# SIEMENS

**Unlocking new cloud-based business opportunities in an industrial company with a novel Continuous Quality Assurance approach**

siemens.com / siemens-advanta.com

# YOUR PRESENTERS

**Klaus Baumgartner**

Head of R&D Digital Buildings
Siemens Smart Infrastructure
Building Products

**Dr. Peter Fassbinder**

Principal Expert
PLM Process Innovation
Siemens Advanta Consulting

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# A new chapter in the history of Siemens AG
## Company setup as of October 1, 2020

## Businesses

| Digital Industries | Smart Infrastructure | Mobility | Siemens Advanta | Portfolio Companies | Siemens Healthineers[1] |

## Countries

## Service & Governance

1) Siemens Healthineers with its own setup for Countries and Service & Governance

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# Siemens Advanta

# WE ENABLE OUR CLIENTS TO <span style="color:yellow">UNLOCK THE DIGITAL FUTURE</span> BY LEVERAGING OUR ECOSYSTEM

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# Smart buildings

With the power of data and technology, smart buildings create an ecosystem where they interact, learn, and adapt to changing conditions and needs of different stakeholders along their life cycle.
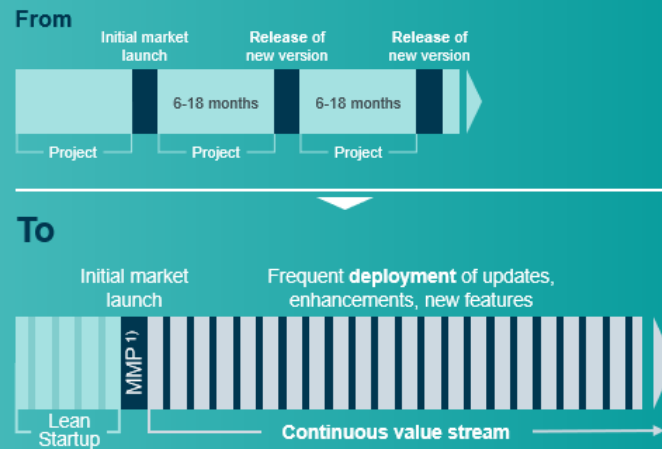
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# Where would you find our products within a Smart Building?
## Building products are in every space...



