



# Verisurf Device Relocating

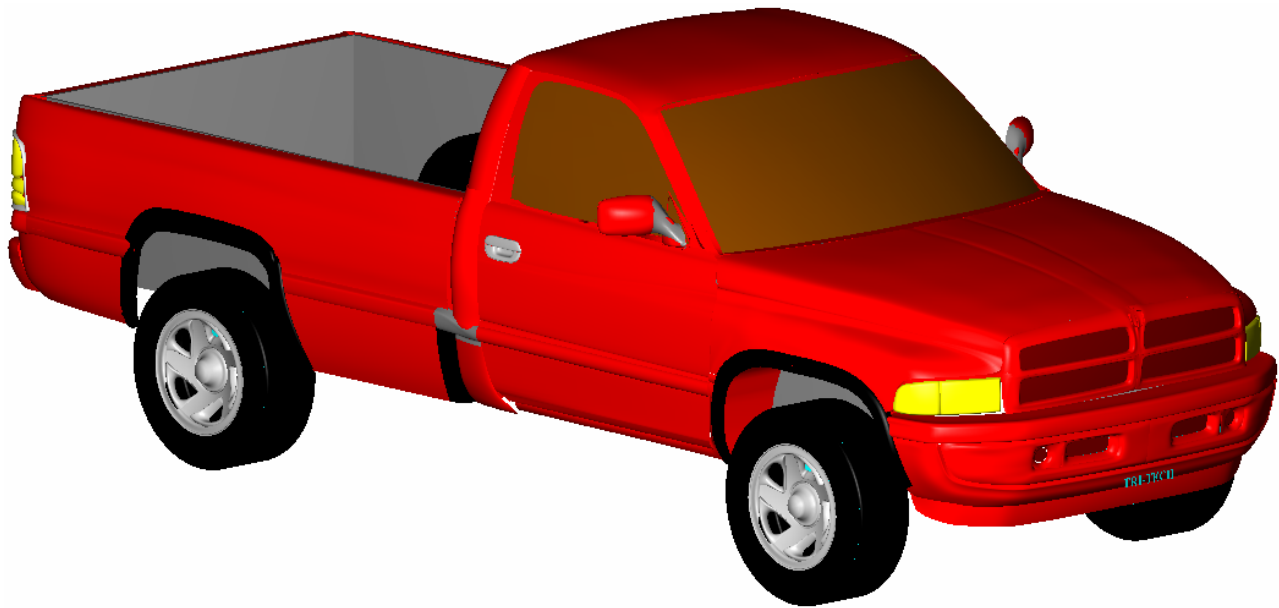
## Table of Contents

INTRODUCTION .....	2
FIRST AUTO ALIGN .....	4
FIRST SCAN ALIGN .....	5
PUCK POSITIONING .....	6
CREATING 1 <sup>ST</sup> RELOCATING ALIGNMENT .....	7
SETTING 1ST RELOCATING ALIGNMENT .....	8
CREATING 2ND RELOCATING ALIGNMENT.....	9
SETTING 2ND RELOCATING ALIGNMENT.....	9

