#166e 2016.gada marts *(latviski un angliski)*

Eiropas Savienības programmas pētniecībā un tehnoloģiju attīstībā - **HORIZONTS 2020**
Latvijas Nacionālā kontaktpunkta grupas bijušā koordinatora (1999-2014) gados
Dr.phys. Arnolda Ūbeļa

VĒSTIS

- **Viss par aktuālo zinātnes un tehnoloģiju attīstībā Eiropas Savienībā ir atrodams INTERNETĀ –** *http://cordis.europa.eu*;
- **Viss par 5., 6. un 7.Ietvara programmu projektiem (5.IP, 6.IP un 7.IP) meklējams -** *http://cordis.europa.eu/projects/home_en.html;*
- **Viss par HORIZONTS 2020 ir atrodams** *http://ec.europa.eu/programmes/horizon2020/;*
- **Viss par ES atrodams www.europa.eu;**
- **Projektu pieteikumiem un projektu vadīšanai paredzēts *Participant Portal***
  https://ec.europa.eu/research/participants/portal/desktop/en/home.html

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Saturs:

1. Šī brīža aktualitātes

Šīs 2016.gada marta VĒSTIS rāda lasītājam šī brīža nacionālās un ES zinātnes politikas rezultātus un salīdzinošu kopskatu par Latvijas zinātnes saimes līdzdalību ES HORIZONTS 2020 pirmo divu gadu programmas izpildē un strukturētu pārskatu par tās konkrēto sadaļu projektu konkursiem 2016. un 2017.gadiem.

1.1. Norises izpilddienestu praksē un zinātnes politikā.

Prese ir atnesusi ziņas par priecīgiem notikumiem mūsu tik labi atpazītās IZM VIAA aģentūras dzīvē: *http://www.tvnet.lv/zinas/latvija/598109-viaa_vaditaja_nodrosina_sevi_ar_lielu_premiju_un_piemaksam_bet_pret_darbiniekiem_nav_tik_dasna*.

Nav pamata uztraukumiem. Mēnešalgas 1000- 2000 eiro apmērā un regulāru prēmiju prakse turpināsies un savstarpējā IZM struktūru solidaritātē šajā jautājumā to garantē.

Zinātniekiem labu algu atnes termiņā iesniegts izcila konsorcija uzrakstīts un augstas kvalitātes vērtējumiem atbilstošs projekts, kuram jāgūst panākums bezkompromisu konkursā ar izciliem kolēģiem Latvijā vai ES mērogā. Ja nav panākuma projektu konkursā, tad atvadies ne tikai no algas, bet arī no konkrētā institūta un Latvijas. Citas alternatīvas zinātniskam darbam Latvijā nav.

IZM ierēdņiem un tās aģentūru darbiniekiem algas un sociālās garantijas gadu garumā nodrošina klātbūtne zinātnes norišu procesos. Rezultāti nav svarīgi, atlaišana un bezdarbs nedraud. Labas partnerattiecības garantē savstarpēju izvirzīšanu prēmijām!

VĒSTĪS 165e aizvadītajos Ziemasvētkos rakstīju :

Šī brīža IZM apzinātu vai neapzinātu "sabotējošo" sasniegumu saraksts ir iespaidīgs un neiegūtā labuma vērtība un arī zaudējumi mērāmi miljonos:

- *2014. gadā tika pieņemts lēmums par FP7 projektu PVN atmaksu un uz 2015.gada janvāri visi pretendenti iesniedza savus pieprasījumus, tikai vēlā rudenī kaut kas sāka notikt;*
- *BALTIC BONUS programma 2015.gadam par atbalsta maksājumiem Latvijas zinātnes grupām, par dalību augsti novērtētos HORIZONTS 2020 projektu pieteikumos – vajadzēja un varēja sākt gada sākumā. Balvu finansējums līdz zinātniekiem atnāks tikai 2016.gadā;*
- *PostDoc stipendiju programmas konkurss no ES struktūrfondu naudas, kuru varēja palaist agrā pavasarī aizvien vēl nav izsludināts. Noteikumi ir birokrātiski samudžināti un notiek institucionāla konkurences cīņa starp FM un VIAA par tiesībām „pelnīt" šī konkursa birokrātiskā uzraudzībā;*
- *Neviena cita Struktūrfondu programma zinātnes atbalstam nav palaista. Ir kādas cerības tikai uz 2016. gada sākumu. Projektu nauda laboratorijās parādīsies pēc 2016.gada septembra;*
- *Saeimas Inovāciju apakškomisija lēma par Stipendiju programmu Ukrainas zinātniekiem vēl šī gada februārī LV prezidentūras laikā, bet IZM „troika" to veikli "noairēja" un Ukrainas zinātniekus savāc pašreiz Eiropas Savienībai naidīgais Krievijas režīms;*

Kas par šīm visām nejēdzībām un to radītajiem ekonomiskajiem zaudējumiem atbildēs? Simtiem miljonus vērta zinātnes infrastruktūra netiek noslogota gandrīz gadu. Vīlušies cerībās aizbrauc gan jauni, gan pieredzējuši zinātnieki. Kam ir jāuzņemas politiskā atbildība? Acīmredzami, ka ierēdņiem pilnas algas maksā par procesu, bet ne par rezultātu. Vai ierēdniecība vispār pazīst jēdzienus „patriotisms" un atbildība par valsti? Nekādi termiņi nav svarīgi. Ja zinātnieku komanda nokavē konkursa termiņu, tad viss ir zaudēts.

