Build Preparation

What is build preparation?

Purpose

Workflow

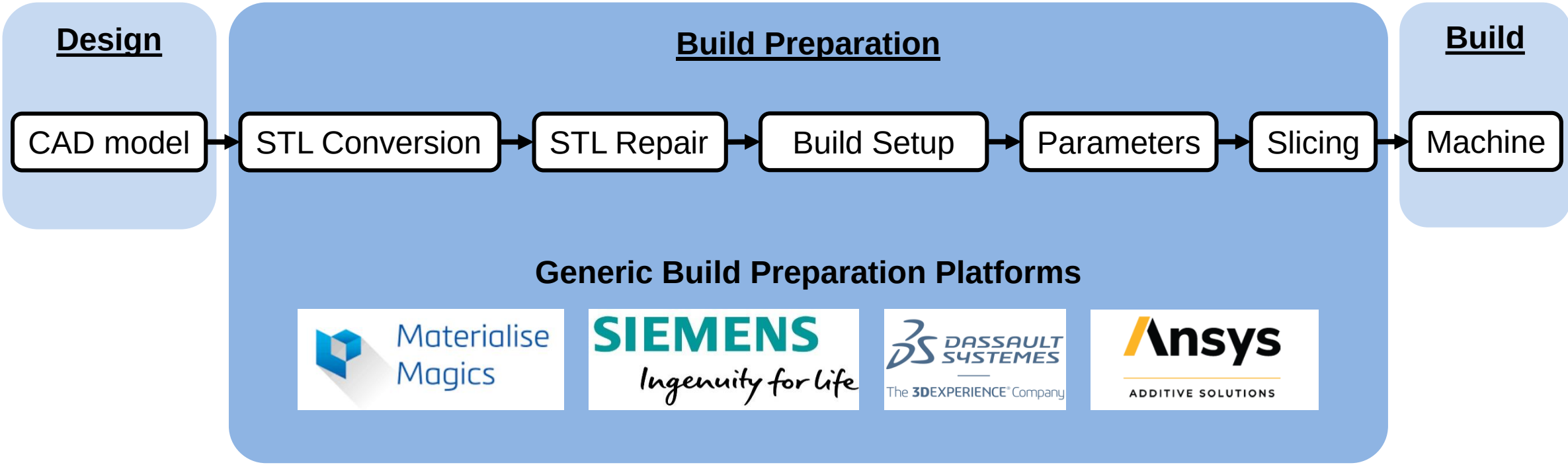
Capabilities

Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Build Preparation

Workflow



Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Build Preparation

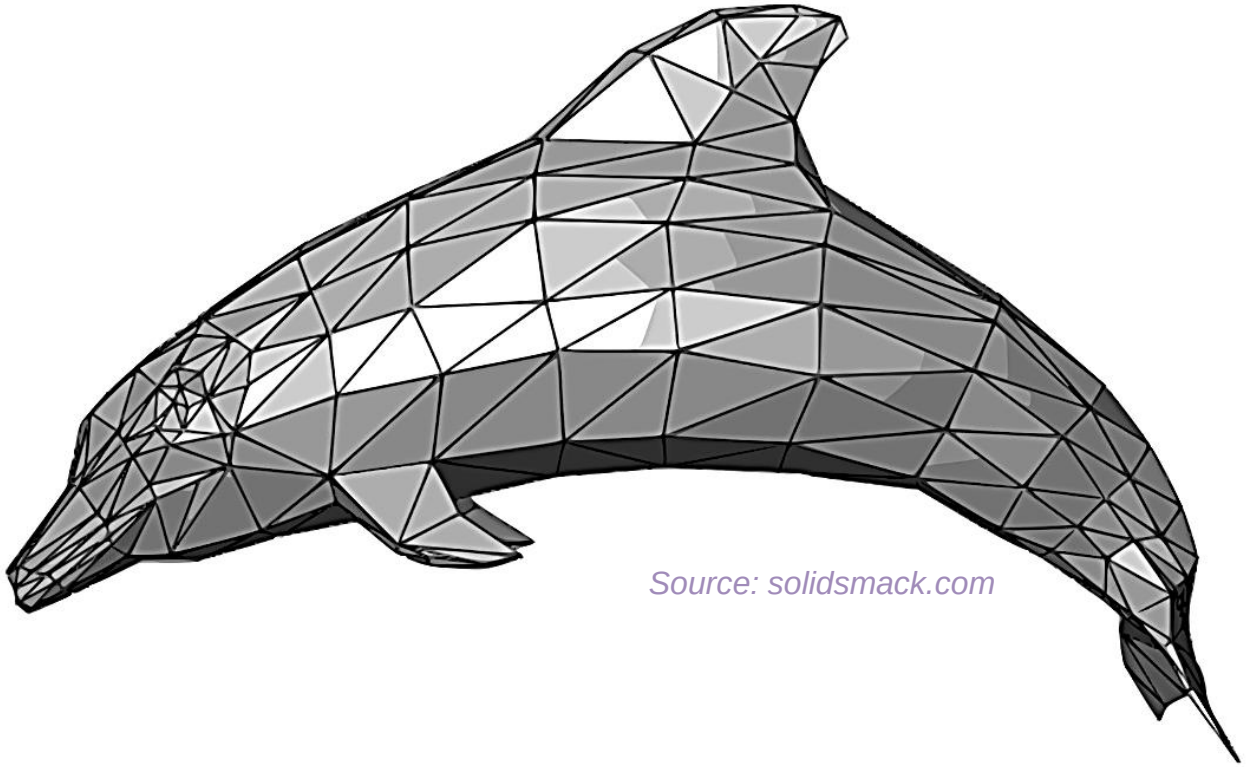
Common & New AM File Formats

Increasing popularity

