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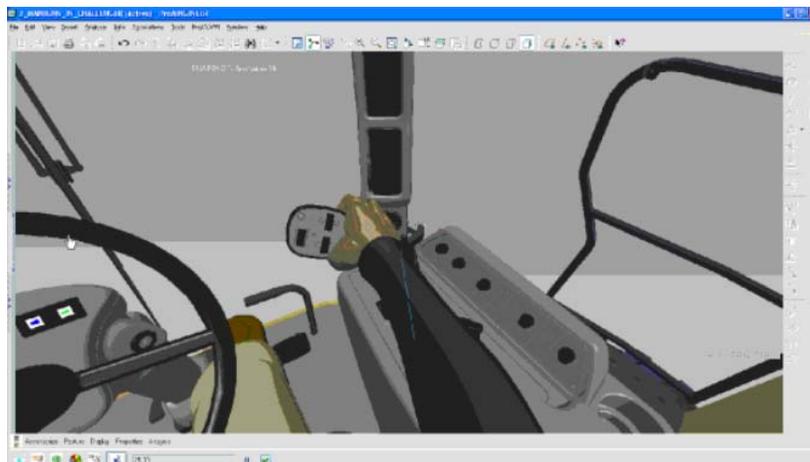
PTC Product Focus

Digital Human Modeling : Sneak Peek

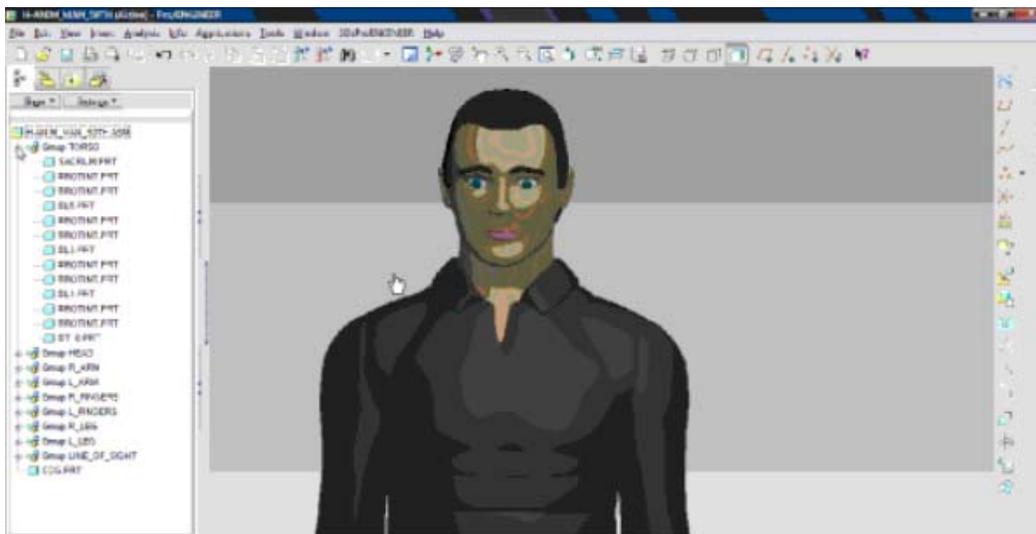
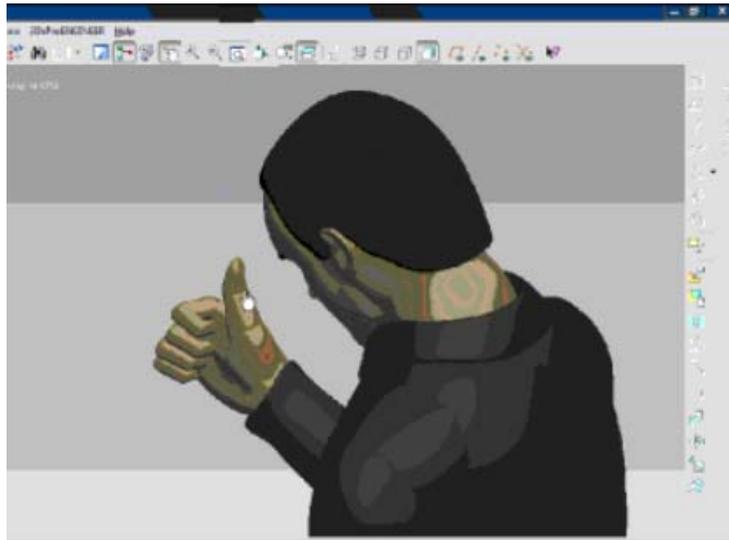
What



is



Manikin?



“What are you looking at?”

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PTC Product Focus

Windchill ProductPoint – Unleashing SharePoint for Product Development

This past August, a handful of AE’s were lucky enough to get training on one of the most exciting new products that PTC has developed since Windchill PDMLink. [Windchill ProductPoint](#) is a Microsoft SharePoint native solution for product development. Windchill ProductPoint offers an easy to learn, quick to deploy solution for sharing CAD and other structured data among teams.

About 6 months ago, there was a Microsoft seminar about Microsoft's new products focus. There were three key strategies for Microsoft in the next coming years:

1. Focus on the development of their Microsoft Exchange (email) Server,
2. focus around their virtualization products and technologies,
3. and lastly a HUGE focus around SharePoint, Microsoft's new "infrastructure for collaboration". Their basic offering of Windows SharePoint Services (WSS) is included for FREE with every installation of Windows Server.

So most IT personal running a Microsoft Windows platform, already has the software needed to run SharePoint. Also, ProductPoint is ready out of the box to use with WSS; however, its capabilities can be extended with Microsoft Office SharePoint Server (MOSS) and Microsoft Project Server. SharePoint also will be the way enterprises using Microsoft products will store and share their critical office files and collaborate. Some experts predict that SharePoint will become ubiquitous just like Windows XP and Vista on PC's, and be available on 100 million desktops.

Microsoft SharePoint Services offers both an infrastructure for collaboration and a foundation for building web-based applications. What that means for Microsoft customers is:

1) Web-based – an easily accessible Web-based workspaces provide team access with just a browser

2) collaboration – supports announcements, alerts, discussion forums, blogs, wikis, file-based collaboration;

3) a manageable infrastructure – leverages SQL*Server, IIS, Internet Explorer, tight integration with Outlook and

4) a low total cost of ownership – it's bundled with all Microsoft Server products.

PTC's new Windchill ProductPoint compliments the Microsoft productivity suite and it now "opens the door" for SharePoint to support product development by managing CAD & engineering applications. Why is this important? Well, if you remember why people get excited about Pro/ENGINEER is that it allows designers and engineers to build intelligent design intent and relationships in a parent/child manner. Also, it allows for someone to easily change the model and the ripple effect of associativity allows all downstream deliverables like assemblies, drawings, associative tooling, etc. to update. At PTC, we have 20 plus years of experience understanding this complex, relational, data structure and their associated CAD models and how to manage when a "change occurs" with tools like Intralink and PDMLink. So now, we are able to build a native SharePoint database application that allows you to store and share your Pro/E, 2D AutoCAD and eventually Solidworks and Inventor data (version 2.0) in a SharePoint SQL database! That's a huge advantage for companies who are currently storing their data on network folder drives and can't find their data and/or stepping on each other's toes by saving over each other's files.