**Power**

**Safety**

**HVAC**

**Security**

**Lighting**

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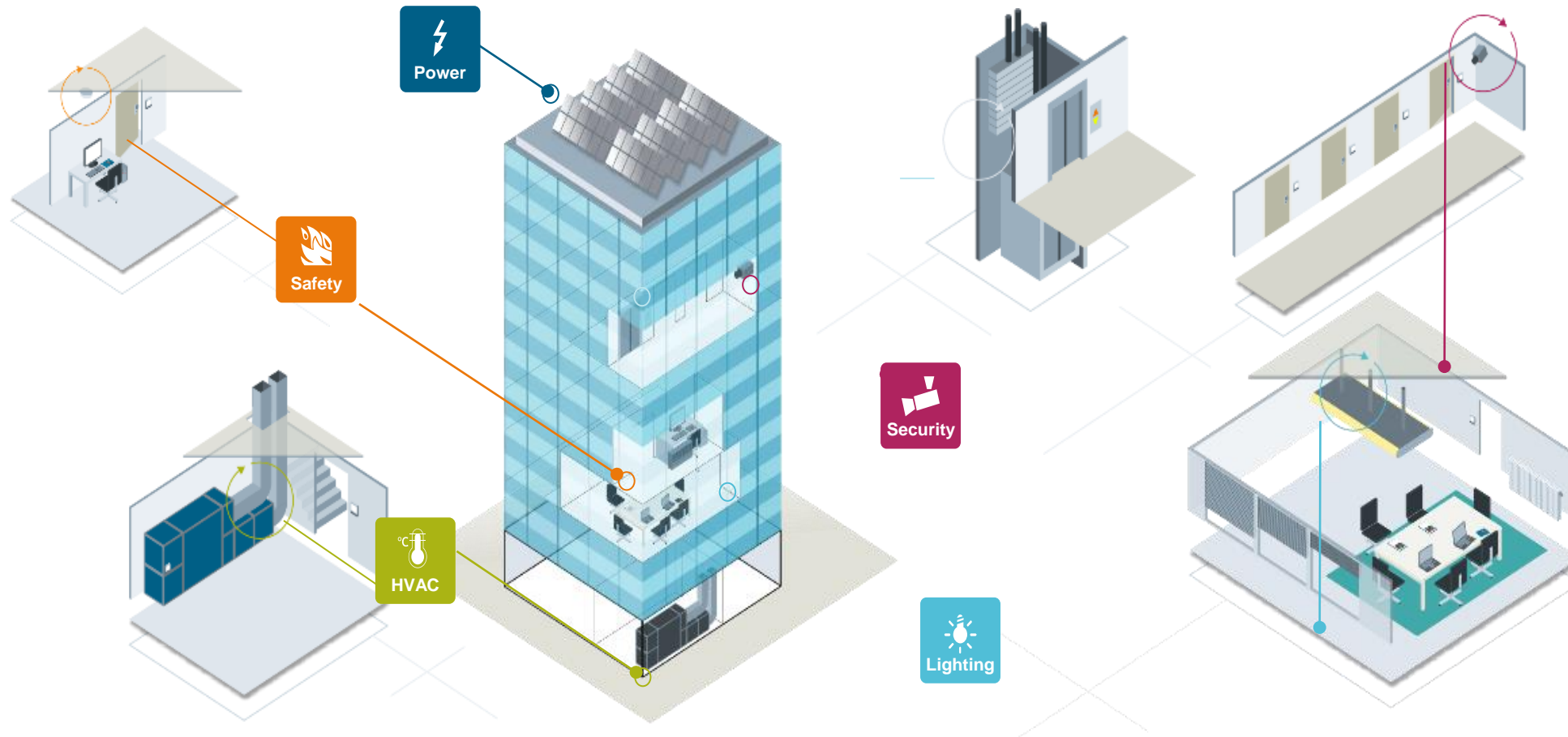
# The need for a Continuous Quality Assurance approach is driven by our vision to provide maximum benefits to our customer



Boost of digital capabilities changes markets and customer offerings radically. Connectivity grows constantly, new cloud solutions emerge, and mobile apps become part of the ecosystem. This opens up tremendous new possibilities, but also triggers an increasing demand of customers for continuous enhancements of products during their lifetime.

**From**

Initial market launch | Release of new version | Release of new version

6-18 months | 6-18 months

Project | Project | Project

**To**

Initial market launch

Frequent **deployment** of updates, enhancements, new features

MMP[1]

Lean Startup

**Continuous value stream**

Our vision is an organization that maximally exploits these possibilities by enabling a continuous flow of value to the customer – safely and securely.

Software updates and enhancements are developed, deployed and operationalized time-boxed with a high frequency, allowing short lead times and high flexibility.

Our Continuous Quality Assurance approach provides a transparent, real-time and easy-to-understand view on all quality aspects including technical and formal criteria, enabling fast and reliable deployment decisions with every sprint.

