mentis

Fast, accurate and cost-effective 3D Printing.



Mentis is a multinational engineering and manufacturing group of businesses. Through continual research, development and innovation over 70 years, Mentis has grown into a leading supplier of steel products across the world.

Mentis 3D was established in 2019 to bring industrial scale additive manufacturing to the African continent.

www.mentis3d.com

OUR BEGINNINGS

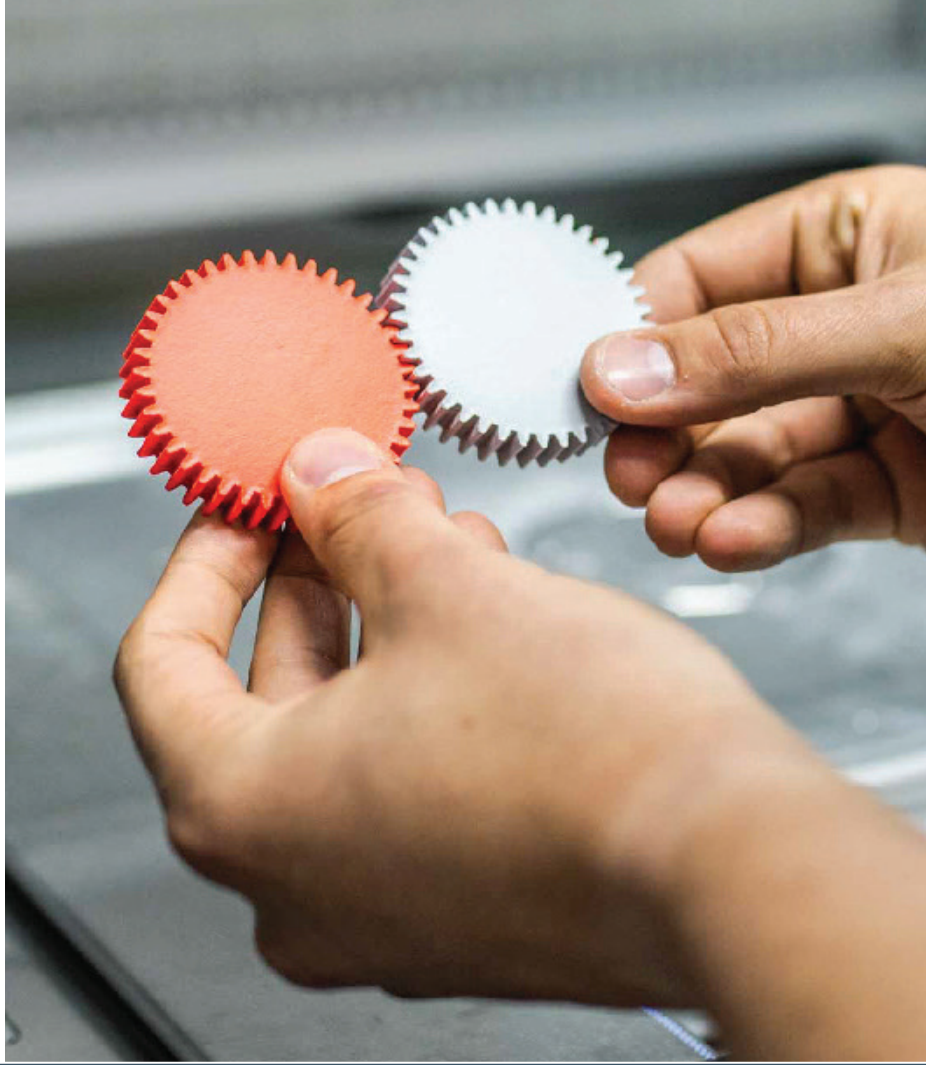
Mentis is a privately owned company, which was established in 1950 and is widely recognised as Africa's leading manufacturer of grating, expanded metal, handrailing systems and guardrail.

Our continued focus is on establishing and servicing our customer and market needs, coupled with engineering expertise and manufacturing excellence. Innovation and product quality, remain the building blocks of our core values and growth ambitions.

Supported by our in-depth engineering and manufacturing capability, we have developed our own manufacturing technology and innovative products, including the unique RECTAGRID pressure locked grating system, which has become the standard for grating in Southern Africa.

