

# International Partnership Mission Of French Optics & Photonics Competitiveness clusters

**South Korea**

April 2016



[WWW.BUSINESSFRANCE.FR](http://WWW.BUSINESSFRANCE.FR)

Coordinated by:



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# COMPETITIVENESS CLUSTERS IN FRANCE

## French industry policy to stimulate economy and strengthen R&D

A new tool for a most efficient and competitive industry in France was launched since July 2005 when the French Government selected 71 projects as competitiveness clusters.

The competitiveness cluster policy aims to create synergy between companies, public and private research units, academic institutions, in order to establish working relationships which develop an environment of cooperation and promote partnerships within innovative projects. Researchers and business enterprises are mobilized, within a public/private sector partnership, to work on new projects, resulting in innovative advances, economic efficiency and job creation, and which should enable those players involved to attain leading positions in their field. It is a part of French efforts to reach 3% of R&D expenses in the GDP, according to the European “Lisbon Strategy”.

The competitiveness clusters are addressing the technological sectors with higher impact on French economy: information and communication technologies, energy and environment, health related technologies, biotechnologies, aeronautics and transportation, food industry.

A competitiveness cluster is an organization which brings together the best players in their field, small or large, where each participant can benefit from access to the following:

- Leading players in their field.
- Top level researchers.
- Qualified personnel.
- Public financial support to encourage innovative projects, in the best possible conditions.

Moreover, due to their international vocation, the competitiveness clusters facilitate:

- the setting up of foreign business enterprises who benefit from this technological environment;
- the creation of international research teams;
- the development of technological partnerships with companies and research centers of foreign clusters.

The success of this innovative industrial and country planning policy is contributing to the favorable orientation of French economic indicators: improvement of the economic growth, new positive level of manufacturing investments and rise of R&D expenditure.

The French competitiveness clusters are under the supervision of the Regional Directorates for Enterprises from the Ministry of Economy, Industry and Digital Affairs.

Website: [www.competitivite.gouv.fr](http://www.competitivite.gouv.fr)

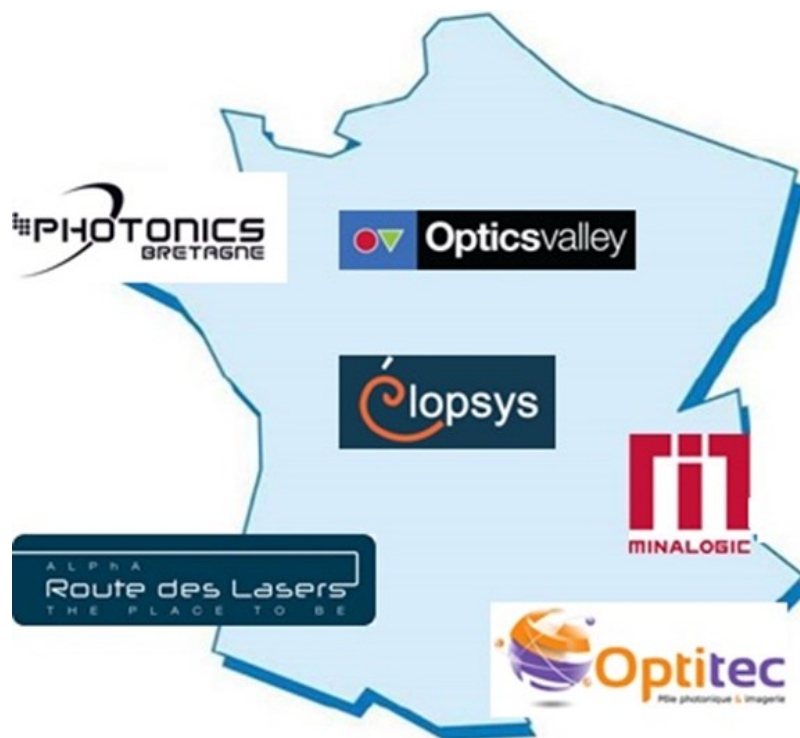


# FRENCH PHOTONICS

The French photonics sector is composed of over 1,000 companies with a consolidated global turnover of EUR 10.45 billion. Besides 660 industry players, 109 services companies, 116 distributors and over 200 integrators complement this community.

