

HORIZON *2020*

LE PROGRAMME DE RECHERCHE ET
D'INNOVATION DE L'UNION EUROPÉENNE

Session d'information sur les appels à projets 2017 « Big Data »

Business France – 06/01/2017

Programme

Horaire	Présentation
09:15 – 10:15	Introduction Demi-journée (F. Laurent – MENESR)) cPPP Big-Data (L. Le Bars - SAP)
10:15 – 11:15	Les sujets Big-Data 2017 de LEIT/ICT (F. Barbato – CE) Autres sujets Big-Data (F. Laurent – MENESR)
11:15 – 11:30	Pause
11:30 – 12:10	Teralab et activités Innovation Spaces (AS Taillandier – IMT) Data Analytics over Decentralized Architectures (D. Frey – INRIA)
12:10 – 13:00	Brokerage event
13:00 – 14:00	Déjeuner

Introduction



1. Horizon 2020 en bref
2. Participation française
3. Focus LEIT/ICT et Big-Data

Horizon 2020 en bref

Horizon 2020: architecture

77,2 Md€ pour 2014-20

RDI

Défis sociétaux

- Santé, bien-être, vieillissement
- Sécurité aliment., bioéconomie
- Energies sûres, propres, efficaces
- Transports intell., verts, intégrés
- Climat, environnement, mat. 1^{ères}
- Sociétés inclusives et novatrices
- **Sociétés sûres**

Primauté industrielle

TIC
NMBP
Espace

Innovation dans les PME
(Eurostars)
Accès au financement à risque

*Recherche
fondamentale*

Excellence scientifique

Recherche exploratoire (ERC)
Technologies futures et émergentes (FET)
Infrastructures de recherche
Marie Curie

Euratom

Fission
Fusion

+ *Elargissement, Science et Société*

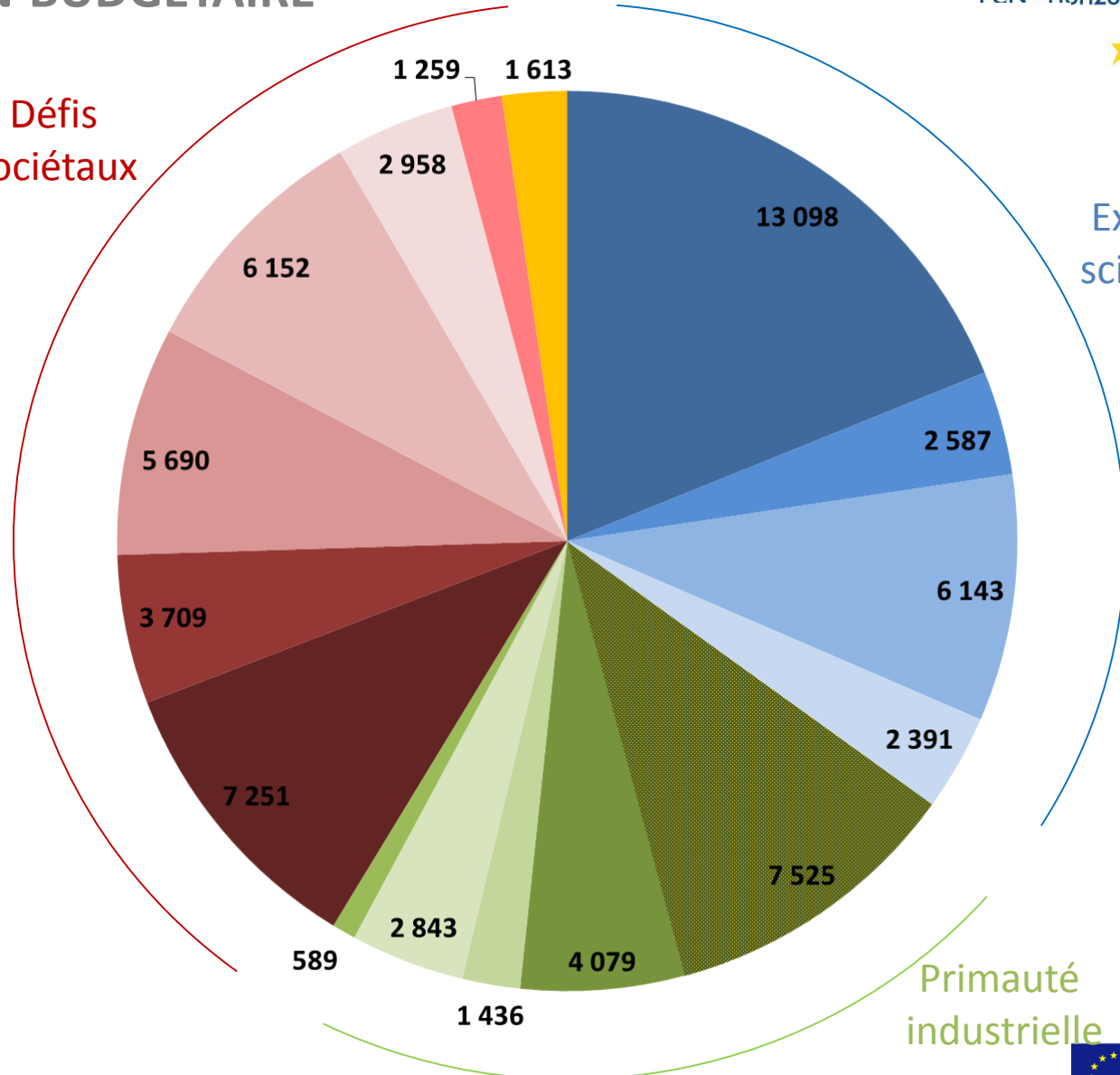
Institut européen
Innovation & Technologie
EIT / KIC