OUR VALUES

- Innovation is in our DNA
- By acting with integrity, we build trust
- We are accountable
- We reinvest in our society
- We care for our people



1950
Business founded in the garage of the founder, Andrew Mentis.

1954
First major grating contract awarded during the construction of the first Sasol plant.

1958
First company to manufacture expanded metal in Africa.

1959
First company to manufacture fusion welded grating in Africa.

1967
Introduced its unique Rectagrid pressure locked grating, becoming the grating standard in Africa.

2012
Mentis expanded its operations into Australia.

2016
Acquisition of Rhino Grating.

2019
Founding of Mentis Additive.

OUR LEADERS

The company has three manufacturing plants, two in South Africa and one in Australia. With five fabrication workshops in South Africa and Australia. Under the Mentis Exports portfolio, the group enjoys an extensive global distribution network.



ANDREW MENTIS
Chief Executive Officer



CHRISTO ELS
Chief People Officer



RUBEN ROACH
Chief Operating Officer



THEO LOOCK
Non-executive Director



VALUE PROPOSITION

- Reduction in carbon footprint and improved environmental sustainability
- Counters the impacts of disrupted global supply chains - a local solution with fast turnaround times
- Parts available just-in-time enabling a true digital inventory

ADVANTAGES OF 3D PRINTING

- Parts and components can be redesigned and optimised to **improve performance** and **reduce cost.**
- **Limitless flexibility** due to no requirement for special tooling as required for legacy manufacturing systems.
- Complex parts and components can be produced with **minimal design limitations**.
- Reduce material wastage, **100% recyclable**.
- Optimise productivity by **mitigating exposure** to **global supply chains**.
- **Just-in-time localised manufacturing** – Reduce delivery times from 2 – 6 weeks to 3 – 5 days.
- Digitise spare parts inventory, **reduce stock** holding, **maximise profitability.**
- More **sustainable** and **environmentally friendly**.

MENTIS 3D

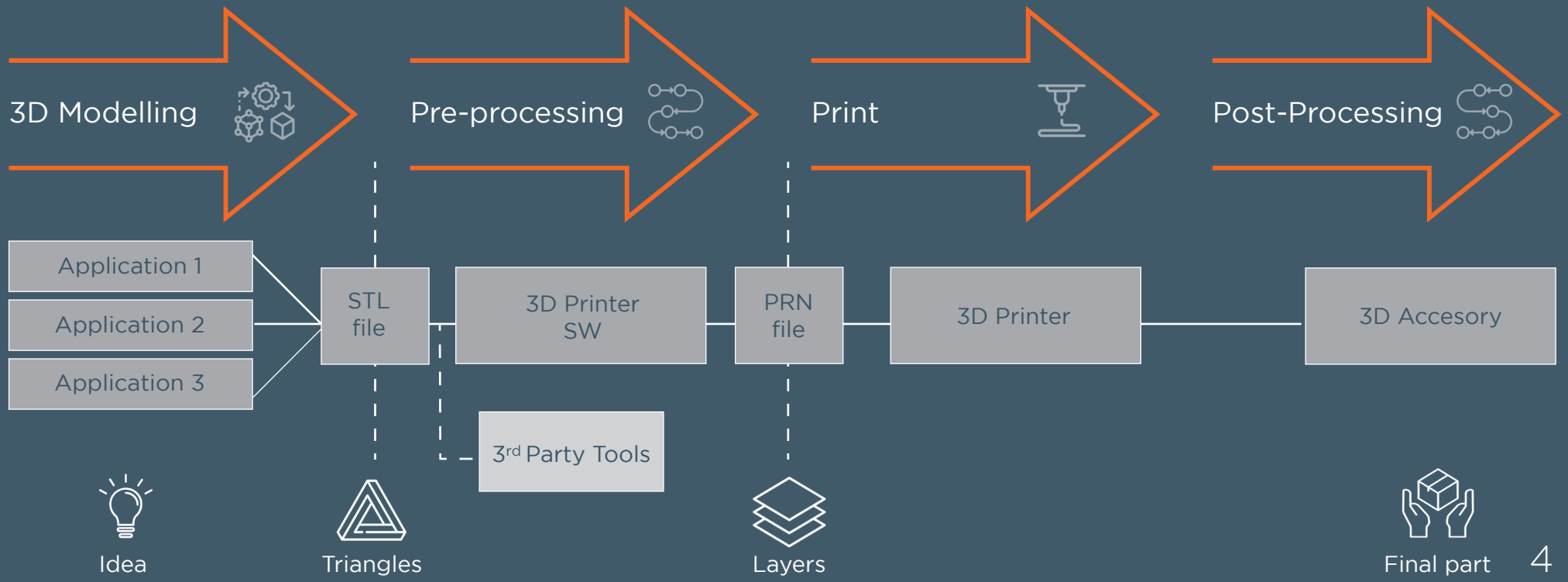
Mentis 3D is the first and only specialist additive manufacturing and 3D print farm in Africa. The experience, qualifications and unique skillsets of the management team brings unrivalled technical expertise to our business offering.

