

Enterprise Product-Level Information Development and Deployment on Aras Innovator

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Abstract

This presentation outlines the approach, process, and methods that Carestream Health, Inc. and Wipro Technologies are using to implement a Global Enterprise PLM System based on Aras Innovator.

Topics include:

- Snapshot of Carestream Health & Wipro Technologies
- Why implement now? Current state drivers...
- Project Structure
- Development Framework
- Development & Acceptance Metrics
- Deployment Strategy
- Challenges, Lessons Learned

Presenters

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Carestream Health – Who We Are

An independent company with a proven track record and \$2.5 billion in revenue

A world leader in:

- Medical imaging ... digital and film
- Healthcare information solutions
- Dental imaging and dental practice management software
- Molecular imaging
- Non-destructive testing



Who We Are

Approximately 7,300 employees serve customers in more than 150 countries worldwide.

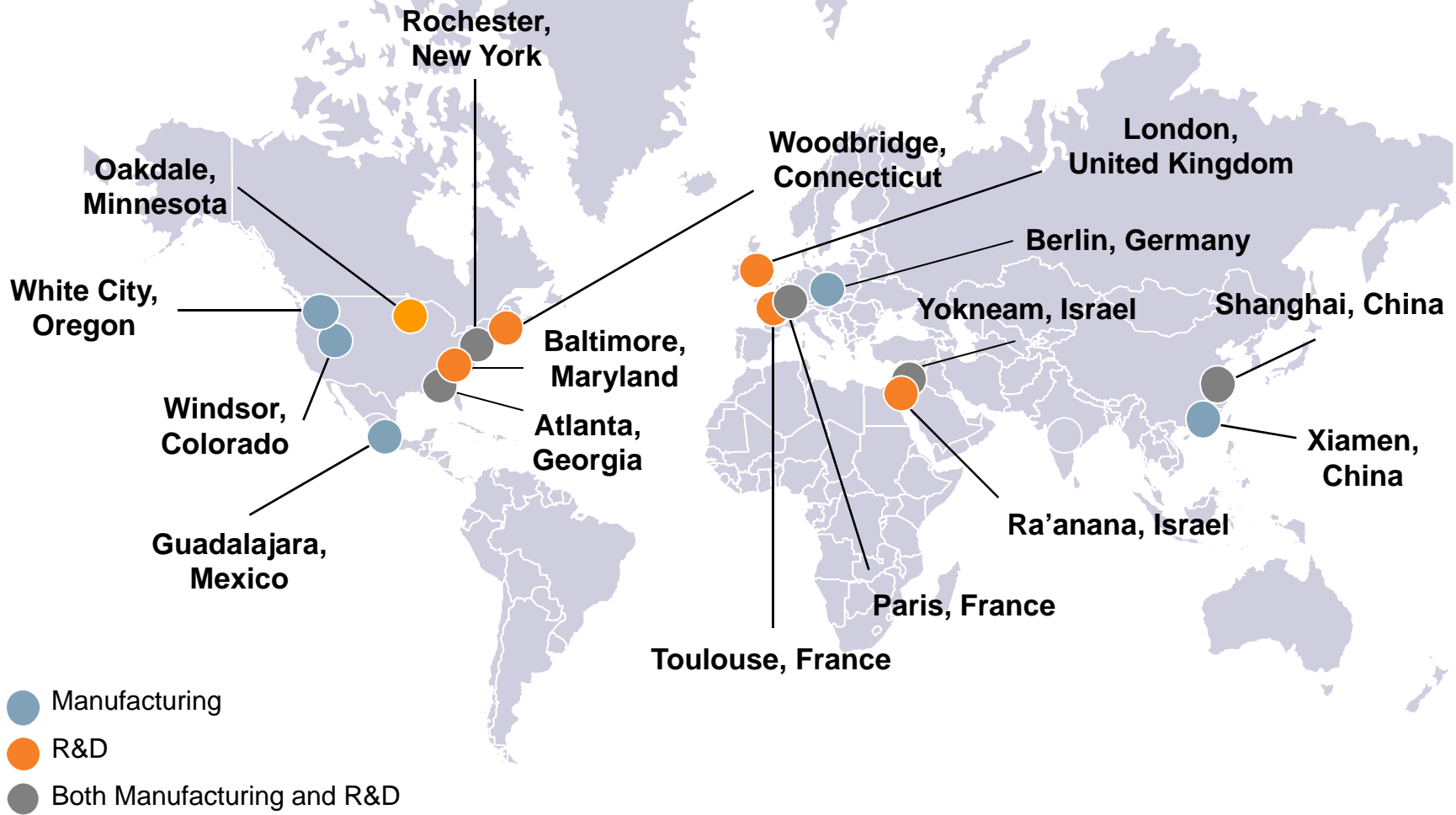
We hold more than 1,000 patents for technology and intellectual property.

Our products are at work in 90 percent of hospitals worldwide.



