


30/31 MEI & 1 JUNI 2017 JAARBEURS UTRECHT

We bring **high-tech** to life

	MECHATRONIC SOLUTIONS			MATHWARE
	 SOURCE OF YOUR TECHNOLOGY		ELECTRONIC SYSTEMS	
ACCURATE POSITIONING				

We bring **high-tech** to life

Booth: C125



Facts



Annual turnover
€ 52,000,000



Customer satisfaction
84%



Development Centre
300 employees



Employee satisfaction
NPS: 89%

Locations



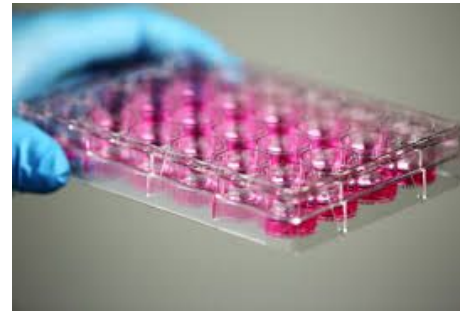
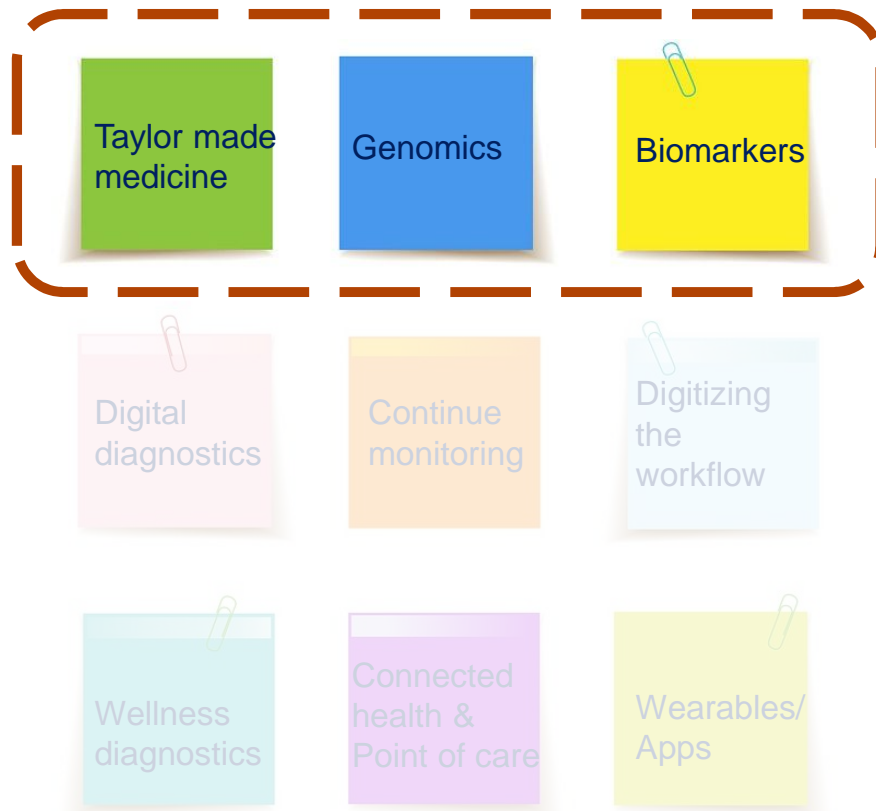
Awards



