

RAPPELS HORIZON 2020



Rappel Horizon 2020

- Horizon 2020 dans le paysage national
- Structure du programme et budget
- Règles de participation

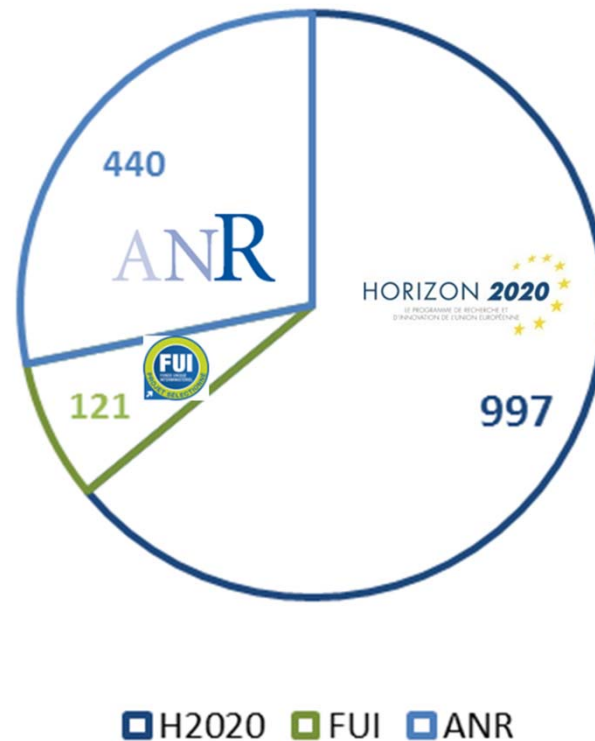
Spécificités du programme LEIT/ICT

EIC Pilot (en bref)

Horizon 2020: un programme majeur pour les ressources externes des équipes FR



Programmes (pérennes) de financement non-récurrent des équipes nationales de RDI entre 2014 et 2018 (en M€/an)



Taux de retour FR de 11,1% vs. « potentiel » de 16,4%
Soit un potentiel d'~450 M€/an additionnel!

Positionnement de la France



	Etat	% Horizon 2020	Contr. budget H2020 (2014-17)	Taux de retour
1	DE	15,2%	20,1%	76%
2	UK	13,3%	11,8%	113%
3	FR	11,1%	15,0%	74%
4	ES	9,1%	7,6%	119%
5	IT	8,4%	11,1%	75%
6	NL	7,9%	5,2%	153%
7	BE	4,5%	3,8%	121%
8	SE	3,7%	3,0%	123%
9	AT	2,8%	2,1%	133%
10	CH	2,8%	N/A	N/A