Who We Are

A **global company** with Manufacturing and R&D locations around the world

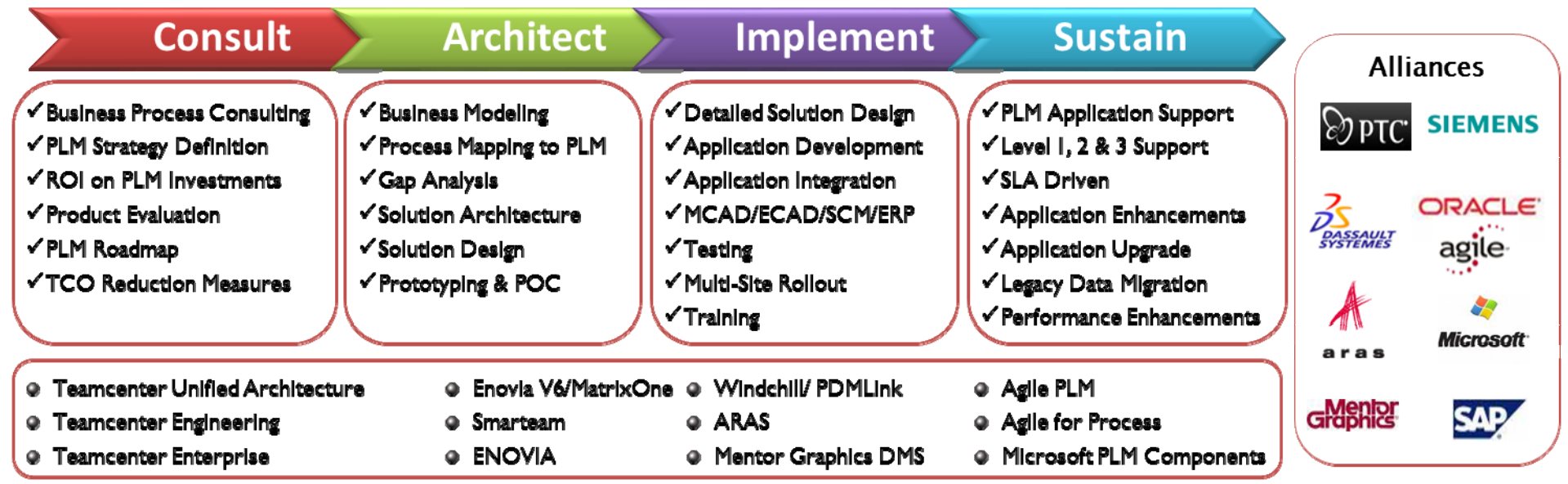


Wipro Ltd. – Overview

- **\$6 Billion in Revenues (IFRS figures for FY 2009-10)**
- **Global Footprint**
 - Established in 1946
 - Presence in 54 countries
 - Headquartered in Bangalore
- **Sustainability Leadership**
 - 2006, 2007 & 2008 CII's National Award for "Excellence in Energy Management" for the most energy-efficient facilities
- 2009 – UN Habitat Award
- **Consistent Growth**
 - CAGR of 29% in the last 6 years – creating value for all its stakeholders
- **110,000+ employees worldwide from 67 nationalities**

IT Products & Services, BPO, R&D , Testing, ERP & Consulting		Consumer & Institutional Products	Infrastructure Engineering	EcoEnergy
Wipro Technologies	Wipro Infotech	Wipro Consumer Care & Lighting	Wipro Infrastructure Engineering	Wipro EcoEnergy
US, Europe, Japan, Australia & South-East Asia	India & Middle East	Personal Care, Baby Care & Wellness Products; Lighting ; Furniture & Switches	Hydraulic Cylinders & Products; Ultra Pure Water Treatment Systems & Solutions; Clean Energy Systems & Solutions	Energy Management Services & Consulting, Green Infrastructure design and development, Renewable Energy Solutions
Revenue 89 %		Revenue : 8 %	Revenue : 3 %	
				

Wipro PLM Practice: Overview



Domain Expertise

Automotive & Aerospace	Life-Sciences & Pharma	Hi-Tech, Semiconductor & Consumer electronics	Telecom	Industrial Manufacturing	CPG, Retail & Media
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Business Process Expertise

<ul style="list-style-type: none"> ■ New Product Introduction ■ Collaborative Global Design ■ Global Program Management 	<ul style="list-style-type: none"> ■ Engineering Design Management ■ Engineering Change Management ■ Document Management 	<ul style="list-style-type: none"> ■ Product Configuration ■ Regulatory Compliance ■ Supplier Sourcing Collaboration
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Why Now?