VENTILATION BUDGÉTAIRE

- ERC
- FET
- MSCA
- RI
- TIC
- NMPB
- Espace
- RF
- PME
- Santé
- Food
- Energie
- Transport
- Climat
- Sociétés innov.
- Sécurité

Défis
Sociétaux

Excellence
scientifique

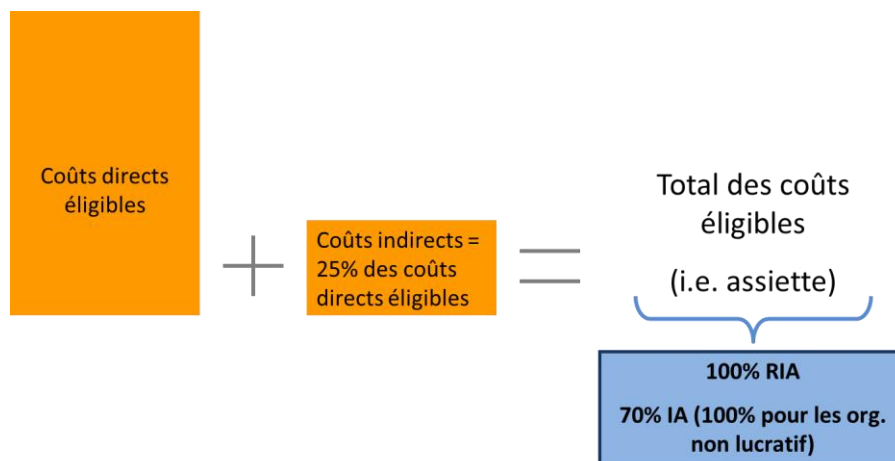


Primauté
industrielle

LES PRINCIPALES RÈGLES D'HORIZON 2020

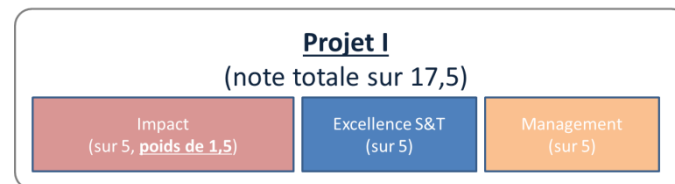
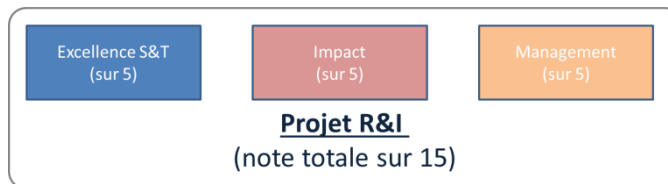
0. Des projets collaboratifs européens (min. 3 partenaires de 3 pays)

1. Des taux de subvention « simples »



A comparer aux taux nationaux !

2. Une évaluation différenciée



3. Une gamme d'« instruments » plus larges :

- De plus en plus en de PCP
- L'instrument PME
- L'instrument *Fast Track to innovation (FTI)*

4. Un « time-to-grant » de 8 mois max.

Le processus des appels



Association cPPP (feuille de route), ETP, groupes d'experts, coordinateurs...

Acteurs nationaux (GTN TIC, SEC + CoFIS)

Délégués

Délégués

WP: Consultation des acteurs clés

12 mois

Draft WP, PC consultation, validation

Appel: publication -> soumission

2-4 mois

Evaluation & préparation Grant

< 8 mois

PCN

Participants

Notre rôle

Informer



Journées
d'information

Mise en ligne
d'information

Lettre du PCN

Orienter



Adéquation idée de
projet

Opportunités de
financement

Conseiller



Relecture d'abstract

Discussion autour
d'idées de projets

Relecture
Instrument PME

Comment lire une ligne d'appel



PCN - Horizon2020

ICT-21-2016: Support technology transfer to the creative industries **Sujet - Année de l'appel**

Specific Challenge: SMEs represent 85% of all actors in the creative industry sector. They co-exist with global players and often face difficulties in adopting state of the art ICT technologies and accessing finance. Moreover, they operate on fragmented and localised target markets and have to bear high market costs which affect their international competitiveness. In this context, ICT tools and technological innovation are fundamental for the creative industries and their competitiveness. They widen creative possibilities and improve efficiency in all sectors.

The goal is to increase the competitiveness of the European creative industries by stimulating ICT innovation in SMEs, by effectively building up and expanding a vibrant EU technological ecosystem for the creative industries' needs and by fostering exchanges between the creative industries SMEs and providers of innovative ICT solutions.

Scope: Innovation Actions

Actions should support creative industries SMEs in leveraging emerging ICT technologies for the development of innovative products, tools, applications and services with high commercial potential. Proposals should ensure that creative industries SMEs are participants in the consortium and take on a driving role in the action, i.e. leading the innovation activities and liaising with end-users, ensuring that the work responds to a clear market demand. The draft business plan provided should demonstrate that the solutions are cost-effective, market-ready and targeted at existing markets with a potential for cross-border extension.

Proposals should make clear if the action would lead to impacts at European or international level and explain how the achievement of those impacts would be measured.

The Commission considers that proposals requesting a contribution from the EU between EUR 0.5 and 1 million for a period between 12 and 18 months would allow this specific challenge to be addressed appropriately. This does not preclude the submission and selection of proposals with a different budget or duration.

Expected Impact:

- For the project portfolio resulting from the Call: tens of innovative solutions with high market potential ready to be deployed by European creative industries SMEs.
- Stronger collaboration between ICT innovative technologies providers and creative industries SMEs to improve the competitive position of the European creative industries.

