Speed in CI/CD: Get Faster to Get Better

Dan Zentgraf, Director, Solutions Architecture - Liquibase

Today’s Presenter

Dan Zentgraf
Director, Solutions Architecture

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What This Talk is About

- Speed is Good
- Acceleration is Better
- Pushing to Get Faster Makes You Better

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Speed is Good

Fast Things Tend to Be More Awesome

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We Like Speed

- We like taking less time to get places
- We like getting things sooner
- We hate waiting
- We get frustrated when we are slowed by blocked work
- We have tons of cultural sayings on the benefits of speed

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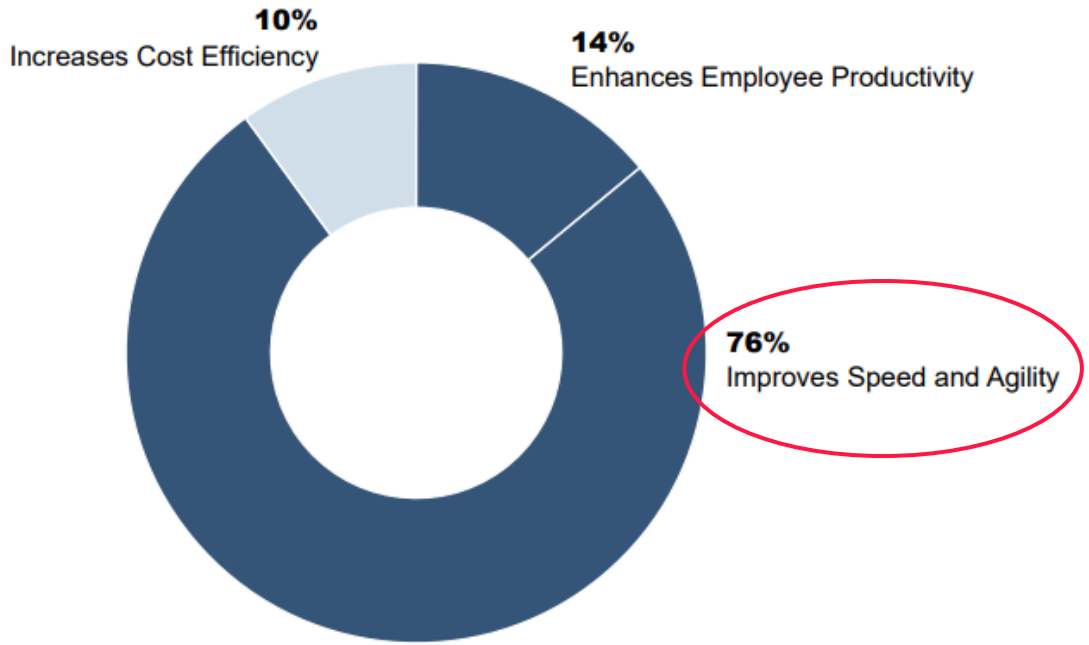
Business Uses Technology to Achieve Speed

Automation for Speed and Productivity

Automation investments driven by desire to increase speed and enhance productivity

Top Value Drivers for Automation Investments in 2020



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Source: 2020 Gartner Emerging Technology Roadmap for Midsize Enterprises

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- POLL -

What do you think is the greatest benefit of CI/CD?

- Increased speed of delivery
- Shortened development cycle
- Increased release frequency
- Reduced complexity of dev lifecycle
- Reduction in bugs post deployment

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Key Benefits of CI/CD

Technical Benefits of CI/CD	
Increased speed of delivery	74%
Shortened development cycle	68%
Increased release frequency	59%
Reduced complexity of dev lifecycle	50%
Reduction in bugs post deployment	40%
Reduced time to complete QA feedback loop	37%

Source: DZone Trend Report: The State of CI/CD: Evaluating Pipeline Maturity, September 2020

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Acceleration is Better

The *PURSUIT* of more speed is better than just keeping speed you already have

Race to Commercial Jet Aviation

- 1947 – Boeing 377
  - One of the last piston-engine propeller airliners
  - ~60-100 passengers
  - Cruising Speed – 262 knots (201 mph)
  - Range ~3,600 nautical miles

- 1957 - Boeing 707
  - ~189 passengers depending on configuration and variant
  - Cruising speed of 525 knots (~604 mph)
  - Range ~3,200 - 4,800 nautical miles

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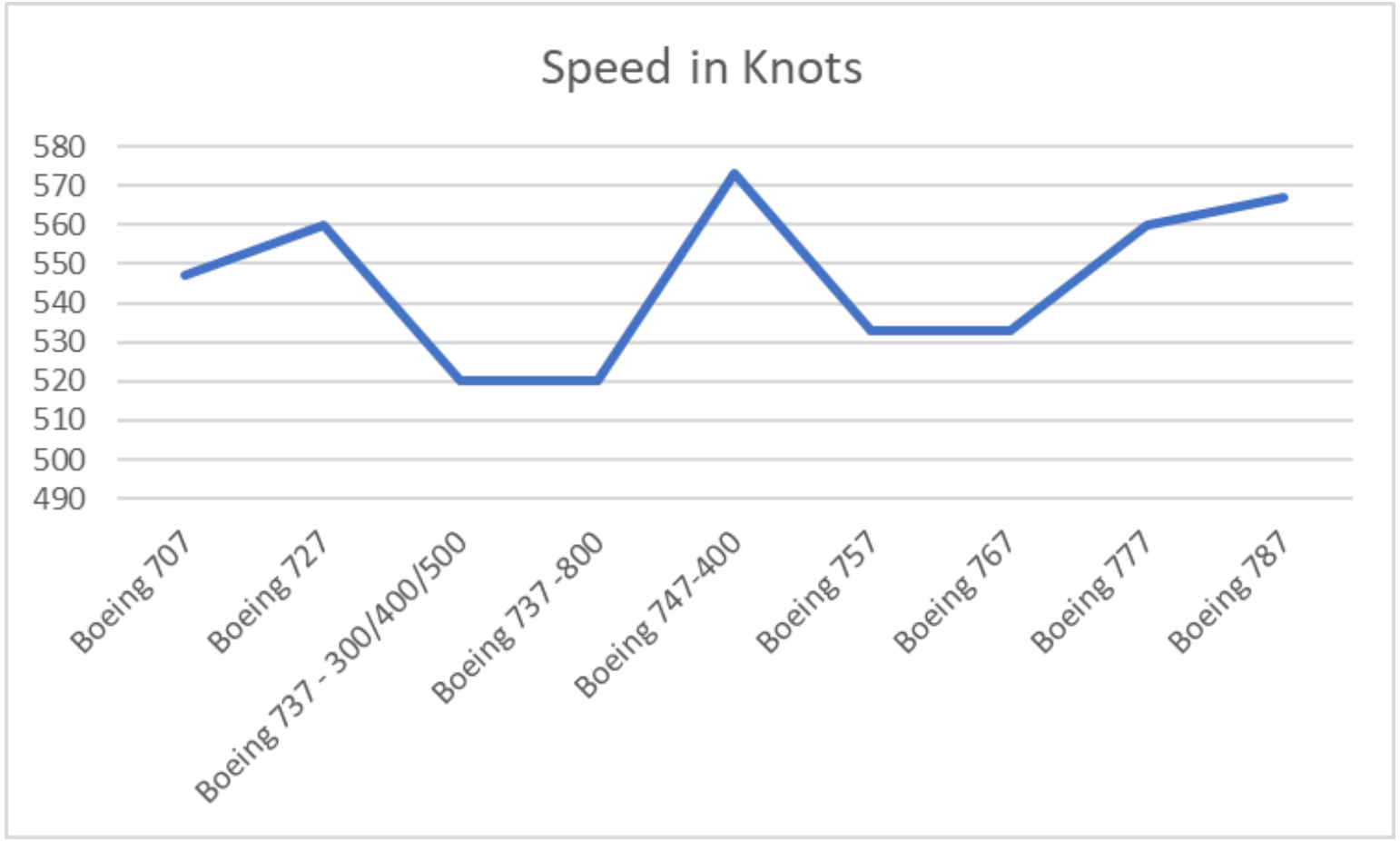
Sources: https://simple.wikipedia.org/wiki/Boeing_377, https://en.wikipedia.org/wiki/Boeing_707