Most popular

	3MF	STL	OBJ	VRML
Always print-ready	✓	✗	✗	✗
Unit aware	✓	✗	✗	✓
Full color capability	✓	✗	✓	✓
Textures in one file	✓	✗	✗	✗
Tray support	✓	✗	✗	✓
Contains support structures	✓	✗	✗	✗

Source: 3mf Consortium



Source: solidsmack.com

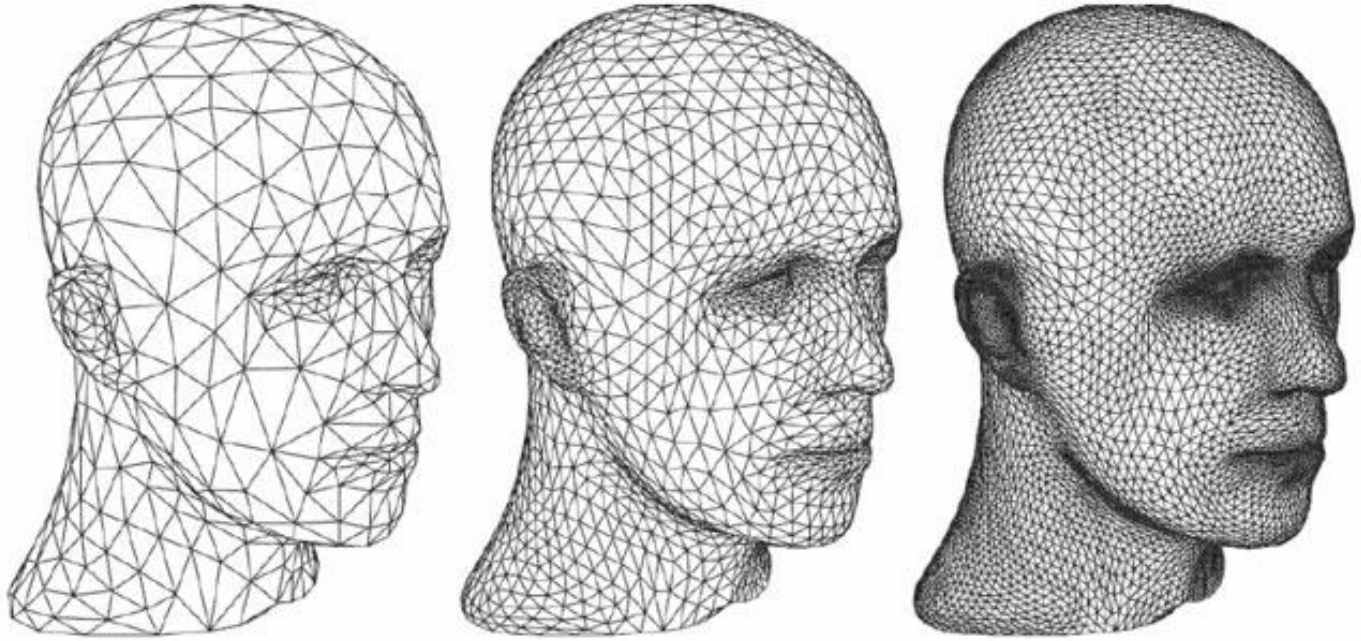
Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Build Preparation

