



PNSQC

OCTOBER 10-12 2022

EU FELIX FORMAL TECHNICAL REVIEW PROCESS ENHANCEMENT

40TH ANNUAL
PACIFIC NW SOFTWARE
QUALITY
CONFERENCE
OCT.10-12, 2022

BIOGRAPHY

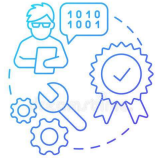


Employment History

intel®



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SOLUTIONS



QUALITY ASSURANCE
ENGINEER



Education, Licenses & Certifications



The University of Bolton
Bachelor Degree, Computing



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SOLUTIONS

Lean Six Sigma Green Belt (ICGB)
Motorola Solutions



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AGENDA

- What is Formal Technical Review (FTR)?
- FTR's objectives
- Type of Reviews
 - Types of Formal Reviews
- Phases of FTR
- FTR Roles & Responsibilities
- Conduct an effective FTR
- Recommended FTR Process Enhancement
 - FTR Guidelines / FTR Tool
- Review Metrics
 - User Experience (UX) / Benchmarking / Quality Data
- Conclusion
- Key Takeaways



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WHAT IS FTR?

- ❑ A software quality control activity to ensure that the software meets:
 - The Specified Requirements.
 - The Pre-defined Standards.
- ❑ Gauging the quality release criteria.
- ❑ Reducing unnecessary project costs.

