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Getting the most out of Enterprise SCADA, Pipeline Applications, and the Intelligent Midstream portfolio

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AVEVA

The New AVEVA Midstream Business

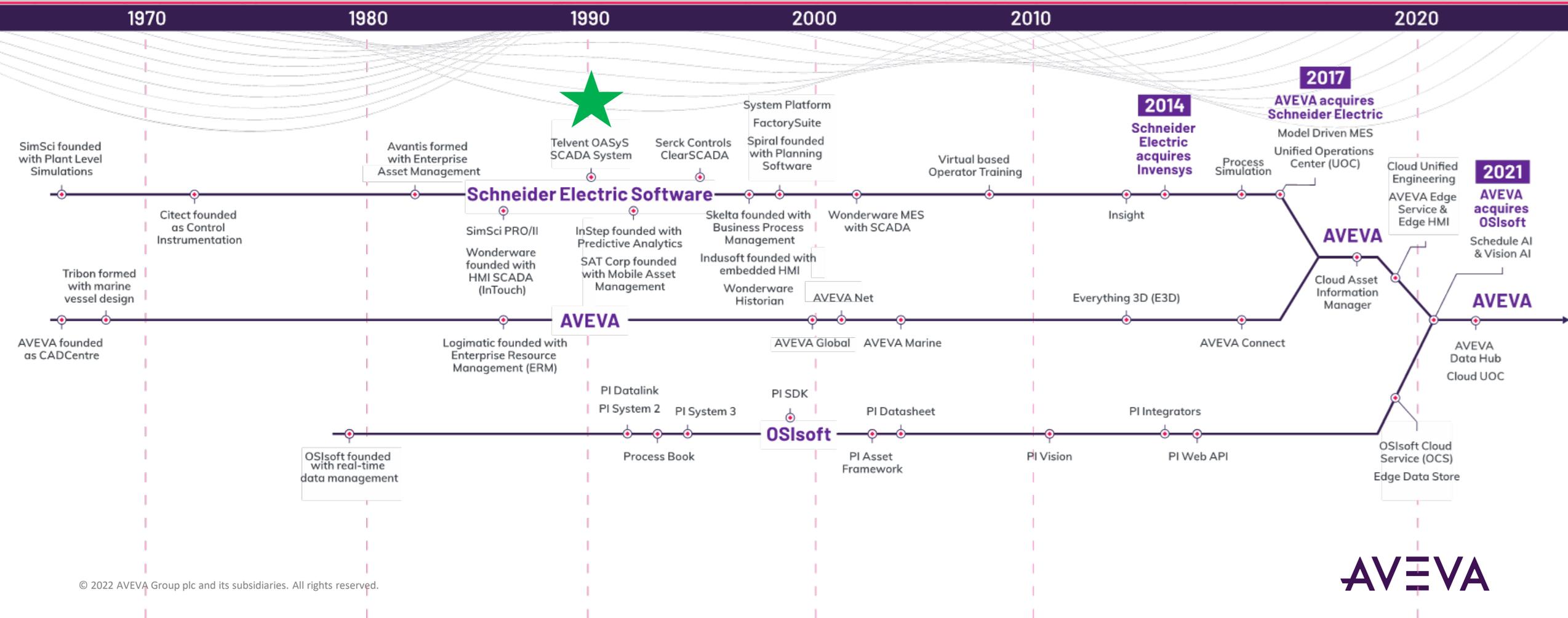
Conference Summary



AVEVA

AVEVA's unique history dates back 55 years

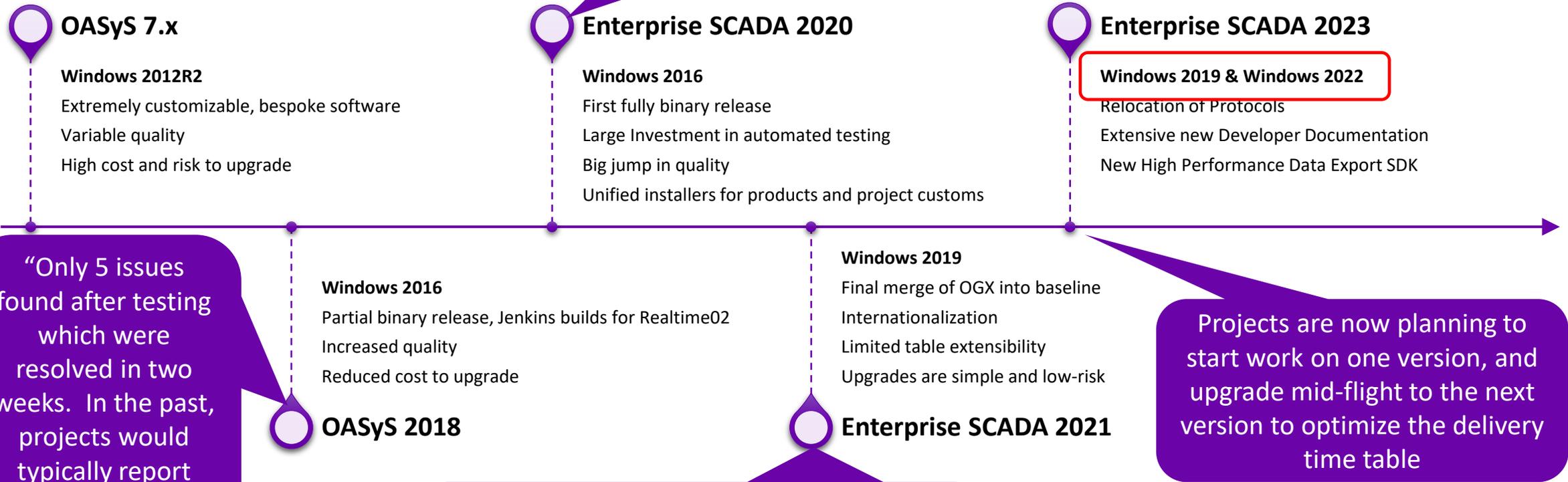
Continual innovation drives an amazing future to build upon five plus decades of success



A brief history in time

OASyS has come a long way...

“2 weeks total for AIT installation and baseline validation, down from about 1 to 1.5 months average for other similar projects in the past”



“Only 5 issues found after testing which were resolved in two weeks. In the past, projects would typically report tens and even hundreds of issues from FAT”

“We were able to install SP1 on the whole system on the staging floor in 3-4 days, with no re-work needed.”

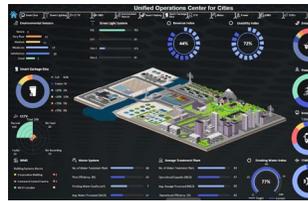
Projects are now planning to start work on one version, and upgrade mid-flight to the next version to optimize the delivery time table

Intelligent Midstream Solutions

Accelerating digital transformation in Midstream

Connected industrial economy

Convergence
IT/OT/ET



ENTERPRISE VISUALIZATION

Converge and contextualize engineering, operations, performance and financial data for end-to-end, single-pane-of-glass enterprise visibility

