Images et Réseaux

*Performance Increasing Innovation*

November 2018

By

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Agenda

- Purpose of Images & Reseaux
  - Innovation Hub
  - Mission Statement
  - Facts and Figures

- I&R Structure
  - Ecosystem and members
  - Governance
  - I&R financing
  - Innovation S Curve
  - Open Innovation
  - Strategic Action Domains
  - Key Market Sectors

- Project Life Cycle
  - Project Calls
  - Project Factory
  - Examples, Links and Valorisation

- The Ecosystem
  - The Technopoles
  - The SATTs
  - The French Techs
  - The IRTs
  - Who Does What?

- International and Europe
  - Objectives
  - Actions
  - Members Around the Globe

- Events and the Team
Purpose

- How can we bring a **competitive advantage** to French companies?

- If crossing markets and technologies with **open innovation** is such a good idea, what can we do to make it happen?

- How can we get academics to work and **share research** with companies more?

- How can small, medium and large **enterprises integrate research** done in engineering schools, laboratories, universities more?
The Competitiveness Clusters

-> Innovation Hubs

Fusion Images & Réseaux and Pole TES in 2019
Background & Mission Statement

The Images & Réseaux innovation hub was created in 2005 by the French National Government to stimulate collaborative innovation in the sectors of ICT and content production.

The regions of Bretagne and Pays de Loire were chosen as together they only regions in France having the large corporations, SMBs and Academics with expertise in these domains.

To create and sustain leading edge competitive ICT innovation companies and academics, through collaborative projects that bring added-value to the region through economic growth and employment.
1650 projects proposed

900 labeled & approved

250+ members

2 regions

6 strategic action domains
- Big data & multimedia
- Interactions, immersions, mixed realities
- Networks & IoT
- Digital security and trust
- Software and engineering
- Users and collaborative producers

430 funded projects

1B€ R&D&I investment

450M€ Public funds

75 projects in progress
Six Member Groups

Institutions

Associated

Professional Associations

Large Corporations

Academics

Small and Medium Enterprises
Governance

- General Assembly (250 members +, 70% SME)
- Board (21 members)
- Executive Committee (5 members)
- COS: Strategy Analysis and Definition
- CSV: R&D Roadmap & Project Recommendations & Evaluations
- CSE: Cluster Evaluation
- CVP: Project Valorization
- GTM: Work groups on DAS, technology and market
I&R Structure Financing

- French Ministry of Enterprises
- Region of Bretagne
- Region of Pays de la Loire
- City of Rennes
- City of Nantes
- City of Lannion
- 250+ Members Fees
Navigating the Innovation S Curve

Examples -
- Horse to Car
- Ice Factory to Refrigerator
- Telegram to Telephone to Mobile
- Mechanical Crane to Hydraulic
- Cassettes to CD to Streaming
- Film camera to Digital camera
- Cathode Ray Tube to LED Screen
- Hard drive to Flash drive
Open Innovation

Open Vs Closed Innovation

Source- https://openinnovaction.wordpress.com/2015/01/01/definition-de-lopen-innovation-selon-henry-chesbrough/
Strategic Action Domains 1/2

**Networks and Internet of Things**
- Management of limited spectral resources
- Energy efficiency
- Generalisation of the virtualisation of resources and network infrastructure (cloud computing)
- Connected objects
- Advancement of the deployment of Very High Speed Networks
- Cooperation and convergence of wireline and wireless networks
- Environmental impact of electromagnetic fields

**Big Data and Multimedia**
- Cloud data storage & utilization, advanced intel. mgt of large scale distributed multimedia data
- Big Data, Utilization of the multiplicity and versatility of data in information systems
- Compression schemes and new formats, in particular for 3D
- Wide spread open data, linked data on the web/internet
- Connected TV, diversification and availability of applications on demand
- Data capture, management, utilization, traceability, visualization, anonymous and cleaning
- New digital fields of study and investigation

**Digital Security**
- Solutions for improving network security
- Data and device security, static and dynamic analysis of code
- Tracking intrusions into private life and the right to forget
- Third party confidence
- Identification tools and mastering of invisible interfaces
- Means of detecting attacks and the organisation of the resistance to attacks
- Solutions to control information in data
- Automated verification of security code properties/information
Strategic Action Domains 2/2

**Interactions, Immersion and Mixed Reality**
- Large scale deployment of mixed reality and immersion technologies in the economy and society
- Interactions between humans and objects/content, enrichment of the modalities of interaction
- Projects linking technology and innovative economic models
- Solution performance increases that pave the way for coherent data management, synchronization, simultaneous access and middleware integration
- Production of innovative interactive applications with high deployment potential and low cost
- Improve qualitative and/or functional realism of virtual environments and interactions
- Increase technology performance mixing the real and the virtual
- Brain computer interfaces, geometries and semantics

**Applications and Services**
- Diffusion of generative technologies that improve the competitiveness of industries that rely heavily on software
- Systemic approach to the production of software
- Develop large scale agile IT modelization tools in an open collaboritive mode
- Reutilization
- Probabilistic and stochastic method validation

**Collaborative Production and Use**
- Standardisation of the production process for data created through the «Internet of Things»
- Economy of functionality and collaboration
- Distributed energy network, «internet of energy»
- DIY (Do-It-Yourself), fablab, crowdfunding, crowdsourcing
Key Market Sectors, crossing ICT technologies with...