Type of Action: Innovation action

Le défi à relever

Le périmètre de l'action

Indication sur le budget

Les impacts attendus

Le type d'action financée



ICT 1 Smart Cyber-Physical Systems			56 000 000 €
a	Modelling and integration frameworks or smart cooperative and open CPS		37 000 000 €
b	Towards platforms and ecosystems or towards a "smart everywhere" society	70	17 000 000 €
c	Support action cross sectorial platform building structuring of constituencies and roadmapping		2 000 000 €



a. **Research & Innovation Actions** should cover one or both of the following themes:

- **Modelling and integration frameworks:** modelling techniques and comprehensive integrated tool chains for clearly defined use cases. Major aspects to be addressed include the holistic modelling of the system behavioural, computational, physical and/or human aspects of CPS; and the seamless interoperability between CPS tools. Solutions should ensure flexibility and tractability of systems.
- **Smart, cooperative and open CPS:** Methods for engineering Cyber-physical Systems that are able to respond in real-time to dynamic and complex situations while preserving control, system safety, privacy, reliability, energy efficiency and dependability features, and addressing security and privacy "by design" across all levels. This includes CPS that are aware of the physical environment, enabling effective and fast feedback loops between actuation and sensing, possibly with cognitive and learning capabilities; further CPS with cooperation and negotiation capabilities supporting distributed services, autonomous, reactive and targeted problem solving and/or improved man-machine interaction. Also covered are open and heterogeneous CPS and Systems of Systems to facilitate seamless connectivity, dynamic reconfiguration as well as handling of emergent properties. The developed methods should enable evolutionary, adaptive and iterative system life-cycles and guarantee Quality of Service at functional and extra-functional level.

Projects are expected to be driven by industrial requirements, to be well balanced between industry and academia, and to include a demonstration and validation phase with realistic use cases.

- b. **Innovation Actions** will stimulate innovation and connect innovators across value chains in view of broader adoption of novel embedded and cyber-physical systems technologies and their enablers in industrial and societal applications. Proposals should cover one or both of the following themes.
- **Towards platforms and ecosystems:** Prepare reference architectures and platforms

ICT 1 Smart Cyber-Physical Systems			56 000 000 €
a	Modelling and integration frameworks or smart cooperative and open CPS	100	37 000 000 €
b	Towards platforms and ecosystems or towards a "smart everywhere" society	70	17 000 000 €
c	Support action cross sectorial platform building structuring of constituencies and roadmapping	100	2 000 000 €



Expected impact:

- Reduction of development time for CPS by 30% as compared to the state-of-the-art in 2013 and significant reduction in maintenance costs.
- Stronger pan-European collaboration across value chains and technology levels from the components and hardware to higher systems level creating open innovation eco-systems and stimulating consensus building on open tools, platforms and standards.
- Development in Europe of a competitive offer for next generation core ICT platforms spanning from operating systems and middle ware to application development and deployment tools with built-in security. This should translate into a significant increase of Europe's market share in this area and in higher added value generated from embedded ICT.
- Uplifting Europe's innovation capacity and competitiveness across all economic sectors with the wider adoption of networked embedded ICT, notably in SMEs.

Types of action:

- Research & Innovation Actions – A mix of proposals requesting Small and Large contributions is expected
- Innovation Actions – A mix of proposals requesting Small and Large contributions is expected

Mécanismes de soutien

Aide au partenariat technologique (APT) -
Aider au montage d'un projet collaboratif européen (H2020, ERA-Net, Eurêka, Eurostars) ou national (FUI)

- Pour les PME et les entreprises de moins de 2000 salariés
- Plafonnement de la subvention à 50 k€ ; versement d'avances remboursables au-delà
- Dépenses éligibles : étude de faisabilité stratégique, recherche de partenaires, préparation des réponses aux appels à projets, assistance et conseil juridique

bpifrance

Accès aux programmes européens (APE) -
Diagnostic d'aide pour l'accès et l'orientation des

- Diagnostic flash, qui permet d'orienter la PME vers un programme de financement adapté à sa stratégie et à ses besoins – forfait de 1 k€ HT
- Poursuite de l'accompagnement – forfait de 4 k€ HT
 - Si la PME le souhaite, et sous réserve de l'accord de Bpifrance,
 - Pour la préparation d'un dépôt de candidature à la phase 1 de l'Instrument PME, voire pour approfondir une stratégie de participation à d'autres programmes européens

Agence Nationale de la Recherche
ANR

Aide au montage de réseaux scientifiques, européens ou internationaux (MRSEI)

- En cas de partenariat fort avec un organisme de recherche public, possibilité de recourir au MRSEI proposé par l'Agence nationale de la recherche (ANR).
- Aide s'élevant en moyenne à 30 k€ pour une durée allant de 18 mois max.

Sites à consulter



<http://www.horizon2020.gouv.fr>



Participant Portal H2020

Éléments de la participation nationale

Horizon 2020: un programme devenu majeur au niveau national



Programmes (pérennes) de financement RDI
récurrents en 2014 et 2015 (en M€/an)



Positionnement de la France (1)

Chiffres donnés à titre de comparaison

	Etat	% Horizon 2020	Contr. budget UE (2014-16)	Taux de retour
1	DE	16,1%	21,4%	77%
2	UK	15,2%	12,2%	127%
3	FR	10,7%	15,9%	69%
4	ES	9,1%	8,0%	117%
5	IT	8,4%	11,7%	74%
6	NL	7,8%	5,6%	142%
7	BE	4,3%	3,9%	114%
8	SE	3,5%	3,2%	111%
9	AT	2,8%	2,2%	130%
10	DK	2,5%	1,3%	199%

