

# A&D PLM Action Group Research

## CIMdata 2020 PLM Market & Industry Forum

### A&D PLM Action Group Research

#### PLM Market & Industry Forum

A CIMdata PLM Leadership Event  
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#plm4um

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## Our Mission...

*Strategic management consulting for competitive advantage in global markets*

**CIMdata is the leading independent global strategic management consulting and research authority focused exclusively on PLM and the digital transformation it enables.**

**We are dedicated to maximizing our clients' ability to design, deliver, and support innovative products and services through the application of PLM.**

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# A&D PLM Action Group Research

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### Key Takeaways

*A&D PLM Action Group Research*

- The Aerospace & Defense PLM Action Group (AD PAG) has become a significant contributor to prioritizing issues and setting direction on PLM-related topics within their industry
- The AD PAG has and continues to invest significant resources to analyze major PLM-related pain points and define objectives and requirements for mitigation
- One AD PAG project workstream, Multiple-view Bill of Materials, has advanced to the point of requirements verification through use case benchmarking of commercial PLM software
- Many opportunities for proactive collaboration exist as the AD PAG continues their policy of collegial engagement with PLM solution providers in execution of their project workstreams

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## Aerospace & Defense PLM Action Group

*Membership*

Founded in February 2014

AEROSPACE & DEFENSE PLM ACTION GROUP



More information at [www.ad-pag.com](http://www.ad-pag.com)

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AEROSPACE & DEFENSE  
PLM ACTION GROUP

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### Aerospace & Defense PLM Action Group

#### Mission

An association of aerospace & defense companies within CIMdata's globally recognized PLM Community Program, which functions as a **PLM advocacy group** to:

- Set the direction for the aerospace & defense industry on PLM-related topics that matter to members
- Promote common industry PLM processes and practices
- Define requirements for common interest PLM-related capabilities
- Communicate with a unified voice to PLM solution providers
- Sponsor collaborative PLM research on member-prioritized industry and technology topics

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### Project Workstreams

*Members prioritize topics and fund research and team projects annually*

Number and scope of projects has increased year over year due to increase of available funds from larger membership

Topic Members	2014-15 4	2015-16 4 -> 5	2016-17 5 -> 7	2017-18 8 -> 10	2018-19 10 -> 11	2019-20 11 -> 10
Global Collaboration	Research Phase 1	Research Phase 2		Team Project Phase 3 <--	Team Project -- Phase 3 --	Team Project --> Phase 3
Obsolescence Management	Research Phase 1	Research Phase 2	Team Project	Project Close Out		
Model-based Definition (MBD) and BOM Definition			Team Project Phase 1	Team Project Phase 2	Team Project Phase 3 <--	Team Project --> Phase 3
Multiple-view Bill of Material (Multi-BOM)			Team Project Phase 1	Team Project Phase 2	Team Project Phase 3	Team Project Phase 4
Model-based Systems Engineering (MBSE)				Team Project Phase 1	Team Project Phase 2	Team Project Phase 3
Standards Working Group						Team Project Phase 1

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### Project Workstreams Evolution

#### Stage 4 – Solution evaluation benchmarks

- Project work progresses through defined stages
  1. Problem statement
  2. Desired state
  3. Requirements
- After several years of effort, the AD PAG *Multi-view BOM* project team reached a new stage
  - In April 2019, this teams proposed engagement with SW providers to validate requirements by benchmarking use cases against commercial SW
  - Decision: Members agreed that this next stage is consistent with the Group's mission and were willing to make the necessary investment

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### Multi-view BOM Solution Evaluation Benchmarks

#### Objectives

##### Primary

- Define an initial set of Multi-view BOM use cases that are sufficiently complex and realistic to provide a test that is representative of AD PAG members' business
- Determine the degree to which the principle PLM providers' technologies fulfil Multi-view BOM requirements by performing benchmark demonstrations using the providers' current and under development solutions
- Manage communication of benchmark evaluation results to promote advancement of multi-view BOM technologies and industry best practices within the PLM ecosystem

##### Secondary

- Gain process experience that will be useful for future planning of engagement with an Interoperability Forum (IF) type organization for ongoing evaluation of PLM software compliance with Multi-view BOM requirements

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### Multi-view BOM Solution Evaluation Benchmarks

#### Participation

- Use case authors
  - Lead authors
    - 3 AD PAG member companies
  - Contributing authors
    - 8 AD PAG member companies
- Benchmark evaluators
  - Representation
    - 8 AD PAG member companies
    - 1 Tier 1
  - 3-4 onsite
  - 6-8 remote
- Benchmarks facilitated by CIMdata
  - ✓ Aras onsite demonstrations
    - 13,14 Jan
    - Aras executed onsite
  - ✓ Siemens DIS onsite demonstrations
    - 13,14 Feb
    - Siemens DIS executed onsite
  - ✓ Dassault Systèmes demonstrations
    - 03 Mar
    - AD PAG member executed
  - ✓ PTC demonstrations
    - 23 Mar
    - PTC executed over cloud