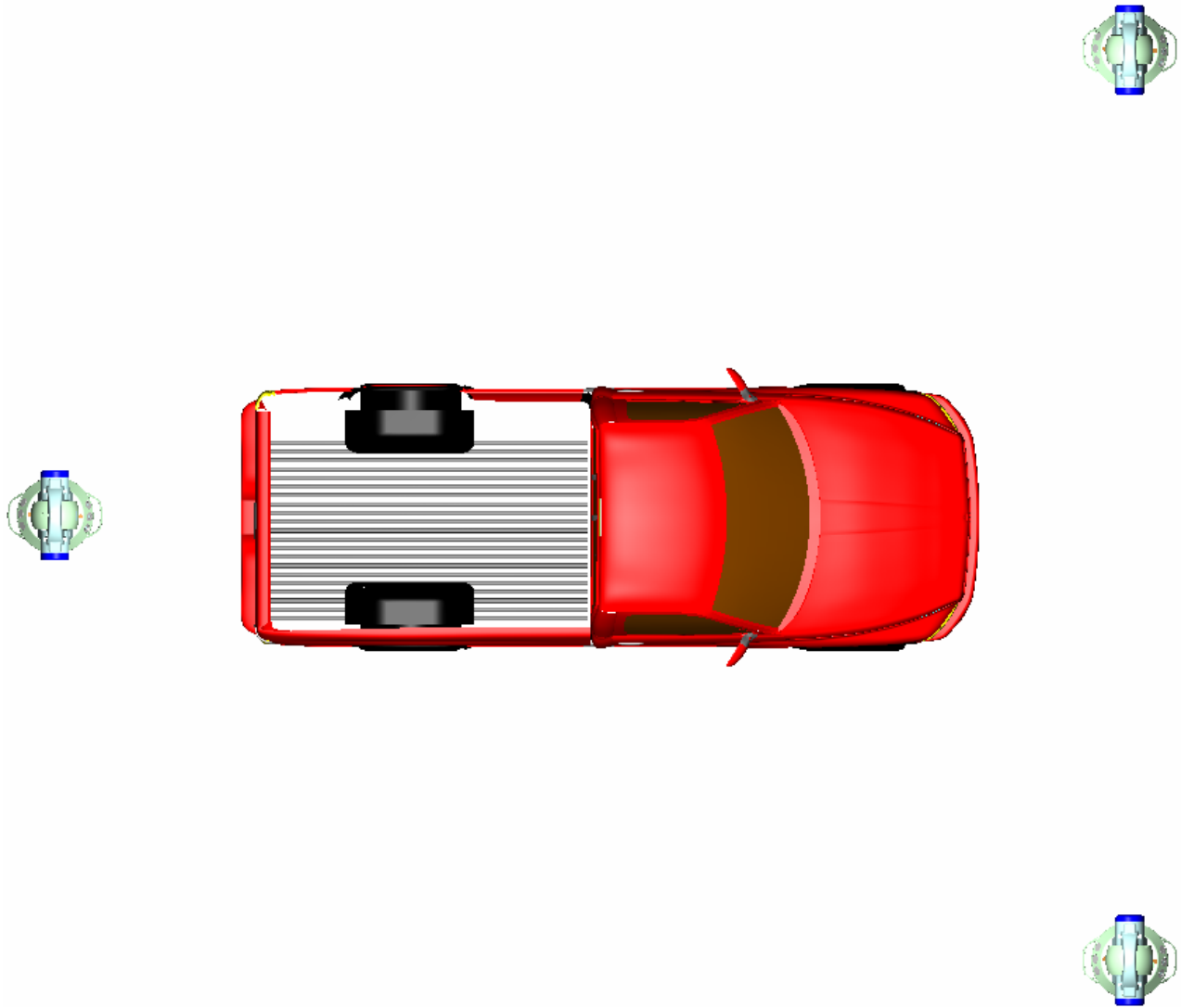
# Introduction

“Relocating” is used to allow line of sight to all surfaces on a part using the same alignment while moving the laser tracker to various positions. It may also be used to extend the measurement envelope of an articulating arm.

In the example below we have a truck model that requires all outer body surfaces to be measured with one alignment and then best fit together to determine if panels are good to each other.