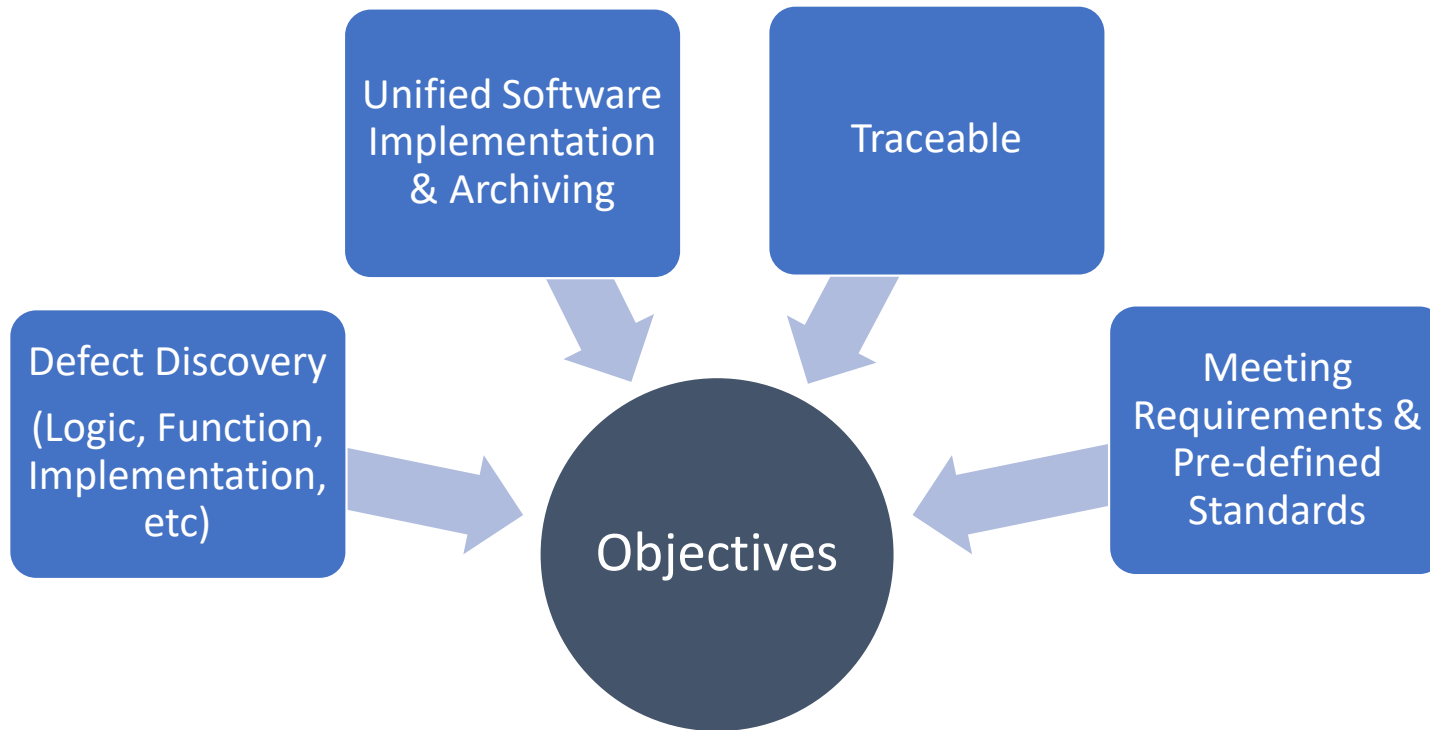


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FTR OBJECTIVES



TYPES OF REVIEWS



Formal Reviews

Professional team that identifies and corrects errors

- Larger Group.
- Scheduled beforehand. Sufficient time for preparation.
- Formal agenda.



Informal Review

Detect defects, generate ideas, or quickly resolve minor problems

- Smaller Group.
- Scheduled at team members' convenience.
- Informal agenda.



TYPES OF FORMAL REVIEWS



WALKTHROUGH

- Author
- Explain document content
- Different participant areas
- Higher-level documents

GOALS

- ✓ Preliminary review
- ✓ Evaluate conformance
- ✓ Initiate a basic understanding
- ✓ Inspect the validity

TECHNICAL REVIEW

- Moderator
- Technical content
- Identify discrepancies
- Defect identification
- Technically qualified personnel

GOALS

- ✓ Work product suitability
- ✓ Assess tech concepts' benefits
- ✓ Set uniformity
- ✓ Gain consensus and build confidence

INSPECTION

- Trained moderator
- Checked documents thoroughly
- Rules and checklists
- Captured defects

GOALS

- ✓ Search for anomalies
- ✓ Enhance document quality
- ✓ Remove defects efficiently and rapidly
- ✓ Create a common understanding

PHASES OF FTR



Phase	Descriptions
Planning	The author submits 'Request for review'.
Kick-Off	Sync and understand the intention.
Preparation	Work solitary on the document.
Review Meeting	Logging, discussion, decision.
Rework	Revises the document.
Follow-Up	Met exit criteria.

FTR Roles & Responsibilities



Author

- Create a checklist for review. Mandate FTR process.

Reviewer

- Review the work product.

Moderator

- Set accurate agenda. Keep the review on track and on schedule.

Reader

- Reads the logged issues.

Recorder

- Write the notes.

Program Manager

- Ensure the reviewing meeting is effective.

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CONDUCT AN EFFECTIVE FTR



Review Meeting

- Review considerations:
 - Involvement & adequate preparation.
 - Review meeting duration (≤ 2 hours).
- Small modules.
- Make decisions.

Review Reporting & Record-Keeping

- Captures issues and feedback.
- Issues consolidation.
- Summary.

Review Guidelines

- Distributed in advance (1-2 weeks).
- Participants behavior.

+

FTR ROLES & RESPONSIBILITIES

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RECOMMENDED FTR PROCESS ENHANCEMENT



FTR process enhancement focus on two specific areas:



FTR Guidelines

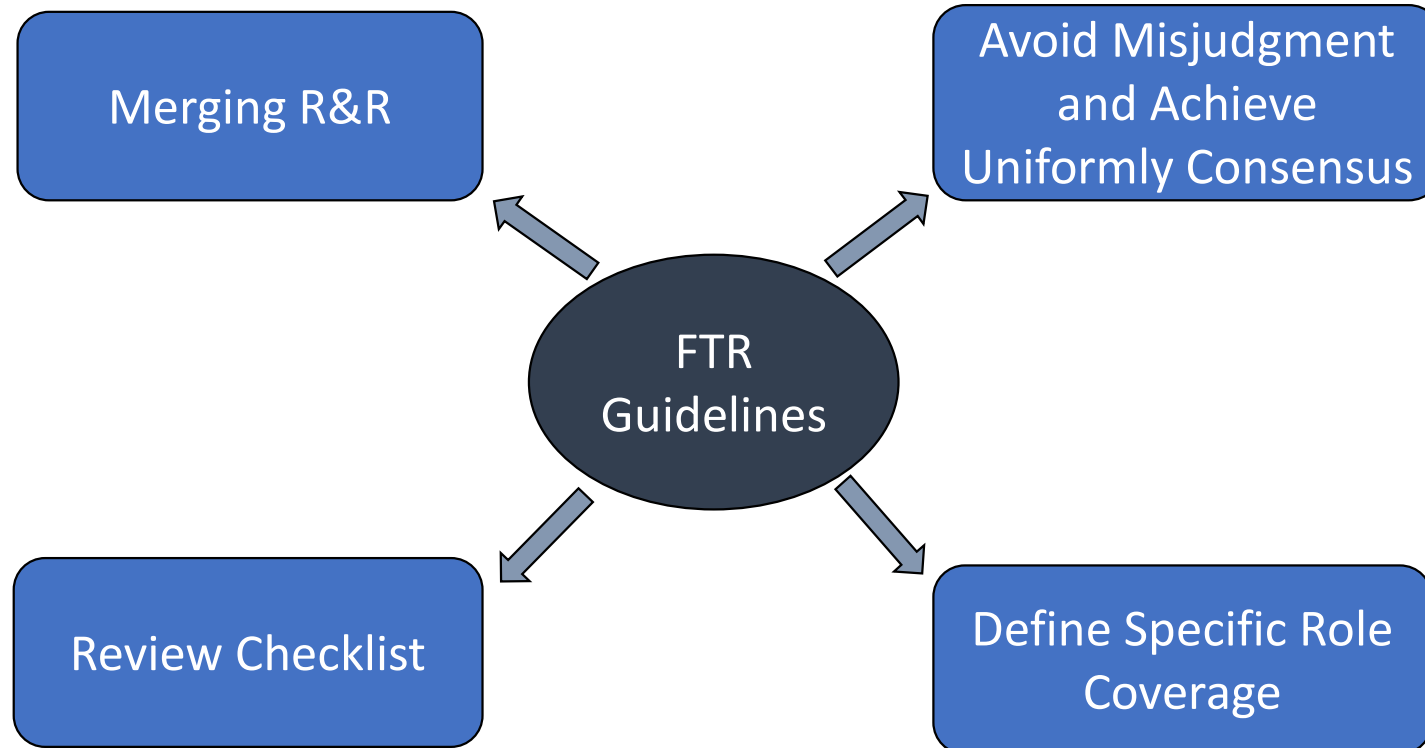


FTR Tool

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FTR GUIDELINES



FTR TOOL ENHANCEMENT (1/8)



Consolidation Ability

- Defect grouping
 - Severity.
 - Similarity.
 - Deprioritize the “don’t need to discuss” defects.

No	Defects/Comments	Priority	Need to Discuss	Similarity
1	Defect A	P2	Yes	#2 – 85%
2	Defect B	P2	Yes	#1 – 85%
3	Comment 1	P3	Yes	N.A
4	Defect C	P4	No	N.A
5	Comment 2	P4	No	N.A

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FTR TOOL ENHANCEMENT (2/8)



Email Notification Ability

- Auto trigger email notification
 - New review is scheduled.
 - All new changes such as R&R, date, etc.

Email for the Participants:

Email Address	Roles & Responsibilities
AlexGrey@gmail.com	Moderator
ChristineLoo@gmail.com	Author
DesmondChung@gmail.com	Reviewer
ArifKurf@gmail.com	Reviewer/Recorder

Send email to the participants [Add](#)

Date:

Time: Set reminder before

Location: Click here to join the meeting"/>

Work Product Path: Link to download"/>

[Setup Meeting](#)

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FTR TOOL ENHANCEMENT (3/8)



One-Click Report Generation

- Dashboard
 - Work progress
 - Quick insights or summary.



