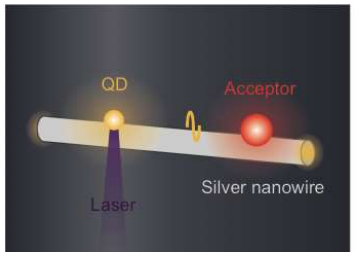
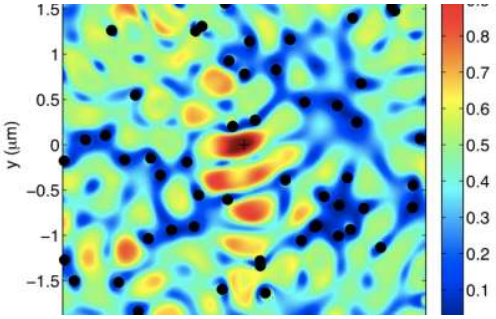
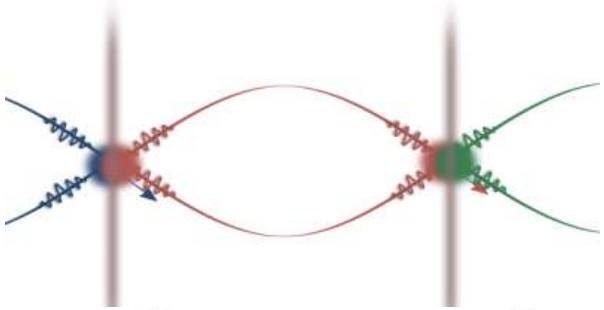
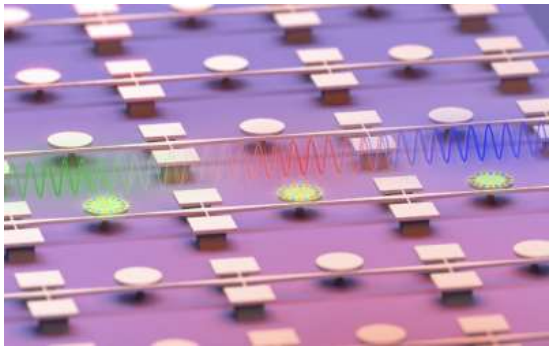
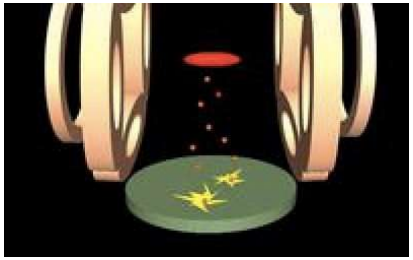
SIRTEQ: From basic Science to Entrepreneurship

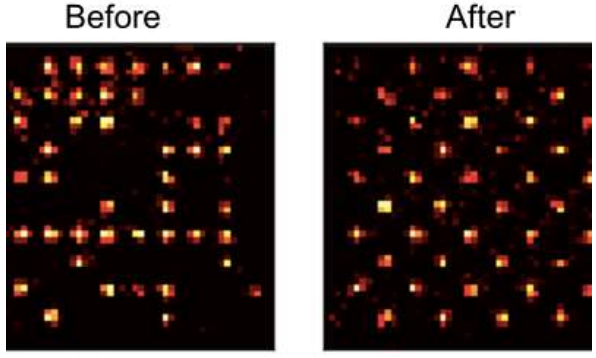


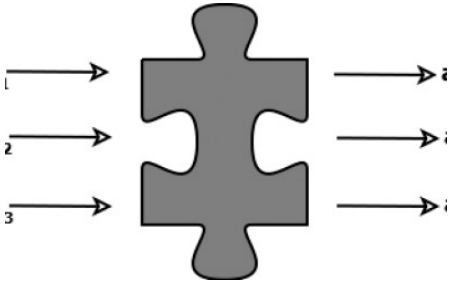












SIRTEQ: Supporting Innovation and technological tranfer

Outline

- Why should we care?
- Basics of innovation and industrial transfer annual meeting
- Funding your first steps
- School on entrepreneurship
- Industry – Research meetings