Unified Operations Center for Midstream

SUPPLY CHAIN

Efficient vol. accounting from forecasting to close

AVEVA Volumetric Accounting

DATA SHARING

Collaborate securely within and beyond the enterprise

AVEVA Data Hub

3rd party ERP, CRM, PLM

3rd-party applications and analytics

3rd-party systems and databases

Applications & advanced analytics

SIMULATION & LEARNING

Controller qualification and compliance

Pipeline Training Simulator

ENGINEERING & EXECUTION

Maximize engineering efficiency in capital projects and operations

OPERATIONS OPTIMIZATION

Pipeline Integrity Monitor

Teamwork

Measurement Advisor

AVEVA Insight

Pipeline Operations

PI Vision

ASSET PERFORMANCE

Asset Performance Management

Safety Management

Information management & streaming analytics

ENGINEERING INFORMATION

Deliver projects on time and improve safety and operational performance with rapid, intuitive access to the Digital Twin

Asset Information Management

OPERATIONS INFORMATION

Leverage contextualized data **including streaming calculations and events with self-service visualization tools**

AVEVA PI System

Automation integration and control

AVEVA Enterprise Pipeline Management

World's most proven solution for safe, secure, regulatory compliant, and efficient pipeline operations

Enterprise SCADA

Enterprise SCADA Data Acquisition (Measurement & Control)

AVEVA Edge (IIoT)

