Use of AM at Lærdal

Additive manufacturing day: Reality now!

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10 March 2020

Chamber of Commerce

Laerdal

helping save lives

We´re better together

«If we create value to society at large, and do our job well, satisfactory economic results will follow and allow us to build a stronger company with time.»

Åsmund Lærdal

Our goal is to help save

500 000 more lives

every year.

Patient Care
50 000 lives

Resuscitation
50 000 lives

Global Health
400 000 lives

Unique Competencies and Capacity

More than 250 people in product design, service design, product & software development
more and more within digital

Stavanger Norway
and Mumbai India

Stavanger Norway

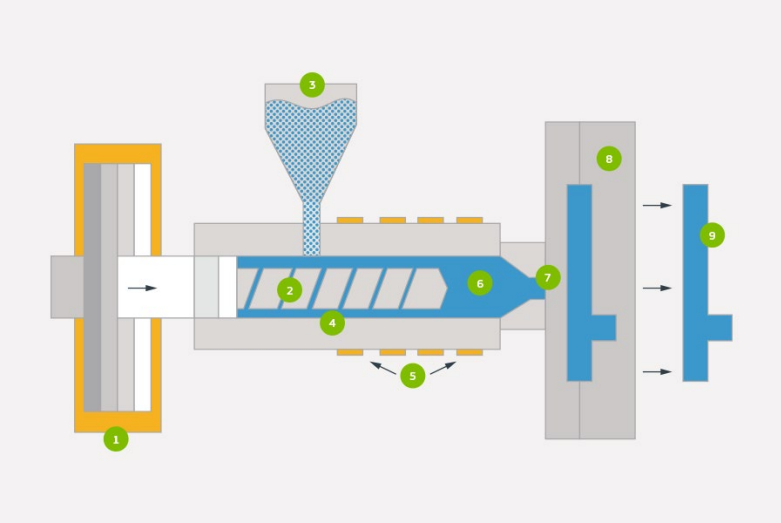
Copenhagen Denmark

Texas United States

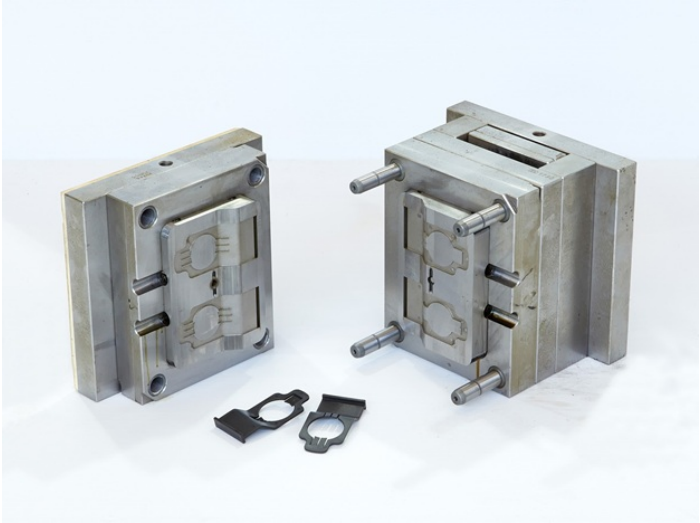
Bangalore India

We invest more than 250m NOK every year!

Our Core and background in Manufacturing



Injection Moulding



Moulding tool

3D printed tooling

Additive Manufacturing

SimBaby

SimNewB

Additive Manufacturing in Projects

Task: Develop two new manikins.

- Tight timeline
- Iterative approach Continous improvements in sprints
- Low yearly volume: 300pcs
- Designed for continous improvement

Approach to AM

Close cooperation with suppliers in AM

Prototyping in quantities of 1-5pcs

- But with focus on possibility to ramp up for production

AM-parts in released products

- Initial phase prior to Mold ready
- Continous production

Examples EC-Baby projects

Item no.:	Description
xx-xxxx1	Chest base
xx-xxxx2	Chest Drain Base
xx-xxxx3	Chest Drain Box
xx-xxxx4	Chest Drain Ribs
xx-xxxx5	IV Port Connector
xx-xxxx6	Conn ret PIO board
xx-xxxx7	SimNewB Backplate