Certifications



Trends in healthcare



Trends in healthcare

Taylor made
medicijnen

Genomics

Biomarkers

Digital
diagnostics

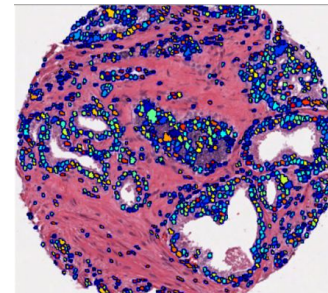
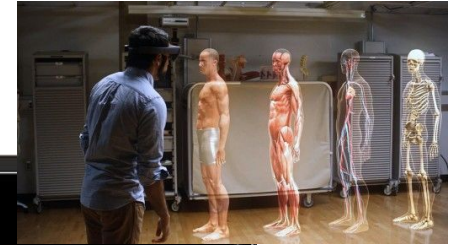
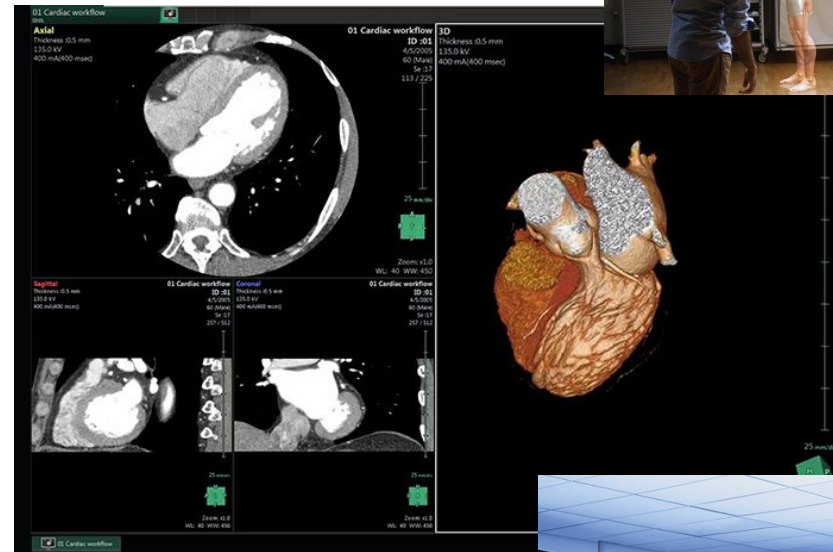
Continue
monitoring