Windchill ProductPoint (Figure 1) offers three major capabilities:

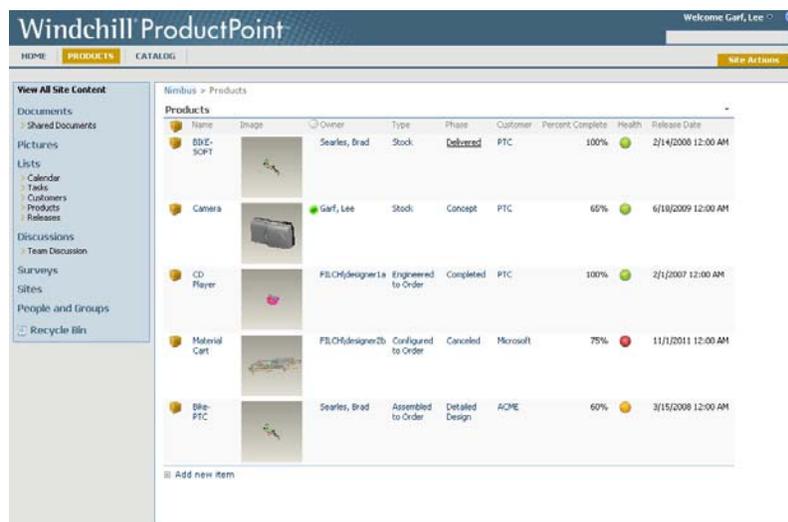
1) Supports all types of structured information; such as files from Pro/ENGINEER or other CAD systems

- 2) enables sharing, visualizing, and markup of engineering data
- 3) works with Windchill-based systems for product development collaboration.

From a product standpoint, with Release 1.0, Windchill Product point Server gives the customers:

- 1) Multi-CAD SharePoint Services - manages multiple formats of CAD files, their structures, and inter-relationships;
- 2) Windchill Portlets for SharePoint (Web Parts - Presents information from Windchill systems in SharePoint browser,
- 3) ProductView SharePoint Services (Figure 2) - Publish and visualize accurate, lightweight product viewables.

With the 2.0 release, it will also offer Windchill PLM Connector Integration to share CAD data across multiple Windchill PDM/PLM systems. So basically, you could have both ProductPoint and PDMLink as complimentary but unique, database solutions that can share data back and forth similar to the way that PDMLink and Projectlink share data today.



The screenshot shows the Windchill ProductPoint web browser interface. The top navigation bar includes 'HOME', 'PRODUCTS', and 'CATALOG'. A sidebar on the left contains 'View All Site Content' with categories like Documents, Pictures, Lists, Discussions, and Surveys. The main content area displays a table of products with columns for Name, Image, Owner, Type, Phase, Customer, Percent Complete, Health, and Release Date.

Name	Image	Owner	Type	Phase	Customer	Percent Complete	Health	Release Date
BDE-SOFT		Searles, Brad	Stock	Delivered	PTC	100%	Green	2/14/2008 12:00 AM
Camera		Garf, Lee	Stock	Concept	PTC	65%	Green	6/18/2009 12:00 AM
CD Player		FLCHdesigner1a	Engineered to Order	Completed	PTC	100%	Green	2/1/2007 12:00 AM
Material Cart		FLCHdesigner2b	Configured to Order	Cancelled	Microsoft	75%	Red	11/1/2011 12:00 AM
Ble-PTC		Searles, Brad	Assembled to Order	Detailed Design	ACME	60%	Yellow	3/15/2008 12:00 AM

Figure 1: Windchill ProductPoint Web-browser

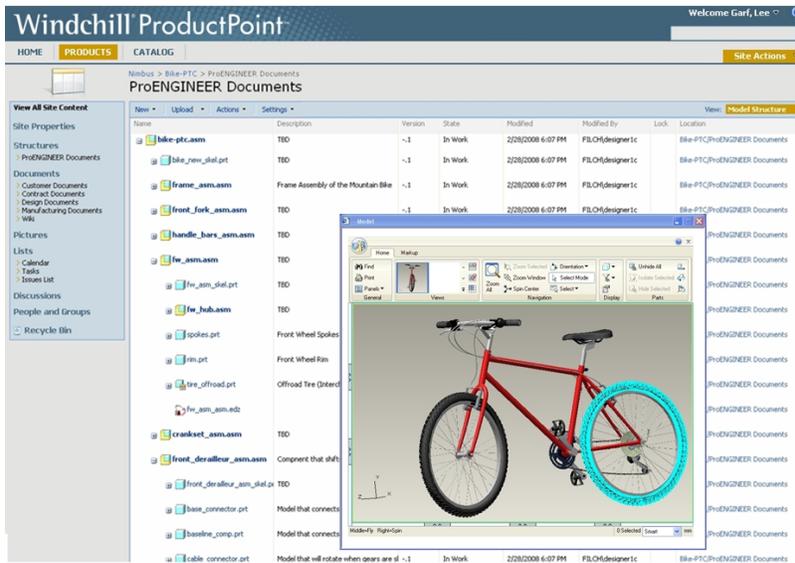


Figure 2: Product View SharePoint Services

So you may ask, am I a good candidate for Windchill ProductPoint? Or should I look at Windchill PDMlink or Intranlink to manage my CAD and Product data? First, a couple of things to keep in mind are that Windchill Productpoint is not a replacement for Pro/INTRALINK 3.X, 8, or 9, Windchill PDMLink, or Windchill Projectlink. The reasoning for that is Windchill ProductPoint is a simple, general purpose solution that does not have some of the deep data management capabilities of these other PTC products. Also, there currently are no migration tools developed to migrate your existing data from these other systems to Windchill ProductPoint. Note, PTC will offer a bulk loader for moving your Pro/E data from a network folder structure to ProductPoint in their 1.1 release in the spring time frame.

Then who is this product intended for? This product was developed mainly for two key audience segments for PTC – SMB with no current PLM and Large customers with SharePoint laser-focus. For small to medium size companies that are using share folders to manage their CAD data. They are struggling today because they have to use folder and file naming conventions and are over-writing each other's work. Plainly stated, it's just not an effective PDM solution for their CAD data. Also, these smaller companies typically have the same needs as larger companies to collaborate with their customer and suppliers. Also, they often have other 2D solutions like AutoCAD and these tools don't offer an effective PLM solution.

