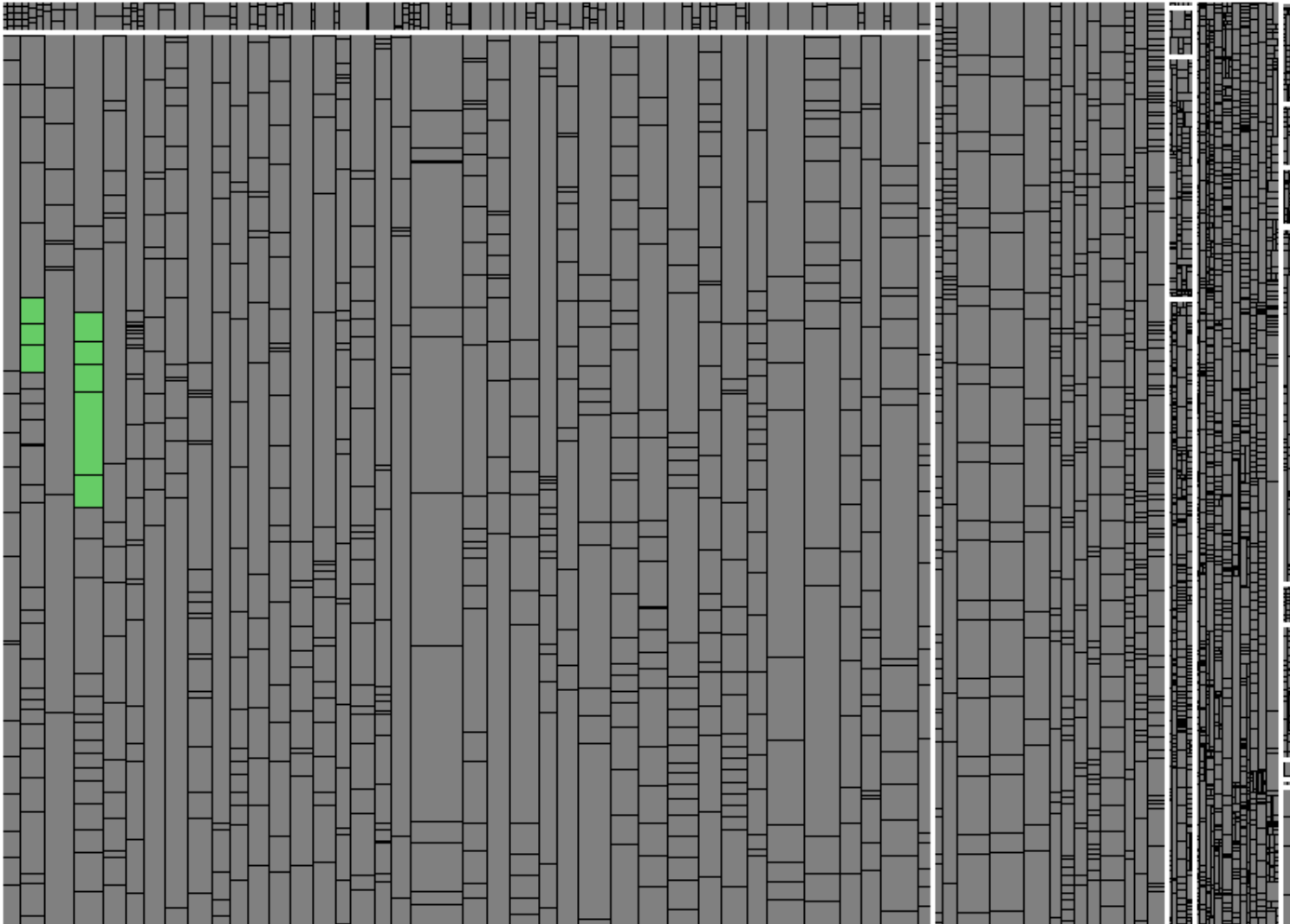
# Hotfixes besser absichern



# Hotfixes besser absichern



# Hotfixes besser absichern



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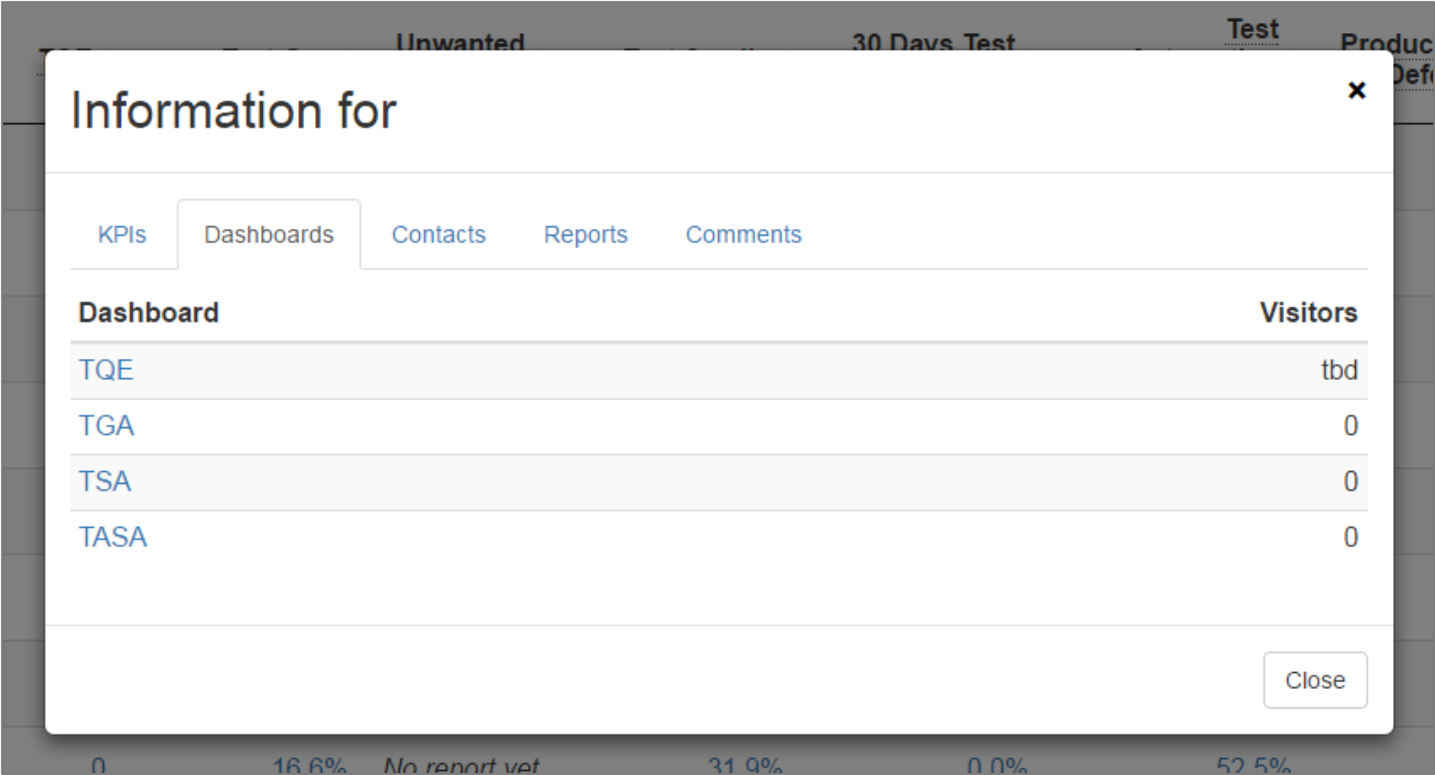
- ABAP
- SAP Data Warehouse Systeme
- Summarische All Dashboards
- Unit Test Ergebnisse
- Trends
- Genauigkeit (z.B. ABAP Export)
- ConQAT → Teamscale
- Individuelle Dashboards (Filtern: Zeit, Scope)