Digitizing
the
workflow

Wellness
diagnostics

Connected
health &
Point of care

Wearables/
Apps



Trends in healthcare

Taylor made medicine

Genomics

Biomarkers

Digital diagnostic

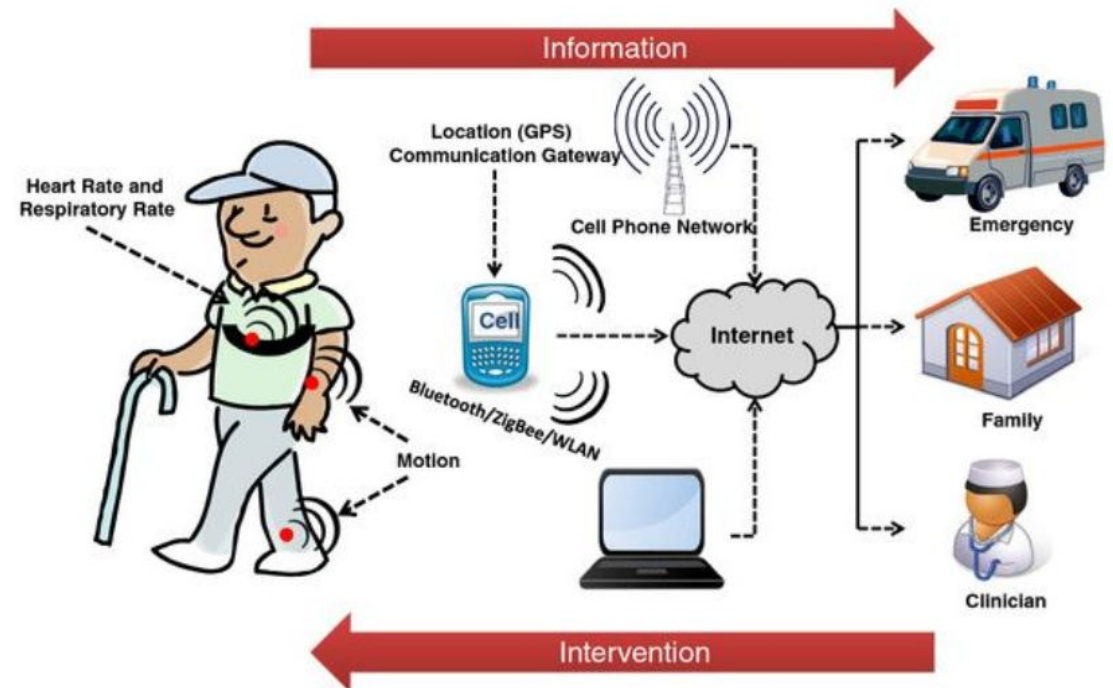
Continue monitoring

Digitizing the workflow

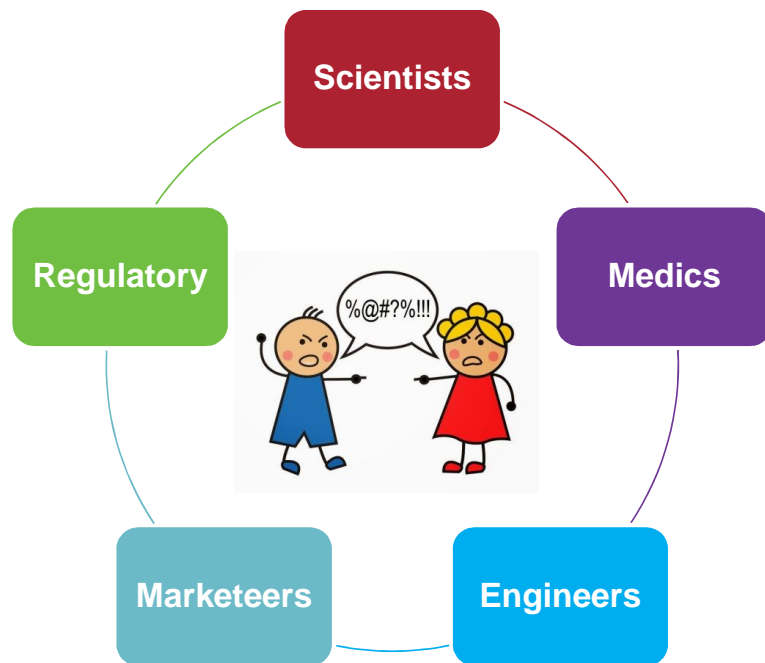
Wellness diagnostics

Connected health & Point of care

Wearables/ Apps

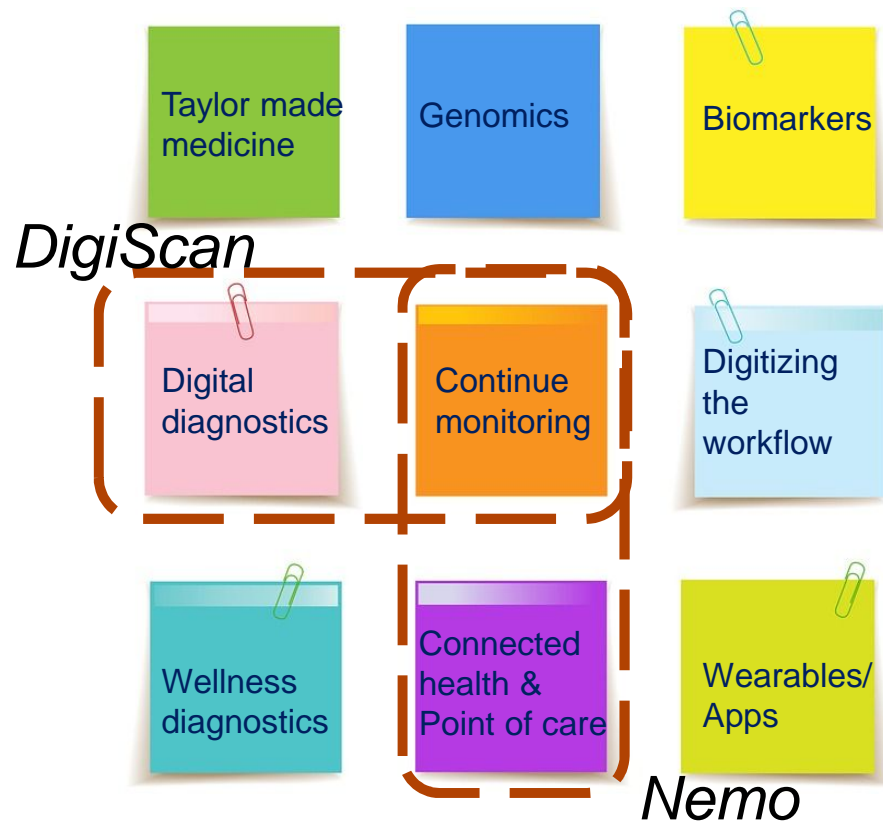


Trends in healthcare



- § Without state of the art technology these innovations are not possible
- § Multi disciplinary approach is essential

Trends in healthcare



2 Sioux project examples as demonstrations of this trend

§ DigiScan

§ Nemo

Digiscan