QUIZZ

TRL

Know-how

Innovative activity

Claims

Love Money

Licensing

Homme de métier

Challenge+

Scientipole

INPI

Pre-maturation

Statut JEI

BPI

Maturation

ASTRID

Incubateur

Centrale-Supelec Entrepeneur

Keeping up during the Flagship

TRL

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Incubateur

FIST

Centrale-Supelec Entrepeneur

Quantum Technologies Flagship Intermediate Report

High-Level Steering Committee 16 February 2017

Uses 42 times the word Industry/industrial

Uses 47 times the acronym TRL: Technology Readiness level

Technology Readiness level

- TRL 1 – basic principles observed
- TRL 2 – technology concept formulated
- TRL 3 – experimental proof of concept
- TRL 4 – technology validated in lab
- TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 7 – system prototype demonstration in operational environment
- TRL 8 – system complete and qualified
- TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

Quantum communication milestones

- In 3 years, development and certification of QRNG and QKD devices and systems, addressing high-speed, high-TRL, low deployment costs, novel

Quantum computing milestones

After 6 years, logical qubits are expected to outperform their constituent physical qubits by

Quantum sensing and metrology milestones

- In 3 years, quantum sensors, imaging systems and quantum standards that employ single qubit coherence and outperform classical counterparts (resolution, stability) demonstrated in laboratory environment;

Quantum

After 10 years quantum sim will be simula domain of ph simulators.

6 years: Inertial sensors and clocks (microwave and optical) will be available as compact, autonomous, field-usable systems (medium TRL). Sensor networks for earth monitoring and tests of fundamental physics will be available (low to medium TRL). Optical interferometers, e.g. for gravitational wave detection, will operate with optimised squeezed states (low TRL, experimental proof of concept). Compact, integrated solid-state sensors will address applications such as healthcare or indoor navigation (low to medium TRL). Spin-based sensors and entanglement-based sensors will address e.g. life-science, including Nuclear Magnetic Resonance (NMR) down to single molecule, Electron Paramagnetic Resonance, hyper-polarised NMR and Magnetic Resonance Imaging (low TRL). Optomechanical sensors will allow developing force sensing, inertial positioning devices, microwave-to-optical converters (low TRL). Sensors based on electrons and flux quanta in solid state devices will allow shot-noise-free ultra-sensitive electrical measurements and hybrid integration of different quantum devices (low to medium TRL).

