



## Comparison of Konica Minolta Vivid 910 and Artec Spider triangulation scanners, and creation of metric models with Artec Studio 11 Professional and Geomagic Studio 2012 based on a grave of the Maulbronn Monastery

### Bachelor Thesis:

The thesis consists of a comparison between Konica Minolta Vivid 910 and Artec Spider triangulation scanners so as to know which the best option is to get the most accurate 3D model of a grave of the Maulbronn Monastery. For this purpose five different cases has been performed in order to get the best results, using two different software: Artec Studio 11 Professional and Geomagic Studio 2012:



*Artec Spider scanner (on the left) and Konica Minolta Vivid 910 scanner (on the right)*

On the Case I, Artec Spider have been used taking the data and Artec Studio 11 Professional to process.

On the Case II, also Artec Spider data and Artec Studio Professional has been used but performing different steps to process the data, achieving a different result.

On the Case III, the data has been taken with Artec Spider scanner but for the processing has been chosen both Artec Studio 11 Professional and Geomagic Studio 2012.

On the Case IV, also a combination of Artec Studio 11 Professional and Geomagic Studio 2012 has been used to process 50 frames taken by Artec Spider.

Finally, on the Case V, the data used has been taken by Konica Minolta Vivid 910 scanner and processed with Geomagic Studio 2012.

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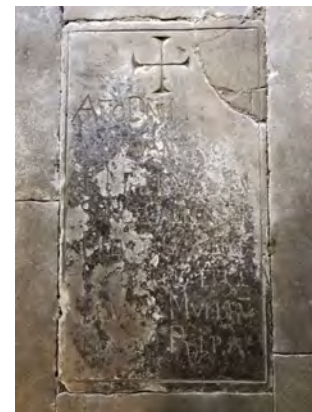
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After the processing, different results have been obtained, which have been compared each other taking into account the methodology developed, resolution of the scanner used, accuracy of the model, and data spreading analyse.



*Grave of the Maulbronn Monastery scanned*

### Results:

The results of the created models show a better solution in the Case V than the others, achieving a resolution in some areas to 0.33mm in some areas to 0.66mm in other areas. The accuracy, definition of the edges of the grave, and the time spent in the creation also show the Case V is the best. The maximum resolution achieved in Cases I, II and III and IV, has been 1mm.



*Result obtained in Case V*