Lastly, typically if you have a handful of designers or engineers (2-9) working on CAD data, they typically work concurrently on projects to meet demanding deadlines; therefore, they definitely need a PLM solution to manage the daily, hourly, minute-by-minute change process that is occurring to their product design in CAD. Furthermore, for the medium and large companies, they may have an IT staff that is standardizing on SharePoint as their company wide collaboration backbone. Or they may have smaller, special purpose workgroups, (e.g., CAE, advanced research) that want SharePoint-level capabilities that can, as necessary, interact with a broader PLM suite. Therefore, we are going to be building this solution so that it's complimentary to Windchill PDMlink and certain folks outside of CAD engineering world (aka purchasing, sales, marketing, manufacturing, etc.) that wants access to product information in Windchill but wants to use Windchill ProductPoint as their browser window into that information via web portlet.

So in summary, Windchill ProductPoint is a native SharePoint solution built by PTC to unleash the power around product development. It will allow end users to quickly search and find the latest version of the right file which will drive greater team productivity. Also, it will help extend access to all the rich, engineering content throughout your company to enable more re-use of that data and better decision making. Also, your IT staff will love it because the solution has a fast and easy deployment on top of a new or existing SharePoint Server. This will greatly reduce the total cost of ownership to deploy and maintain. Finally, your company will be able to adopt the tool with a minimum learning curve due to the familiar interface and integrated environment.

So now that you have a basic understanding of Windchill ProductPoint, how do you learn more about this fantastic new product from PTC? All the information around ProductPoint just got posted to [Windchill ProductPoint](#) product page over the weekend. It contains a [recorded demo](#), [Microsoft announcement](#), [FAQ](#), [press release](#), [datasheet](#) and [whitepaper](#). Also, on Nov 17, PTC plans to ship Pre-production of Windchill ProductPoint so that you can load the software and try it out for yourself. Lastly, PTC hopes to deliver that production product right under your Christmas tree around the end of the year.

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PTC Product Focus

Windchill CDRL/SDRL in 9.1

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Tips of the Month

Calculating Dynamic Forces and Sending them to Mechanica Structure

Pro/ENGINEER has some very powerful capability to understand the real form, fit and function of a design. Anytime you have a design where you having fast moving parts, that design will be generating high acceleration values which mean large forces. Remember what our friend Sir Isaac Newton taught us – $F = m * a$.

And remember going to college for your engineering degree and spending a lot of time waiting outside your professor's office to get help with learning how to calculate the very complex formulas found in your Dynamics text book? Things obviously got a lot more complicated for going from "statics" (not moving) to "dynamics" which can really make your head spin.

Most Pro/E users have the ability to run kinematic range of motion on their designs with the Mechanism Design functionality that is part of the basic [Pro/E Foundation XE package](#). However, this capability can be greatly extended to set up and find the critical dynamic forces using [Mechanism Dynamic Option](#). Also, you can find exactly where the peak forces occur within a range of motion and use these forces as a key input values to run an FEA analysis in [Mechanica Structure](#). Boy, imagine having this capability when taking that Dynamics class. But more importantly, this capability will allow you to fully simulate how a moving part will be stressed and find out ways to optimize your design for the best performance with no failures. So how can you set up and run a dynamics study on your Pro/ENGINEER models today? It's actually pretty simple. Here is a 10 step process to run a dynamic/FEA analysis along with key figures for each step.

1. You need to assemble your design using Mechanism joint connections. This will allow assembly to move throughout its range of motion. You can create these joints in Assembly mode or go to Applications/Mechanism.

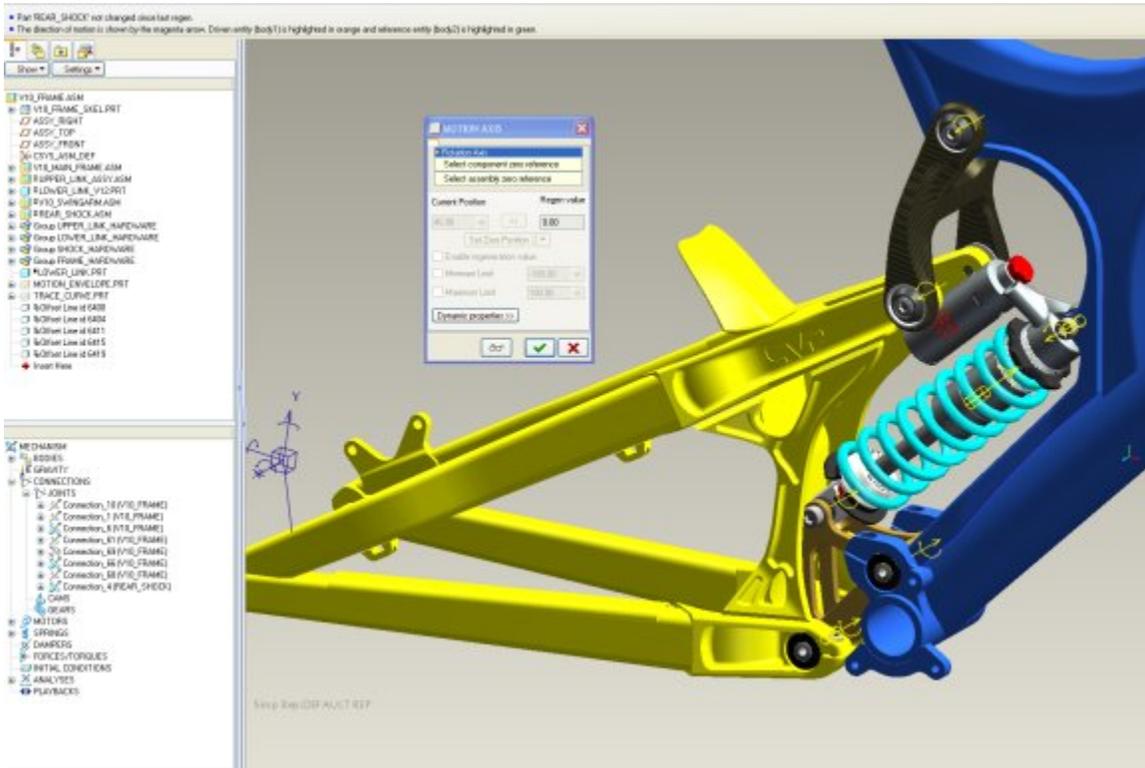


Figure 1: Mechanism Connection Joints

2. You need to define dynamic bodies and forces like spring, dampers, cams, friction, and gravity. It's easy to create these items from the Mechanism Model tree located in the lower left corner of window. For instance, just select Gravity/RMB/New or Edit Definition from the Model Tree to get access to the menu.