% GERD UE28 (2014)	% ETP pers. R&D UE28 (2014)	% ETP cherch. UE28 (2014)	% demandes brevet OEB UE28 (2013)	Intensité RDI (2014)
29,5%	21,8%	20,1%	39,3%	2,9%
13,5%	14,1%	15,6%	9,4%	1,7%
16,9%	15,3%	15,3%	15,8%	2,3%
4,5%	7,3%	7,0%	2,6%	1,2%
7,3%	8,9%	6,8%	7,3%	1,3%
4,6%	4,5%	4,3%	5,9%	2,0%
3,5%	2,5%	2,7%	2,7%	2,5%
4,8%	3,0%	3,8%	5,0%	3,2%
3,5%	2,4%	2,3%	3,3%	3,0%
2,8%	2,1%	2,3%	2,8%	3,1%

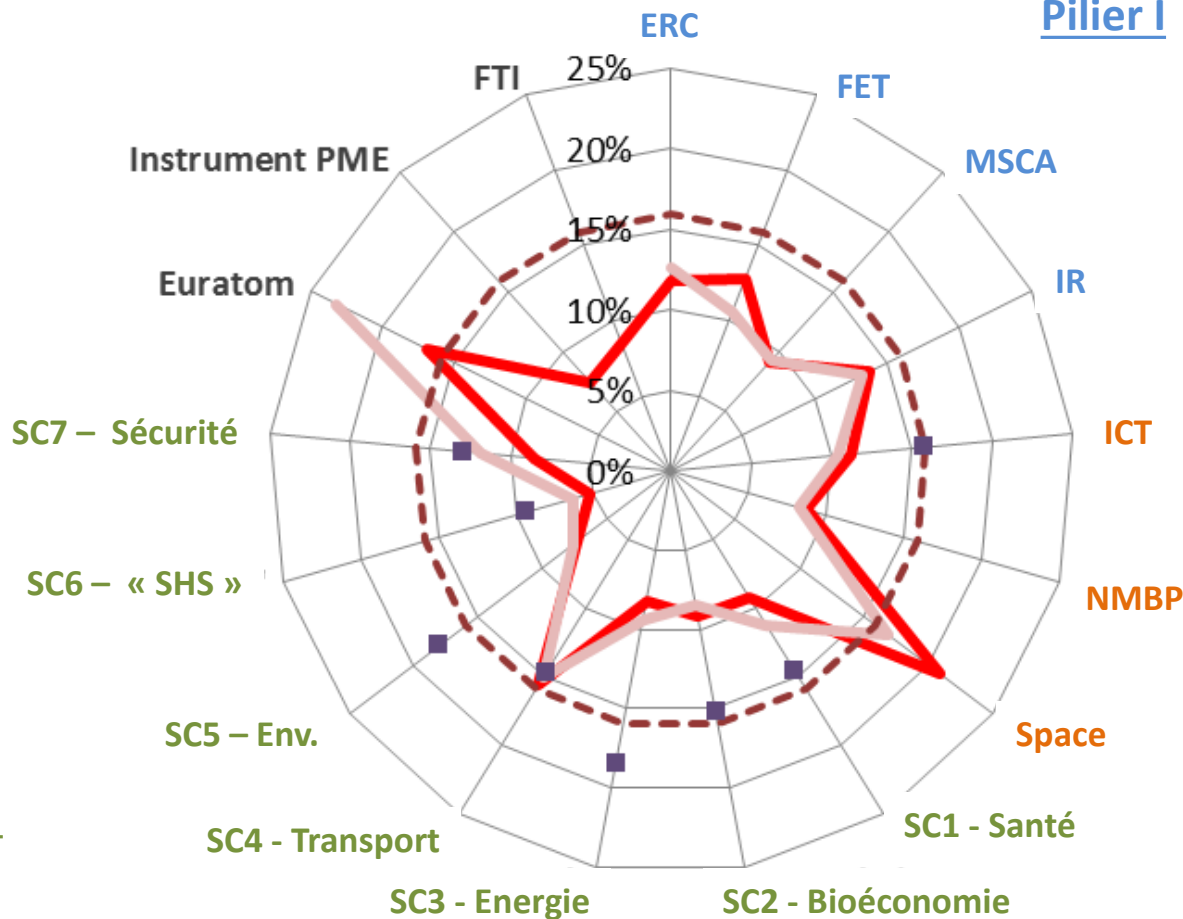
Sources: eCorda (après retraitement MENESR) et Eurostat

Positionnement de la France (2)



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Pilier I



Pilier II

Pilier III

— H2020
 — FP7
 - - - Benchmark €
 ■ % Publi à fort impact UE27 (2012)

Focus LEIT/ICT et Big-Data

Quelques chiffres clés LEIT/ICT (2014-2016) (hors SME-INST)

