

# TECH NOTE

PMC Technology Update

## 3D Scanning for less than \$300?

With the introduction of consumer 3D cameras it is now possible to get into scanning for less than \$300. In this note we'll look at the pros and cons of such low-cost scanning.

### What should you expect

As with everything in life, you get what you pay for. In the case of ultra-low-cost scanning you should expect limited ranges, low accuracy, and some difficulties in capture. Depending on your needs though, it is possible to capture **useable** data for under \$300.

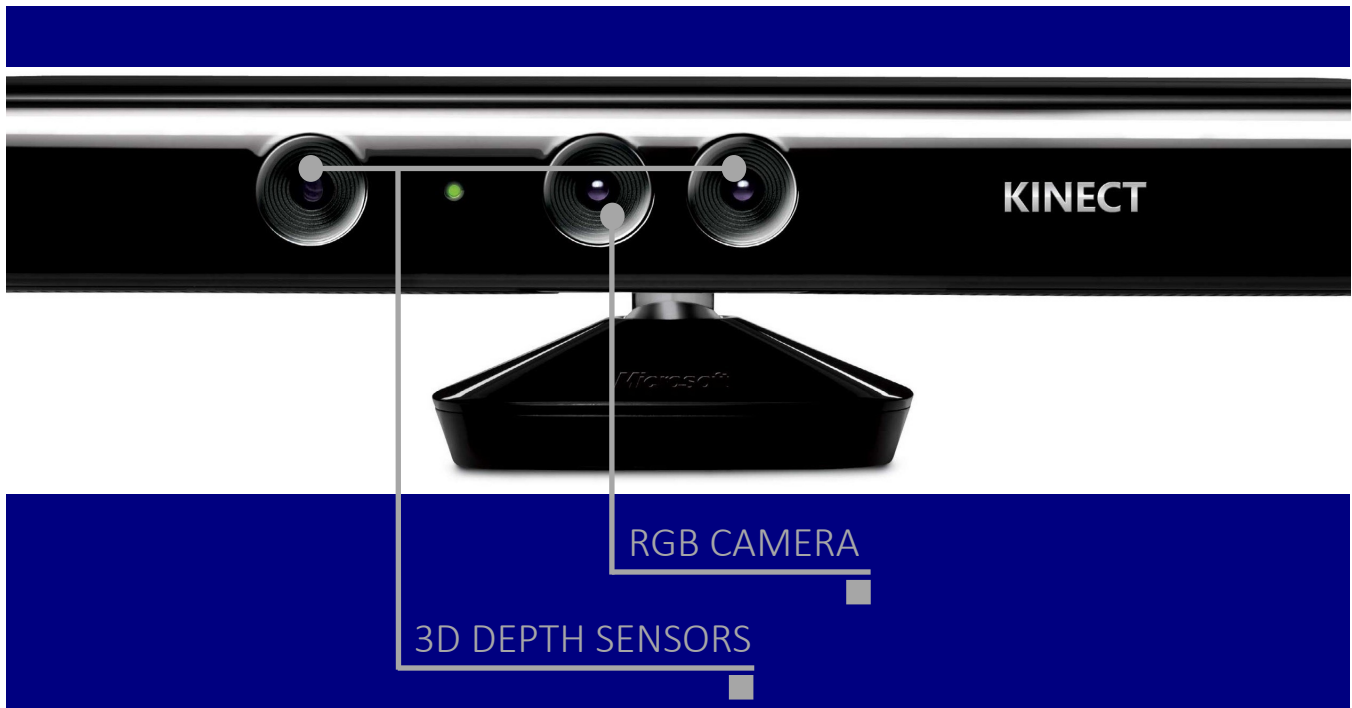
### What you'll need

To get started in the world of scanning you'll need two things; a 3D sensor and software to record and register the collected data. The sensors combine RGB cameras with depth and other sensors that allow for motion tracking. When combined with specialized software you're able to simply pass the sensor over the object to be scanned.

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*Whether you are experimenting before purchasing a professional scanner or simply want to scan for fun or as a hobby, this is the route to take.*

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**Microsoft Kinect v2**

## Sensor Options

There are currently two different sensors on the market with a third on the way.

### Microsoft Kinect for Windows Sensor



You can pick one these up online for as little as \$200. Be careful though, this is not the same sensor that is used on the Xbox.

### Asus XTION PRO LIVE



When you can find it in stock the XTION PRO can be purchased for as little as \$170. The XTION PRO works the same way as the Kinect but offers a higher resolution capture than the Kinect v1.

## A new sensor coming soon

As of June 2014, Microsoft began accepting pre-orders for the Kinect version 2. This is similar hardware to what is being shipped with the Xbox One. If you're considering getting into scanning with one of these low-cost sensors PMC recommends that you hold off until this new sensor becomes available. All parts of the version 2 sensor have been upgraded, including the camera and depth sensors.

