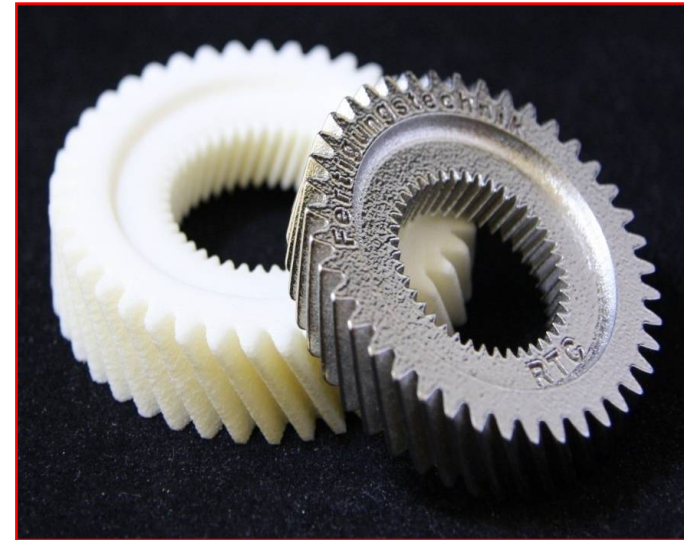




# 3D PRINTING PARTS





# ADVANTAGES OF 3D PRINTING

- Process is fast and accurate.
- Superior quality surface finish is obtained.
- Separate material can be used for component and support
- No need of mould or other tools.
- Minimum material wastage.
- Reduces product development time considerably.

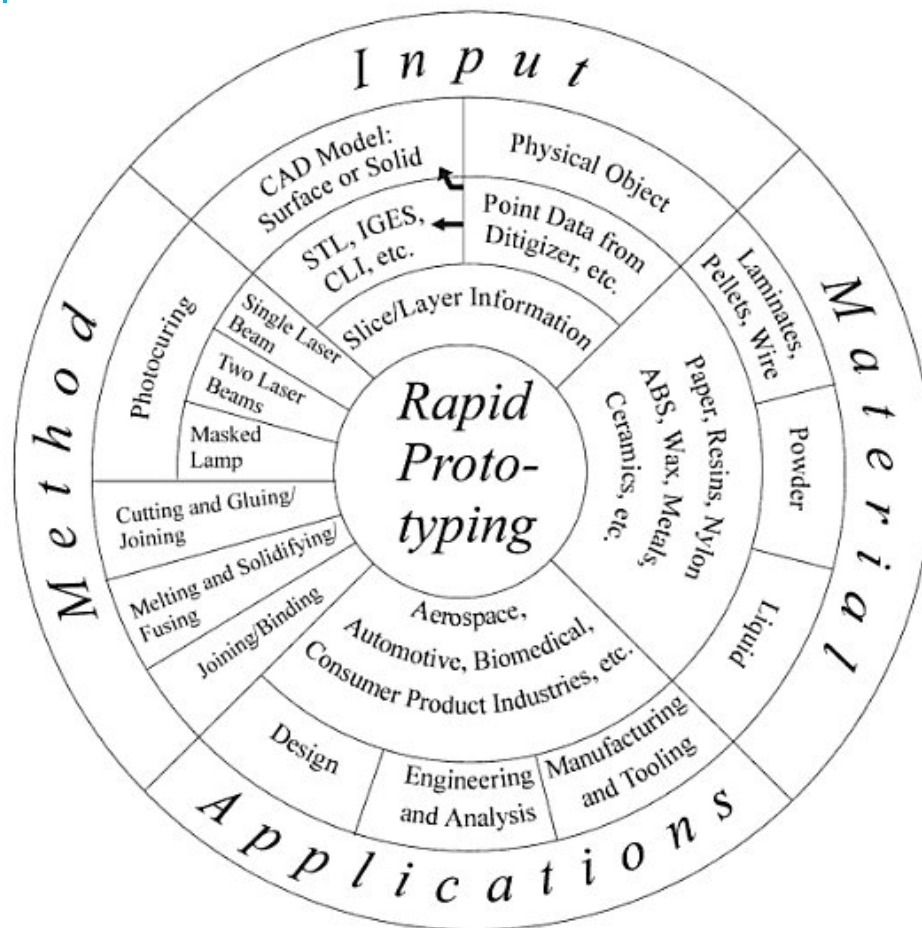


# LIMITATIONS OF 3D PRINTING

- Limited range of materials
- Component get distorted
- Some time staircase effect is observed



# KEY ASPECTS OF RAPID PROTOTYPING/3DP



STL - StereoLithography

IGES – Initial Graphics Exchange Specifications

CLI – Common Layer Interface

ABS – Acrlonitrile Butadience Styrene



## Input:



- Input refers to the data information required to describe the **physical object with 3D data**.
- There are two possible starting points — a computer model or a physical model.
  - ✓ The computer model created by a CAD system can be either a surface model or a solid model.
  - ✓ On the other hand, 3D data from the **physical model is not at all straightforward**. It requires data acquisition through a method known as **reverse engineering**.



## Method :

The method employed by each vendor can be generally classified into the following categories:

- ✓ Photo-curing, cutting and joining, melting and solidifying/fusing /binding.
- ✓ Photo-curing can be further divided into categories of single laser beam, double laser beams and masked lamp.



## Application :

- Applications can be grouped into (1) Design (2) Engineering, Analysis, and Planning and (3) Tooling and Manufacturing.
- A wide range of industries can benefit from RP and these include, but are not limited to, aerospace, automotive, biomedical, consumer, electrical and electronics products.