Introduction of Risk-based Testing

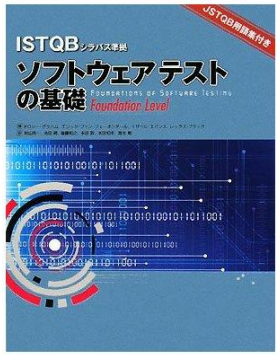
Advanced Testing Process with Risk

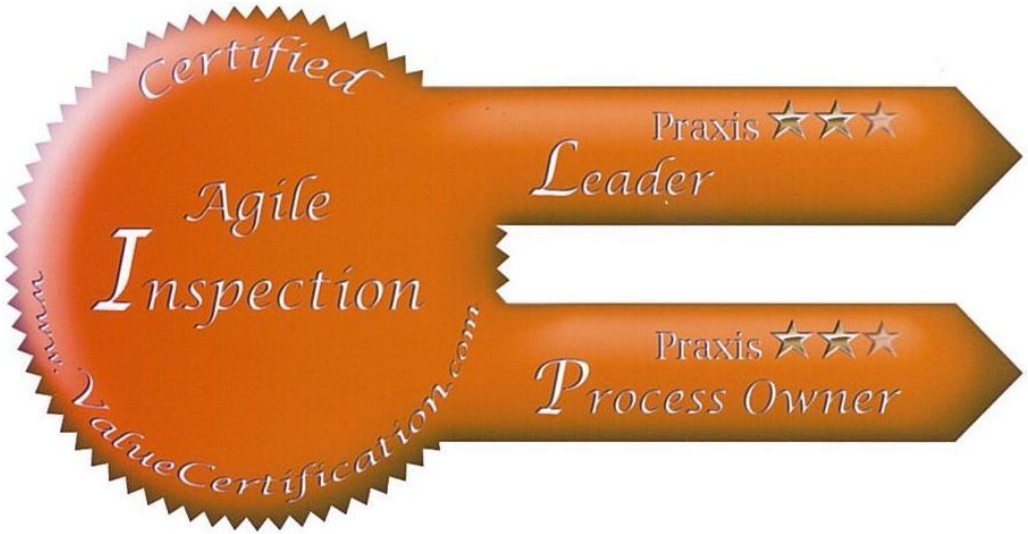
Atsushi Nagata
Sony Corporation

Introduction

Sony Corporation

Quality Engineering Manager
Professional Division
Software Quality Assurance
Test Process Improvement





By RexBLACK
& NagataATSUSHI

STP SOFTWARE TESTPROFESSIONALS

ADVANCED RISK BASED TEST RESULTS REPORTING:

Putting Residual Quality Risk Measurement in Motion

Software Test & Quality Assurance

Japan Symposium on Software Testing

JaSST

ソフトウェアテストシンポジウム

Best Speaker Awards

Advanced Risk-Based Test Reporting

Agenda

Fallacies of Risk-Based Testing

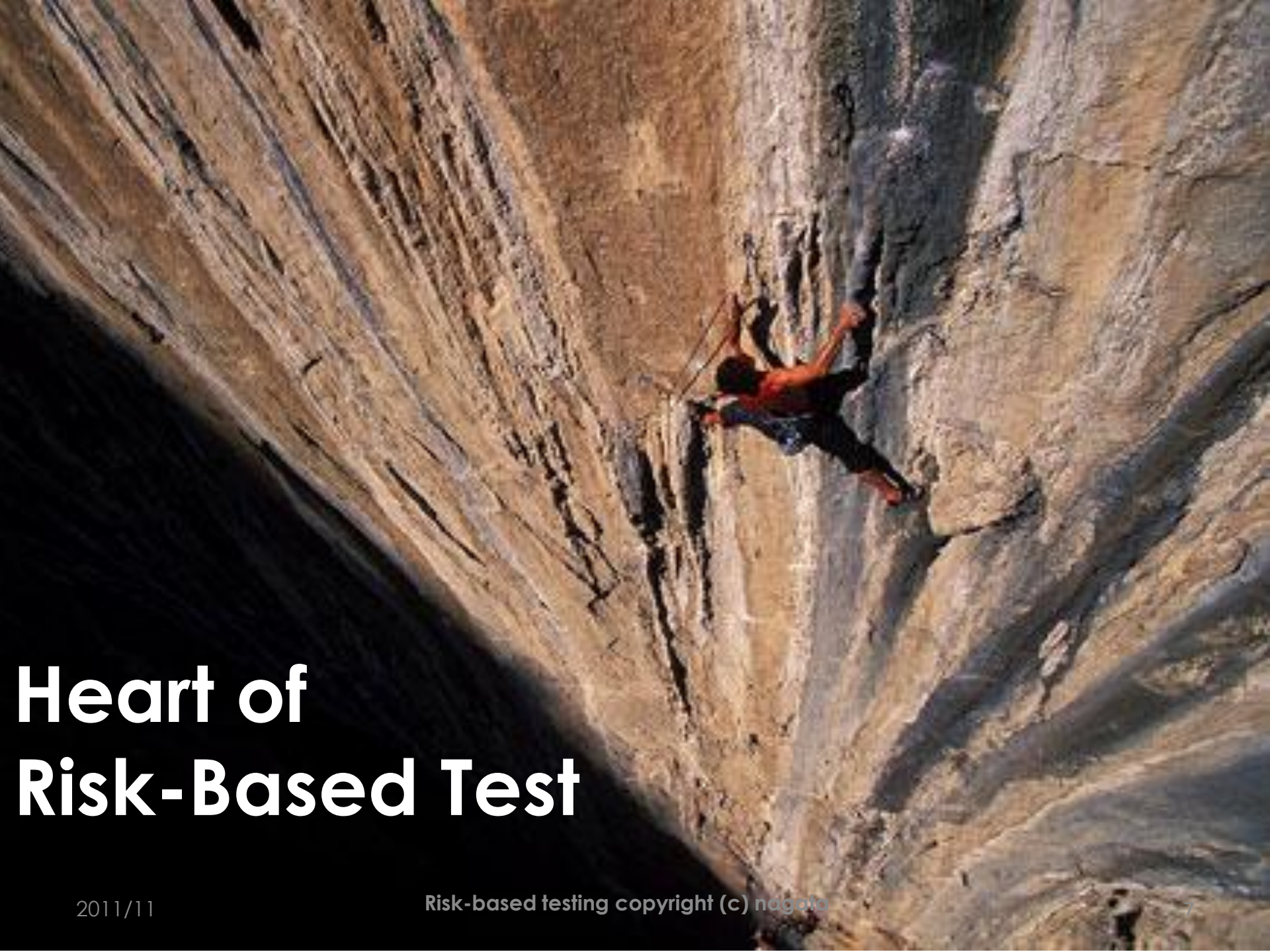
Heart of Risk-based Testing

Test monitoring in Risk-based Testing

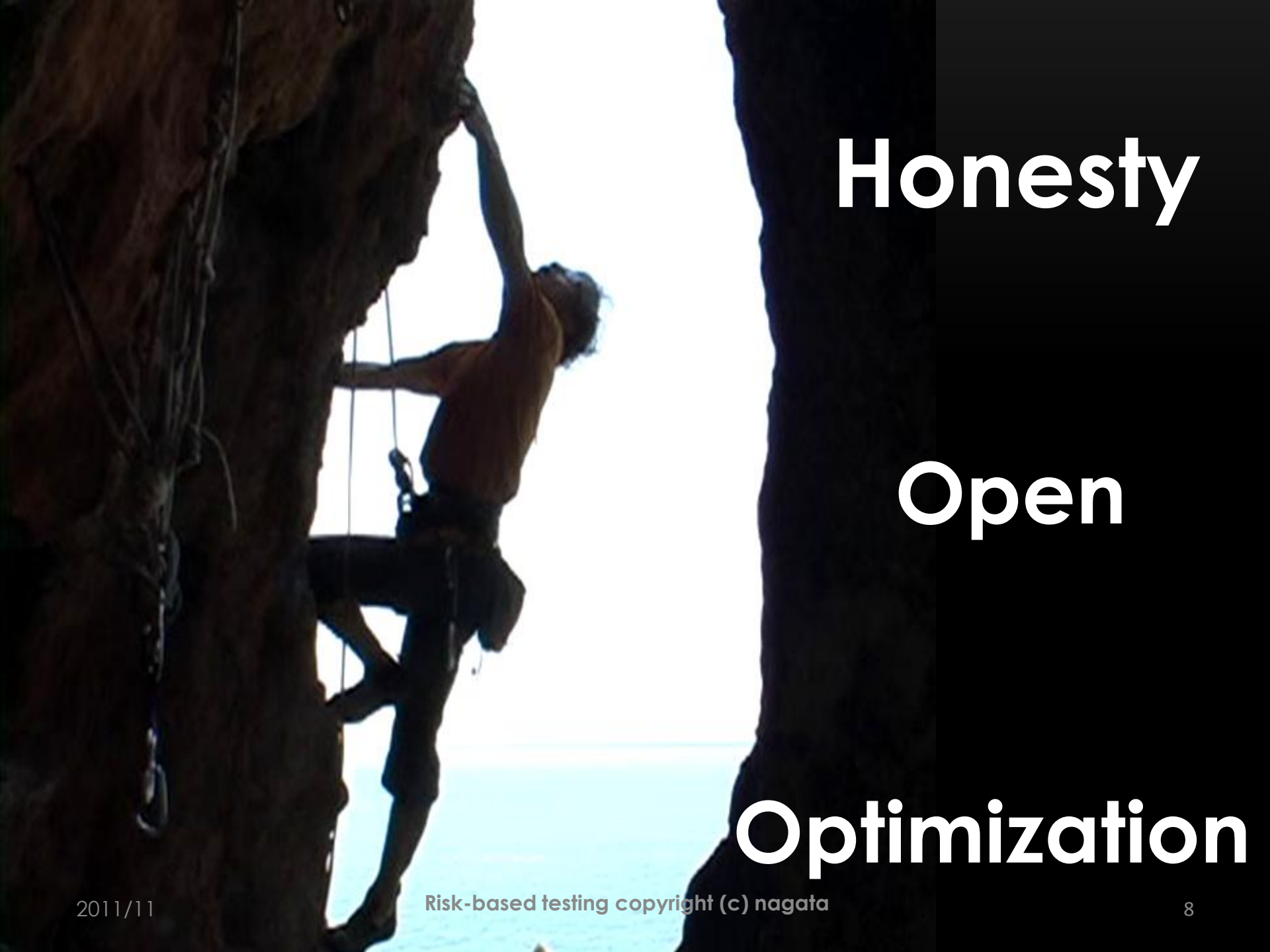
Fallacies of Risk-Based Testing

- **Risk based testing is just a method to cut corners.**
- **Risk based testing can be done entirely by the test team.**
- **Risk based testing only influences selection of test cases.**

