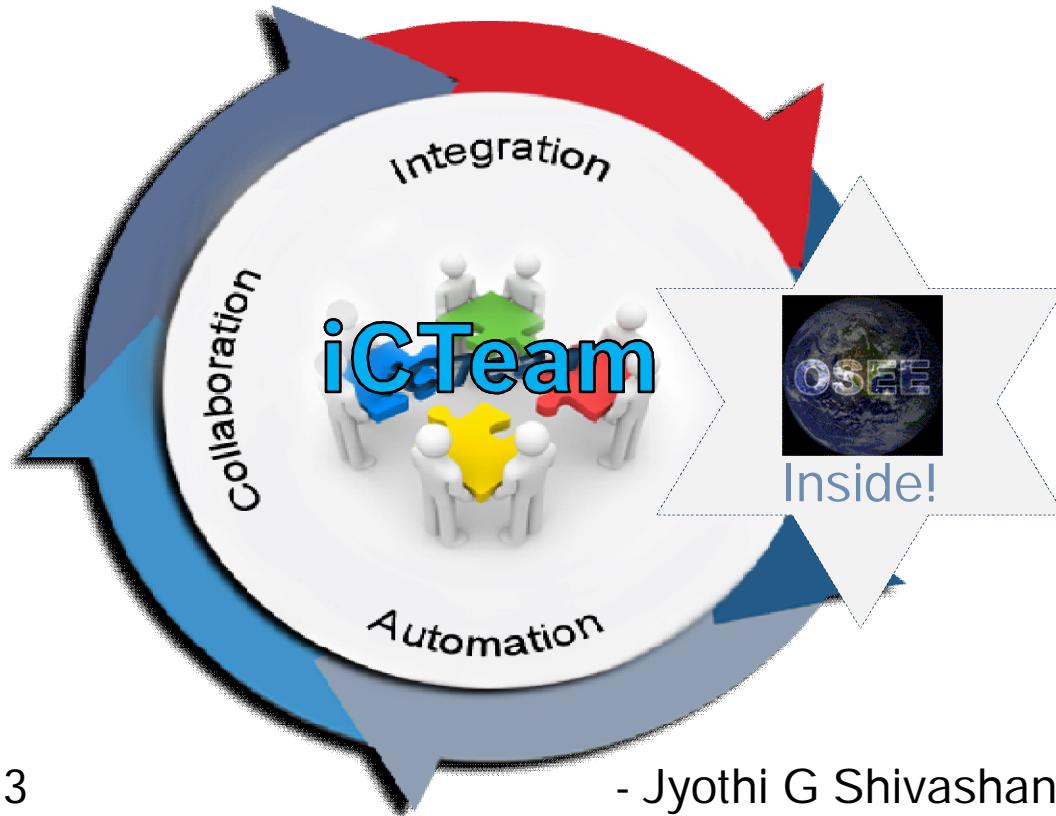




iCTeam, a confluence of parallels



Eclipsecon 2013

26 Mar 2013 16:15 – 16:45

Room : Back Bay

- Jyothi G Shivashankar
(Robert Bosch Engineering and Business Solutions)

- Ryan D Brooks
(The Boeing Company)



