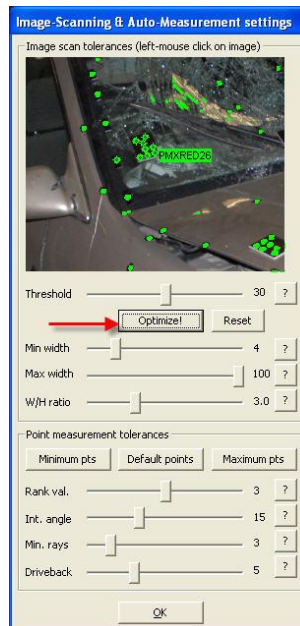


## iWitnessPRO Quick Reference Guide

- Before performing any photogrammetric surveys, calibrate your camera with the **AutoCal placards** or the **calibration target sheets** (C:\Program Files\iWitnessPRO\docs).
- We strongly recommend a **Digital SLR camera** is used for iWitnessPRO. Two good example brands are Nikon & Canon.
- If possible, shoot in **Aperture Priority** with the lens stopped down a few f-stops. The goal is to underexpose the images slightly so the code and feature point target's red retro reflective material has high-contrast with the black target background. This is typically between F8 and F16; (try a few test shots in different lighting conditions as different cameras respond differently with the cameras flash intensity.)
- Always **shoot with the camera flash**.
- Assure there **are at least 5 coded targets in every image**, as well as assuring **good image overlap throughout all of the codes** in the photogrammetric network. Ideally each image should "see" 8+ codes.
- Before running the project (R<sup>++</sup> key), **open one image and press the Q-key**. Click the "Optimize!" button.

Further, the "**Min rays**" is set to a default of 3 "rays" (i.e., 3 images.) If, for example, you only imaged the codes and/or feature point targets (FPTs) in only quantity 2 images, there won't be a 3D object point computed. Moving the "Min ray" slider to read 2 is an option, but it is advised that each 3D object point has at least 4 rays or higher for optimum accuracy.



**After the R++ process, if one or more thumbnails display a “yellow tick mark” instead of a “green tick mark”...**

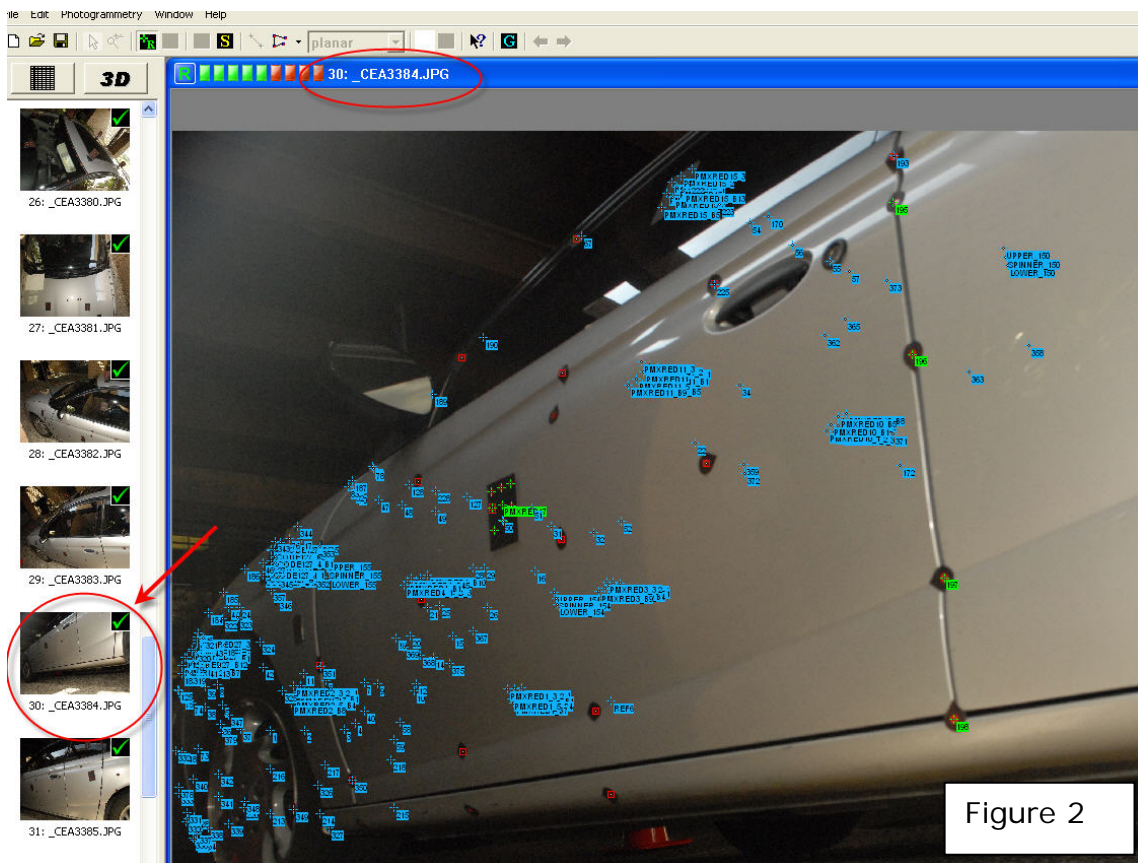
- iWitnessPRO retains all of the features of iWitness for the traditional “Referencing process”. For example, if you use an image **that does not have the minimum “code coverage”**, iWitness scans the targets (some might be orange, meaning they are referenced, and some might be red, meaning they are not referenced) but the image will not be **oriented**. There is still a way to **orient** the image within iWitnessPRO.