Resolution

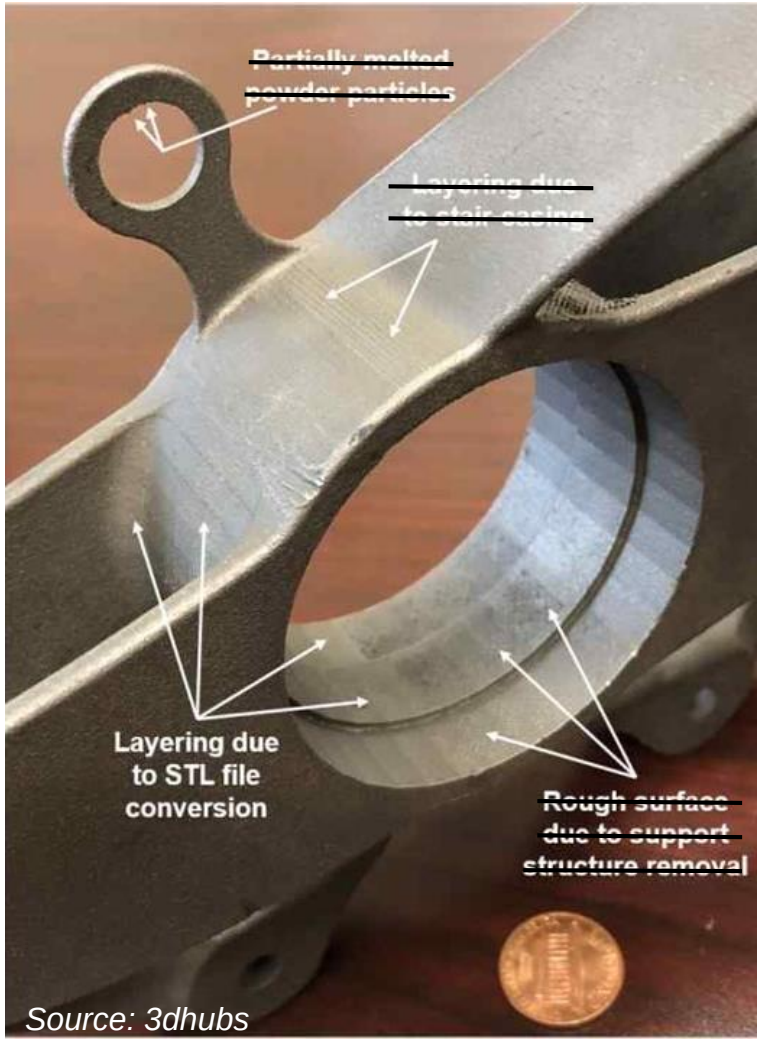
Source: sculpteo.com



Loss of features
Reduced triangles
Faster & Smaller File Size

Greater resolution
Increased number of triangles
Slower & Greater File Size

Resolution + File Size



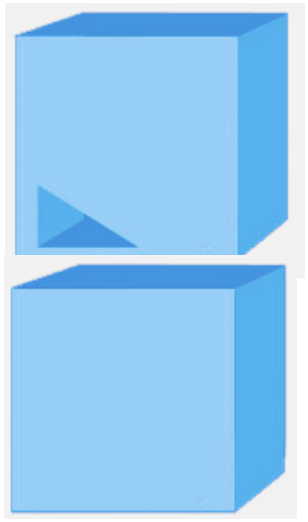
Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