BOSCH



Agenda

1

The parallel industries in Embedded SW Engineering

Automotive

Aerospace

2

The parallel Collaboration concepts

Eclipse

AUTOSAR



This ALM is a confluence of two parallels

Aerospace

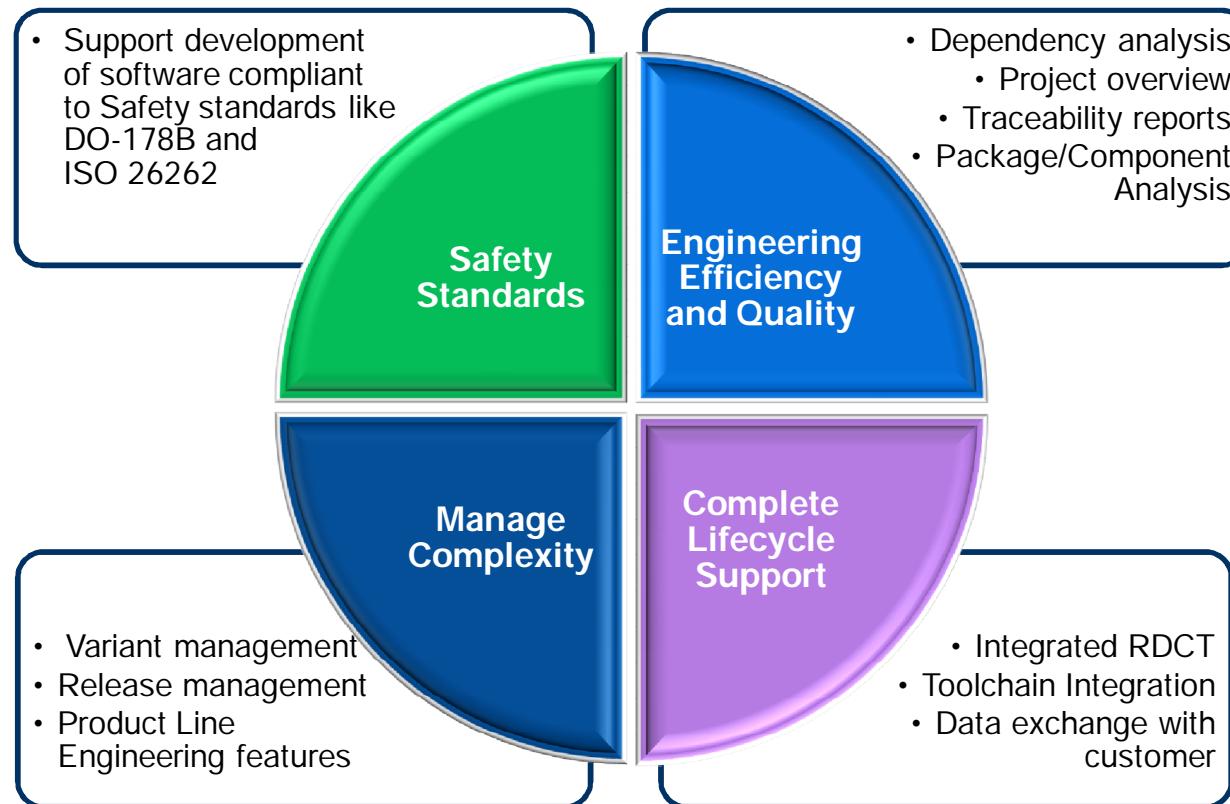


Automotive





Challenges for Aerospace & Automotive industries



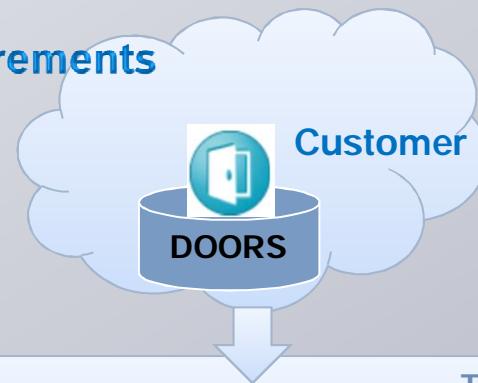


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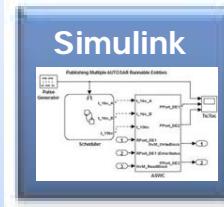
Improve Engineering Efficiency and Quality

Engineering
Efficiency
and Quality

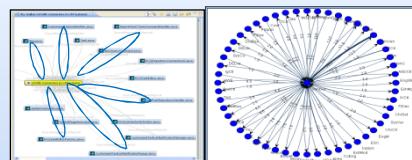
Changes & Requirements



Design



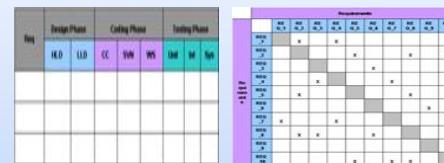
Dependency Viewers



MY DASHBOARD



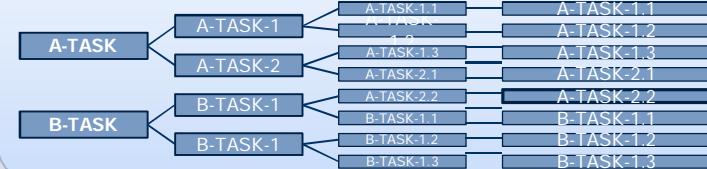
Traceability Matrix Reports Vertical Horizontal