Commercial Jet Aviation 60+ Years Later



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You Can Always Find a Way to Pursue Speed

- **If planes are what they are, how do you accelerate if you are an airline?**
  - Boring plane –all 737s (first versions in 1966)
- Agility
  - Standardized plane
    - Move crew around quickly
    - Ability to swap planes on routes
    - Simplified maintenance
  - Faster, simplified boarding
- Only consistently profitable major US carrier for 47 years running
  - (as of end of 2019)

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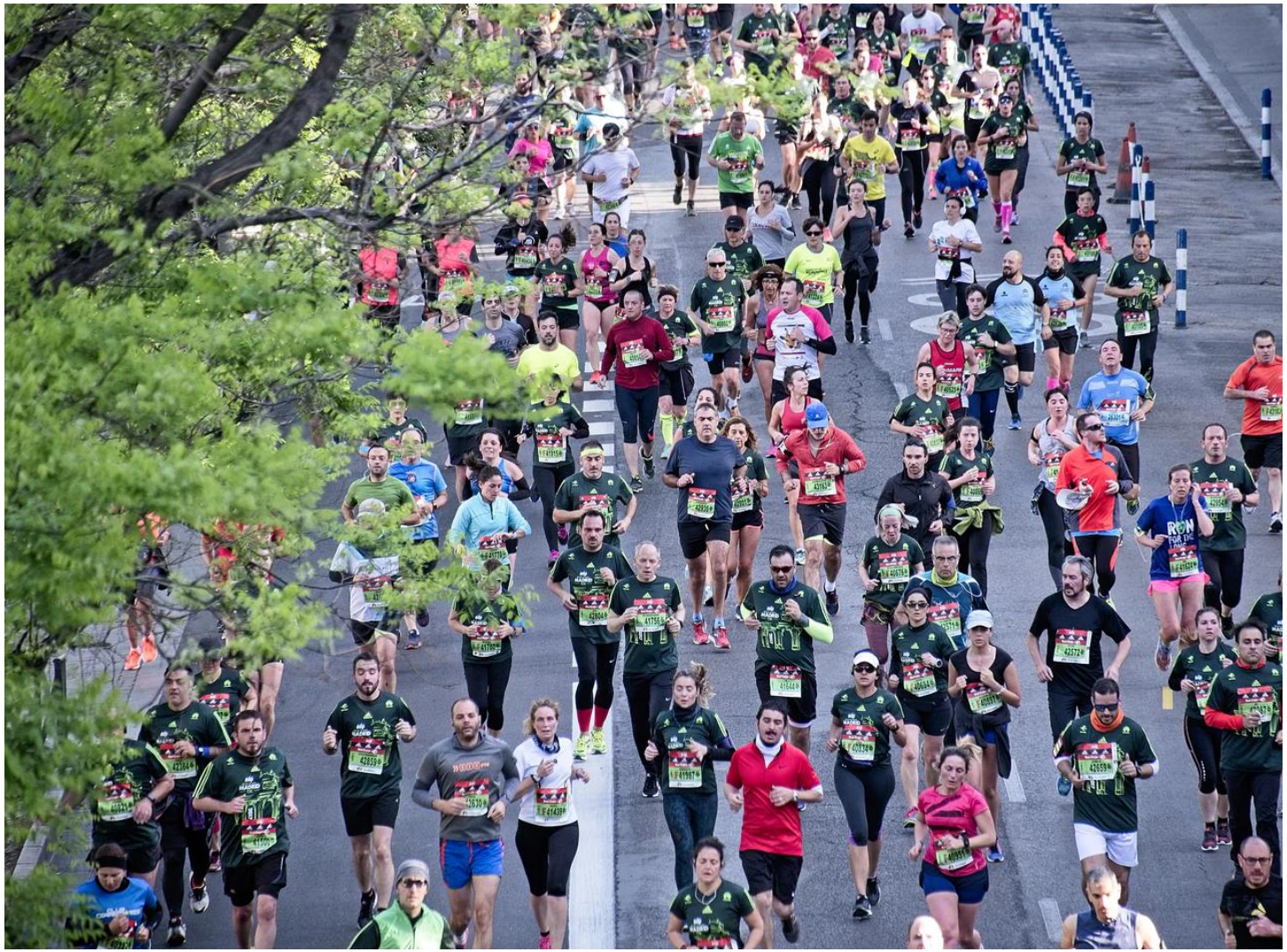
Pushing to Get Faster Makes You Better

