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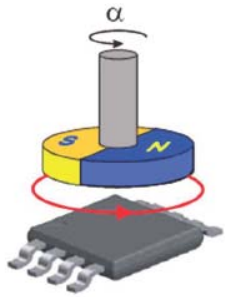
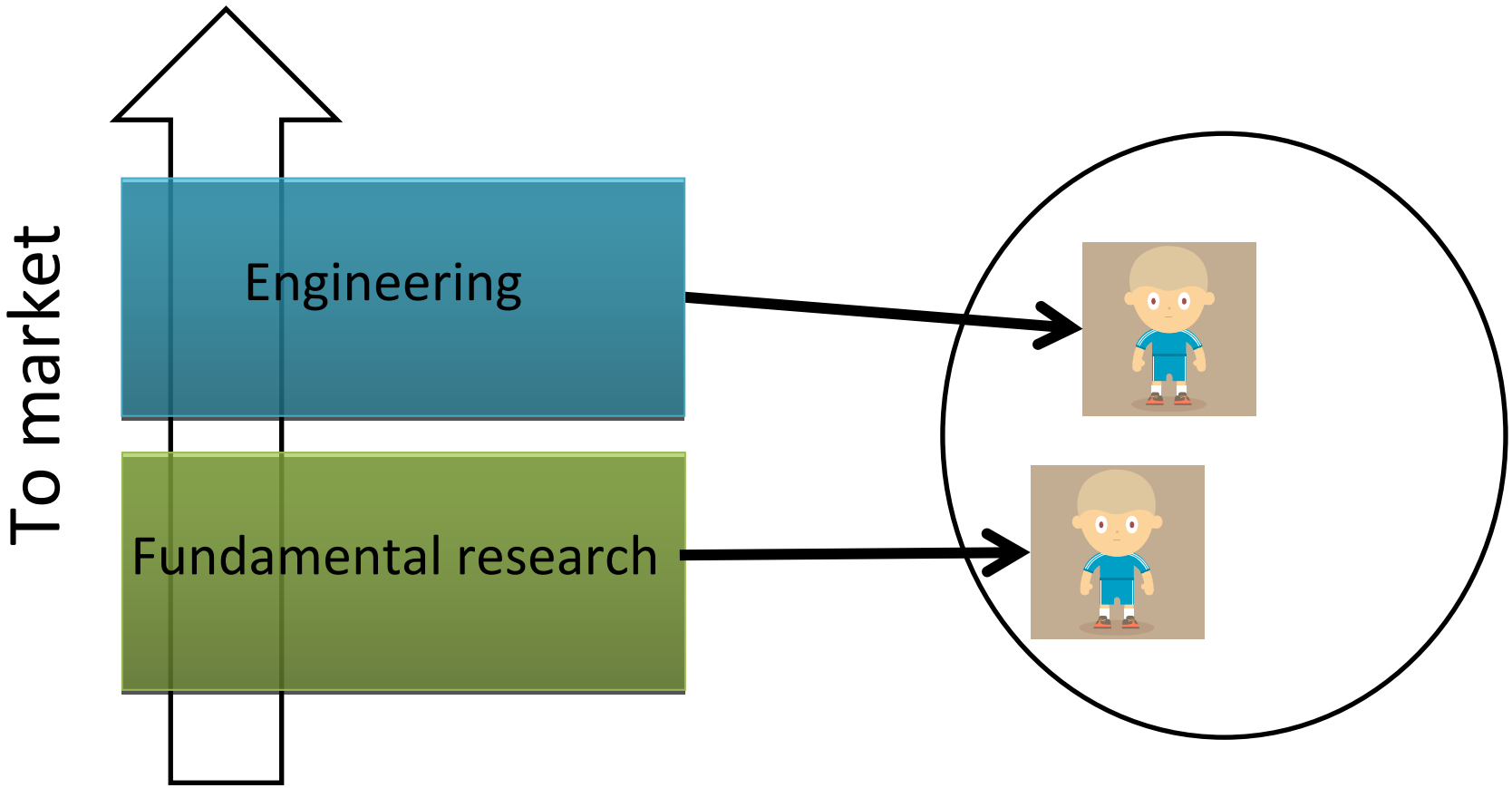
Angular position sensing on-a-chip