The French industrial photonics production key sectors are lighting, defense & security, components, thin films and photonics for the environment and health.

There are six photonics clusters in France which benefit from a strong support from the French Government and the Regions. Two of their principal missions are the promotion of the sector with national and European institutions and providing support in bridging the gap between the R&D and the commercial development of SMEs.



# OPTITEC CLUSTER

## Photonics cluster OPTITEC, an essential leverage for photonics sector in the south of France.

Photonics cluster **OPTITEC** is one of the leading French competitiveness cluster, located in the south of France (Provence-Alpes-Côte d'Azur and Languedoc-Roussillon/Midi-Pyrénées regions) specialized in complex optics and imaging systems dedicated to space, aeronautics, defense, medical, food industry and green photonics applications. With more than 210 highly committed members it represents more than 25% of French national R&D in optics. On average, 45% of member companies' activity is oriented towards export and 25% dedicated to R&D.

Its competitive advantage is based on its member-network which covers the whole value chain from leading edge research centers and universities with world-renowned laboratories to SMEs and industrial groups such as Thales Alenia Space and DCNS. Both regions have a dense network of SMEs, most of them leaders in their market sector, as well as start-ups originating as spin-offs from the proliferation of major regional corporations or laboratories.



## OPTITEC

C/O LAM - Technopole de Château Gombert  
38 rue Joliot Curie  
13388 MARSEILLE Cedex 13  
France

[www.pole-optitec.com](http://www.pole-optitec.com)



## Ziga VALIC

Head of European & International Affairs

☎ +32 (0)2 741 87 58

☎ +32 (0)471 71 22 18

✉ [ziga.valic@pole-optitec.com](mailto:ziga.valic@pole-optitec.com)



# AMPLITUDE SYSTEMES

## AMPLITUDE SYSTEMES

11 Avenue de Canteranne  
Cité de la Photonique  
33600 PESSAC  
France

[www.amplitude-systemes.com](http://www.amplitude-systemes.com)



## Benoît MORIN

Asia Key Account Manager

☎ +33 (0)5 56 46 46 56

📱 +33 (0) 6 01 03 72 21

✉ [bmorin@amplitude-systemes.com](mailto:bmorin@amplitude-systemes.com)

**Amplitude Systemes develops and manufactures diode-pumped ultrafast lasers for scientific and industrial applications.**

**Amplitude Systèmes**, a company of the Amplitude Laser Group, is a global leader in developing and manufacturing industrial ultrafast lasers. Together with its sister company Amplitude Technologies, Amplitude Systèmes is the only company which offers all ultrafast laser technologies available today, from industrial fiber lasers to high energy Peta watt class Ti:Sapphire lasers. By combining high quality manufacturing and aggressive R&D, Amplitude Systèmes brings new solutions to the most demanding industrial and scientific applications. Today, the company offers easy to use, 24/7 operations ultrafast lasers for a variety of applications, such as ophthalmology, semiconductor and microelectronics, medical device manufacturing, among other industrial and medical applications.



# FLASHLAMPS

## Flashlamps Verre and Quartz: high performance xenon discharge lamp manufacturer

Our company is established since 1928 as a scientific glassblowing company. For more than 60 years we provide specialty lamps for a wide field of applications (scientific lasers, dermatologic photonic curing, aerospace applications). Lamps are tailor-made. We design and we manufacture your lamps of your needs.