This enables us to master the paradigm shift from a project-based approach to a continuous value stream to the customer, while fulfilling our industrial quality aspiration and regulatory requirements.
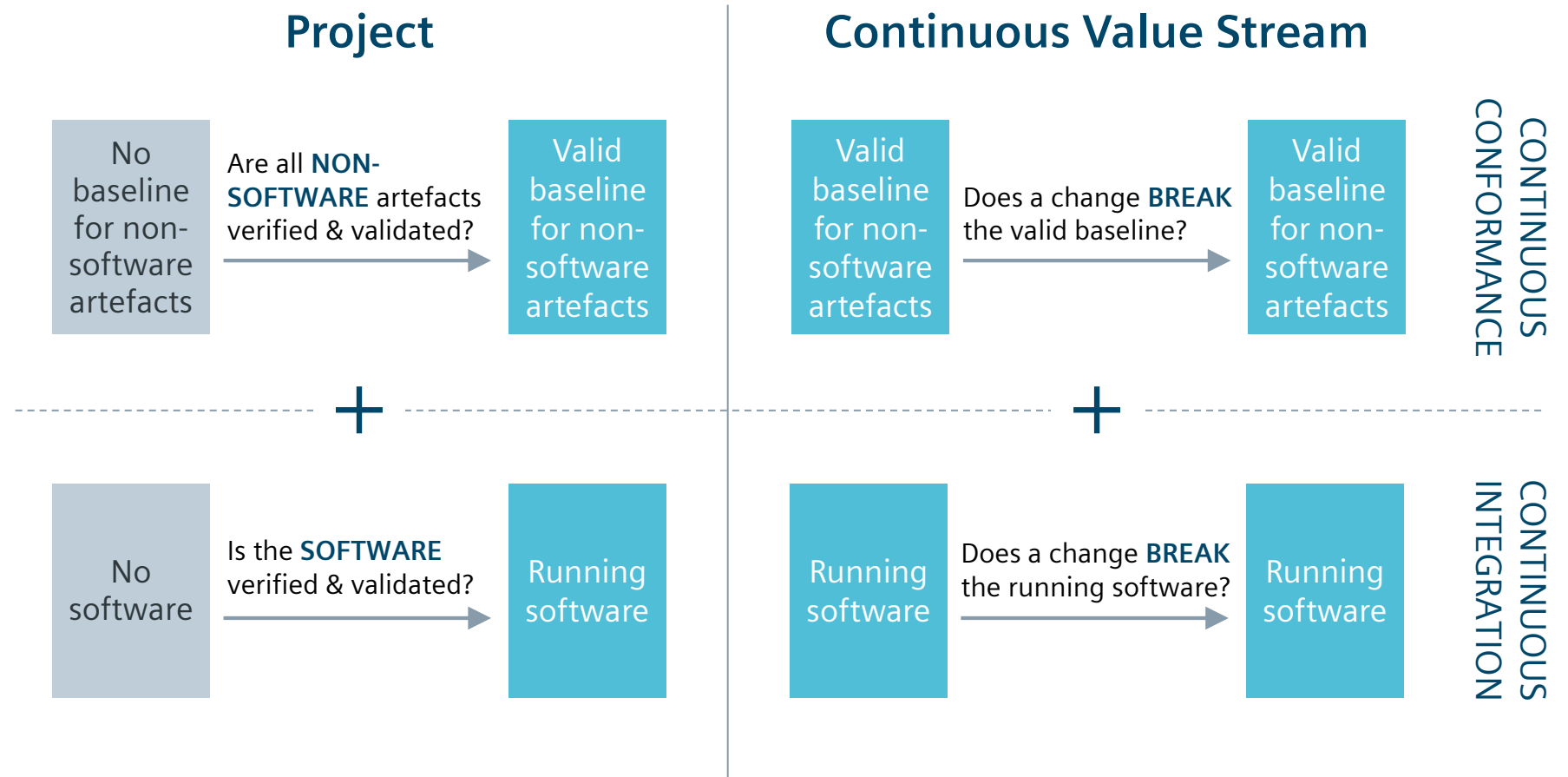
1) Minimal Marketable Product

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# CONTINUOUS QUALITY ASSURANCE

