Focus on impact

The Stages roadmap

Erich Meier

September 2024

KUGLER MAAG CIE
by UL Solutions

kVA
by UL Solutions
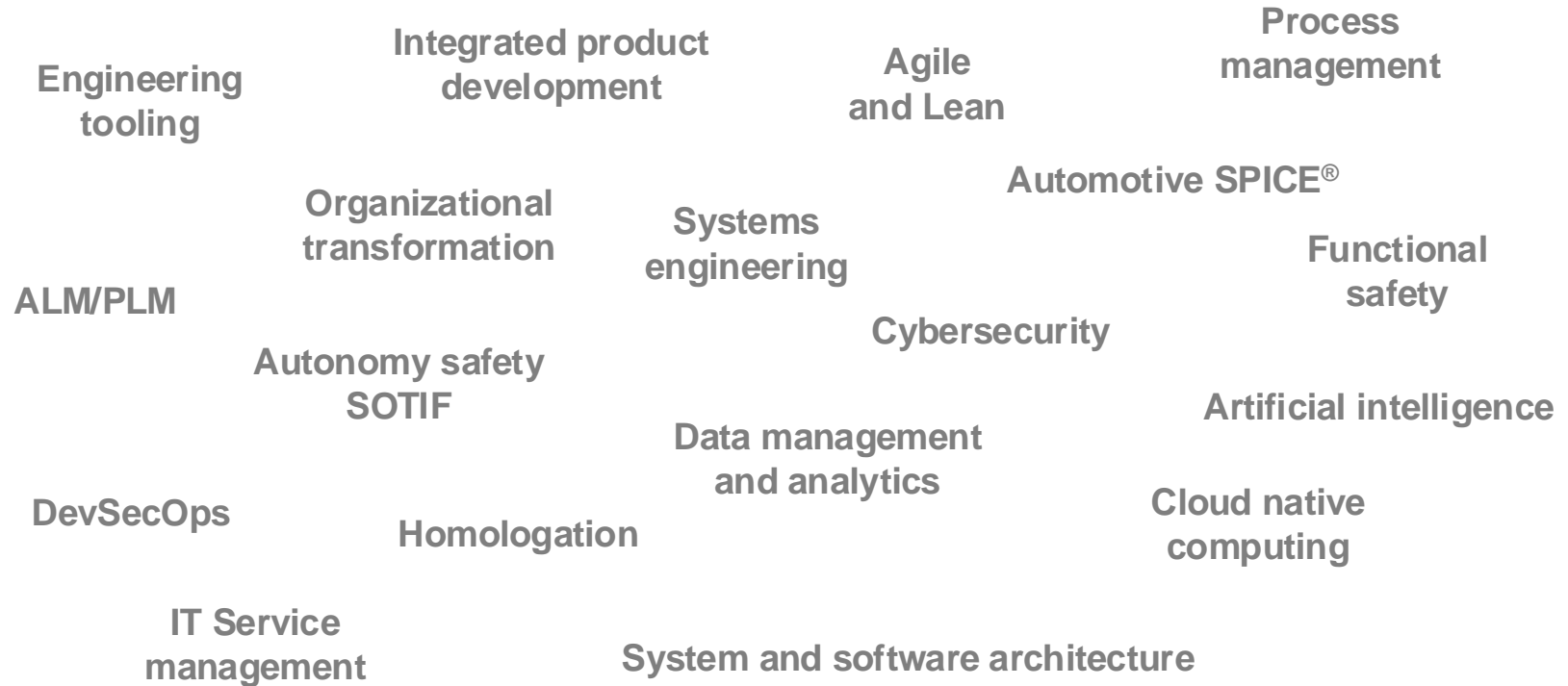
methodpark
by UL Solutions

