

# Collaboration: Did They Respond Yet?

## *CIMdata Commentary*

### *Key takeaways:*

- *Collaboration between aerospace and defense OEMs and their design chain suppliers has been identified as a chronic pain point by the OEMs, i.e., point of friction impeding information flow through the product lifecycle.*
- *CIMdata research has revealed that, in general, A&D OEMs and their partners have no system in place to record and track collaboration inquiries.*
- *Establishing an inquiry and response tracking system between collaboration entities is a simple, low cost investment that would go a long way to alleviating this chronic pain point.*

Over the past two years CIMdata has participated in collaboration research together with a number of aerospace and defense (A&D) OEMs—members of the A&D PLM Action Group.<sup>1</sup> Admittedly the focus of the research centered on the preparation and transfer of product 3D model geometry and part manufacturing information (PMI) between collaboration partners. In this particular study those partners were the OEMs and their Tier 1 suppliers. However, the investigation also looked at the software and hardware collaboration environment and workflow processes used by the OEMs. Among the challenges that were uncovered, one process-related issue stood out as intriguingly bothersome—typically, the OEMs and the suppliers had no system in place to record and track collaboration inquiries between themselves. CIMdata sees this as an opportunity for the companies to immediately improve their collaboration efforts by installing a simple, easy to use workflow tracking tool.

## **Goals and Methodology**

CIMdata worked together with the A&D PLM Action Group members to conduct this research on global collaboration processes, data formats, and other collaboration aspects applicable to A&D global product design activities and design partner collaboration. The research was done in two phases, each taking approximately 12 months. The work was intended to develop recommendations that the A&D PLM Action Group members can pursue to improve their collaboration capabilities, including a draft direction statement that the members can use to influence solution providers' future developments.

In Phase 1, the Group commissioned CIMdata to develop a taxonomy of product development collaboration, and prepare a survey to capture a generalized characterization of PLM global collaboration as currently practiced and experienced within the extended A&D product development ecosystem of the A&D PLM Action Group member companies. In Phase 2, CIMdata was commissioned to conduct a deeper investigation of the high priority improvement areas identified in Phase 1, and to heighten confidence in the findings by gathering information from a broader, statistically significant community of OEMs and Tier 1 suppliers.

The primary research method for Phase 2 was an online survey (offered in paper form as required) based on the PLM Global Collaboration Taxonomy that was developed and agreed with the A&D PLM Action Group members in Phase 1. The Phase 2 survey focused on those areas of the Taxonomy deemed of high potential for improvement as revealed in the Phase 1

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<sup>1</sup> The A&D PLM Action Group is an association of aerospace and defense OEMs and Tier 1 suppliers who jointly address shared PLM-related challenges in the industry. For more information, see <http://www.cimdata.com/en/memberships/aerospace-defense-plm-action-group>.

study results. The survey was followed by telephone interviews of a subset of respondents to clarify and expand upon the information they provided.

All research was done without disclosing any A&D PLM Action Group member's individual practices or strategies to other members or to research survey respondents. The same level of confidentiality was applied to information from other survey respondent companies.

## **Inquiry and Response**

Using the Collaboration Taxonomy the A&D PLM Action Group developed in Phase 1, the survey question we report on here dealt with a collaboration process step the OEMs called "Inquiry and Response." Within the taxonomy this process step was defined as follows: "Resolve issues or questions raised by recipient; locate and provide additional data as required; maintain transaction log of each interaction." The OEM members indicated that it was often the case during a development program that either one of their engineers or a supplier engineer would ask a question of the other about the most recent 3D product model data being shared or, in some cases, would ask for a piece of additional data. The key line of investigation in the Phase 2 survey was regarding the level of problems that were encountered in each process step. Survey respondents could select: none, minor, moderate, bad, very bad, or severe. In addition, if they responded with very bad or severe, they were asked to describe the issue and the impact.

Invitations were sent to 164 individuals at 83 companies. In the end, 41 survey responses were received from 20 companies. Overall, CIMdata noted that the Inquiry and Response process step was one of the most poorly rated, and companies reported the lack of tools for tracking information requests and responses. They complained that tracking is usually manual, left up to the requesting engineer, and often results in duplicate data entry. One respondent noted "We tend to do this twice: in our system and in the customer/OEM/supplier system too. Duplicate [data] entry." Another complained of having to submit multiple request reminders before getting a reply. In some instances, respondents suggested using a PLM solution tool that would log and track requests and responses between collaborating partners. In addition, it was noted that the solution should have the capability of escalating a request if a response is not forthcoming.

## **Recommendation**

CIMdata's summary recommendation to the A&D PLM Action Group members was "an inquiry and response tracking system should be put in place between collaboration entities" for their next aircraft program.

We suggested that the A&D membership should do a market review to identify any existing tools that can provide a solution to an inquiry and response tracking requirement. Most PLM solution providers already offer tools for recording and tracking data items as part of their workflow implementations. If an appropriate tool cannot be found, the A&D membership should work with their primary PLM solution providers to define and implement a collaboration inquiry and tracking tool that can be used between collaboration entities. The tool should have the ability to set timelines for when a response to an inquiry is expected and automatically notify identified individuals if the deadlines are missed. The tool should have the ability to generate reports of the responses to all closed inquiries and status of all open inquiries for management review.

Looking across other industry segments, CIMdata believes these recommendations apply to any company doing product development working in collaboration with a supply chain.

## **About CIMdata**

CIMdata, an independent worldwide firm, provides strategic management consulting to maximize an enterprise's ability to design and deliver innovative products and services through the application of Product Lifecycle Management (PLM). CIMdata provides world-class knowledge, expertise, and best-practice methods on PLM. CIMdata also offers research, subscription services, publications, and education through international conferences. To learn more about CIMdata's services, visit our website at <http://www.CIMdata.com> or contact CIMdata at: 3909 Research Park Drive, Ann Arbor, MI 48108, USA. Tel: +1 734.668.9922. Fax: +1 734.668.1957; or at Oogststraat 20, 6004 CV Weert, The Netherlands. Tel: +31 (0) 495.533.666.