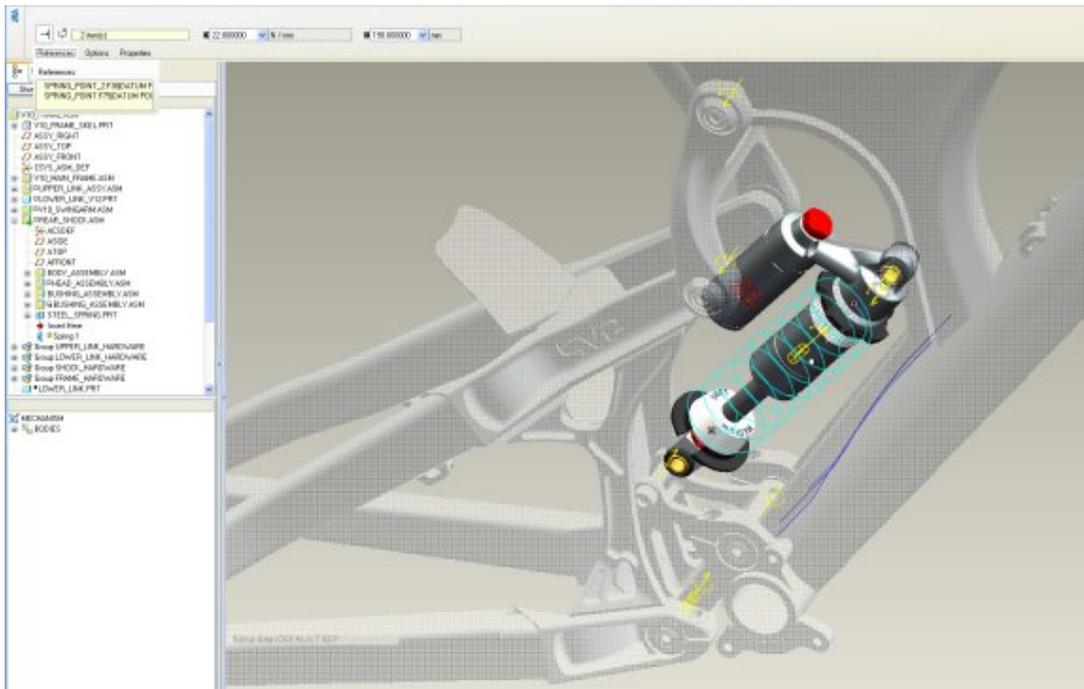


Figure 2: Dynamic Entities like Springs, Dampers, Gravity, Friction, etc.

3. You need to define a driver which basically is like a motor that starts your mechanism motion.

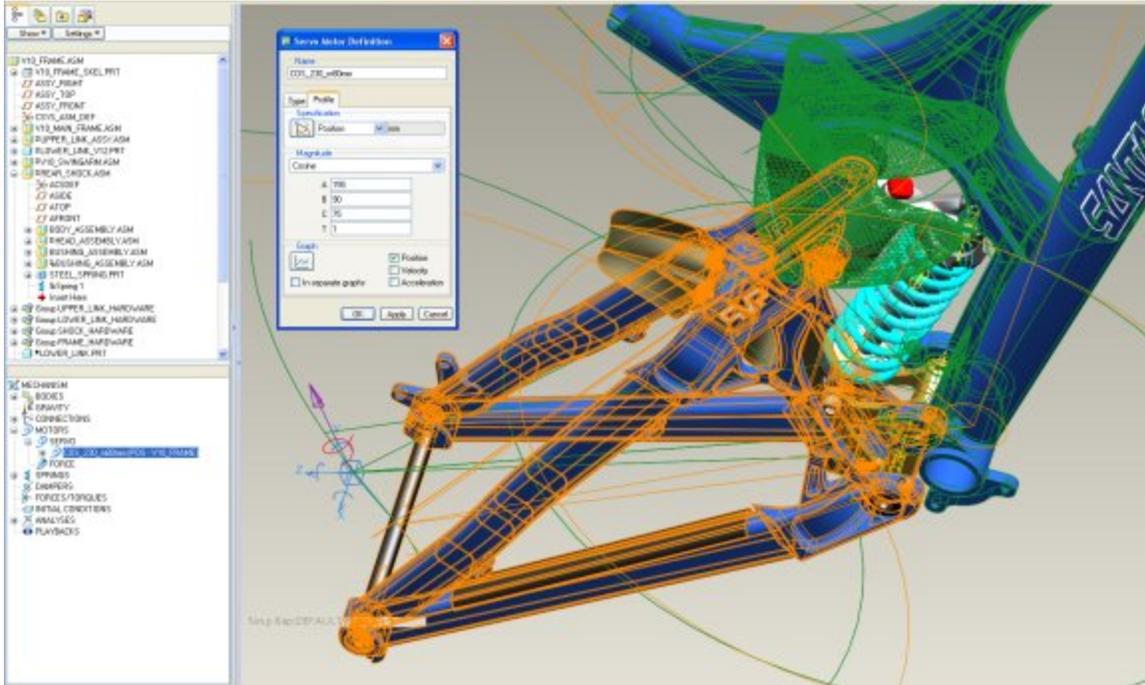


Figure 3: Driver Motors

4. You want to define an initial condition that defines exactly what that driver is doing at time=0. You can setup a snapshot for the position of the start and include that with the initial condition.

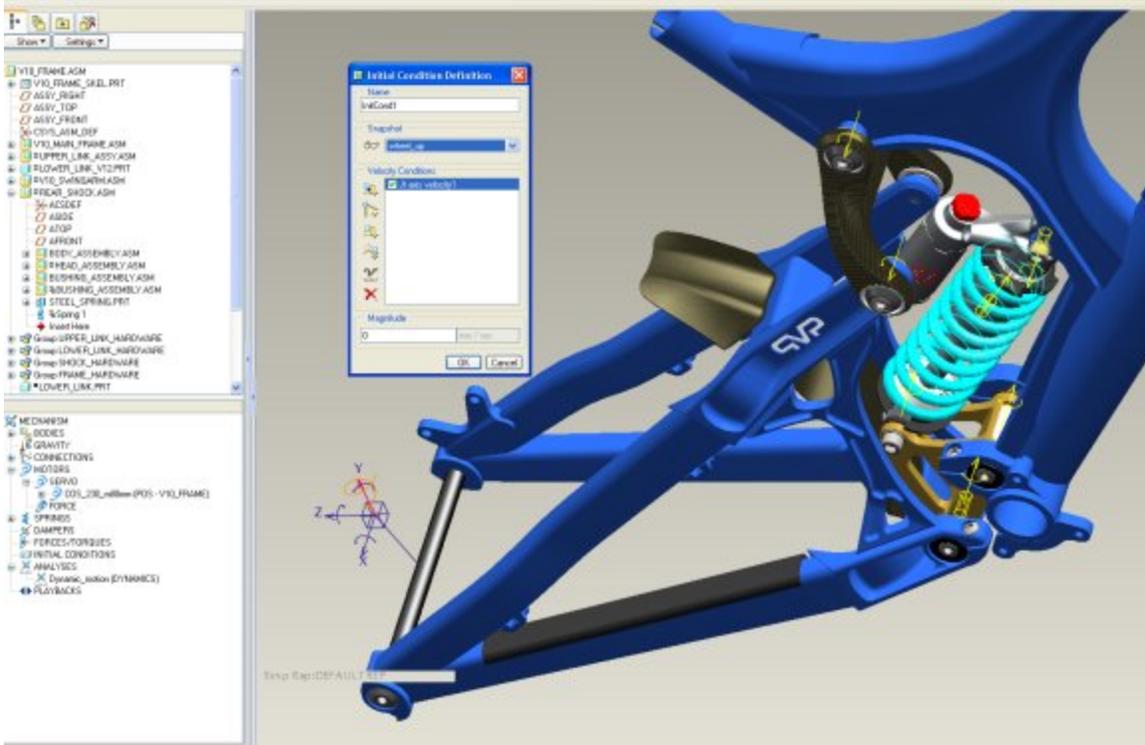


Figure 4: Initial Conditions

5. You need define a dynamic analysis where you define how long you want the driver to run, start the initial condition, and turn on gravity and friction. Now run this analysis. This is required for the next step to calculate the forces.