”Five Fallacies of Risk Based Testing”, Rex Black, http://www.rbcs-us.com



Heart of Risk-Based Test


Honesty
Open
Optimization

Honesty

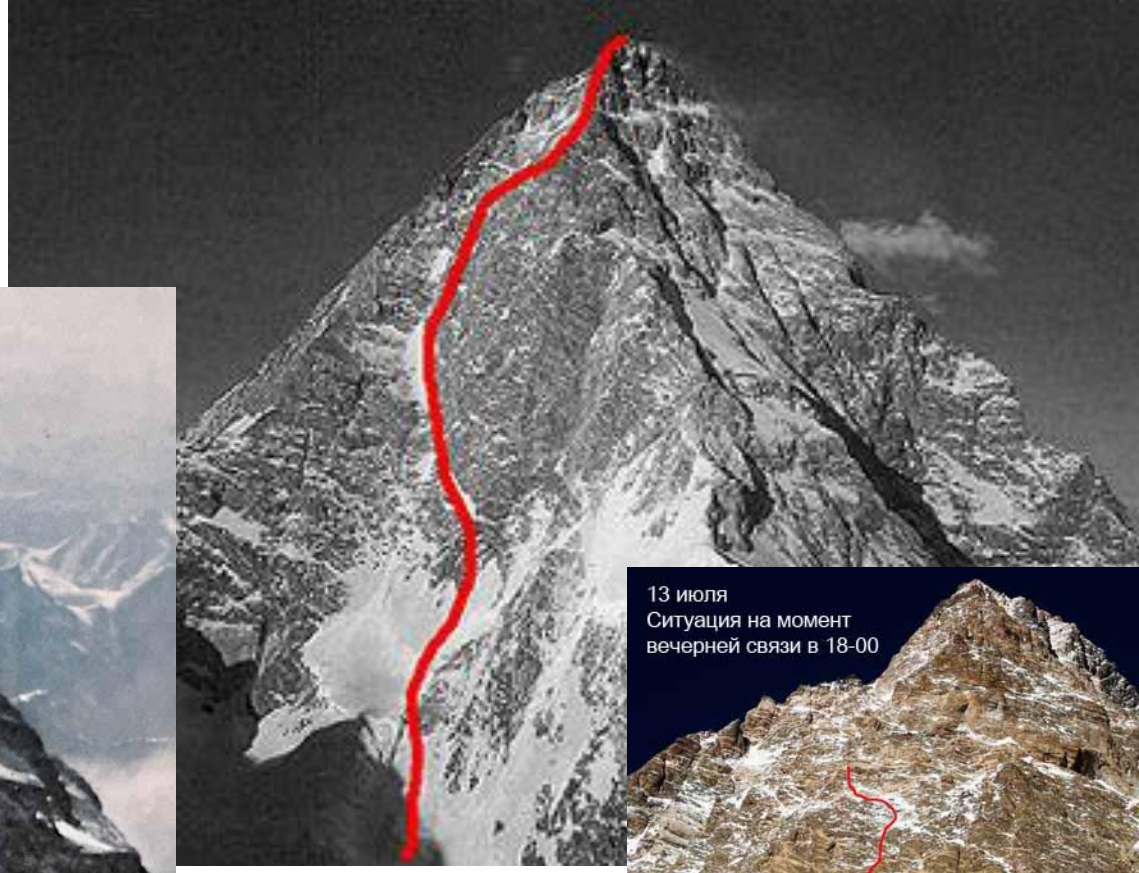
Exhaustive testing is impossible

Exhaustive Risk Identification is impossible

Exhaustive Risk Mitigation is impossible


8611 м
OPEN

Challenge



What kind Mountain ?


No Risk

Not Enough

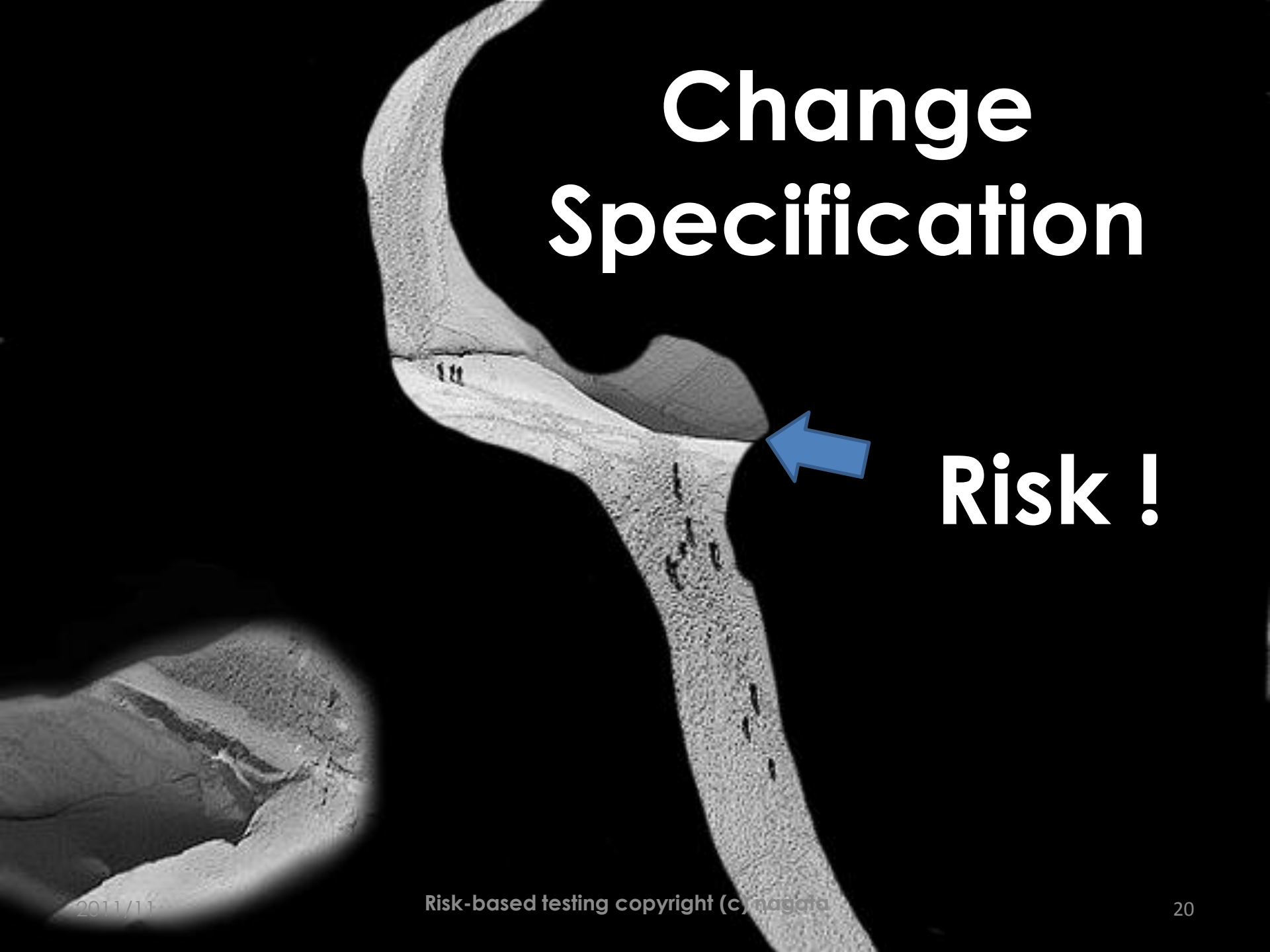
This is it !

Sharing Value of Risk or..


Tragedy


Along with
Specification

Trouble in past


Change
Specification
Risk !