- We continue to globalize R&D and Manufacturing to meet the growth needs of our company
- Legacy systems were outdated and not globally scalable
- Complexity in the organization is increasing
- Business is built on a network of legacy-point solutions that originated from local investment, divestitures, mergers, and acquisitions
- R&D Effectiveness team had exhausted leveraging existing systems and driving major sites to them, gaining critical mass for a corporate upgrade
- Information Technology Organization had developed into a strategic partner with new senior management

Project Timeline

May 2009 – Dec 2009	Project definition Business case development Project approval Vendor evaluations and selections
Jan 2010	Initial requirements development started with Wipro
Feb 2010 - Present	Project execution

Project Structure & Governance

Project Charter

Defines:

- Problem
- Solution
- Costs
- Benefits
- Scale
- Scope
- Deliverables
- Schedule
- Team
- Governance

Basis for Project Approval from Executive Leadership

Project Governance

Role	Decision Rights
Executive Board	
Executive Sponsor	Gate Passage, Functionality, Cost, Schedule, Project Cancellation
CIO	Corporate Prioritizations and Governance, ELT Communications
CTO	
Steering Committee	
Five Business CTOs or Directors	Business Unit Deployment
Regulatory Affairs Director	Regulatory Compliance
Business Managers	
Ten Business Unit leaders	Subject Matter Expert Availability

Understanding Decision Rights is key to project success!!!

Project Team

Position	Role
Project Manager	Overall Project Management
Technical Project Manager	Leads the technical development from the Carestream side
Training Project Manager	Leads the training development, planning, and coordination
IT Project Manager	Coordination of IT resources and budget tracking
Wipro Project Manager	Coordination of Wipro activities
Eight Individual Contributors	Requirements Development, Data Migration, Testing
Approximately 55 Subject-Matter Experts (SMEs)	Requirements Development, Testing

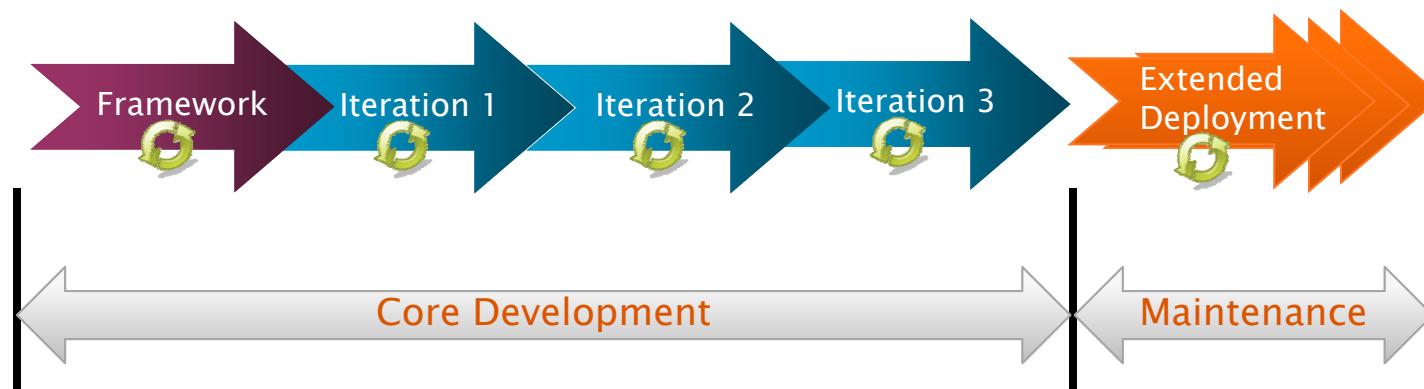
Wipro PLI Project Team

Position	Role
On-Site Project Manager (1)	Overall project management of Wipro activities and coordination
Solution Architect (2)	Lead the solution architecture, process mapping
Technical Leader (1)	Leads the solution design, development and testing
Developers (8)	Development and unit testing
Test Leader (1)	Leads the test planning, execution, and reporting
Testers (4)	Test case development and functional testing
Configuration & Release Manager (1)	Overall configuration management control and release management