3rd-party sensor data & other data sources

SCADA

MMS

Historian

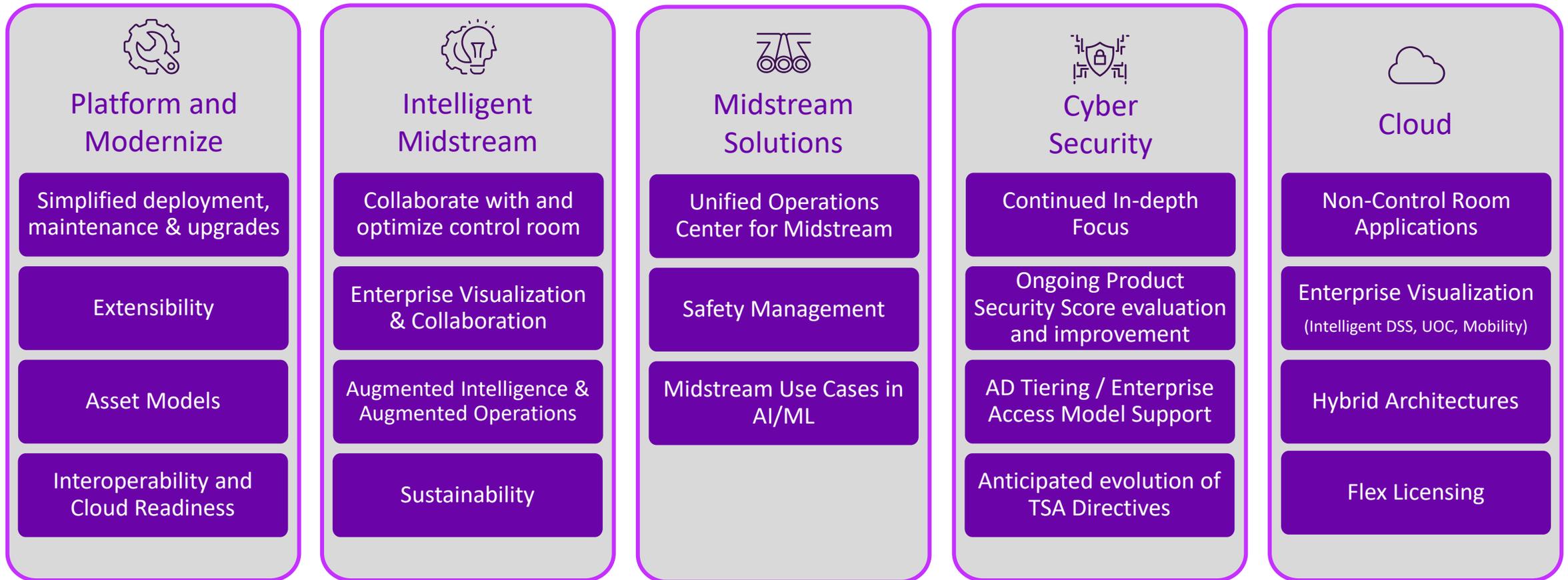
PLCs

DCSs

Edge/IIOT

AVEVA Midstream Investment Themes

Enterprise Pipeline Management System (formerly OASyS)