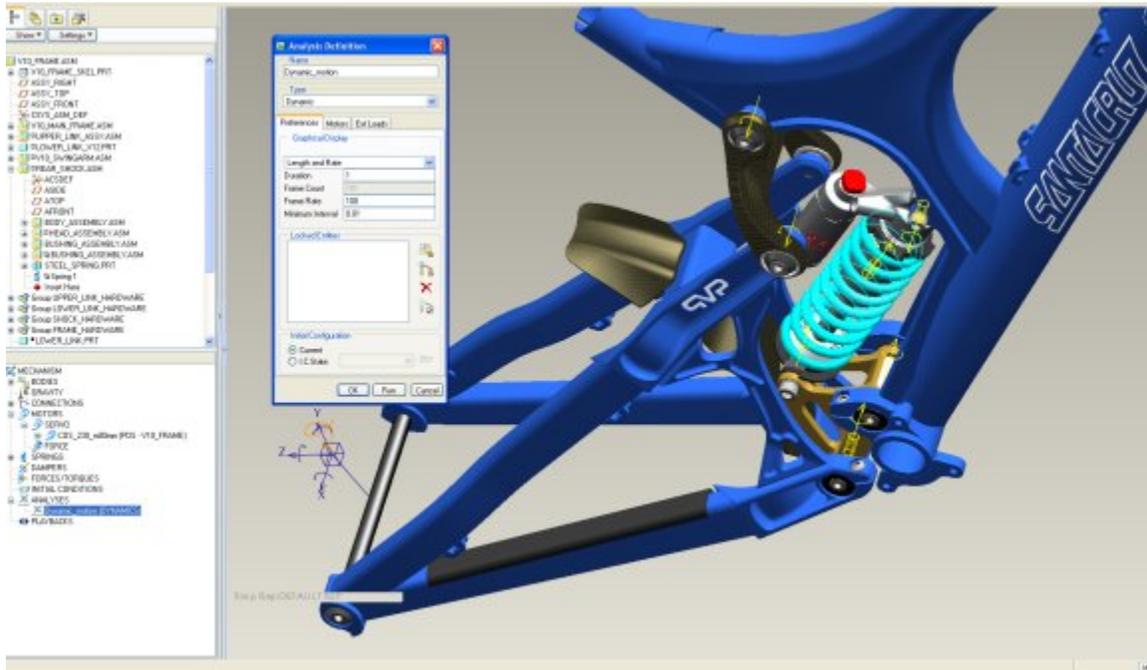


Figure 5: Creating a Dynamic Analysis

6. You need to create connection force measures at each key location on the model. These measures can be graph for the entire time range. Just select the force measures, the dynamic analysis and hit the graph icon. Also, you typically want to playback the analysis and show the force magnitude arrows to graphically see where the peak forces occur.