- Smart Home
- **Smart Territories** and Cities
- Smart Health
- e-Education

- e-Tourism
- **Factory of the Future**
- Connected Vehicule
- Smart Grids

- Entertainment
Innovation Hub Positioning

Foster digital transformation
- Collaborative R&D&I strengthens relationships between players (SMEs, Large corporations, Researchers and Users)
- Economic growth of the territory, high performance SMEs

European innovation leader
- An efficient project factory
- Active in National Industry Solutions and their declination on the regions (AR plan, IoT, intercluster: 5G, Smart Grid, Industry of the Future...)
- European & international cooperation, ETPs (NEM, 5G, FIWARE)

Working with and complementary to the innovation ecosystem
- 11 Technopoles
- 4 City French Techs + 3 Theme French Techs
- 1 IRT
- 1 SATT
Innovation Project Life Cycle

Project closure + 7 years
Long-term Economic Impacts
New projects
International

Kickoff, Follow-up, Closure
Short-term Economic Impacts
Services with partners

Project emergence
“Best Practice” advice
Partner ID & qualification
Conditions of eligibility

Project Selection
based on specific criteria
Panel of Experts
Board of Directors Approval

Regions of Bretagne and Pays de Loire
Public Investment Bank France / Ministry of Economy
National Research Agency
European Union

Services with partners

Idea

Follow-up

Labelization

Realization

Financing

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Key Project Calls

- SME Project Call, Bretagne and Pays de Loire Regions
- Unique Inter-Ministrial Fund France – FUI
- French National Research Agency – ANR
- Future Investments
- European Horizon 2020
A Powerful Project Factory

MEASURABLE

• 270+ projects terminated
• 550+ products/services
• 21 startups
• Over 250 patents / 50 licenses
• Over 2700 publications / conferences

TO

A Powerful Product Factory
A project in Networks and IOT applied to Maritime

FUI10, Sept 2012, duration 28M, 3,45M€

Objectives
→ Develop a LTE communication terminal adapted to maritime applications
→ Data rates targeted: 10 Mbit/s at 10 Nautical Miles to show new multimedia usages at sea

Technology Breakthroughs
→ Adaptation and operation of new propagation models
  → Antennas specified
  → Spacing between antennas defined
A few projects in IOT and Interactions applied to Health

**COMPAGNON HOSPITALIER**: Robot welcome in healthcare

Le CHU d'Angers, un établissement de santé à la pointe de la technologie

Instauré au cœur de la ville, sur les bords de la Maine, le Centre Hospitalier Universitaire d'Angers est l'un des pionniers en matière technologie. L'arrivée du numérique dans le domaine du médical permet au CHU de tendre vers cet objectif. Réalité virtuelle, objets connectés, robotique… se trouvent désormais entre les murs d'un hôpital et dessinent une « nouvelle » médecine : plus connectée. C'est désormais la réalité de cet établissement pionnier à bien des égards.

L'entrée principale du CHU d'Angers

Project Call Challenge Numeric CADO 2016
Consorto, CHU Angers
150k€, 9 months

**INTUISCRIPT**: learning to write

Dans les écoles bretonnes, l'apprentissage de l'écriture se fait sur tablette

Project Call Future Investment 2013
ScriptnGo, IRISA, Microsoft, French Education National
2,5M€, 38 months
A few projects in IOT and Interactions applied to Agriculture and Health

**ALAMO Connected Farm**

*Innov'Space 2018 - Équipement d'élevage*
*Raccordez tous vos capteurs connectés grâce à Alamo*

25/07/2018 | par DS | Terre-net Média

L’outil Alamo de l’entreprise Euro-process permet de raccorder tous les équipements connectés de l’élevage à une seule et unique centrale. Cette technologie collecte et rassemble toutes les données issues des différents capteurs.

Voici les caractéristiques de cet Innov'Space 2018, rédigées par l’exposant lors de son dépôt de candidature. À découvrir au Space du 11 au 14 septembre, Hall 4 - stand B 44.

À ce jour les équipements connectés utilisés en agriculture fonctionnent en "silo" et utilisent différents protocoles de communication.