All started with research…

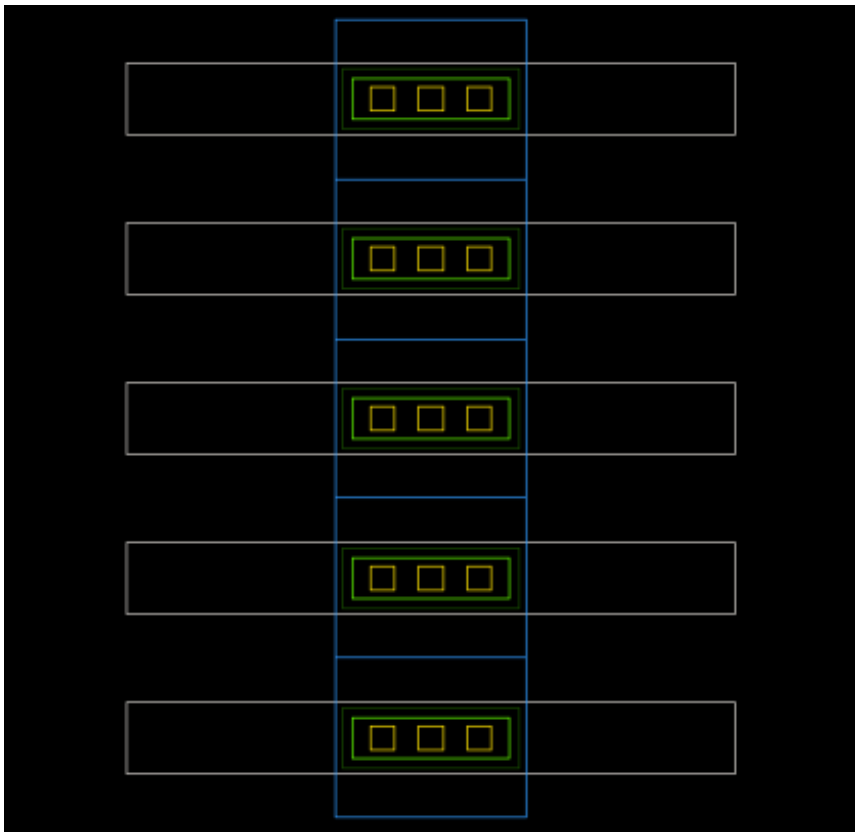
… **not** related to angular position sensing

Team:
Not only from different fields, but from **different level on the research to market process**

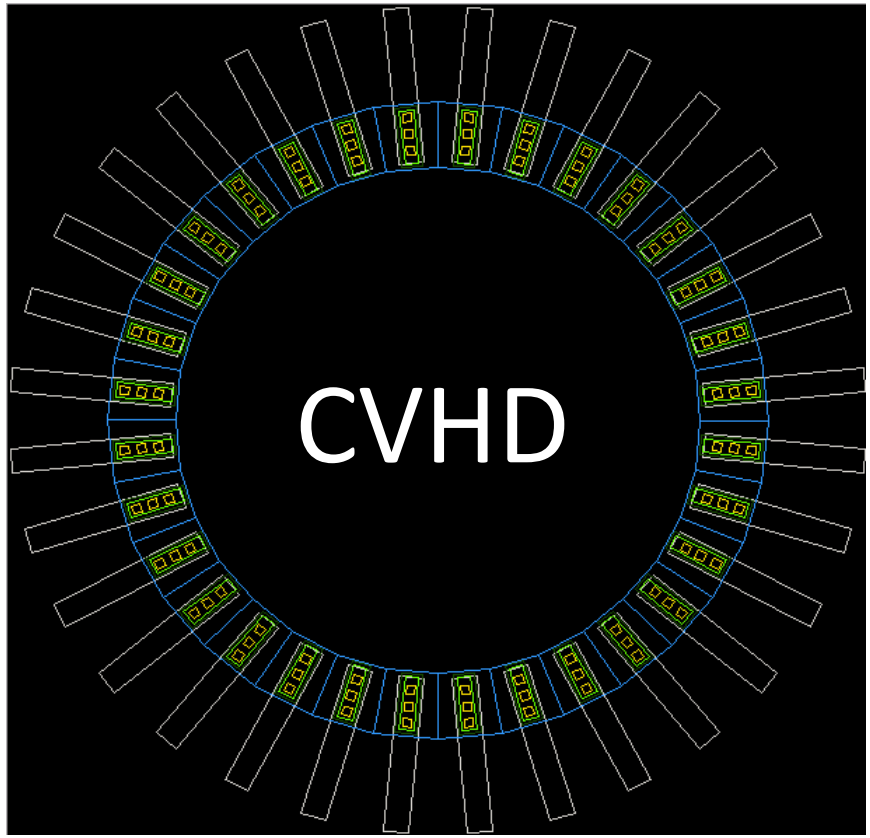


Birth of a new concept : circular vertical Hall device (CVHD)

