



Centre for Sensors, Instruments and  
Systems Development

UNIVERSITAT POLITÈCNICA DE CATALUNYA

Shaping light to your needs

# CD6

## *A photonics-based entrepreneurial ecosystem*

BARCELONATECH · 2019

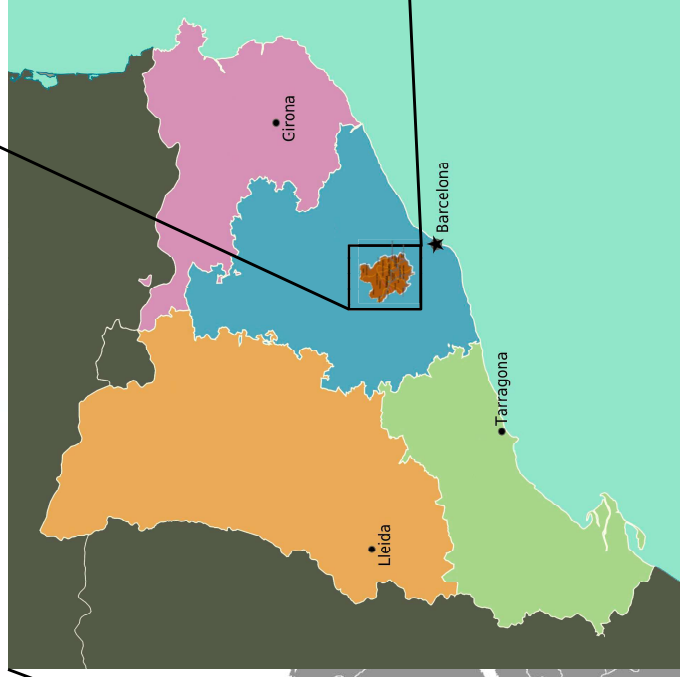




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# Overview

- CD6, a R+D center of UPC
- Located in Terrassa



## VALLÈS OCCIDENTAL

- High population density
- Strong industrialization
- Industrial diversity
- High rate of exports
- Talent & Knowledge  
(Universities, Research and Technological centers, business schools, ...)



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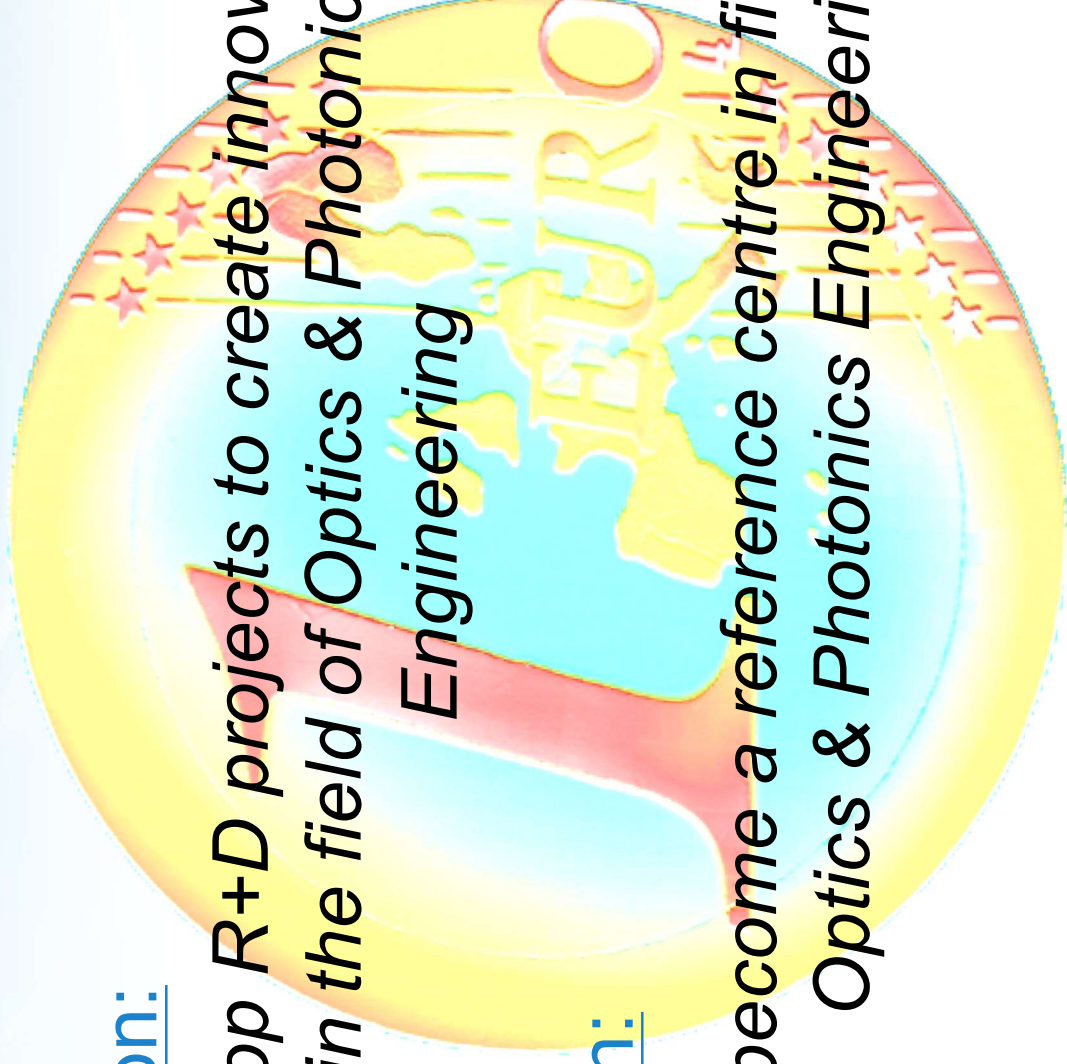
## Strategy