Tagad, trīs mēnešus vēlāk redzams, ka nekas nav mainījies. Sliktāk, termiņi konkursu naudas plūsmām nobīdīsies uz 2016.gada beigām, vai pat uz 2017.gadu. Acīmredzami steigas nebūs, jo ja ES struktūrfondu naudu Latvijas ierēdniecība zinātnei un inovācijām nevar izlietot savā manierē, tad labāk palikt procesā nekā riskēt.

Riski ir ļoti nopietni. Atšķirībā no iepriekšējiem ES Strukturfondu plānošanas periodiem būs būtiska. Eiropas Komisijai naudas izlietošanas procesa uzraudzībā Latvijā nāk palīgā *„veco"* dalībvalstu nodokļu maksātāji. Eiropas Komisijai ir svēts subsidiaritātes princips. Tā var brīnīties, bet tā nedrīkst iebilst, ja Latvija labākas zināšanu apmaiņas nodrošināšanai uzbūvē „autobāni" starp LU un RTU kampusiem. Vienīgie, kas var uzdot pamatotus jautājumus un prasīt atbildes nodokļu maksātāju vārdā, ir pedantiskie veco dalībvalstu auditori. Viņi ir gatavi šurp atbraukt. Tātad *„autobāni"* ar daudziem *„atbirumiem"* būvēt ir riskanti. Labāk saņemt labas un garantētas algas gadiem par teicienu „*mēs pie tā strādājam*". Zīle būs rokā!!!

Latvijas zinātnes politikas „rezultātu" labi parādā EU Innovation scoreboard 2015: *http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards*. Ar 'Innovation Performance Indicator „ - 0.300 Latvija ir nožēlojami pēdējās vietās ES, tālu aiz Igaunijas (0,500) un vēl tālāk aiz Somijas (0.710). Tie ir dati par 2014.gadu. Destruktīvās 2015. un 2016. gadu politikas rezultātus pārliecinoši parāda degradējoši indikatori, kuri raksturo līdzdalību H2020 izpildē! Sekmības procents 2014.gadā bija 20% procentu un tagad tas ir nokritis līdz 11.91%.

1.2. Īsi par Latvijas zinātnieku rezultātiem HORIZONTS 2020 pirmo divu gadu konkursos un problēmām.

Tabula 1. rāda, ka atpaliekam pārliecinoši un tam ir skaidri redzami cēloņi. Tabulas pēdējā kolonā dots zinātnieku kopskaits valstī. Redzams, ka, rēķinot *„per capita",* Latvijā strādā 2,5 reizes mazāk zinātnieku kā vidēji ES un 4 reizes mazāk nekā Somijā. Skatoties uz tabulu, vēl ir jāatceras, ka resursi un nauda, kas pieejama Latvijas zinātniekiem *„per capita"* ir mazāka, nekā jebkurā citā no tabulā minētām valstīm. Salīdzinājums ar vecajām dalībvalstīm ir graujošs – tur vidēji zinātniekam pieejamie *„per capita"* resursi ir 20-40 reizes lielāki nekā Latvijas zinātniekam.

Nevienam nav noslēpums, kāds haotisks bezjēdzīgu reformu process un bungu rībonja, imitējot *„burnoje dejateļnost",* notiek valstī zinātnes, tehnoloģiju un inovāciju jomā pēdējos gados. Absolūtos skaitļos jau tā mazais, zinātnieku skaits valstī 2013.gadā *(PLE izpratnē)* salīdzinājumā ar 2012.gadu ir sarucis par vairāk kā 7%, ir ļoti maz audzis 2014. gadā un, acīmredzami ir nokritis radikāli 2015.gadā.

IZM iezīmētais mērķis - 100 M€ labi ja tiks izpildīts par 50%.

Tabula 1, kura ilustrē dažādu ES dalībvalstu, kandidātvalsts Turcijas un kaimiņvalstu Baltkrievijas, Ukrainas un Krievijas līdzdalību HORIZONTS 2020 konkursos un summārais rezultāts dažām valstīm FP 7 programmā

(dati uz 01.11.2015)