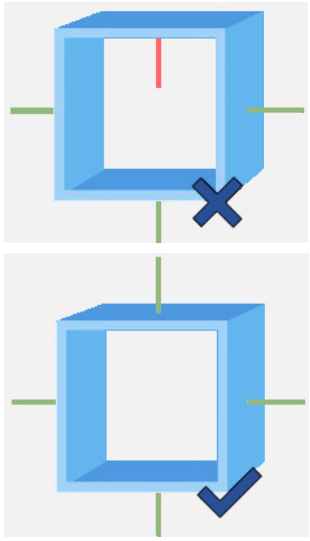
Build Preparation

Errors/Fixing

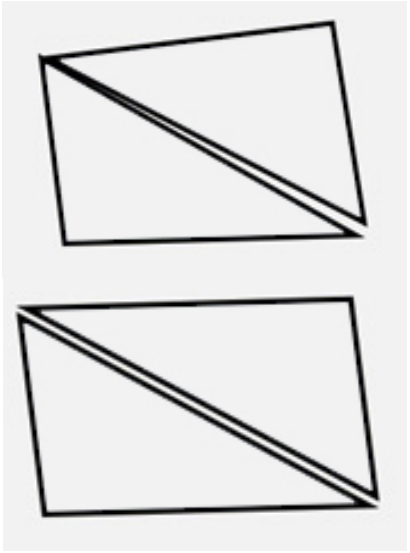
Holes/Gaps



Inverted Normal



Bad Edges



Intersection/Overlapping

Source: Materialise

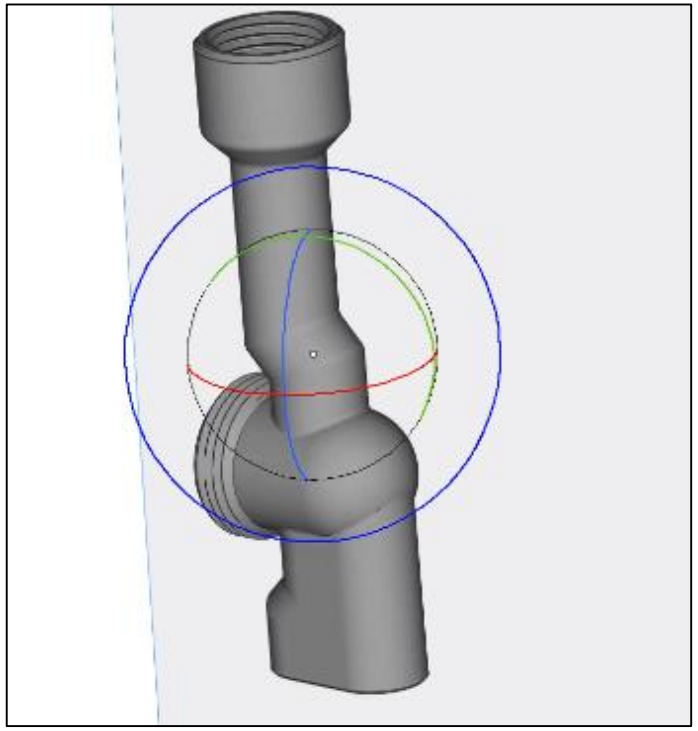
Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