# FOR A CONTINUOUS WORLD

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# GREEN TO GREEN

or continuous everything

## Applying a successful mantra from software – beyond software

|  | Project | Continuous Value Stream | |
|---|---|---|---|
| **CONTINUOUS CONFORMANCE** | No baseline for non-software artefacts → Are all **NON-SOFTWARE** artefacts verified & validated? → Valid baseline for non-software artefacts | Valid baseline for non-software artefacts → Does a change **BREAK** the valid baseline? → Valid baseline for non-software artefacts | |

**+**

| No software → Is the **SOFTWARE** verified & validated? → Running software | Running software → Does a change **BREAK** the running software? → Running software |
|---|---|

**+**

CONTINUOUS CONFORMANCE

CONTINUOUS INTEGRATION

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# Deploying software requires not only Continuous Integration, but also Continuous Conformance

**CONTINUOUS PROGRAM**
Ensures DEPLOYMENT INDEPENDENT activities are addressed for the product

**CONTINUOUS MARKETING**
Ensures MARKETING activities are addressed at appropriate times

**CONTINUOUS CONFORMANCE**
Ensures the quality of NON-SOFTWARE artefacts

+

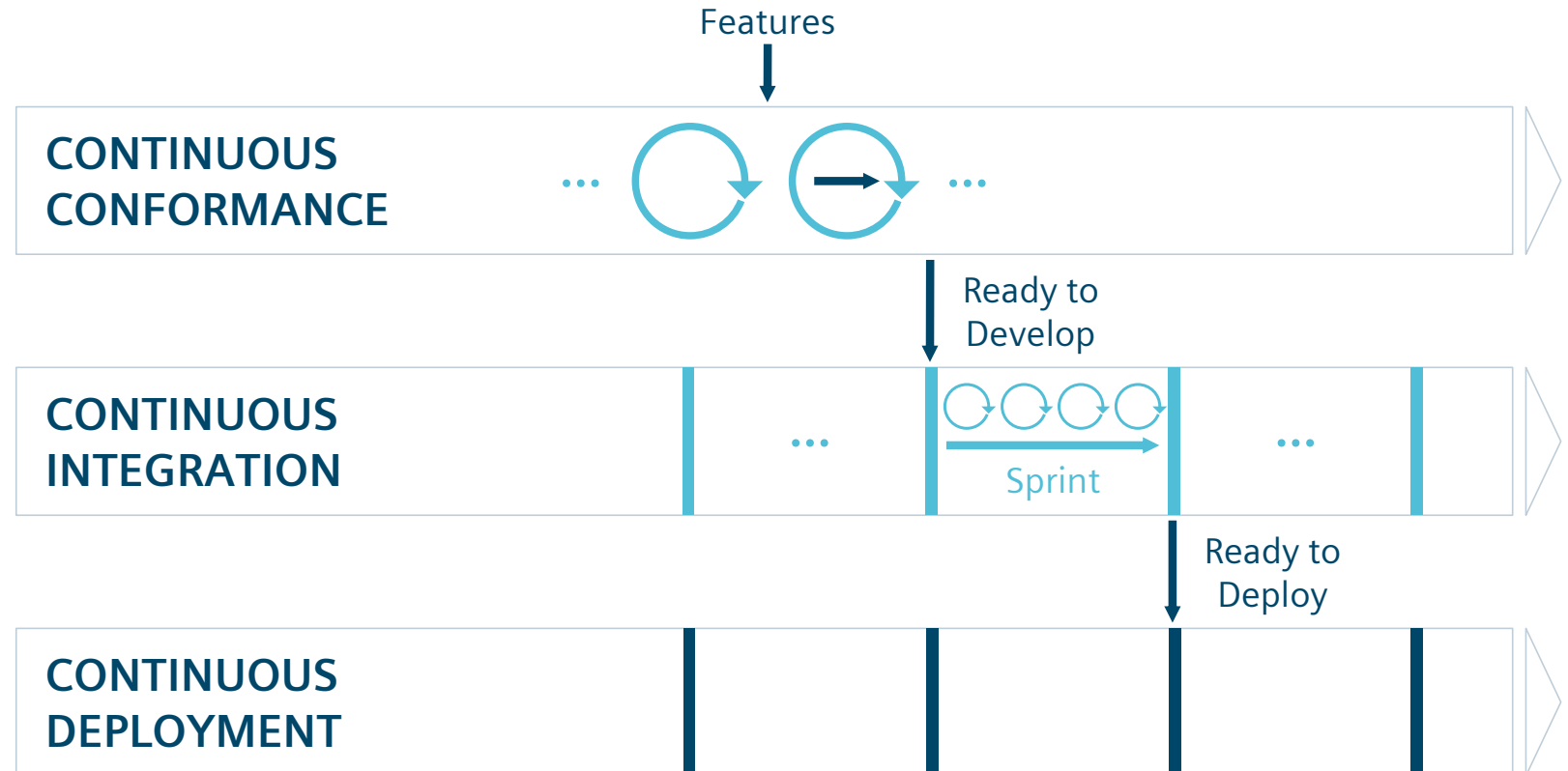**CONTINUOUS INTEGRATION**
Ensures the quality of the SOFTWARE
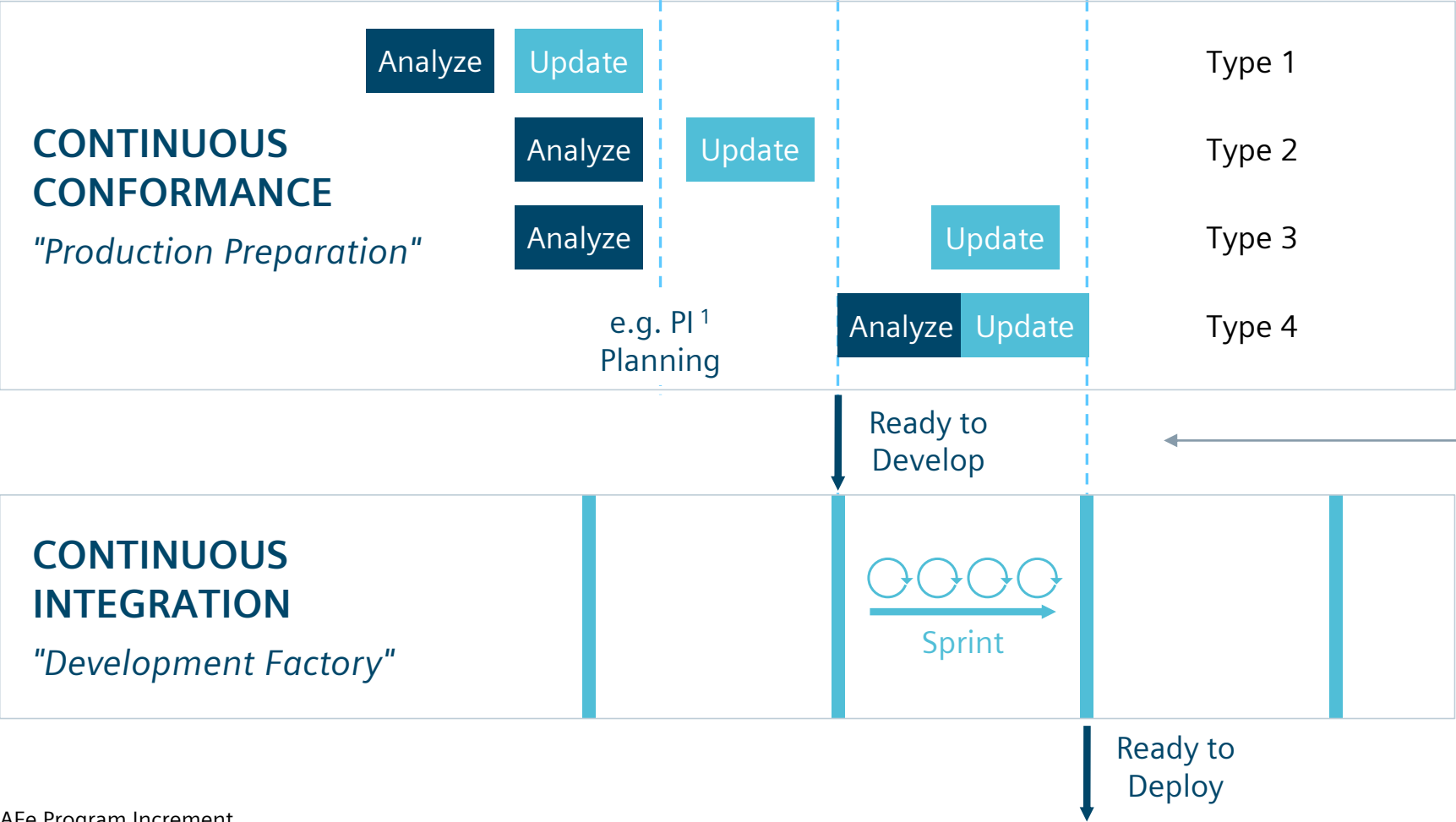
**CONTINUOUS DEPLOYMENT**

