

DE LA RECHERCHE À L'INDUSTRIE



# FINANCING SCIENTIFIC & HIGH TECH INNOVATION

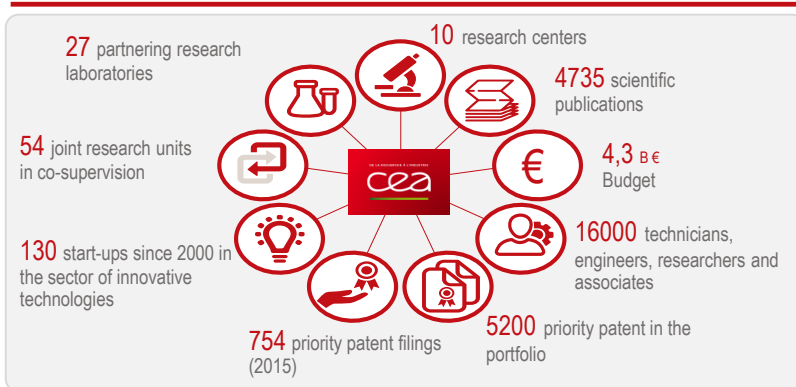
## THE EXAMPLE OF “SUPERNOVA INVEST” A NEW VC MODEL IN EUROPE ?

[www.cea.fr](http://www.cea.fr)

EARTO INNOVATION SCHOOL  
19 SEPTEMBER 2017

- **CEA brief presentation**
- Evolution of CEA's VC « tools » and the creation of « Supernova Invest »

## The CEA : a central player for R&D and innovation



### SCIENCE

#### Fondamental research

- ✓ Department of matter sciences
- ✓ Department of life sciences



### TECHNOLOGIE

#### Defense Security



#### Energy Nuclear



#### Key technologies for industry



Source: CEA Investissement

## CEA Tech : high-tech platforms and technologies for industry & start-ups

### □ Mission :

Produce and disseminate strategic technologies for the benefit of industry and the economy



### □ Key figures :

€ 600 M EUR Budget



4 500 collaborators



50 technology start-ups created in the last 10 years



6 000 patent families (750 patent filing per year)

