

Feature: Enterprise CAD

Data management software helps keep courier's electric prototype vehicle design project on track

By Mike Edwards

TORONTO – Keeping track of 3D solid model parts, subassemblies and assemblies, not to mention other files such as PDFs and office documents, can easily spiral out of control – even where a small design firm is concerned.

into the nuts and bolts design of it,” said Minato.

One of Inertia's clients is Unicell (unicell.com), a truck body design and manufacturing company with operations in Toronto and Buffalo, NY. Unicell had approached Purolator, Canada's largest overnight courier company, about making a zero emission vehicle for its delivery truck fleet. The vehicle would also

Minato said that Inertia is one of two prime mechanical engineering contractors on the Quicksider. “There were so many parts to the vehicle that involved companies at a lot of different locations.” The volume of parts – into the hundreds, including both designed and purchased parts, versions of the parts and number of people involved was in danger of becoming too unwieldy to manage.

“I could also see the potential havoc in place with working with the wrong revisions,” explained Minato.

Tying everything together in-house and with Inertia's partners, including Unicell, ArvinMeritor, a fabrication shop, parts distributors and other engineering contractors, Minato chose SolidWorks PDMWorks Enterprise software. Already a SolidWorks 3D solid modeler and COSMOSWorks

“Implementation was extremely quick – a representative from Javelin Technologies (the local value added reseller for SolidWorks products; javelin-tech.com) took about 3 to 4 hours to set the system up,” said Minato.

The data management system has many advantages, according to Minato. “For example, inside SolidWorks configurations, I can create different design scenarios and within one of the PDMWorks windows other people can preview these configurations before opening up the file.

“I can set up access permissions such as check in, check out and edit for each partner, as well as what folders each partner sees. The system will also provide a warning if the user is not working on the latest file. It can also show the latest revision and a digital paper trail of the prior revisions to any document.”

Another benefit that Minato found was the ability to move Quicksider parts and assemblies around the folder structure of PDMWorks Enterprise without losing the linkages to other files and documents that have references to the moved part or assembly.

Although the Quicksider project participants are in the Toronto area, Minato also pointed out that the collaboration abilities of PDMWorks Enterprise has allowed him to work with a QuestAir, a customer located in Burnaby, BC, that designs and manufactures hydrogen gas purification systems (questair.com).

“With PDMWorks I have been able to share all my analysis files, and report files with them using the Webserver feature. I have been working with them on and off for about three years and still have not met them face to face – all work has been completed remotely.”

For PDMWorks demos, go to: solid-works.com/pages/products/solutions/PDM_VidVau_fore.html.

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The zero emission Quicksider curbside delivery truck. Foreground screen at right: what a partner would see with a VPN connection, including visualization preview (shown is a sample suspension designed by Ray Minato and available at dpncanada.com as a 3D PDF). Background: a typical web browser TCP/IP access screen.

Ray Minato, a mechanical engineer with 15 years of automotive design, manufacturing and motorsports industry expertise, faced such a potential crisis almost two years ago when he took on a courier company curbside delivery truck project. His company, Inertia Engineering & Design (inertiaengineering.com), is currently a two-person operation.

“The truck is the reason why we implemented a PLM (product lifecycle management) system, especially once we got

be built in partnership with ArvinMeritor, the world's largest truck suspension company.

A battery electric prototype of the Purolator vehicle, dubbed the Quicksider, required Minato's expertise in chassis design, integration of the suspension systems, developing and managing tests for regulatory compliance, as well as overseeing tests for stability and handling,

finite element analysis software user, Minato had the document management system software installed locally on his server.



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