Protecting your ideas

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Financing your first steps

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Creating your spin-off

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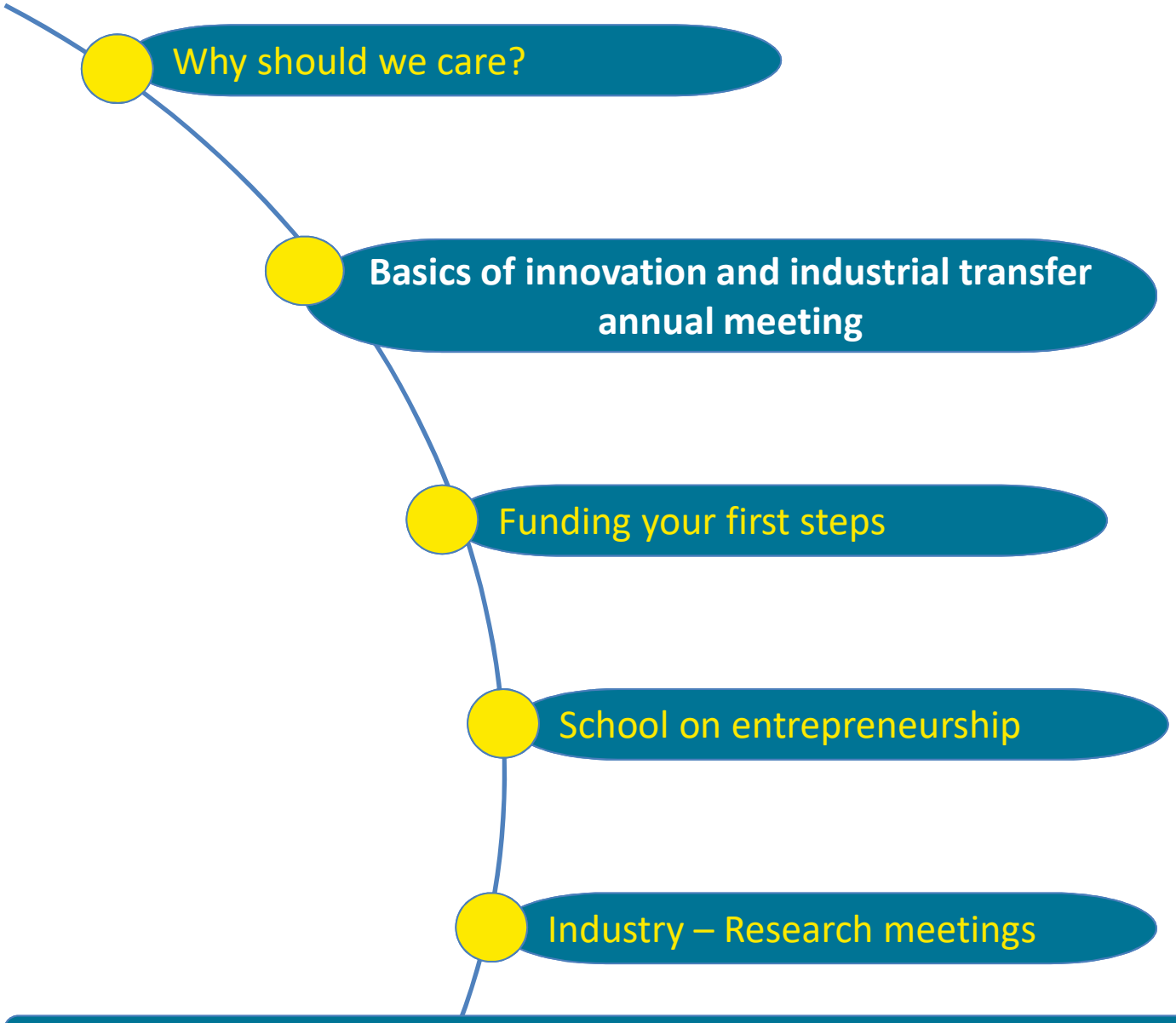
Why should we care?
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1st edition: January 8th 2018

Program:

- CAILABS: from quantum optics to light shaping for fibers

- Conference on Innovation

- DAUMET: from spintronics to luxury

- Conference on Patent & Intellectual property

- Funding your first steps

- Poster session

CAILabs

Shaping the light

Olivier Pinel
Strategic projects

Founders

Jean-François Morizur, PhD

CEO
Jean-François combines scientific and business expertise.
Read more

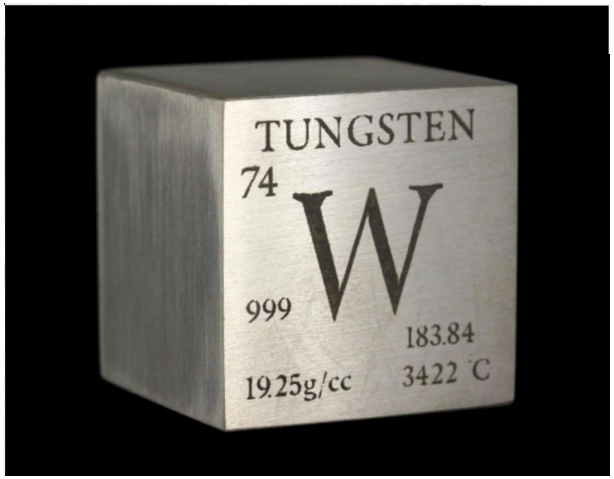
Guillaume Labroille, PhD

CTO
Guillaume is an expert in optics and telecommunications.
Read more

Prof. Nicolas Treps, PhD

Scientific Advisor
Nicolas is an internationally recognized expert in quantum optics.