## FLASHLAMPS Verre & Quartz

30 route d'Aulnay  
93140 BONDY  
France

[www.flashlamps-vq.com](http://www.flashlamps-vq.com)



## Emmanuel DIOT

Director

☎ +33 (0)1 48 49 74 21

✉ [emmanuel.diot@flashlamps-vq.com](mailto:emmanuel.diot@flashlamps-vq.com)

## Fabrice ARTIS

Senior development engineer

☎ +33 (0)1 48 49 74 21

✉ [fabrice.artis@flashlamps-vq.com](mailto:fabrice.artis@flashlamps-vq.com)



# GLOPHOTONICS

## **GLOphotonics**

Ester Technopole - 1 avenue d'Ester  
87069 LIMOGES Cedex  
France

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

**GLOphotonics**  
The Hollow-Core PCF and Photonic MicroCell™ Company

## **Dominique BONNISSEAU**

Business Development & Sales

☎ +33 (0)5 87 50 67 25

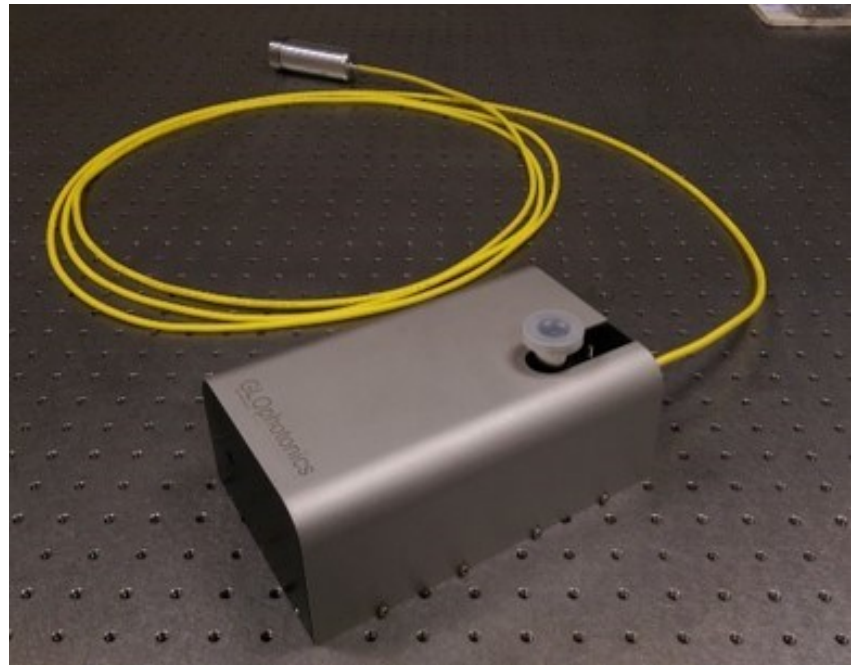
☎ +33 (0)6 48 41 64 00

✉ [dominiquebonnisseau@glophotonics.fr](mailto:dominiquebonnisseau@glophotonics.fr)

## **The Hollow Core PCF and Photonic MicroCell Company**

**GLOphotonics** SAS (or 'GLO' for short) is a French start-up based in Limoges. GLO is set up to commercialise hollow-core photonic crystal fiber (HC-PCF) and their functionalised form Photonic MicroCells™ (PMC). GLO products are built

upon its proprietary and disruptive specialty fiber technology and gas photonics for beam delivery, frequency conversion and pulse compression of ultrafast and high power lasers. GLO is extending the capabilities of the HC-PCF and PMC even further by working with laser developers and system integrators, and with CNRS-University of Limoges joint Research Institute XLIM to keep giving its technology a continuous innovative edge.





