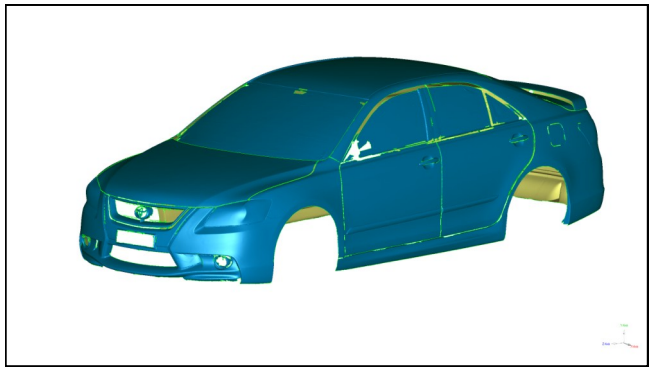
Toyota Aurion—Aussie Racing Cars

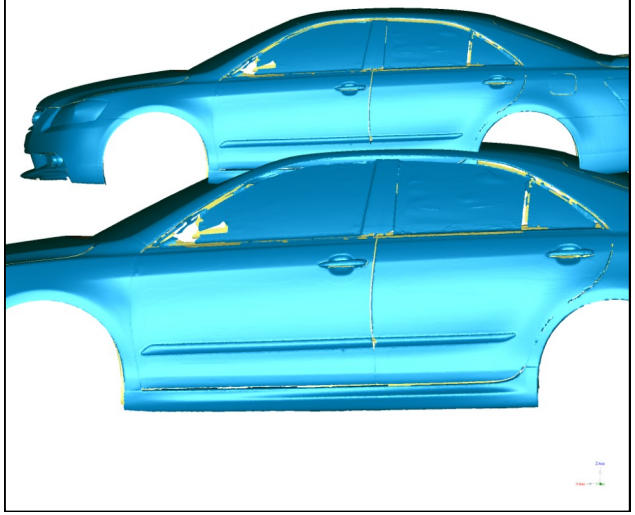
Having assisted Aussie Racing Cars over the last eight years develop the AU Falcon and then the VY Commodore it was only natural for Phil Ward of Aussie Racing Cars (www.aussieracingcars.com.au) to call once again on Wysiwyg 3D to help develop the Toyota TRD Aurion as a miniature race car.

So impressed by the Aussie Racing Car series was Toyota Australia that they approached Phil to develop an Aussie Racing Aurion based upon the TRD Aurion body shape. Toyota wanted this car to be instantly recognisable as an Aurion and wanted the first car on the track at Indy 2008.

Phil called Wysiwyg 3D to chat about the new body. Discussing at length the issues and lessons learnt developing the previous 2 models, it was decided that the approach this time would include scanning a full size Toyota TRD Aurion, scanning the existing chassis, scanning an existing Aussie Commodore and then mixing all this altogether in cad to then have a mould, not a pattern, machined. The first product out of this mould would serve as the prototype for test fitting, visualisation and production pattern. This approach was designed to reduce development time and ensure the right “look”.



Real Size Aurion Versus scaled Aurion



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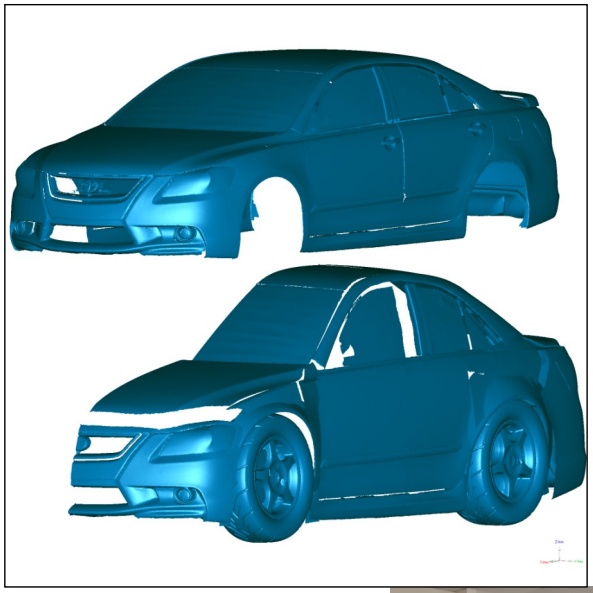
WYSIWYG 3D

Shane introduced Phil to Russell Mapplebeck of Impact Design, a toolmaker, CNC programmer and Catia product design expert. With Russell on the team the mould would come off the 5 axis mill ready for assembly and layup.

By Laser scanning the existing chassis and existing body Russell had a base to work from. He would know the critical areas of fit and clearance, of ride height, cooling air in and out and overall physical form. It is a difficult task to resize a 5 metre long, 1.9 metre wide and 1.4 metre high car into a 3 metre long, 1.4 metre wide and 1.2 metre high version that looks the same. To do this the full size Aurion scan data was cut and scaled, moved and rotated until it was roughly right. Staying in polygons at this stage makes this task easy. Then Russell set about surfacing over the top of the modified scan data. Working closely with the experienced eyes of Phil and James Ward, Russell was able to model a body that was approved for machining. Not only did Russell need to design the body to look right and fit the chassis, he also ensured that it would be manufacturable!



Inital Sizing Cut and Shut
Quarter View

The moulds were roughed out in Melbourne and then finished machined at Broens Tool-making in Sydney on one of their 5 axis mills.

“The first product laid up in the assembled mould released perfectly, fitted straight over the chassis, sitting on the steel where it is supposed to and clearing what it needed to” said Phil Ward. “this is the first body to have fitted perfectly straight out of the mould - it is a credit to the entire team involved. We have come such a long way from the first AU Falcon eight years ago, Shane’s company has been an integral part of that evolutionary process and we could not have achieved such success without their industry knowledge”

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