# Funktionsumfang ist nicht alles

- Assistenztool
- Freiwillige Nutzung → verpflichtend



System	TQE	Test Gap	Unwanted Test Gap	Test Smells	30 Days Test Smells	Test Automation Smells	Production Defects
AutoFac	0	65.5%	No report yet				tbd
Care	0						tbd
CashFlow	0						tbd
Claims Workflow	0						tbd
cMoss / cCollab	0			35.3%	0.0%		tbd
cMoss / CodeBase	0	16.6%	No report yet	31.9%	0.0%	52.5%	tbd
cMoss / Collaboration	0			14.7%	0.0%		tbd
cMoss / Connect	8	0.8%	No report yet	26.8%	19.5%	81.5%	tbd
cMoss / MRIntranet	0	0.0%	No report yet	31.9%	0.0%	52.5%	tbd
cMoss / MyProfile	0	100.0%	No report yet	31.9%	0.0%	52.5%	tbd



Information for ×

KPIs **Dashboards** Contacts Reports Comments

Dashboard	Visitors
TQE	tbd
TGA	0
TSA	0
TASA	0

Close

0 16.6% No report yet 31.9% 0.0% 52.5%

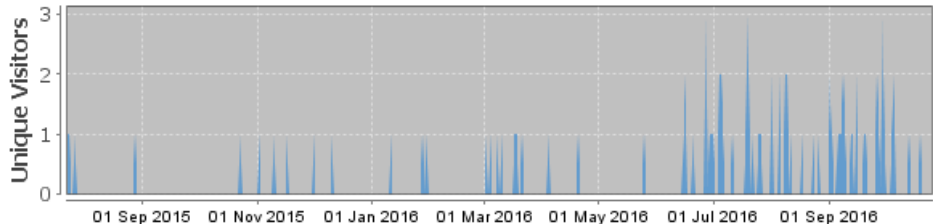
**conQAT** @ Wed Oct 26 01:23:19 CEST 2016

- Overview
- Test Smells
  - All Smells
  - Recent Changes (30 Days)
  - Vague Sentences
  - Conditional Sentences
  - Long Steps
  - Long Sentences
  - Clones
  - Clones with Shared Steps
- TFS Process Smells
  - Missing Test Aspects
- Help
  - TGA/TSA Moss
  - Usage Concept
  - Contact
- Info
  - Parameters
  - Log
  - Config
  - Execution Time
  - Version

### Test Smells

All Smells	37.0%
All Smells (Except Clones in Shared Steps)	36.9%
Recent Changes (30 Days)	41.0%
Recent Changes (30 Days, Except Clones in Shared Steps)	41.0%
Vague Sentences	6.9%
Conditional Sentences	3.4%
Long Steps	1.2%
Long Sentences	0.7%
Clones	27.5%
Clones with Shared Steps	0.2%

### Dashboard Usage



Unique Visitors

01 Sep 2015 01 Nov 2015 01 Jan 2016 01 Mar 2016 01 May 2016 01 Jul 2016 01 Sep 2016

## As a **Test Analyst**

- I want to know if my testing missed some code which my developer colleague created for the slice we are working on.

## As a **Test Lead**

- I want to know if testing progress in the current iteration keeps up with developed changes and where our gaps are.
- I want to know the progress of my release test and make conscious decisions for remaining gaps.
- I want to make sure that we don't release any untested code in our hotfixes.
- I want to make sure my regression test set's (functional) coverage is in sync with my code base.
- I want to make sure that different test levels complement each other.

## As a **Test Service Manager**

- I quickly get an overview over the test scope and progress of a project.

As a **Developer** or a **Technical Architect** I can help my test colleagues to understand the code and its criticality so that they can create missing test cases.

As a **Requirements Engineer** who also tests, I can quickly see the impact of my tests on the code level.

As a **Project Manager** who needs to understand testing in the project, I can quickly get an overview and use the tool in discussions with my testers.



## Test Quality Report for FAB

System	Report #		
FAB	1		
Report Date	Report Author	Report QA	Last Report Date
2016-04-11	F. Streitel	D. Pagano	n/a
Test Phase Start	Test Phase End	Type of Test Phase	Coverage Sources
2016-03-28	2016-04-15	Regression test	Pool Green
System Size [Files]	System Size [LOC]	System Size [BLOC]	
4,940	792,359	497,952	
Code Baseline Date	Code Baseline Revision	Code Latest Date	Last Code Revision
07.12.2015	657693	06.04.2016	687155
Added Files	Deleted Files	Changed Files	Copied/Moved Files
19	3	142	2

## Summary

**Reporting Period** 2015-11-01 – 2016-05-19  
**Amount of Change** 86 Files (3.8%)

**Quality Goal** 3  
**Cluster** AMS

Test Qua  
 FAB

### TQE Compliance



Quality Goal 3 was missed and 9 new TQE Tasks were added with this report. No progress on existing TQE Tasks, 23 open tasks now.