The idea

Conventional workflow:



Painful &
uneasy

Time +
Inaccuracy +
Fault sensitive



Digitizing the entire workflow

DigiScan

The wishes and challenges

Performance specs:

- Accurate & precise
- Short scan time
- No coating allowed

Environment & User:

- Hand held
- Limited dark room,
- High degree of humidity,
- Real-time visualization
- Portable (USB-laptop)

Marketing

- Quick step to product



DigiScan

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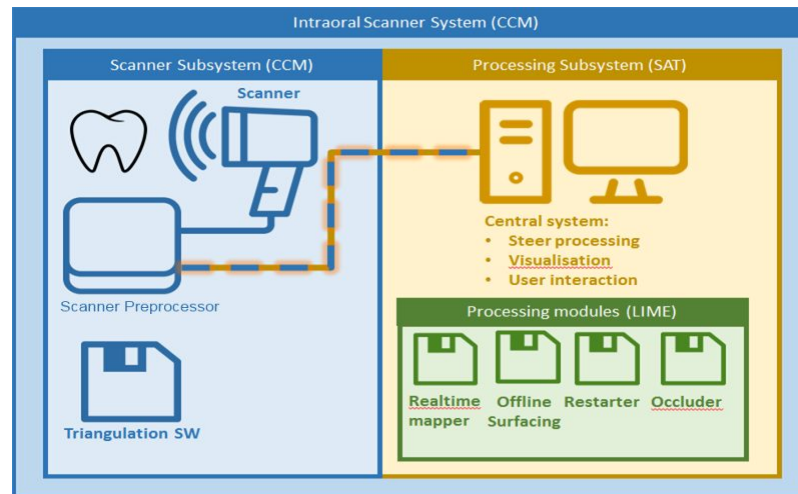
Marketing

- Quick step to product

Sioux

Product with all disciplines:

- q Mechanics
- q Electronics
- q Optics
- q Software & Mathematics
- ü Image processing
- ü GUI