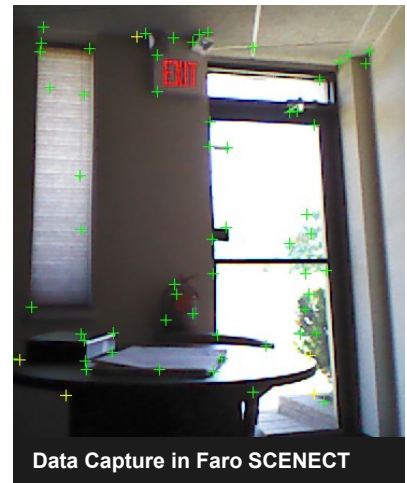
## Is this comparable to an Artec Eva?

No. Although the basics behind the technology are similar you will not see anywhere close to the results delivered by the more professional-grade device. Both the Artec Eva and Artec Spyder scanners deliver far superior results in less time.

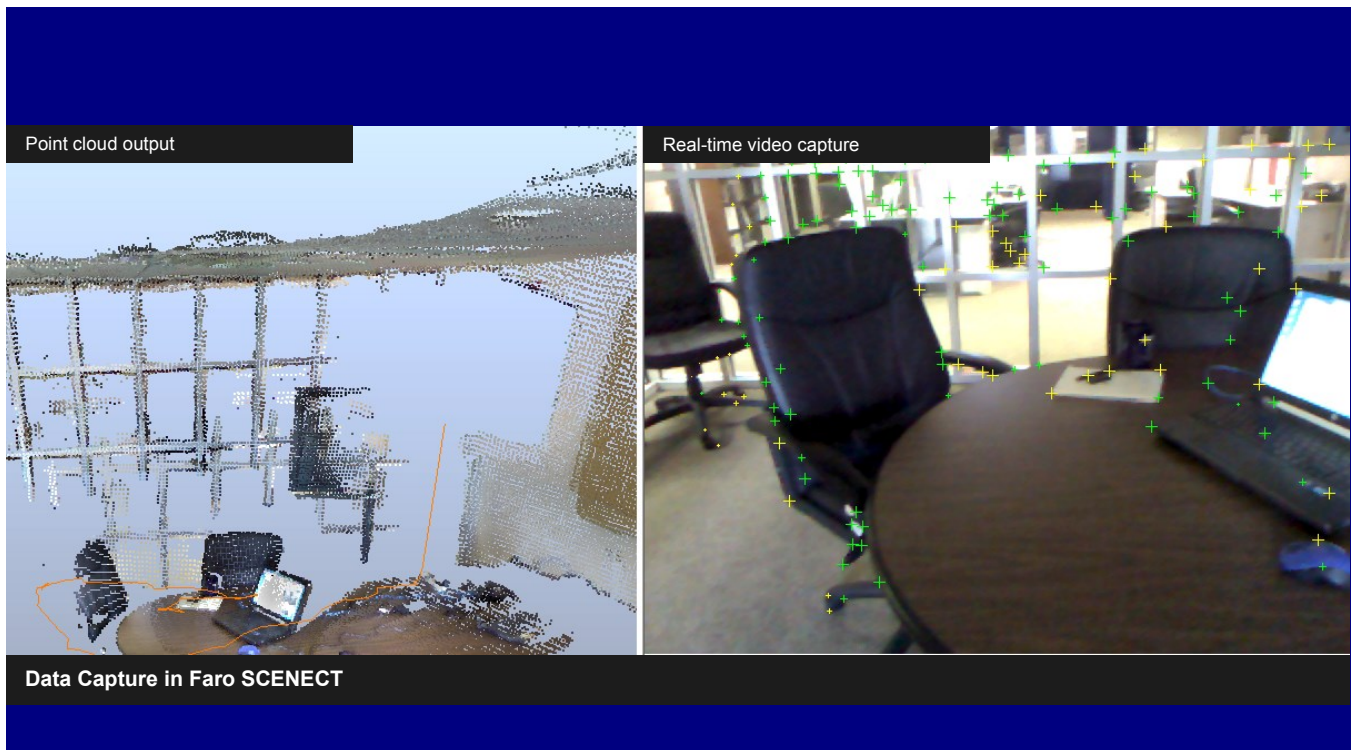
## Data Capture

For data capture you have two primary options; Faro SCENECT and Artec Studio. The Faro solution is currently free for any use while the Artec solution can be obtained as a 30-day trial and is reasonably priced after that.

In PMC's testing we've found the Artec solution produces superior results and is easier to use. That said, the final quality of the data seems more limited by the sensor versus the software. The final data were rather closely matched in terms of accuracy.