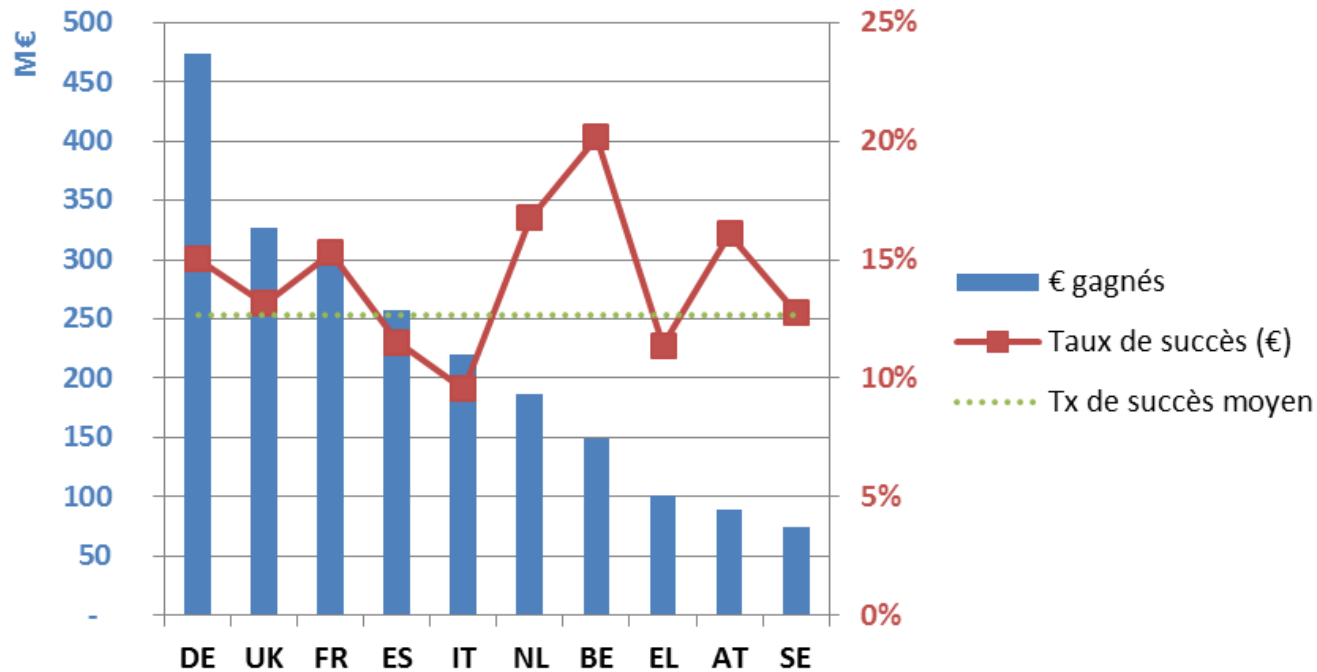


3500 propositions/an dont 1.400 à participation FR
160 projets retenus/an dont 80 à participation FR
4,4 Md€/an demandés pour 660 M€/an distribués
Soit un taux de succès (€) de 15%

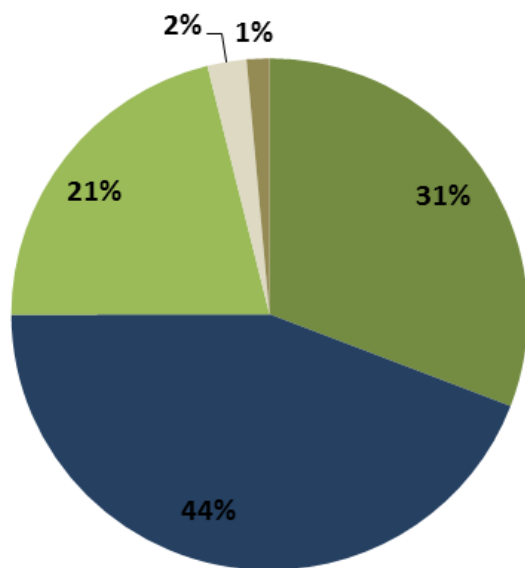
410 M€/an demandés par les équipes FR (9,2%)
81 M€/an gagnés par les équipes FR (12,2%)
Soit un taux de succès (€) de 19,8%

Un total de 11.000 participants dont 1.750 FR
~ 280 bénéficiaires FR (après consolidation)

LEIT/ICT: comparaison pays

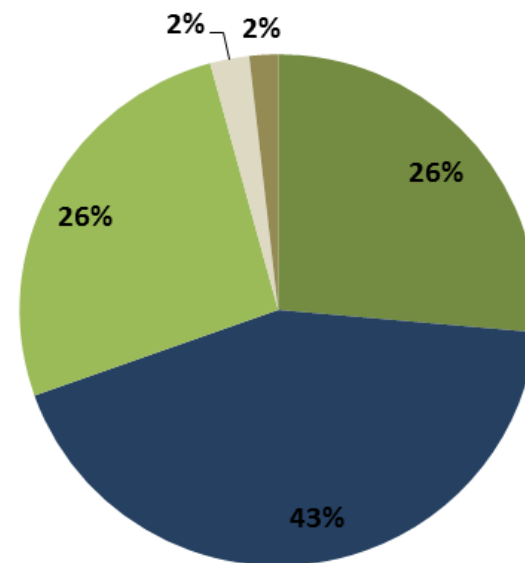


LEIT/ICT: un programme driven par l'industrie mais (très) ouvert au secteur académique



Propositions

- Higher or Secondary Education
- Private for Profit
- Research Organisation
- Other
- Public Body