Chiffres donnés à titre de comparaison

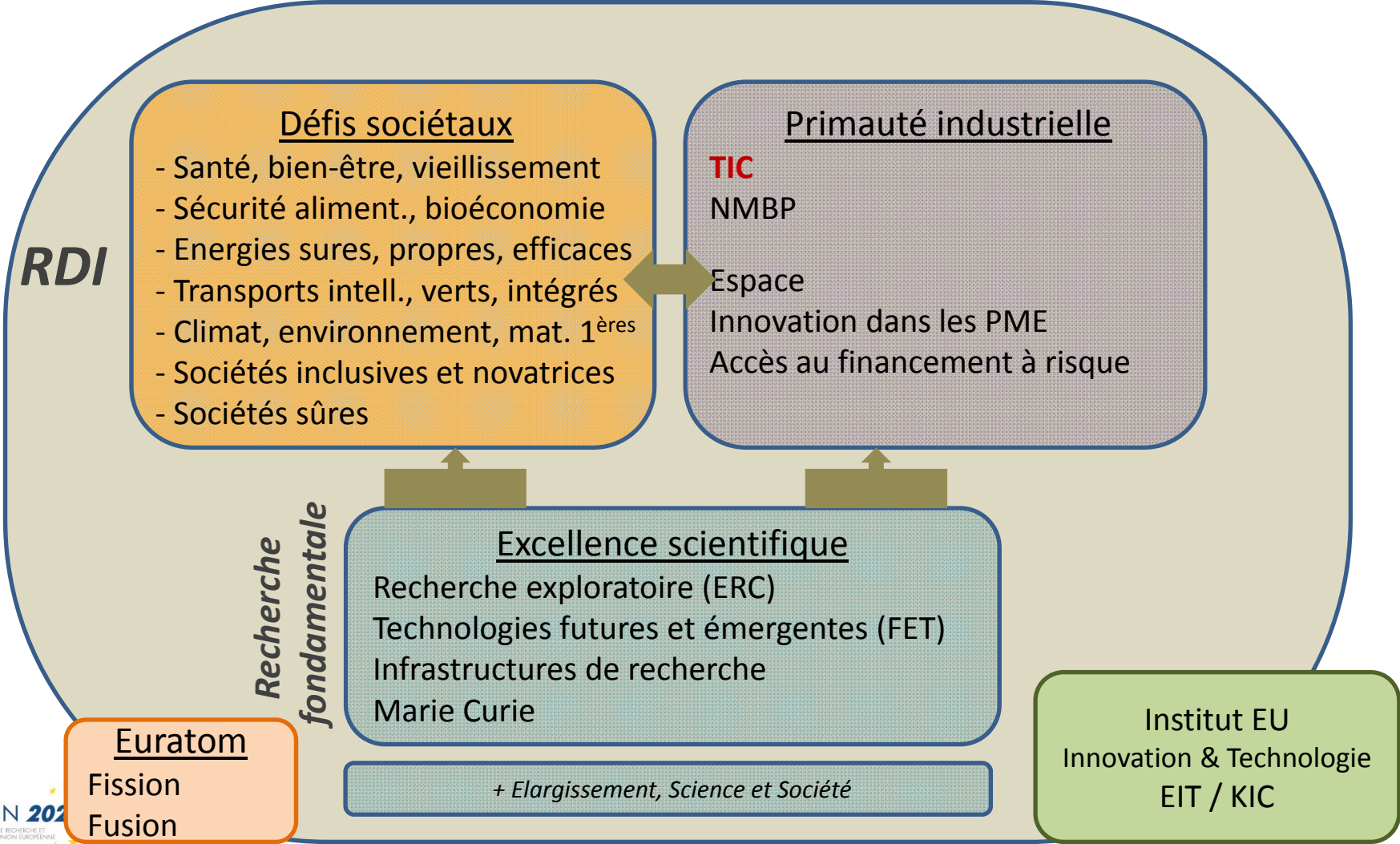
% GERD UE28 (14-16)	% ETP pers. R&D UE28 (14-16)	% ETP cherch. UE28 (14-16)	% demandes brevet OEB UE28 (2014-17)	Intensité RDI (2014)
29,9%	22,2%	20,9%	36,0%	2,9%
13,8%	14,4%	15,6%	9,8%	1,7%
16,4%	14,6%	14,7%	16,8%	2,3%
4,4%	7,1%	6,8%	2,9%	1,2%
7,4%	9,0%	6,8%	7,6%	1,3%
4,6%	4,5%	4,3%	6,2%	2,0%
3,4%	2,7%	2,9%	2,8%	2,5%
4,9%	3,0%	3,7%	5,4%	3,2%
3,6%	2,5%	2,4%	3,6%	3,0%
N/A	N/A	N/A	N/A	N/A

