Book review: 3D Recording, Documentation and Management of Cultural Heritage. Review by reviewed by Alain Colombini

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Edited by Efstratios Stylianidis and Fabio Remondino, Whittles Publishing, 2016, ISBN 978-184995-168-5 Hardback, 400 pages, liberally illustrated, full colour throughout.

My general opinion is that as a scientist of contemporary art and, most recently, a 3D documentation user, I found this book very valuable. It can reach an eclectic audience in providing a broad spectrum of the subject. Significant details of acquisition techniques and data treatment tools would fulfill most of the expectations of the Cultural Heritage community. Nevertheless, I would have appreciated some examples of contemporary artwork case studies. The book is attractively designed and of a handy size. The Preface could have made the book more attractive by highlighting the fundamental purpose of it with regard to the implementation of these new 3D tools in Cultural Heritage science.
The list of authors, arranged by name in alphabetical order, relevant backgrounds and area of interest/expertise, is quite comprehensive, although editors could have appeared in a separate topic.

Chapter 1 Introduction- Current Trends in Cultural Heritage and Documentation
Mario Santana Quintero and Rand Eppich
The authors frame the purpose of this book with very distinctive sub-chapters/trends regarding the new technology for recording, visualising and documenting as valuable resources for Cultural Heritage management equally dictated by conservation needs. The layout of figures is well balanced but legends are not related to the text! (except for Fig. 1.10)

Chapter 2 Conservation Techniques in Cultural Heritage
Minna Silver
The author runs through the 3D recording and documentation tools available for the preservation of Cultural Heritage artefacts. This chapter introduces the current trends in 3D technology, starting with the most experienced field in documentation and visualization of archaeological and prehistoric sites. Fully detailed case studies of various sites bring to the fore the improvement of techniques used up until now. A very comprehensive overview of caption and data treatment is given through some case studies, when applied to the conservation and documentation of both monuments, sculptured monument and objects of various sizes and type of materials. Reference publications and books are quite significant.

Chapter 3 Cultural Heritage Management Tools: The Role of GIS and BIM
Anna Osello and Fulvio Rinaudo
This chapter focuses on the benefit of geographic system acquisition technology and building information modeling, as applied to Cultural Heritage documentation. It concentrates on the benefit of complementary approaches of the documentation and management to the Cultural Heritage community, and thus due to development of software which is now made available as open source.

Chapter 4 Basics of Photography for Cultural Heritage Imaging
Geet Verhoeven
This chapter is the longest part of the book. At first, it touches upon the physic of colour, radiation and the general principles of imaging. Upon reading it, this section turned out to be very essential for the understanding of the passage from photographic emulsion to digital imaging. FIG. 4.15 is key and so is the overall chapter, which provides required knowledge to anyone involved in 3D recording, data treatment, documentation and management of Cultural Heritage. References are also significant.

Chapter 5 Basics of Image-Based Modelling Techniques in Cultural Heritage 3D Recording
Efstratios Stylianidi, Andreas Georgopoulos and Fabio Remondino
This chapter is very important for the understanding of the documentation of Cultural Heritage. It is at the right place in the book where digital images are significantly treated along with the image acquisition tools, procedures and mode of calculations.
The case studies section emphasizes the use of 3D recording for Cultural Heritage documentation needs in relation to the description and monitoring of a monument, restoration purposes and virtual reconstruction. Nevertheless, more case studies of small and medium size, both ancient and contemporary objects could have complemented this chapter.

Chapter 6 Basics of Range-Based Modeling Techniques in Cultural Heritage 3D Recording
Pierre Grussenmeyer, Tania Landes, Michael Doneus and José Luis Lerma
Following on from the previous topic, this chapter focuses on data acquisition techniques, mostly by laser scanning systems with various approaches. Sections cover aspects of terrestrial scanning data applied to Cultural Heritage through archaeological and large architectural objects.

Chapter 7 Cultural Heritage Documentation with RPAS/UAV
Fabio Remondino and Efstratios Stylianidi
This last chapter covers the aspects of the current existing acquisition platforms, in particular the possibility of using flying platform. The most common PRAS/UA>V systems ("drones" for a larger public) are reviewed regarding their availability in different types, sizes and required performances and also the regulations in various countries (whether civil or military applications). Despite giving an overview of these flying platforms, this chapter does not sufficiently highlight these techniques, which are widely used in different domains. The recordings of small and medium size Cultural Heritage 3D objects are at stake, in particular for contemporary artworks where surface reflection presents a major drawback for image acquisition and relevant data treatment.

This book is of major importance for Cultural Heritage 3D recording and management and can be seen as an important resource handbook.