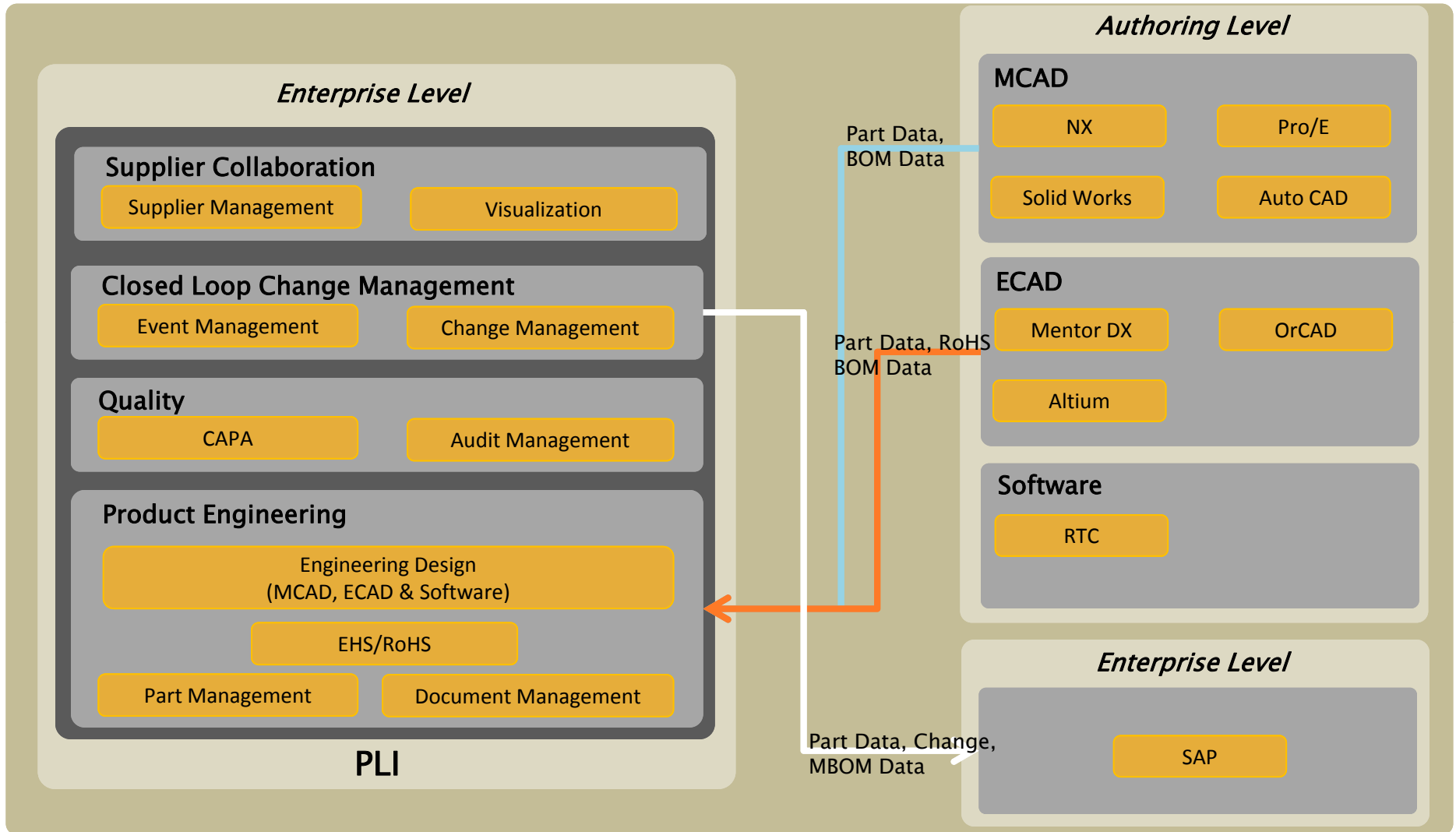
Development Framework

Agile SCRUM – An iterative, incremental release model

- Identify framework components
- Perform work package breakdown
- Identify number of iterations to develop the work packages
- Define, design, develop, and test
- Release work package for Subject Matter Expert review, demo & training
- Receive feedback as functional/software defects, enhancements, change requests
- Implement feedback
- Perform performance test
- Perform acceptance test
- Release to production