### Mission:

*Develop R+D projects to create innovation  
in the field of Optics & Photonics  
Engineering*

### Vision:

*To become a reference centre in field of  
Optics & Photonics Engineering*



## The CD6

- Staff: 37 people
  - 10 researchers
  - 15 R+D Engineers
  - 8 PhD Students
  - 4 Management
- Multidisciplinary:
  - Optics
  - Mechanics
  - Electronics
  - Software
- Site:
  - 1800 m<sup>2</sup>
  - Research labs
  - Mechanic & Electronic Workshops

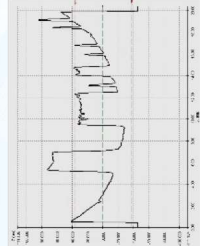
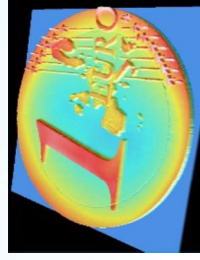


**Development of prototypes and turn-key instruments**

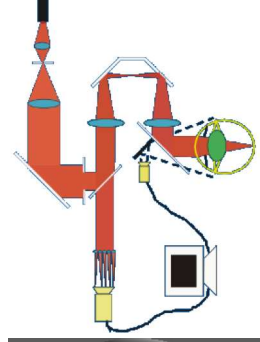


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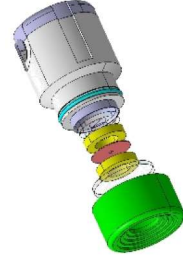
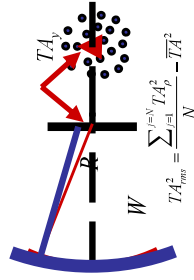
# Research areas



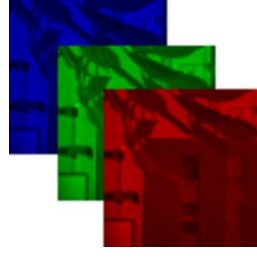
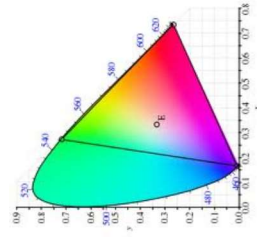
Optical Metrology



