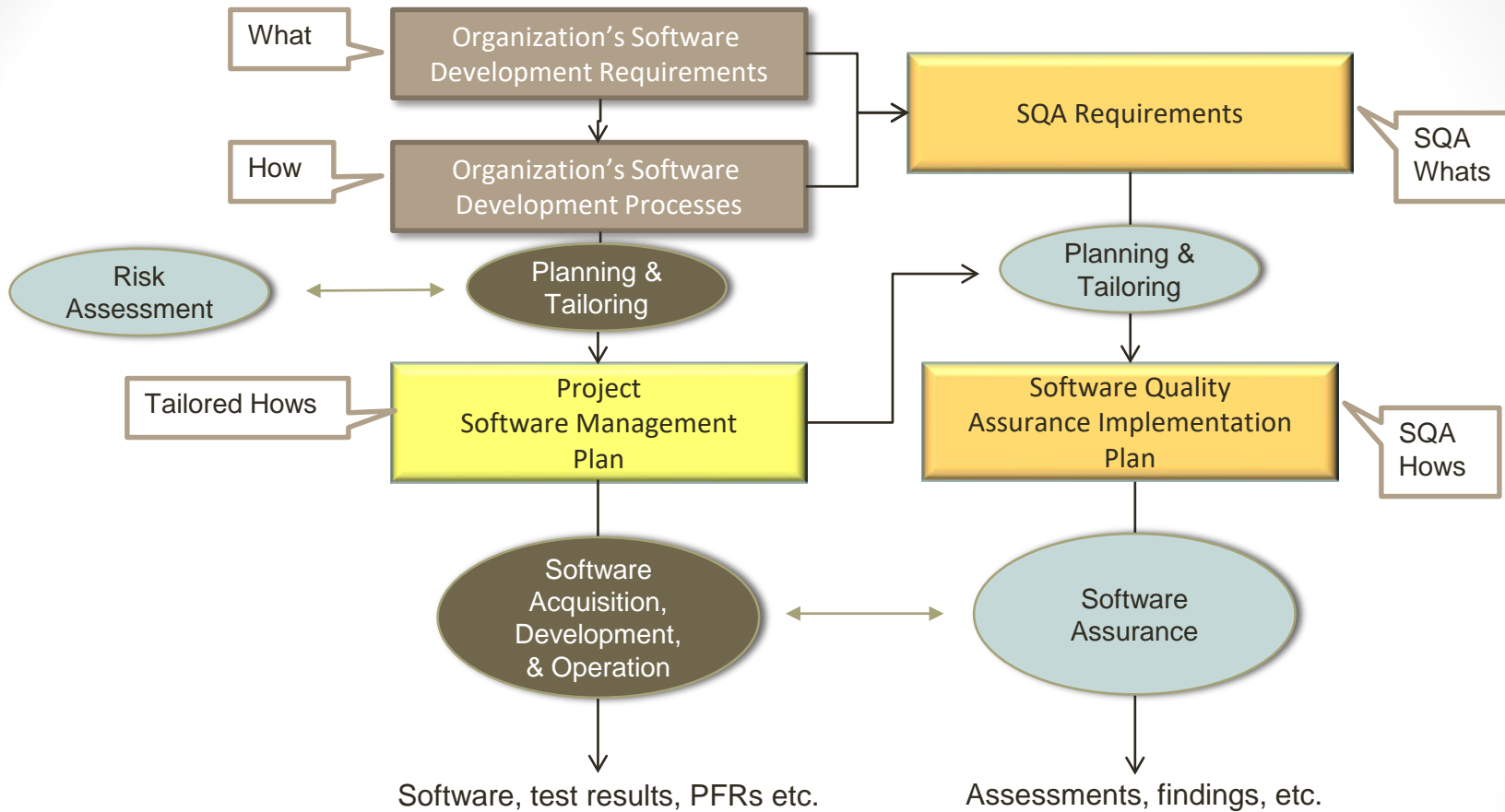







# JPL SQA

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-  Institutional Requirements
-  Project Requirements/Plans
-  SQA Requirements/Plans

