



Australian Government

ICPPRP398 Set up and produce a 3D scan

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with ICP Printing and Graphic Arts Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to set up and operate a three-dimensional (3D) scanner to scan a 3D object and output data to a specified data file type.

It applies to individuals working in technical fields who utilise 3D images for graphical, artistic and manufacturing applications.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Pre-Press

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare object to be scanned	1.1 Size and complexity of the object to be scanned is determined 1.2 Output requirements of scan are determined from specifications and confirmed with client 1.3 Appropriate scanner is selected to suit the type and complexity of object to be scanned 1.4 Object is surface treated according to the scanner's operating requirements 1.5 Object is oriented for the most efficient scan

ELEMENT	PERFORMANCE CRITERIA
2. Prepare scanner	2.1 Scanner is checked and adjusted in readiness for operation according to manufacturer's operating procedures 2.2 Any malfunctions are reported to relevant personnel for repair or maintenance in accordance with organisational procedures 2.3 Tolerance level of the scanner is set to achieve the most effective scan that meets client output specifications
3. Operate scanner	3.1 Scanner is operated efficiently according to manufacturer's operating procedures and the organisation's work health and safety (WHS) procedures 3.2 Scanner settings are monitored and adjusted to ensure an effective scan 3.3 Scanner files are retrieved according to manufacturer's operating procedures 3.4 Scanner is shut down and reset according to organisational and manufacturer's operating procedures
4. Prepare output file ready for end user	4.1 Scanner files are downloaded to computer 4.2 Data and images are checked to confirm quality meets client specifications 4.3 Scanner output files are converted into the specified file format 4.4 Data files are presented to the client to confirm specifications have been met

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.2, 1.4, 2.1, 2.2, 2.3, 3.1-3.4, 4.2, 4.3	Analyses graphics files and other documentation to determine scanning requirements
Writing	4.3	Names data files according to naming conventions
Oral communication	1.2, 2.2, 4.4	Effectively participates in verbal exchanges using active listening and questioning to convey and clarify information

Numeracy	1.1, 2.3	• Uses mathematical processes to estimate size • Performs mathematical calculations to check and adjust software to reflect appropriate tolerances for scanning
Navigate the world of work	2.2, 3.1, 3.4	• Understands roles and responsibilities for tasks and makes basic decisions on work completion parameters • Complies with legislative and organisational requirements
Interact with others	1.2, 2.2, 4.4	• Understands what to communicate, with whom and how, in routine work situations
Get the work done	1.1-1.5, 2.1, 2.2, 2.3, 3.1-3.4, 4.1, 4.2, 4.3	• Takes responsibility for planning, sequencing and prioritising tasks and own workload for efficiency and effective outcomes • Makes routine decisions and implements standard procedures to address problems • Uses familiar digital technologies and systems to control equipment, access information, enter data and save files

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICPPRP398 Set up and produce a 3D scan	Not applicable	New unit	No equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a74b7a0f-a253-47e3-8be0-5d426e24131d>

Assessment Requirements for ICPPRP398 Set up and produce a 3D scan

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Performance Evidence

Evidence of the ability to:

- communicate with client to ascertain needs
- determine scan requirements from client specifications and object criteria
- select an appropriate scanner and prepare the surface of the object
- prepare the scanner and orient the object effectively
- scan the object safely and efficiently
- create files from scanner to client specifications.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- describe the common three-dimensional (3D) scanner technologies and their respective applications
- evaluate a range of objects to be scanned and select an appropriate scanner and the treatments to be applied
- list and describe current industries where 3D scanning is used
- identify the safety requirements when using 3D scanners
- explain the importance of adjusting or considering scale, units of measurement, calibration, distance from subject, tolerance, and resolution for efficient 3D scans
- specify the output file types for various applications, including but not limited to, the following file extensions:
 - STL - standard triangle language/standard tessellation language file format
 - OBJ - geometry definition file format
 - PLY - polygon file format
 - VRML - virtual reality modelling language file format

- XYZ/PTX - point cloud file formats
- AMF - additive manufacturing file format
- describe the file conversion process required to prepare files for various applications.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the printing and graphic arts field of work and include access to:

- a 3D model
- a 3D scanner
- specifications for scanner output files
- organisational and manufacturers' operating procedures.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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