Visual Biophotonics



Optical Design



Color and Spectral Technology

## Results in the last 5 years

### Technology Transfer:

- ▶ Income 7,0 M€
- ▶ Projects: +50
- ▶ Customers +30
- ▶ Patents: 49 (acc.)
- ▶ Patents (licensed): 8 (acc.)
- ▶ Spin-off's: 9

### Other:

- ▶ People transferred to private companies: 6
- ▶ International scientific meetings organization
- ▶ Entrepreneurship fostering programs

### Scientific Results:

- ▶ Articles: 52
- ▶ International Meetings: 97
- ▶ Doctoral Thesis : 15
- ▶ Book chapters: 122



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# Customers





## Customers

**Transport:** Docter Optics GmbH, FICOSA Internacional, Gadyel, SEAT, Lear Corp., IDIADA, TRETTEY - Groupe TRES (F), YORKA, ALSTOM, ITV TECHNOLOGY, AUTOLIV (S), Faurecia, IDNEO, ...

**Electronics & Multimedia:** Grundfos Semiconductor (DK), Hewlett-Packard, SONY, SAMSUNG, FAGOR, IZM – Fraunhofer Institut Berlin (G), Milasys (G), ...

**Biomedical:** Biosystems, INDO, Visiometrics, BIOMAT, Essilor International (F), R&S Medical (USA), Merck GmbH, Calhoun Vision (USA), Pfortner Cornealent (AR), Desarrollos Dentales +3, Phibo Dental Solutions, Antonio Puig, UBAN Research, Carril Instruments, OPHTEC (NL), LIPOTEC, ...

**Instrumentation:** ATOS (G), Rayteq (IL), NTE, Solarius Inc. (USA), Telstar Technologies, Monocrom, Service Vision, Sensofar, Tecnatom, SenseFab (TW), ASE Group (SG), ...

**Public Agencies :** Harbors of Generalitat de Catalunya, Institut Cartogràfic de Catalunya, museums, ...

**Other:** Security, Graphic Arts, Cosmetics, Solar Energy, Textiles, papermaking, Metallurgy & Tool manufacture, Food Industry, other research centers, ...