Projets

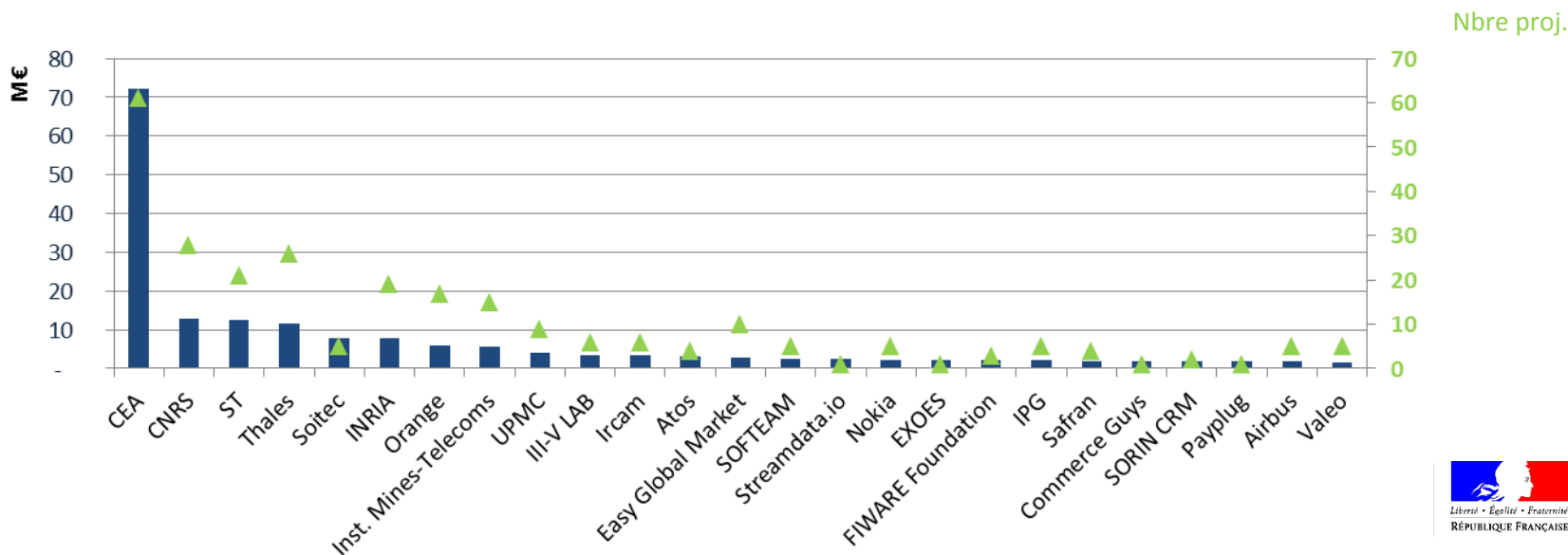
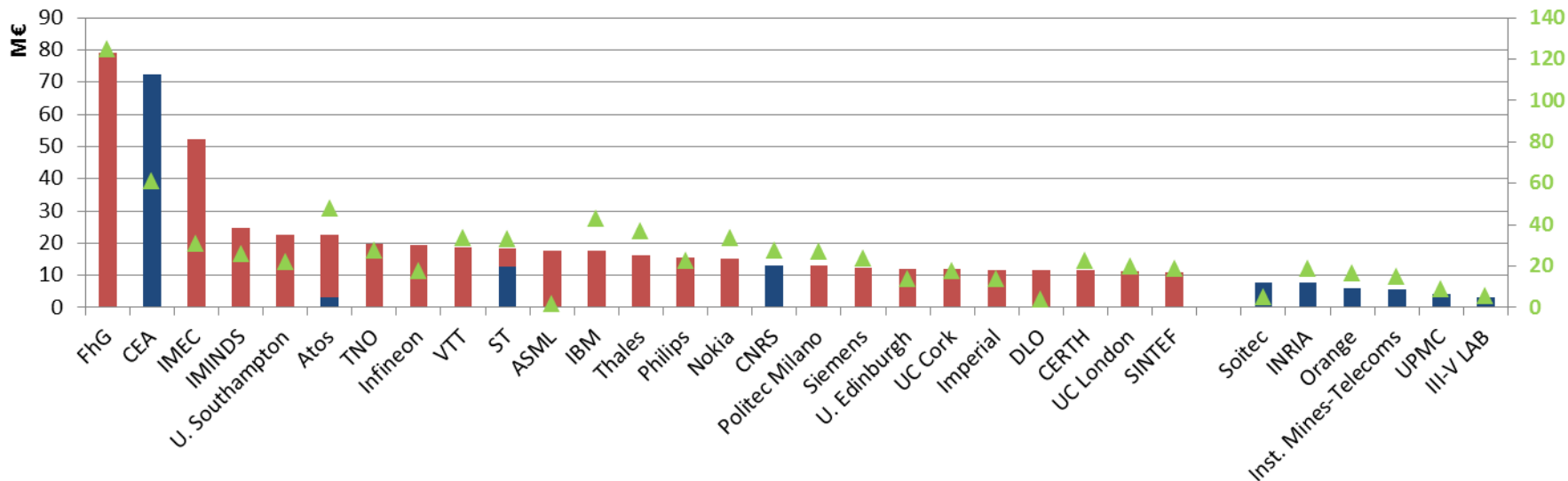
Chiffres hors Instrument PME

LEIT/ICT: grands bénéficiaires

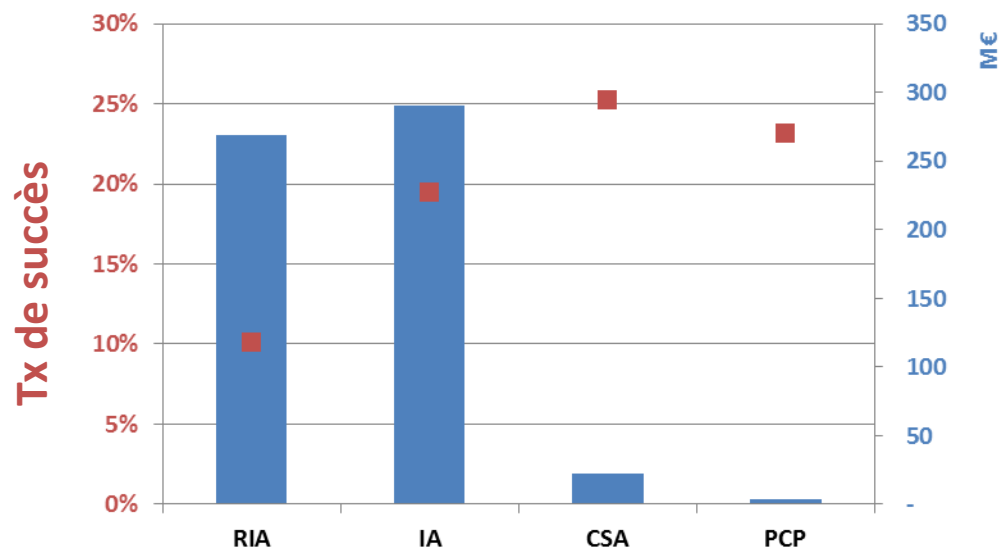


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Nbre prop.