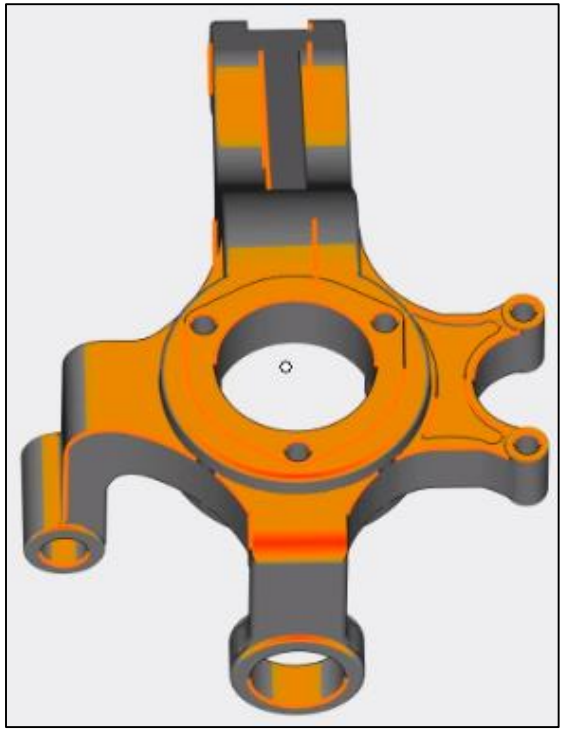
Build Preparation

Orientate/Supports

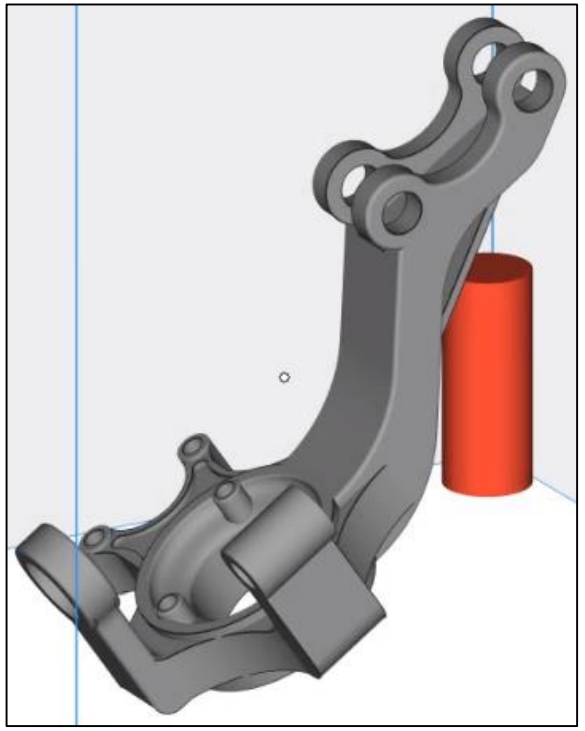
Orientate



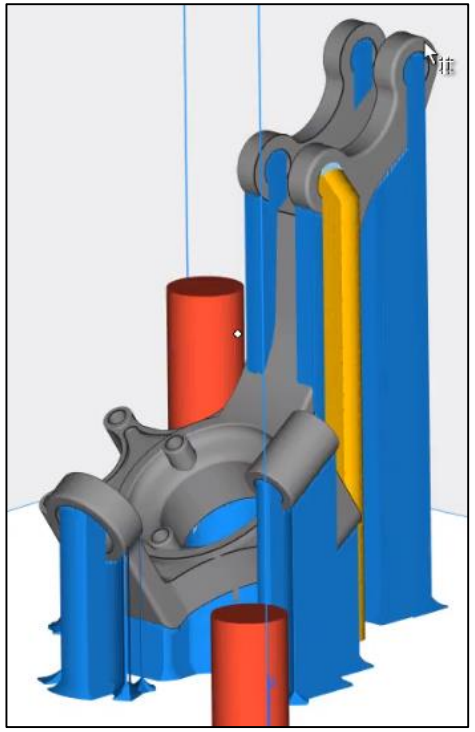
Overhang Regions



Select orientation



Support