Configuration Management



Tasks & Assignments





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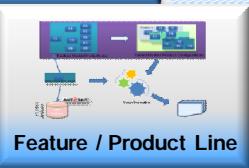
Complete Lifecycle Support

Complete
Lifecycle
Support

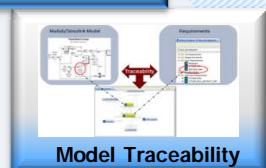
Requirements
Management



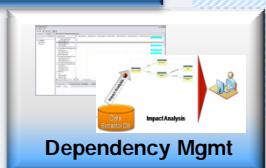
Design



Model Based
Development



Impact Analysis



Configuration



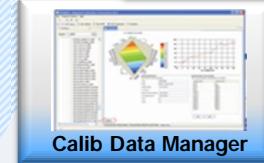
Continuous
Integration



Jenkins



Document
Management



Calibration
Data Manager



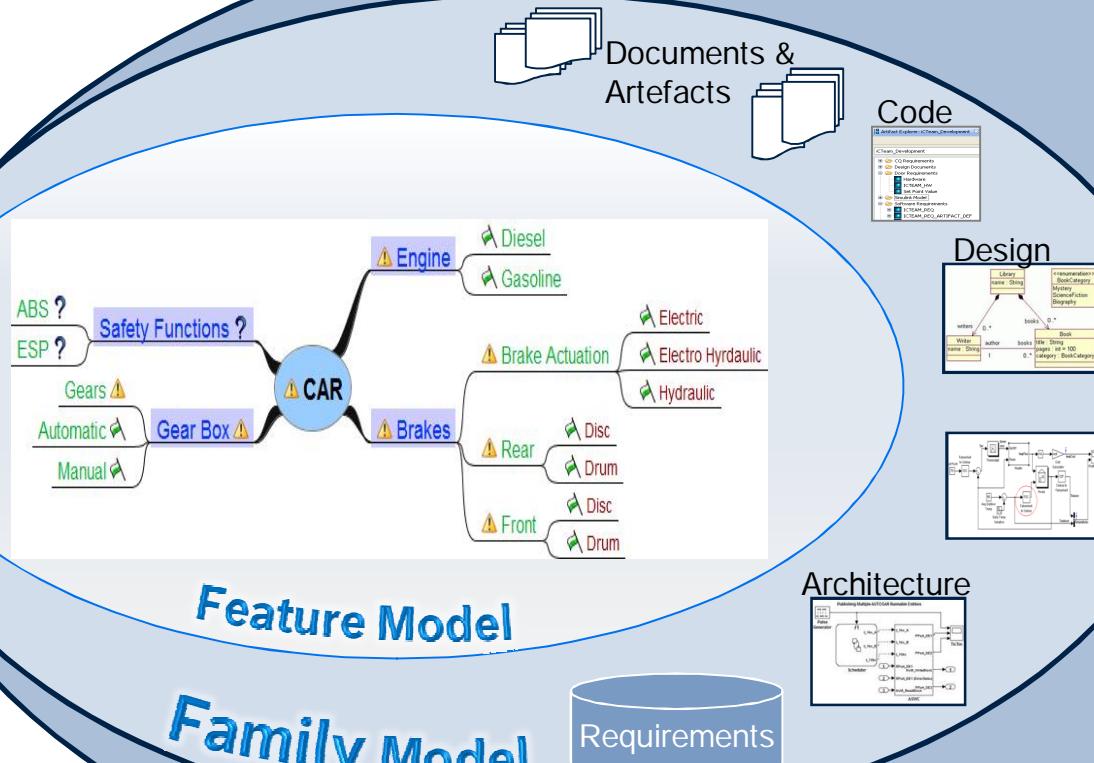
Software Sharing
Support

Verification &
Validation





Managing Complexity



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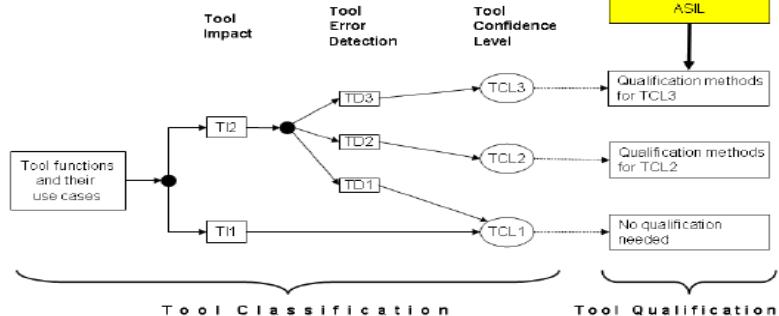
Conformance to Safety Critical standards



ISO 26262 is a Functional Safety standard, titled "Road vehicles -- Functional safety"

The standard ISO 26262 is an adaptation of the Functional Safety standard IEC 61508 for Automotive Electric/Electronic Systems. ISO 26262 defines functional safety for automotive equipment applicable throughout the lifecycle of all automotive electronic and electrical safety-related systems.