Alamo est une Gateway IoT, une passerelle multi-protocolle radio, évolution, en d'autres termes une centrale de raccordement pour tous les équipements connectés de l'exploitation que soit la marque. Elle permet de collecter toutes les données de la ferme et son environnement en provenance des différents capteurs.

**SME project call 2016**
Europrocess, CG wireless, Univ Rennes 1
675k€, 24 months

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**ROBO-K Smart Re-education**

*FUI 13 project call 2011*
BA systems, CEA, Kerpape, CHU Rennes, Movea, UR2
3.5M€, 36 months

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Valorisation and Impacts

- Top Priority
- Technological Breakthroughs
- Sector Recognition
- Business Growth and Employment
R&D&I Network Dynamics

http://visir.images-et-reseaux.com/#/home/
The ECOSYSTEM - Providing Services to our Members in Collaboration with our Regional Partners
The Technopoles in Bretagne and Pays de la Loire

- Brest
- Lannion
- Saint Brieuc
- Rennes
- Saint Malo
- Vannes
- Lorient
- Quimper
- Nantes
- Le Mans
- Angers
- Laval
- La Roche sur Yon
The Technology Transfer Accelerators (SATT)
The French Techs

[Map of France showing various tech hubs and ecosystems]
The Technology Research Institutes (IRT)
# France Innovation, covering all the bases

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Creation SU</th>
<th>Company Development</th>
<th>Technology Development</th>
<th>Market Growth</th>
<th>Industry / Research Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>French Techs</td>
<td>Priority</td>
<td>Contribute</td>
<td></td>
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<td>Technopoles</td>
<td>Priority</td>
<td>Priority</td>
<td>Contribute For companies</td>
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<td>SATTs</td>
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<td>Contribute For Researchers</td>
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<td>Priority IP Transfer w/o Projects</td>
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<td>Innovation Hubs</td>
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<td>Priority</td>
<td>Contribute For Researchers</td>
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<td>Priority In House Projects</td>
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<tr>
<td>IRTs</td>
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<td>Priority</td>
<td>Contribute For Researchers</td>
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<td>Priority Common Lab Projects</td>
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</tbody>
</table>

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Europe and International Objectives

- **Technology Partnerships**
  - Access to an international & technology focused network (EIT, NEM, 5G...)
  - Access to conferences (NEM, CES, MWC...)
  - Access to technological partnerships
  - Support for European projects, partners
  - Labeling Eureka Projects

- **Business Support**
  - Link with our regional partners in charge of international development of business opportunities (BCI, HPL, BusFrance...)
  - Encourage partnerships opportunities
  - Access to (new) markets
  - Access to foreign delegations in international trade fairs, visits to region

- **Worldwide Presence and Recognition:**
  - Detailed information on the technology expertise of our region
  - Contribution to technical analysis on incoming investment projects
  - Provide new opportunities for innovative projects
  - Partner identification
Europe and International Actions

Club International

Focus on an Industry in a Geographical Zone

6 MOUs with foreign clusters

PROJECTS
Bretagne and Pays de la Loire offices in Brussels

MEMBER
KNOWLEDGE INFORMATION COMMUNITY and Rennes Node

MEMBER
Work Groups

MEMBER
Networld2020

MEMBER
PPP FI PROJECT PARTNER

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Our Members World Presence Map

http://visir.images-et-reseaux.com/#/membres/
Events, Communication, Benchmarking

- **Communication**
  - Twitter – 6700 followers
  - Weekly Newsletter
  - « Coup de Cœur » Crowdfunding

- **Over 40 events per year**
  - Technoferences
  - Open Innovation Camp
  - General Assembly
  - Workshops
  - Project Emergence Sessions

- **Major events**
  - Digital Tech Conference, Rennes
  - Web2Day, Nantes
  - Laval Virtual, Laval

Agenda of events on web site [www.images-et-reseaux.com](http://www.images-et-reseaux.com)
The Team

- Gérard LE BIHAN CEO Lannion/Rennes
- Sara FREOUL Assistant / Projects / International Rennes
- Roselyne LANNOU Administration Responsible Lannion
- Carole BALZANO Communication Assistant Lannion
- Stephanie GERON-BLAY Communication Responsible Rennes
- Darin BEACH CTO, Director Technology, Projects, International Rennes
- Sarah GUY Responsible validation & selection Committee Rennes
- Simon BOISSERPE Chargé de mission -Collaborative Projects - Nantes
- Marie FERRONNIERE Métall’Augmentée Rennes
- Gaël MAUGIS European Project Manager Lannion
- Bertrand YEURC’H Product Owner PRIDE (SMILE) Lannion
- Jean-François MOALIC Smart city/ Smart Grid Rennes
- Benoit PERRIN Chargé de mission – Collaborative Projects – Lannion
- Erwan BESCOND Chargé de mission – Collaborative Projects - Brest