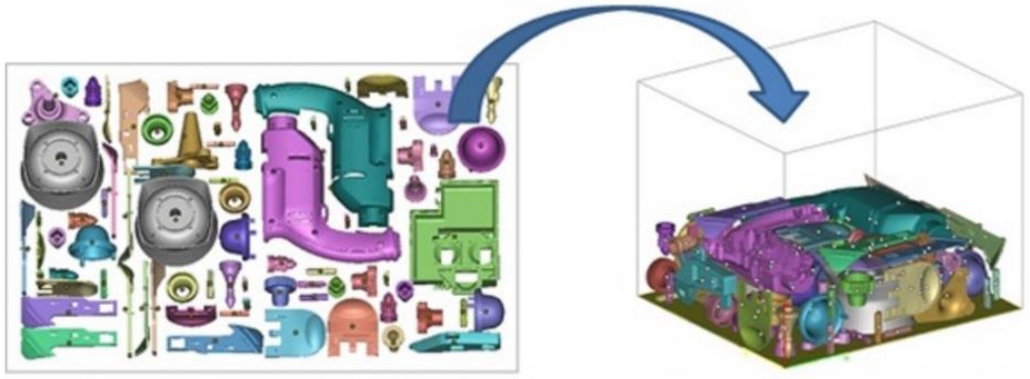
Source: Materialise

Co-funded by the Erasmus+ Programme of the European Union

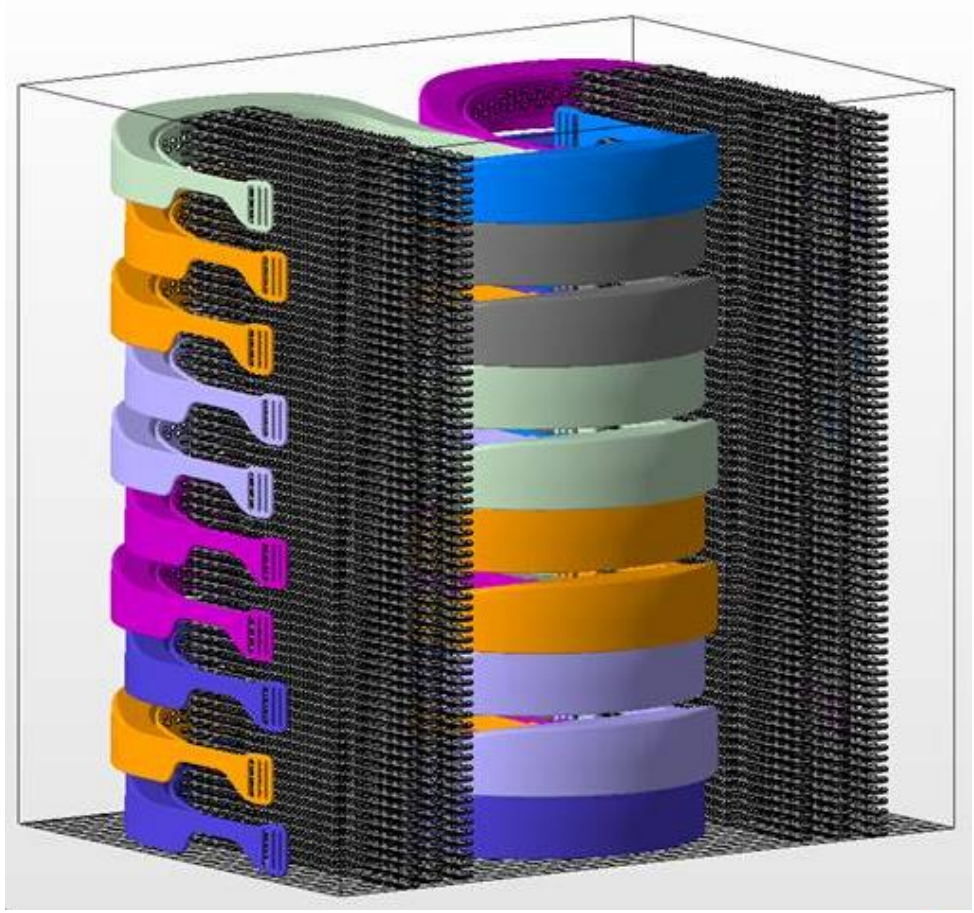
This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Build Preparation