System Lifecycle Planning

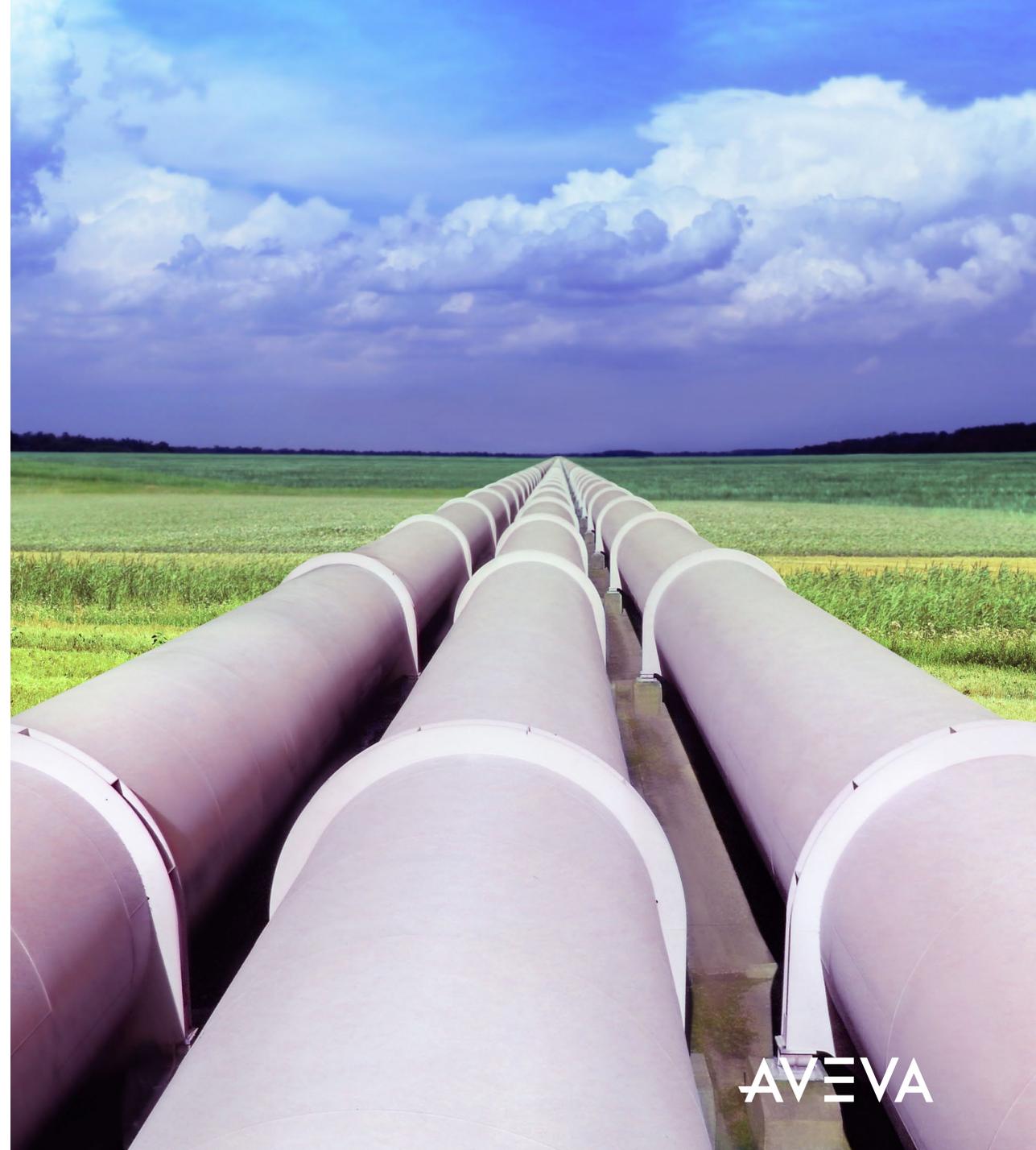
Conference Summary

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Keeping Your System Current

How to leverage this new normal

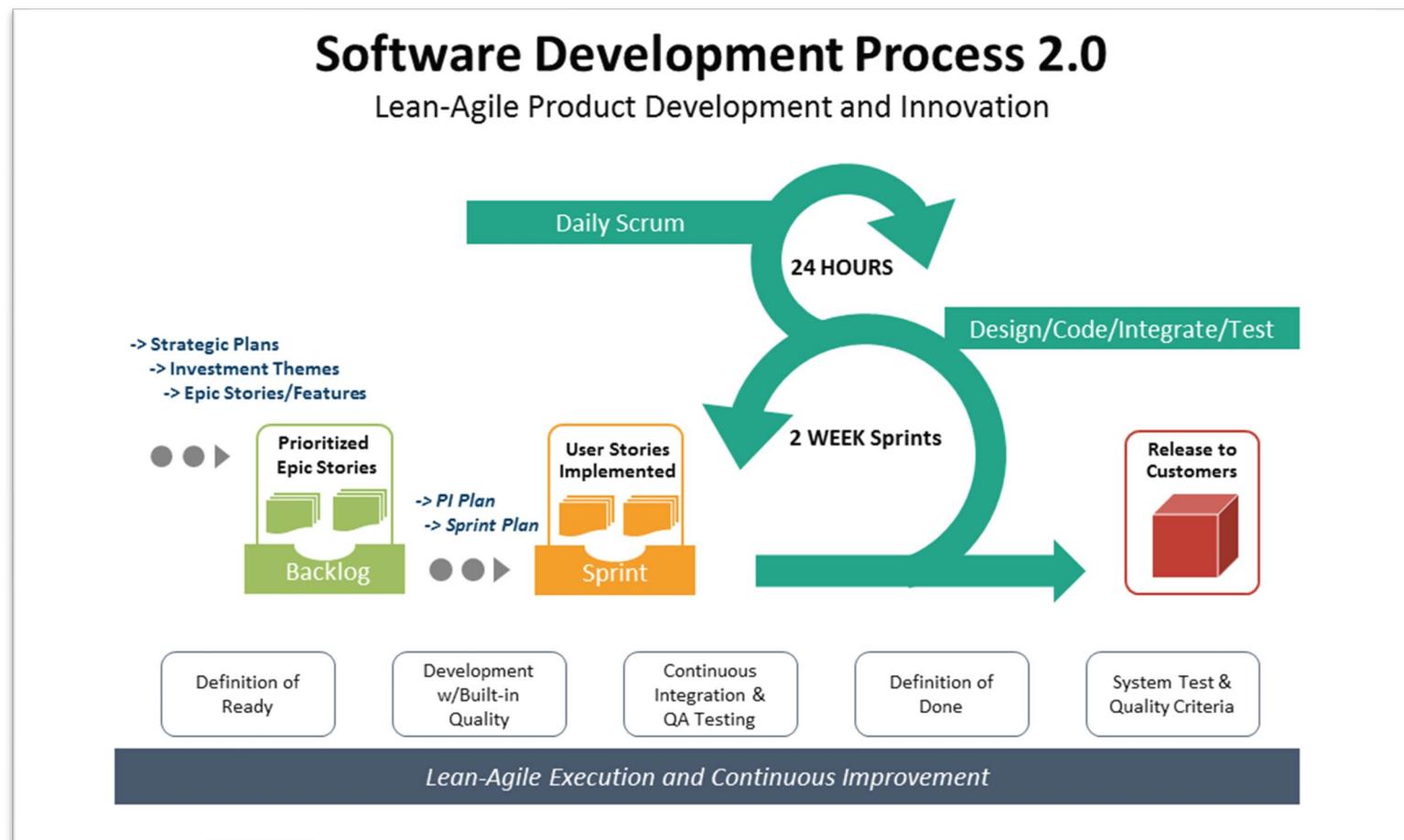
- Reconsider your upgrade cycle
 - Some customers want annual but are constrained by P2P
 - How to reduce the need and cost of P2P
- Upgrade drivers
 - Keep systems secure, and keep up with changing Security Requirements
 - Changing regulatory requirements
 - Continuously add value to operations
 - Aging infrastructure
- Upgradeability Best-Practice Session
 - Preparation and planning using best-practice estimations
 - Early recognition of product gaps