### □ CEA Tech platforms

#### leti

Electronic and Information Technologies Laboratory  
1 800 people, 280 M€ budget



Micro & nanotechnologies, system integration

#### list

System and Technologies Integration Laboratories  
800 people, 80 M€ budget



Intelligent digital systems, Advanced Manufacturing

#### liten

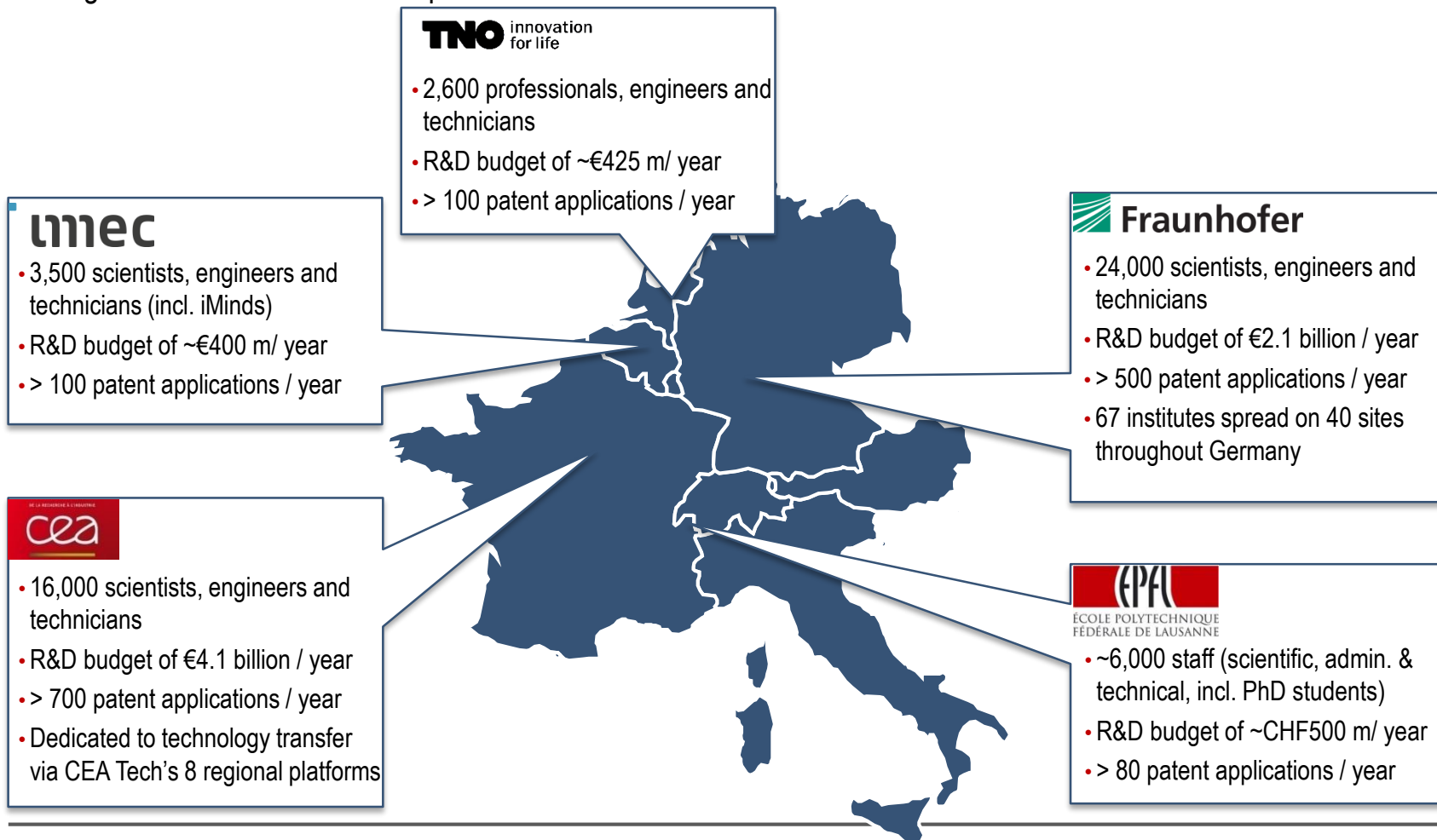
Innovation Laboratory for New Energies Technologies and for Nanomaterials  
1 000 people, 180 M€ budget



New technologies for energy / nanomaterials

# CEA HAS A STRONG RELATIONSHIP WITH MAJOR R&D INSTITUTIONS IN EUROPE

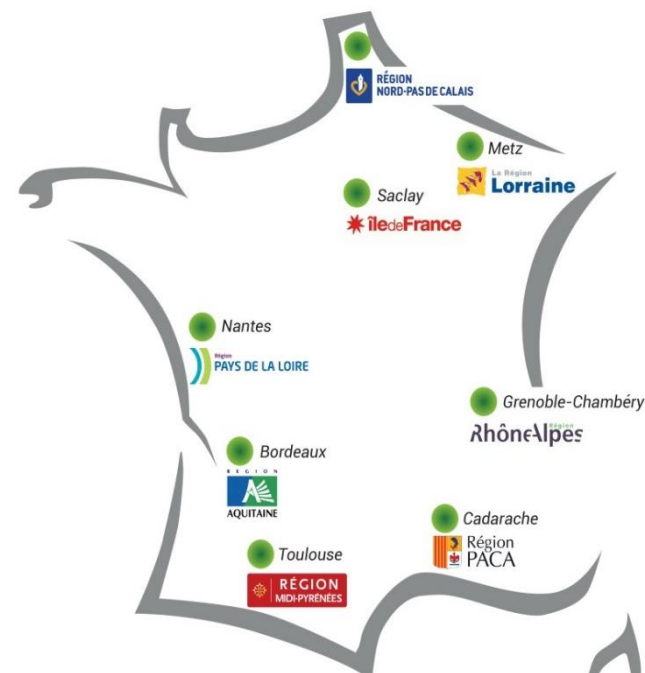
- CEA and its ecosystem are more and more interconnected to the main other industry-related R&D organizations in Western Europe



# CEA'S ECOSYSTEM IS A FAVORABLE ENVIRONMENT FOR TECH START-UPS AND NEW VENTURES

- CEA is French industry's primary R&D service provider
  - Ranked in early 2016 by Reuters as the world's #1 public research institution
  - The center of advanced research into nanomaterials, microelectronics, complex software, systems integration, new energy, health technology, and more
  - Dedicated to technology transfer via CEA Tech's 8 regional platforms
  - 16000 people, repeatedly in the top 3 French Patent recipients over the last ten years
  
- Excellent "deal flow" through CEA & its partners
  - More than 100 startups have come out of CEA since 2000
  - CEA has assisted more than 180 new regional companies via R&D contracts that help identify investment opportunities
  - IP protection, application proof of concept, spinoff mechanism to help grow projects over the course of 18 months growth-driving salaries, HEC education, financing for product developpement, etc.)
  