DAUMET



Cyrile Deranlot
President

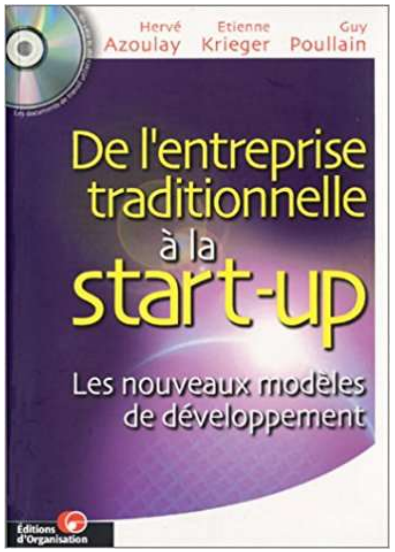
Marine Kohler
Consultante Marketing/Communication

Rachid Boujamaa
Responsable technique

Albert Fert
Comité Scientifique

André Behlouli
Comité Scientifique

Conference on Innovation by Etienne Krieger



Créer et développer une startup technologique

Conference on Intellectual Property by Cécile Joubert

- Patent attorney
- Graduate of the Ecole Nationale Supérieur de Physique.
- Master's degree in Optics and Photonics, as well as a PhD in physics.

- 10 years research engineer at Thomson-CSF
- 9 years as IP Manager of a start-up, Nemoptic

Poster Session :