Ventilation par instrument



Une programmation par l'industrie: cPPP



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FP7

H2020



FUTURE INTERNET PPP & SME ACCELERATOR

Expansion of use cases

NETWORKING R&D



ADVANCED COMPUTING



CONTENT TECHNOLOGIES & INFO MANAGEMENT



ROBOTICS R&D



PHOTONICS R&D



FACTORY OF THE FUTURE



Structure LEIT ICT

6 CHALLENGES

A new generation of components and systems

Advanced Computing and Cloud Computing

Future Internet

Content

Robotics and autonomous systems

ICT Key Enabling Technologies

Cross cutting activities



-Factory of the Future

-Internet of Things

-Digital Security



Horizontal activities



-Innovation and entrepreneurship support

International cooperation

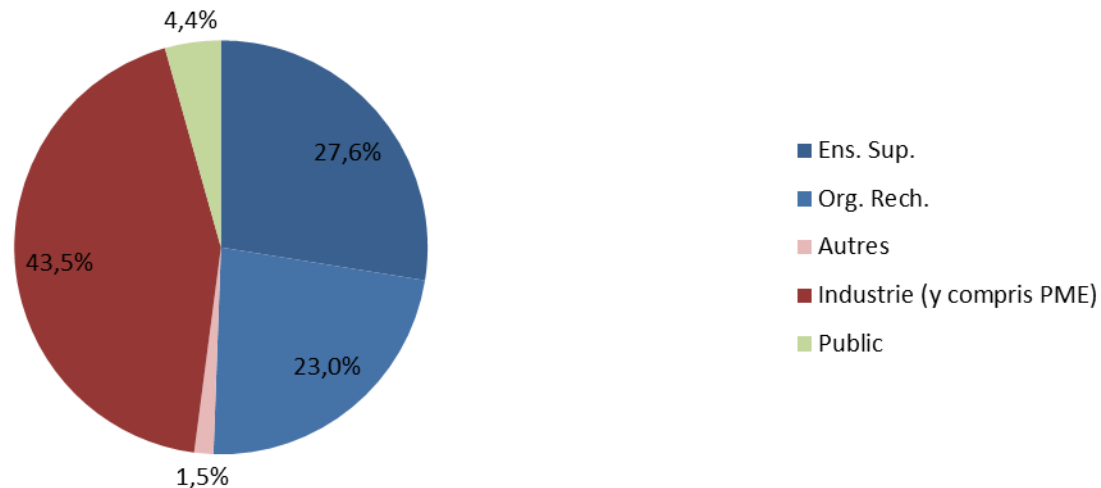
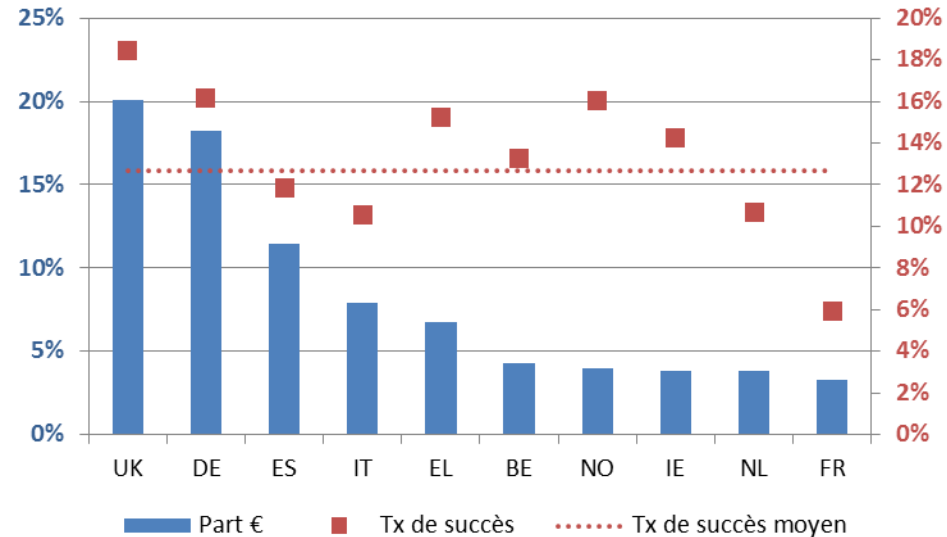


International
UE Brazil

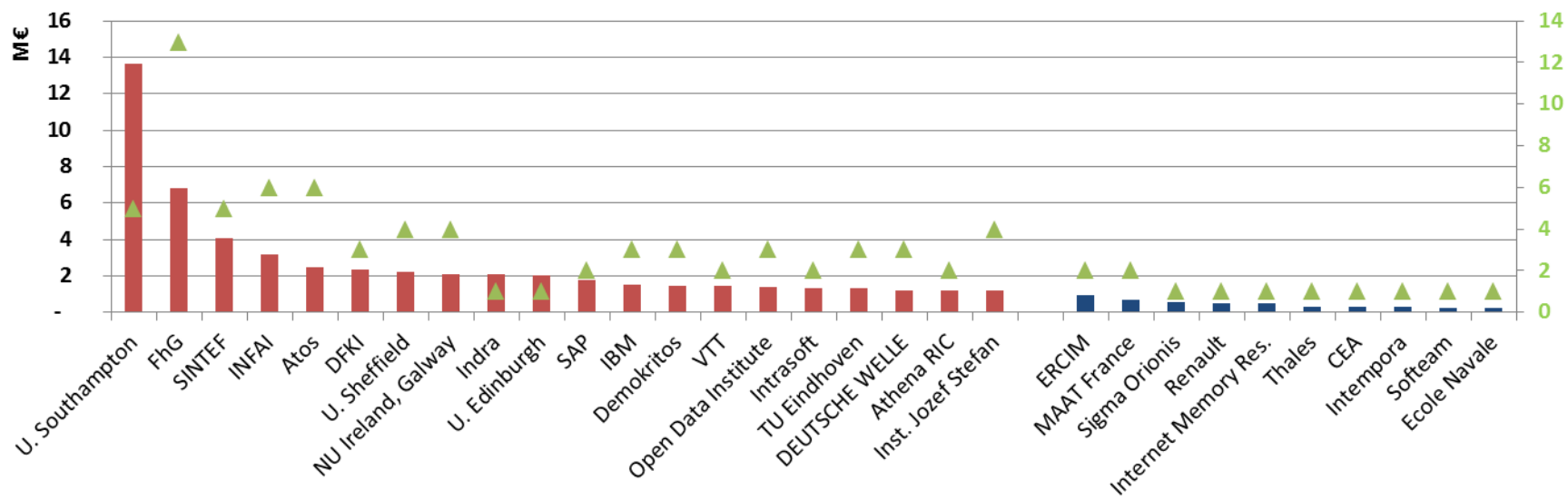
Big-Data 2014-2016 (1/2)