VDC Research reports that adherence to ISO 26262 and AUTOSAR is expected to increase significantly in the next two years.



iCTeam ISO 26262 Classification Results

SL	FEATURES	USE CASE DETAILS		
		Tool Impact Level of the tool	Tool Error Detection Level of the tool	Tool Confidence Level (TCL) of the tool
1	REQUIREMENTS MANAGEMENT	T11	TD1	TCL1
	Requirements Management: Requirements breakdown	T11	TD1	TCL1
	Requirements Management: Requirements imports into MS Word	T11	TD1	TCL1
	Requirements Management: Export / Import requirement template	T11	TD1	TCL1
	Requirements Management: Horizontal and vertical traceability	T12	TD1	TCL1
	Requirements Management: Requirements validation	T11	TD1	TCL1
2	BUILD & RELEASE MANAGEMENT	T11	TD1	TCL1
	Build and Release Management: Release planning	T11	TD1	TCL1
	Build and Release Management: Blocking artifacts from defects	T12	TD1	TCL1
	Build and Release Management: Blocking release in case of open defects	T12	TD1	TCL1
	Build and Release Management: Blocking release in case of open issues	T12	TD1	TCL1
	Build and Release Management: BAMF support for configuring build	T11	TD1	TCL1
	Configuration Management: Integration of external SCM	T11	TD1	TCL1
3	CONFIGURATION MANAGEMENT	T11	TD1	TCL1
	Configuration Management: Open and compare code artifacts from external SCM	T11	TD1	TCL1
	Configuration Management: Tagging artifacts for retrieval of artifacts from a version	T12	TD1	TCL1
	Configuration Management: Tagging artifacts for retrieval of documents and retrieving versioned documents	T12	TD1	TCL1
4	ISSUE TRACKING SYSTEM	T11	TD1	TCL1
	Issue Tracking System: creation of Task	T11	TD1	TCL1
	Issue tracking system: Task Assignment	T11	TD1	TCL1
	Issue tracking system: Linking to RDC/T artifacts	T11	TD1	TCL1
	Issue tracking system: Tagging management	T11	TD1	TCL1
5	DEPENDENCY MANAGEMENT	T11	TD1	TCL1
	Dependency Analysis: Graphical Display of component dependency	T11	TD1	TCL1
	Dependency Analysis: Impact analysis for change in one component	T11	TD1	TCL1
	Dependency Analysis: Impact analysis for change in one or more components	T12	TD1	TCL1
	Dependency Analysis: Impact analysis for change in one or more versions	T12	TD1	TCL1
6	PROJECT MANAGEMENT	T11	TD1	TCL1
	Project Management: creation of projects, team, users	T11	TD1	TCL1
	Project Management: Status Report creation	T11	TD1	TCL1
	Project Management: Task assignment	T11	TD1	TCL1
	Project Management: Export to MPP	T11	TD1	TCL1
7	REVIEW MANAGEMENT	T11	TD1	TCL1
	Review management: creating and executing reviews	T11	TD1	TCL1
	Review management: inclusion of open reviews	T12	TD1	TCL1
	Review management: Blocking start transition of the task in case of open reviews	T12	TD1	TCL1
	Review management: Tracking of defects to closure	T11	TD1	TCL1
8	SOFTWARE SHARING	T11	TD1	TCL1
	Software sharing: Export of requirements in RDC/T format	T11	TD1	TCL1
	Software sharing: Export of requirements in word format	T11	TD1	TCL1
	Software sharing: Horizontal and vertical traceability information can be exported to excel	T11	TD1	TCL1
	Software sharing: Horizontal, vertical traceability information can be exported to excel	T11	TD1	TCL1
9	TEST MANAGEMENT	T11	TD1	TCL1
	Test Management: Linking of testcases to requirements	T11	TD1	TCL1
	Test Management: Export of testcases to excel	T11	TD1	TCL1
	Test Management: Export of testcases to ASAM ATX format	T11	TD1	TCL1
	Variant management: Design of variants/features	T11	TD1	TCL1
	Variant management: Merging of features	T11	TD1	TCL1
	Variant management: Reuse of features with variants	T11	TD1	TCL1
	Variant management: Design of variants/features	T11	TD1	TCL1
	Variant management: Linking of feature design to RCT artifacts	T11	TD1	TCL1