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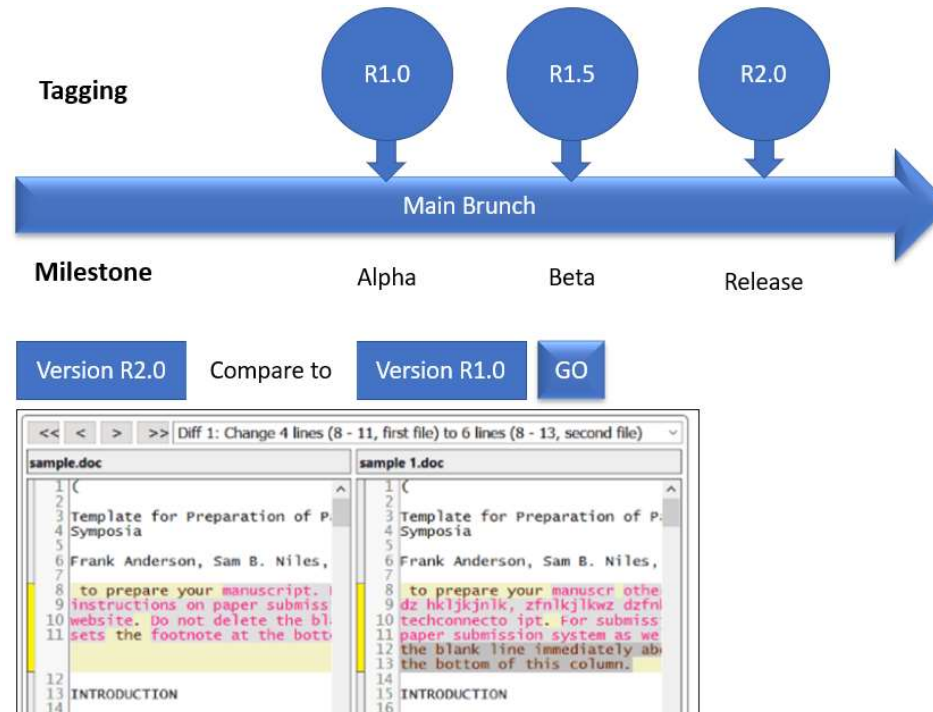
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FTR TOOL ENHANCEMENT (4/8)



The capability of Versioning & Tagging

- Versioning & Tagging
 - Milestone release.
 - Compare the delta.



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FTR TOOL ENHANCEMENT (5/8)



Log the Reviewing Efforts

- Capture all the reviewer's review duration.

No	Name	Review Effort (In Hours)
1	AlexGrey@gmail.com	<input type="text" value="1.5"/>
2	ChristineLoo@gmail.com	<input type="text" value="1.0"/>
3	DesmondChung@gmail.com	<input type="text"/>
4	ArifKurf@gmail.com	<input type="text" value="0.7"/>
5	AlexGrey@gmail.com	<input type="text" value="1.2"/>

Total: 4.4

Save

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FTR TOOL ENHANCEMENT (6/8)



Grammar & Spelling Checker

- Spelling or grammar errors.

Spelling & Grammar Checking:

The FTR tool should be able to detect^s any spelling or grammar errors. This will help to improve the **organization** professionalism.

Ignore Once

Ignore All

Suggestion:

The FTR tool should be able to **detect** any spelling or grammar errors. This will help to improve the **organization's** professionalism.

Change

Change All

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FTR TOOL ENHANCEMENT (7/8)



Plagiarism Detection

- Detect plagiarism/copyright infringement

Results of plagiarism analysis from 2022-Oct-12 13:30

3.8% Plagiarized Content **96.2%** Unique Content

View: **All sources** (4)

- All sources** (4)
- Top three** (3)
- Internet sources** (3)
- Own documents** (1)

Source	Match Percentage	Matches	Action
https://en.wikipedia.org/wiki/Space_explorat	1.9%	3 matches	Highlight matches in source
2 documents with identical matches			
"New_Horizons.pdf" dated 2018-06-15	1.2%	2 matches	Highlight matches in source
https://www.plagscan.com/dlView?7395199	0.5%	2 matches	Highlight matches in source
http://adc.gsfc.nasa.gov/adc/education/spa	0.0%	1 match	Highlight matches in source

1 Introduction

In this introduction, we discuss what Formal Technical Review (FTR) is and the importance of having it in the entire software development lifecycle by defining the objectives. We briefly go through the high-level overview of the different types of reviews currently available and move on to provide detail of the phases available in the FTR process.