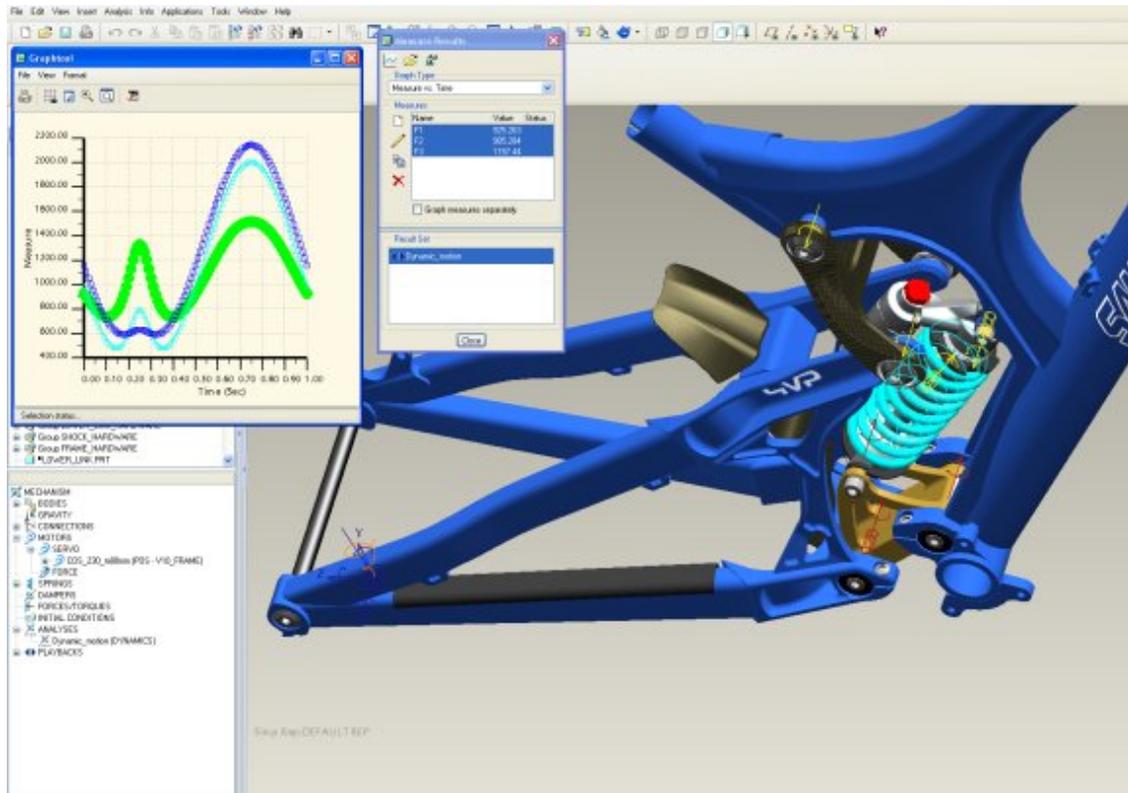


Figure 6a: Force Measures with Graph

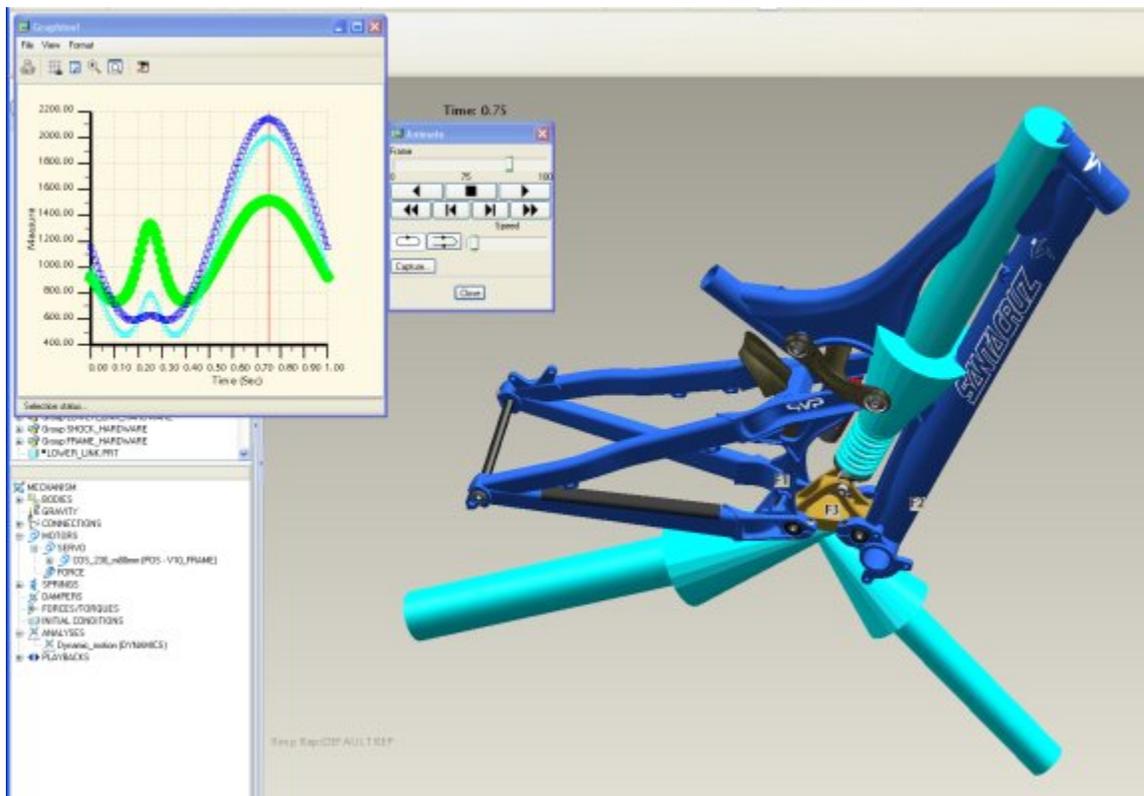


Figure 6b: Force Measures Arrows

- You want to File/Use in structure and select the component of interest, and apply all the peak loads occur at a single time location or max all loads across the time range. Typically, you want to just select the forces, and deselect the rest (moments, accelerations, etc.) The graph should help you validate when the max load occur.

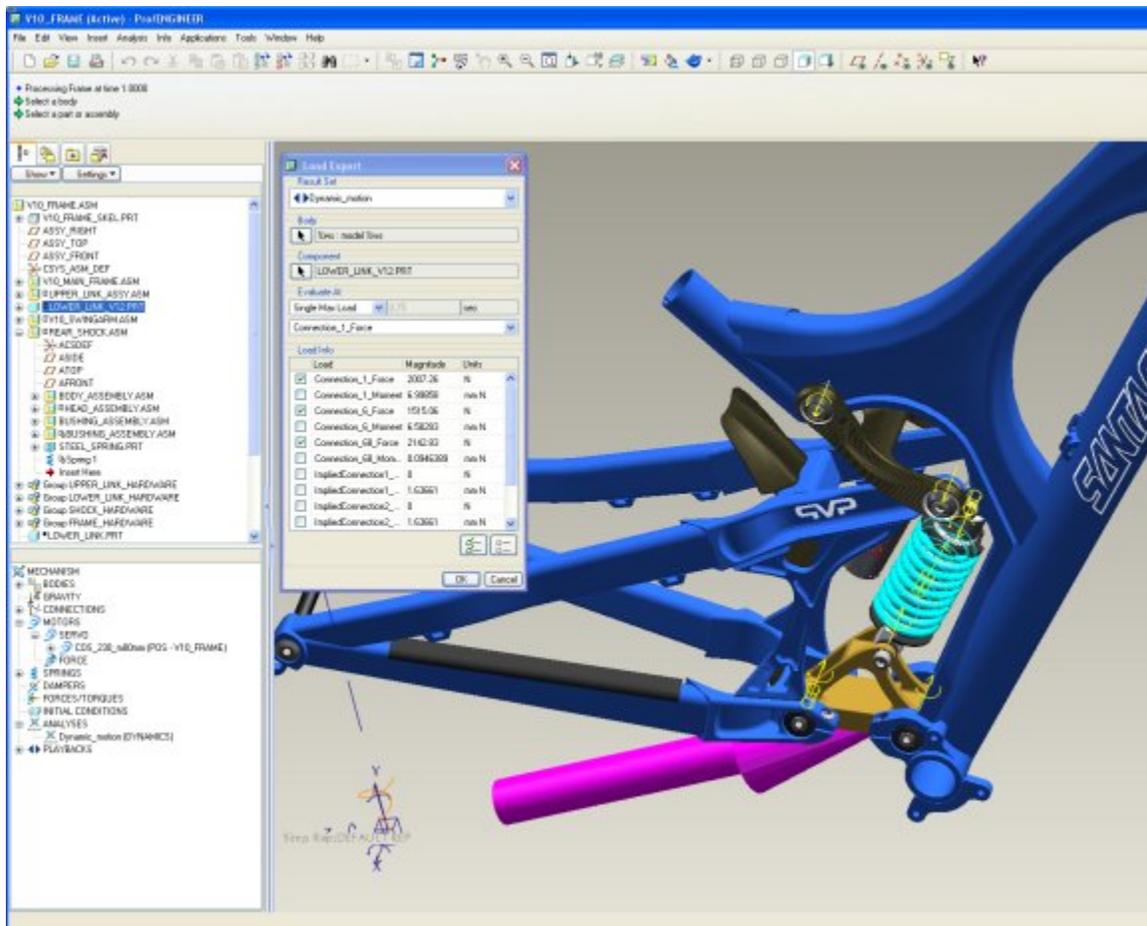


Figure 7: Calculating Peak Loads

- Now that the loads have been transferred to the Pro/E model, you can open the model by itself in another window. Go right into Mechanics Structure. With any Mechanics analysis, you typically need to define three things 1) material properties 2) loading and 3) constraints. With a moving body, the constraints will be handled as inertia relief during the analysis set up. Assign the material properties for the part.