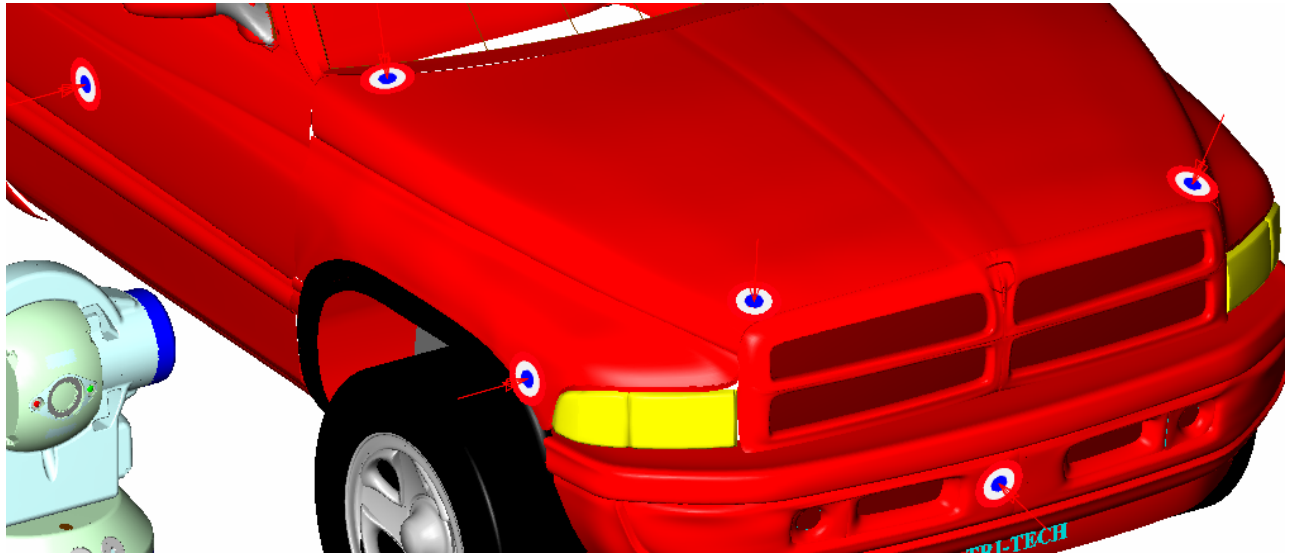
Using a tracker it is obvious that you can not achieve “line-of-sight” to all body panels. In this case you will need 3 different tracker positions to measure all the body panels. Those positions are shown on the next page.



With the 3 trackers shown we should be able to achieve “line-of-sight” to all body panel outer surfaces.

## First auto align

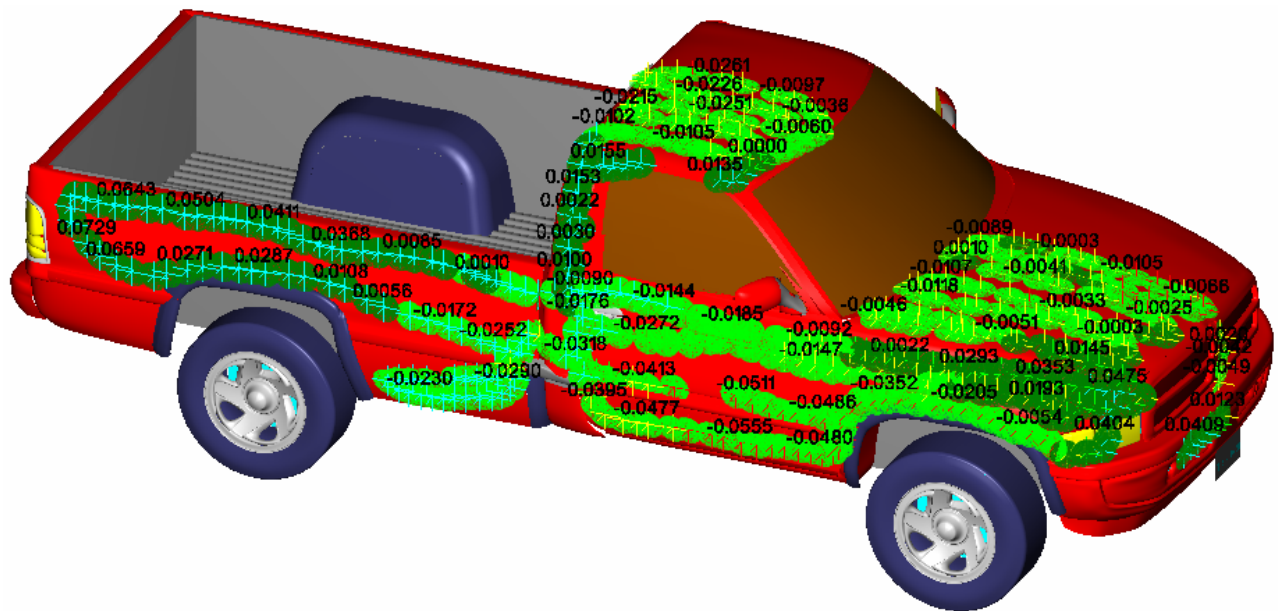
As with any Verisurf auto-alignment you need to get an initial alignment with the 1<sup>st</sup> tracker. These can be any points that your 1<sup>st</sup> tracker can see. I'll use the following example.