**CONTINUOUS QUALITY ASSURANCE**

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# Continuous Conformance enables high deployment frequencies, while ensuring industrial quality

**CONTINUOUS CONFORMANCE**

*"Production Preparation"*

| Analyze | Update | | | | Type 1 |
| Analyze | | Update | | | Type 2 |
| Analyze | | | Update | | Type 3 |
| | | | Analyze | Update | Type 4 |

e.g. PI [1] Planning

Ready to Develop

**CONTINUOUS INTEGRATION**

*"Development Factory"*

Sprint

Ready to Deploy

|  | Analyze | Update |
|--------|:-------:|:------:|
| Type 1 | ✓ | ✓ |
| Type 2 | ✓ | ✓ |
| Type 3 | ✓ | — |
| Type 4 | — | — |

1) SAFe Program Increment

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# Continuous Conformance is manageable Example

## Team A

Feature →

Continuous Conformance Criteria

required updates: **30%**

## Team B

Feature →

Continuous Conformance Criteria

required updates: **12%**
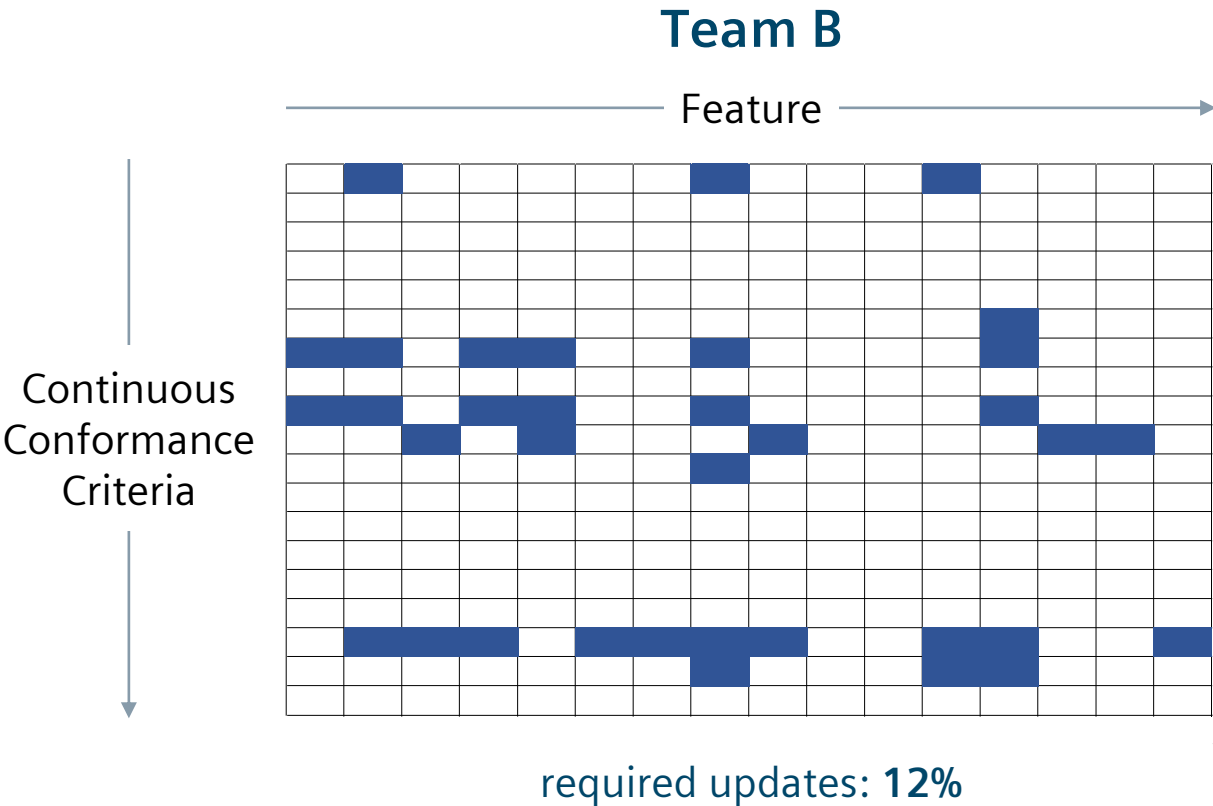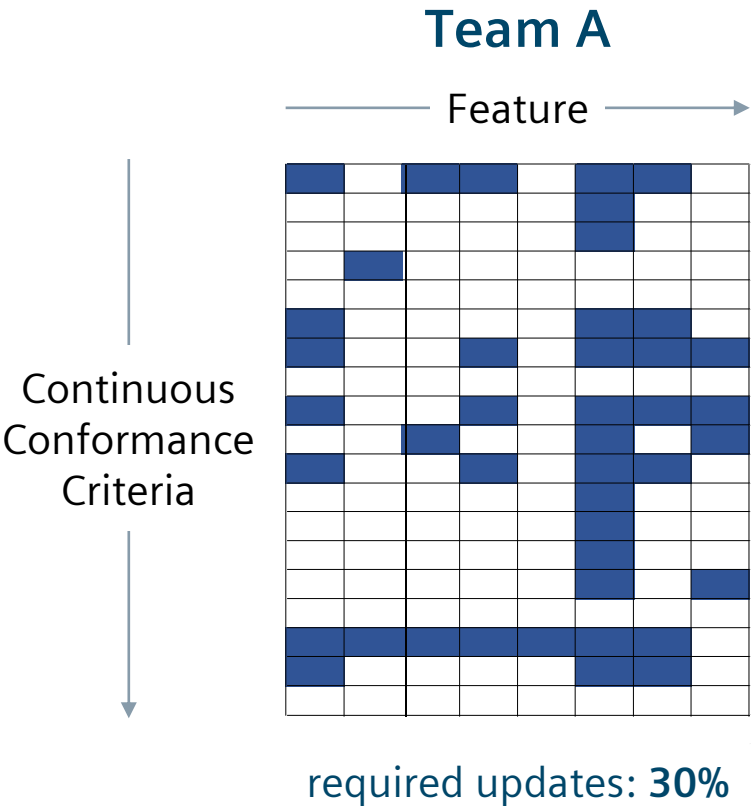
■ = for this feature the non-software artefact of the Continuous Conformance criteria has to be updated