Solution Framework



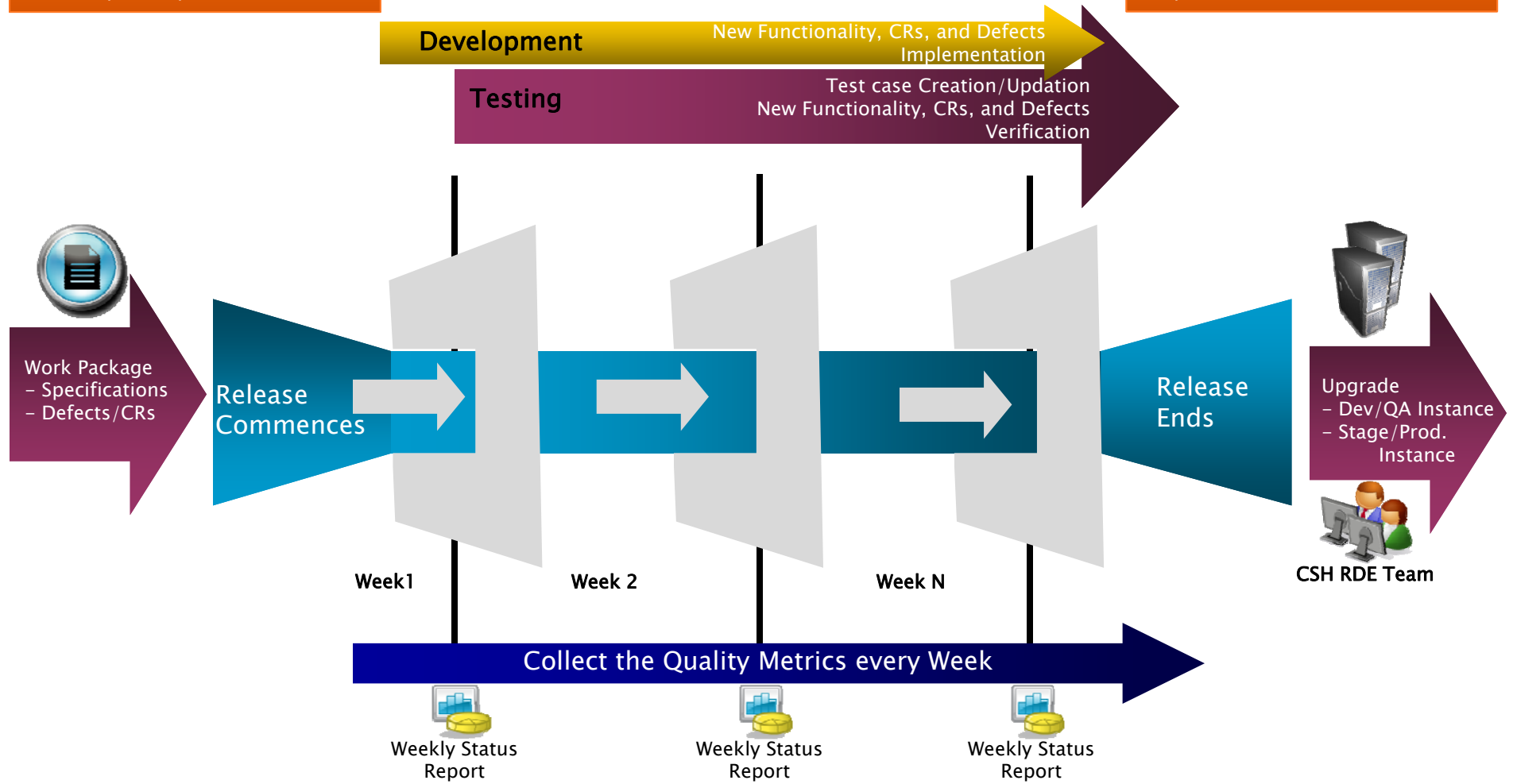
Release Scheduling Process

Entry Criteria

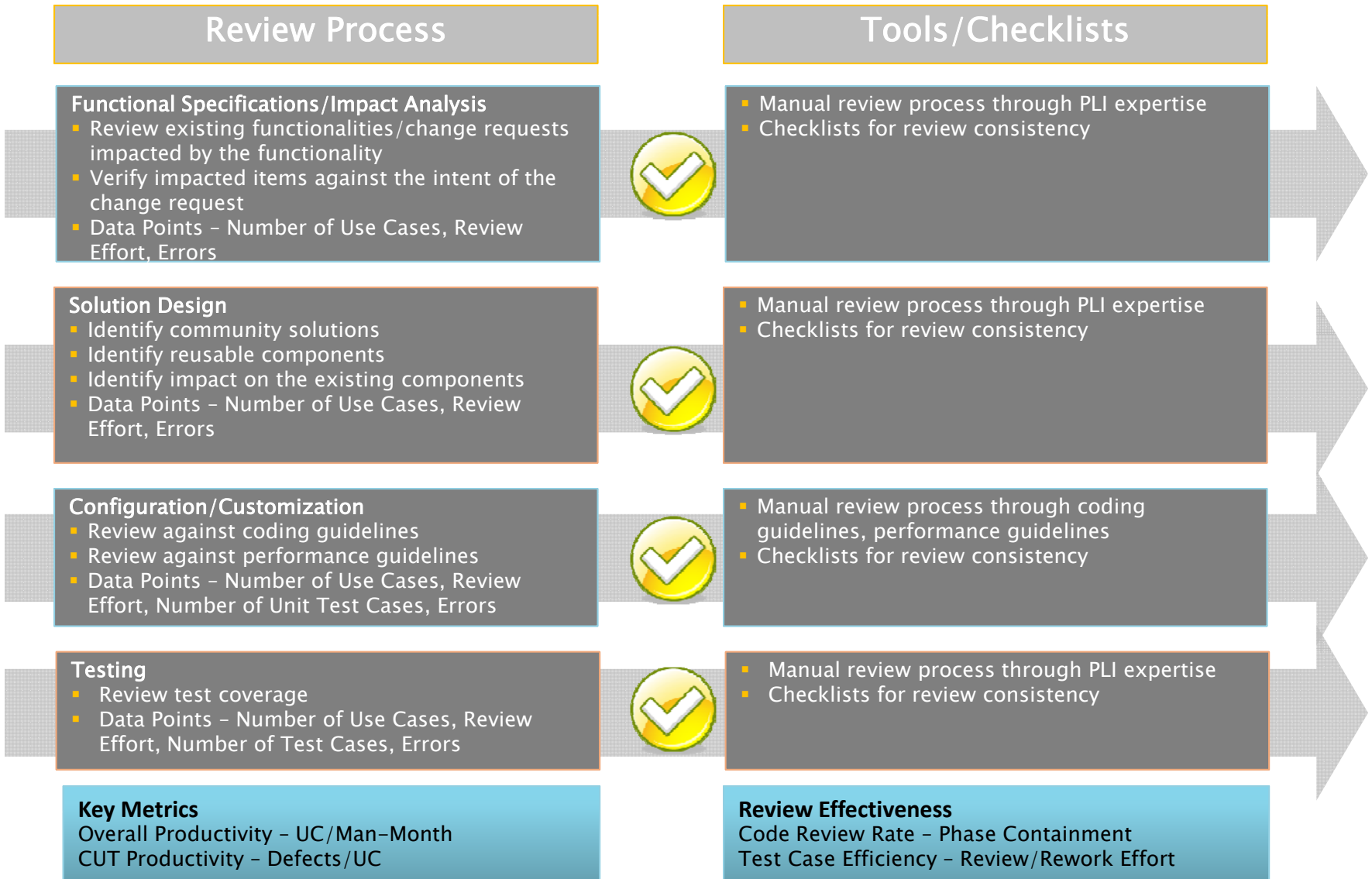
- Conduct CCB/SCRUM meeting
- Develop specs/impact analysis
- Plan solution reviews
- Develop build plan for release