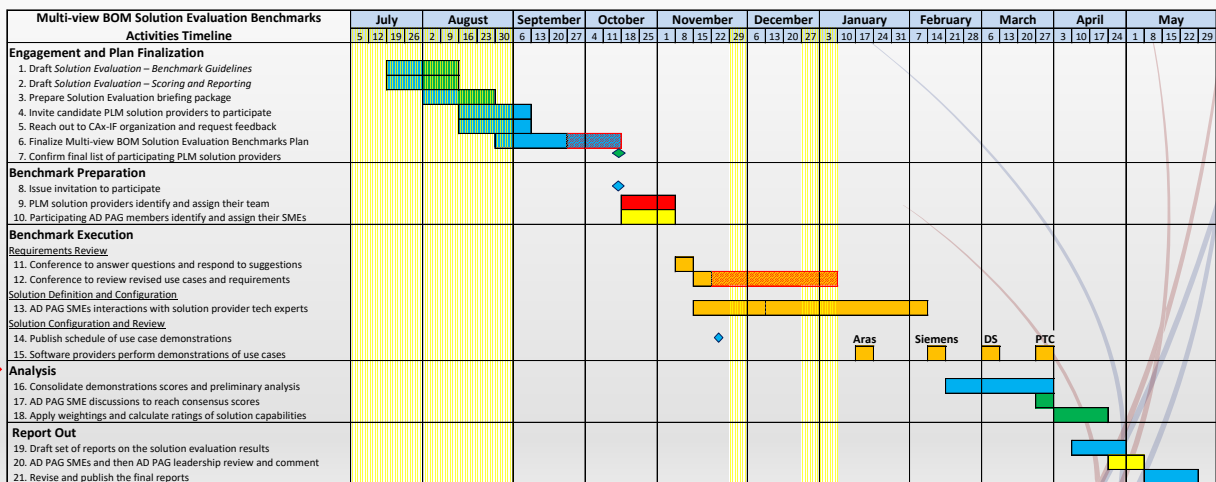
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### Multi-view BOM Solution Evaluation Benchmarks

#### Schedule



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### Multi-view BOM Solution Evaluation Benchmarks

#### Benchmark use cases

The benchmark use cases were defined within the context of the AD PAG member companies' current and future work processes.

#### Focus Area 1 – Engineering Release

- 1.1 ER-01: Adapting and consuming tolerances after restructuring
- 1.2 ER-02: Consume documents linked to specific EBOM items after restructuring
- 1.3 ER-03: Consume documents linked to specific EBOM items with effectivity revision after restructuring
- 1.4 ER-04: Consume annotations after restructuring

#### Focus Area 2 – Supplier Collaboration

- 2.1 SC-01: 150% BOM export/import
- 2.2 SC-02: Articulating changes within 150% BOM

#### Focus Area 3—Bolted Join

- 3.1 BJ-01: Bolted join

#### Focus Area 4—Engineering to Manufacturing

- 4.1 EM-01: Condition of supply
- 4.2 EM-02: Manufacturing assembly
- 4.3 EM-03: Engineering only change
- 4.4 EM-04: Manufacturing only change
- 4.5 EM-05: Engineering change

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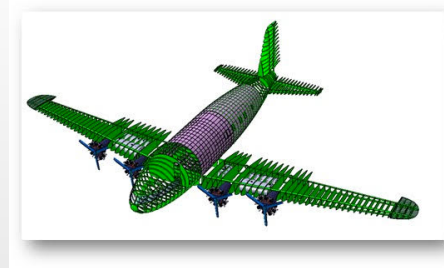


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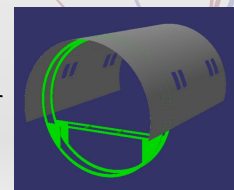
### Multi-view BOM Solution Evaluation Benchmarks

#### Benchmark data set

- Model-Based Engineering Demonstrator Reference Model, in hierarchical view
  - 900+ parts
  - Formats: Native CATIA V5 and STEP AP242 edition 1
  - Attributes added to support Engineering Release (ER) and Engineering to Manufacturing (EM) Use Cases
  - Available as open source at [Link](#)
- CAD structure must be imported into PLM Provider's PLM system, creating eBOM for test case usage



Reference Model Section identified for ER, EM Use Cases



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### Multi-view BOM Solution Evaluation Benchmarks

#### Reporting

- Results consolidation, analysis and reporting are managed by CIMdata
- CIMdata will deliver three reports which will vary by target audience:
  - For general release
    - Summary ratings (average and range) of solution capabilities across all providers
  - For participating PLM software providers
    - Summary ratings (average and range) of solution capabilities across all providers
    - Ratings (average scores) of capabilities for their solution
  - For AD PAG members
    - Summary ratings (average and range) of solution capabilities across all providers
    - Ratings (average scores) of capabilities for each solution

Results will be reported in May

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### PLM Foresight Poll

How would you characterize movement to multiple-view BOM (i.e., eBOM/mBOM/sBOM/...) within industries...

**Pick the Profile that best fits your sense of how companies are moving towards multiple-view BOM within industries with complex, regulated products?**

60% Investigating, 10% Planning, 5% Implementing, 0% In production

50% Investigating, 15% Planning, 10% Implementing, 5% In production

40% Investigating, 20% Planning, 15% Implementing, 10% In production

30% Investigating, 25% Planning, 20% Implementing, 15% In production

Start the presentation to see live content. Still no live content? Install the app or get help at [PollEv.com/app](http://PollEv.com/app)

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### Business Opportunity

*Join the conversation – Engage with the A&D PLM Action Group*

- Go to [www.ad-pag.com](http://www.ad-pag.com) and review AD PAG research, direction statements and position papers
  - Incorporate insights gained into your assessment of market trends and priorities
  - Reflect direction statements, project findings and requirements in your product and services strategies and offerings
  - Contribute your expertise and experience to the AD PAG members
    - Submit comments on published work products
    - Proactively offer to support ongoing project workstreams
- Present your point of view to AD PAG members at their events
  - PLM Road Map NA, TBA
  - PLM Road Map at GPDIS, Sep 2020
  - PLM Road Map EMEA, Nov 2020

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### Conclusion

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### To Learn More...

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