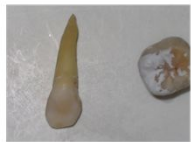
Model the system

- Quick validation
- Parallel design

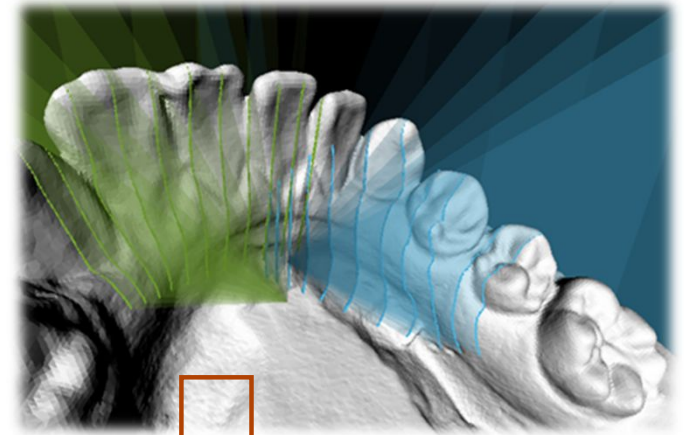
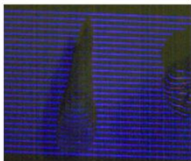
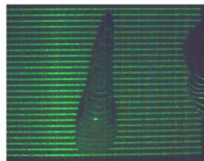
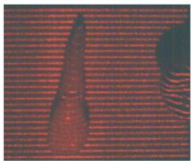
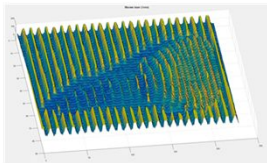
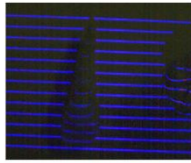
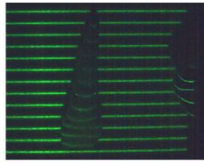
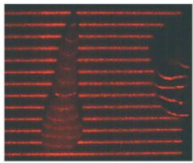
DigiScan

the model, an example

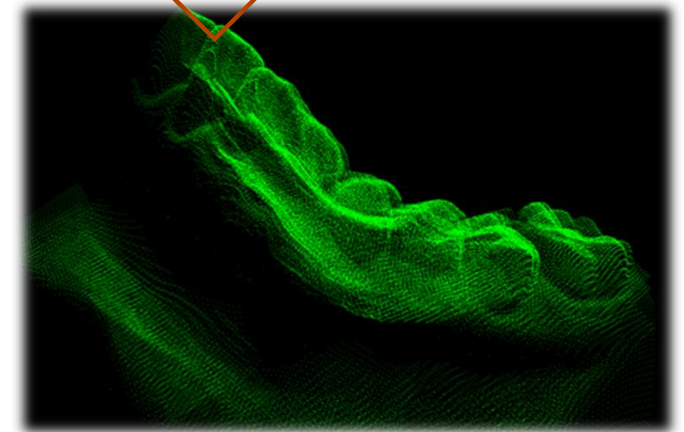
How many lines do I need?



Optics &
Algorithm development



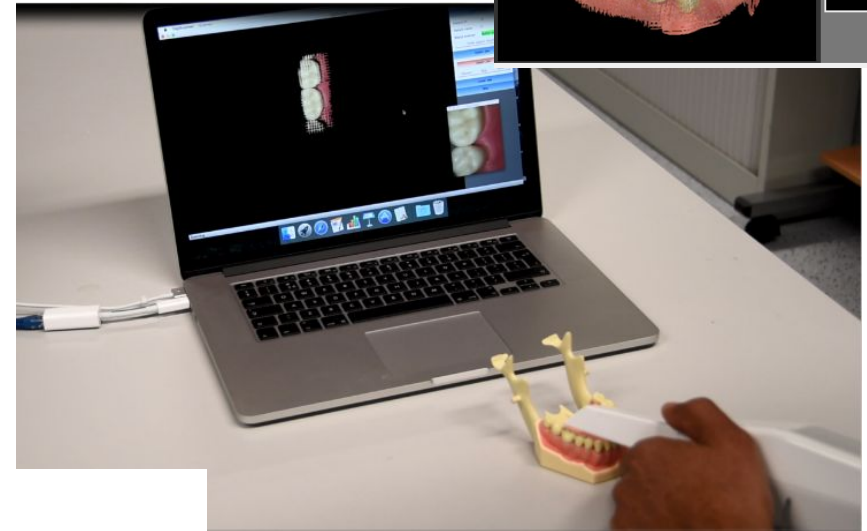
Mathware &
Algorithm development



DigiScan

The approach

1. Market scan + 1st draft specifications
2. Feasibility study
3. Prototype
4. Feedback from market
5. Product development