Valsts	Dalībnieki projektu pieteikumos	Dalībnieki projektu pieteikumos, kuri izvirzīti finansēšanai	Sagaidāmais finansējums M€	Sekmība % pēc dalībnieku skaita	Sekmība % pēc finansējuma	Zinātnieku skaits valstī EUROSTAT 2013 *(PLE)*
Latvija	**865**	**103** **FP7 356**	**17.502** **FP7 49.938**	**11.91**	**7.88**	**3748*(2014)*** **3625*(2013)*** **3904*(2012)***
Igaunija	1 368	183 **FP7 540**	51.326 **FP7 88.643**	13.38	11.16	4 407
Lietuva	1 040	101 **FP7 417**	14 768 **FP7 54 771**	9.71	5.38	8 557
Somija	5 406	637 **FP7 2 628**	252 081 **FP7 866560**	11.78	9.00	39 196
Zviedrija	7 003	947	438 033	13.52	12.10	62 043
Polija	5 171	545	127 057	10.54	8.00	71 472
Dānija	5 441	786	356 198	14.45	12.63	40 858
Īrija	4 021	488	251 023	14.62	13.04	15 732*(2012)*
Nīderlande	14 005	2 161	1 103 570	15.43	15.21	72 325
Austrija	6 269	980	389 893	15.63	14.16	39 924
Vācija	28 161	4 301	2 311.000	15.27	17.86	360 900
Lielbritānija	30 348	4 441	2 020 786	14.63	13.14	259 347
Francija	18 479	2 990	1 220 001	16.18	15.16	265 177
Turcija	2 399	226	54 517	9.42	7.72	82 121
Baltkrievija	118	18 **FP7 52**	2 824 **FP7 3 765**	15.25	12.61	18 500
Ukraina	521	54 **FP7 214**	7 068 **FP7 23.810**	10.36	5.76	66 200
Krievija	147	44 **FP7 545**	2 492 **FP7 72.324**	29.93	15.89	459 504
Indija	88	17	1 254	19.32	15.75	????

Kā redzams no tabulas, kopā Latvijai uz 2016.gada martu bija tikai 103 līdzdalības finansētos projektos. Panākumi gūti konkursos, kur varbūtība finansējuma iegūšanai bija 10-15% robežās.

Traģiski, ka ir ļoti maza līdzdalība konkursos un nav neviena panākuma M-S-C stipendiju programmā un ERC grantu piesaistē. Nav vairs Latvijā zinātnieku, kuriem, līdzās projektu stresam, būtu garantēta vismaz daļslodze vairāku gadu garumā radošam darbam un meklējumiem.

Mūsu profesūra neskaitās. Uz vienas rokas pirkstiem var saskaitīt profesorus, kuri ir spējīgi rosināt izcilu pētniecisku H 2020 projektu koordinatora statusā, savākt pasaulē iespējami labāko konsorciju un iegūt finansētu projektu. Starp 103 minētiem tāda projekta nav.

Tālāk tabulā 2 ir dota valsts vadošo institūtu panākumu statistika FP5, FP6, FP7 un HORIZONTS – 2020. Tabulā 2 zilā krāsā ir institūcijas līdzdalību skaits finansētos projektos, bet melnā krāsā līdzdalību kopskaits projektu pieteikumos, kas viennozīmīgi ir konkrētā institūta integrēts atpazīstamības rādītājs ES vienotā zinātnes telpā. Dotas arī TECHNOPOLIS atzīmes un redzama izteikta korelācija.

Tabula 2.

b	INSTITUTES	TOTAL	TOTAL	FP5	FP5	FP6	FP6	FP7	FP7	HORIZON 2020	HORIZON 2020	TECHNOPOLIS ranking
1	Institute of Mathematics and Computer Science, Uni.of Latvia	29	85	9	16	8	26	11	37	1	6	4
2	Latvian State Institute of Wood Chemistry	27	109	7	26	4	32	12	38	4	13	4
3	Institute of Materials and Structures, RTU	27	75	4	10	11	28	9	29	2	4	3
4	Institute of Solid State Physics, University of Latvia	22	81	8	9	5	33	7	31	2	8	4
5	Institute of Physics UL	22	48	9	11	3	17	10	17	0	3	2
6	FOTONIKA-LV, UL	21	85					8	24	1	19	
	FOTONIKA-LV, UL									0	8	
	Institute of Atomic Physics and Spectroscopy, UL	19	63	6	13	5	28	7	21	0	1	4
	Institute of Astronomy, University of Latvia	3	12	0	0	1	1	1	2	1	9	3
	Institute of Geodesy and Geoinformatics Uni.Latvia	1	2	0	0	0	0	1	1	0	1	1
7	RSU and A.Kirhenshtein Institute of Microbiology and Virology	18	94	3	16	3	20	8	37	4	21	3
8	Institute of Physical Energetics	17	38	8	10	2	9	5	9	2	10	2
9	Latvian Institute of Organic Synthesis	15	72	1	11	1	16	9	30	3	13	5
10	Latvian Biomedical Research and Study Centre	15	70	5	22	5	20	5	20	0	8	4
11	Baltic Studies Centre	15	35	3	8	5	11	5	11	2	5	2
12	*BIOR-Institute of Food Safety, Animal Health and Environment*	9	18	3	3	3	7	3	8			4
13	Institute of Aquatic Ecology	8	26	4	12	3	10	1	4	0	2	3
14	Institute of Chemical Physics, University of Latvia	6	18	2	4	2	5	0	6	2	6	3
15	Inst. of Polymer Mechanics, UL	6	43	0	14	5	14	1	14	1	8	2
16	Institute of Electronics and Computer Science	6	28	2	4	2	7	1	11	1	13	4
17	Latvian State Forestry Research Institute "Silava"	6	32	1	9	3	9	1	6	1	8	3
18	Transport and Telecommunication Institute (private)	3	22	0	0	0	4	3	18	1	5	4