Sharing Risk

Cooperation


Respect
Teamwork
Trust

Risk Treatment Preparation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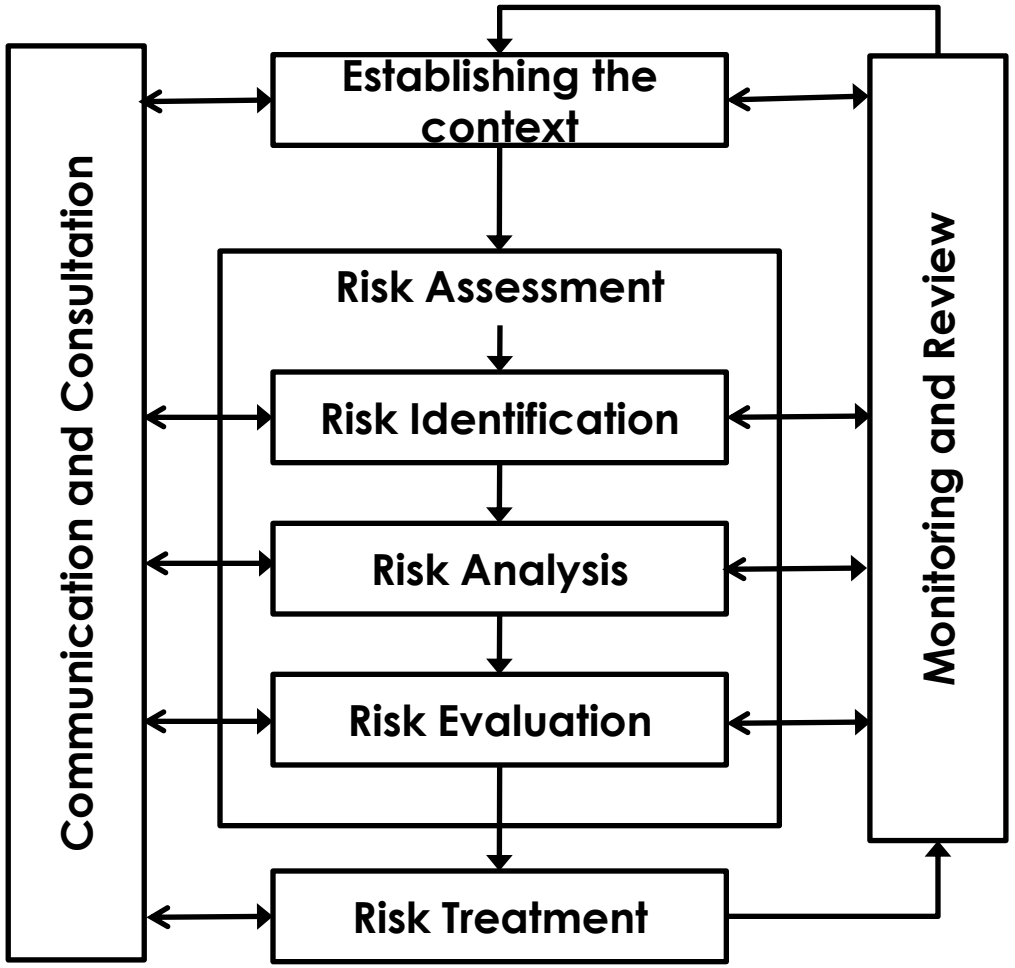
OPEN
Risk based testing can be done entirely by the test team.
Share the Value of Risks with Stakeholders