Software Development Process

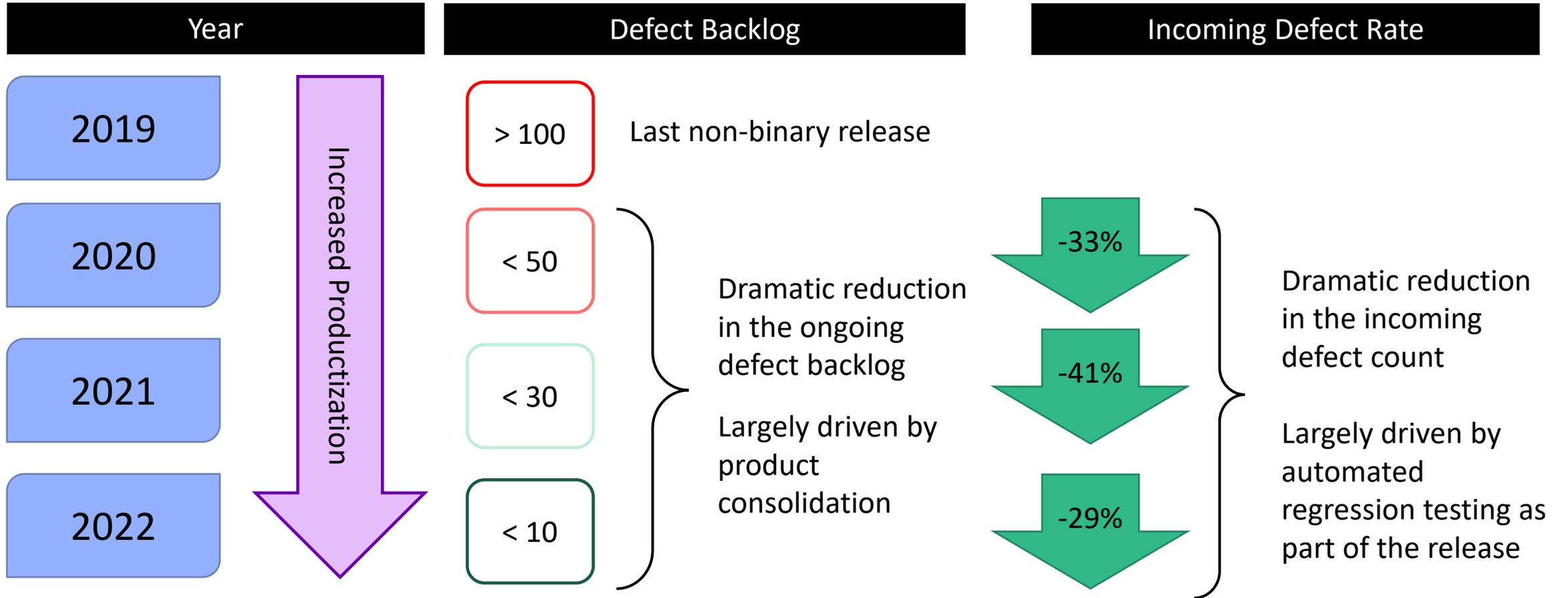
Overview

- SwDP 2.0 is AVEVA R&D's Quality Management System based on Lean-Agile process and aligned with ISO 9001:2008 and ISO 9001:2015 standards.
- Key Principles
 - Plan–Do–Check–Act
 - Process Approach
 - Risk-Based Thinking
 - Continual Improvement