Pēdējā tabula parāda Latvijas augstskolu sekmes HORIZONTS 2020 konkursos uz 2016.gada martu. Ir izteikti redzama sekmības procenta krišana. Rektori droši vien sāk strauji nosirmot, bet nespēj saņemt drosmi *„draudzīgām"* sarunām, IZM, FM un Saeimā. Tā vietā ir vieglāk iekasēt nepamatotus „nodokļus" un dividendes no veiksminiekiem uz to pašaizliedzības rēķina.

Savukārt LZA sirmās galvas droši sēž savā Staliņa *„baroko stila"* cietoksnī. LZA runas vīru uzvedība minētām varas struktūrām ir labi prognozējama un nav bīstama. Izmantojot *„goda viesa"* statusu un tukšus solījumus pat trešās šķiras ierēdnis viegli tiek galā ar jebkuru neapmierinātības izpausmi. Jaunpienācēji LZA elitē uztur tradīciju un arī klusē.

		TOTAL	TOTAL	FP5	FP5	FP6	FP6	FP7	FP7	H-2020	H-2020
1	University of Latvia									11	84
2	Riga Technical University									7	83
3	Riga Stradina University									4	21
4	Ventspils Augstskola									1	10
5	Latvijas Kultūras Akademija									1	1
6	Latvijas Jūras Akadēmija									1	1
7	Rezeknes Augskola									0	8
8	Daugavpils Universitāte									0	9
9	Latvijas Kultūras Koledža									0	8
10	Latvian Agriculture Uni									0	5
11	Vidzemes Augstskola									0	5
12	Liepājas Universitāte									0	4
13	Rīgas Ped&Vad Augstskola									0	2
14	Stockholm School of Econ									0	3
15	UN BIZNESA ADMINISTRACIJAS AUGSTSKOLA									0	1
16	INFORMACIJAS SISTEMU MENEDZMENTA AUGSTSKOLA SIA									0	1
17	LATVIJAS SPORTA PEDAGOGIJAS AKADEMIJAS									0	1

Mazie un vidējie uzņēmumi ir ES ekonomiskās politikas uzmanības centrā. Zinātnē orientēti MVU ir ES zinātnes un inovāciju politikas centrā. Tamdēļ ES HORIZONTS 2020 programmā salīdzinot ar FP7 ir vairāki finansu instrumenti, kuri rada lielāku pievilcību MVU dalībai tās konkursos. Tālāk Tabula 4 rāda Latvijas MVU panākumus. Zilā krāsā līdzdalība finansētos projektos, melnā krāsā līdzdalību skaits projektu pieteikumos kopā. Abi cipari viennozīmīgi ir izcilības rādītāji konkrētam uzņēmumam. Līdzdalība finansētā projektā H-2020, smagās konkurences apstākļos, apliecina gan izcilību, gan nodrošina atbalstu projekta realizācijai. Līdzdalību kopskaits projektu pieteikumos rāda, ka uzņēmums ir atpazīts un pieprasīts Eiropas vienotā zinātnes, tehnoloģiju un inovāciju telpā konkrētu projektu ideju realizācijai. No tabulas, kura rāda mūsu viennozīmīgus līderus *(pirmos 25)* pēc finansēto projektu skaita FP5&6&7+H2020, redzams, ka pagaidām Latvija nevar lepoties ar lielu skaitu panākumiem bagātu MVU un tam skaidrojums ir ļoti vienkāršs – tikai aptuveni 700 zinātnieku ir nodarbināti Latvijas uzņēmumos. Kopumā statistika ir sekojoša: iepriekšējās trijās programmās FP5&6&7 kopskaitā ir startējuši 299 Latvijas MVU ar līdzdalību 749 projektu pieteikumos. 102 projekti ir tikuši finansēti, attiecīgi: 43/155-FP5; 25/228-FP6 un 34/366-FP7. Kā redzams no tabulas programmā HORIZONTS 2020 Latvijā ir tikai 13 MVU, kuri saņēmuši H-2020 finansējumu dažādos konkursos.

Kopumā uz 2016.gada martu ir zināms, ka H2020 SMEs instrumenta pirmās kārtas projektu konkursos ir startējuši 78 Latvijas MVU ar 123 projektu pieteikumiem. Finansēti ir tikai 3 projekti *(sekmība 2.4%)*, no kuriem 2 ir FOTONIKA-LV balstīti projekti.

H2020 SMEs instrumenta otrās kārtas projektu konkursos ir startējuši 13 Latvijas MVU ar 20 projektu pieteikumiem. Viens ir guvis finansējumu.