Disclaimer

Certain statements in this presentation, which are not historical facts, are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These include statements regarding planned or potential product roadmaps, product development, product features and process updates. In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "would," "likely," "expects," "plans," "anticipates," "could," "intends," "targets," "projects," "contemplates," "believes," "estimates," "predicts," "potential," "continue" and variations of these terms and similar expressions, or the negative of these terms or similar expressions. These statements are neither promises nor guarantees and involve known and unknown risks, uncertainties and other factors that may cause actual results or performance to differ materially from those expressed or implied by the forward-looking statements, including, but not limited to, the risks described in our Quarterly Reports on Form 10-Q under the headings Risks Related to Our Industry and Business and Risks Related to Information Technology and Our Software, and the other risks discussed in our filings with the Securities and Exchange Commission (the "SEC"), as well as other factors described from time to time in our filings with the SEC. Such forward-looking statements are made only as of the date of this presentation. We do not undertake or assume any obligation to update publicly any of these forward-looking statements to reflect actual results, new information or future events.
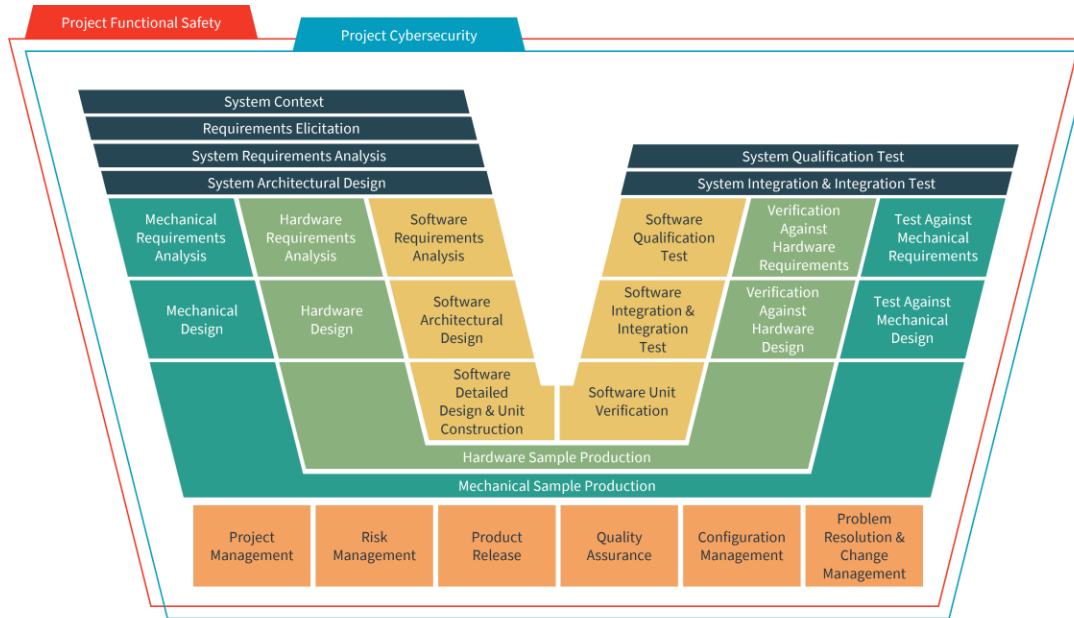
Bringing together excellence