Sources: eCorda (après retraitement MENESR) et Eurostat

Horizon 2020: architecture



77,2 Md€ pour 2014-20

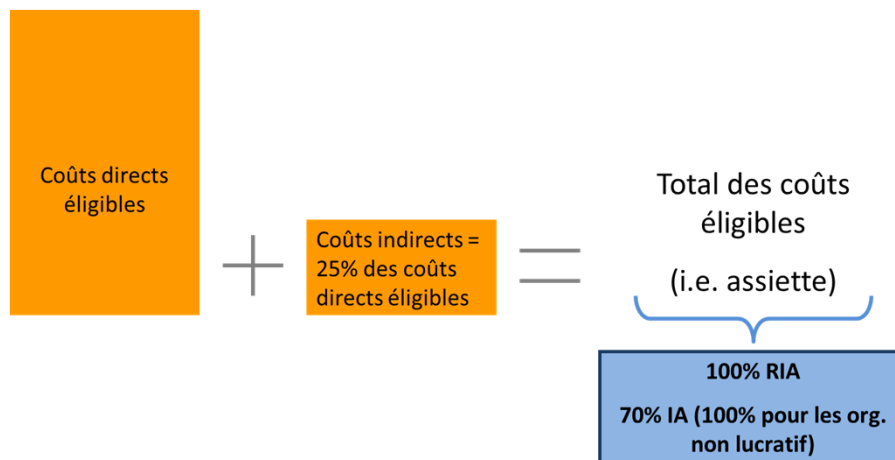


Horizon 2020: les règles de base



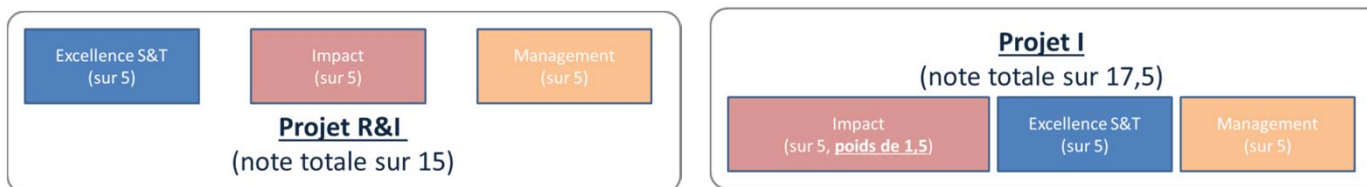
0. Des projets collaboratifs européens (min. 3 partenaires de 3 pays)

1. Taux



A comparer aux taux nationaux !

2. Critères



3. Quelques autres « instruments » :

- PCP and PPI
- SME instrument, bourses (ERC, MSCA)
- *Fast Track to innovation (FTI)*

4. « time-to-grant » garanti!

Quelques chiffres clés (appels LEIT/ICT 2018)



Propositions soumises

- 774 propositions éligibles dont 365 à participation FR (47%)
- 5,3 Md€ demandés dont 536 M€ demandés par FR (10%)
- 9101 participations dont 735 FR (8%)
- 3920 participants dont 358 FR (9,1%)
- 53 coordinations FR (6,8%)