Speed Provides a Vision and Goal



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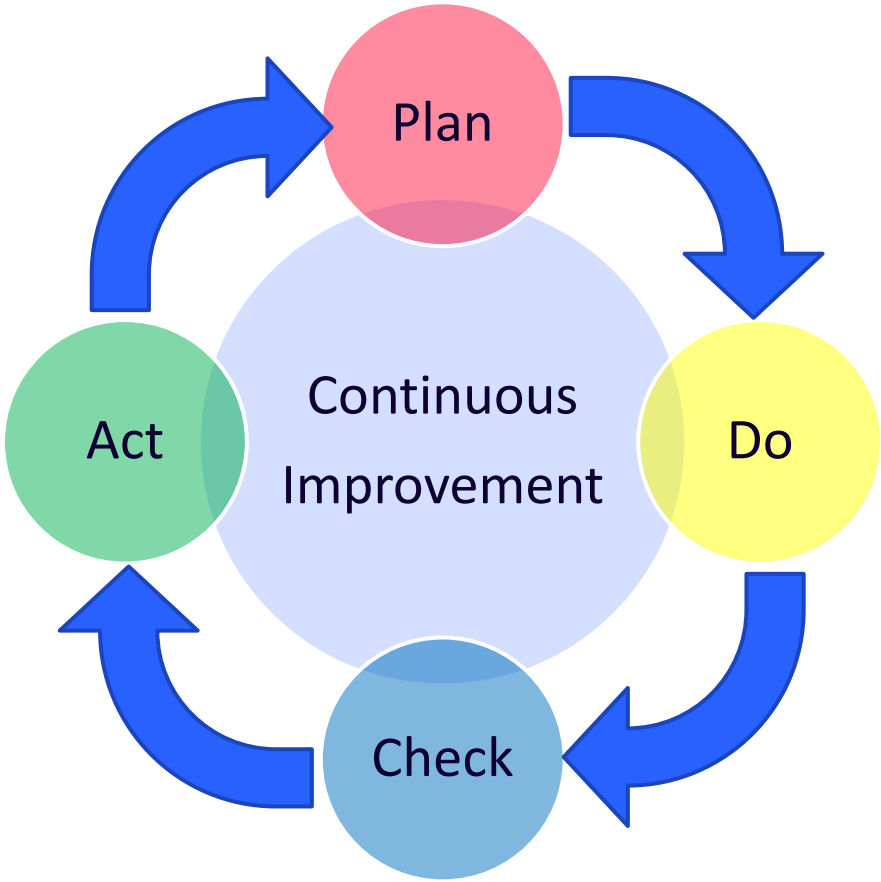
The Other CI – Continuous Improvement

- Intrinsic to Agile / DevOps
- Achieve better results without backsliding elsewhere
- Improved Throughput
- Improved Quality



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You Must Actually Fix Things

- Simplify - Remove Complexity
- Add Lightness - Remove the Unnecessary
- Automate - Remove Inconsistency
- Monitor and Measure
- Analyze Trends Over Time
- Precise Control
- Uninterrupted Flow - Eliminate Rework

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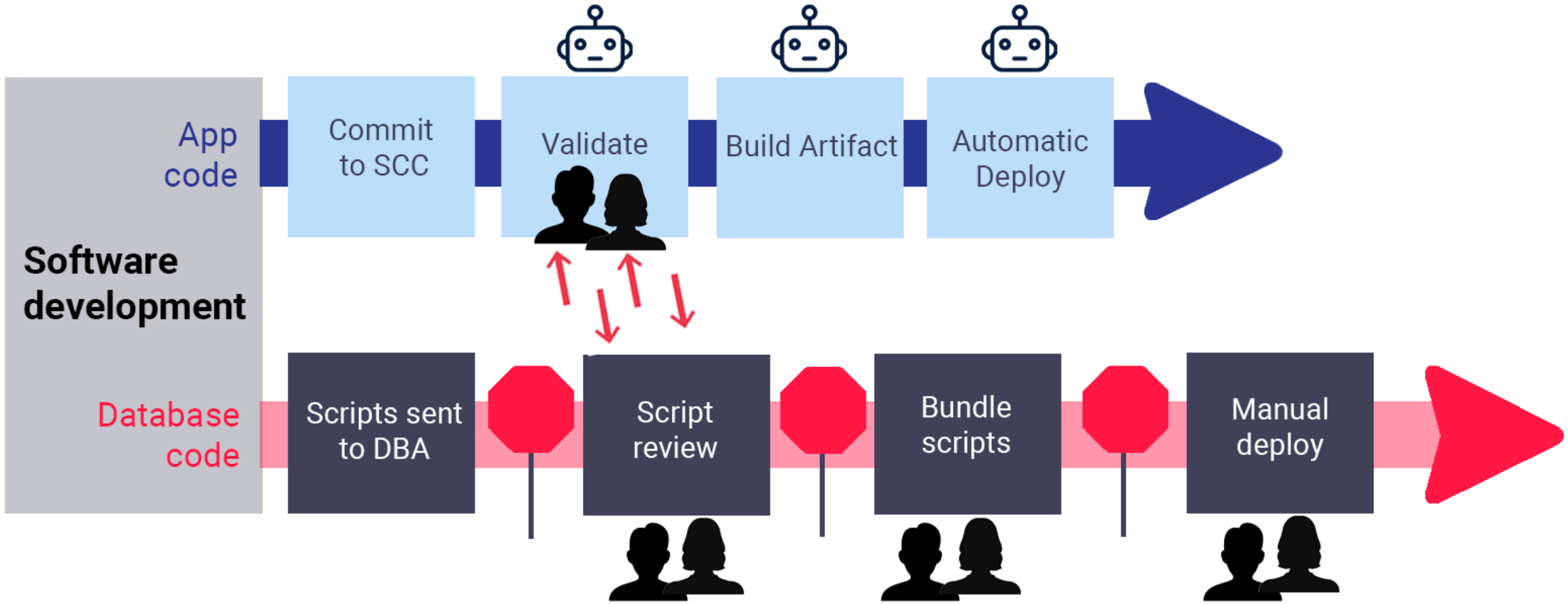
Simplify - Remove Complexity