Bringing together excellence

Engineering tooling

Integrated product development

Agile and Lean

Process management

Organizational transformation

Systems engineering

Automotive SPICE®

Functional safety

ALM/PLM

Cybersecurity

Autonomy safety SOTIF

Artificial intelligence

Data management and analytics

DevSecOps

Cloud native computing

Homologation

IT Service management
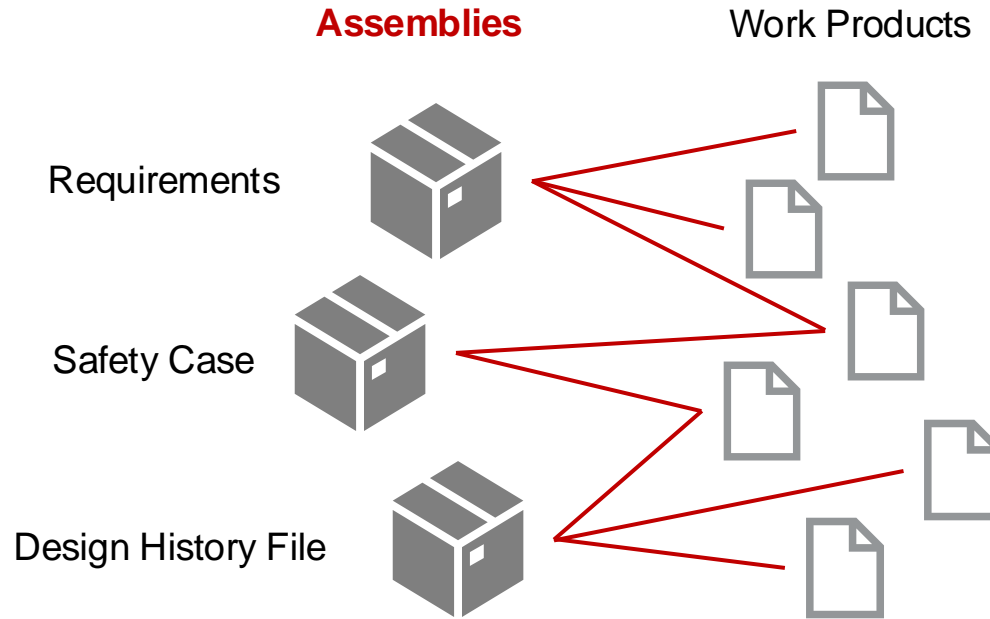
System and software architecture
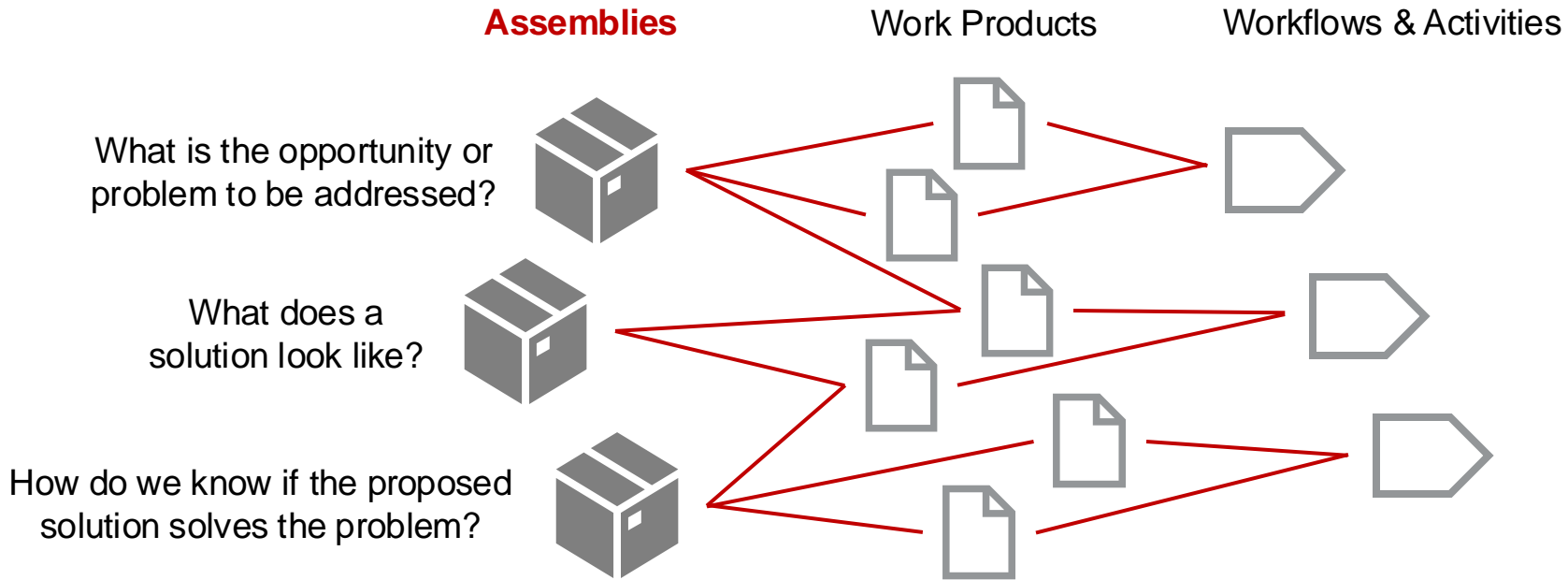
The Automotive Process Framework

- Process templates for system, software, hardware and mechanical development

- Complete mapping to ISO 26262, ISO 21434, and Automotive SPICE® project scopes

- Templates, practice and checklists supporting ISO 26262

- Enhanced system and software development and cybersecurity guidance

- Support for Essential Scaled Agile Framework (SAFe)

Develop automotive engineering processes with reduced time and cost

Focus on impact through work product orientation

Assemblies   Work Products

Requirements

Safety Case

Design History File

Focus on impact through work product orientation

Assemblies   Work Products   Workflows & Activities

What is the opportunity or problem to be addressed?