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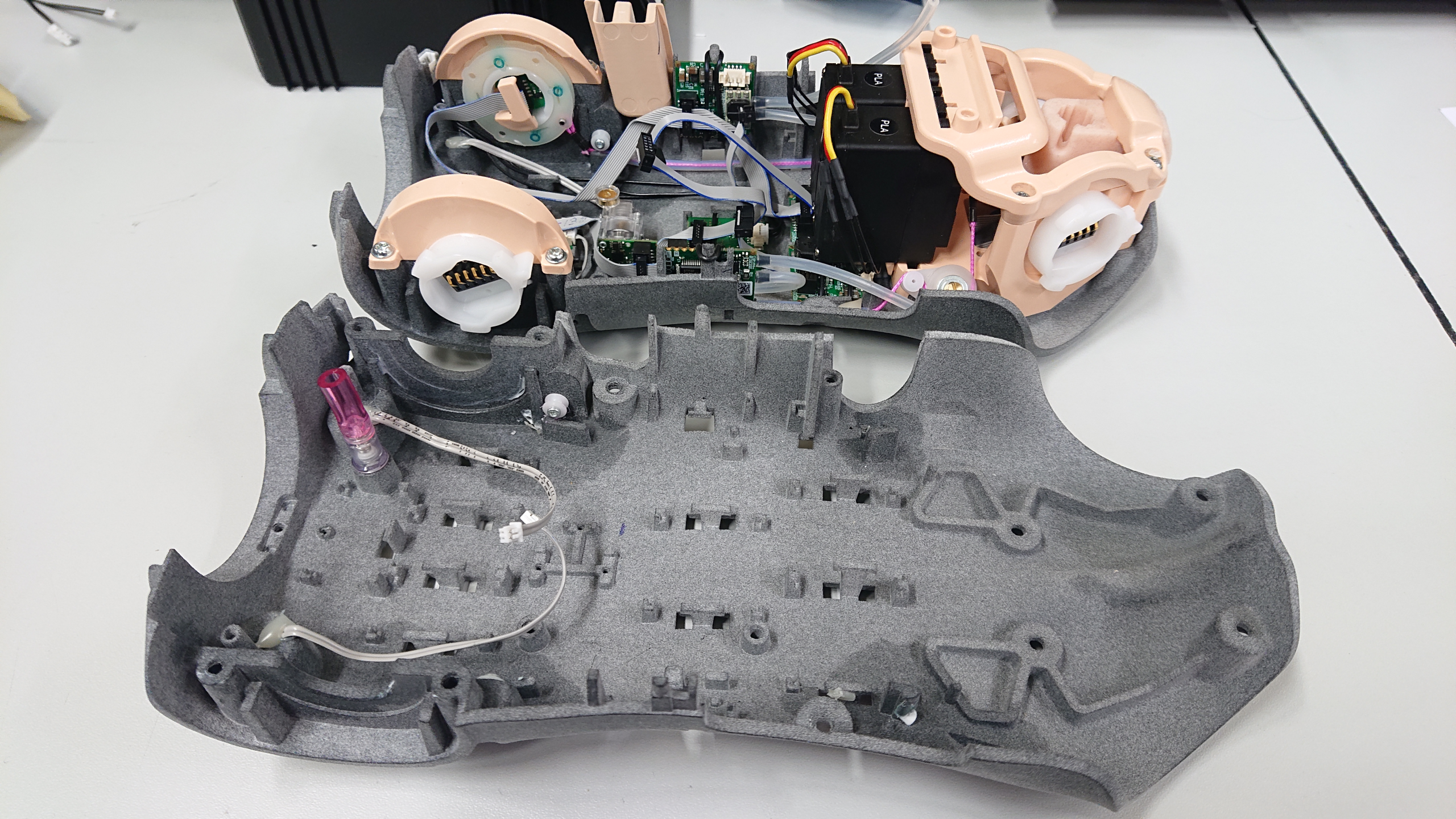
PLA
PLA

3D printing (AM) Summary

- **Pros**
- No tooling cost
  - Design changes
- Delivery time (1-X days)
- Design freedom
  - Draft
  - Undercut
  - ….
- Tooling (silicone)
  - Faster (design & building)
  - Lower cost than metal tools
  - Quality acceptable for production

- **Cons**
- Part cost
  - Size
  - Geometry / complexity
- Surface finish
- Mechanical properties
  - Depends on printing direction
  - Life time testing.
- Raw material availability
- Tolerances
- Variations
- Unability to give tolerances/variations

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