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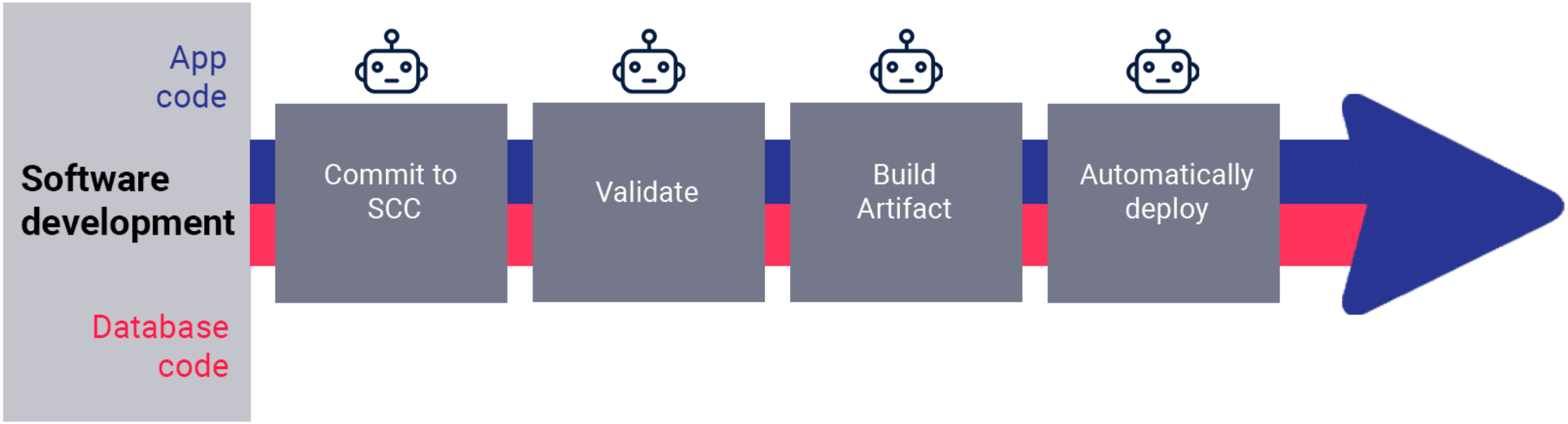
Simplify - Remove Complexity



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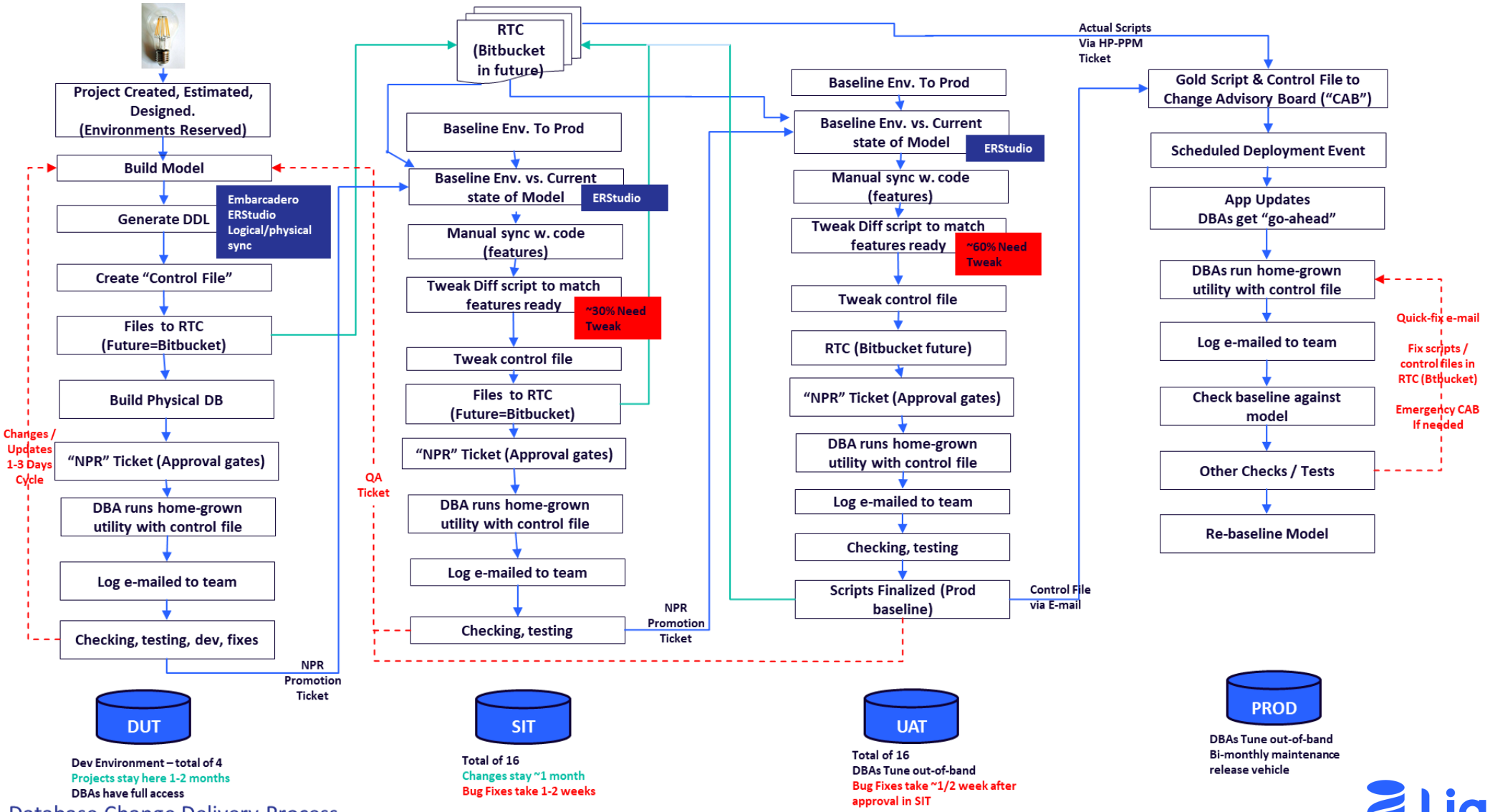
Add Lightness - Remove the Unnecessary