What does a solution look like?

How do we know if the proposed solution solves the problem?

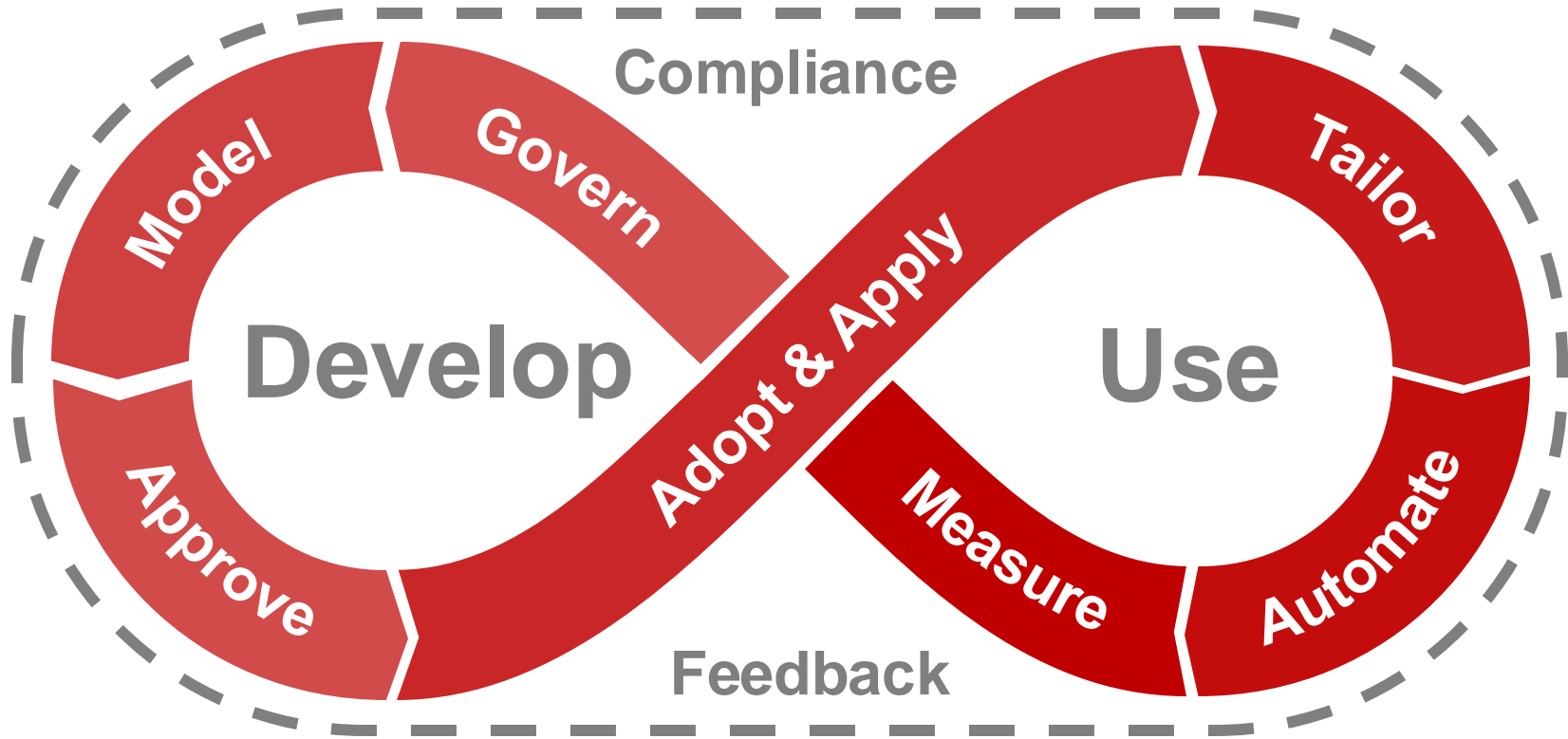**Work product orientation is already supported by unified configuration metamodel; it only requires a change in process development strategy**

Process management lifecycle

Internal process management survey

- 4 different usage levels
  - None: not done
  - Performed: is done, but not consistently, so results are unpredictable
  - Planned/organized: consistently done with predictable results
  - Standardized: consistently done in the whole target organization with predictable results