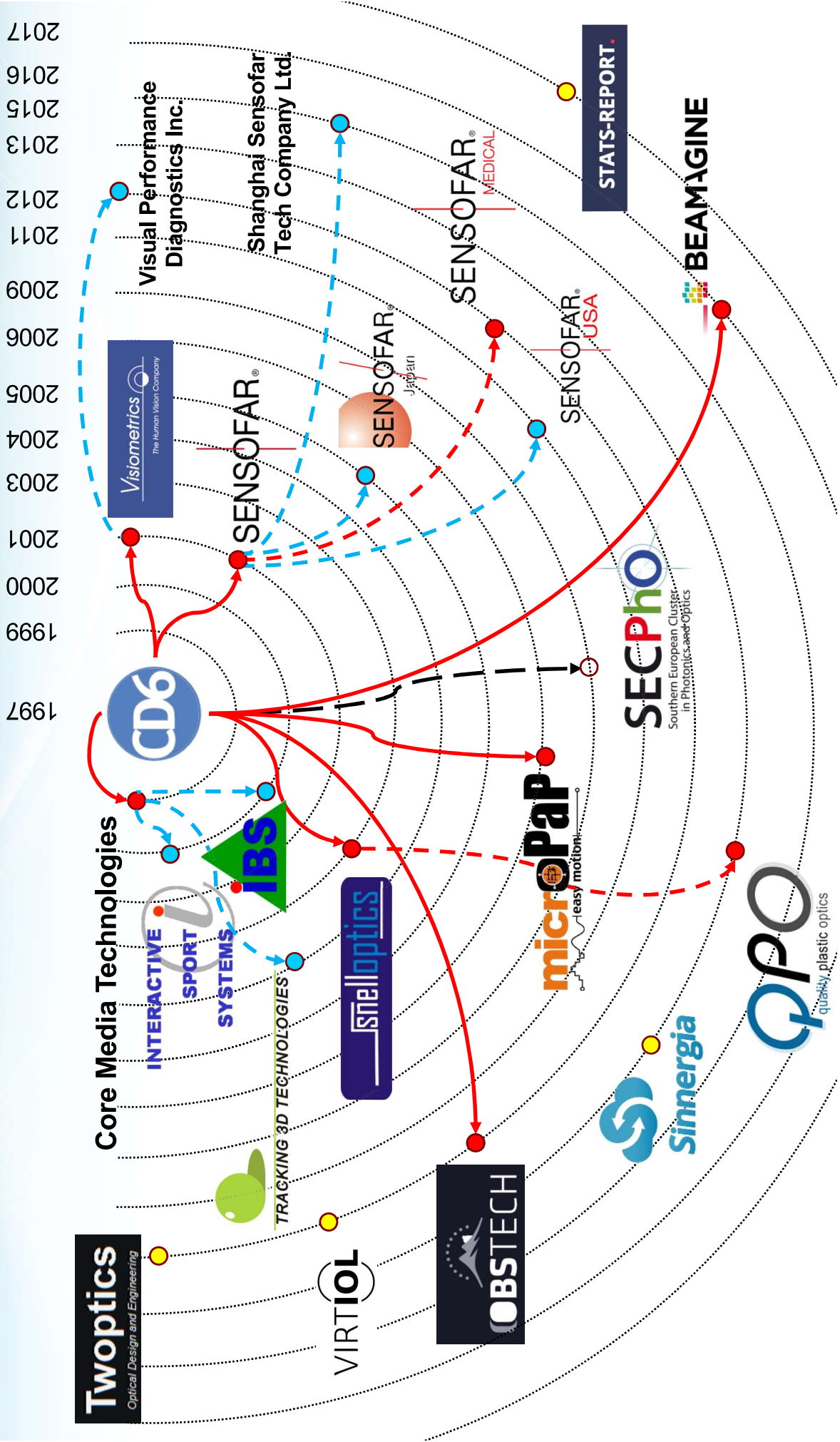




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# Entrepreneurial ecosystem



# Spin-off Companies

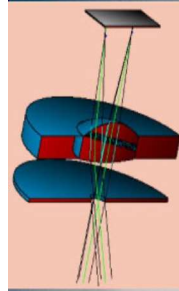
- High performance non contact metrology
- in-line production metrology



## SENSOFAR

<http://www.sensofar.com>

- Plastic optics (LED lighting)
- Photometry Instruments



## Snelloptics

<http://www.snelloptics.com>

- Vision quality measurement
- Eye pathologies assessment.



## Visiometrics

The Human Vision Company

<http://www.visiometrics.com>

- Advanced stepper motors control
- Advanced brushless motors control



## micropap

easy motion!

<http://www.micropap.com>



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# Spin-off Companies

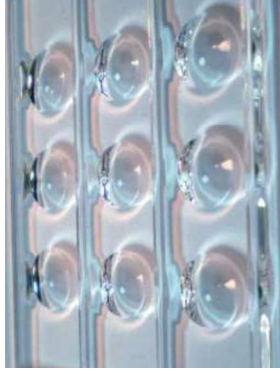
- Automated stent inspection



**SENSOFAR**<sup>®</sup>  
MEDICAL

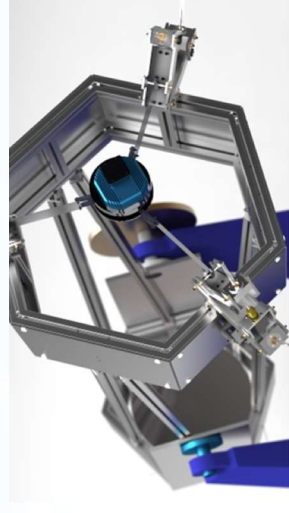
<http://www.sensofar.com/medical/>

- Plastic optics
- Injection processes for optics manufacturing



**QPO**  
quality plastic optics

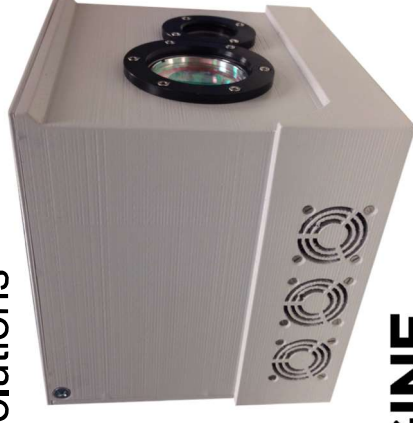
- Remotely controlled telescopes
- Advanced observatory services



