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AMERICAS 2008



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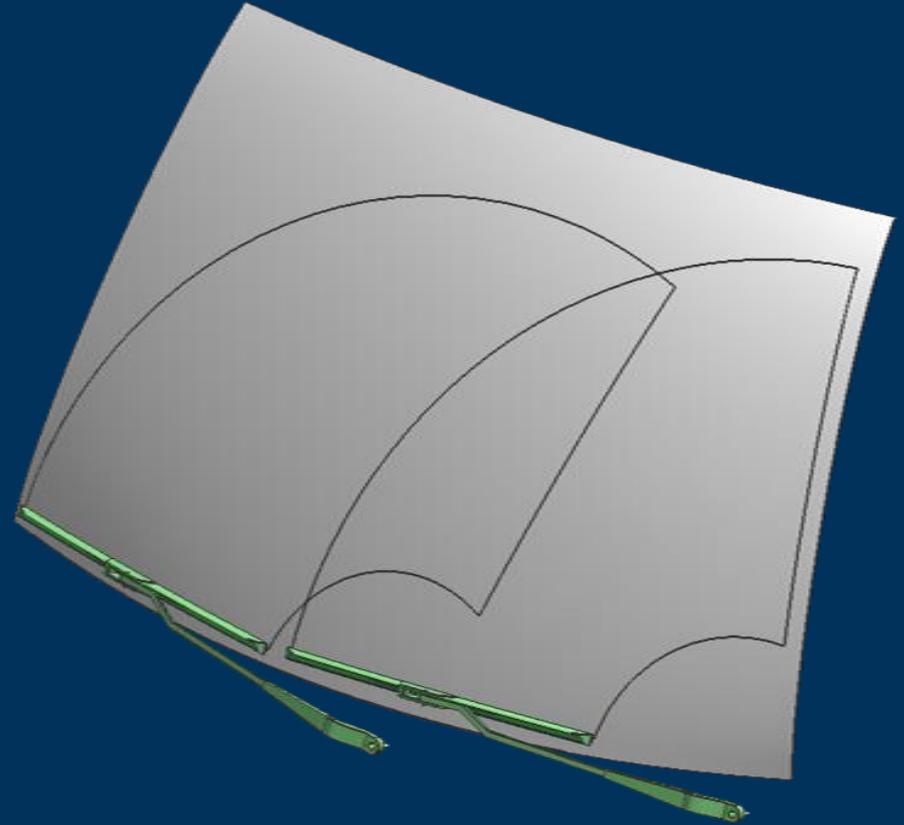
Using VB .NET to Develop a Windshield Wiper Design Application

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General Motors Corp.



Agenda

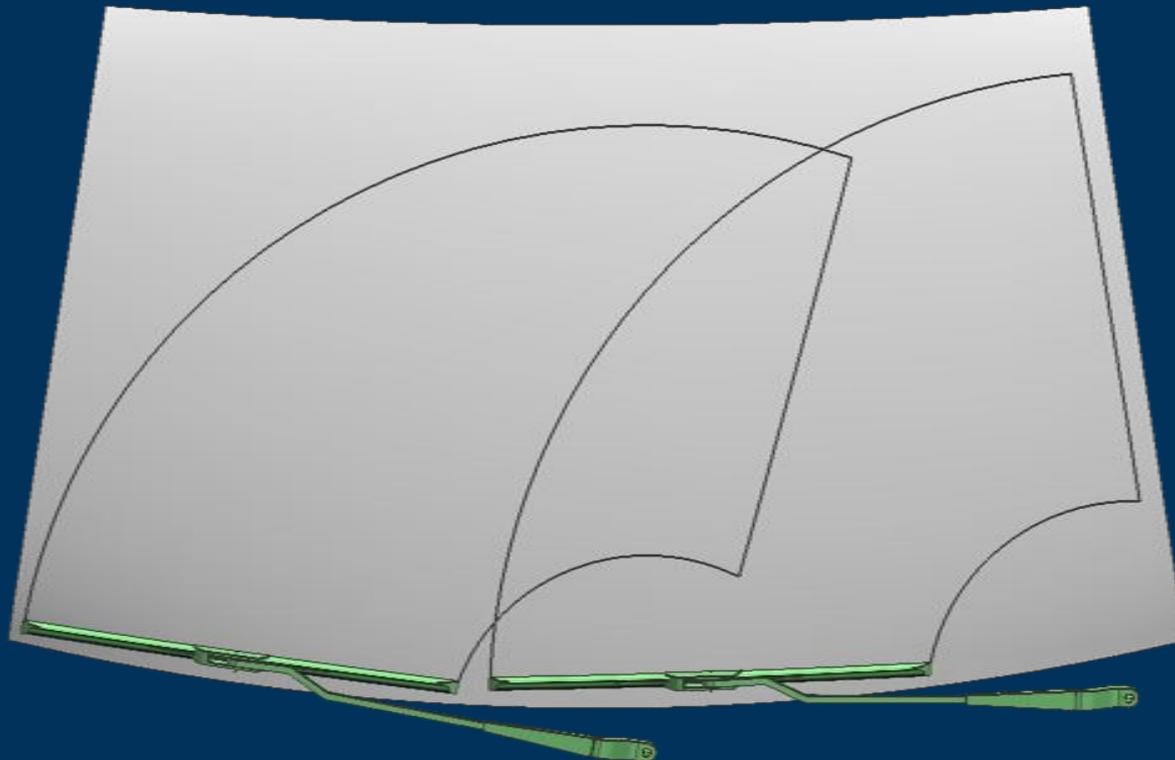
- ▶ Introduction
- ▶ What It Does
- ▶ Coding
- ▶ Why VB .NET?
- ▶ Application Purpose
- ▶ Demonstration