- Evaluation was done by Stages consultants

pability Level	Govern	Model	Approve
L0: None	none or largely unplanned	uncoordinated	no approval
L1: Performed t is done, but not consistently, results are unpredictable)	business goals and target compliance are defined	basic modeling guidelines exist	manual reviews are done
	process architecture, process organization and rollout/release plan exist	process version concept exists	
		process interfaces are being discussed	
L2: Planned/organized consistently done with redictable results)	process architecture is consistent	modeling guidelines are mostly adhered to	structured reviews and approval using automations

Survey results

Maximum and average usage per discipline
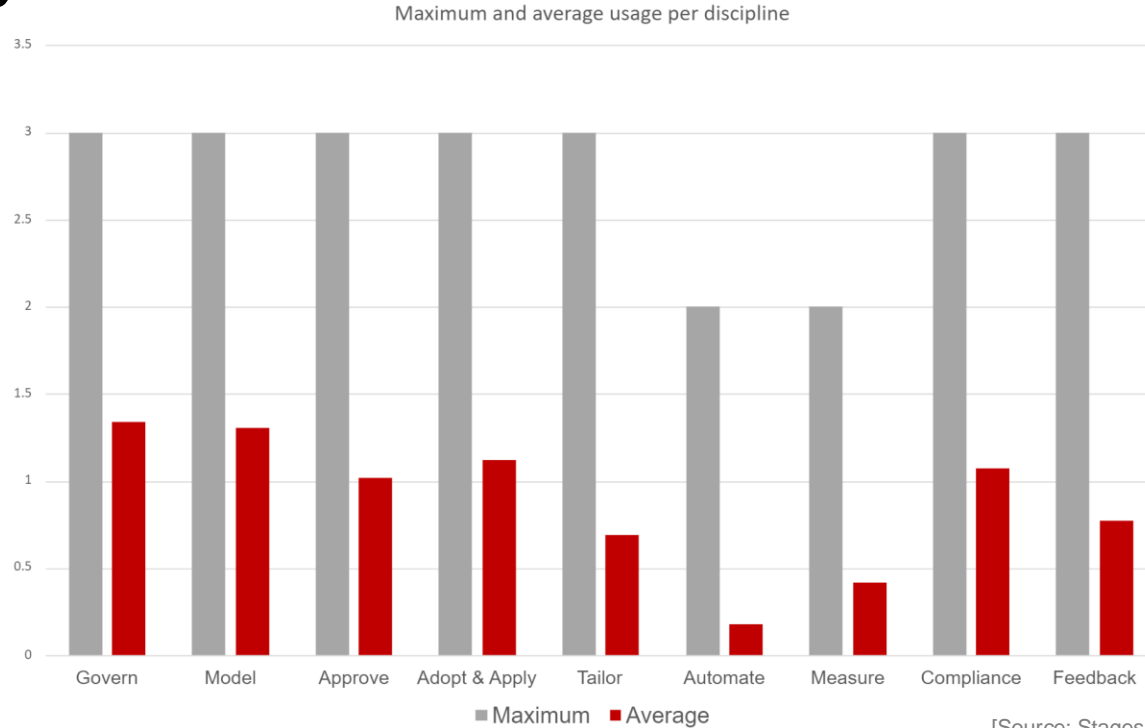
[Source: Stages consultants]

High impact areas have lower usage

Priorities for the Stages roadmap

Improve process impact	Improve process understanding	Improve process management efficiency

- Build and enhance features for process execution

- Improve process usage in other tools

- User experience

- User interaction

- Process modelling supported by AI

- Focus on business results via Stages Managed Service

Stages roadmap

We build
Now
We discover
Next
We consider
Later

States & quality level templates
Simplify the consistent use of states and quality levels for work products

7.11

Processes via Generative AI*
Generate and adjust descriptions for workflows, activities, roles, work products, tools. Generate workflow skeletons for specific processes.