### Clear Improvements



Test Coverage

### Clear Negative Trend



Unit Test Stability



**5 Quality Indicators are Meet:** Build Stability, Architecture Conformance, Guideline Violations, Duplicated Code, Nesting Depth



**5 Quality Indicators are Violated:** Unit Test Stability, Test Coverage, Compiler Warnings, File Size, Method Length

System  
 FAB

Report Date  
 2016-04-11

Test Phase St  
 2016-03-2

System Size [F  
 4,940

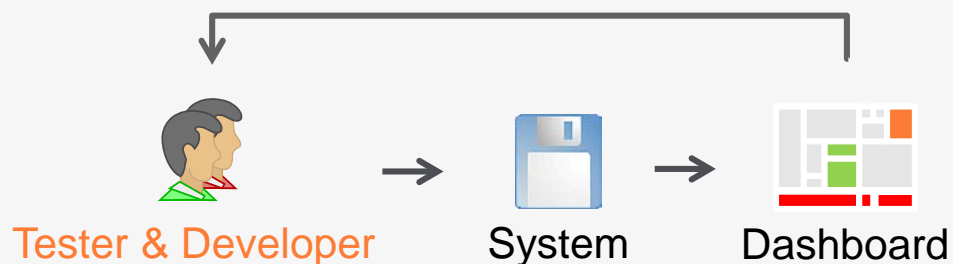
Code Baseline  
 07.12.2015

Added Files  
 19

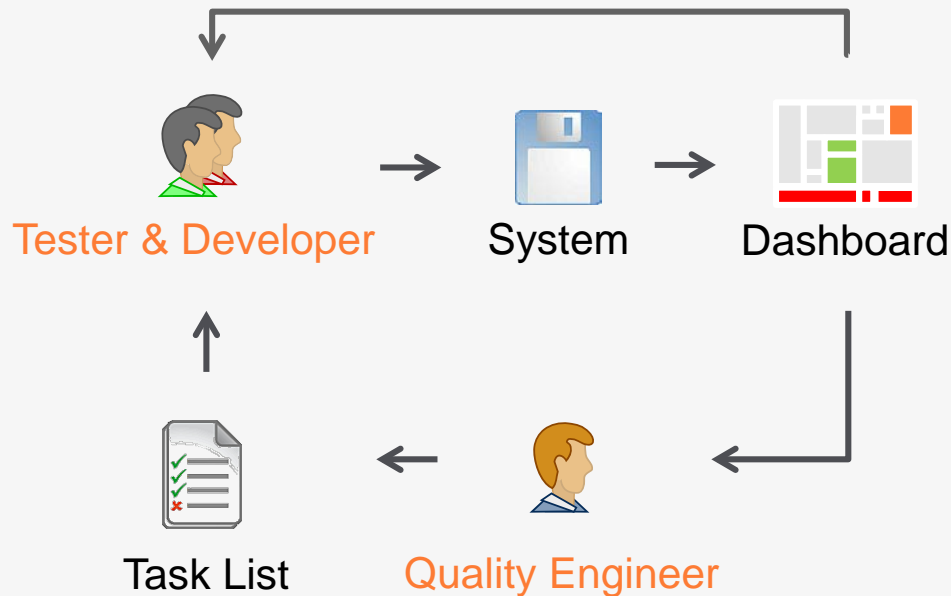
– TQE Report #15  
 2016-05-23

2

Code Date: 2016-05-19  
 Baseline: 2015-11-01

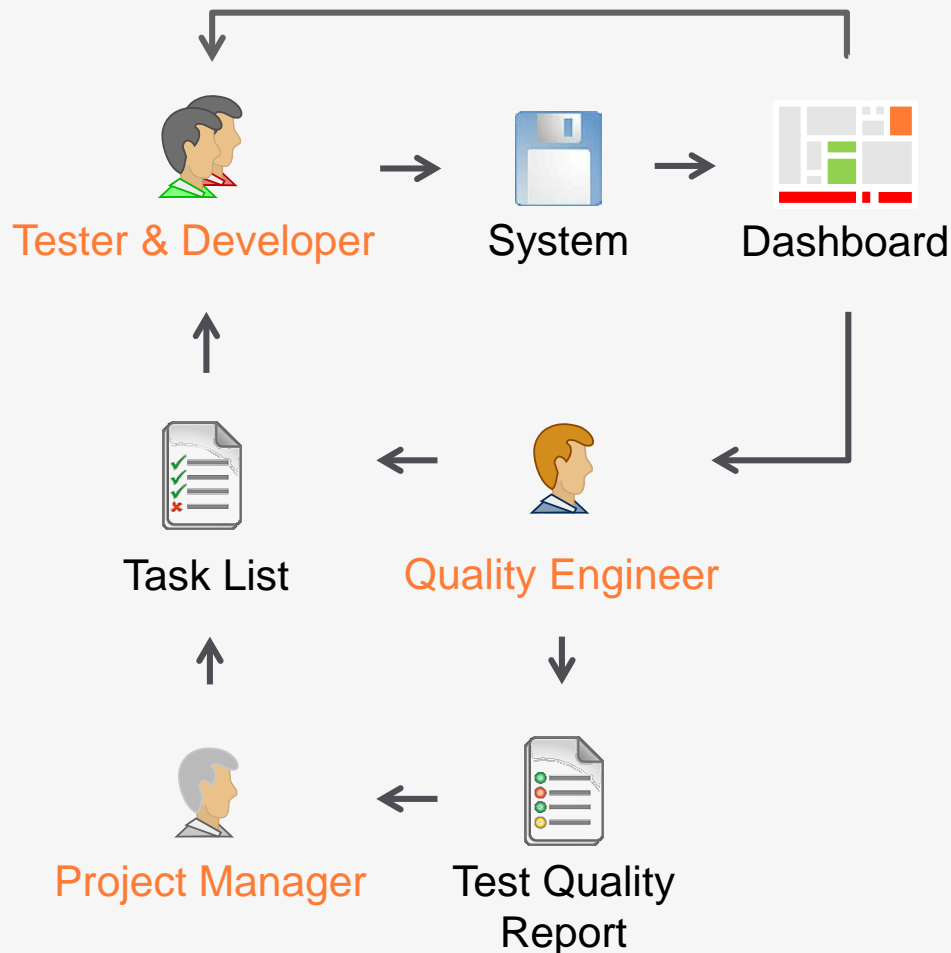


- Developer changes system code. Tester executes test cases for system.
- Dashboard shows untested changes.
- Tester regularly checks dashboard and closes test gaps with help of developer.