**OBSTECH**

<http://www.obstech.net/>

- LIDAR and ToF solutions



**BEAMAGINE**

<http://www.beamagine.com/>

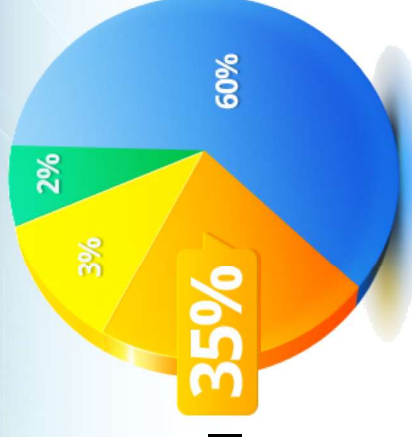


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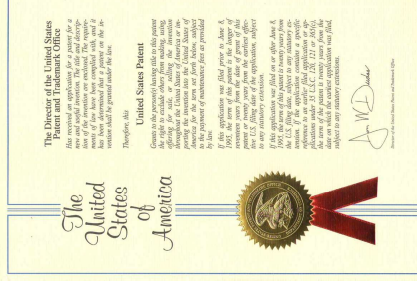
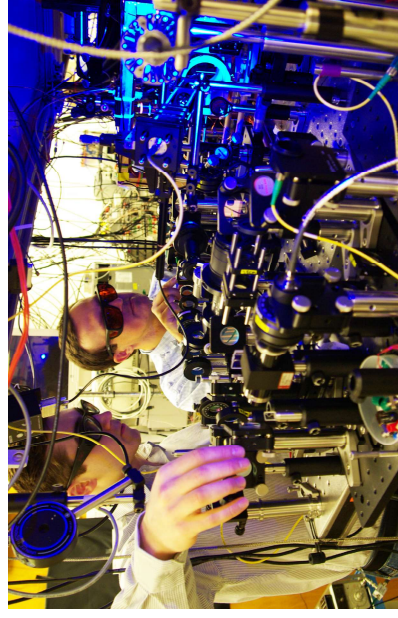
## Entrepreneurial ecosystem figures

- 2018 Turnover: >15 M€
- Employees: 70
- Number of new hi-tech products: +20
- IPR: 12 patents (PCT, EP)
- International markets: +30 different countries
- Reference customers: NASA, Fraunhofer Network, SONY,  
Mitsubishi, Mitutoyo, Mayo Clinic,  
Hewlett-Packard, Apple, ...

# CD6 links with the ecosystem



- Shareholders  
Opportunity, Moving jobs from lab to industry, Industrial partners, ....
- Technology licensing strategy  
IPR property, licensing strategy, royalties, ....
- R+D  
High rate of re-investment, customer relationship, Labs at CD6, ...





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## Key factors

- Organization culture
- Understanding research as a business
- Long-term relationship with industrial partners (over 30 years)
- Customer-oriented organization
- Entrepreneurial examples in the neighborhood
- Easy experience sharing



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## Next step: Pushing entrepreneurship

- Establish a permanent support to the entrepreneur
- Focused on companies related to optics and photonics
- Main functions:
  - Business model assessment and evaluation of its value gathering capacities. Business plan assessment.
  - Pre-seed funding to validate technical and business hypothesis
  - R+D support in early stages
  - Organization of meetings with potential investors to introduce highly validated business proposals
- Networking events



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[www.cd6.upc.edu](http://www.cd6.upc.edu)

T. +34 93 739 8901

CONTACT:

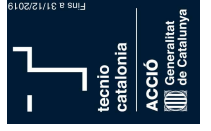
[jaume.castella@upc.edu](mailto:jaume.castella@upc.edu)

[www.cd6.upc.edu](http://www.cd6.upc.edu)

+34 93 739 89 01 / +34 93739 83 14



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I TECNOLOGIA  
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DE CATALUNYA  
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