SAFe Impact on Product Quality

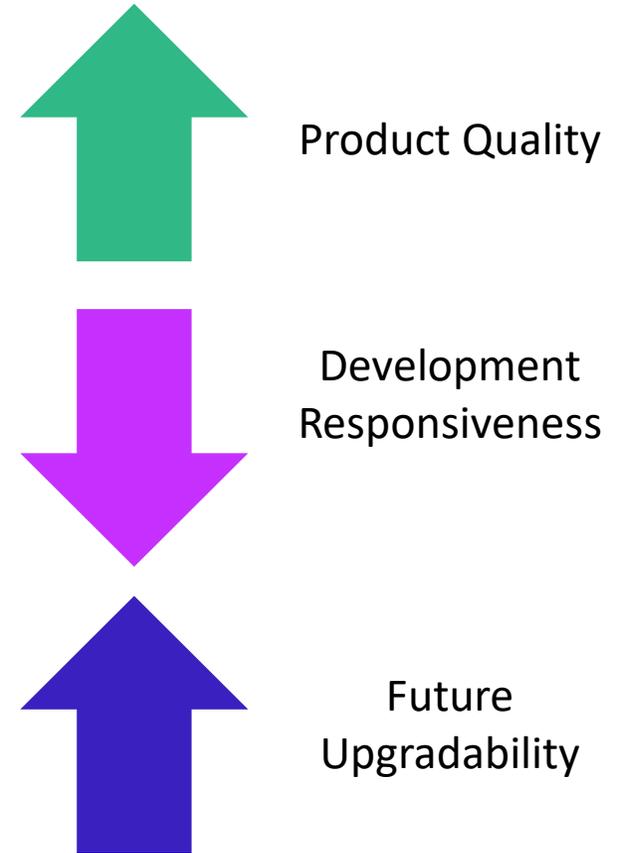
Reduce defect backlog, and reduce incoming customer reported defects



What does this mean to you?

Are there any tradeoffs for this increased quality?

- All Patches, Hotfixes and Service Packs are General Availability
 - No more hand carrying zips and tarballs
 - All releases are hardened and inspected with the same process
- Project customizations are limited to using available APIs and extensibility points
 - Previous customizations need to be reviewed and rationalized
 - An API is more than the interface, it is a public contract
- Core enhancements require a general availability release
 - No enhancements are added to patches to minimize disruption and release overhead
- Feature research takes time!



Success Use Cases for recent upgrades

Examples of pre-2020 and post-2020 upgrades that have benefited from this new normal

- More product features
 - Reduced custom code, less effort for projects
 - Protocols were productized
 - Significant product CRM improvements around alarming
- Reduction in project effort
 - No longer have to FnR – better separation between product and Operating systems
 - AIT driven installations are significantly faster and less error-prone. Install time down from months to weeks for complex, and days for simpler installs
 - In-place upgrades on the factory floor is less than a week, depending on the number of servers
 - Increased product quality is expected to reduce the amount of standardized testing, as fewer defects are being found
- Reduction in overall timeline
 - Some projects are reaching P2P in 8 months, down from 12-15
- Recent References
 - Large Liquids Customer
 - Enterprise SCADA 2021 to Enterprise SCADA 2023
 - Upgrade effort estimate reduced by 85%
 - In-place upgrade
 - Large Gas Customer
 - OASyS 2018 SP3 to Enterprise SCADA 2023, with no product customizations, only interfaces
 - Upgrade effort estimate reduced by 75%