# ISP SYSTEM

## ISP SYSTEM: Specialist in precision Engineering

Precision engineering specialist:

- innovative deformable mirrors for intense laser and X-Ray using a patented technology for actuators. The mirror deformation is stable even unpowered, avoiding any electro-magnetic perturbation. The linearity is excellent (>99%) and hysteresis much lower than with piezo actuators (<0.1%). These deformable mirrors avoid any print through effect.
- nano positioning stages with high stroke.
- opto-mechanics devices including complete beam transport lines (mirrors, positioning stages and vacuum vessels) : delivery of turn-key solutions
- Laser soldering / sintering machines for Electronic power modules manufacturing (automotive or aeronautics, spatial)
- Die-bonding machines for power modules assembly

## ISP SYSTEM

ZI la Herray - BP10047  
65501 VIC EN BIGORRE Cedex  
France

[www.isp-system.com](http://www.isp-system.com)



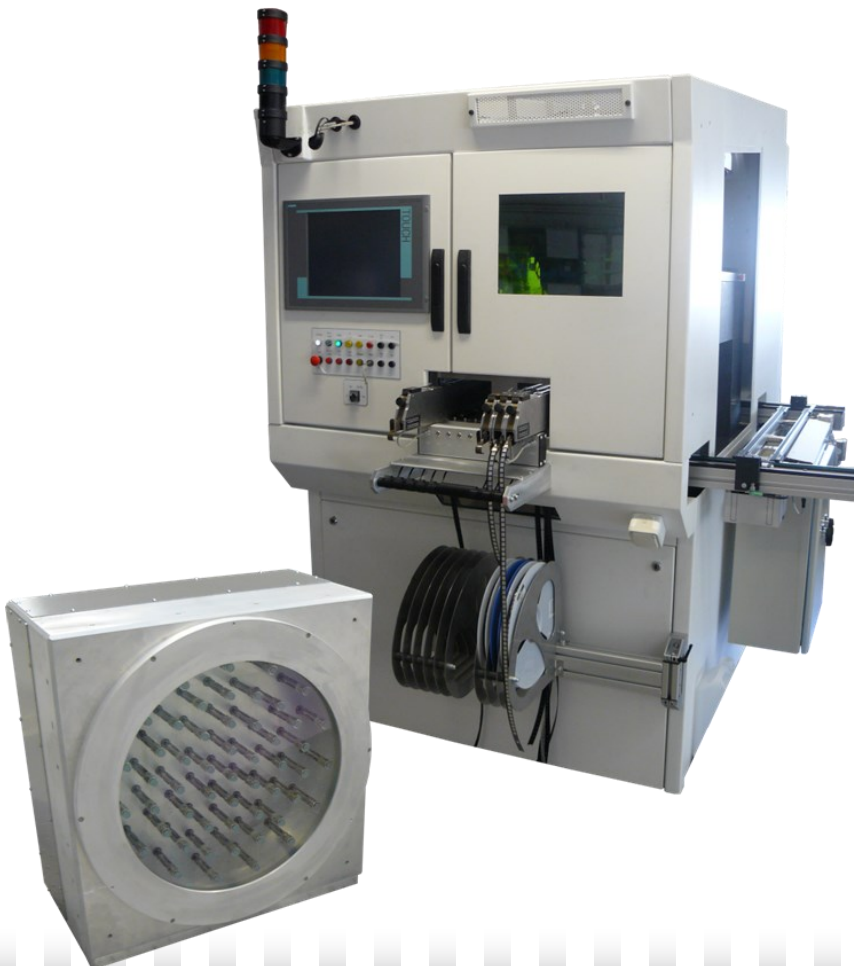
## Laurent ROPERT

Export Account manager

☎ +33 (0)5 62 33 44 44

☎ +33 (0)6 81 54 25 99

✉ [laurent.ropert@isp-system.fr](mailto:laurent.ropert@isp-system.fr)



# J.W & ASSOCIÉS

## **J.W & Associés**

1175 route d'Avignon  
13090 AIX EN PROVENCE  
France

[www.jwassociés.com](http://www.jwassociés.com)

**J.W & Associés**

*Paris – Bruxelles – Aix en Provence*

## **Julien WARLOUZE**

CEO

☎ +33 (0)1 40 07 81 63

☎ +33 (0)6 45 69 09 43

✉ [julien.warlouze@jwassociés.com](mailto:julien.warlouze@jwassociés.com)



**J.W. & Associés** is a French consulting firm based in Aix en provence, Paris and Brussels. Our core business is to accompany technology SMEs with high added value in the definition and implementation of their growth strategy. We place the strategy at the heart of international development :

- What strategy to 5 years, 10 years?
- How to identify the most relevant country?
- What is the best set-up to sustainably develop a business?