We are HP's official 3D printing partner on the African continent, with multiple HP MJF machines now in operation We have the technology to deliver cost effective and large scale production runs, offering clients a fast, affordable and reliable 3D printing manufacturing service.

MENTIS 3D is Africa's first and only ISO Accredited 3D printing facility.

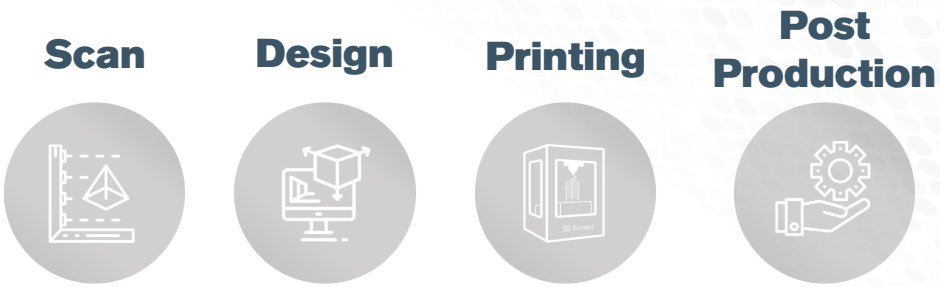
SABS
ISO 9001
ISO 9001 : 2015 CERTIFIED

PRODUCTION FLOW



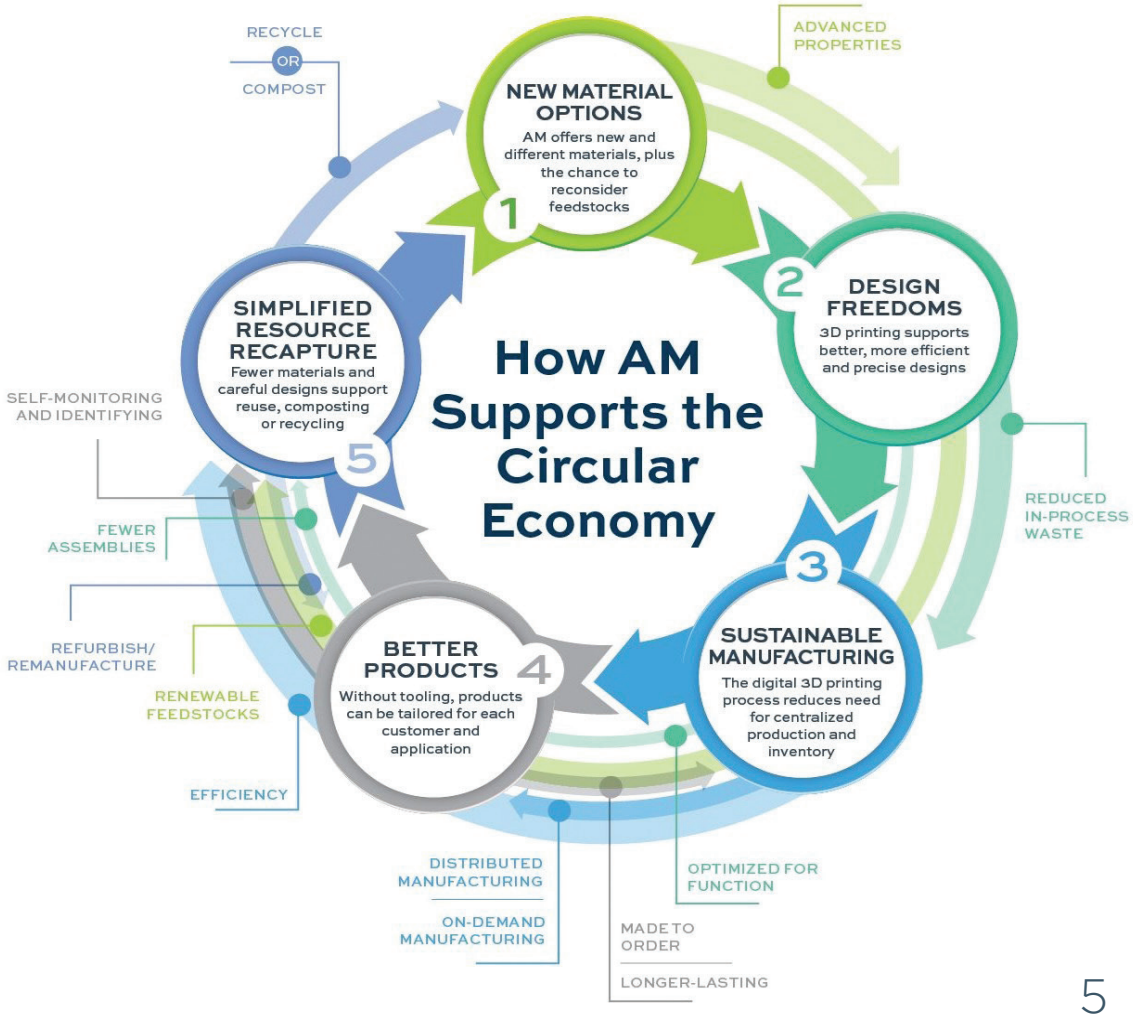
SERVICES

Our access to state of the art design software, as well as our skilled team of engineers, allows us to offer a comprehensive solution from design to delivery of the final 3D printed product.



Some of the benefits of our design capabilities include:

- Scan and digitize existing parts for integration with on demand 3D print production.
- Optimise the design of an existing product.
- Incorporate lattices into products for weight saving or enhanced thermal and acoustic properties.