In Section 2, we discuss the roles and responsibilities of each profession that will be involved in the formal technical review. It is important to understand how each profession plays their roles and its contribution to the success of the review. Section 3 describes the overall methodology for conducting an effective formal technical review, for example, setting up the meeting, record keeping, review reporting, review guidelines, and the recommended formal technical review tools which summarize the "best-known method" for the formal technical review process.

Section 4 elaborates on the various recommended process enhancements, and how they can benefit organizations' implementation. Process enhancement focuses on how to reduce waste by implementing lean practices, avoiding process duplication, and FTR tool enhancement that enlightens exceptional and outstanding user experience. In section 5, we provide some examples of the review metrics from various aspects which include user experience, establishing organizational benchmarking, and defining the quality data. Finally, in Section 6, we summarize and provide directions for future work and areas to research.

1.1 What is the Formal Technical Review (FTR)?

The Formal Technical Review (FTR) is a **software quality control activity to ensure that the software meets the specified requirements and predefined standards**. In the past, many organizations have deprioritized the importance of review feedback because they didn't envision it to show a significant value added to the software quality or bring any tremendous benefits to the organization. Despite the proven data that reviews level up software release quality, they may be viewed as a redundant part of the software release process.

Scan

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FTR TOOL ENHANCEMENT (8/8)



The capability of Auto Archiving

- Auto archive work product.
- Backtrack capability.

No	FTR	Archived Date	Work Product Link	Details
1	FTR Meeting A	Jan 2022	LINK	View Details
2	FTR Meeting B	Feb 2022	LINK	View Details
3	FTR Meeting C	May 2022	LINK	View Details
4	FTR Meeting D	Aug 2022	LINK	View Details
5	FTR Meeting E	<input checked="" type="checkbox"/>	-	-

Archive

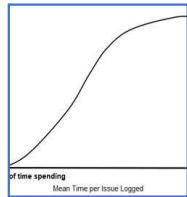
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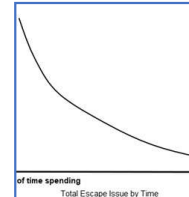


REVIEW METRICS (1/2)

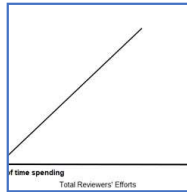
- ❑ Retrospective review to identify gap at the right time.
- ❑ Recommended metrics:



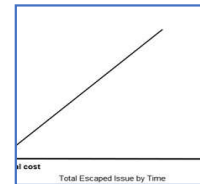
Mean Time per Issue Logged



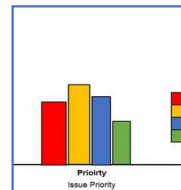
Total Escaped Issues by Time



Total Reviewers' Efforts in a Specific Review



Total Escaped Issues by Cost



Issue Priority

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REVIEW METRICS (2/2)



FTR Metrics	Improvement
Total defects captured =< 50	<ul style="list-style-type: none">• Exceed limit, the work product is not ready.• Conduct one or more informal reviews.
Total reviewer time is =< 3 hours	<ul style="list-style-type: none">• Focus on small group of modules
Escaped Issue =< 20%	<ul style="list-style-type: none">• Define clear roles and responsibilities.• Reviewers with correct expertise.

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USER EXPERIENCE (UX)