- Start-ups, whether from CEA or elsewhere, are included as part of an ecosystem that accelerates operations and optimizes investment needs:
  - Intellectual property assets
  - Knowledge and expertise (R&D, marketing, IP)
  - Cutting-edge technical and industrial resources (platforms)

CEA Tech locations throughout the French territory

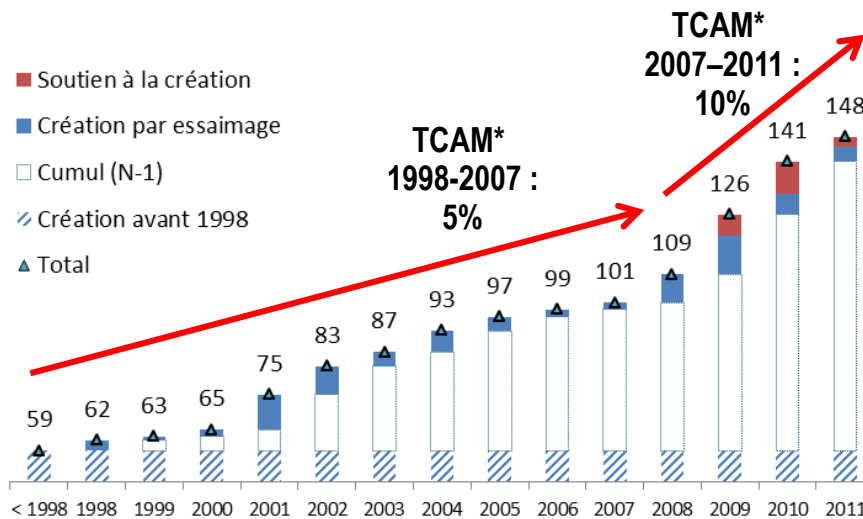


- CEA brief presentation
- **Evolution of CEA's VC « tools » and the creation of « Supernova Invest »**

# SUPPORT OF HIGH-TECH & INDUSTRIAL NEW VENTURES HAS ACCELERATED OVER THE LAST DECADE

**With close to 200 companies created, over the past decades CEA is a reference player in France**

*Cumulated company creation figures since 1998*



Source : interne CEA

**Measurable **benefits** of being in the CEA's ecosystem for tech ventures**

- ☐ Access to **mutualized technologies**
- ☐ Access to a **"lab to fab"** infrastructure allowing to :
  - ✓ Decrease CAPEX needs (transformed into OPEX)
  - ✓ Reduce development cycles and TTM
- ☐ Access to **specific financing mechanisms** to alleviate R&D needs
- ☐ Positioning in a **local ecosystem** (companies / local administrations) and innovation-driven

**The pace of new venture creation has accelerated over the past decade**

## BUT VC FINANCING REMAINED RELATIVELY LIMITED WITHIN CEA'S OVERALL “VALUE TRANSFER” MODEL

CEA's technology transfer model, as for other RTOs, broadly relies on three main pillars :

■	Shared & contractual research	800 to 900M€ / year
■	Licensing	~20M€ / year
■	Spin-offs & start-ups	since 1999 and until 2012, a seed fund of ~30M€ (CEA-I) (investment capacity of just « a few » M€ /year )  historically, large spin-offs (STM, SOITEC & AREVA...) but no recent “large scale” initiative...