Present your research to the professionals of innovation

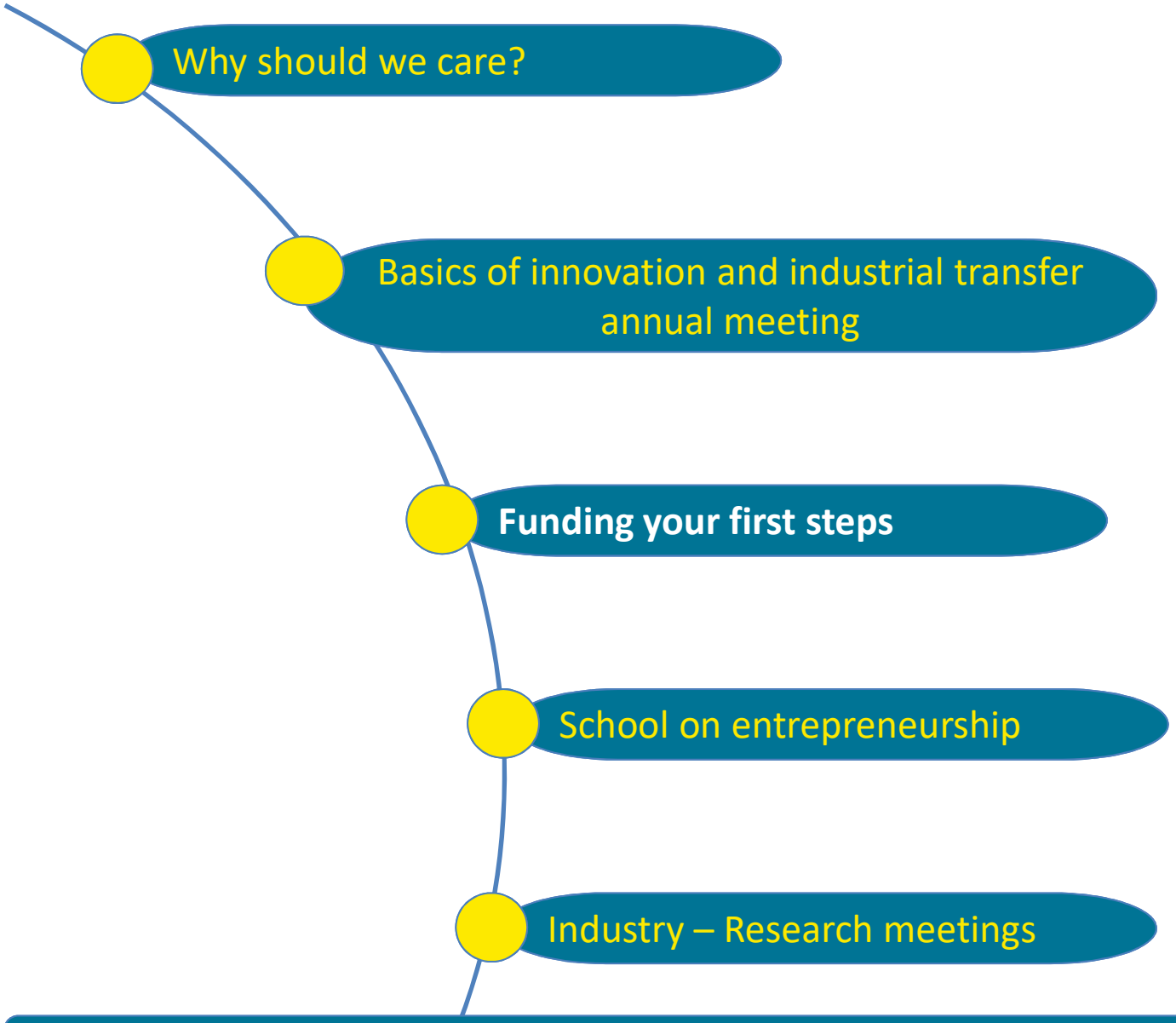
1st edition: January 8th 2018

30-50 participants per year:

Ideally:

- All Post-docs and PhD funded by SIRTEQ
- One member per team funded by SIRTEQ
- As many of you as possible

Outline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Project call (AAP) Valorisation

- Entrepreneurship training
- Prototyping, reproducibility, viability:

  Salary for up to 9 months per project
  Small and medium-sized equipment.
- Personal coaching
- Market study
- Others Requests

First AAP closed – AAP Valorisation all year-long for smaller projects

Outline

- Why should we care?
- Basics of innovation and industrial transfer: annual meeting
- Supporting your first steps
- **School on entrepreneurship**
- Industry – Research meetings