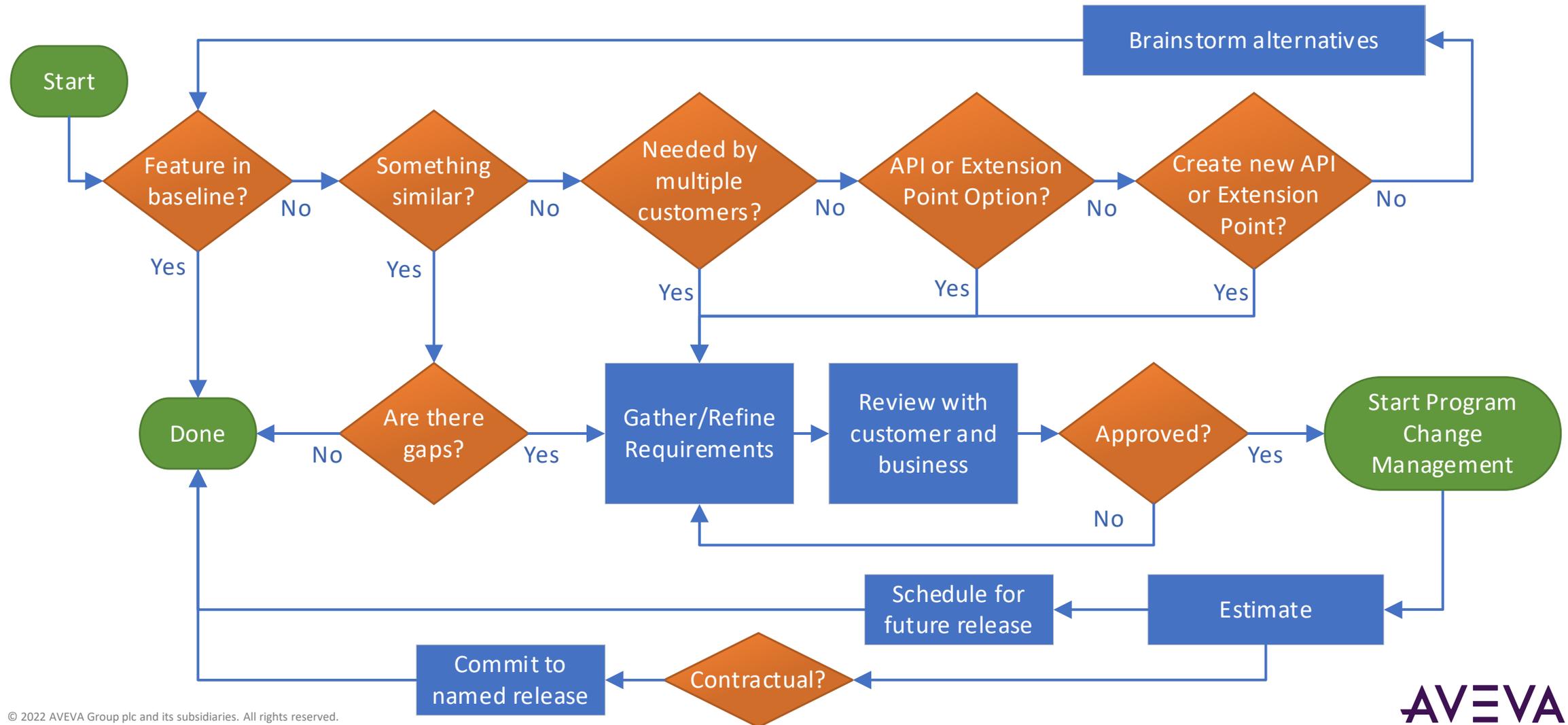
Influencing the Roadmap

Conference Summary

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Rationalization of Prior Project Customizations

Systems running Enterprise SCADA 2018 SP3 or earlier



Aha! Ideas Portal

Submit suggestions directly to Product Management

- A public portal for the submission of ideas, enhancements and clarifications
- Review all ideas from all customers, partners and employees
- Add comments to ideas to facilitate idea refinement and decision making
- Vote on ideas that you'd like to see implemented
- Ideas are reviewed by Midstream Product Management
- Accepted ideas are linked or promoted to a feature in the backlog

AVEVA Enterprise SCADA Server Ideas Portal
Product enhancement requests

ENTERPRISE SCADA IDEAS ENTERPRISE SCADA DEPRECATIONS

+ ADD A NEW IDEA

My ideas 8
My votes 12
My proxy votes 0
Pinned ideas 1

FILTER BY CATEGORY

- Administration / Installation 0
- ▶ API / SDK / Developer Relations 4
- ▶ Architecture 2
- ▶ Control Room Management 7
- ▶ Historical 5
- ▶ Realtime 6
- ▶ Telemetry 9

Pinned ideas

PINNED VDB Override Future?
Our projects make use of the VDB Override feature quite a bit, but it's been deprecated, possibly in 2022, and...
Share feedback

All ideas

3 Request for a new telemetered point
VOTED SE PA WWW integrator has industry specific binary release integrator modified the ...
8 months ago in Realtime API/S