This provides a decent 3-2-1 to get the tracker close so that we can measure an alignment scan on the available surfaces.

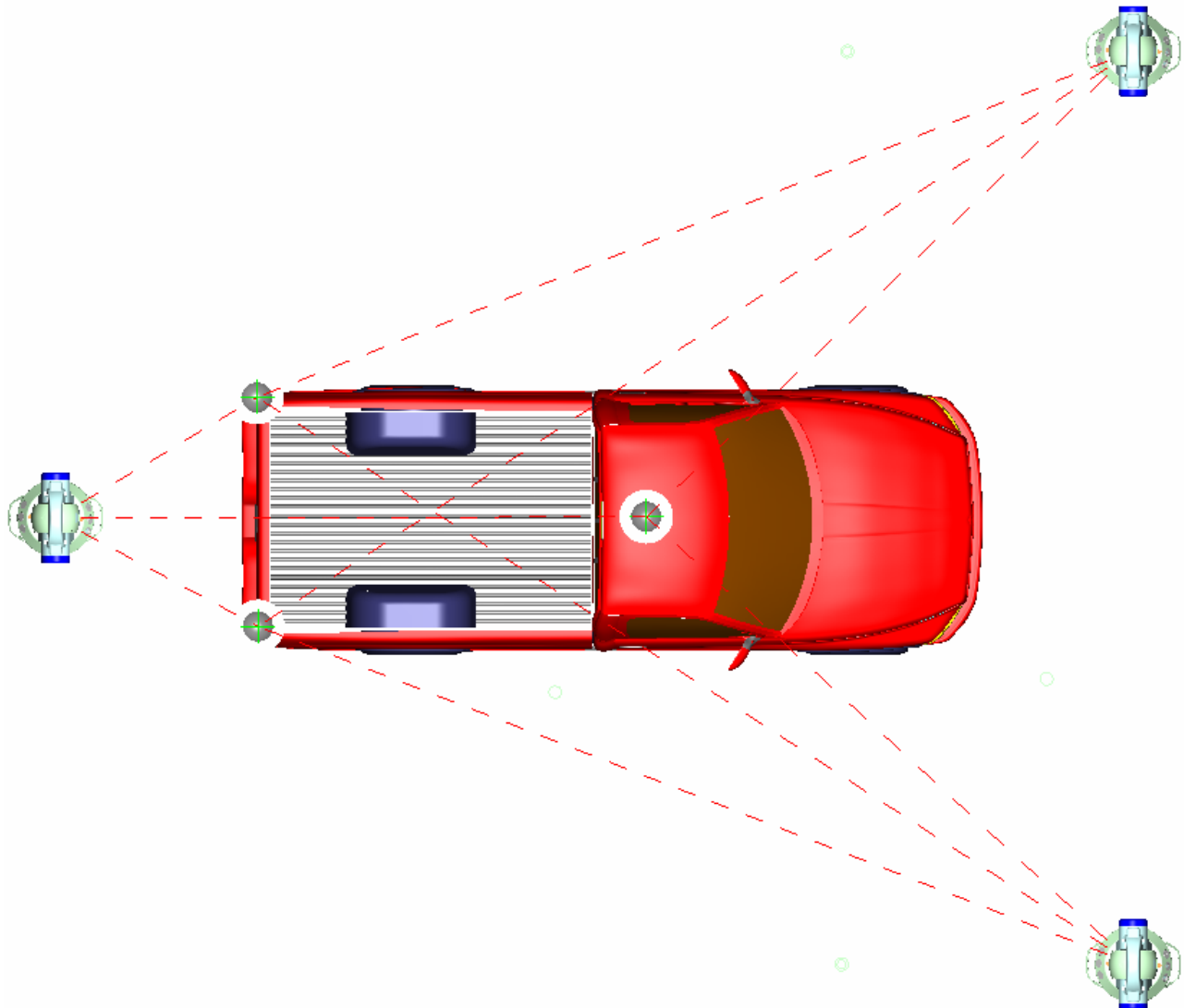
# First Scan Align

Create a new level to take a scan of the body parts with line of sight. We shift the alignment and the points to now be locked on this alignment. We now have a better alignment that includes many points on the body panel. We get something similar to this.