Spring 2018

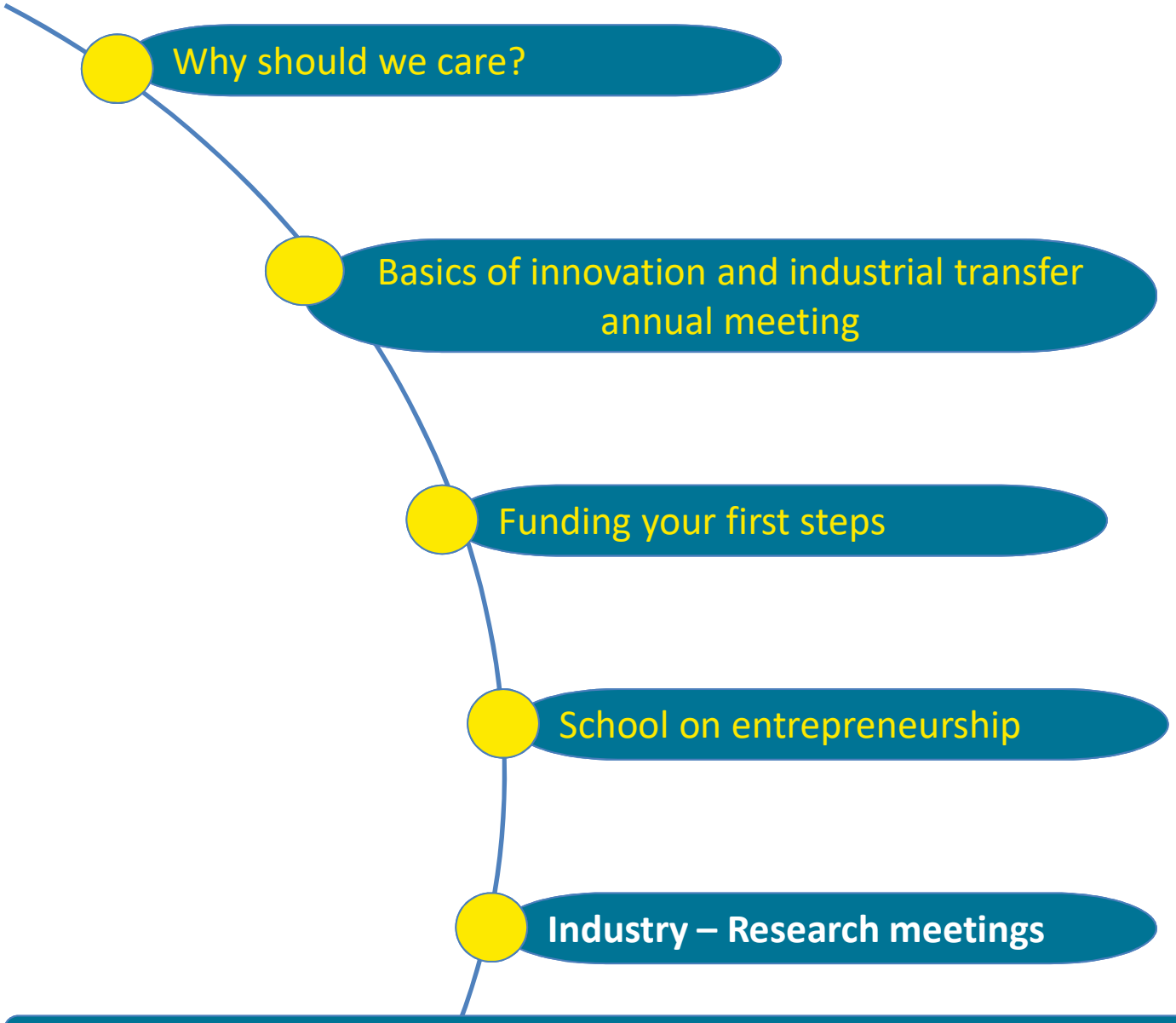
15-20 participants – One week – Each Spring

Objectives: Favor industrial transfers

- What are the first steps of a spin-off creation?
- What the different required know-how ? (technical, behavioral, …)
- Define a market? Which market for your innovation?
- Understanding Intellectual property
- Case studies

Validated by Doctoral Schools

Outline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www.sirteq.org

Annual academic-industry meeting

Brigding the gap

DIADEMS AND SIRTEQ QUANTUM TECHNOLOGIES WORKSHOP

14-15 septembre 2017 Thales Research & Technology (TRT)

The European FP7 project DIADEMS (DIAmond Devices Enabled Metrology and Sensing) and SIRTEQ will be holding a joint industry oriented workshop bringing together some of the most prominent stakeholders

2017-2018: a very special year!

Délégation régionale à la recherche et à la technologie d'Ile de France

Ministère de l'éducation nationale de l'enseignement supérieur et de la recherche

150 k€

No co-funding needed for the small equipments needed for prototyping

Office members for Innovation & Entrepreneurship

Scientific innovations	
François Marquier	ENS Cachan
Nicolas Treps	LKB
Pascale Senellart	**C2N**