iCTeam is qualified as per ISO26262 standard to support Automotive embedded software development of safety level of up to ASIL-D





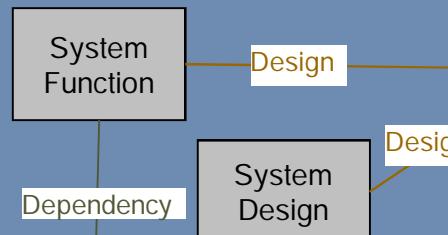
iCTeam, a confluence of parallels

Improve Engineering Efficiency and Quality

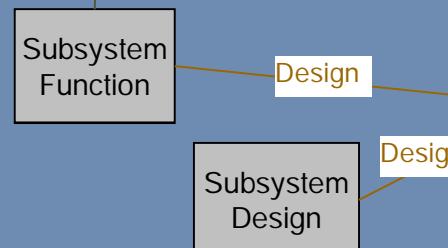


Functional Analysis

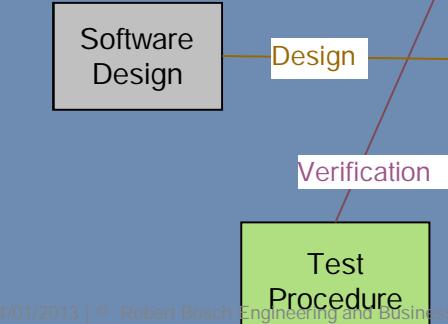
Tier 1:
System



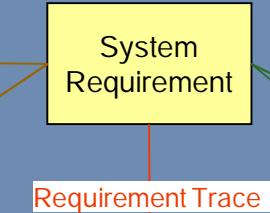
Tier 2:
Subsystem



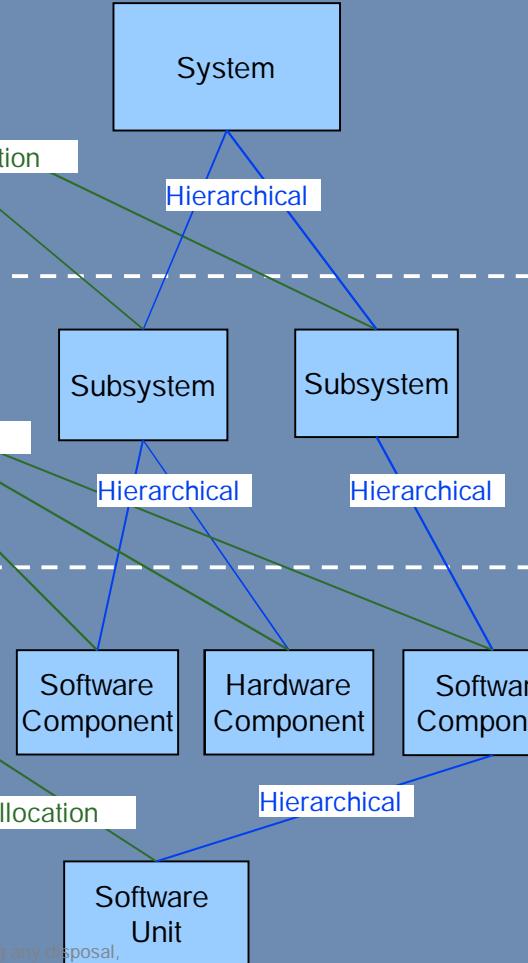
Tier 3:
Component



Requirements



Product Decomposition



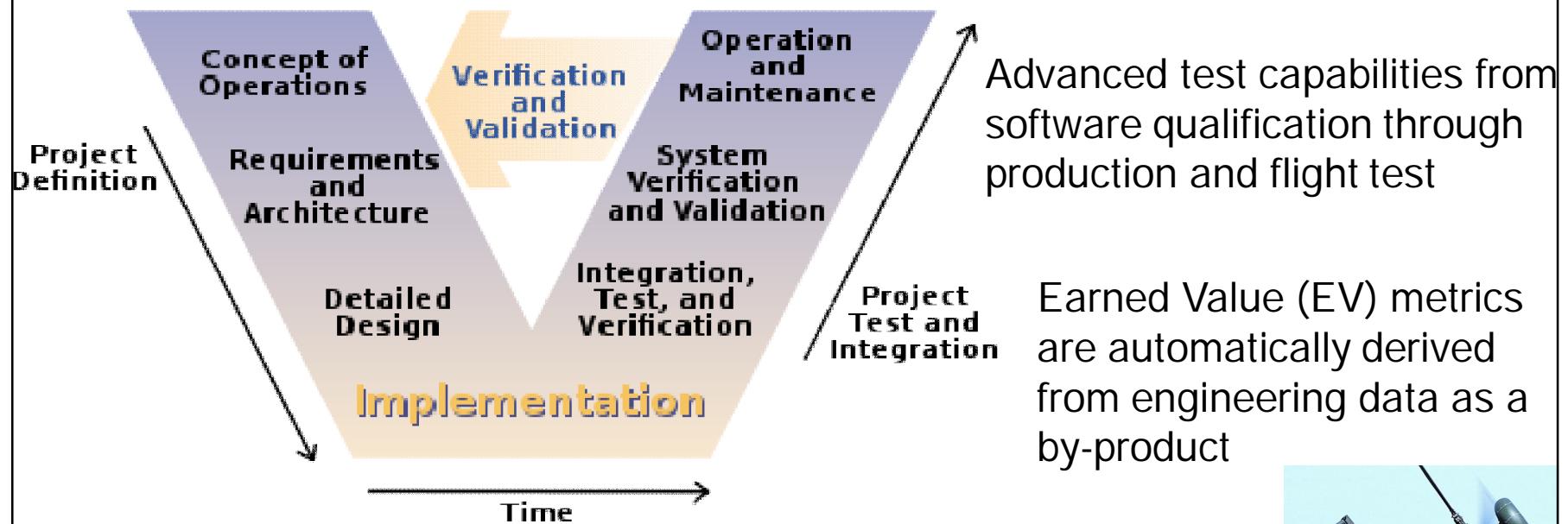


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Complete Lifecycle Support

Complete Lifecycle Support

Change managed processes integrated directly into toolset supporting overall systems engineering approach across the full life-cycle.



The V-model of the Systems Engineering Process
http://en.wikipedia.org/wiki/V_model