The experience of the firm demonstrates that international success requires above all a good fit between the market and the characteristics of the company and its product. The choice of a country is a key element of an international business success but often selected randomly. J.W. & Associates assists leaders to answer their questions and build a strategy for the international long-term to ensure the success of their business.

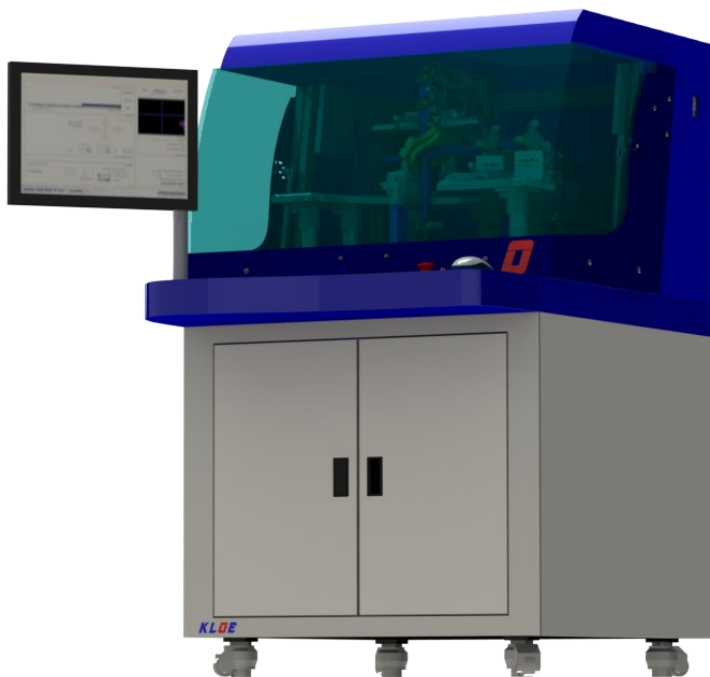
# KLOÉ

## OUR SOLUTIONS FOR YOUR UV LITHOGRAPHY ACTIVITIES

For more than 15 years, **KLOE** has accrued a broad expertise in the field of ultraviolet photo-inscription. Exposure to UV exceeds the field of microelectronics lithography and today finds applications in fields as diverse as biotechnologies, optics, medicine..

Its expertise with both its DILASE and UV-KUB lithography equipment ranges and its knowledge of numerous photoresists provide Kloé with an exclusive Know-How.

The unique optical performance of our equipments provide our customers with state-of-the-art tools for microfabrication activities in particular requiring for high resolution ( $<0.5\mu\text{m}$ ), high aspect ratio ( $> 1:50$ ), and very thick photoresist layers processing ( $>300\mu\text{m}$ ) with only one laser-pass.



## KLOE

1068 rue de la Vieille Poste  
34000 MONTPELLIER  
France

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



## Paul COUDRAY

CEO

☎ +33 (0)4 67 82 19 10

☎ +33 (0)6 12 29 48 96

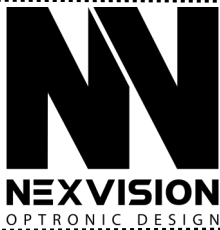
✉ [coudray@kloe.fr](mailto:coudray@kloe.fr)

# NEX VISION

## NEX VISION

Hall D4 Parc SWEN  
1 boulevard de l'Océan  
13009 MARSEILLE  
France

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



## Vincent CARRIER

CEO

+33 (0) 4 91 77 62 86

+33 (0) 6 30 36 08 28

vincent.carrier@nexvision.com



## NEX VISION : Optronic reference design company looking for a Korean partner

**Nexvision** is a French design office for optronics with 12 years of state-of-the-art technology in defense/security, Media & cinema and industry sectors. Nexvision has built a strong experience with major players on the European and North American markets through its dual expertise in hardware and software design for vision systems.