Journey of Touchpoints



Review Performance of
the FTR Guidelines &
FTR Tools



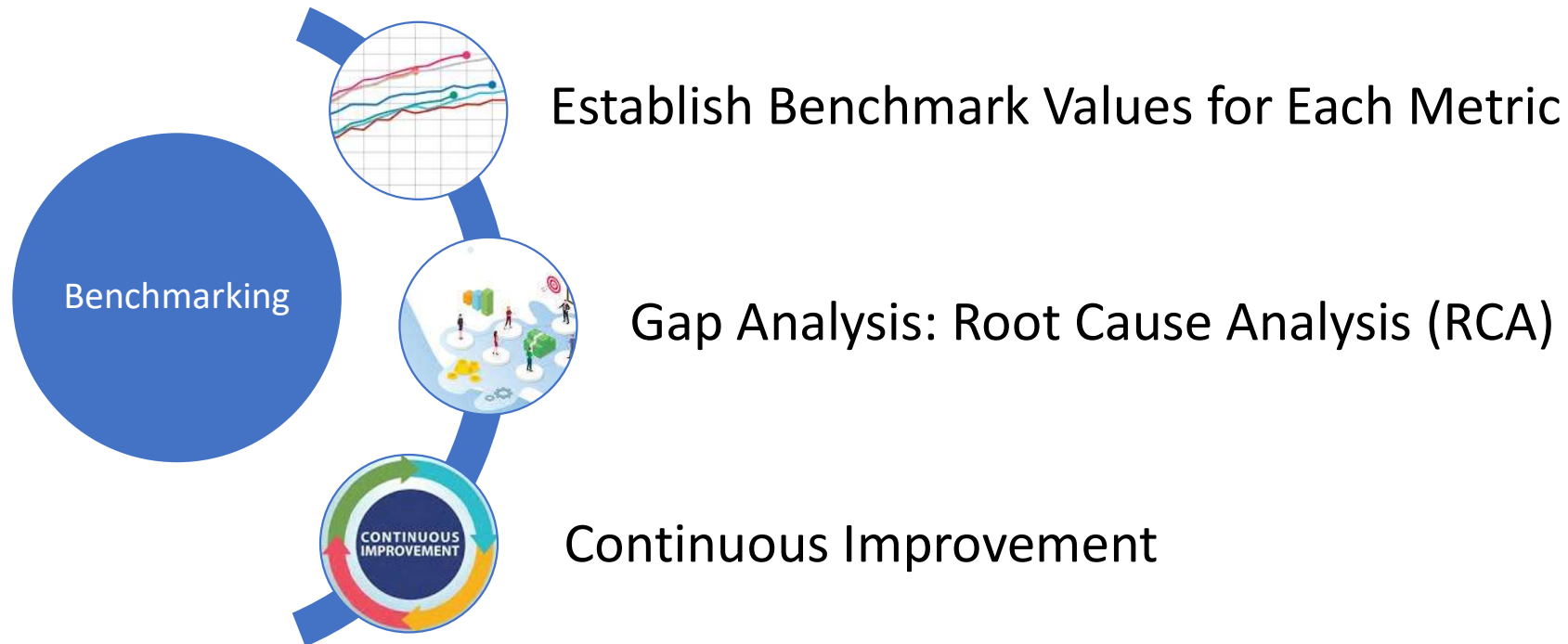
Conduct Short Survey

User Feedback	Excellent	Very Good	Good	Fair	Poor	Remarks
Overall Experience	√					
Sufficient Info to Kickstart the Review		√				
Sufficient Review Duration		√				
The roles and responsibilities are clear		√				
The Review Meeting is Efficient	√					
The FTR Guidelines is Clear	√					
The FTR Tool is Easy to Use	√					

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BENCHMARKING

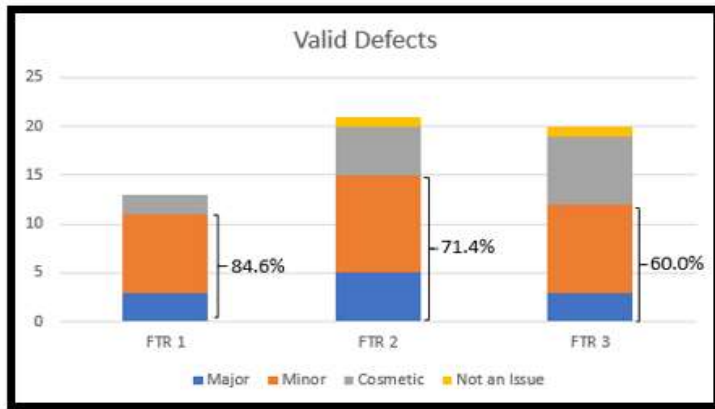


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QUALITY DATA



- Valid defects summary on FTRs.



Formal Technical Review	Major	Minor	Cosmetic	Not an Issue	Valid Defects (%)
FTR 1	3	8	2	0	84.60%
FTR 2	5	10	5	1	71.40%
FTR 3	3	9	7	1	60.00%

- Captured > 60% of the valid defects.**

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CONCLUSION

Detailed explanation of the FTR including:

- Overview
- Objectives
- Types of reviews
- Roles & responsibilities

Recommendation of FTR Process Enhancement i.e.