-  Project Activity
-  SQA Activity



# SQA Whats

Project & SQA Classifies Software & Identifies Safety Critical

Risk Assessment of Project's Tailoring of Software Development Processes

Project Software Management Plan Evaluation

Write up of SQA Plan & Implementation

Planning

Process and Product Quality Assurance (PPQA) Reviews

Requirements Verification & Trace

Software Review Certification Records (SRCRs)

Contractor Oversight

Implementation

Anomaly Resolution

Anomaly Resolution



# SQA Value

***SQA lowers risk by providing unbiased insight into the software task, increasing confidence for decision making.***

# SQA Hows – Planning

Whats	Hows
Classify/Identify SW	Review for Safety Critical Software Components, Classification of Software
Risk Assessment of Project's Tailoring of Software Development Processes	A risk assessment on how the Project choses to implement their processes for their Software Development Requirements
SMP Evaluation	Review SMP against Software Development Requirements and Software Development Processes
SQA Requirements/Implementation Plan	SQA Requirements signed off by Project SQA Implementation Plan in Wiki with activities queried from SQA JIRA System

# SQA Hows – Implementation

Whats	Hows
SRCR	Formal Delivery Review certifying that Project has the necessary gate products at the agreed upon level of quality. That agreed upon processes have been followed.
<p>SQA provides objective voice on whether SW or GSE ready for delivery</p> <p><b>RISK ADDRESSED: premature delivery of immature software leads to cost increase, schedule slip and increased risk of mission failure due to those additional defects not discovered</b></p>	
Requirements Verification & Trace	Review and trace of requirements from conception, architecture, detailed design, implementation, test, and delivery.
<p>SQA assures that all requirements have been reviewed, met, and tested successfully</p> <ul style="list-style-type: none"> <li>85% of Projects perceive bi-directional trace as valuable, 54% reported as performed*</li> </ul> <p><b>RISK ADDRESSED: misinterpretation of ambiguous requirements, incomplete implementation of requirements, superfluous implementation, untested requirements, inability to react to requirements changes, all of which threaten cost increases, schedule slips and risk of mission failure</b></p>	

# SQA Hows – Implementation

## Whats

## Hows

PPQA  
Reviews

Product Reviews (Software Management Plans, Processes, Contracts, Requirements, Interfaces, Architecture, Detailed Design, Code, Software Test Plans, Procedures, & Reports,, User’s Guides, Release Description Document, Maintenance Plan )  
Process Reviews (Review of adherence to process agreements e.g., Planning, milestone reviews (entry, success criteria), peer reviews, Action Item Resolution, CM, Requirements Management, etc.)

SQA assures that the project adheres to all of its development processes

- Lower Defect Density Rate when projects follow rigorous Software Processes\*

**RISK ADDRESSED: Unsupervised, projects do not follow their planned processes, leading to greater defect densities, with effects of cost increase, schedule slip when those defects are discovered later, and increased risk of mission failure due to those defects not discovered**

Contractor  
Oversight

Review that all Requirements are flowed down into Contract  
Review of Contractor’s Processes and Requirements against Organization’s Processes and Requirements  
Review that Contractor adheres to agreed upon Processes and Requirements

Make sure contractor’s development processes, SOW, SDRLs, DRDs, and deliverables are adequate and followed/provided

**RISK ADDRESSED: Inadequate processes, SOW, SDRLs, and DRDs that are not followed can lead to deliverables not meeting our needs in the desired timeframe and cost**

\*State of SW Report 2015

# SQA Hows –Anomaly Resolution

## Whats

DPFRRs/PFRs/ISAs

## Hows

Review that anomalies are properly classified and resolved

All Anomalies and Problem Reports are handled and dispositioned correctly.

**RISK ADDRESSED: increased risk of mission failure due to:**

- Misclassification
- Ineffective Resolution