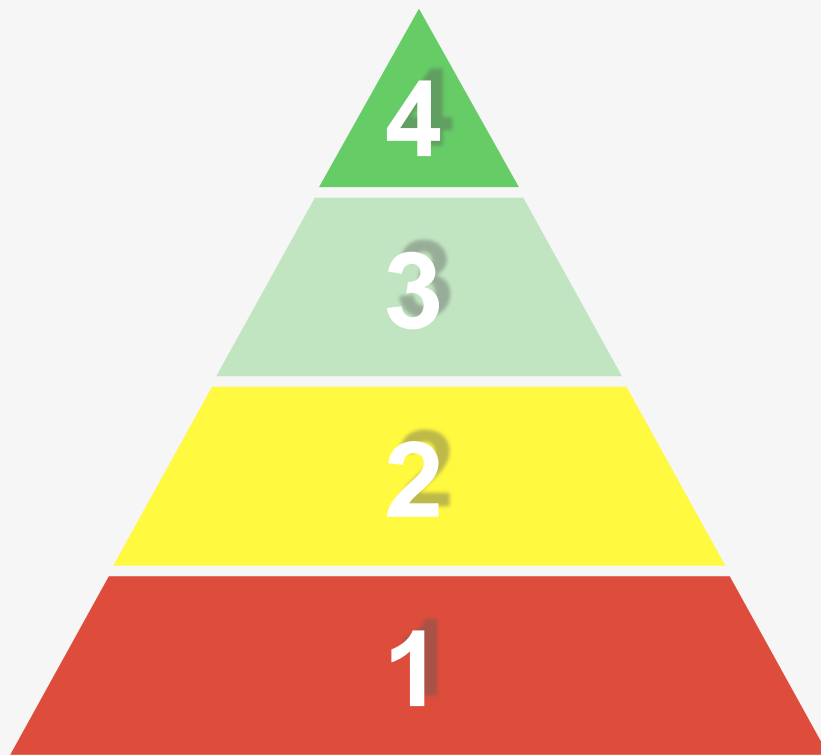


- Developer changes system code. Tester executes test cases for system.
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- Quality Engineer assesses remaining Test Gaps in collaboration with team.
- Quality Engineer proposes specific tasks to improve test process.
- Findings and tasks are captured in Test Quality Report. Reports are prepared regularly, synchronized with test phases.





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- Quality Engineer assesses remaining Test Gaps in collaboration with team.
- Quality Engineer proposes specific tasks to improve test process.
- Findings and tasks are captured in Test Quality Report. Reports are prepared regularly, synchronized with test phases.
- Project Manager receives quality reports and schedules tasks.
- Project Manager follows up on findings, tasks and Test Gap trend.



QG 4: No test gaps

QG 3: No test gaps in changes that affect requirements with high or medium priority