Tabula 4, Latvijas SMS FP5, FP6, FP7 un HORIZONTS 2020 konkursos. Zilā krāsā finansēto projektu skaits.

Rank	MVU, kam ir projekti IP7unH-2020	TOTAL	TOTAL	FP5	FP5	FP6	FP6	FP7	FP7	H-2020	H-2020
1.	EKODOMA SIA	12	40	6	7	2	6	1	5	3	22
2.	Tilde SIA	10	65	1	10	2	10	5	35	2	9
3.	Plasma&Ceramic Tech. Ltd.	6	44	2	7	2	17	1	10	1	10
4.	Asla Biotech SIA	3	22	0	0	2	15	1	7		
5.	Ritols SIA	3	16	1	2	0	6	2	8		
6.	Let-Comm SIA	3	10	2	3	0	6	1	1		
7.	Latvian Intelligent Syst. SIA	2	11	1	1	1	9	0	1		
8.	Micro Dators Ltd. (SMART ME	2	8	0	0	0	0	2	8		
9.	ALGOREGO SIA	2	3	0	0	0	0	2	3		
10.	REGULA BALTIJA SIA	2	2	0	0	0	0	2	2		
11	LATVIJAS TEHN. CENTRS	2	4							2	4
12	Baltic Scientific Instr. Ltd	1	15	0	3	0	3	0	6	1	3
13	BALTIC CONSULTING Ltd	1	3	0	0	0	0	0	1	1	2
14	HEE Photonic Labs, Ltd	1	6	0	0	0	0	0	1	1	5
15	SIA RUBBER PRODUCTS	1	3							1	3
16	EUROLCDS SIA	1	5							1	5
16	RENESCO SIA	2	3							2	3
17	Rigas satiksme Ltd., Riga City	1	2	0	0	0	0	0	1	1	1
18	Nano RAY-T	1	1							1	1
19	REM PRO SIA	1	1							1	1
20	RUBER Tech Ltd	1	6							1	6
20	DPA, www.dpa.lv	1	8	0	0	0	0	1	1	0	7
21	Rīgas Austr.kl.Uni. Slimn.SIA	1	6	0	0	0	0	1	4	0	2
22	GroGlass SIA	1	5	0	0	0	0	1	3	0	2
23	Hanzas Elektronika, SIA	1	8	0	0	1	1	0	2	0	4
24	Cube-Media SIA	1	3	0	0	0	0	1	2	0	1
25	A/S-Biotechnical Center,JSC	1	10	1	3	0	4	0	3		
26	LATGALES MAIZNICA SIA	1	6	0	0	1	3	0	3		

1.3. Sasniegt vairāk!

Tālāk VĒSTIS tekstā *(2.nodaļa)* ir uzskaitīti jau izsludinātie un paredzamie 2016. un 2017.gadu H2020 konkursi, to tēmu konkursu struktūra, termiņi hronoloģiskā secībā un daudzviet īsi apraksti. Tā ir sarežģīta lasāmviela 30 lpp apjomā. Rūpīgas izpētes gadījumā tā dos iespēju lasītājam piedāvāt savai zinātniskai grupai, vai institūtam stratēģiju un ceļa karti līdzdalībai HORIZONTS 2020 uzdevumu izpildē.

Būtu priecīgas, ja man nebūtu taisnība, tomēr veiksme H2020 projektos faktiski ir vienīgā iespēja Latvijas zinātniskiem institūtiem un atsevišķām zinātniskām grupām pastāvēt neatkarīgi no valsts, IZM un dažkārt arī kādas universitātes destruktīvās attieksmes pret viennozīmīgu izcilību zinātnē. Tagad ir skaidri redzams, ka Latvijas zinātnei naidīgā gaisotnē, liela daļa no tabulā 2. minētiem institūtiem, bez līdzdalības ES Ietvara programmu projektu izpildē vairs nebūtu atrodami Latvijā vai veģetētu dažu zinātnes fanātiķu pārcilvēciskas piepūles rezultātā.

Tagadējā bezjēdzīga, un no augšas uzspiestā integrācija acīmredzami vēl vairāk samazinās institūtu iespējas uz radošu un patstāvīgu rīcību. Tabulas uzskatāmi rāda, ka juridisko statusu un neatkarību saglabājušie institūti nav salīdzināmi pēc apmēriem ar augstskolām, bet ir daudz sekmīgāki par augstskolām H2020 konkursos.

Mums ir jānoturas, mūsu tautai ir jānoturas, Latvijai ir jānoturas. Nāks labāki laiki un labākas Valdības un mūsu noturētie placdarmi noderēs izaugsmei nākotnes Latvijā.

Nav viegli būt padomdevējam šāda situācija, tomēr balstoties uz manu un manas komandas pieredzi tomēr atgādinu par iespējām, kuras, neatkarīgi no zinātņu disciplīnas, var izmantot stipras zinātnes grupas, institūti un pat izcilas zinātnes personības Latvijā. Arī tie, kuri jau iekļauti IZM *„norakstāmo"* sarakstā.