Database Change Delivery Process

Whiteboard Session Summary – Current State

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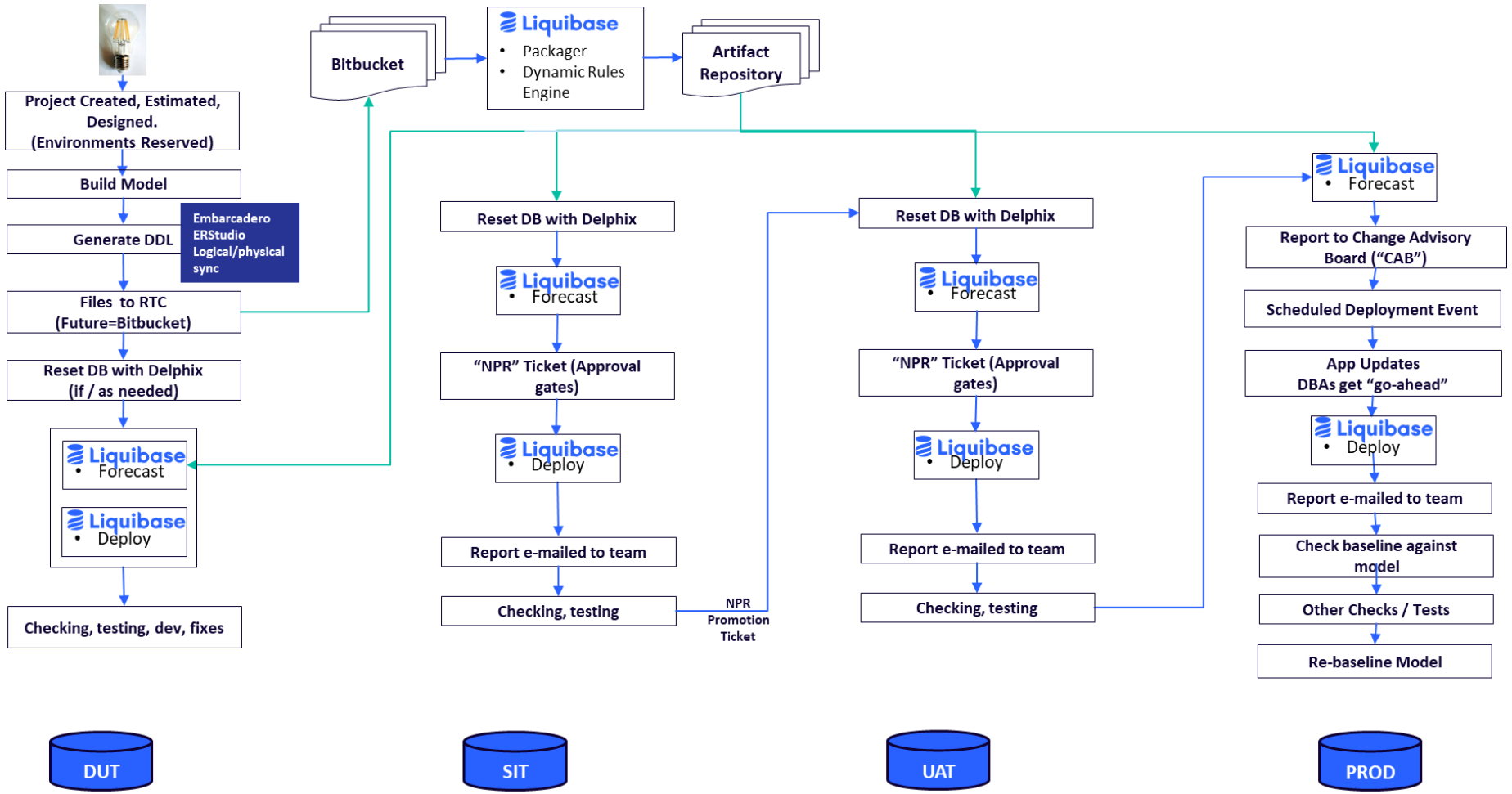
Add Lightness - Remove the Unnecessary



FUTURE CONCEPT Database Change Delivery Process with Liquibase
Whiteboard Session Summary 9-10-2019

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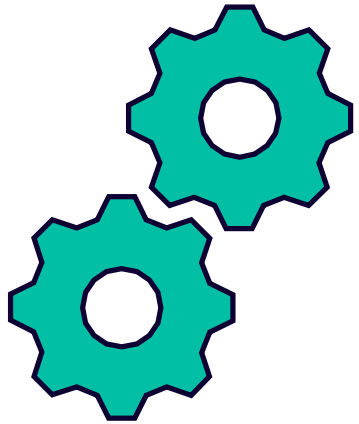
Automate - Remove Inconsistency

- Automation is the fastest way to go fast
- Automation ensures predictable results

- You can’t have automation if your process is inconsistent



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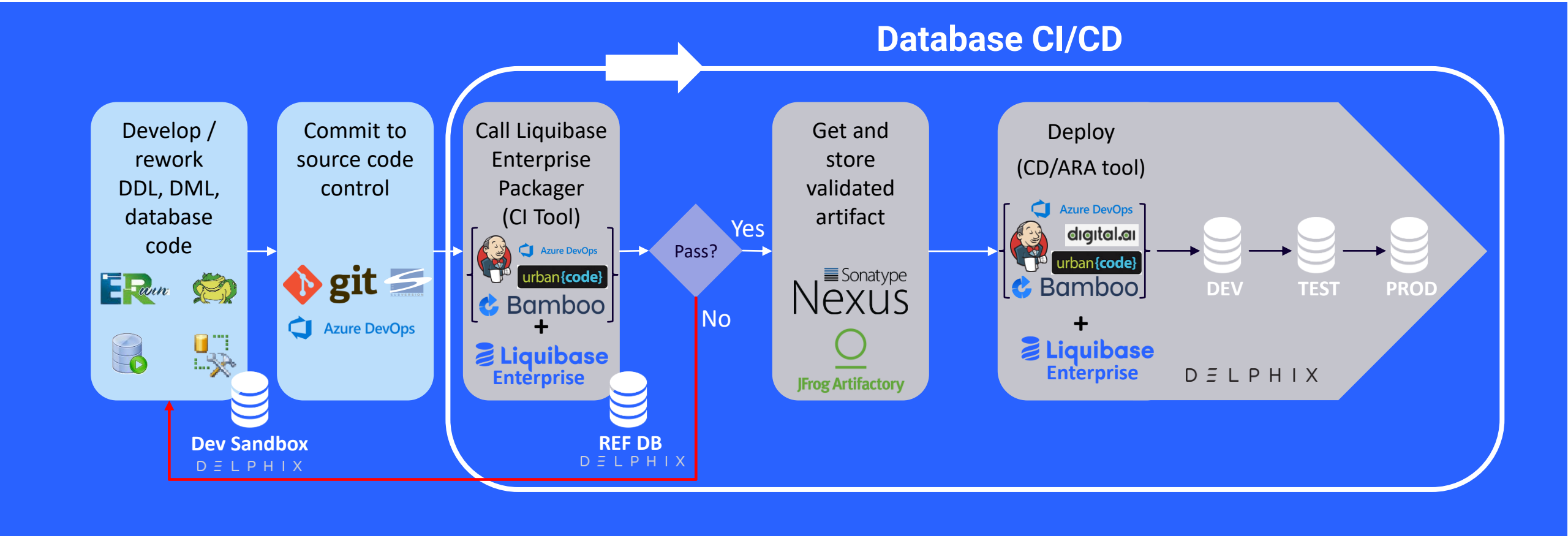
Automate - Remove Inconsistency