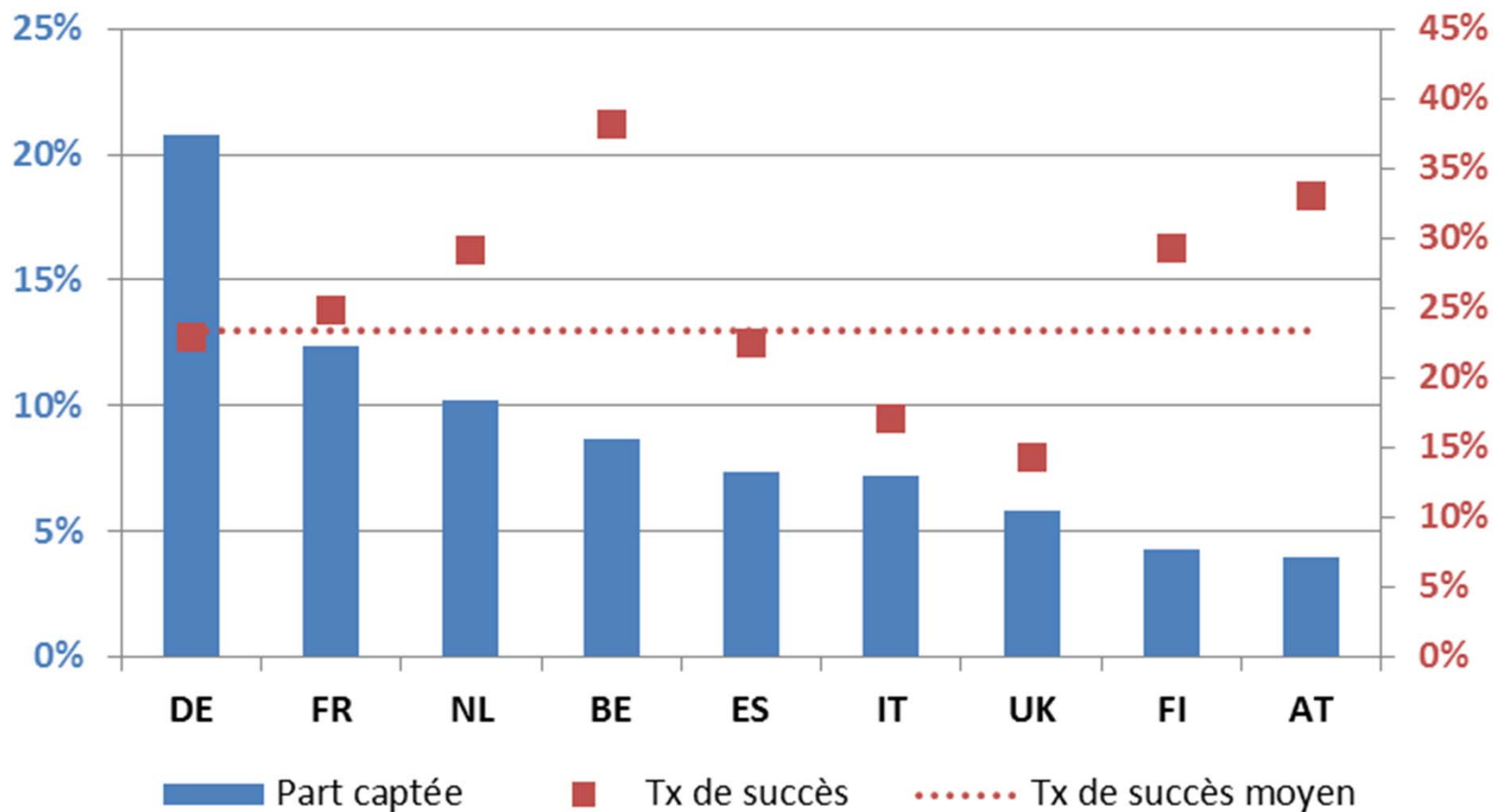
Projets retenus

- 125 projets retenus dont 76 à participation FR (60%)
- 1,3 Md€ distribués (tx de succès: 24%!!) dont 182 M€ à des partenaires FR (14,4%)
- 1757 participations dont 197 FR (11%)
- 1355 bénéficiaires dont 139 FR (10,2%)
- 8 coordinations FR (6,4%)