Maksimāla uzmanība ir jāvelta MSCA, ERC, FET-open un *Research Infrastructure* projektu konkursiem. Nožēlojamais bāzes finansējums zinātnē mums nav ļāvis uzkrāt pietiekošu zinātnisko kapacitāti un tamdēļ pavisam maz Latvijā ir tādu, kuri paši var rosināt projektus minētajos konkursos koordinatora statusā. Tomēr ir cita iespēja - ar lielāku varbūtību uz daudzskaitlīgu panākumu. Pirmajos trijos, no četriem minētajiem konkursiem, ES piedāvā iespēju līdzdalībai H2020 konkursos sadarbībā ar pasaules labākajiem zinātniekiem, kuriem ir augstākās raudzes zinātnes idejas.

Latvijā šobrīd ir 50-70 zinātniskas struktūras *(ar dažādu autonomijas pakāpi*) ar izcilām zinātnieku grupām, par kuru atpazīstamību Eiropas Vienotā Zinātnes telpā projektu vērtētājiem, šaubu nebūs. Ir jārisina vienkāršs uzdevums. Ir jākontaktē ar jau zināmiem un jāmeklē papildus jauni kolēģi, kuriem ir jāstāsta par šo konkursu iespējām un jālūdz realizēt savus projektus Latvijā.

Tā ir labi zināma prakse ES. Vispārējai zināšanai atgādinu: Helsinku Universitāte tagad lepojas ar vairāk, kā 30 ERC grantiem; Lunda Universitāte ar 24; Upsalas Universitāte ar Stoholmas Universitāte ar 25; Geteborgas Universitāte ar 14, Čhalmera Universitāte ar 17.
Līderu trijniekā Kembridža ar 128; Oksforda ar 126 un Londonas University College ar 88. Turpretī Latvijā ir tikai prof.A.Ambaiņa ERC grants, kurš tiek realizēts LU Datorikas fakultātē.

Visiem panākumus vēlot un atbalstu solot: Arnolds Ūbelis, 2016.gada 10.martā

Dr.Phys. Arnolds Ūbelis, bijušais FP5, FP6, FP7 un Horizonts 2020 Nacionālās kontaktpunktu grupas koordinators līdz 2015.gadam, e-mail: arnolds@latnet.lv

2. Vēstis no NKP un atgādinājumi par aktuālo HORIZONTS-2020 tematiskās un horizontālās aktivitātēs

Aizvien atgādinu, ka katram aktīvam zinātniekam vajag atvērt savu kontu ***Participant Portal,*** *http://ec.europa.eu/research/participants/portal/desktop/en/home.html. K*onts minētajā portālā jūtami atvieglos dzīvi iepazīstoties ar HORIZONTS 2020 un citām finansējuma iespējām. Šis konts ir labs palīgs projektu pieteikumu sagatavošanā un veiksmes gadījumā arī projektu realizēšanā. Pieredzējušiem zinātniekiem ir ieteicams pieteikties ekspertos gan HORIZON 2020 konkursiem, gan citiem darbiem, kur ekspertus meklē Eiropas Komisija.
(http://ec.europa.eu/research/participants/portal/desktop/en/experts/index.html)

Tālāk ātrai orientācijai ir dots HORIZONTS 2020 konkursu uzskaitījums to termiņu hronoloģiskā secībā līdz 2017.gada vēlam rudenim. Katram konkursam ir daudzskaitlīgs *„TOPIC"* saraksts un ir nepieciešams to rūpīgi izpētīt, lai identificētu sev vajadzīgo.

Kopumā šis saraksts jums ļaus sastādīt jūsu, vai jūsu zinātniskās grupas (*laboratorijas*) pirmā līmeņa stratēģisko plānu Jūsu līdzdalībai H-2020 konkursos divus gadus uz priekšu.

Dažviet esmu pievienojis pamataprakstus. *„TOPIC"* apakšlīmenī tas ir izdarīts pilnībā tikai konkursiem, kur, manuprāt, Latvijā varētu rasties daudzskaitlīgāka interese. Kā būs redzams tālāk, tad konkursu un „topic" saraksts priekš „Industry Leadership" un „Societal Challenges" ir ļoti garš un sarežģīts un lai tajā orientētos ir vajadzīga piepūle daudzu stundu garumā. Konkursu apakštēmas (*topics)* ir stipri specifiskas un līdzdalība eventuālā projekta pieteikuma konsorcijā būs atkarīga no, konkrētās zinātnieku grupas Latvijā, atpazīstamības starp tām institūcijām ES, no kurām nāks koordinātori projektu pieteikumiem. Nepieciešamais nosacījums, lai Latvijas zinātnieku grupa varētu uzņemties koordinēt konkurētspējīga projekta konsorciju ir kapacitātes apliecinājumi ar attiecīga līmeņa publikāciju sarakstu, līdzdalība līdzīgos FP7 projektos un atpazīstamība attiecīgās tēmas zinātnieku saimē Latvijā un pasaulē. Tas nav pietiekami, jo konkurētspējīga H-2020 projekta uzrakstīšanas koordinatora statusā izmaksas mērāmas līdz 30 000 eiro un Latvijas gadījumā tās ir konkrētā zinātnieka „personīgās „ investīcijas, kuras nav pieņemts uzskaitīt (*ir nu gan muļķis – neviens tam neliek to darīt!!!)*

Svarīgi, bet ne vienkārši priekš Latvijas, ir sagaidāmie TEAMING, *TWINNING un ERA-Chairs* projektu konkurss ar termiņu, sākot no 2016.gada septembra.