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Monitor and Measure

- Health
- Impact of Improvements
- Problems
- Decision Support

Image: Johnson Space Center Mission Control, nasa.gov

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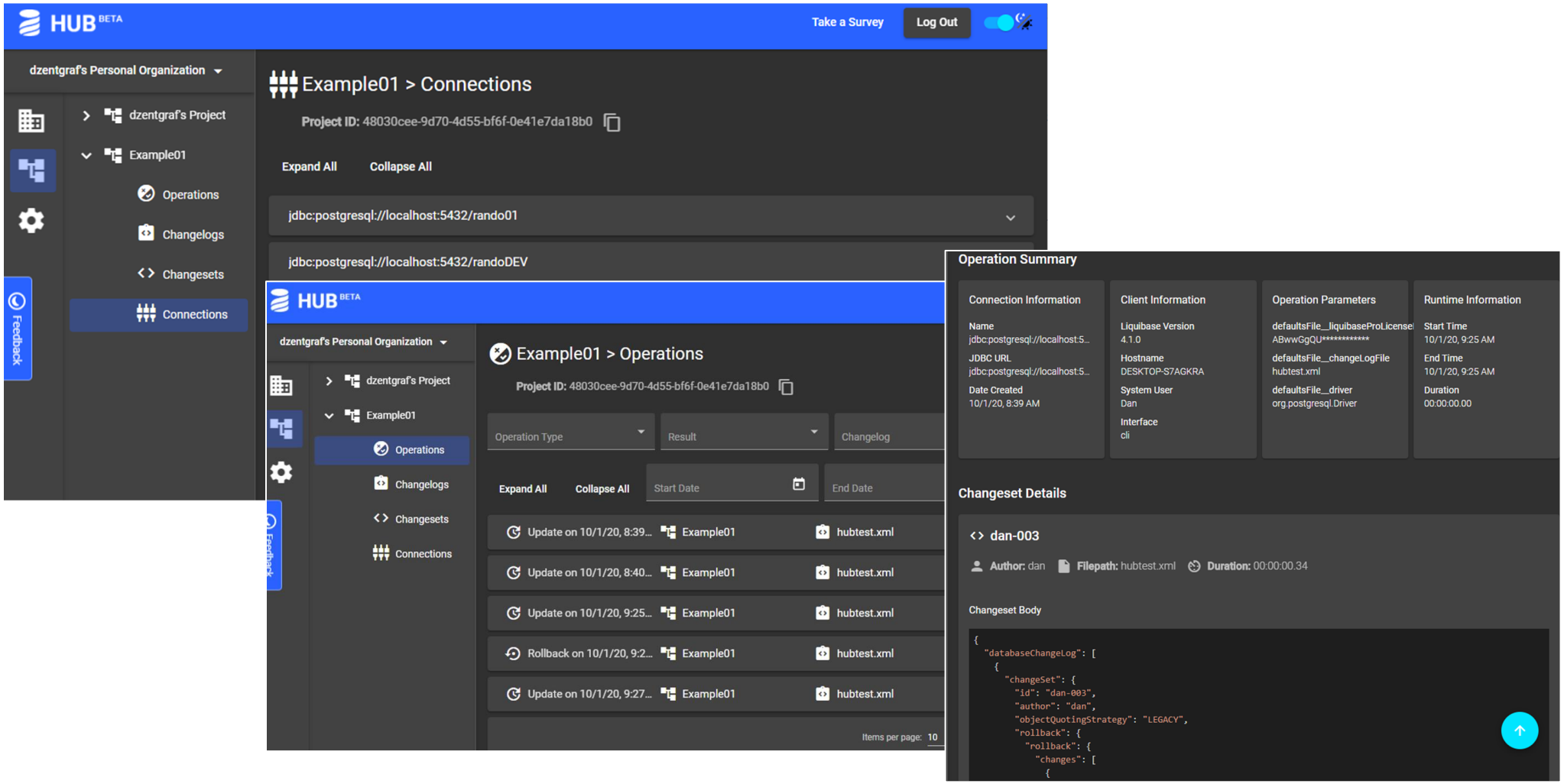
Monitor and Measure



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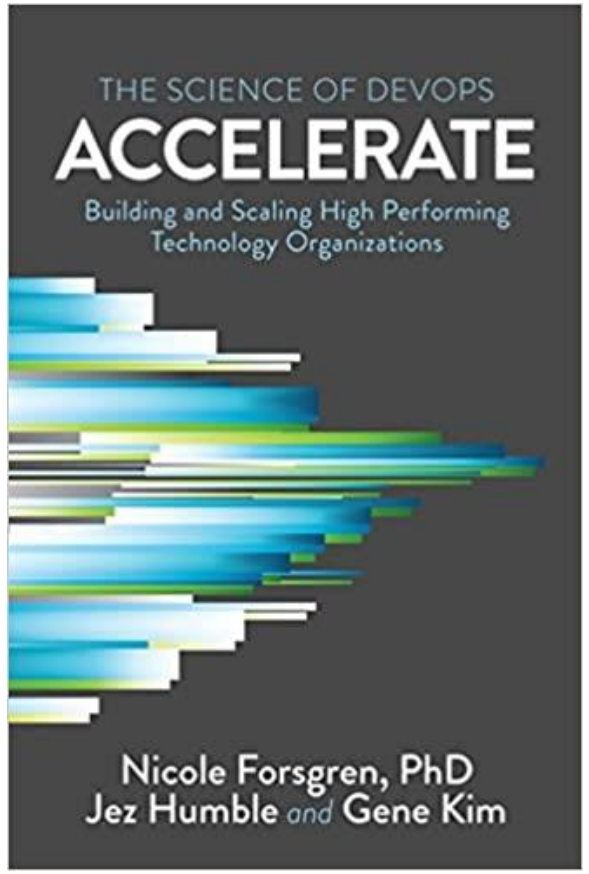
Analyze Trends Over Time

- Lead Time
- Deployment Frequency
- Change Fail Percentage
- Mean Time to Restore



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Analyze Trends Over Time

Averages from actual customer data using DORA KPI metrics[1].