- Leverage the power of generative design, using material only where it is needed.
- Transform complex assemblies into single parts.
- Revolutionise spare part stock holding with digital inventories.



ENVIRONMENTAL SUSTAINABILITY AND LOWER CARBON FOOTPRINT

- High-speed HP MJF technology enables high print output per watt of energy consumed
- Average electricity consumption is approximately 30 watt hours per cm3 printed
- Inventory reduction - on-demand manufacturing of parts
- HP's MJF technology allows for up to 80% reusability of raw materials after each print run
- Parts printed with HP's industry-leading powder are fully recyclable, enabling a circular economy
- Up to 74% less GHG emissions from 3D printing of parts using nylon material compared to traditional manufacturing using metal

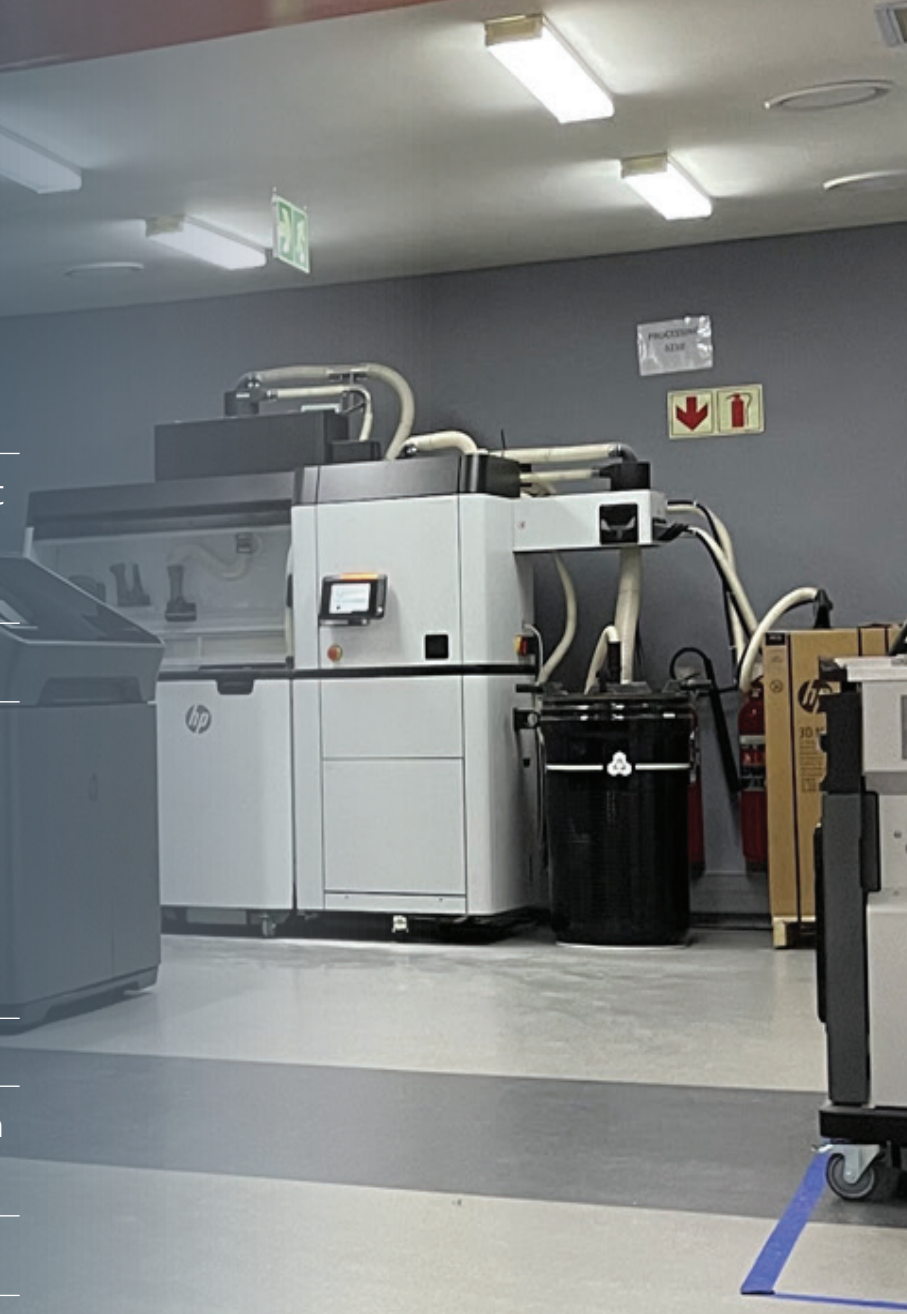
- **Lower carbon footprint compared to injection moulding**
  - less energy consumed
  - less shipping
  - less material
  - less mass
  - high reusability
- **HP case study**