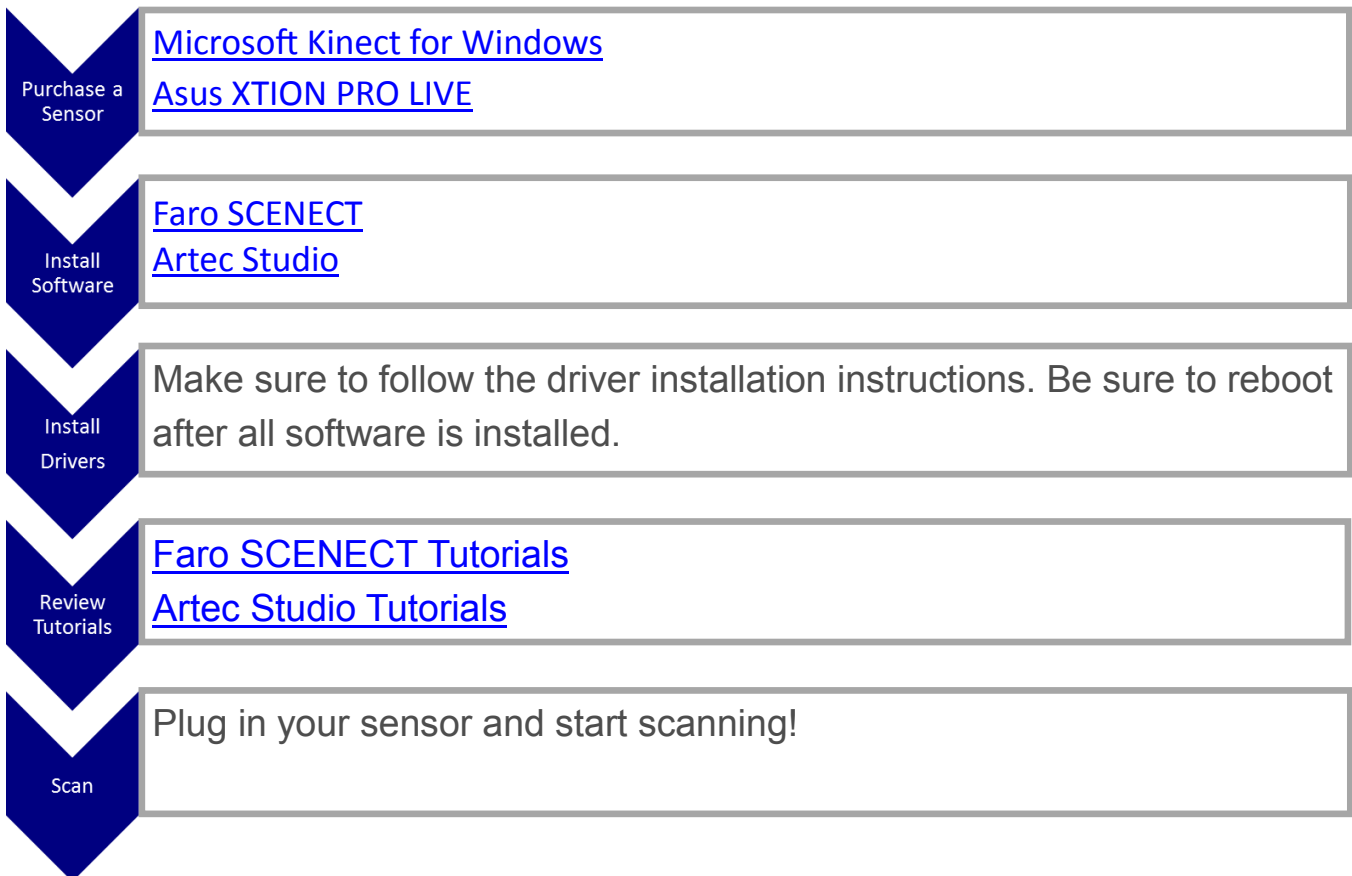


**Data Capture in Faro SCENECT**



# Scanning Process

No matter what sensor or software combination your using the scanning process is the same.



# About PMC

PMC is the largest independent industrial engineering & simulation services firm in North America. For over 30 years PMC has been leveraging the latest in advanced technology to improve our Clients' processes.

Established in 1979, PMC has grown to have offices around the world. With over 700 clients, 6000 completed projects, and over 150 employees, PMC can work with you to find the right data-driven productivity solutions for your needs.

## About the author

Our Laser Scanning/CAD Team is managed by Chris Mounts, a scanning veteran who has scanned over 100 million square feet of buildings and facilities. Chris continues to be a technology leader within the industry, writing multiple regional and national CAD and BIM standards. He has presented at multiple industry conferences, and has been twice recognized by the American Institute of Architects (AIA), receiving the Technology in Architectural Practice (TAP) award two consecutive years.

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Give us a call for more information about our services and products

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