Nexvision is currently developing a helmet mounted sight and display (HMSD) system tailored for Special Forces and police intervention groups. This new helmet will allow:

- Night and thermal fusion
- Augmented reality on visor
- Real-time interaction with central command

Nexvision aims at launching this new product on the Korean Market through a local partnership agreement. More than a simple commercial distributor, Nexvision is looking for a well-established company in order to build a real mutual expansion, and is ready to collaborate in various fields.

## NVS-11 PROJECT NIGHT VISION SYSTEM HMSD | SYMBOLOGY



NIGHT VISION SYSTEM FOR SPECIAL FORCES  
NVS-11 PROJECT  
AUGMENTED REALITY HELMET  
IMAGE PROJECTION ON THE VISOR  
EMBEDDED IMAGE ANALYSIS & SYMBOLOGY

- NATO NIGHT LEVEL 5
- PHOTONIS EBCMOS SENSOR
- NVIDIA TEGRA X1 GPU
- XILINX ULTRASCALE FPGA

# NEXVISION

OPTRONIC DESIGN



# SYMÉTRIE

## The hexapod company

**SYMÉTRIE** designs and manufactures precision positioning & motion systems that meet the most specific needs of accuracy, stiffness and repeatability of research laboratories and industrialists.

SYMÉTRIE is a specialist of hexapod, which is used to position an object in space following the 6 degrees of freedom with high accuracy, resolution and stiffness.

The product line ranges from miniature hexapod versions to hexapods that scale the height of a two story building and are able to move several tons in a highly dynamic fashion to reproduce a vehicle motion (boat, submarine, tank, plane...) to test electro-optics systems.



## SYMÉTRIE

10 allée Charles Babbage  
30000 NIMES  
France

[www.hexapod-system.com](http://www.hexapod-system.com)



## Anne DUGET

Marketing & Sales Manager

☎ +33 (0) 4 66 28 87 20

✉ [anne.duget@symetrie.fr](mailto:anne.duget@symetrie.fr)



# TEMATYS

## TEMATYS

6, cite de Trevisé  
75009 PARIS  
France

[www.tematys.com](http://www.tematys.com)

### Straightforward Exploration of Photonics markets

TEMATYS provides a complete range of Business services at operational level (from market investigation to product definition and early commercialisation) and strategy level (diversification strategy, photonics portfolio management). Our customers are private companies (Large, medium-sized and Start-up) and Public organisations in the field of Materials, Photonics and Sensors. We have developed a specific expertise in R&D technology transfer and in marketing of Photonics technologies among various markets (Medical, Life Science, Agri and agro industries, Automotive, Industrial manufacturing and control, Security & Defense).



## Jacques COCHARD

Business Development

+33 (0) 6 89 37 57 88

[jcochard@tematys.com](mailto:jcochard@tematys.com)



Sensing & imaging systems



Communication systems



Screens, displays, projectors, ...



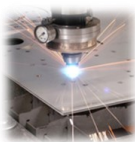
LED, OLED, lamp systems



Photovoltaic systems



Laser & production systems



# THALES OPTRONIQUE

**High energy nanosecond lasers for semiconductors and flat-panel displays manufacturing.**

We are a manufacture of nanosecond lasers suitable for silicon annealing, for OLED and new Low-Temperature Poly-Silicon (LTPS) LCD HD patterning and laser lift-off process steps. These lasers are also suitable for laser shock peening and Carbon-Fiber-Reinforced Polymer (CFRP) texturing and/or cutting.