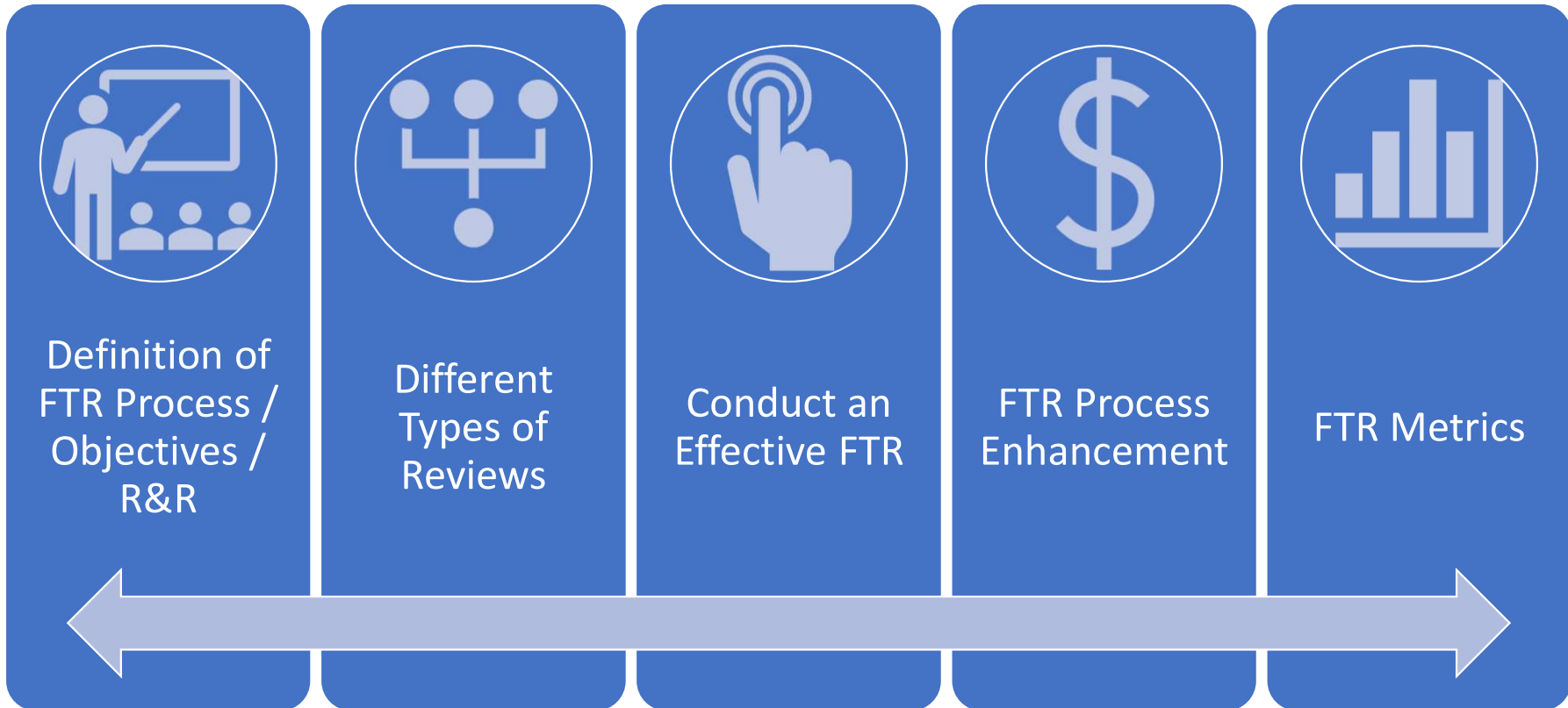
- FTR Guidelines
- FTR Tool

Key benefits

- Identify potential defect upfront
- Managing costs more intelligently



KEY TAKEAWAYS



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THANKS TO INTEL TEAM



PEH WEI WOUI



OOI MEI CHEN



LIU KEPING



INTEL SQBA TEAM

THANK YOU

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QUESTIONS?

-
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