old

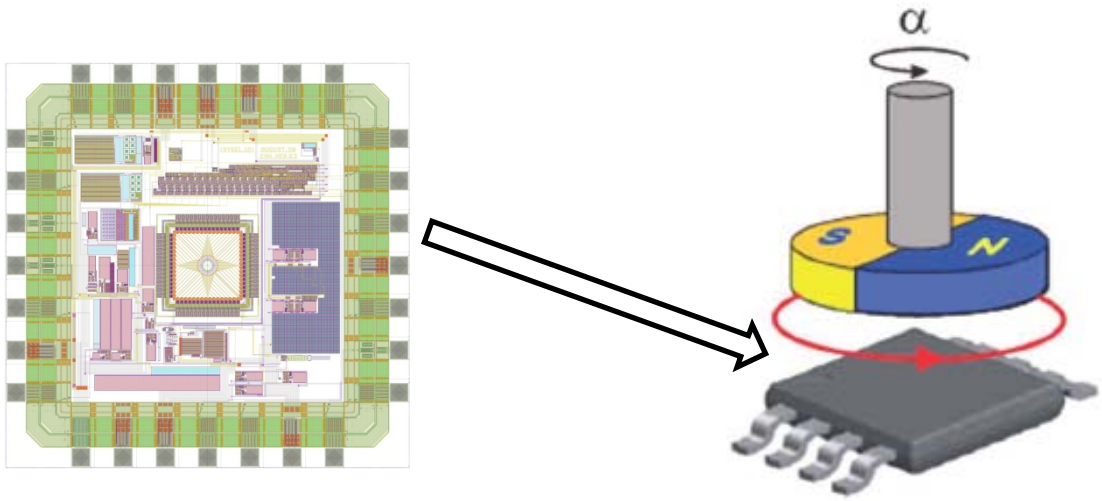


new



Only then we realized that it was an ideal field angle detector

Therefore the ideal **angular position sensor**



And compared with existing technologies…

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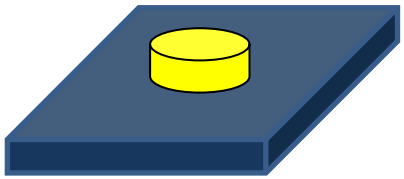
angular position sensors on-a-chip (CMOS)

Existing technologies:

Magneto-concentrator



Problem: non-standard fabrication

Manufacturer: Melexis

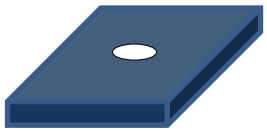
Field gradient technique

Problem: large silicon die

Manufacturers: AMS,IC-Haus, Renishaw

The new technology:

CVHD



Determine the angle without on-chip computation

Patent: EPFL/Sensima

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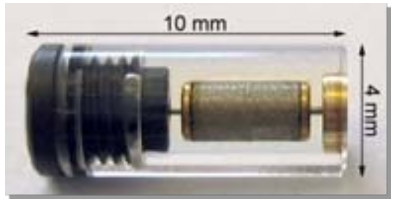
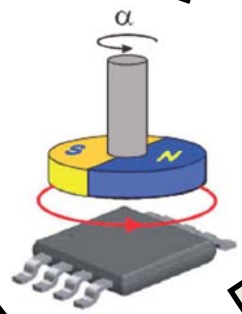