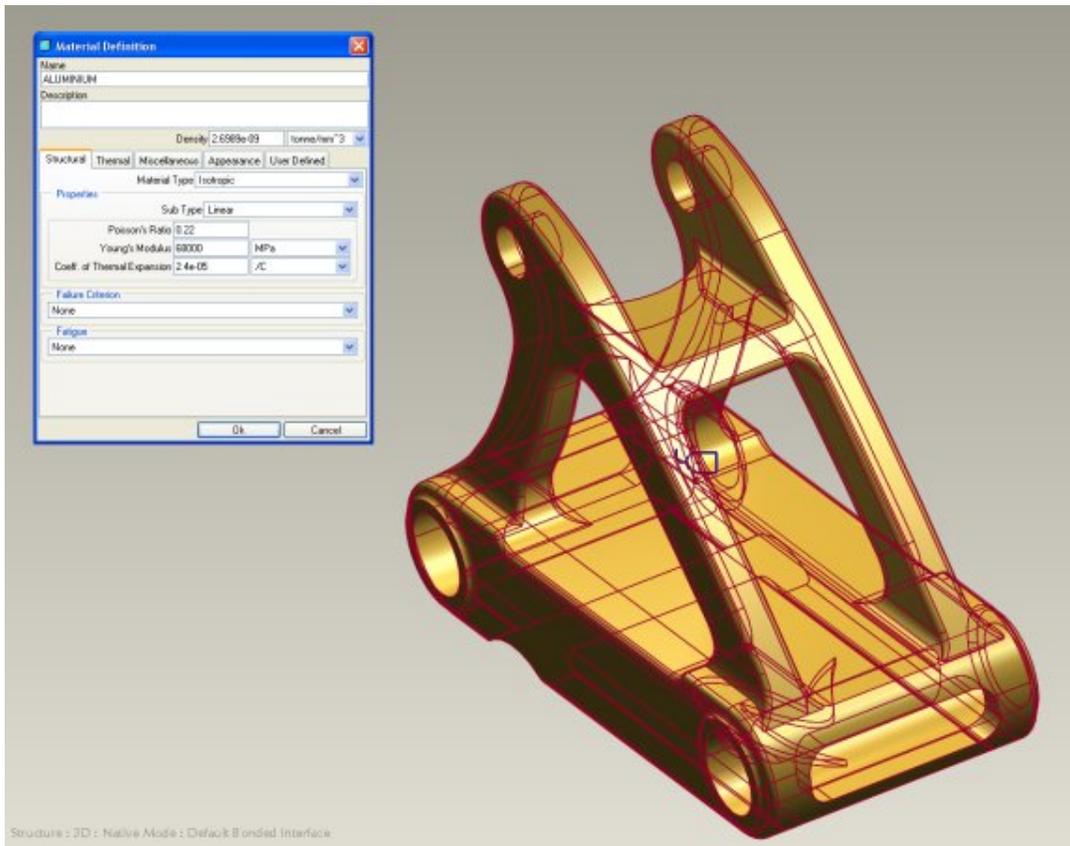


Figure 8: Material Properties

9. Insert/Mechanism Loads to bring in the loads into the model. Now, just click the force that currently is applied at a point and apply/distribute the force across the appropriate model surface.

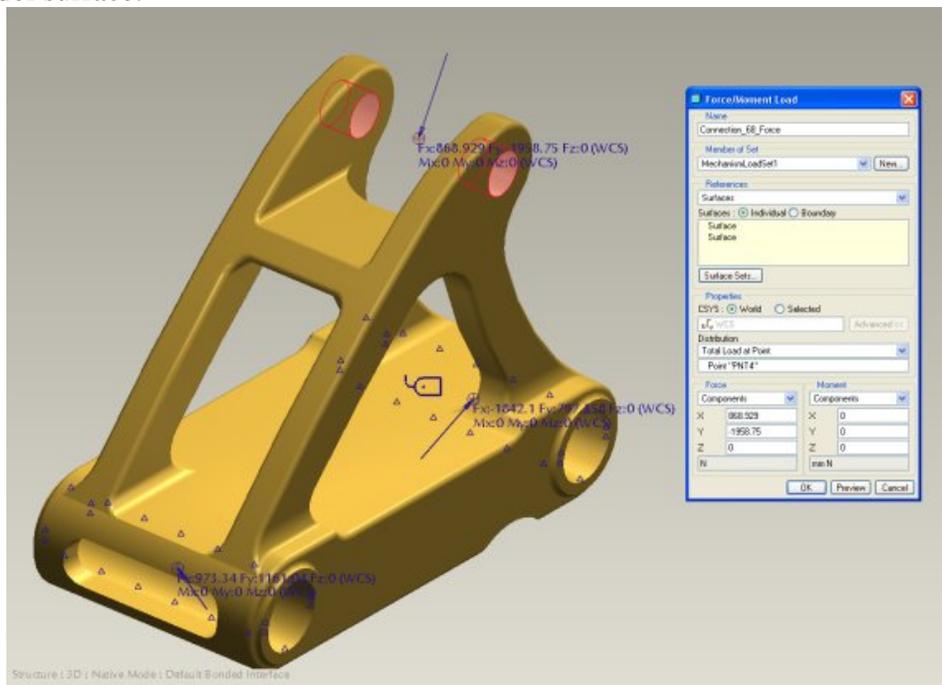


Figure 9: Mechanism Loads Applied to Model Surfaces

- Set up a static analysis where you use the loading you just defined and set it to inertia relief. Run the analysis and post process the results for stresses and displacements.