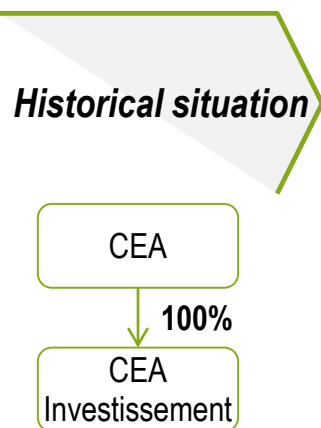
⇒ A relatively ‘unbalanced’ model ; a need to develop licencing as well as VC capacities

⇒ A favorable environment as open innovation and start-ups programs “flourish” in our industrial ecosystem

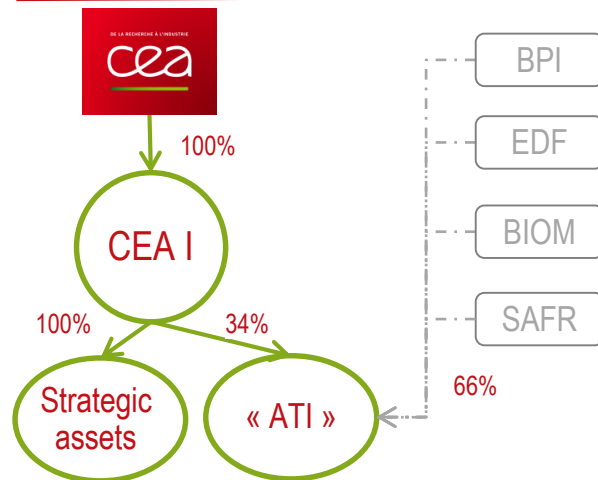


# A THREE STEPS DEVELOPMENT OF CEA'S VC ORGANIZATION OVER THE PAST 4 YEARS

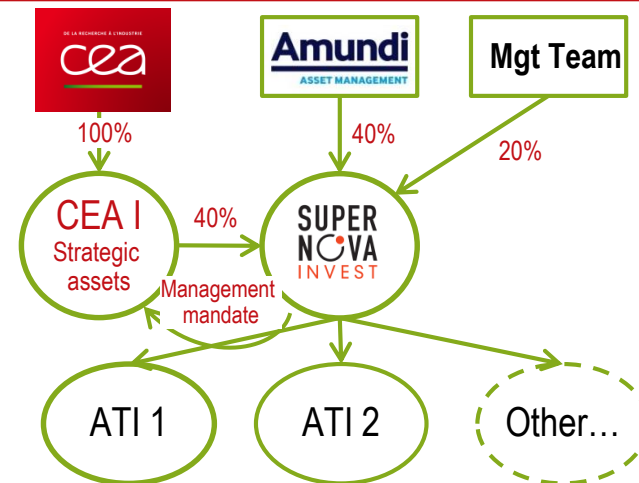
**Step 1 : a 100% owned invest. subs.**



**Step 2 : creation of « ATI » an open fund in 2013**



**Step 3 : creation of Supernova Invest an independent accredited investment fund**



*Key evolutions  
in our model*

- Transition from a 100% “corporate venture” approach to an open partnership bringing together financial and industrial players
- Creation early 2017 of an authorized investment management company with the European N°1 Asset management Group Amundi
- 500% increase of funds under management

- **Lack of financing solutions** contributing to market imperfections and failures in the process of building European unicorns developing industrial innovations
  - Seed and early stage venture capital as well growth as capital (EBITDA > 0) are presently available in Europe
  - Late stage venture capital dedicated to the Digital Economy are also available
  - **Late stage financing of venture capital firms developing industrial innovations** is not well addressed by existing European equity funds
- Several industry sectors demonstrate the need for large venture / late stage venture funds **to accelerate their development:**
  - Microelectronics, Industrial processes, New materials, Measurement instrumentation (in build-up phases), Cleantech, Medical Diagnostics, etc.
- A venture fund focused on accelerating industry innovations requires **specific skills:**
  - Multi-sectorial expertise to deal with system-level innovations
  - Capacity to challenge not only technological breakthroughs but also issues linked to industrialization phases (feasibility, timetable, supply-chain, economies of scale, margin stacking, etc.)
  - Capacity to challenge not only techno-industrial issues but also:
    - Value propositions and time-to-market in various industrial value-chains
    - Long-term financial requirements to maintain leadership

### Mathematical modelling



### Micro/Nano-electronics



### New materials



### Chemistry & Biology



## TECHNOLOGIES

## MARKETS

### Manufacturing & ICT

#### Selected thematics

- **FACTORY OF THE FUTURE**
  - Non-destructive testing
  - Robotics & Cobotics
  - Immersive augmented reality systems
- **SENSORS & SMART GRIDS**
- **EMBEDDED SYSTEMS**
  - Autonomous vehicle
  - Drones