## Puck Positioning

Now the key is to strategically place some pucks where all 3 trackers can achieve “line-of-sight”. The 2 trackers on the right can get the 2 sides and the front of the truck and the tracker to the left can get the rear side. The pucks are placed with one on the roof and two on the top of the bed near the tailgate.

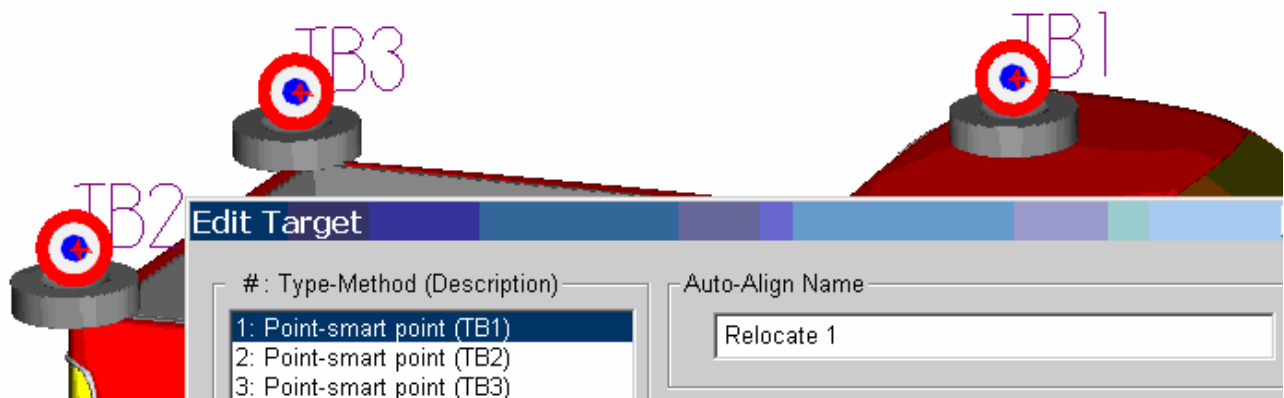


# Creating 1<sup>st</sup> Relocating Alignment

With the pucks securely placed we now use MEASURE to take 3 points. These will be named TB1, TB2 and TB3.