## **THALES Optronique**

2 Avenue Gay Lussac  
78995 ELANCOURT Cedex  
France

[www.thalesgroup.com](http://www.thalesgroup.com)

# THALES

## **G rard MARQUEBIELLE**

Laser Business Development Director

☎ +33 (0)1 30 96 88 47

☎ +33 (0)6 71 08 48 20



[gerard.marquebielle@fr.thalesgroup.com](mailto:gerard.marquebielle@fr.thalesgroup.com)

## **Alice BARNAVON**

Laser Business Developer

☎ +33 (0) 1 30 96 76 86

☎ [alice.barnavon@fr.thalesgroup.com](mailto:alice.barnavon@fr.thalesgroup.com)



<https://www.thalesgroup.com/en/worldwide/group/lasers>

## Business France

Business France is the national agency supporting the international development of the French economy, responsible for fostering export growth by French businesses, as well as promoting and facilitating international investment in France. It promotes French companies, business image and nationwide attractiveness as an investment location, and also runs the V.I.E (Volunteership for International Experience) program. Founded on January 1, 2015 through a merger between UBIFRANCE and the Invest in France Agency, Business France has 1,500 personnel, both in France and in 70 countries throughout the world, who work with a network of public and private sector partners.

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### Business France Cluster Service

Business France signed an Convention with the Directorate General for Enterprises to accompany the clusters and their members in their international development. The objective is to facilitate technology partnerships: joint development of processes, products and services with foreign players, companies, R&D centers, etc.

Business France Marseille (Branch Office): Espace Gaymard - 2 place d'Arvieux - 13002 MARSEILLE

Business France - Head Office: 71-77 boulevard Saint Jacques - 75014 PARIS

Website: [www.businessfrance.fr](http://www.businessfrance.fr)

#### Contacts:

**Virginie LEYTES** - Project Manager - Competitiveness Clusters and Technological Partnership Department

✉ [virginie.leytes@businessfrance.fr](mailto:virginie.leytes@businessfrance.fr) - ☎ +33 (0)4 96 17 25 52

**Jean-Charles JUBENOT** - Assistant / Project Manager - Competitiveness Clusters and Technological Partnership Department

✉ [jean-charles.jubenot@businessfrance.fr](mailto:jean-charles.jubenot@businessfrance.fr) - ☎ +33 (0)4 96 17 25 82

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### Business France in South Korea

Business France supports French companies in their business development on the Korean market. Main operational activities include providing information and assistance to businesses seeking to export, promoting French companies and technologies (trade shows, etc...), helping businesses setting up in South Korea , etc.

Business France Seoul office

Samheung Bldg. 8th Fl., 705-9 - Yeoksam-dong, Gangnam-gu,

135-711 SEOUL - CORÉE DU SUD

☎ : 02 564 9032 - Fax : 02 564 9832

E-mail : [seoul@businessfrance.fr](mailto:seoul@businessfrance.fr)

Website: <http://www.youbuyfrance.com/kr/>

#### Contact:

**Nicolas AUDIBERT** - Senior Trade Advisor - Tech & Services

☎ : +82025631543 - ✉ [nicolas.audibert@businessfrance.fr](mailto:nicolas.audibert@businessfrance.fr)

**Ji-hyun LEE** - Trade Advisor - Tech & Services

☎ : +82 (0)2 564 9434 - ✉ [ji-hyun.lee@businessfrance.fr](mailto:ji-hyun.lee@businessfrance.fr)

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### The Directorate General for Enterprises (DGE)

Under the authority of the Minister for the Economy, Industry and Digital Affairs, the DGE is tasked with developing and implementing government policy for industry, digital economy, tourism, commerce, craft industries and trade and services, to promote business start-ups, growth, innovation and competitiveness for companies of all sizes in France and abroad.

#### Contact:

**Jean-Bernard GRAMUNT** - International Senior Manager for Latin America, Russia - CEI & ICT Cluster Expert

☎ +33 (0)1 44 97 28 77 - ✉ [jean-bernard.gramunt@finances.gouv.fr](mailto:jean-bernard.gramunt@finances.gouv.fr)

Address: DGE - Service de la Compétitivité et du Développement des PME

61 boulevard Vincent Auriol - 757034 PARIS Cedex 13 - France

Website: <http://www.entreprises.gouv.fr/la-dge/missions>