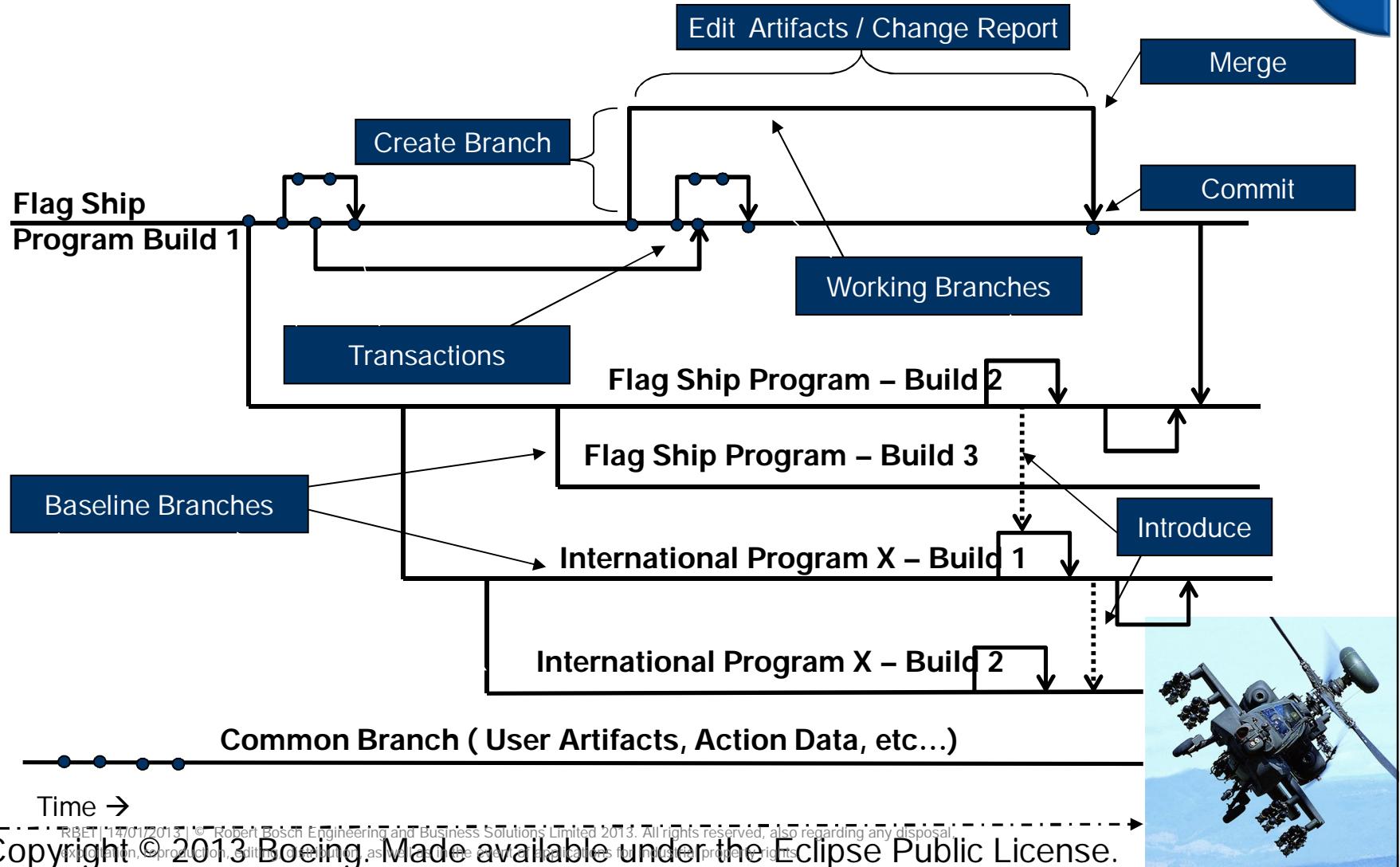




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Managing Complexity

Manage Complexity



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Conformance to Safety Critical standards



Structural coverage analysis and disposition (including across variants)
System safety analysis and reporting

Coverage - Open System Engineering Environment

File Edit Navigate Search Project Run QSE Window Help

Covera X Artifact ATS Na

Open CP 1 - Import 1 - New CP - #8 - 03/21/2012
08:13 AM - 122 Coverage Items

Branch: SAW_Bld_1

SAW_Bld_1 Select Branch...

Create New Coverage Package
Open Coverage Package
Delete/Purge Coverage Package
Configure Coverage Methods
Compare Two Strings

Search Coverage Method: <select> <clear>
Name: Namespace: Rationale:
Clear Work Prod Coverage Unit Assigned: <select> Coverage Un

Joe Smith - osee.h2.dbosee

Quick Search X
SAW_Bld_1 Select Branch...

Enter Search String
Search CP 1

Options
 Attribute Type Filter: Name
 By Id
 Include Deleted
 Match Word Order

Search: RE | 4 Loaded - 35 Shown - 1 Selected -

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[Open CP 1 - Import 1 - New CP - #8][epu][PowerUnit1.java][computeSize]

```
/*
 * Copyright (c) 2004, 2007 Boeing.