315 propositions éligibles dont 114 à participation FR
 2900 participations dont 188 FR
 1650 participants dont 120 FR
 1,3 Md€ demandés dont 90 M€ par participants FR (7,1%)

38 projets retenus (11 RIA, 21 IA, 6 CSA) dont 13 avec FR
 411 participations dont 18 FR
 316 bénéficiaires dont 4 FR
 161 M€ alloués dont 5,3 M€ pour bénéficiaires FR (**3,3 %!!**)
 Taux de succès global: 12,7%



Big-Data 2014-2016 (2/2)



Autres appels Big-Data

Orientations principales du WP16-17 (1)

Une participation obligatoire des utilisateurs finaux (en tant que partenaires), dont les missions incluent :

- Les spécifications fonctionnelles et la validation de la solution (haut du cycle en V)
- La mise à disposition de composants de démonstrateurs (locaux, logiciels, systèmes, etc.)
- La quantification des impacts estimés pour améliorer la sécurité

Orientation du programme vers des pilotes et des missions de sécurité

- Démonstrateurs avec des TRLs généralement élevés (atteignant le niveau 8)

Prise en compte accrue de la dimension sociale

- Les SHS doivent être complètement intégrées dans le projet
 - Sociologie des usagers
 - Mécanismes de l'innovation, etc.

Soutien à l'industrie de l'UE pour être compétitive

- Les business plans et les analyse économiques doivent être expliquées

Orientations principales du WP16-17 (2)

Une structure sur 3 appels principaux

- Protection des infrastructures critiques (DG CNECT + Home)
- Sécurité (DG Home)
- Digital security (DG CNECT)

Budget:

- ~175 M€ en 2016
- ~197 M€ en 2017

Les principaux changements par rapport au WP14-15:

- Un nombre de sujets plus limité (~33 vs. 55)
- Des enveloppes réservées pour une majorité de sujets (i.e. pas de compétition entre ces sujets)
- Des budgets par projet plus prescriptifs
- Des sujets plus resserrés ou au contraire très ouverts (et un texte globalement de meilleure qualité)
- Une plus grande participation des utilisateurs finaux/practitioners attendue
- Des règles *Special modalities* (fortement) assouplies et en nombre (très restreint)

Thèmes des appels 2017

CIP

Water Systems??

Energy
Infrastructure
(power plants and
distribution)

Transport ??
Infrastructure and
means of transportation

Communication
Infrastructure

Health Services

Financial Services

SEC-DRS

Broadband
Comm. Systems

CBRN cluster

SEC-GM

Clusters of
practitioners

SEC-FCT

Human Factor
(with subtopics)

Tools for forensic
laboratories

Detection and
data fusion
(in sewage
networks)

Prevention
Investigation
Mitigation (with
subtopics)

SEC-BES

Information system
to EU external
policy

Risk-based
screening border
crossing

Through-foliage
detection

Big Data for
customs

No gate crossing
point solutions

DS

Cryptography

Advanced threats

Privacy, data
protection

SME-Inst

Engaging SMEs
in security R&D
(SMEInst-13)

Integration of detection capabilities and data fusion with utility providers' networks



Deployment of detection systems in utility networks (e.g. to measure energy consumption, characteristics of used waters, air quality, etc.), for instance for the detection of explosive precursors and illegal chemicals (drugs)

- **Innovation Action**
- Outcome TRL: **7 to 8 for the sensors deployed**
6 for the information system and mobile platform
- Budget: **8 M€ per project**
- Total budget: **16 M€ → 2 funded projects**
- Coordination with activities of the EDA may be considered
- A minimum of 2 independent utility network operators; and a minimum of 3 Law enforcement agencies (LEA) in charge of counter-terrorism, or bomb squad units, from 3 different EU Members States
Additional participation from LEAs from Associated Countries is encouraged
- Demonstrations must take place in at least 2 agglomerations: One of over 1000000 inhabitants, and another of between 100000 and 300000 inhabitants, located in 2 different Member States, and using different types of sewage systems

SEC-17-BES-2017:

Architectures and organizations, big data and data analytics
for customs risk management of the international goods
supply chain trade movements



Improving customs risk management and supply chain security.

A need for customs to acquire quality data on supply chain movements, to exploit them for risk assessment purposes, and to make checks more efficient

- **Research and Innovation Action**
- Outcome TRL: **not provided**
- Budget: **5 M€ per project**
- Total budget: **10 M€** → 2 funded projects

- At least 3 border guard or custom authorities from 3 EU or Schengen Member States or Associated Countries