7.11

Document management in PTC Codebeamer
Access project instance work products in PTC Codebeamer through Stages

7.11

Process execution in JIRA Cloud and IBM ELM
Create relevant process activities and work products as issues in JIRA Cloud and IBM ELM (RTC) 7.0.3

7.11

Automotive Process Framework
Support for Essential Scaled Agile Framework (SAFe),
Support for Automotive SPICE 4.0

Now

| Creator	Consumer
Delivery	Content

* Only available on Managed Service

Selected other Stages 7.11 Highlights

- Reminders and escalation support for process release automations

- System for Cross-domain Identity Management (SCIM) support

- Various user interface improvements
  - Process participant menu easier to find
  - Process interfaces menu redesigned
  - Search results contain element path

- Admin and security
  - Improved login page for Single Sign On
  - Multifactor authentication for local accounts
  - „fire once" admin jobs
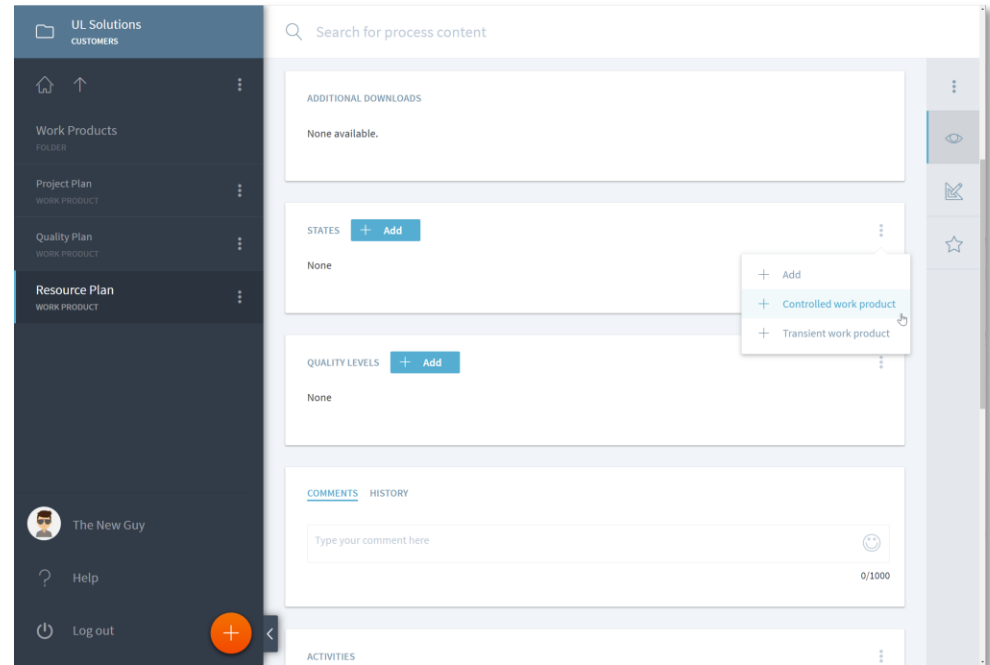
Stages roadmap

We build
Now

States & quality level templates
Simplify the consistent use of states and quality levels for work products

7.11

Processes via Generative AI*
Generate and adjust descriptions for workflows, activities, roles, work products, tools. Generate workflow skeletons for specific processes.

7.11

Document management in PTC Codebeamer
Access project instance work products in PTC Codebeamer through Stages

7.11

Process execution in JIRA Cloud and IBM ELM
Create relevant process activities and work products as issues in JIRA Cloud and IBM ELM (RTC) 7.0.3

7.11

Automotive Process Framework
Support for Essential Scaled Agile Framework (SAFe),
Support for Automotive SPICE 4.0

Now

We discover
Next

Improve end user navigation
Reduce efforts for end users to find processes relevant for them

Provide conversational interface
Allow end users to ask natural language questions to find relevant process content faster

Speed up process understanding
Reduce time for end users to orientate within relevant process content, e.g. by reducing clicks

Improve process filtering
Speed up understanding for end users about relevant processes, e.g. by filtering for end user context or use cases

Automotive Process Framework
Support for SOTIF (Security of the Intended Function), APQP 3rd Ed, Automotive Standard Lifecycle

Oct

We consider
Later

Improve process guidance
Enable process participants to comfortably edit process guidance
(like in Confluence)

Extend search scope
Allow end users to find information in guidance files by indexing DOC, PPT, PDF, etc.

Process content for AI LLMs
Feed process content into customer-specific large language models or other AI support databases to enable AI based access to engineering data

Stages 7.11 is planned for October 2024

Creator Consumer

Delivery Content

* Only available on Managed Service

Our focus is on...

1	Process understanding
2	Process execution
3	Responsible AI

Thank you!