As illustrated in figure 1 below, there are not enough codes for the AutoReference process (code *PMXRED17* is the only code in the image.) You can marquee drag (cursor being in the Select Mode – White Arrow) around the “orange points”. Right mouse click and select “Unreference”. Note: that all of the **Orange Referenced** point IDs will become **red squares**, as noted below. Select the **+R** tool and manually reference the red squares with one or more oriented images from the **R++** AutoReference process.



Figure 1

By referencing a quantity of 5 or so cross-referenced points with another oriented image, the above image will be oriented and the green “tick mark” visible in the thumbnail (in this example case, image 30: *\_CEA3384.jpg*. See the figure 2, illustration below.)



- It is also possible to select "Orient All Images" from the Photogrammetry menu, which will automatically orient any images with sufficient measured points. This can be done for a single image by right-clicking in the image and selecting Photogrammetry->Orient.
- It is always better to use **more codes than less in each image**. Codes should be spaced at least 6" apart (15cm) from each other. For the best results, consider augmenting the standard set of the 48 codes with 12 of the "spinner codes" - (rotated so that they're seen in as much as 360 degrees horizontally during the photography.) Contact DCS at [sales@iWitnessphoto.com](mailto:sales@iWitnessphoto.com) for information about the spinner code pricing and availability.
- **Always take plenty of images with roll diversity** (i.e. portrait and landscape shots.)
- This tip sheet is not a substitute for the **iWitnessPRO User Manual**, but covers some of the key points one will experience in using iWitnessPRO. This tip sheet should be used once the user is familiar with the manual and the main functions of iWitnessPRO.

Figure 3 is an example of code coverage using 4 spinner codes and 2 standard codes, (identified by the red circles). Remember to use plenty of codes in each image. Figure 3 is considered minimal in 'code coverage'.

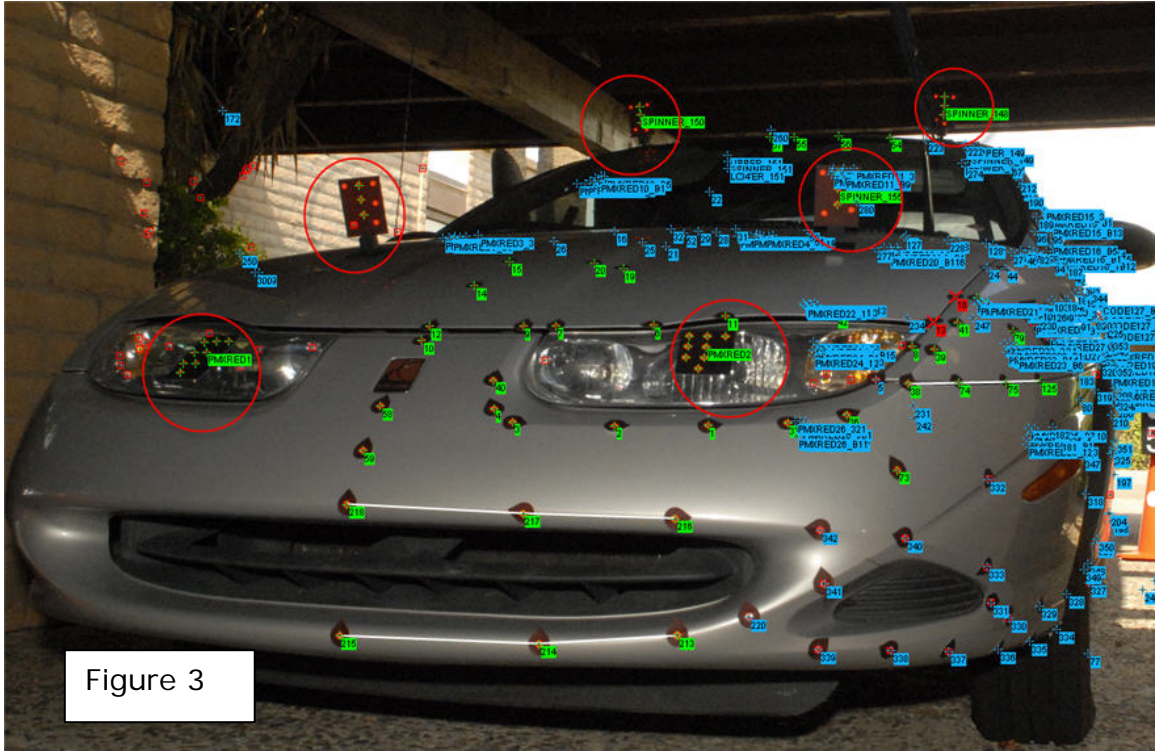


Figure 3

End of document - (updated August 2009)