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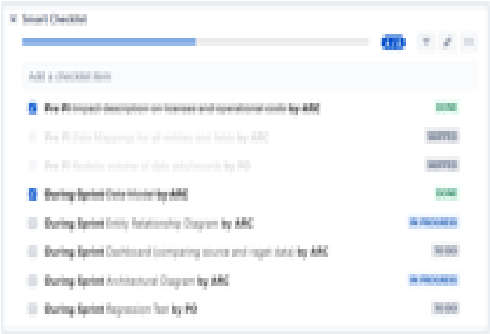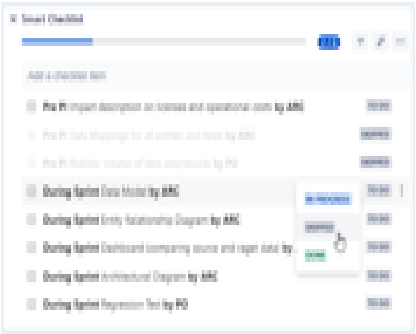# Management of Continuous Conformance in the standard tool chain is critical for success

Feature

User Story

User Story

...

Continuous Conformance Story

Continuous Conformance Story
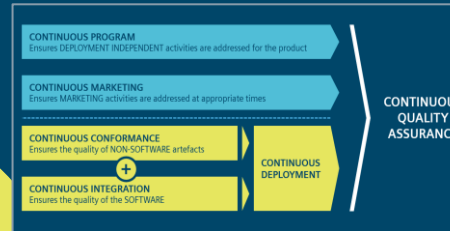
...
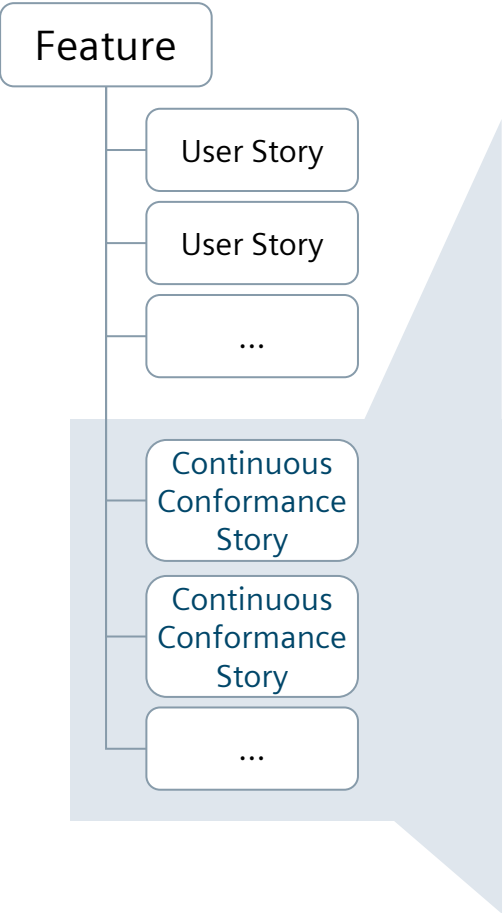
**RTC** [1]

**JIRA**

**Azure DevOps**

Analysis

Update & Tracking

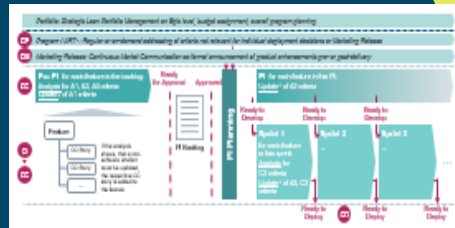**SIEMENS**

Vision
Change Management
Coaching & Roll-Out

Deployment Strategy
Continuous Conformance Criteria
Other Criteria

CONTINUOUS
QUALITY
ASSURANCE

Roles & Responsibilities
Meetings
Processes

Tool Integration
Cont. Conf. & Cont. Int.
Dashboards

SUSTAINABLE
IMPLEMENTATION

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# YOUR
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Whitepaper: 'Continuous
Delivery and DevOps in
industrial environments'
https://sie.ag/whitepaper-devops

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