 * All rights reserved. This program and the accompanying materials
 * are made available under the terms of the Eclipse Public License v1.0
 * which accompanies this distribution, and is available at
 * http://www.eclipse.org/legal/epl-v10.html
 *
 * Contributors:
 *   * Boeing - initial API and implementation
 */
package org.eclipse.osee.coverage.import01.epu;

import java.util.logging.Level;
import org.eclipse.osee.coverage.internal.Activator;
import org.eclipse.osee.framework.logging.OseeLog;
import org.eclipse.swt.graphics.Image;
import org.eclipse.swt.graphics.Point;
import org.eclipse.swt.widgets.Composite;
import org.eclipse.swt.widgets.Table;
import org.eclipse.swt.widgets.TableColumn;

/**
 * @author Donald G. Dunne
 */
public class PowerUnit1 extends Table {

    public Image image;

    public PowerUnit1(Composite parent, int style, Image image) {
        super(parent, style);
    }

    public Image getImage() {
        try {
            if (getStyle() == 4) { // 1, 1, TestUnit
                return this.image; // 1, 2, n
            } else {
                return this.image; // 1, 3, TestUnit2
            }
        } catch (Exception e) {
            return null;
        }
    }
}
```

Automatic generation of MIL-STD-498 software documents (SRS, STP, STD, SSDD, STR, SDD, VDD, etc.)