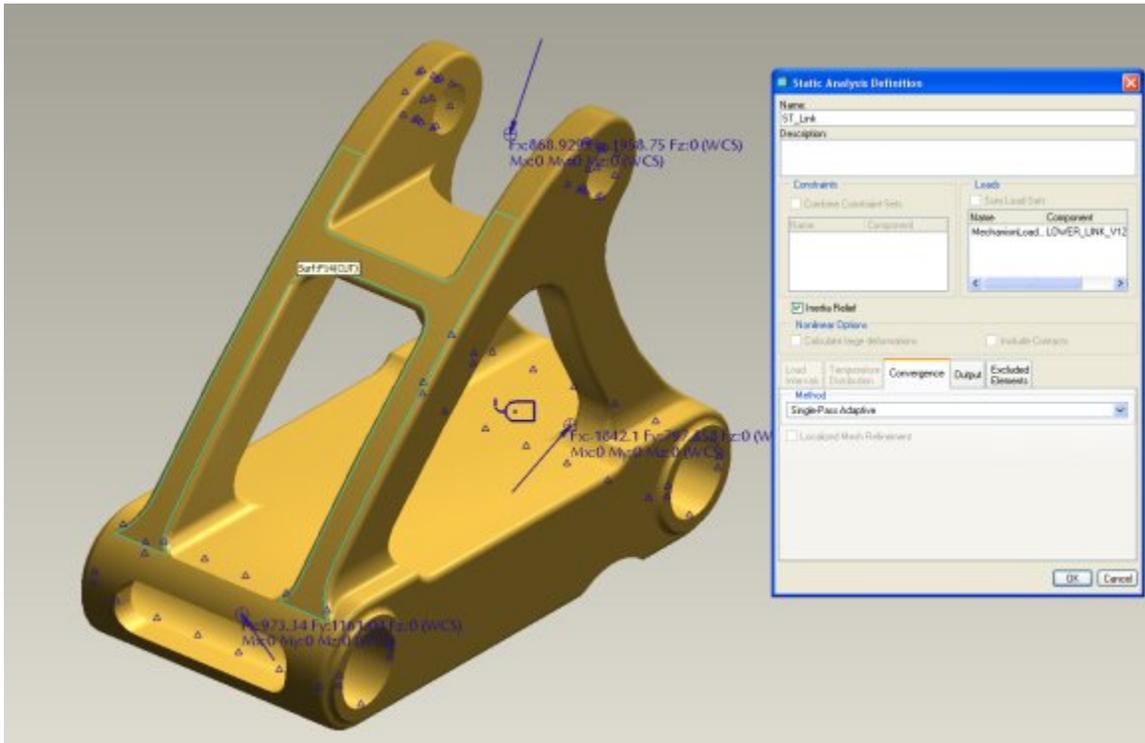


Figure 10a: Inertial Relief Static Analysis

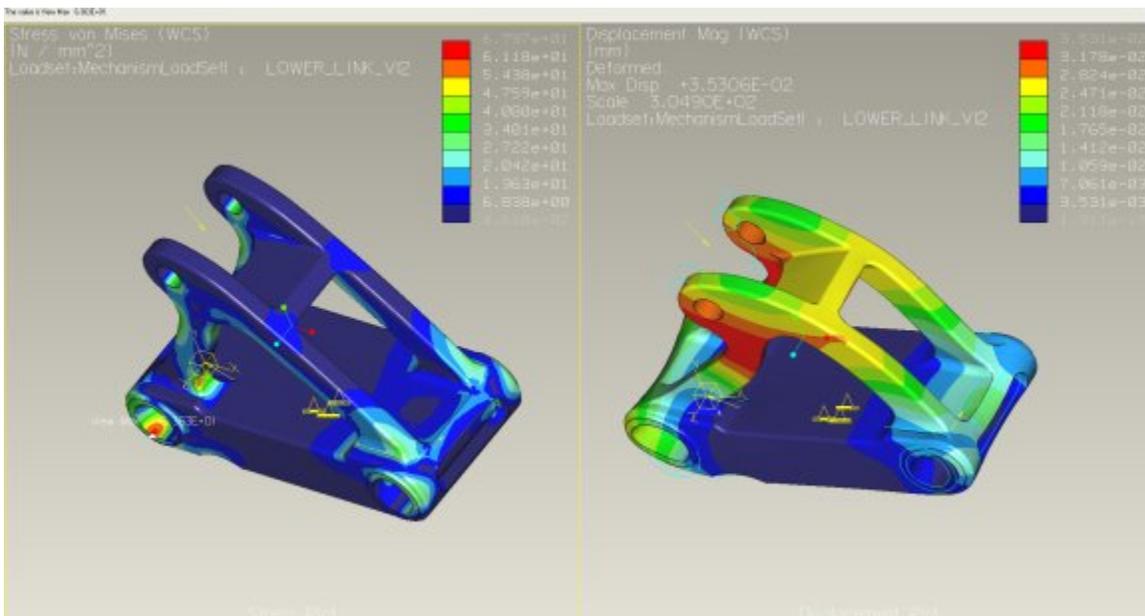


Figure 10b: Post Processing of Stress and Displacement Results

For more details around Mechanism Dynamic Option and Mechanica Structure, you can refer to the following help on Tech Support -- [\[MDX/MDO\] Central Resource Page](#). Also you can look at the following PTC University courses:

- [Mechanism Design using Pro/ENGINEER Wildfire \(2-4\)](#),
- [Mechanism Simulation using Pro/ENGINEER Wildfire \(2-4\)](#), and
- [Pro/ENGINEER Mechanica Simulation using Pro/ENGINEER Wildfire \(2-4\)](#).

These courses are offered in Instructor led training, Virtual Course training, and Web-based training. Note, the Wildfire 4.0 training should be available soon.

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Tips of the Month

Relating Contract Line Items and DIDs to a CDRL

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Announcements

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 - Conceptual and Industrial Design
 - Detailed Design
 - Simulation/Analysis
 - Production
 - Design Collaboration
- Windchill PDMLink
- Windchill ProjectLink
- Pro/INTRALINK
- PTC Online Tools

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[Tips & Techniques: Work Smarter Not Harder!](#)

E-PROFILES IS HERE!!

We have been eagerly anticipating the debut of the new electronic version of Profiles Magazine and now it is here! This new web site will supplement the print edition of the magazine and will

provide new useful features not feasible with paper media. e-Profiles will provide you with 24x7, worldwide access to key information previously available exclusively in the print version. "Tips & Tricks," a popular feature pioneered by Pro/USER, has also moved to the web and will be expanded as the site matures.

Please take a few minutes to check out this new web site. We don't think you will be disappointed.

<http://profilesmagazine.com/>

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Upcoming Events & Training Class Schedules

Upcoming, 2008 Your local Pro/Engineer User Groups
<http://www.ptcuser.org/rugs/>

June 1 – 4, 2008 Long Beach, CA USA
PTC/USER World Event
<http://www.ptcuser.org/>

Events

Our seminars and conferences seek to provide you with relevant information regarding product development trends in your industry as well as innovative software learning experiences. Think of them as a constructive day off where you can share experiences and swap ideas with your peers.

If you can't manage to get away, we'll bring it to you. Check back often for regularly scheduled live webcast events.

[You're Invited to Attend...](#)

Please visit the [PTC Education Services](#) website for the latest training information including course descriptions, schedules, locations, and pricing.

- Attend a course at any PTC Center and receive a **free** copy of Pro/ENGINEER Wildfire Student Edition!

<http://www.ptc.com/services/edserv/index.htm>

Live Instructor-Lead Virtual PTC Training Courses

Virtual Classrooms provide interactive learning with a trained PTC instructor in convenient and manageable sessions that last approximately 4 hours over a series of days. It's easy to join a class right from your desk using a phone or voice-over IP technology.

Sessions are performed just like a traditional ILT (including interactive exercises where you and the instructor can work on lab exercises together) and feature some of our most popular ILT courses. These sessions cover the exact same material as the traditional ILT in-center courses. Also look for some of our most frequently requested mini-topics delivered in the same format that are only an hour - two hours in duration.

If you have any questions about these sessions or would like to see getting other courses, not on this list, on the schedule please feel free to contact me for more details. They are a great way to bring training to you without you having to worry about location or being out from work for long stretches.

You can register for these sessions just as you would for any normal ILT class either by:

1. calling order admin at <http://www.ptc.com/services/edserv/training/registra.htm> or
2. you can go to PTC University directly at <http://www.ptc.com/learning> and submit a registration request directly. All you have to do is search the catalog by typing in “virtual” in the search field and you will see a listing.

PTC

Note: This PTC E-Newsletter will continue to be used for the following:

- 1) Inform you on events related to PTC products (user groups, conferences, training schedules, etc.)
- 2) Educate you on solutions that are available at PTC
- 3) Tips & Techniques using PTC Products

Note: These messages are compiled in the local PTC office and will be distributed via e-mail.

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