Share Responsibility
for Risk


Optimization
Adaptive
Re-active

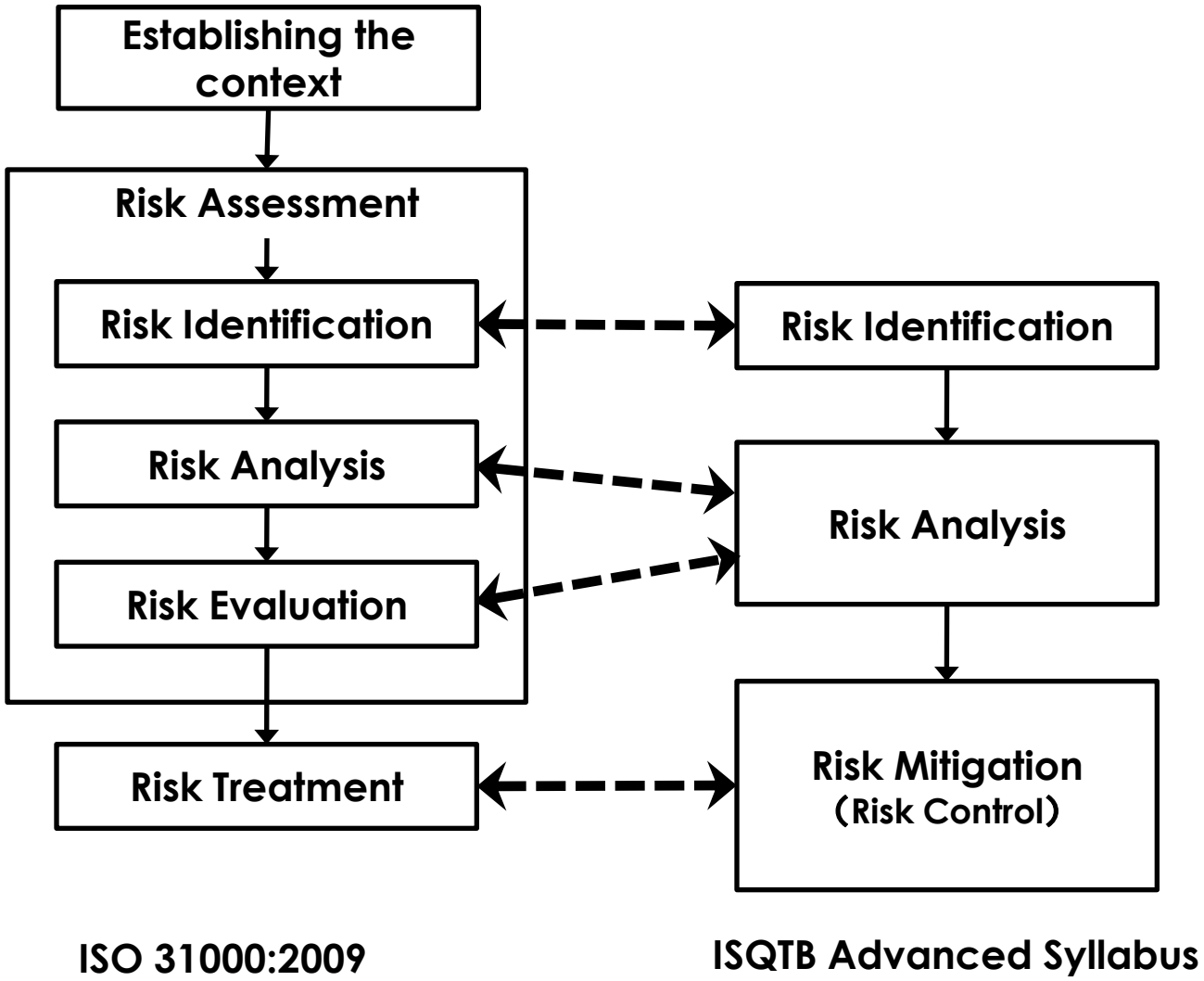

Risk-Based Testing
Risk Management

Risk Management Process



ISO31000 : 2009

Risk management process and Risk-based testing



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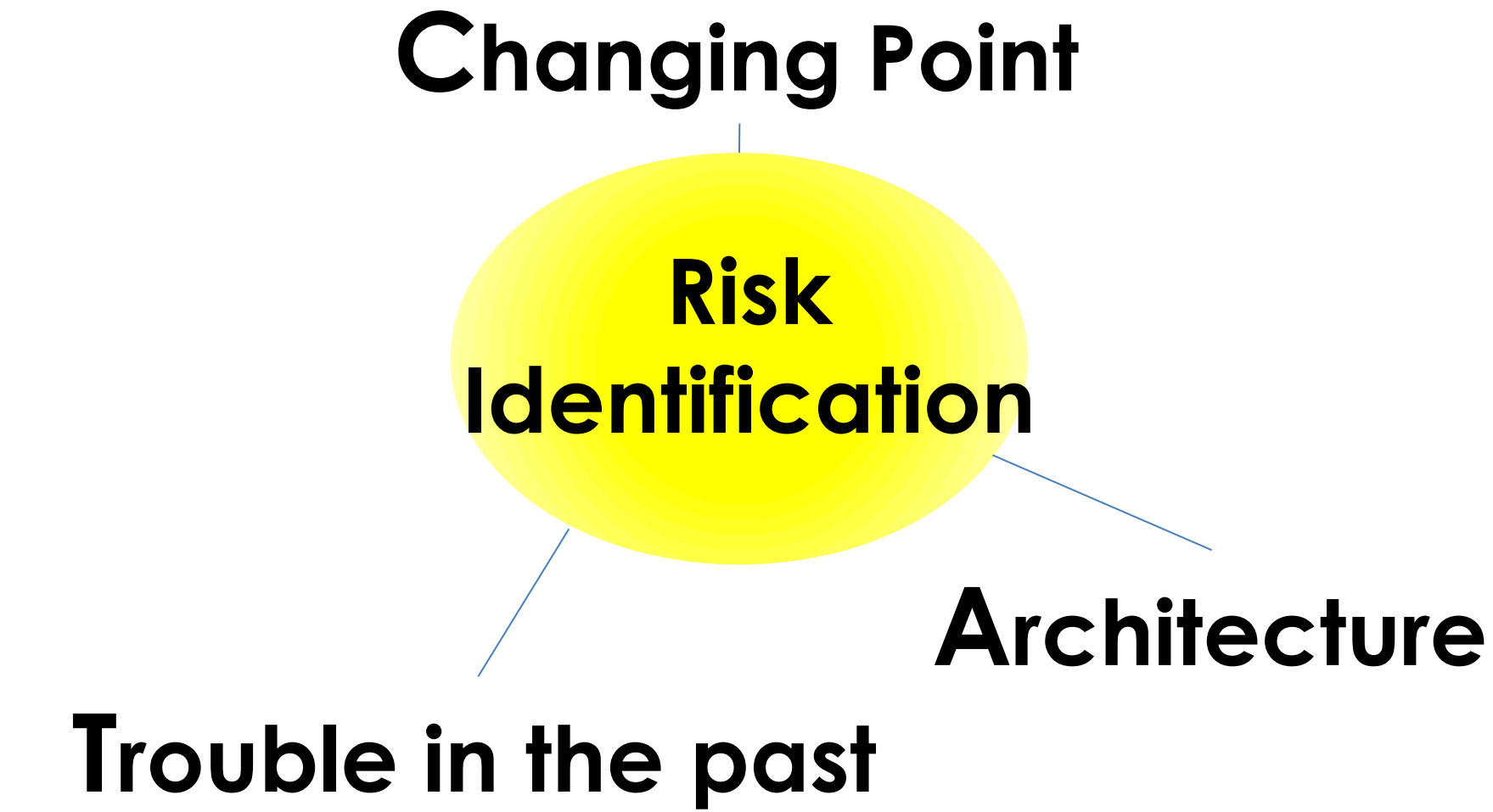
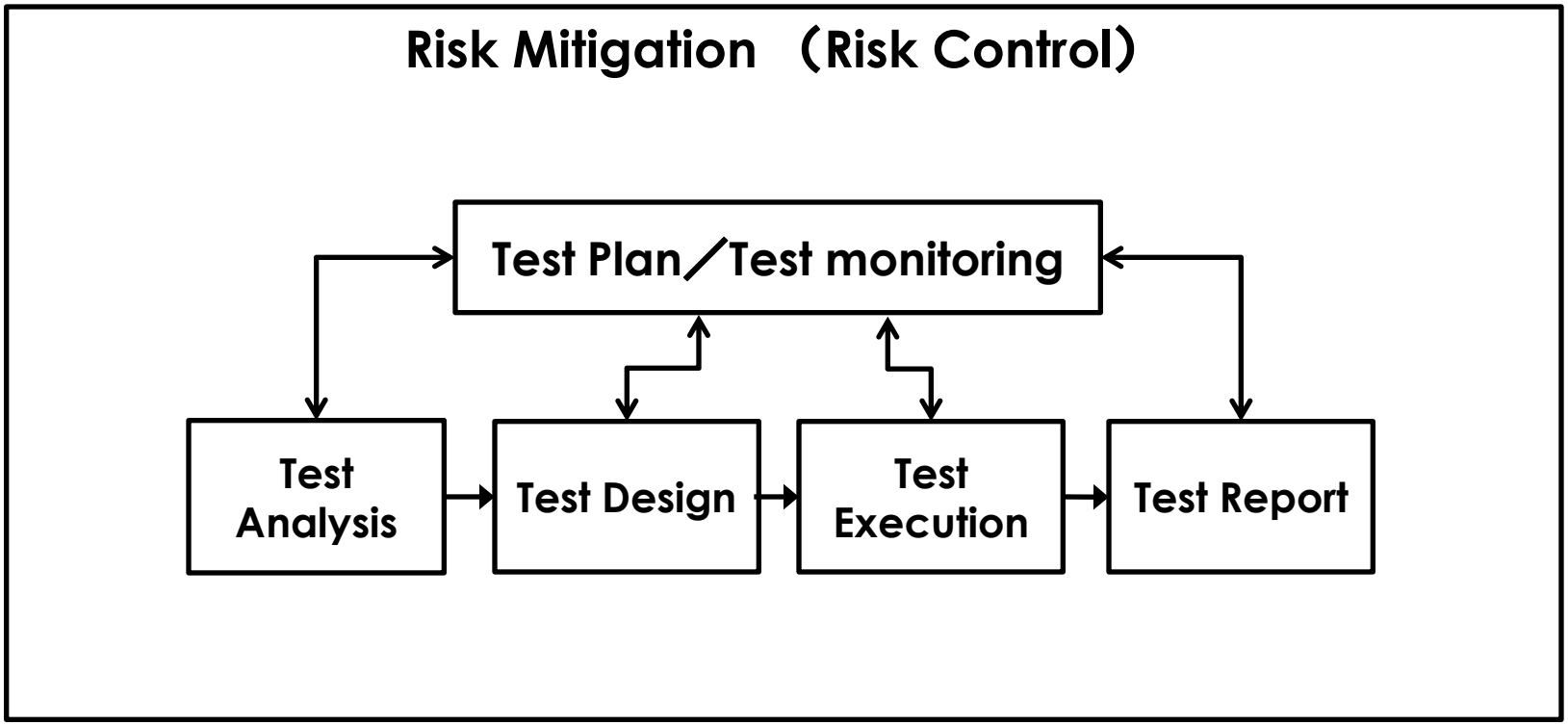

Changing Point
Risk Identification
Architecture
Trouble in the past

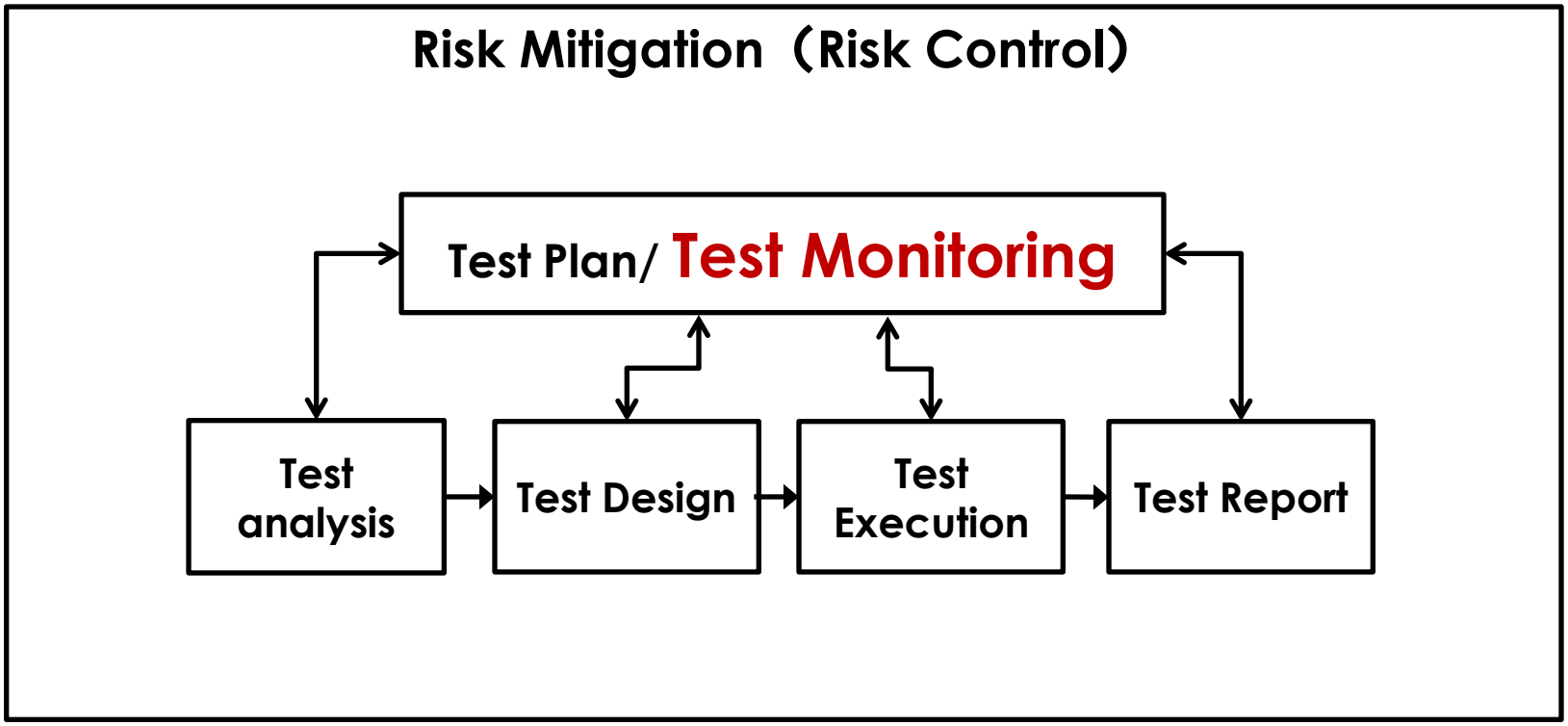
Which risk is higher ?

Risk Item	Phenomena	Likelihood	Impact	Likelihood	RPN
:	:	:	:	:	:
System did not boot-up	Recover after power cycle	once per 1000	4	2	8
:	:	:	:	:	:
Customer data was erased when the system booted up.	Data was not recovered	No reproduce	5	1	5
:	:	:	:	:	:

Test Process = Risk Mitigation

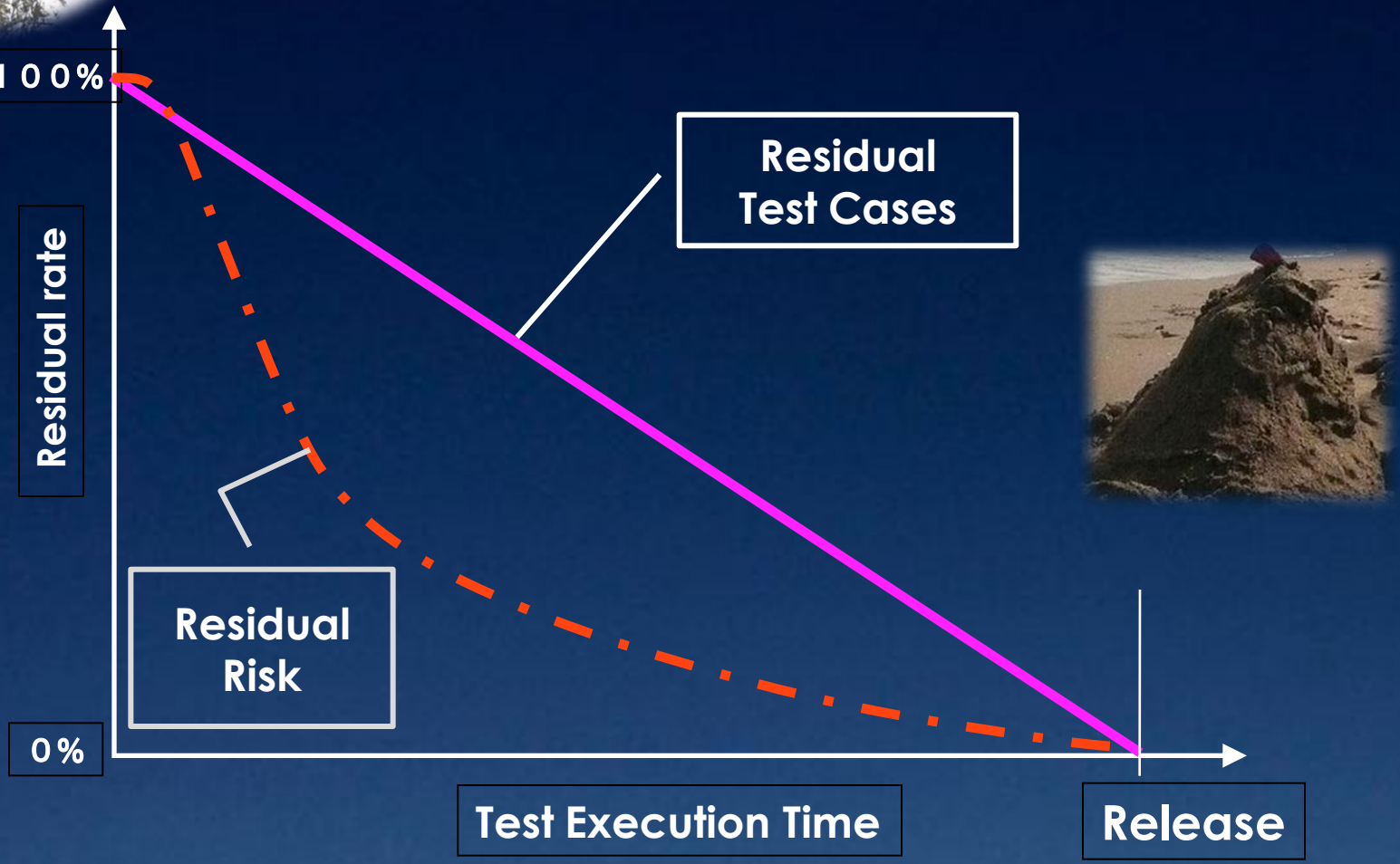


Test monitoring of Risk-based Testing



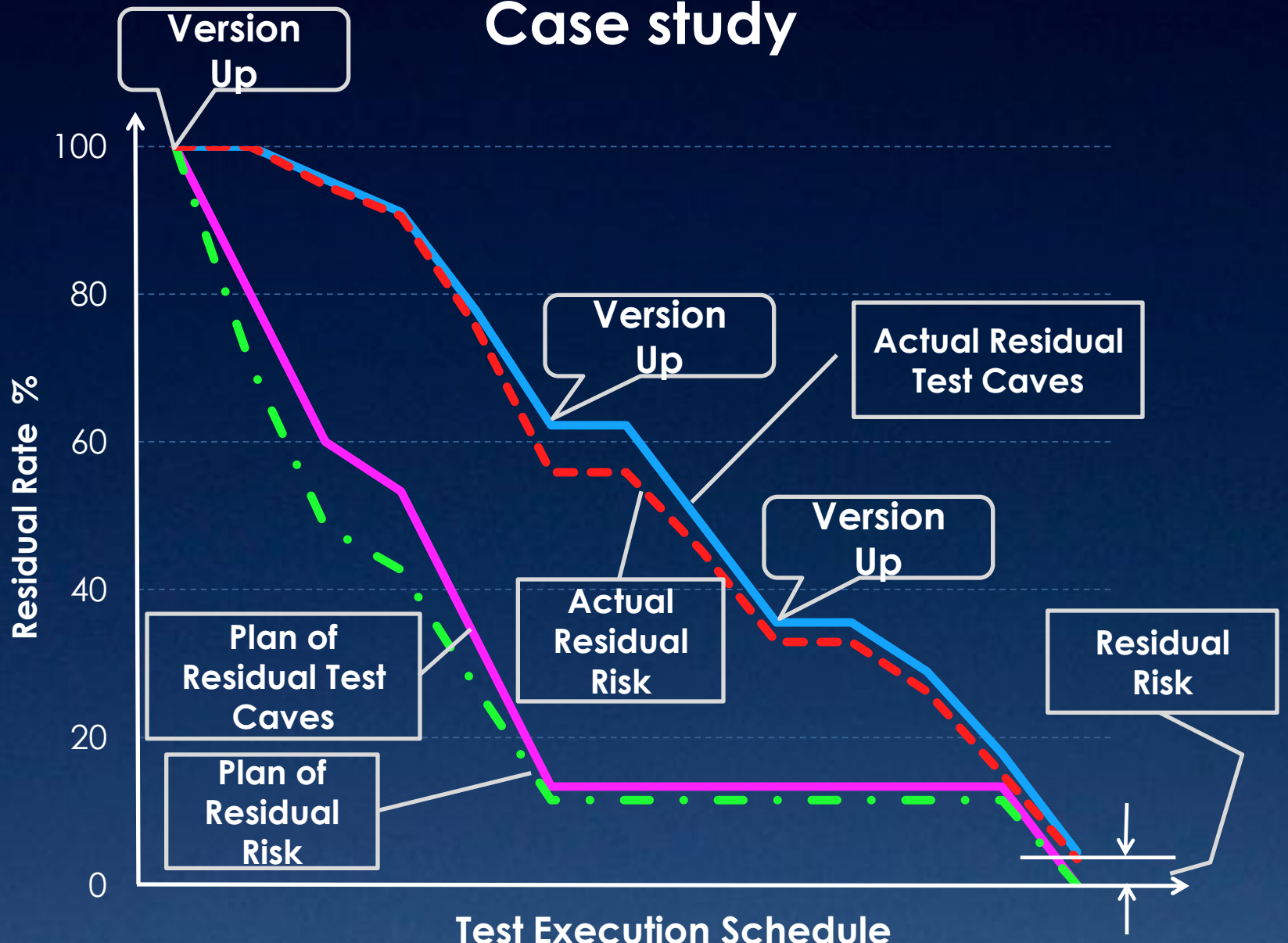
Relationship between Risk and Test Monitoring

Ideal Residual Risk pattern



Actual Residual Risk pattern

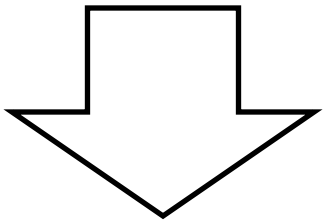
Case study


Version Up
100
80
60
40
20
0
Residual Rate %
Version Up
Actual Residual Test Caves
Version Up
Actual Residual Risk
Plan of Residual Test Caves
Plan of Residual Risk
Residual Risk
Test Execution Schedule