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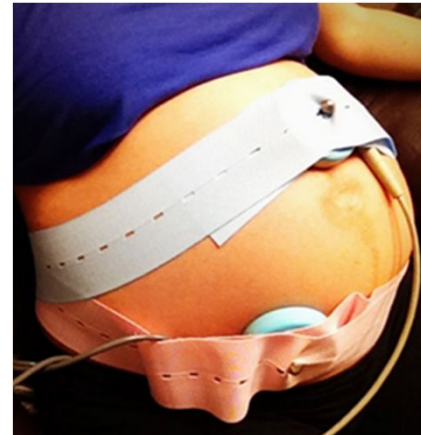


Nemo Healthcare

Background and mission



- Yearly 40,000 newborn babies start with a handicap due to insufficient oxygen.
- By reducing insufficient oxygen cases, 50% of these babies can be saved from handicaps
- Detecting this by obtaining Cardio Toco Graphs (CTG) non-invasive is very hard to do for patients with a high BMI score using current methods
- It is Nemo Healthcare's mission to develop and provide a method to enable obtaining accurate and reliable CTG in a patient friendly way



Nemo

The approach

§ Use Sioux ISO13485 certified quality system



§ Technical risks in development identified and pulled forward



§ Mitigation by conducting small projects where risks are tackled one by one

§ In this presentation we highlight one of these risks:
obtaining reliable accurate signals



Nemo

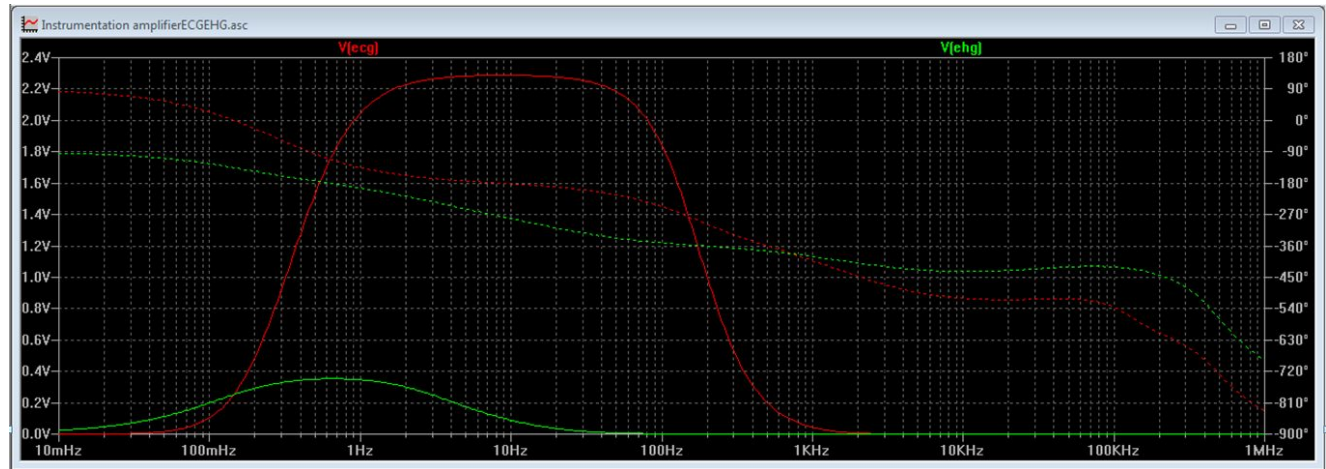
Obtaining the signal

Challenge:

- Prove that ECG of unborn child can be measured non-invasively.