Exit Criteria

- Verified software
- Updated Specifications/analysis
- Updated test cases
- Updated test results

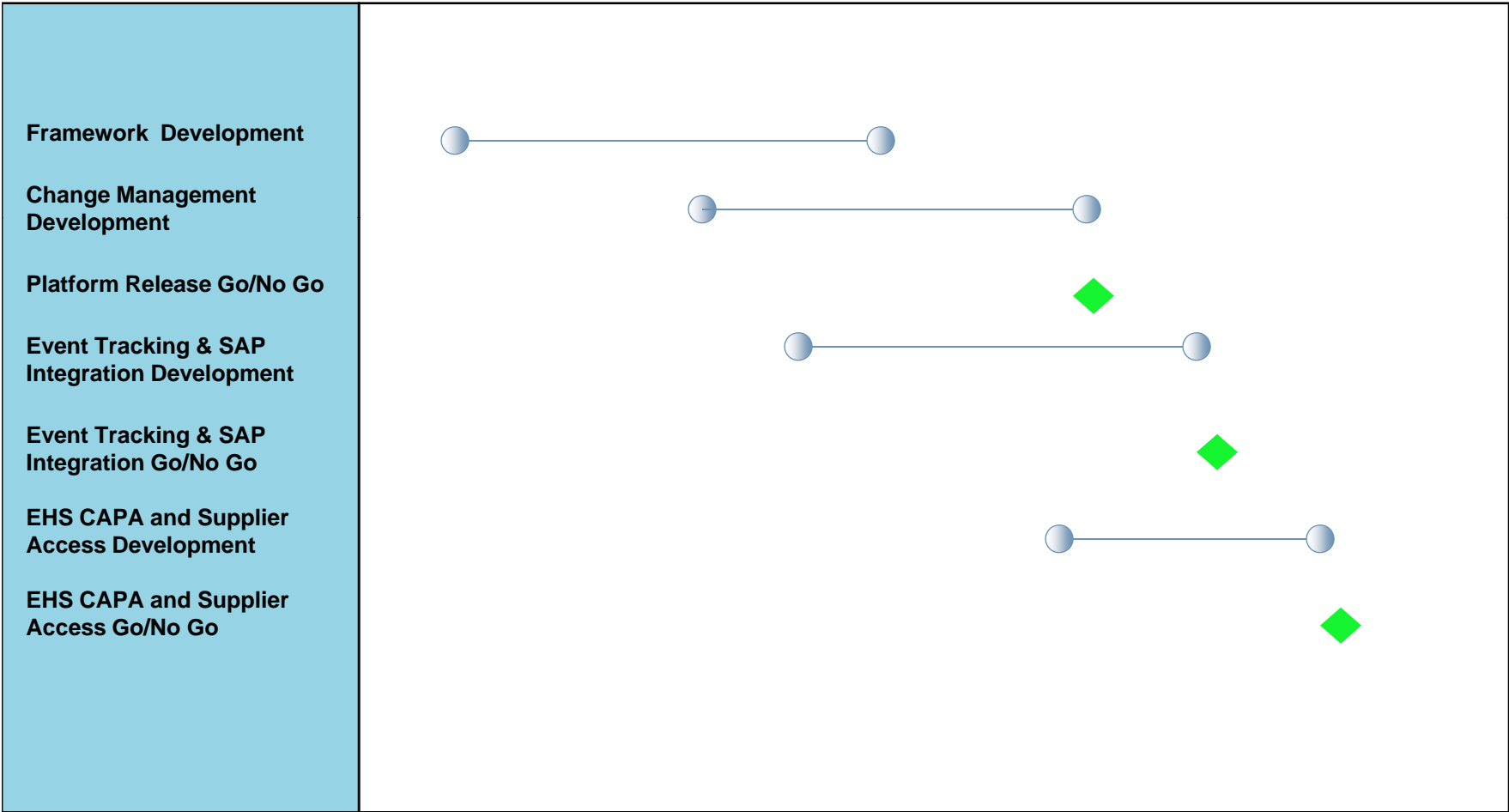


Reviews & Metrics



Carestream Health Product-Level Information

Original Development and Deployment



Project Realization

- Requirements gathering and review of information is difficult
- Deployment planning across a global organization
 - Businesses asked us to avoid deployments of major changes during certain times of year
- Underestimated training
- Decided to re-plan project to incorporate
 - Deploy base functionality
 - Retire legacy commercial parts database
 - Socialize the environment
 - Understand deployment issues
 - Deploy core functionality

PLI Releases

Release 1

This release provided:

- Commercial Parts Requests
- Commercial Parts Library (Mentor DMS Replacement)
- Mentor ECAD Integration

Release 2

This release provided:

- Enhancements and fixes to Release 1

PLI Releases

Release 3

This release provides:

- CAPA database, workflow
- Audit management
- ECR, ECN, ECI, DA
- Bidirectional integration with SAP
- ECAD, MCAD integration
- Integration of RoHS data
- Event tracking and integration with engineering change management
- Part number requests

Deployment phased in by Business, Project, Team, etc.