Medical

Automotive

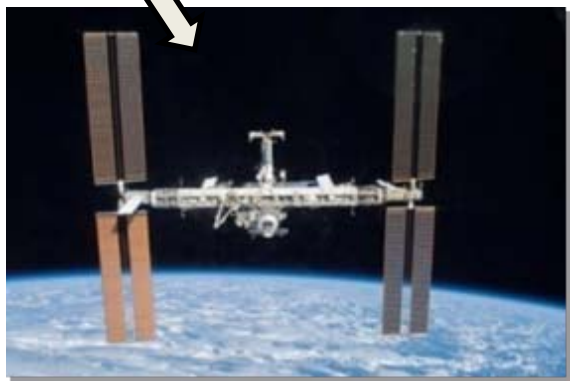
Aeronautics

Consumer electronics



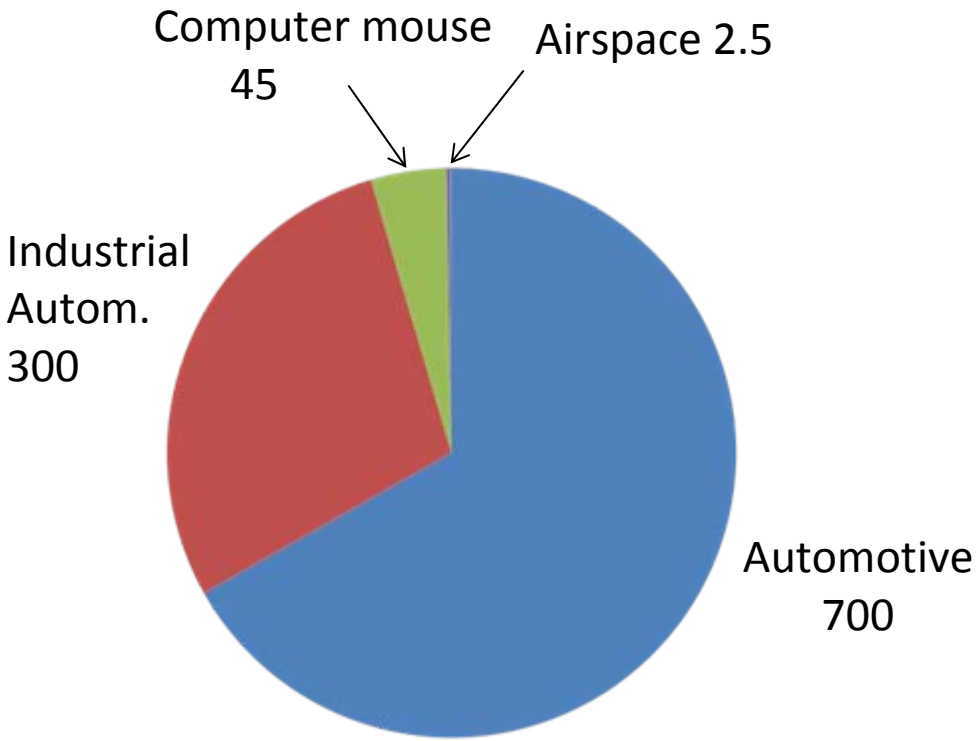
Electric appliance

Factory automation



Space

Angular position sensors on-a-chip market



Yearly, in mio USD

Opportunity window:

• Angular position sensor (APS) on-a-chip appears on the market in the early 2000.

• Essentially 2 players cover the whole market: AMS and Melexis

• Their patent prevent traditional motion sensor companies (Allegro, Honeywell, Micronas, Asahi Kasei, etc.) to enter the market

• Therefore these company are today internally starting to develop a high performance APS and not covered by another patent

• When they discover that a startup from EPFL group world leader in magnetic sensor has a new system they got interested.

But the product was not ready….

1. do we wait for our technology to be mature?

2. Do we jump on the occasion and propose solution (even if never yet tested) ?

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Business model (fabless semiconductor company):

Phase 1:	licensing for mass and sales for high end
Phase 2:	sales for all application + diversification to other magnetic sensors

Phase 1

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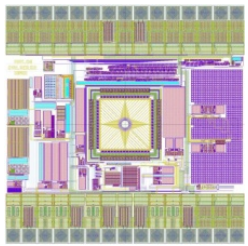
Circular Vertical Hall Device

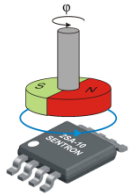


Completely new concept

- Purely CMOS
- 11 bits accuracy
- No calibration

Angular Position Sensors

licensing



Developpement mandates & sales

Mass-production

automotive

Industrial automation

High end applications

space

aeronautics

Medical implants

SENSIMA technology sa

Business model (fabless semiconductor company):

Phase 1:	licensing for mass and sales for high end
Phase 2:	production and sales for all application + diversification to other magnetic sensors

Other magnetic sensor

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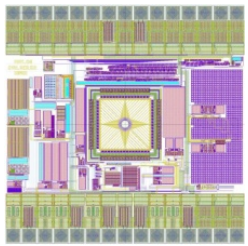
Circular Vertical Hall Device



Completely new concept

- Purely CMOS
- 11 bits accuracy
- No calibration

Compass

Metrology

Mass-production

Portable applications

High end applications

scientific applications