Deployment Frequency

3x deployments/month

Lead Time Reduction

95% delays eliminated

Change Failure Rate

94% errors/month

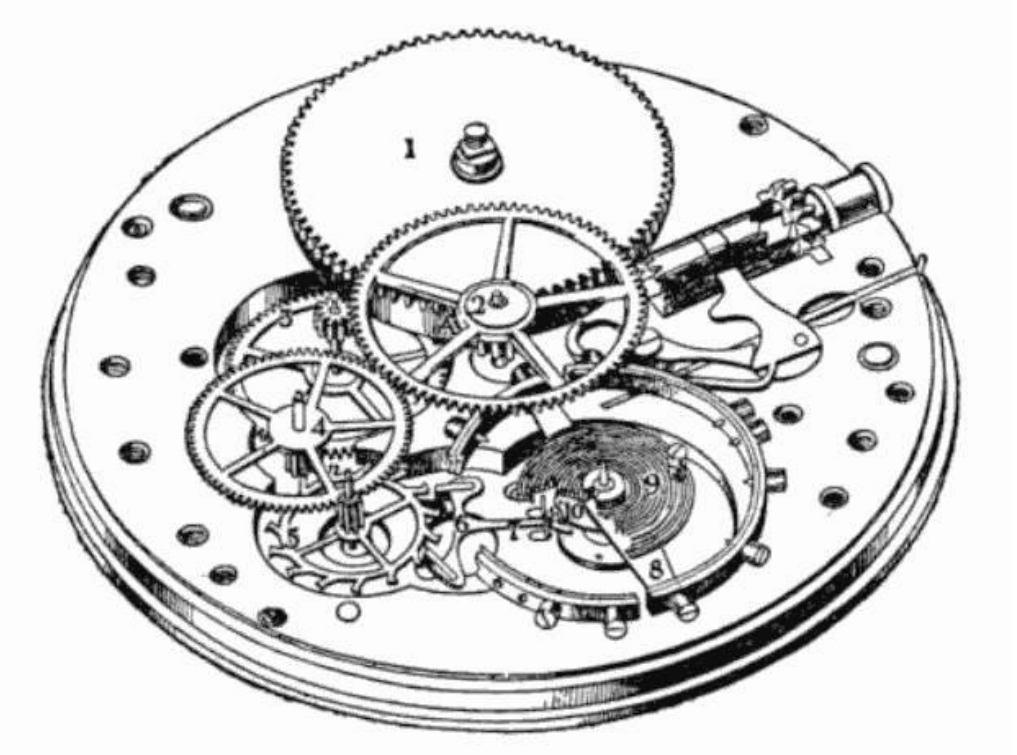
WIP Reduction

66% changes/deployment

[1]*substituting WIP reduction for MTTR as recovery is not directly related to deployment performance.*

Precise Control

- Ability to make very fine adjustments
- Avoid large ‘swerves’
- Small errors compound quickly at speed
- Constantly adjust toward expected outcomes



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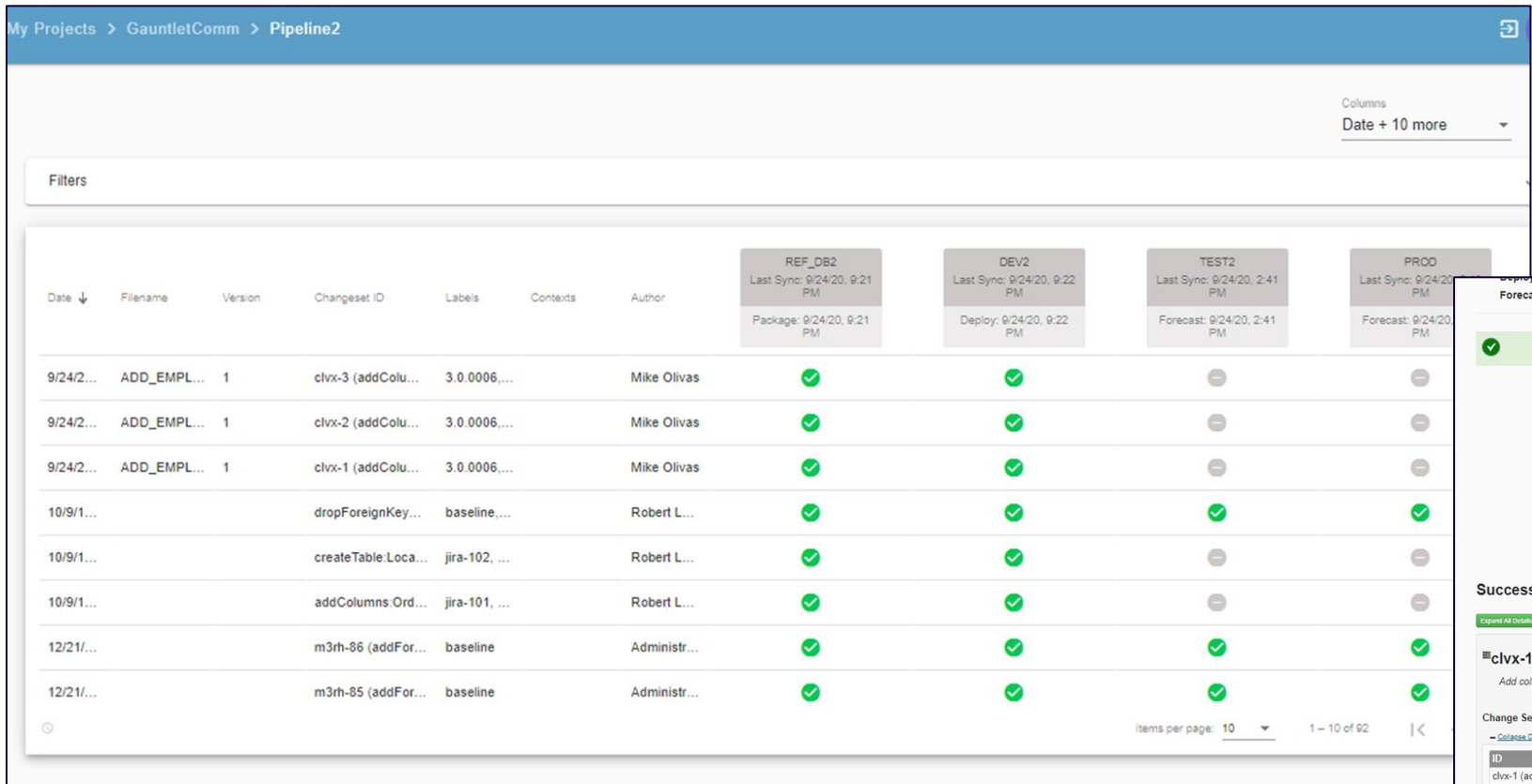
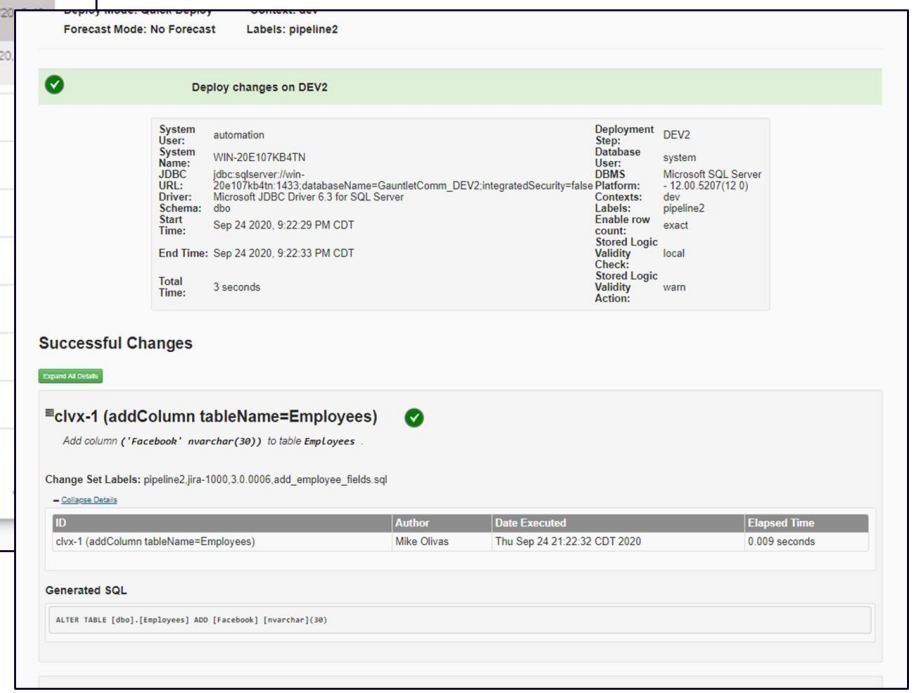
Precise Control





