



**Australian Government**

# **Assessment Requirements for ICPPTD301 Manipulate 3D files in preparation for 3D printing**

**Release: 1**

# Assessment Requirements for ICPPTD301 Manipulate 3D files in preparation for 3D printing

## Modification History

Release	Comments
Release 1	This version first released with ICP Printing and Graphic Arts Training Package Version 3.0.

## Performance Evidence

The candidate must demonstrate they can perform the following according to the standards defined in the elements, performance criteria and foundation skills of this unit.

The candidate must demonstrate the ability to manipulate 3D files in accordance with workplace procedures to meet required outcomes a minimum of 2 times. This includes demonstrating the ability to:

- communicate with client to identify needs
- confirm client requirements for three-dimensional (3D) print output
- determine work requirements and obtain client approvals
- recognise faults, imperfections and errors in 3D printer files
- use software to rectify errors in 3D printer files
- save files in required format.
- 

## Knowledge Evidence

The candidate must be able to demonstrate the following knowledge to effectively complete the tasks outlined in the elements and performance criteria of this unit, and to manage tasks in the context of the work role:

- common manifold errors in 3D printer graphics, including the effect on:
  - proposed printed material
  - printing technology
  - wall thickness
  - file resolution limits
  - conversion between software
  - support structure
- possible errors, including:
  - reversed surfaces
  - components without volume

- internal edge and face errors
- the relationship between 3D modelling software and 3D image software, including:
  - file types
  - function of the software
  - main image editing tools
  - scale and units
- “Cartesian coordinate system” and how it relates to 3D graphics file manipulation
- the purpose of “slicing” in the preparation of G-Code for 3D object build
- the effect of setting resolution and deposition thickness in 3D graphics on 3D print output quality
- work health and safety (WHS) requirements and workplace procedures relevant to 3D printing technologies
- intellectual property and copyright laws and requirements in relation to 3D printing.
- 

## Assessment Conditions

Assessment must be conducted in a safe environment where evidence gathered demonstrates consistent performance. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the pre-media field of work and include access to:

- a range of model files and image files with errors
- a computer with industry-standard 3D software packages
- a 3D printer or 3D printer specifications
- organisational policies and procedures relating to use and storage of data and files.

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

## Links

Companion Volume Implementation Guides are available from VETNet -

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