Introduction

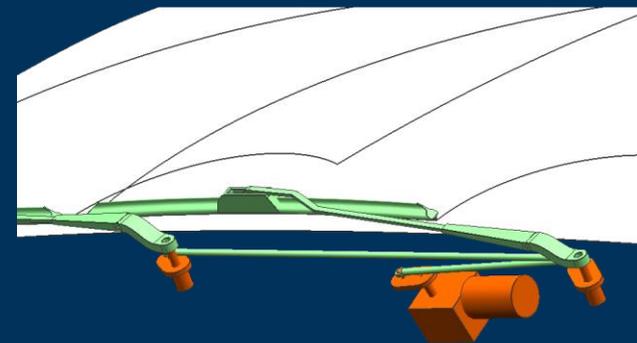
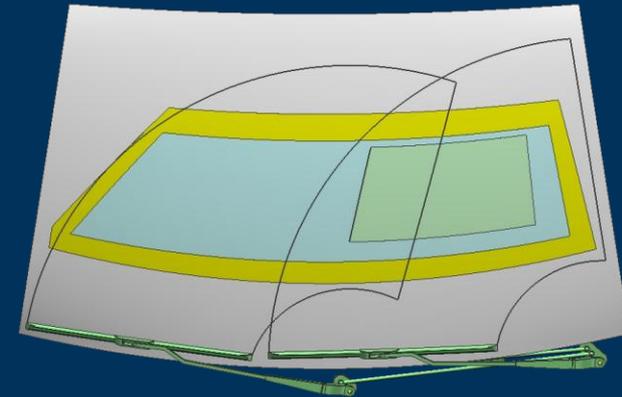
- ▶ Wiper Design Advisor 3
 - ▶ Tool to Design and Analyze Automotive Windshield Wiper Systems





What It Does

- ▶ Allows user to iterate and optimize all dimensional and positional parameters. For example:
 - ▶ Arm length, blade length, wipe angles
 - ▶ Pivot location, pivot shaft orientation
- ▶ Checks wiped area against Federal Motor Vehicle Safety Standards (et. al.)
- ▶ Synthesizes the mechanism under the cowl
- ▶ Checks entire system against GM Best Practices
- ▶ Creates simple wireframe and solid geometry





What It Does Not Do

- ▶ Does not create a detailed model
 - ▶ This is done by suppliers
- ▶ Does not deal with forces (yet)

Coding



- ▶ Written in Visual Basic .NET 2003
- ▶ With NX/Open .NET API
- ▶ NX version 3
- ▶ Some functions written in C with the NX/Open C API
- ▶ KF Attributes used for data persistency



Why VB .NET?

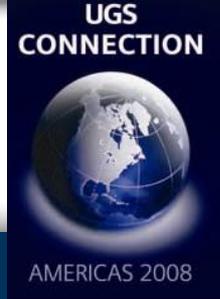
- ▶ We chose to use VB because it has:
 - ▶ Flexible user interface
 - ▶ Fast performance
 - ▶ No footprint in the part file



When to Choose Knowledge Fusion?

- ▶ If the answer to this question is YES, then use KF to write the automation application
 - ▶ Will the application create NX features and will the user manually add additional features and will the user re-run the application to edit the features created by the application?
 - ▶ %nx_application class
- ▶ Other reasons to use KF
 - ▶ Create associative geometry that updates without running the application.
 - ▶ Smart template part files with embedded KF rules.
 - ▶ Checkmate checkers.

Demonstration



► Demonstration



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