PLI Releases

Release 4

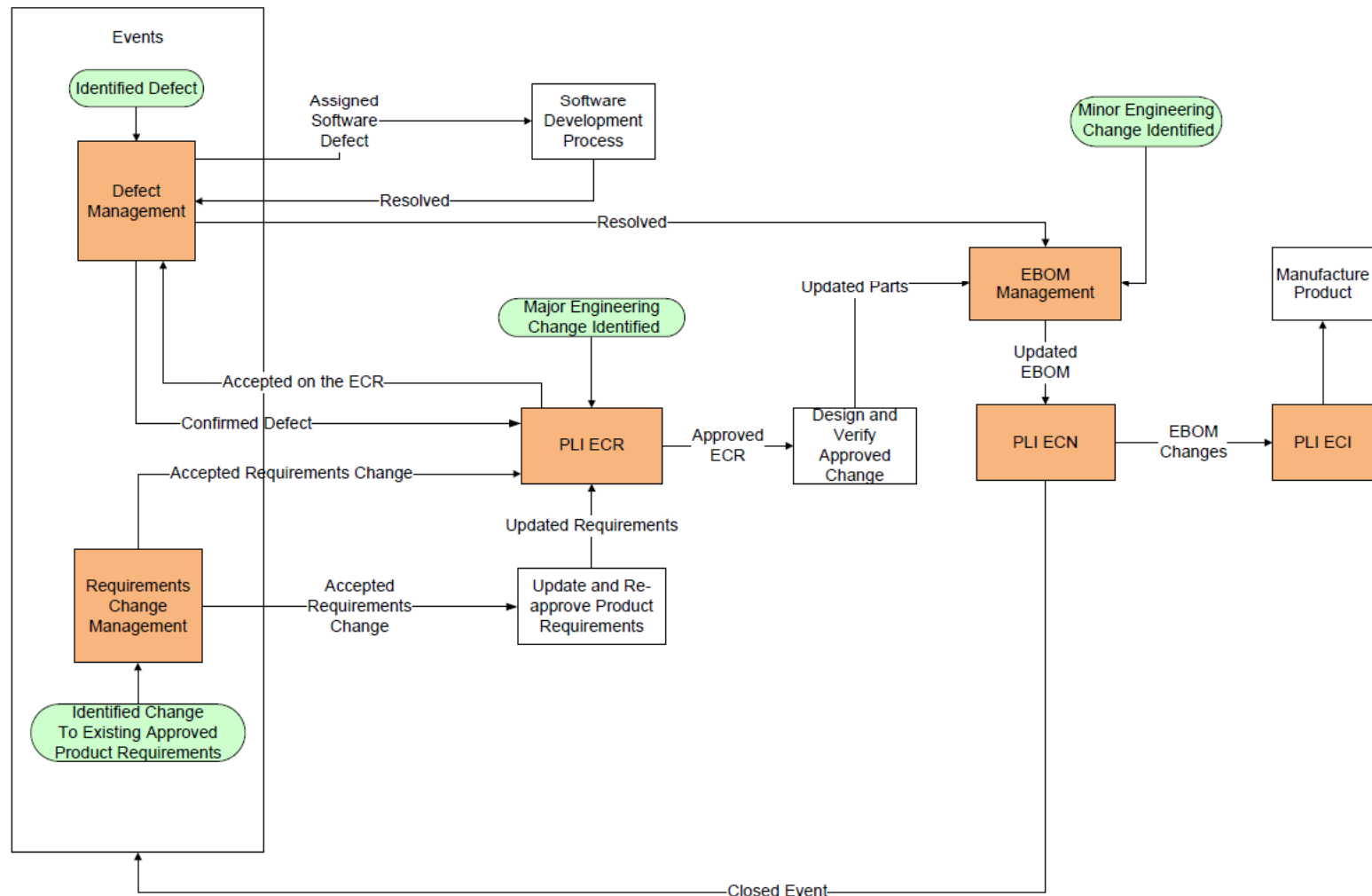
This release provides:

- Feature-function enhancement requests
- Visualization capabilities utilizing Actify
- Supplier integration with quoting and engineering change management