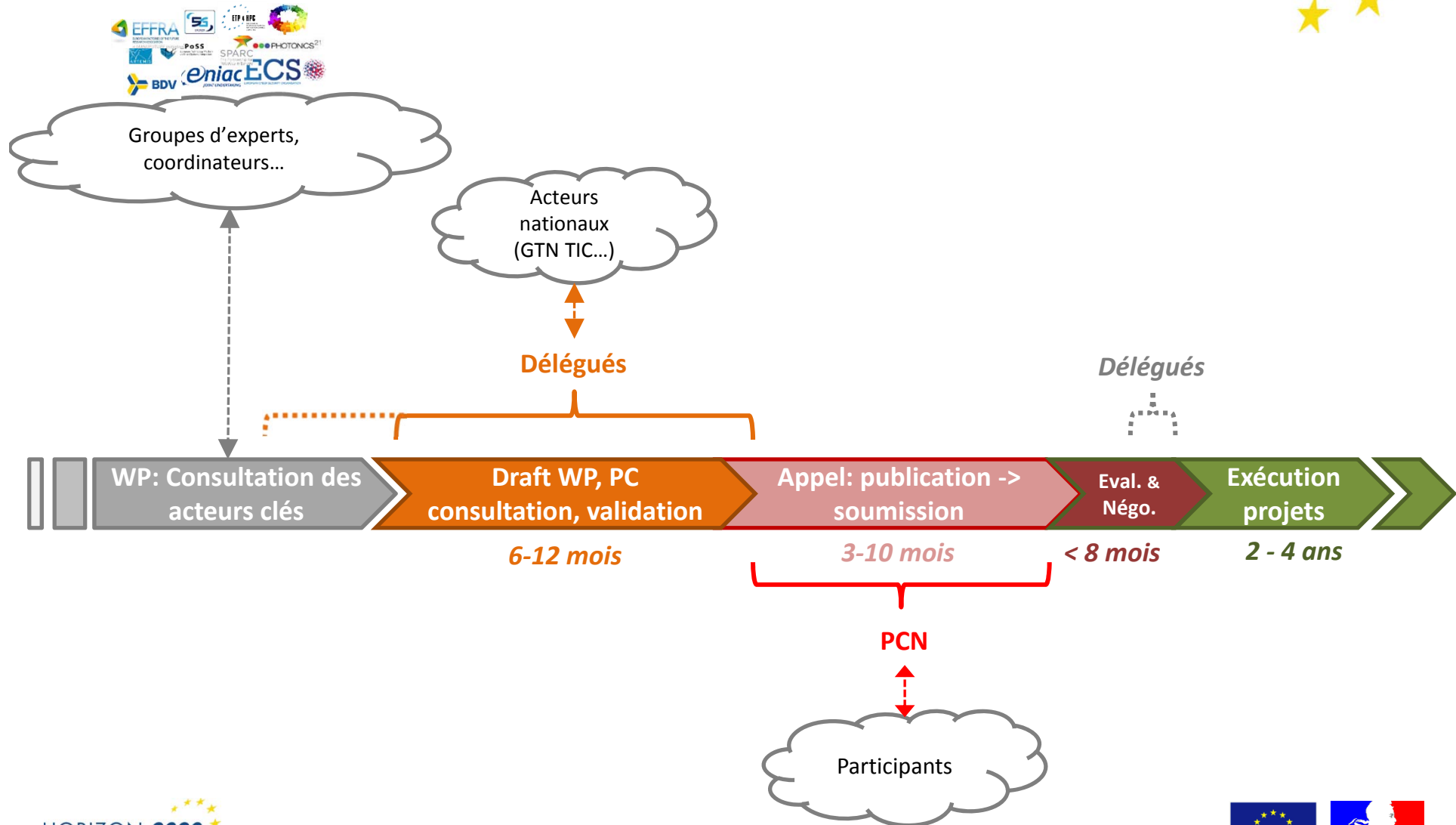
Chiffres clés Photonique



17 projets /an financés
+72 M€/an distribués chaque année
+500 bénéficiaires (dont ~ 70 FR)
Taux de succès moyen de 23,4%