QG 2: No test gaps in changes that affect requirements with high priority

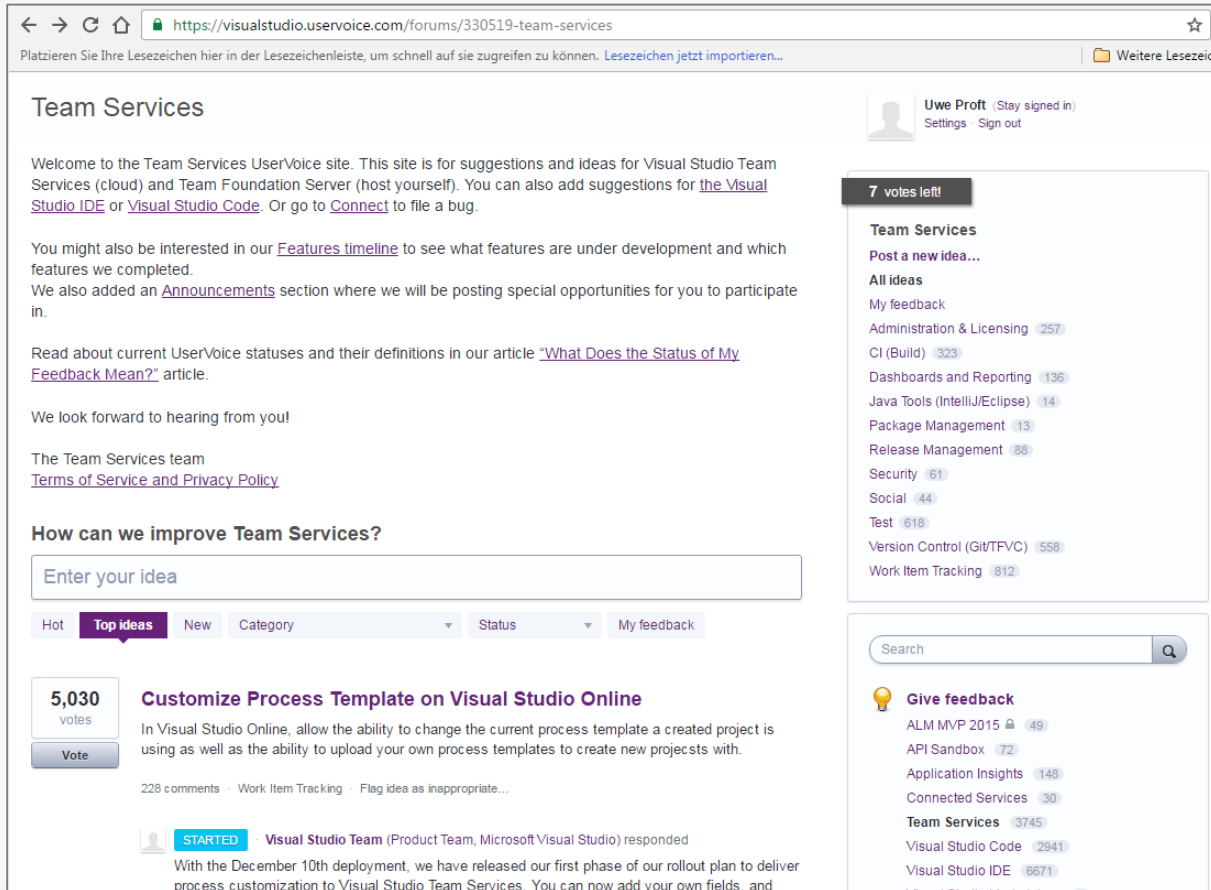
QG 1: Don't care

# Monthly (light weight) Assessments

Project	Provider	Technology	TQE	QG	unfixed in changed			Assessment	Comment
					new	code	fixed		
		.Net	ChP	2	0	0	0		no development
		.Net	CoP	4	0	0	0	G	hardly any development
		ABAP	CoP	1	5	0	1		no development (only changes in SAP Code Inspector configuration)
		.Net	CoP	4	80	10	41	Y/R	Commits also from TA.
		.Net	CoP	4	4	3	27	Y	Commits mostly from TA. Architecture spec. out of date.
		.Net	CoP	4	70	4	8	R	Commits also from TA. Architecture spec. out of date
		.Net	CoP	4	0	0	0		no development
		.Net	CoP	4	0	0	0		no development
		.Net	CoP	4	5	3	6	Y	Commits only from TA. Architecture spec. out of date. Few commits introduce findings. Assessment Y due to resolved findings.
		ABAP	CoP	2	0	0	0		no development
		ABAP	ChP	2	26	21	57	G	new findings mainly minor guideline violatoins, but more fixed
		.Net	ChP	2	0	0	4	G	hardly any development
		ABAP	ChP	2	18	353	83	G	new findings only minor guideline violatoins, but more fixed
		.Net	CoP	2	0	0	0		no development
		.Net	CoP	4	0	0	0		no development
		ABAP	CoP	2	60	3	26	Y	some QG-relevant findings, but not many
		ABAP	ChP	2	4	25	0	Y	hardly any development, new findings not severe
		ABAP	ChP	2	0	80	2	G	
		ABAP	ChP	2	11	67	5	Y	new findings either minor guideline violations or tolerable duplications
		.Net	CoP	3	8	15	19	Y	new/modified QG-relevant findings. Mostly minor, also relevant findings fixed
		.Net	ChP	2	1	3	3	G	For C# code. (JavaScript code would also be assessed with G)
		ABAP	CoP	2	0	0	0		no development
		ABAP	CoP	2	14	109	21	G	new findings consists of only minor guideline violations
		.Net	CoP	3	12	10	3	G	new findings consists of only minor guideline violations
		.Net	CoP	3	0	1	0	G	hardly any development
		.Net	CoP	1	0	0	0		no development
		.Net	CoP	3	0	0	0		no development
		.Net	CoP	3	0	5	0	Y	all commits from
		.Net	ChP	2	0	0	0		no development
		.Net	ChP	2	0	0	0		no development

- Assistenztool
- Freiwillige Nutzung → verpflichtend
- Transparenz schaffen
- Alle Stakeholder einbinden
- Report & Prozess
- Quality Goals
- Monthly assessments
- Interner Kümmerer

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Team Services

Welcome to the Team Services UserVoice site. This site is for suggestions and ideas for Visual Studio Team Services (cloud) and Team Foundation Server (host yourself). You can also add suggestions for [the Visual Studio IDE](#) or [Visual Studio Code](#). Or go to [Connect](#) to file a bug.

You might also be interested in our [Features timeline](#) to see what features are under development and which features we completed.

We also added an [Announcements](#) section where we will be posting special opportunities for you to participate in.

Read about current UserVoice statuses and their definitions in our article "[What Does the Status of My Feedback Mean?](#)" article.

We look forward to hearing from you!

The Team Services team  
[Terms of Service and Privacy Policy](#)

### How can we improve Team Services?

Enter your idea

Hot **Top ideas** New Category Status My feedback

**5,030** votes  
Vote

#### Customize Process Template on Visual Studio Online

In Visual Studio Online, allow the ability to change the current process template a created project is using as well as the ability to upload your own process templates to create new projecsts with.

228 comments · Work Item Tracking · Flag idea as inappropriate...

**STARTED** Visual Studio Team (Product Team, Microsoft Visual Studio) responded

With the December 10th deployment, we have released our first phase of our rollout plan to deliver process customization to Visual Studio Team Services. You can now add your own fields, and

Uwe Proft (Stay signed in)  
Settings · Sign out

7 votes left

#### Team Services

Post a new idea...