  Using 3D printed parts in their own products - an aluminium machined traditional part replaced with a plastic HP MJF printed equivalent resulted in:
  - 50% cost reduction
  - 93% weight reduction
  - 95x carbon footprint reduction



TRANSFORMING INDUSTRIES WITH 3D PRINTING

- Enable on demand, more localized production
- Expand product life through increased availability of spare parts
- Eliminate part obsolescence
- Reduce waste, less material, high reusability
- Reduce shipping
- Reduce inventory of raw materials and finished products
- Improved carbon footprint compared to traditional manufacturing methods
- Reduce time to Market with functional prototypes e.g., Injection Moulding
  4 - 6 months vs 3 - 5 days with additive manufacturing
- Reduce stock holding with digital inventories
- Reduce exposure to global supply chain



FROM 3D SCAN TO FINAL PART PRODUCTION

HP 3D High Reusability PA12

- Produces strong, functional and detailed complex parts
- Provides excellent chemical resistance to oils, grease, aliphatic hydrocarbons and alkalies
- Developed to produce functional prototypes and end use parts across various industries
- Achieves watertight properties without additional post processing
- Achieves fine detail and dimensional accuracy
- Ideally suited to produce from a single part to high volume production runs.

Packaging Line Components

- Sprockets
- Gears
- Cams
- Pulleys
- Rollers
- Housings
- Enclosures
- Cable routing fixtures
- Spindle wheels
- Conveyor drive pulleys
- Levers
- Pistons
- Clamps
- Mounting Brackets
- Handles
- EOAT's (End of Arm Tooling)
- Assemblies
- Jigs & Fixtures
- Ducts
- Vacuum forming tooling

HP Multi Jet Fusion Printers



HP 4210 & 5210 series

- Support free powder printing
- Reduced visibility of layer lines
- High strength PA12 Nylon
- Additional Materials available
- Ideal for high volume fully isotropic production parts



HP 580 Colour

- Full colour printing
- High voxel density
- Support free powder printing
- Virtually free of layer lines
- High strength Nylon Plastics



EFFICIENT SPARE PARTS LOGISTICS WITH ADDITIVE MANUFACTURING

Spare parts management comes with a long list of challenges: high storage and logistics costs, overproduction caused by minimum purchase volumes and long lead times are standard and prevalent. Sometimes, the supplier is no longer offering the part by the time it is needed.

Additive manufacturing offers a solution: Spare parts made from metals or plastics can be produced on demand by the 3D printer without tools and in the exact quantity required, without a minimum purchase volume This avoids unnecessary overproduction and guarantees maximum customer satisfaction

Instead of resource intensive warehouse logistics, the parts are digitized, CAD data saved on file; and only sent for production when necessary. A cost effective more sustainable and highly efficient process.

Industrial 3D printing gives you the opportunity to revolutionize your entire spare parts management value chain to improve your company’s long term profitability.

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Contact us today to find out more about the new and exciting technologies we have on offer.

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