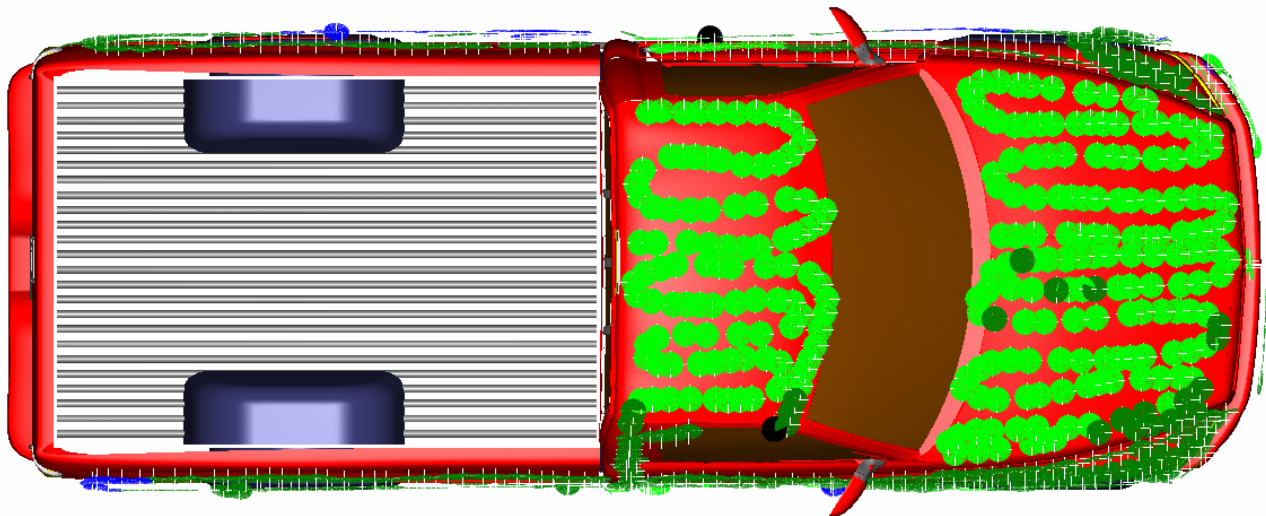
In auto-align create a NEW alignment named Relocate 1 using the 3 points in order.



## Setting 1st Relocating Alignment

Now that we have a relocating auto-align we can move the tracker to a new position (front left) and run this auto-align. This will align the new tracker position to the previous best-fit alignment to the right side body panels.

Create another new level and scan the body panels on the left side and then best fit both sides together to get a new alignment that uses both sides of the truck. We get something like this.

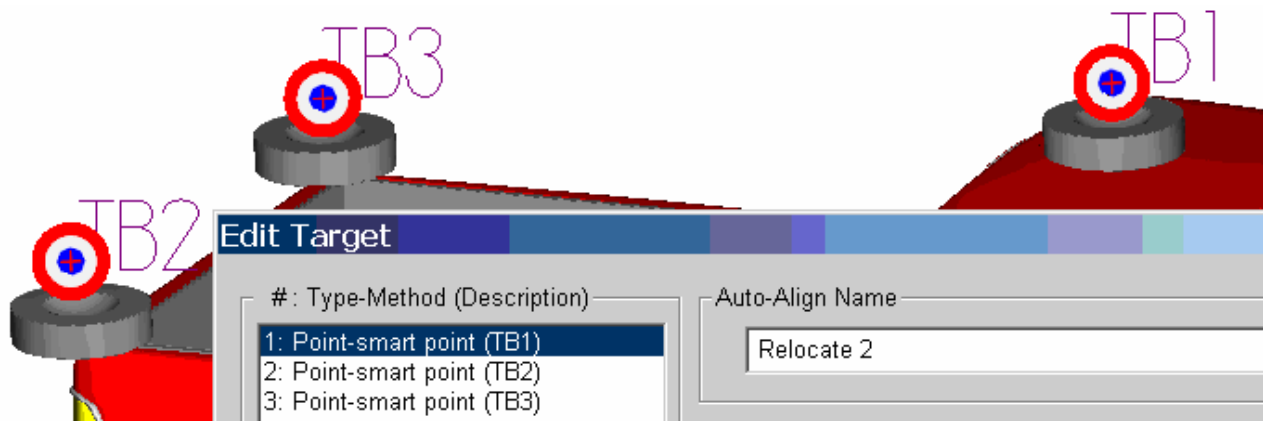


We shift the alignment and the points to now be locked on this alignment.



## Creating 2nd Relocating Alignment

Now retake the 3 relocating points in measure to establish a new Relocate 2 auto-align.



## Setting 2nd Relocating Alignment

Move the tracker to the rear of the truck and run Relocate 2. This will align the rear tracker position to best fit-fit from the left and right panel scans.

Create another new level and scan the body panels on the rear side and then best fit all 3 levels with points together to get a new alignment that uses all sides of the truck. We get something like this.