##### All ideas

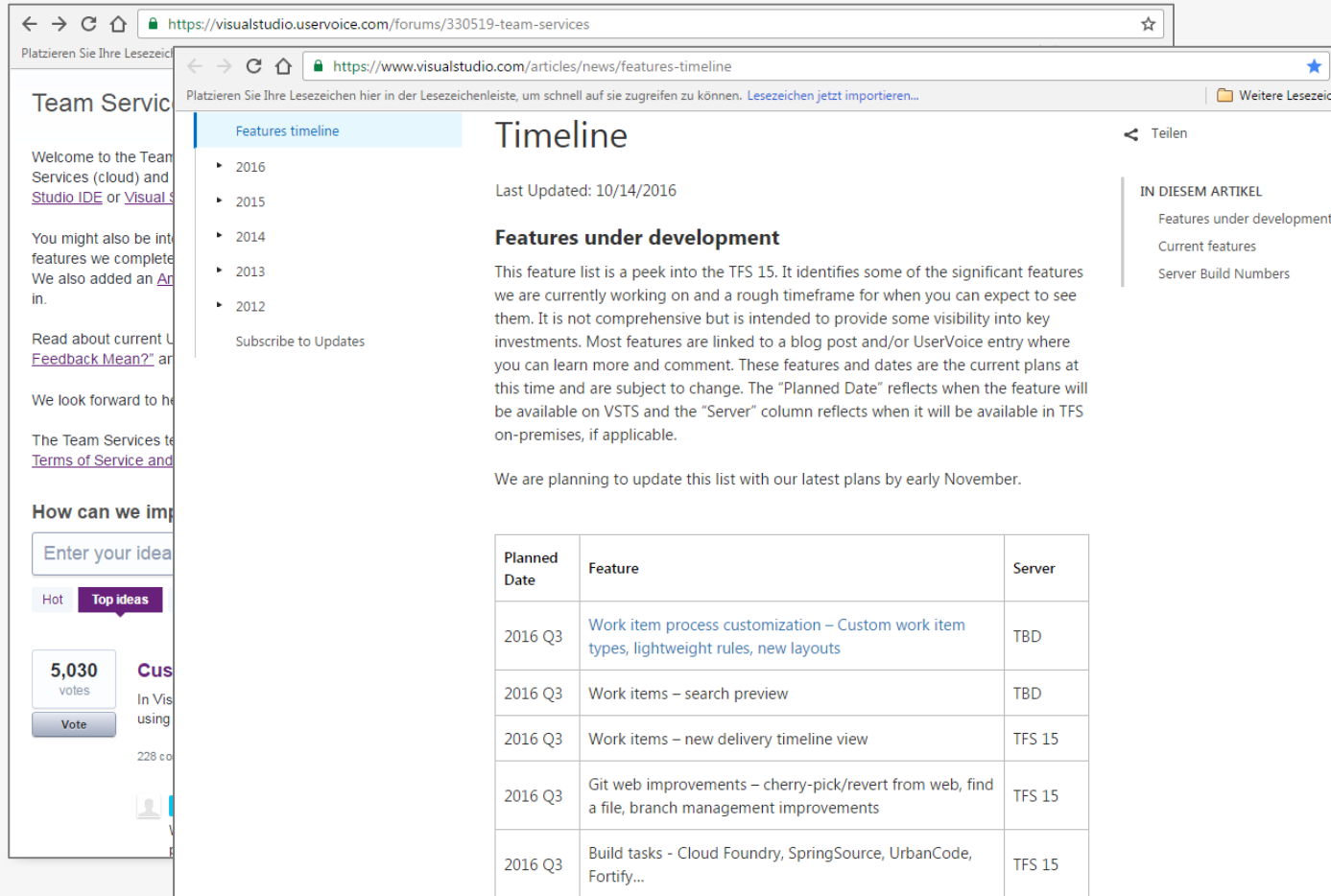
My feedback

- Administration & Licensing 257
- CI (Build) 323
- Dashboards and Reporting 136
- Java Tools (IntelliJ/Eclipse) 14
- Package Management 13
- Release Management 88
- Security 61
- Social 44
- Test 618
- Version Control (Git/TFVC) 558
- Work Item Tracking 612

Search

#### Give feedback

- ALM MVP 2015 49
- API Sandbox 72
- Application Insights 148
- Connected Services 30
- Team Services 3745**
- Visual Studio Code 2941
- Visual Studio IDE 6671



The screenshot shows a web browser displaying the Visual Studio UserVoice forums. The main article is titled "Features timeline" and is dated 10/14/2016. It provides a "Features under development" list, which is a peek into the TFS 15 backlog. The article includes a table of planned features with their dates and server versions.

**Features timeline**

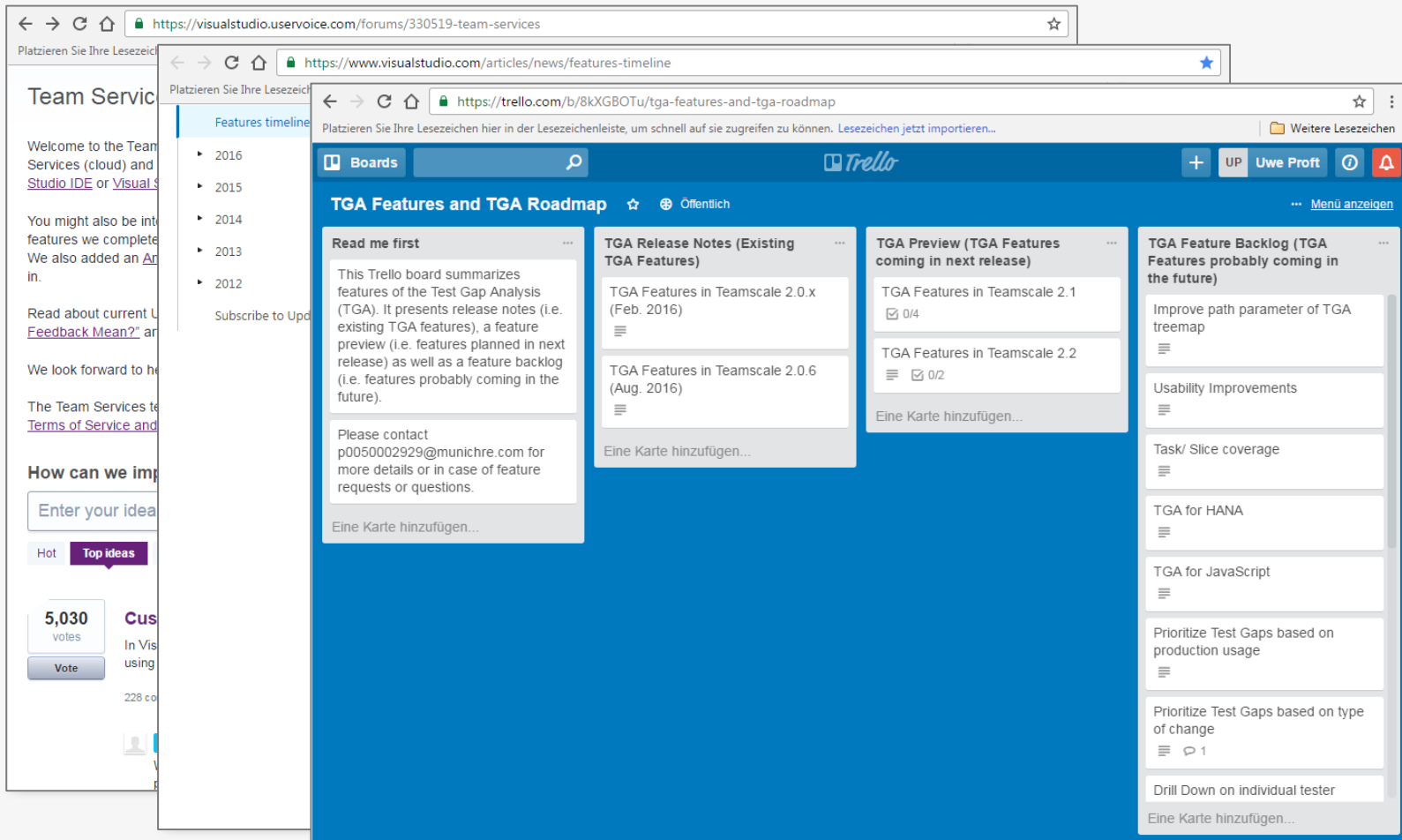
Last Updated: 10/14/2016

### Features under development

This feature list is a peek into the TFS 15. It identifies some of the significant features we are currently working on and a rough timeframe for when you can expect to see them. It is not comprehensive but is intended to provide some visibility into key investments. Most features are linked to a blog post and/or UserVoice entry where you can learn more and comment. These features and dates are the current plans at this time and are subject to change. The "Planned Date" reflects when the feature will be available on VSTS and the "Server" column reflects when it will be available in TFS on-premises, if applicable.

We are planning to update this list with our latest plans by early November.