Mise en œuvre H2020: Le mécanisme des appels à propositions



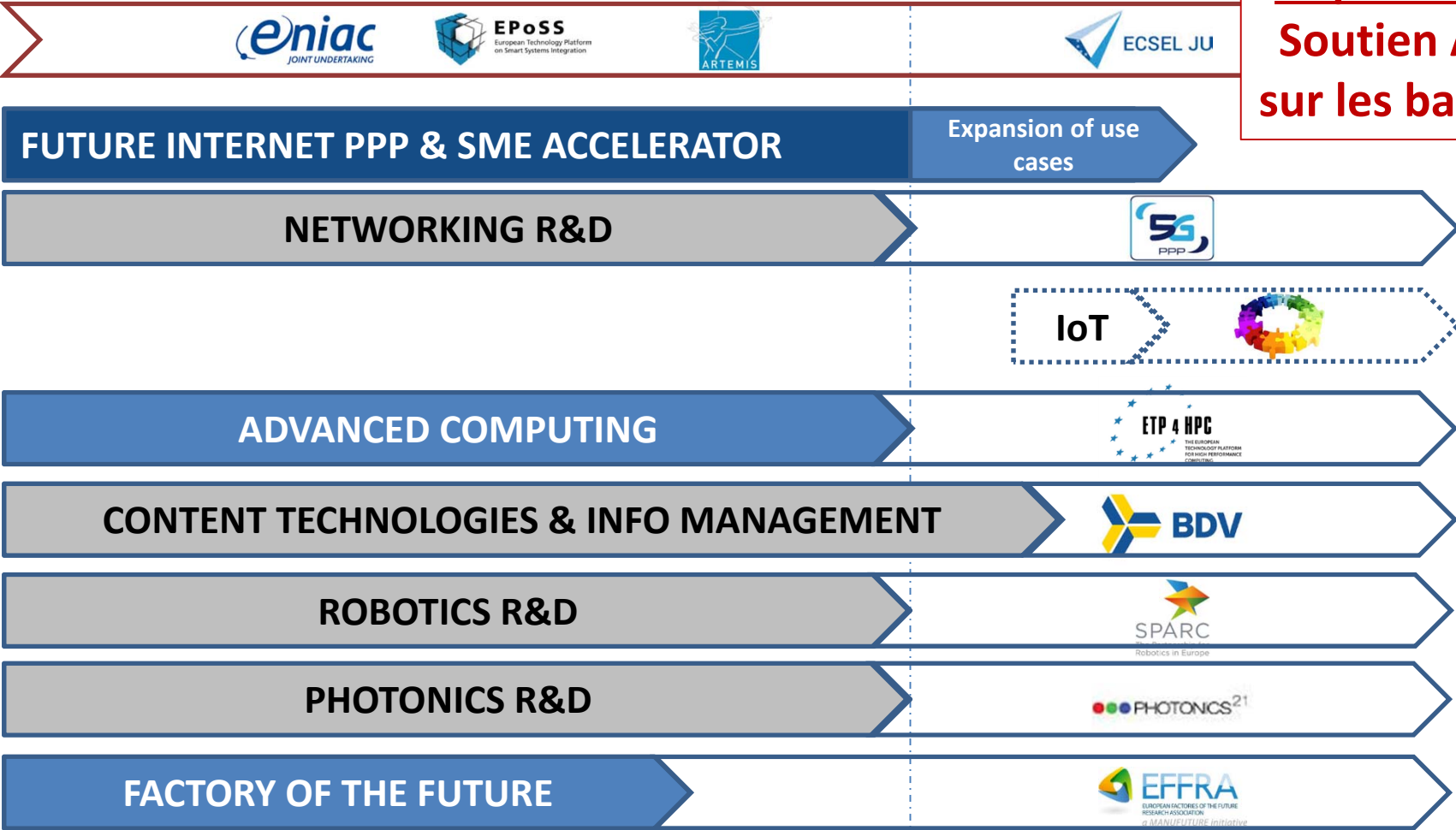
Une programmation par l'industrie: cPPP



FP7

H2020

**Depuis 2017:
Soutien ANR
sur les bas TRL**



FUTURE INTERNET PPP & SME ACCELERATOR

Expansion of use cases

NETWORKING R&D



IoT



ADVANCED COMPUTING



CONTENT TECHNOLOGIES & INFO MANAGEMENT



ROBOTICS R&D



PHOTONICS R&D



FACTORY OF THE FUTURE



Cyber





Exemple SRIA

Europe's age of light!

How photonics will power growth and innovation

Strategic Roadmap
2021–2027



PHOTONICS PUBLIC PRIVATE PARTNERSHIP



Proposed roadmap for 2021–027

	2021	2022/2023	2024/2025	2026/2027
Overview	High speed processing		CO₂ emission reduction	
Technology Challenges	Weight reduction		Material savings	
	Digitalisation of production		Simulation supported production	
	Agile manufacturing and connected production			
	Individualisation and personalisation of products and production equipment			
Critical milestones to move from Science to Market	High speed scanners / tailored beam developments and applications	Simulation and digitalisation	Connected production	Global environmental goals
Photonics Research (R) & Innovation (I) Challenges	<p>Efficient lasers and components</p> <ul style="list-style-type: none"> • Material, coatings and components for high power/high-intensity beams • High energy and highly agile ultra-short pulse lasers • High brilliance diode lasers (CW and pulsed) with different wavelengths • Lasers for the generation of coherent X-rays • High power mid-infrared lasers with wavelengths greater than 1 μm • Multibeam lasers <p>Beam delivery, shaping and deflection systems</p> <ul style="list-style-type: none"> • Novel optical fibres for use at wavelengths higher than the UV (and beyond 2μm) • Non-mechanical high-speed beam scanning systems • Re-configurable and programmable beam shaping systems (tailored light) • Rapid monitoring and quantitative feedback systems • Focusing and imaging optics facing the Abbe limit for highest spatial resolution of energy • Multibeam guiding and switching • Miniaturised interchangeable optical processing systems <p>Industry 4.0</p> <ul style="list-style-type: none"> • Connectivity of laser systems for integration in manufacturing platforms (also intelligent fibre connectors with integrated functionality, e.g. back reflection or temperature) • Integration of sensors throughout the laser processing system • Parallel processing for high throughput • Data and knowledge management for laser materials processing "standardised" CAM-modules for materials processing • Development and integration of simulation tools into production chains <p>Quality control and NDT</p> <ul style="list-style-type: none"> • Real-time process control • On-line non-destructive testing of laser manufactured parts • Process optimisation based on novel in-line / at-line photonic measurement and multi-modal metrology • Big Data correlation, metamodeling and quality prediction • Data analytical techniques / mathematical methods to optimise information gathered from available measurements (e.g. compressive sensing, super-resolution imaging) <p>Laser specific materials development</p> <ul style="list-style-type: none"> • Alloys and materials for additive manufacturing • Photonic specific materials for electronics • High-performance materials for laser processes 			
Joint actions required	EFFRA; SPIRE			