PLI Closed-Loop Change Process

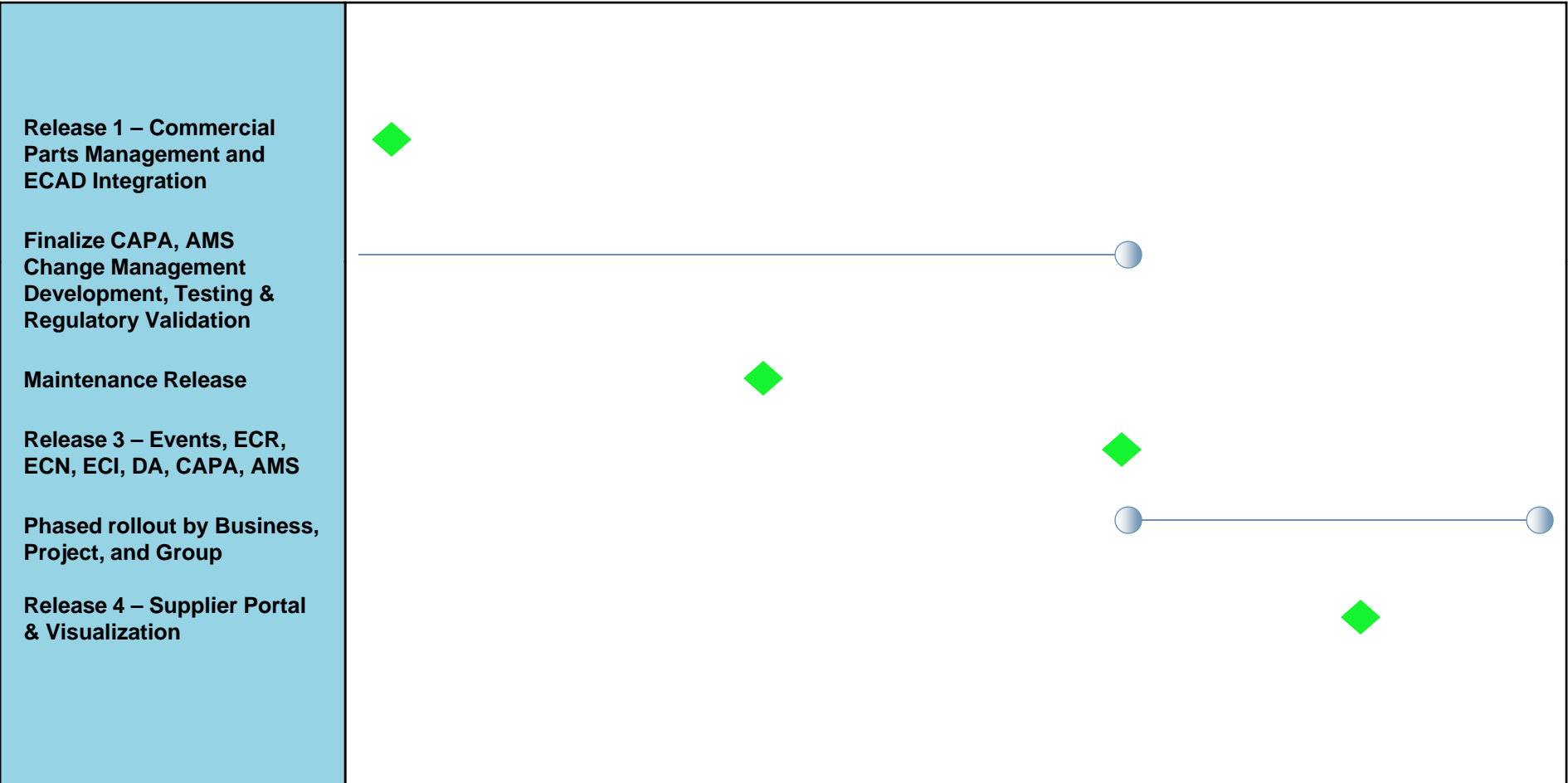
Engineering Change Management Process
(high level overview)

V4



Carestream Health Product-Level Information

Current Development and Deployment



PLI – Challenges

Development Challenges

- Developing requirements to the correct level of detail
- Using a 3rd party partner for requirements and test documentation often required significant review and re-review effort, that takes longer than expected.
- The review, tracking changes, and acceptance process for the documentation is labor intensive and takes longer than expected to do it right.
- Getting adequate feedback across the right cross section of end users
- Scheduling time with the Subject Matter Experts was difficult due to intense product development schedules (demos, requirements, testing, etc.)
- Tracking all the issues and resolutions

Deployment Challenges

- Parallel deployment in the USA and China as products are being concurrently developed in both sites

PLI – Best Practices

Best Practices (requirements, implementation, etc.)

- As part of the early requirements effort, map out the business processes to be supported using swim-lane diagrams, and review with end users to ensure a clear understanding what's needed.
- Document the data requirements in detail (field behaviors required at each state transition).
- Make the goal reasonable. Try to break it up into reasonable results.
- Plan the training early in the process.
- Have the training reviewed by people that are not very familiar with the product.
- Challenge processes that don't make sense or add no value.

PLI – Best Practices

Best Practices (development)

- Developed Aras Innovator-specific guidelines for configuration and customization.
- Developed performance guidelines.
- Developed configuration/customization report documenting the customizations to the OOTB files for future upgrades.
- Sandbox-based review process
- Identified performance-sensitive use cases for continuous performance monitoring across iterations/releases.
- Identified critical-use cases for smoke testing scenarios.

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