Planned Date	Feature	Server
2016 Q3	<a href="#">Work item process customization – Custom work item types, lightweight rules, new layouts</a>	TBD
2016 Q3	Work items – search preview	TBD
2016 Q3	Work items – new delivery timeline view	TFS 15
2016 Q3	Git web improvements – cherry-pick/revert from web, find a file, branch management improvements	TFS 15
2016 Q3	Build tasks - Cloud Foundry, SpringSource, UrbanCode, Fortify...	TFS 15

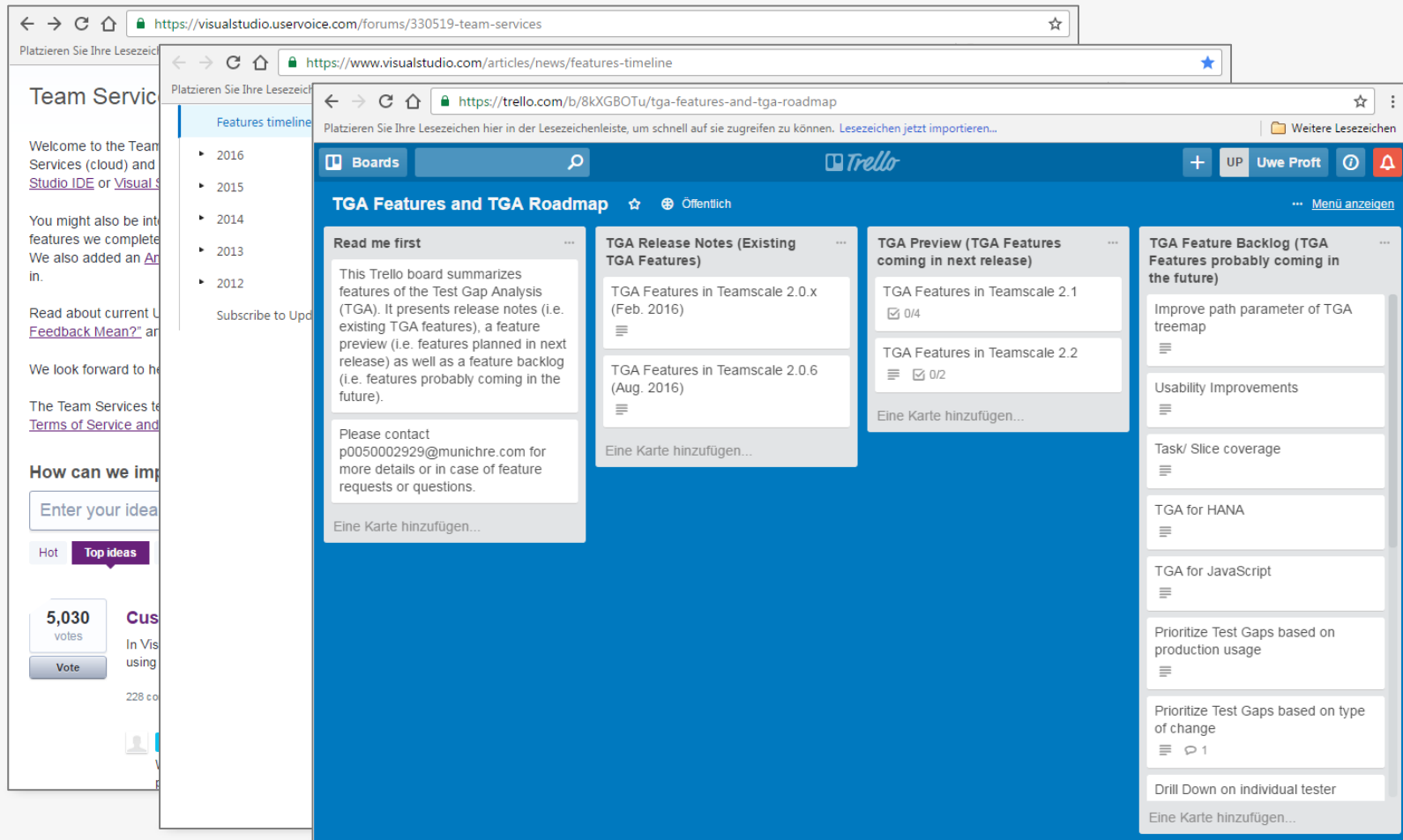


The screenshot displays a web browser with three tabs. The active tab is a Trello board titled "TGA Features and TGA Roadmap". The board is organized into four columns:

- Read me first:** Contains a welcome message and contact information for p0050002929@munichre.com.
- TGA Release Notes (Existing TGA Features):** Lists "TGA Features in Teamscale 2.0.x (Feb. 2016)" and "TGA Features in Teamscale 2.0.6 (Aug. 2016)".
- TGA Preview (TGA Features coming in next release):** Lists "TGA Features in Teamscale 2.1" (0/4) and "TGA Features in Teamscale 2.2" (0/2).
- TGA Feature Backlog (TGA Features probably coming in the future):** Lists several items including "Improve path parameter of TGA treemap", "Usability Improvements", "Task/ Slice coverage", "TGA for HANA", "TGA for JavaScript", "Prioritize Test Gaps based on production usage", "Prioritize Test Gaps based on type of change" (1), and "Drill Down on individual tester".

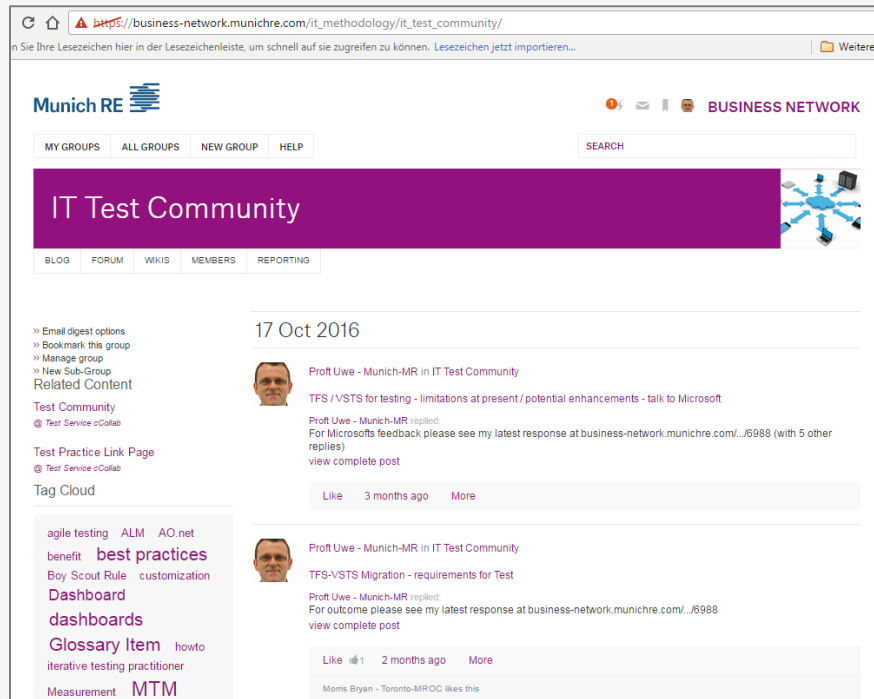
On the left side of the browser, a "Team Services" forum page is partially visible, showing a "Features timeline" with years from 2012 to 2016 and a "How can we improve" section with a "Vote" button and "5,030 votes".