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Uninterrupted Flow - Eliminate Rework

- First Time Complete and Accurate
- Build Quality In
- Use the pipeline tools and capabilities you have built to ensure problems caught quickly
- Avoid Flow Disruptions

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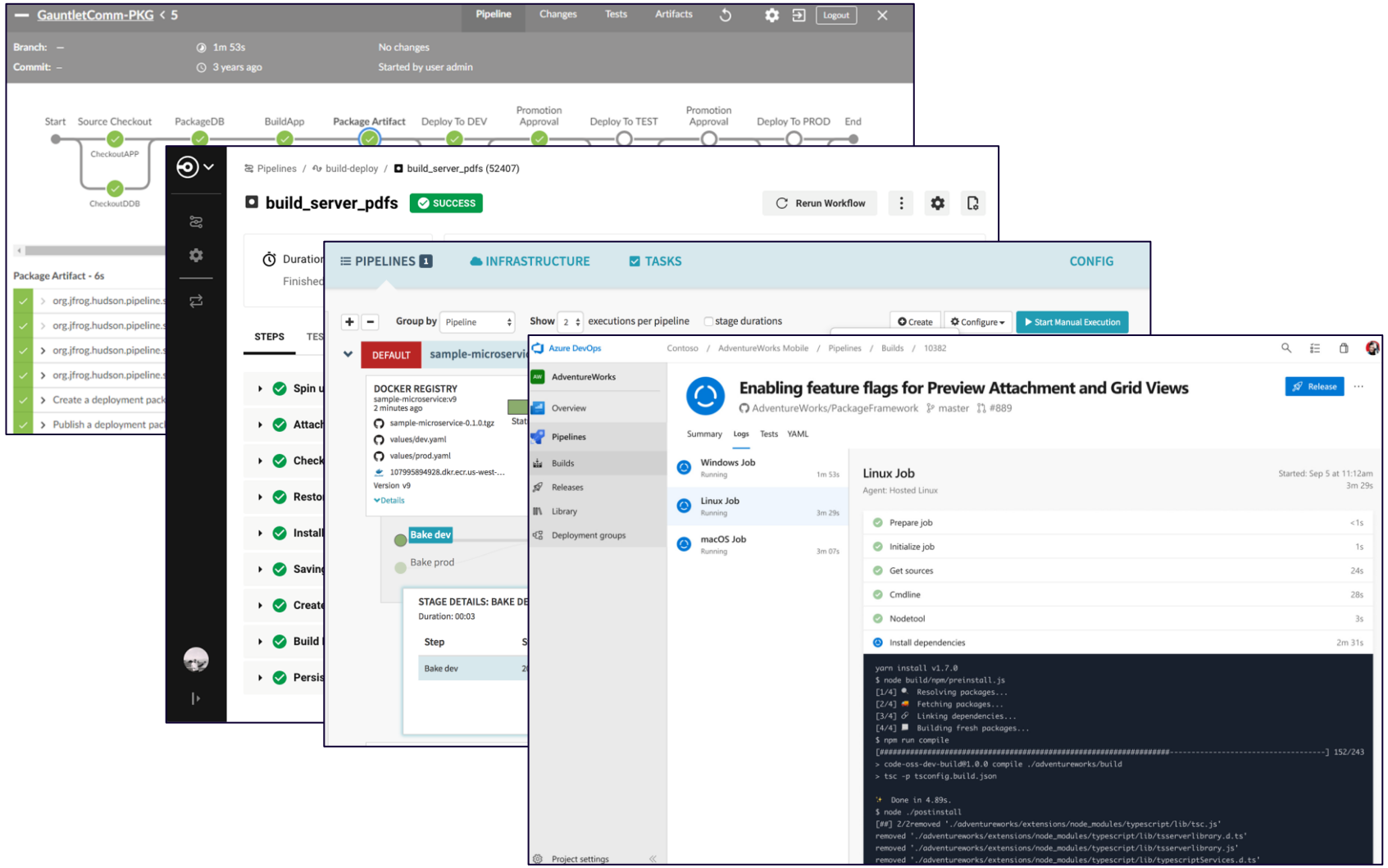
Uninterrupted Flow - Eliminate Rework



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QUESTIONS

Be a Part of the Community!

- www.liquibase.org
- Official Liquibase Forum (forum.liquibase.org)
- Stack Overflow (tag: Liquibase)
- Discord Chat
- Reddit: /r/Liquibase
- Twitter: @Liquibase

Dan Zentgraf
Director, Solutions Architecture
dzentgraf@liquibase.com

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See Liquibase in Action

- See On-demand Demos: https://www.liquibase.com/demo
- Learn about Liquibase Hub: https://www.liquibase.com/hub

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THANK YOU

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Speed in CI/CD: Get Faster to Get Better

It’s not about being fast. It’s about getting faster

Speed is central to discussions of the benefits of CI/CD. Too often, speed is presented as the goal of CI/CD. That’s not entirely true. Speed is exciting, but by itself, it is just expensive. Speed is valuable because of the things that it brings with it. In every instance where people pursue speed, they have to systematically simplify, lighten, and improve the thing they are trying to make fast.

This webinar will dive into what the pursuit of speed brings to DevOps and CI/CD so that you can break through the hype and truly improve your software process. It’s not about speed for the sake of speed; it’s about eliminating needless complexity and adding smart automation. Now that we’re living in a COVID world, more companies are focusing on speed and will leave those that aren’t far behind.

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Punchline

- All Agile and DevOps assume Continuous Improvement
- Standing pat at a given speed yields stagnation

- A prime driver of Improvement comes from *pursuit* of VELOCITY
- That’s why the digital natives have pushed to the point where they can deploy in minutes or seconds

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About Liquibase