### Healthcare

#### Selected thematics

- **MEDTECH**
  - Instrumentation for surgery
  - Active implantable medical device
- **INSTRUMENTATION FOR R&D**
- **DIAGNOSTICS**
  - Medical imagery
  - Point of care tests
  - Personalized medicine

### Energy & Environment

#### Selected thematics

- **WHITE BIOTECHNOLOGY & GREEN CHEMISTRY**
- **ENVIRONMENTAL CONTROL**
  - Waste processing
  - Recycling and revalorization
  - Air & water treatment and monitoring
- **ENERGY EFFICIENCY**
- **ENERGY STORAGE**

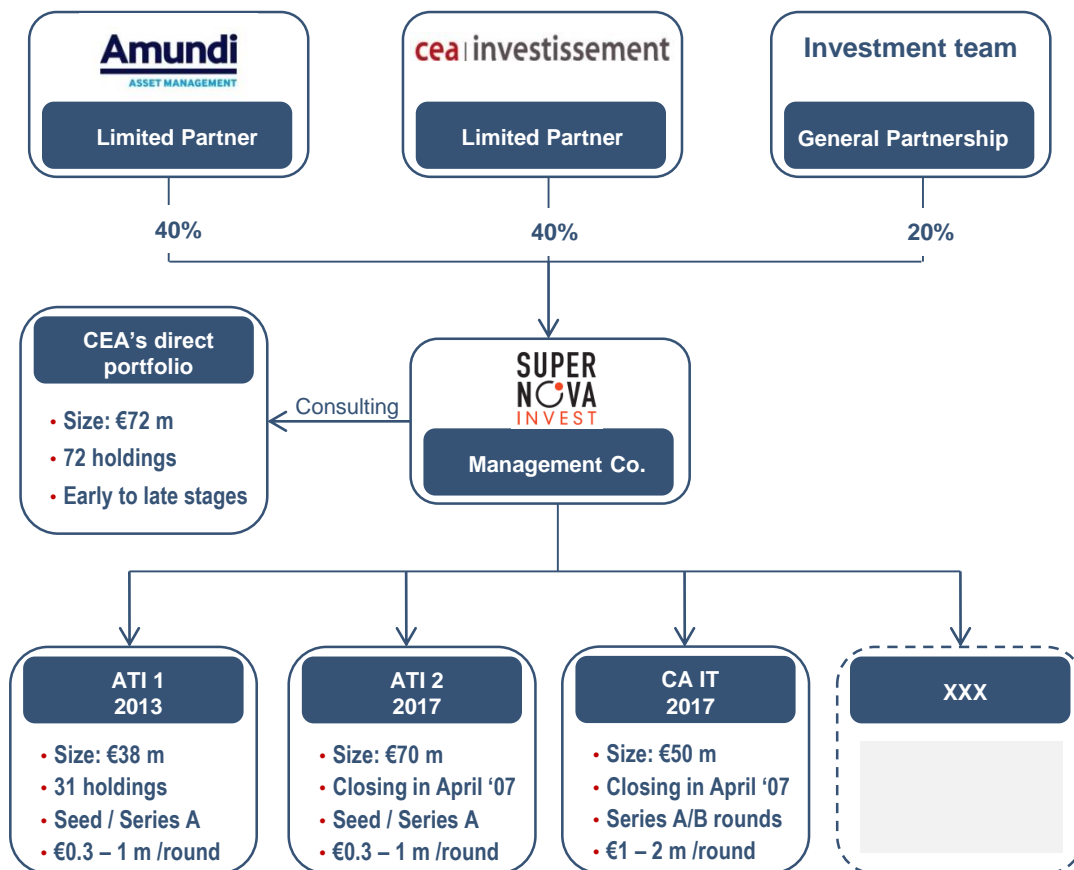
- **Partnership.** Supernova Invest is an independent management company owned by:

- Amundi, Europe's leading player in asset management
- CEA Investissement, 100% owned by CEA (ranked world's most innovative public research Institution by Reuters in 2016)
- The investment team

- **History**


- Founded in 2017
- Succeeds CEA Investissement who was created in 1999 to finance key technology startups with industrial applications

- **Mission:** To finance the whole development cycle of innovative enterprises from seed/early stages to later growth stages through various dedicated funds



ATI: Amorçage Technologie Innovation – CA IT: Crédit Agricole Innovation & Territoires

**Merci !**

  
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