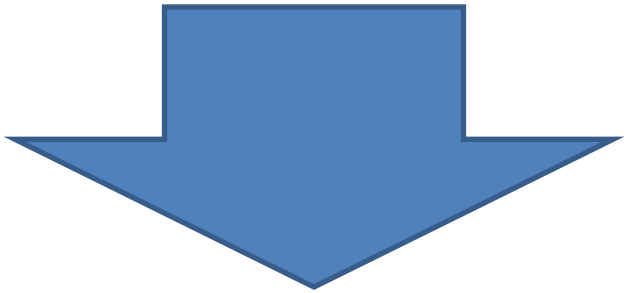
Test => Pass

No Risk？

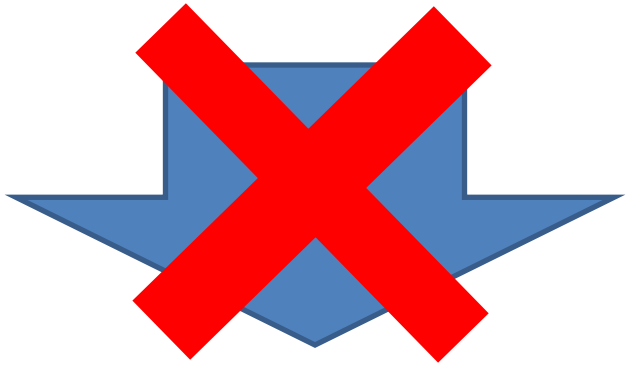
Test => Pass



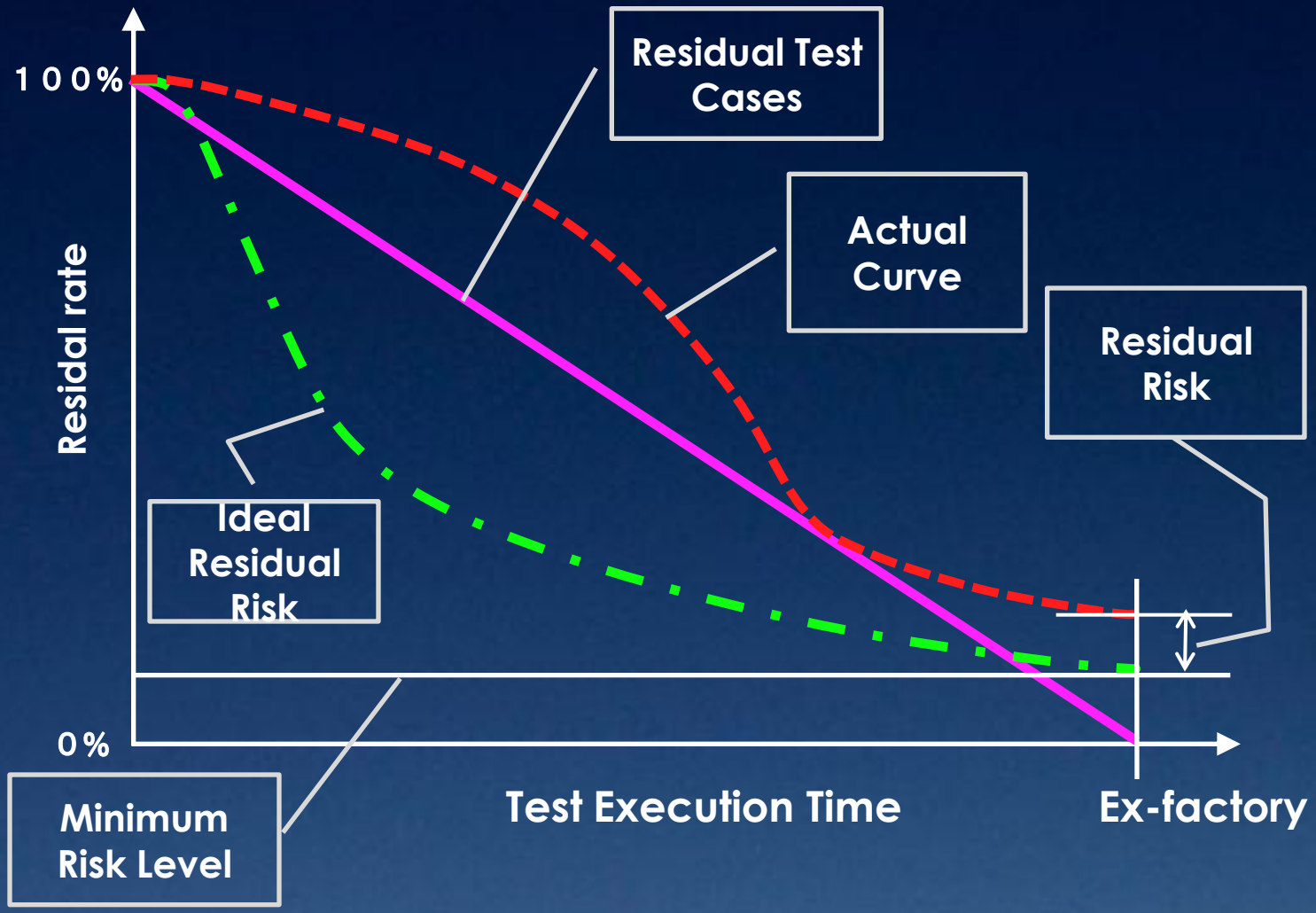
Likelihood



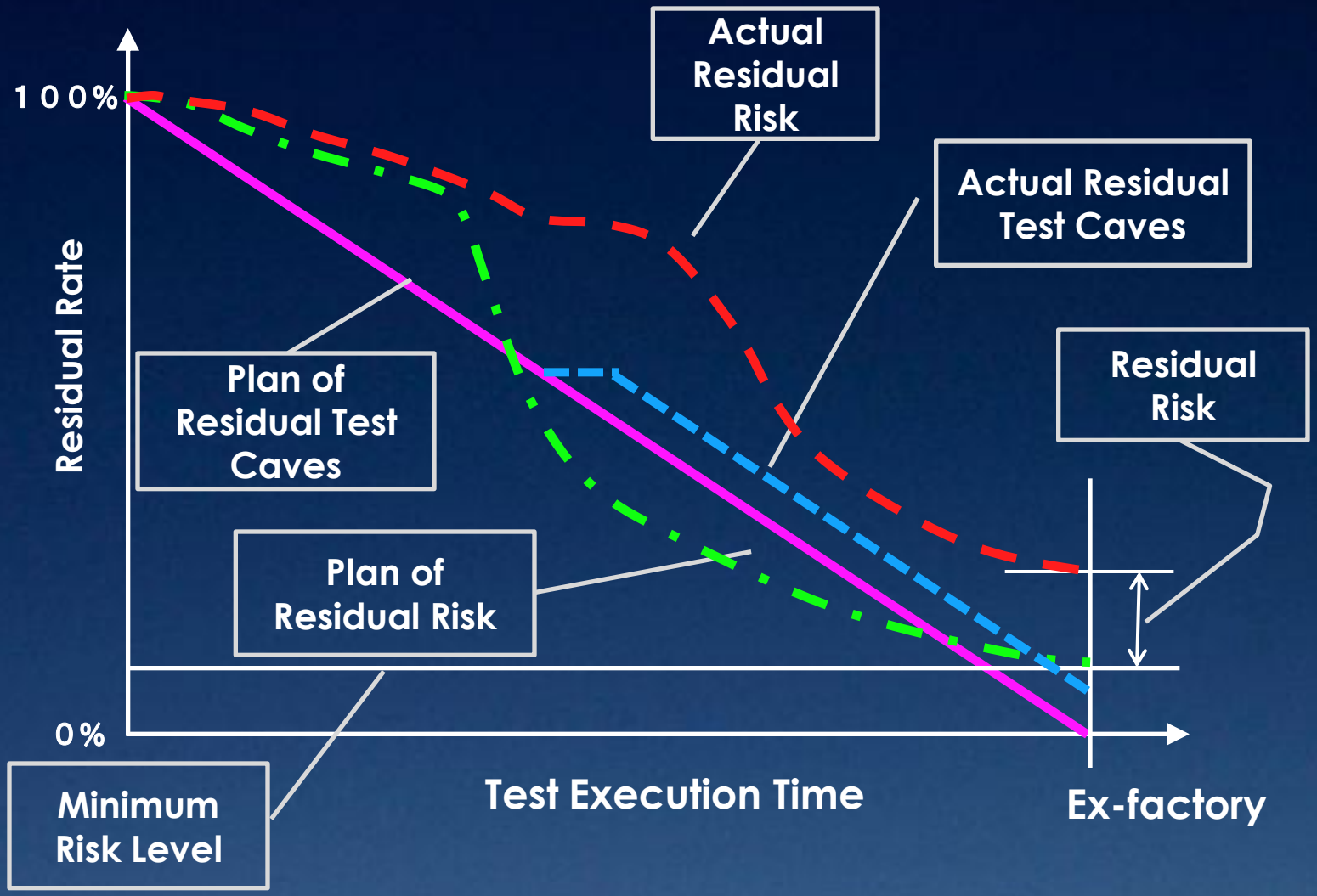
Impact



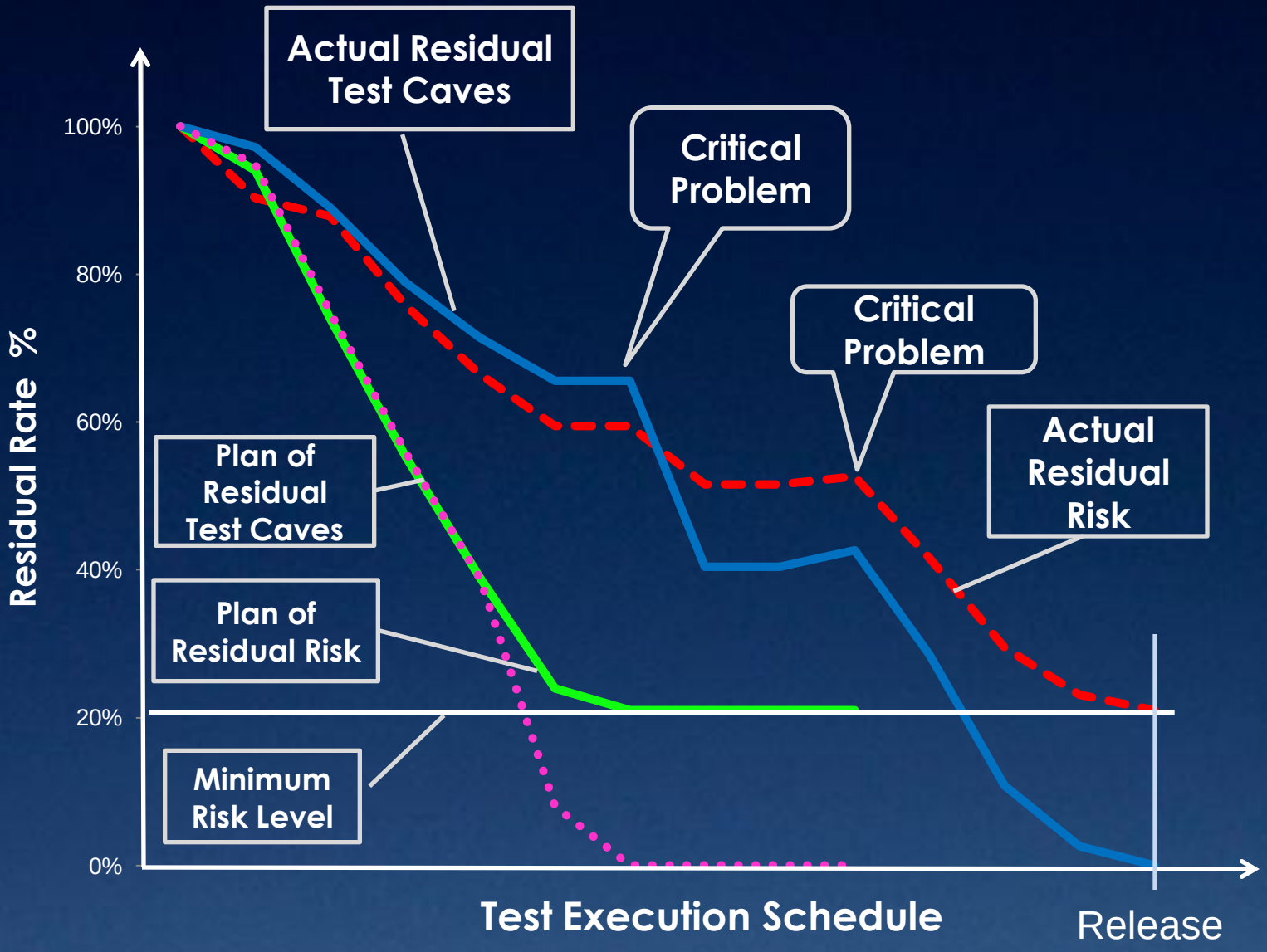
Revised Residual Risk Chart



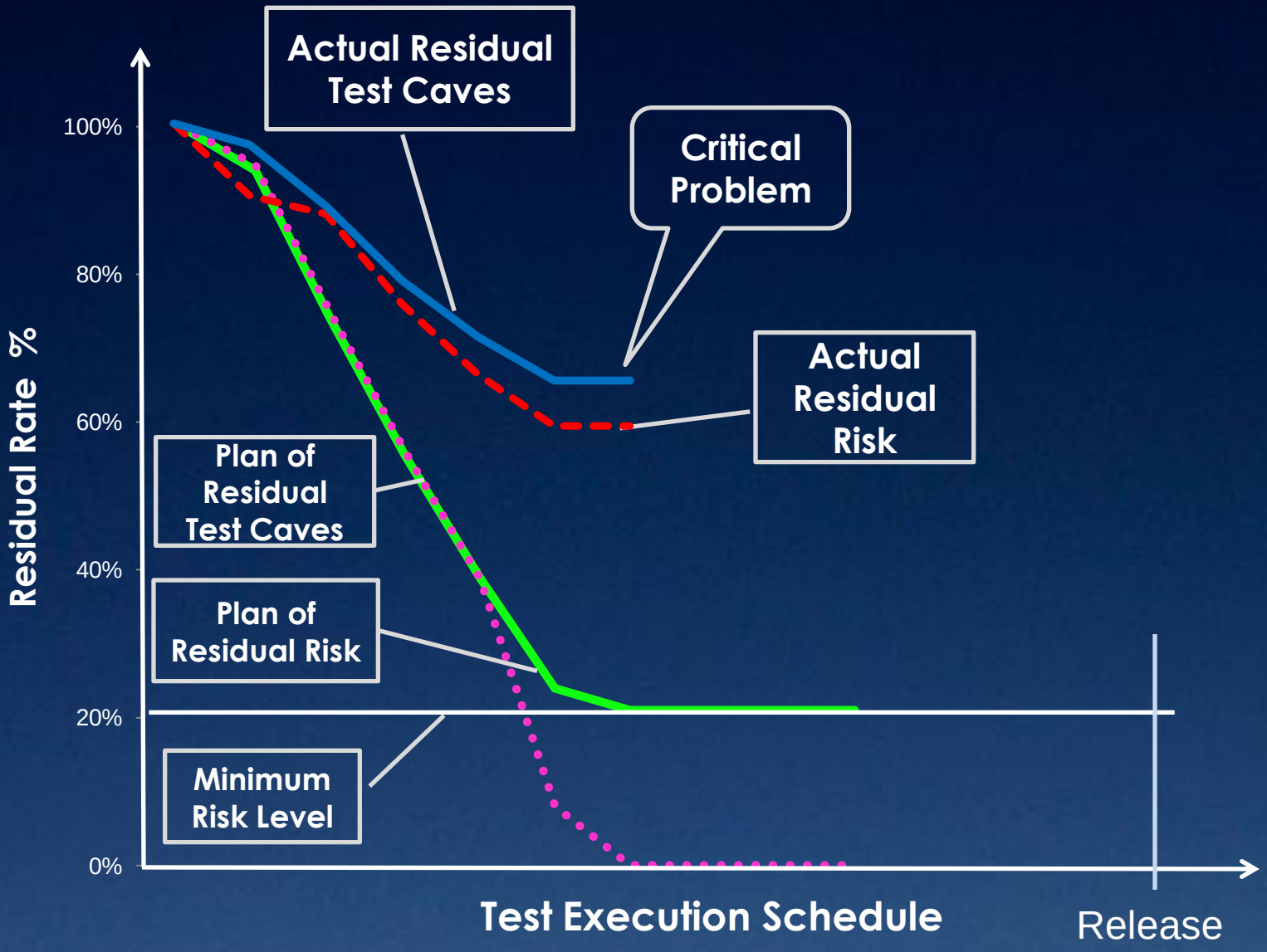
Revised Residual Risk Chart



Case study


Actual Residual Test Caves
Critical Problem
Critical Problem
Actual Residual Risk