Horizon 2020
Work Programme 2018-2020

S.i. Information and Communication Technologies

DRAFT

DISCLAIMER

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Comment lire une ligne d'appel



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

Défi à relever

Périmètre de l'action

Budget indicatif du projet

Impacts attendus

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:

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



Conseil européen de l'innovation : Financement d'innovation de rupture de leur émergence jusqu'à leur déploiement

Soutien aux innovations de nature radicale et disruptive ayant un potentiel d'expansion qui sont trop risquées pour les investisseurs privés

**Conseil européen
de l'innovation**

**Aider les innovateurs à créer les marchés du futur,
à mobiliser des fonds privés, à développer leurs
sociétés,**

**Gestion et suivi proactifs, centrés sur l'innovation,
agiles et qui sous-tendent la prise de risques**

Réorganisation d'instruments existants avec deux instruments complémentaires comblant l'écart entre l'idée et le projet dans lequel il est possible d'investir

Bas TRL : Pathfinder

Pathfinder : subventions

(des premiers stades de développement technique aux stades précédant la commercialisation)

Programmes FET

Haut TRL : Accelerator

l'Accélérateur :

subventions et financement mixte

(des stades précédant la commercialisation à l'introduction sur le marché et à l'expansion)

Instrument PME phase 2 et 3

Gouvernance: EIC Advisory Board

Enhanced EIC Pilot



Pathfinder = FET Open + Proactive

Accelerator = SMEINSTR2 + Blended finance

- Volet Subvention:
 - 0,5 M€-2,5 M€ sur la base d'un taux de 70%
 - Soutien aux activités RDI « classiques »
- Volet Equity (optionnel):
 - Jusqu'à 15 M€
 - Toutes activités
- Accompagnement(coaching) : levée de fonds / export / mise en relation grands groupes

Evaluation

- Excellence (33%) : innovation, achieved results, commercial aspects, regulatory aspects, innovation management...
- Qualité, efficacité mise en oeuvre, risques (33%): team, organizational-financial and legal aspects, IPR, major focus on how the team will drive the company all the way to the global stage
- Impact(33%): market opportunities, organizational-financial and legal aspects, high impacts in term of jobs, growth and social impact
- Sur le volet Equity, le SPV analysera :
 - Effort financier pour déployer l'innovation sur le marché
 - Données financières, structure de capital, la gouvernance de l'entreprise
 - Qualité et risques liés aux contrats dans lesquels l'entreprise est impliquée
 - Futurs revenus de l'équity, types de participation, tranches d'investissement

Accelerator /
SME Instrument



EUROPEAN INNOVATION COUNCIL eic BETA

PCN - Horizon2020



En pratique pour 2019 2020

- **Dates dépôts Phase 1**
 - 07 May 2019
 - 05 September 2019
- **Dates dépôts phase 2**
 - 05 June 2019 – Subvention
 - 09 October 2019 – Subvention + option capital
 - 08 January 2020 – Subvention + option capital
 - 18 March 2020 – Subvention + option capital
 - 19 May 2020 – Subvention + option capital
 - 07 October 2020 – Subvention + option capital