Images et Réseaux
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Purpose

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

- If **crossing markets and technologies** 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?
The Competitive Clusters

-> French Innovation Hubs
The Images & Réseaux cluster 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 leading edge competitive ICT innovation companies and academics, through collaborative projects that bring added-value to the region through economic growth and employment.
Key Figures

- **250+ members**
- **855 labeled projects**
- **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
- **369 funded projects**
- **971 R&D&I investment (M€)**
- **419 public funds (M€)**

The only European Future Internet accelerator in France

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Six Member Groups

[Diagram showing logos of various companies and institutions]
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
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 competivity 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
- e-Education
- Smart Health

- e-Tourism
- Factory of the Future
- Connected Vehicule
- Smart Grids
Cluster Positioning

Foster digital transformation

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

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
Images & Réseaux

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

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

Idea

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

Follow-up

Labelization

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

Realization

Financing

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

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Document Confidentiel
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
I&R : A Powerful Project Factory

MEASURABLE
• 258 projects terminated
• 509 products/services
• 21 startups
• 252 patents / 50 licenses
• 2726 publications / conferences

2017 : the best year for l’ANR
• 19 labeled
• 8 funded
• 6 on waiting list

A Powerful Product Factory
Providing Service to our Members in Collaboration with our Regional Ecosystem
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
The Technology Research Institutes (IRT)
Project: Stabilized Marine Terminal

FUI10, T0 Sept 2012, duration 28M, 3,45M€, Networks et Internet of objects

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
Contacts Project
- Jean-Pierre PERONNE - THALES COMMUNICATIONS & SECURITY
- Yann TOUTAIN - MICROWAVE VISION GROUP
- Eric VALLEE - ALCATEL LUCENT
- Emmanuel MICHAULT - DETI
- Jacky MENARD – TELECOM BRETAGNE
  contact@tms-project.com

Impacts
- Demonstration Route de Rhum 2014
- Winner Trophy I&R 2014 « Compétitivité et Grand Prix »
- New products
- Publications press
- More to come...
A few projects in e-Health - technology for Sr. citizens

**AGATHE: therapeutic 3D**

- Simulate daily life
- Provide care in a virtual situation
- Improve patient’s autonomy

7 partners / €1 M of funding

**MAZADOO: Facebook for your golden years**

- Uses social networks to break through the isolation of elderly people living in retirement homes
- Technologies working to create social links

5 Partners / €2 M of funding
A few projects in Interactions, Augmented Reality - 3D and town planning

**ENVIE** THE 3D TOWN SHOWS MUCH MORE THAN REALITY

Mapping "enhanced" with geographical, environmental and other data

4 partners / budget 774 K€

**BRETAGNE3D**

*Bretagne in 3D*

Project that led to the launch of [www.territoires3D.com](http://www.territoires3D.com)
France and Regional R&D network dynamics

http://visir.images-et-reseaux.com/#/home/
Valorisation and Impacts

TOP PRIORITY

Business Growth and Employment

Sector Recognition

Technological Breakthroughs

Valorisation and Impacts
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
Twice a year
Mixing markets / technos & Geographical zone + Missions

6 MOUs with foreign clusters

- Cluster Tic Galicia
- Cintel
- YRP
- DSP Valley
- Maroc Numeric Cluster
- Prompt

PROJECTS
Bretagne and Pays de la Loire offices in Brussels

MEMBER
KNOWLEDGE INFORMATION COMMUNITY
and Rennes Node

MEMBER
Work Groups

MEMBER
NEW EUROPEAN MEDIA

MEMBER
Networld2020

PPF FI PROJECT PARTNER

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International : 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
  - Open Innovation Camp
  - Technoferences
  - Workshops
  - Project Emergence Sessions
  - General Assembly

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

Agenda of events on web site  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
- Charline JEHANNIN Communication Rennes
- Stephanie GERON-BLAY Communication Responsible Rennes
- Darin BEACH CTO, Responsible 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