Plan of Residual Test Caves
Plan of Residual Risk
Minimum Risk Level
100%
80%
60%
40%
20%
0%
Residual Rate %
Test Execution Schedule
Release

Case study


Actual Residual Test Caves
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Plan of Residual Risk
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100%
80%
60%
40%
20%
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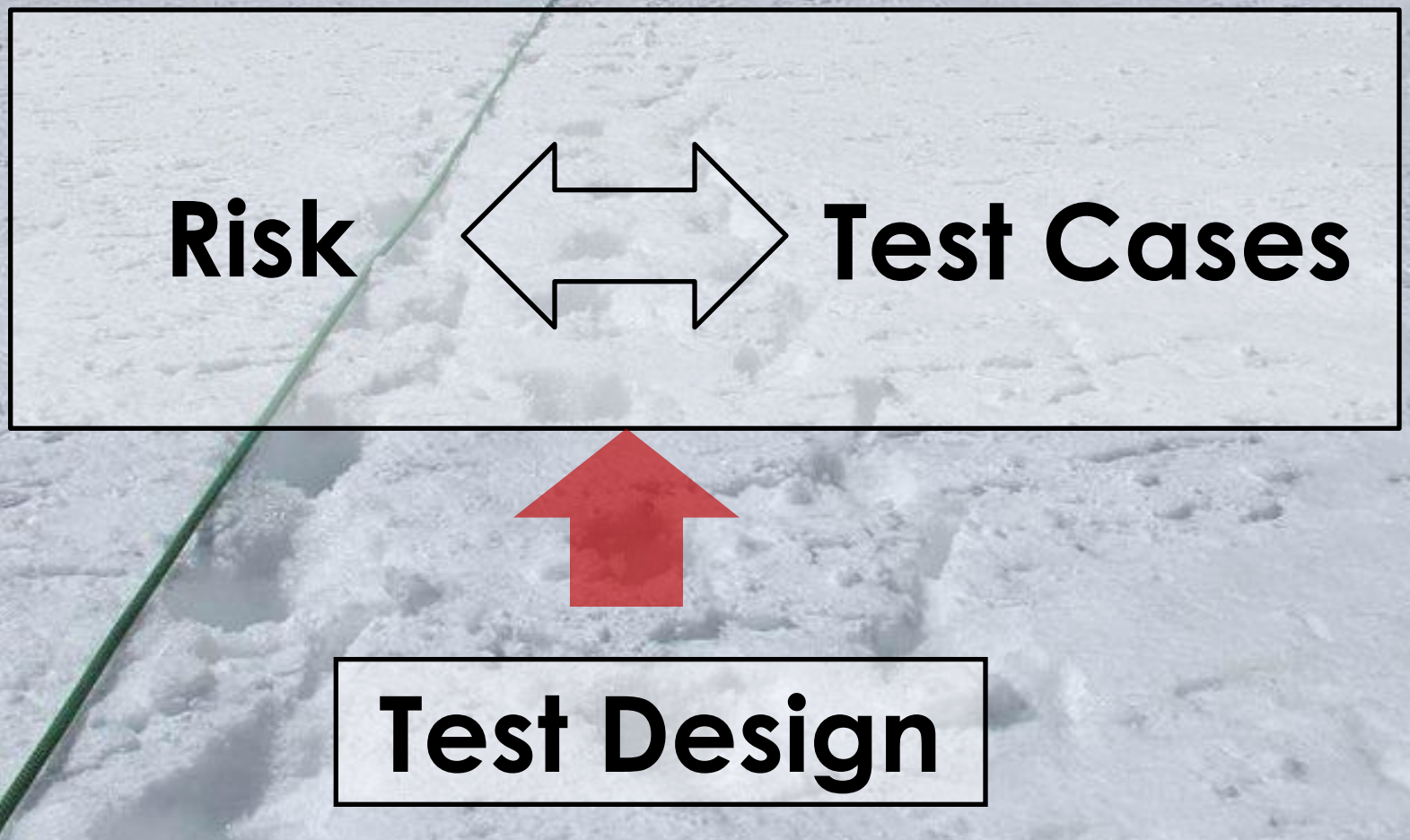
Residual Rate %
Test Execution Schedule
Release