Nesting/Layout



Source: AMFG



Source: MTC

Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

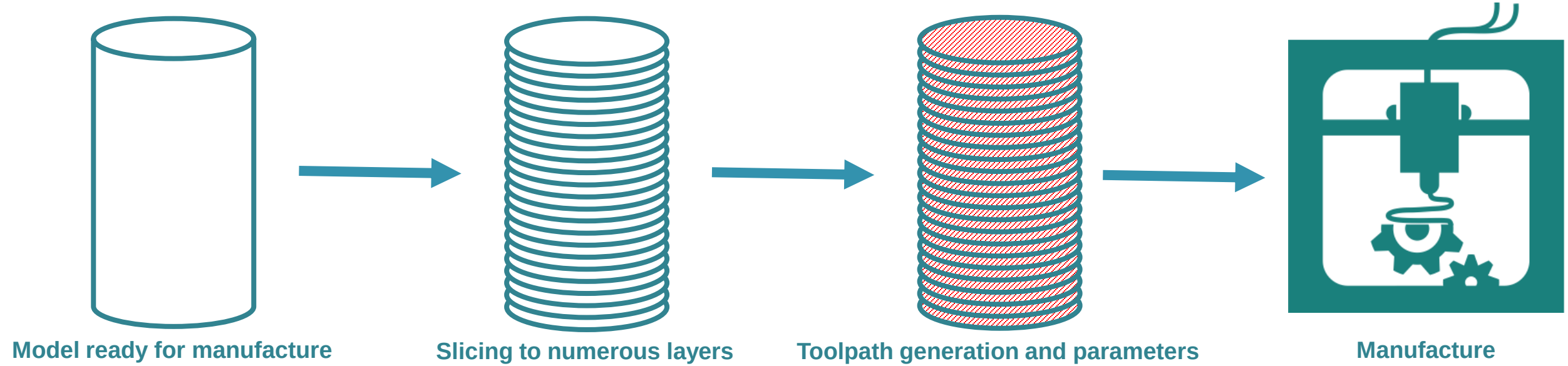
DEMO

Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Build Preparation

Build Layout/Nesting

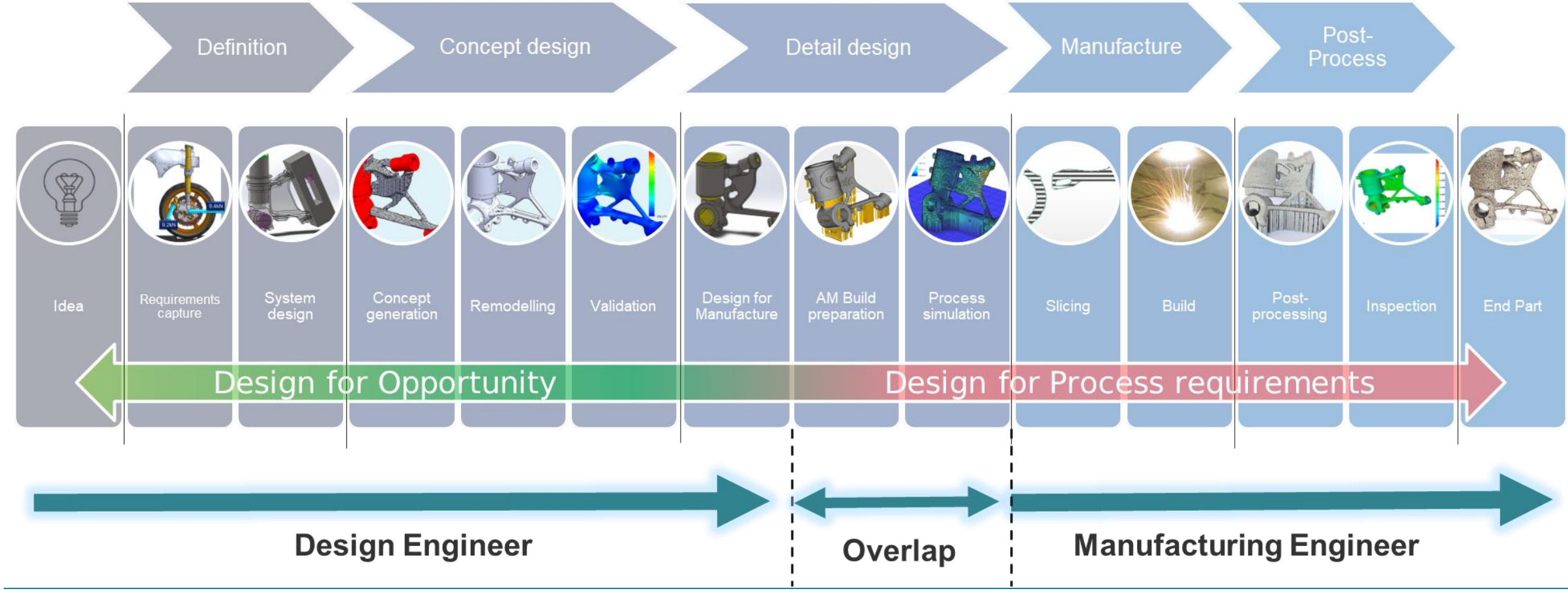


Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Build Preparation

Workflow



Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Build Preparation

Checklist

1. **Is the design suitable for AM?**
   - Consider all the DfM considerations
2. **Are you exploiting the design freedom offered with AM?**
3. **How is part performance affected by AM?**
   - Has the design been better optimised for its application? Is it worse?
   - Have you considered and accounted for AM material characteristics? How will this be monitored?
4. **Cost and technical feasibility comparison with another manufacturing method**
   - Why use AM if you can use a cheaper method of manufacture
5. **Have you considered the post-processing requirements during design?**
6. **Have you accounted for all the build risks?**
   - If not, you will need to ensure this is accounted for during build preparation

Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Build Preparation

Summary

- Build preparation is used to fix, orientate, support, organise the build layout and slice
- Build preparation software is used to de-risk a build failure
- There are generic build preparation software available as well as more specific versions from machine providers

Co-funded by the Erasmus+ Programme of the European Union

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.