2 VDB Override Future?
VOTED Our projects make use of the VDB Override feature quite a bit, but it's been deprecated, possibly in 2022, and...
8 months ago in Kr

AHA! Ideas Portals

Submit Ideas to anything
in the AVEVA portfolio



- AVEVA has an ideas portal for the entire portfolio across all the verticals
 - Engineering, Operations & Control, and Cloud
- Or, use one of the links below to jump straight to a product



Enterprise SCADA



Pipeline Operations
Liquids



Pipeline Operations
Gas



Measurement
Advisor



Enterprise SCADA
HMI

Examples of Previous Innovation Sprints

Engaging customers as part of the innovation process

Enhanced Alarm Management

Customer: Southwest Gas / Southern Company Gas

- **Problem:** Current solution is prone to error and requires a lot of labor to maintain
- **Outcome:** Demonstrated how AVEVA Reports could be utilized to build alarm management dashboards, filtered views and export data. Enhancements to how Enterprise SCADA stores alarm information identified and scheduled for implementation.

Enhanced Product Compatibility Checking

Customer: P66

- **Problem:** Explore product compatibility validation for complex pipeline systems or terminals with an emphasis on approaches other than our current solution
- **Outcome:** Prototype of a solution that proactively alerts an operator if they attempt to open a valve that would open a path between two different products.
 - Identified backend processing required to monitor uncommanded changes

Pipeline Scheduling & Optimization

Customer: Pembina

- **Problem:** Can AVEVA help generate, visualize and maintain batched pipeline schedules optimized for different criteria
- **Outcome:** Experimented with AVEVA Unified Supply Chain Schedule and Schedule AI to generate pipeline schedules
 - Identified and later resolved missing functionality
 - Contract signed to build an industry solution phased over 3 years

Summary

Key Takeaways

- Engage with your AVEVA team early!
- Systems prior to v2020 can have customizations that need to be rationalized
 - Rationalization process takes a while to work through
- New baseline features get added to future releases not existing releases
 - Service packs for small enhancements OR
 - Major release (annual)
 - Some features may take several releases
- Extensions can be added anytime since they use approved APIs and extension points
- New features can be submitted to AHA! or you can review other submitted features
- Complicated features or ideas can be prototyped during Innovation Sprints





Conference Feedback Summary

AVEVA

AWC 2022 Summary

Key takeaways from the last 4 days

Customer Advisory Boards

- Enterprise SCADA, Pipeline Operations, and Pipeline Simulation priorities investment priority feedback
 - Anything we didn't get to cover?

O&G Pipeline Session Summary

- Intelligent Midstream overview
- Enterprise SCADA learning lab
- Pipeline Operations learning lab
- Measurement Advisor learning lab
- Upgrade Best Practices learning lab
- AVEVA's Safety Management powered by Prometheus Group
- Advances in Pipeline Monitoring to Address Changing Regulations and Sustainability Initiatives
 - AVEVA Pipeline Training Simulator

Customer Session Summary

- Cybersecurity roundtable
- Colonial Pipeline: Our PI system Journey & use cases
- Enbridge: Achieving efficiencies in API 1165 compliance
- Flint Hills: Using the PI System for IT/OT System Health Monitoring
- Plains All American: Using the AVEVA Portfolio to Enable Self-Serve Analytics and Optimization in Pipeline Operations
- PG&E: How AVEVA OTS has improved operator (controller) training
- Plains Midstream Canada: Recent upgrade experience overview
- TC Energy
- Transnet Pipeline: Recent new system deployment experience



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Questions?

Please wait for the microphone.
State your name and company.



Please remember to...

Navigate to this session in the mobile app to complete the survey.



Thank you!

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ABOUT AVEVA

AVEVA is a global leader in industrial software, sparking ingenuity to drive responsible use of the world's resources. The company's secure industrial cloud platform and applications enable businesses to harness the power of their information and improve collaboration with customers, suppliers and partners.

Over 20,000 enterprises in over 100 countries rely on AVEVA to help them deliver life's essentials: safe and reliable energy, food, medicines, infrastructure and more. By connecting people with trusted information and AI-enriched insights, AVEVA enables teams to engineer efficiently and optimize operations, driving growth and sustainability.

Named as one of the world's most innovative companies, AVEVA supports customers with open solutions and the expertise of more than 6,400 employees, 5,000 partners and 5,700 certified developers. With operations around the globe, we are headquartered in Cambridge, UK and listed on the London Stock Exchange's FTSE 100.

Learn more at www.aveva.com