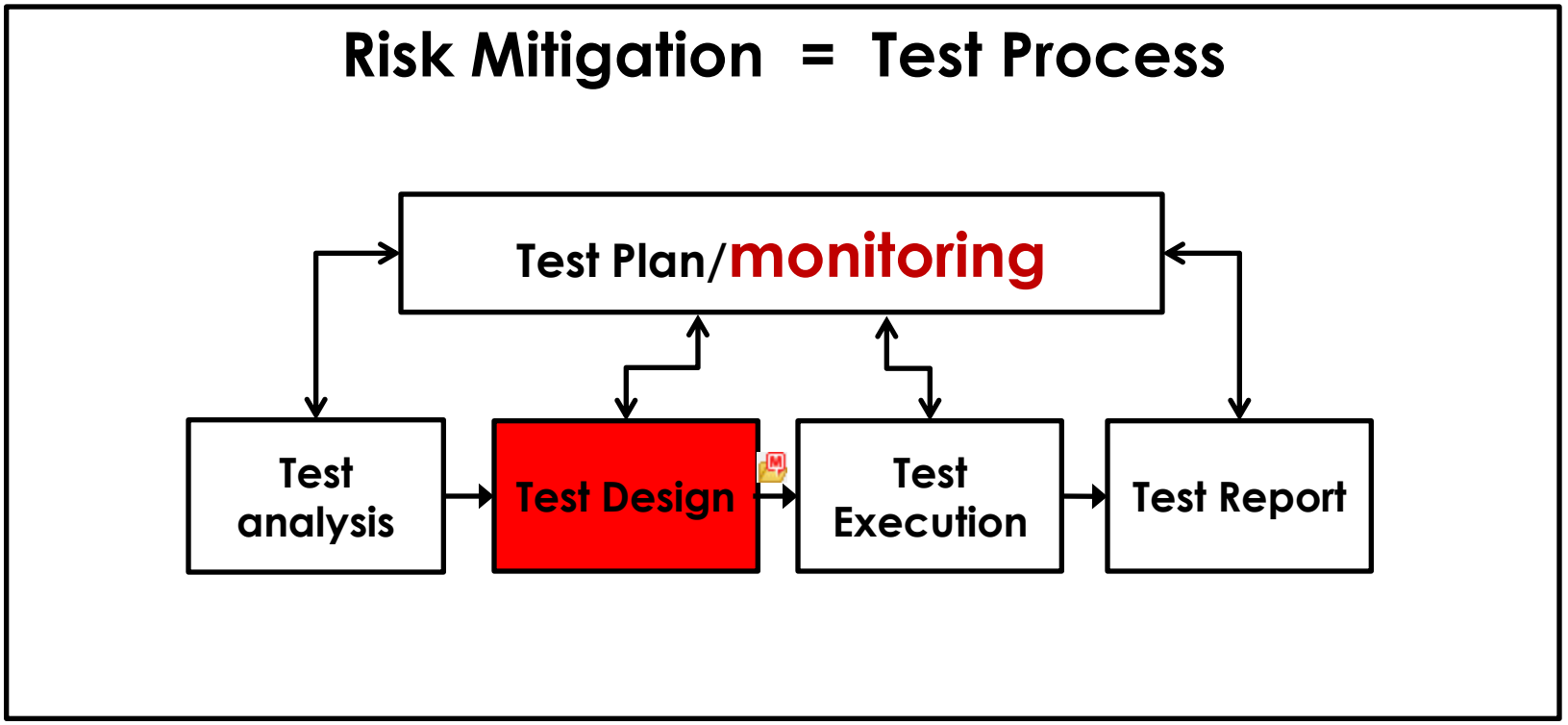

Traceability

Traceability



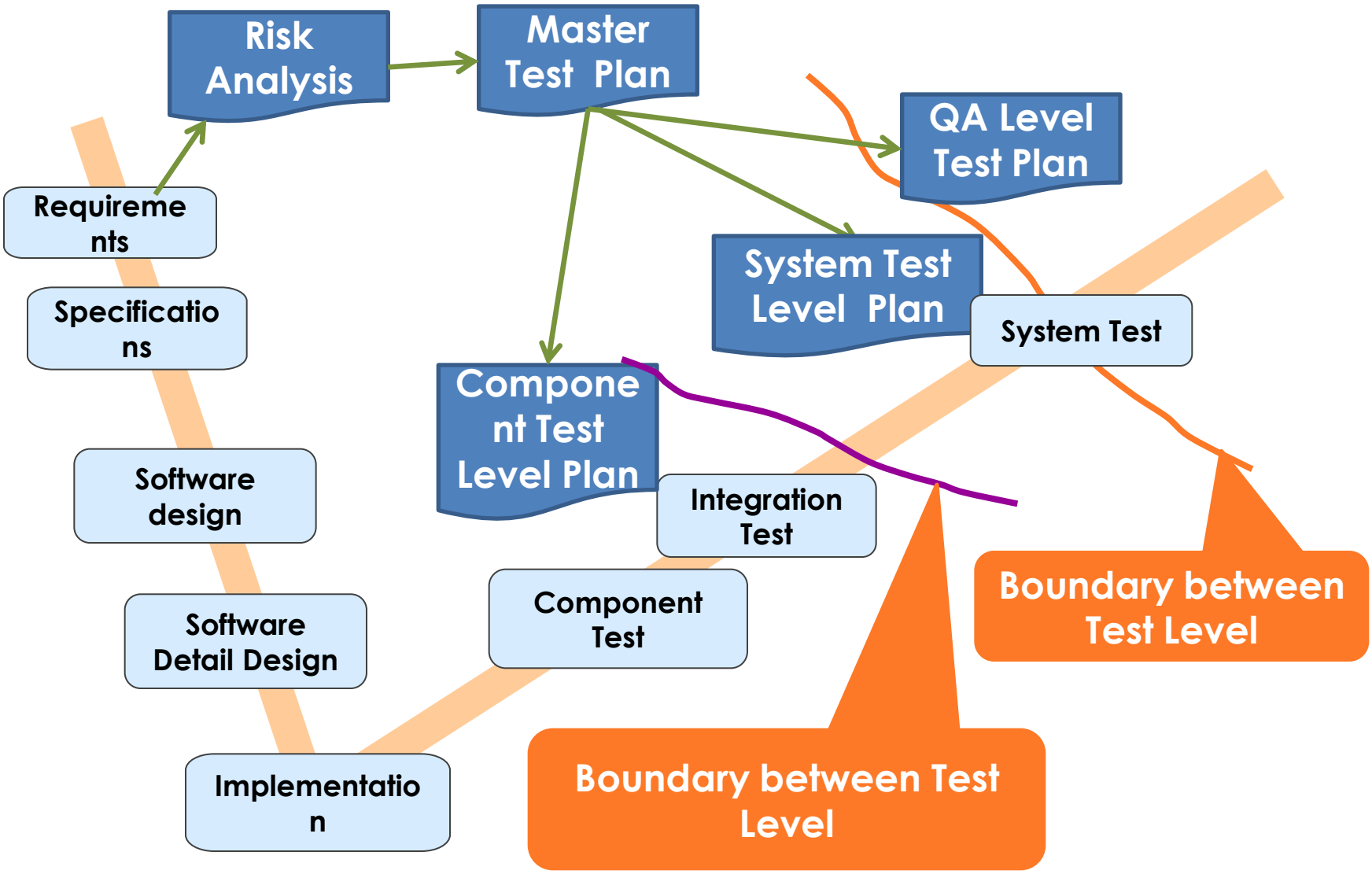

If you want to success with
Risk-Based Testing
We need our test process matured
Much more !!

Test monitoring of Risk-based Testing

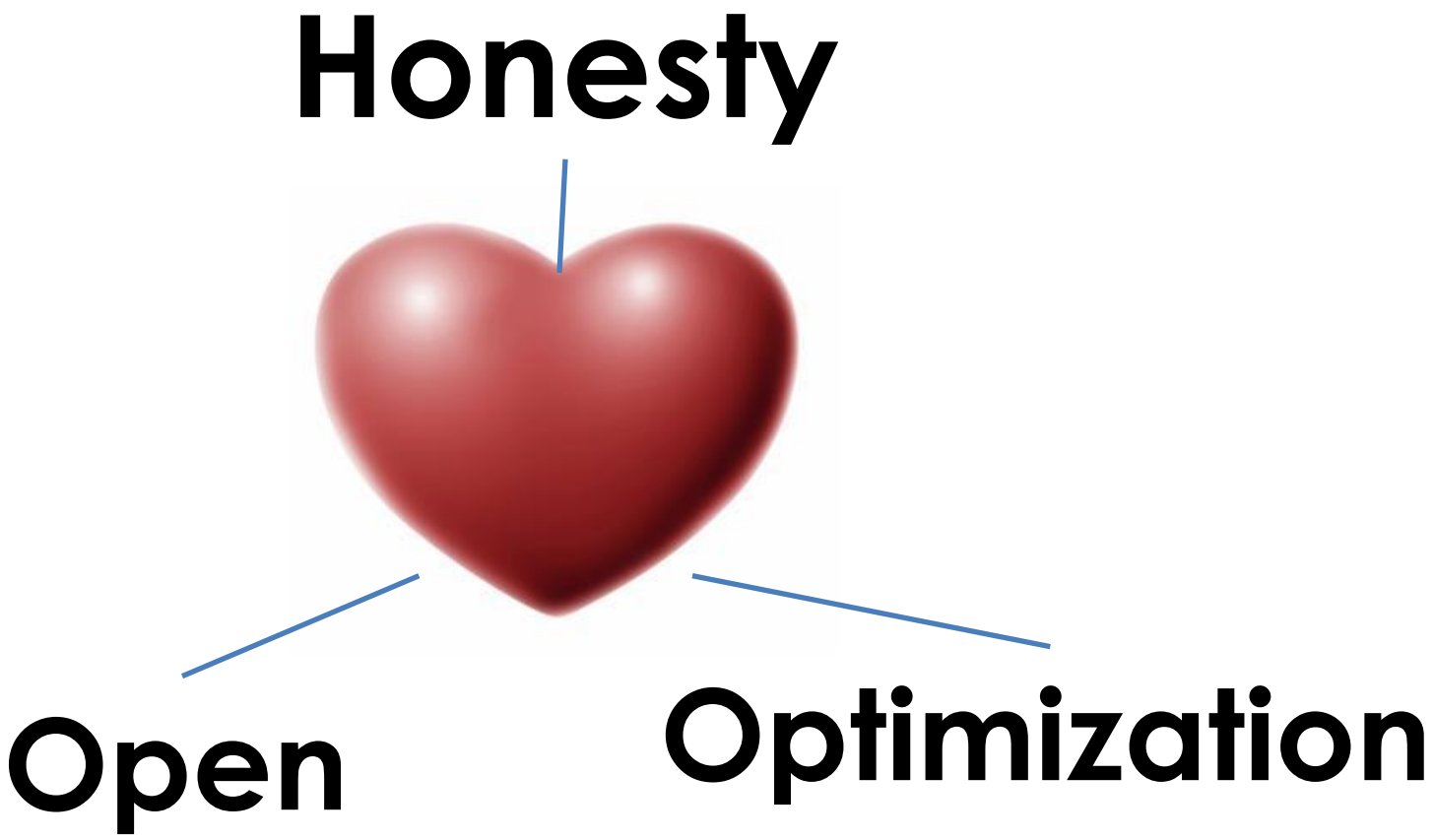


Test Design is Key

Master Test Plan：Risk Distribution



Heart of Risk-Based Testing



Thank you