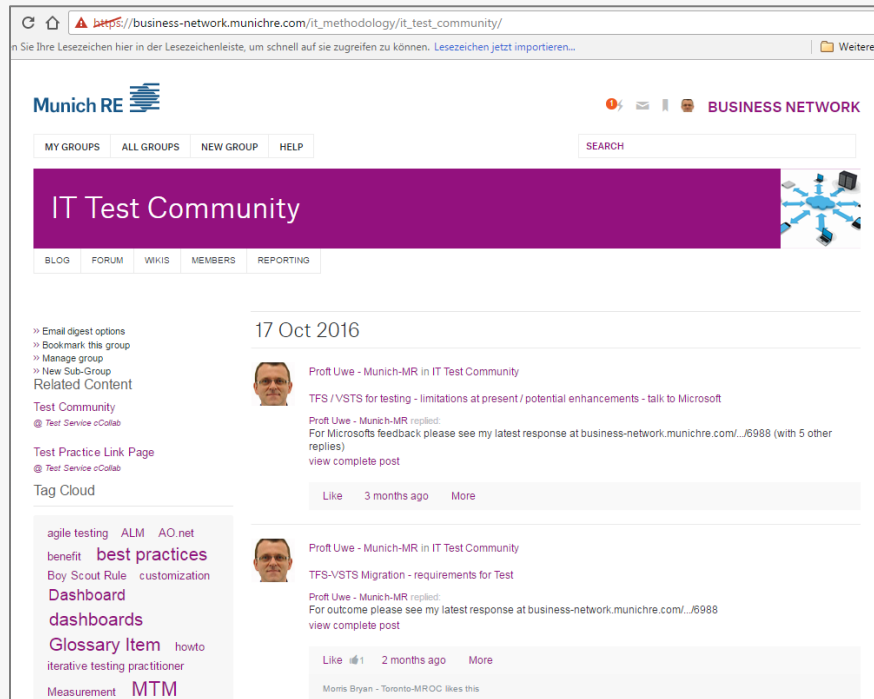


The screenshot displays a web browser with three overlapping windows. The top window shows a forum page for 'Team Services' with a 'Features timeline' section listing years from 2012 to 2016. The middle window shows a Trello board titled 'TGA Features and TGA Roadmap' with four columns: 'Read me first', 'TGA Release Notes (Existing TGA Features)', 'TGA Preview (TGA Features coming in next release)', and 'TGA Feature Backlog (TGA Features probably coming in the future)'. The 'Read me first' column contains a welcome message and contact information. The 'TGA Release Notes' column lists features for Teamscale 2.0.x (Feb. 2016) and Teamscale 2.0.6 (Aug. 2016). The 'TGA Preview' column lists features for Teamscale 2.1 (0/4) and Teamscale 2.2 (0/2). The 'TGA Feature Backlog' column lists various items like 'Improve path parameter of TGA treemap', 'Usability Improvements', 'Task/ Slice coverage', 'TGA for HANA', 'TGA for JavaScript', 'Prioritize Test Gaps based on production usage', 'Prioritize Test Gaps based on type of change', and 'Drill Down on individual tester'.

Transparenz über den Produkt-Backlog für TGA (alle Quality Tools) (für die Kunden)



The screenshot shows a web browser window displaying the Munich RE IT Test Community forum. The browser address bar shows the URL [https://business-network.munichre.com/it\\_methodology/it\\_test\\_community/](https://business-network.munichre.com/it_methodology/it_test_community/). The page header includes the Munich RE logo, navigation links for 'MY GROUPS', 'ALL GROUPS', 'NEW GROUP', and 'HELP', and a search bar. The main content area is titled 'IT Test Community' and features a navigation menu with 'BLOG', 'FORUM', 'WIKIS', 'MEMBERS', and 'REPORTING'. On the left sidebar, there are links for 'Email digest options', 'Bookmark this group', 'Manage group', and 'New Sub-Group', along with 'Related Content' and 'Test Community'. The main forum post is dated '17 Oct 2016' and is by 'Proft Uwe - Munich-MR in IT Test Community'. The post title is 'TFS /VSTS for testing - limitations at present / potential enhancements - talk to Microsoft'. The post content includes a reply from 'Proft Uwe - Munich-MR' stating: 'For Microsofts feedback please see my latest response at business-network.munichre.com/.../6988 (with 5 other replies)'. Below the post, there is a 'Like' button, a timestamp '3 months ago', and a 'More' link. A second post is partially visible below, also by 'Proft Uwe - Munich-MR in IT Test Community', with the title 'TFS-VSTS Migration - requirements for Test'. A 'Tag Cloud' on the left lists terms like 'agile testing', 'ALM', 'AO.net', 'benefit', 'best practices', 'Boy Scout Rule', 'customization', 'Dashboard', 'dashboards', 'Glossary Item', 'howto', 'iterative testing practitioner', 'Measurement', and 'MTM'. At the bottom of the post, it says 'Morris Bryan - Toronto-MROC likes this'.



- Ich bin gern bereit, unsere Erfahrungen zu teilen UND ich würde gern aus Ihren Erfahrungen lernen:  
[uproft@munichre.com](mailto:uproft@munichre.com)

- TGA, dynamische Codeanalyse, Teil einer Toolbox
- Transparenz → effektives & effizientes Testen
- Mächtiges & komplexes Werkzeug
- Veränderung & Akzeptanz
- Gemeinsam Test Gap Analyse (die Quality Tools) voran bringen:  
Offener Backlog & User Forum