Performance specs :

- Fetal signal: 1 .. 10 μ Vpp
- Mother signal: 250...1500 μ Vpp
- Range: 2 mVpp
- Patch noise: 250 nVpp
- Frontend noise: < 250 nVpp
- Bandwidth: 1 .. 75 Hz
- 50 Hz background: > 1 Vpp
- Sample rate: >500 Hz
- Isolation > 4 kV



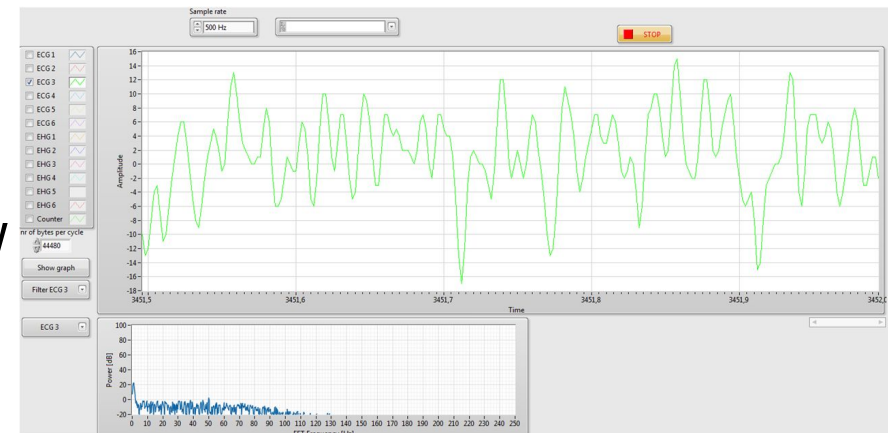
§ Disciplines

§ Electronics

§ Embedded SW

§ LabVIEW

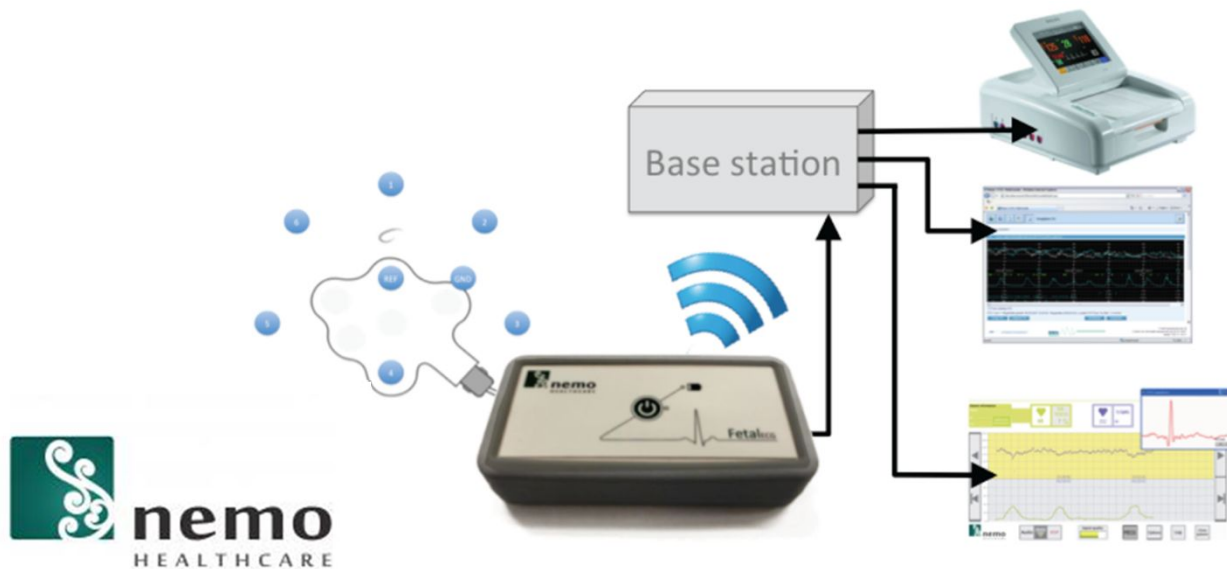
§ Mechanics



Nemo

The products

PUREtrace



Source of your technology

BOOTH C125