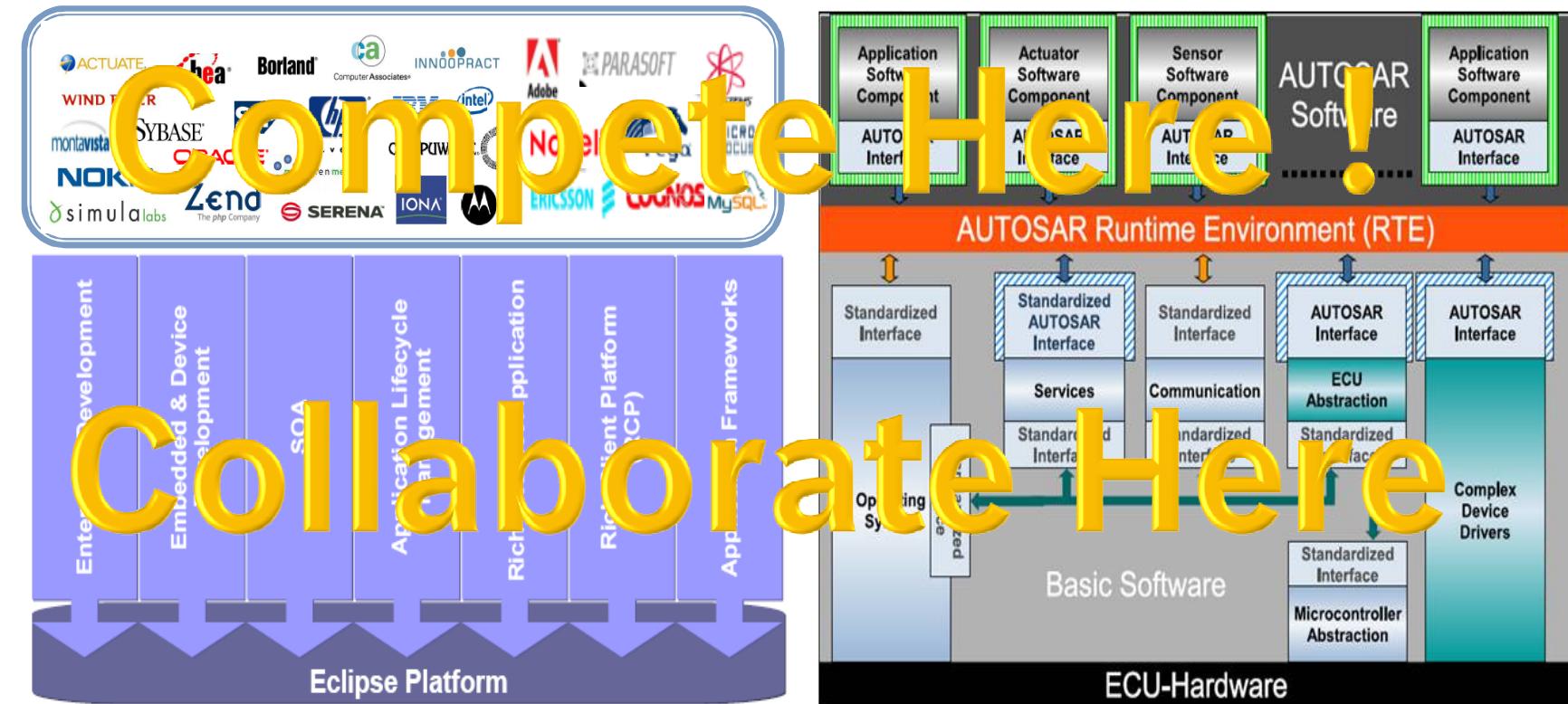
This ALM is a confluence of two parallels

eclipse ≈ AUTOSAR





Eclipse ~ AUTOSAR : Similarities in concepts and principles





Thank You

Q & A

Give Feedback on the Sessions

1

Sign In: www.eclipsecon.org

2

Select Session Evaluate

3

Vote