Specifiski un īpaši ir Eiropas zinātnes padomes *(ERC)* triju kategoriju granti: iesācējiem līdz 7 gadiem pēc disertācijas aizstāvēšanas; konsolidatoriem līdz 12 gadiem pēc disertācijas aizstāvēšanas un pieredzējušiem zinātniekiem. Nožēlojamā valsts finansējuma apstākļos Latvijā varbūt ir izauguši labi ja ducis zinātnieku, kuru zinātniskā produktivitāte ir tāda, lai varētu tos droši mudināt pieteikt ERC grantiem savas sapņu idejas ar nopietnu varbūtību uzvarēt.

Tajā pašā laikā, ja esam savas zemes un Latvijas zinātnes patrioti, ir jādara maksimāli daudz, mudinot citu zemju zinātniekus braukt uz Latviju ar M-S-C un ERC grantiem. Tā ir „win-win" situācija. Varēsim likt lietā nosacīti labo zinātnes infrastruktūru, kura radīta ar ERAF un citu finansējumu *(labi zinām, ka patreizējā noslodze pie mazā zinātnieku skaita ir vidēji krietni zem 20-30%)* un vienlaicīgi mūsu grupās un laboratorijās būs labi apmaksāti un zinātnē motivēti kolēģi, ar kuriem varēsim sadarboties tais brīvajos brīžos, kuri paliks pāri dienišķo maizi pelnot blakus darbos. Tā varbūt sagaidīsim laikus, kad sāksim nezaudēt *„kiberkarā",* kurš visās jomās izvērsts pret Latvijas tautu.

Tālāk ir HORIZONTS 2020 konkursu tabulas ar termiņiem hronoloģiskā secībā līdz 2017.gada pēdējām dienām. Informācija, kuru izmantojot var viegli piekļūt informācijas paketei *(WEB vietnes meklējot GOOGLE),* **lai ātri varētu orientēties situācijā, kad atnāk uzaicinājums līdzdalībai projekta konsorcijā!**

Atvainojos! Materiāls ir ļoti apjomīgs un noteikti nav izdevies izvairīties no kādām pārrakstīšanās kļūdām.

H2020	Societal Challenges	H2020-BBI-PPP-2015-2-1	03-12-2015

BIO BASED INDUSTRIES JOINT UNDERTAKING

The objective of the BBI Initiative is to implement a programme of research and innovation activities in Europe that will assess the availability of renewable biological resources that can be used for the production of bio-based materials, and on that basis support the establishment of sustainable bio-based value chains. Those activities should be carried out through collaboration between stakeholders along the entire bio-based value chains, including primary production and processing industries, consumer brands, SMEs, research and technology centres and universities. For 2015 the following calls were published:

- *From lignocellulosic feedstock to advanced bio-based chemicals, materials or ethanol*
- *Valorisation of cellulose into new added value products*
- *Innovative processes for sugar recovery and conversion from Municipal Solid Waste (MSW)*

H2020	Industrial Leadership	H2020-IND-CE-2016-17	8.December 2015 21 January 2016 8 March 2016 6 September2016 27October 2016 19 January 2017 21 January 2017 4 May 2017

INDUSTRY 2020 IN THE CIRCULAR ECONOMY

Topics:

1. ***PILOTS-03-2017:Pilot Lines for Manufacturing of Nanotextured surfaces with mechanically enhanced properties:*** *IA Innovation action, Two stage: 27 October 2016, 4 May 2017*
2. ***PILOTS-04-2017:Pilot Lines for 3D printed and/or injection moulded polymeric or ceramic microfluidic MEMS:*** *IA Innovation action, Two stage: 27 October 2016, 4 May 2017*
3. ***PILOTS-05-2017:Paper-based electronics:*** *IA Innovation action, Two stage: 27 October 2016, 4 May 2017*
4. ***FOF-06-2017:New product functionalities through advanced surface manufacturing processes for mass production:*** *IA Innovation action, Single stage: 19 January 2017;*
5. ***FOF-07-2017:Integration of unconventional technologies for multi-material processing into manufacturing systems:*** *IA Innovation action, Single stage: 19 January 2017;*
6. ***FOF-08-2017:In-line measurement and control for micro-/nano-enabled high-volume manufacturing for enhanced reliability:*** *IA Innovation action, Single stage: 19 January 2017;*
7. ***FOF-09-2017:Novel design and predictive maintenance technologies for increased operating life of production systems:****IA Innovation action, Single stage: 19 January 2017;*
8. ***FOF-10-2017:New technologies and life cycle management for reconfigurable and reusable customised products:*** *IA Innovation action, Single stage: 19 January 2017;*
9. ***FOF-12-2017:ICT Innovation for Manufacturing SMEs (I4MS):*** *CSA Coordination and support action, RIA Research and Innovation action: 19 January 2017;*
10. ***FOF-10-2017:New technologies and life cycle management for reconfigurable and reusable customised products:*** *IA Innovation action, Single stage: 21 January 2017;*
11. ***SPIRE-07-2017:Integrated approach to process optimisation for raw material resources efficiency, excluding recovery technologies of waste streams:*** *IA Innovation action, Single stage: 19 January 2017;*
12. ***SPIRE-08-2017:Carbon dioxide utilisation to produce added value chemicals:*** *IA Innovation action, Single stage: 19 January 2017;*
13. ***SPIRE-09-2017:Pilot lines based on more flexible and down-scaled high performance processing:*** *IA Innovation action, Single stage: 19 January 2017;*
14. ***SPIRE-10-2017:New electrochemical solutions for industrial processing, which contribute to a reduction of carbon dioxide emissions:*** *CSA Coordination and support action, Single stage: 19 January 2017;*
15. ***SPIRE-11-2017:Support for the enhancement of the impact of SPIRE PPP projects:*** *CSA Coordination and support action, Single stage: 19 January 2017;*

16. ***SPIRE-12-2017:Assessment of standardisation needs and ways to overcome regulatory bottlenecks in the process industry:*** *CSA Coordination and support action, Single stage: 19 January 2017;*

H2020	Industrial Leadership	H2020-NMBP-2016-2017	December 8, 2015 January 21, 2016 May 24, 2016 October 27, 2016 January 19, 2017 May 4, 2017

CALL FOR NANOTECHNOLOGIES, ADVANCED MATERIALS, BIOTECHNOLOGY AND PRODUCTION

Topics:

1. ***BIOTEC-05-2017:Microbial platforms for CO2-reuse processes in the low-carbon economy:*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
2. ***BIOTEC-06-2017:Optimisation of biocatalysis and downstream processing for the sustainable production of high value-added platform chemicals:*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
3. ***BIOTEC-07-2017:New Plant Breeding Techniques (NPBT) in molecular farming: Multipurpose crops for industrial bioproducts:*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
4. ***BIOTEC-08-2017:Support for enhancing and demonstrating the impact of KET Biotechnology projects:*** *CSA Coordination and support action, Single Stage, October 27, 2016;*
5. ***NMBP-04-2017:Architectured /Advanced material concepts for intelligent bulk material structures :*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
6. ***NMBP-05-2017:Advanced materials and innovative design for improved functionality and aesthetics in high added value consumer goods:*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
7. ***NMBP-06-2017:Improved material durability in buildings and infrastructures, including offshore :*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
8. ***NMBP-07-2017:Systems of materials characterisation for model, product and process optimisation :*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
9. ***NMBP-12-2017:Development of a reliable methodology for better risk management of engineered biomaterials in Advanced Therapy Medicinal Products and/or Medical Devices:*** *RIA Research and Innovation action, Two Stage, October 27, 2016, May 4, 2017;*
10. ***NMBP-14-2017:Regulatory Science Framework for assessment of risk benefit ratio of Nanomedicines and Biomaterials:*** *RIA Research and Innovation action, Two Stage, October 27, 2016, May 4, 2017;*
11. ***NMBP-15-2017:Nanotechnologies for imaging cellular transplants and regenerative processes in vivo :*** *RIA Research and Innovation action, Two Stage, October 27, 2016, May 4, 2017;*
12. ***NMBP-22-2017:Business models and industrial strategies supporting novel supply chains for innovative product-services:*** *RIA Research and Innovation action, Two Stage, October 27, 2016, May 4, 2017;*
13. ***NMBP-25-2017:Next generation system integrating tangible and intangible materials model components to support innovation in industry:*** *IA Innovation action, Two Stage, October 27, 2016, May 4, 2017;*
14. ***NMBP-28-2017:Framework and strategies for nanomaterial characterisation, classification, grouping and read-across for risk analysis:*** *RIA Research and Innovation action, Two Stage, October 27, 2016, May 4, 2017;*
15. ***NMBP-29-2017:Advanced and realistic models and assays for nanomaterial hazard assessment:*** *RIA Research and Innovation action, Two Stage, October 27, 2016, May 4, 2017;*
16. ***NMBP-35-2017:Innovative solutions for the conservation of 20th century cultural heritage:*** *RIA Research and Innovation action, Two Stage, October 27, 2016, May 4, 2017;*
17. ***NMBP-34-2017:Governing innovation of nanotechnology through enhanced societal engagement:*** *CSA Coordination and support action, Single Stage, January 19, 2017;*
18. ***NMBP-13-2017:Cross-cutting KETs for diagnostics at the point-of-care:*** *RIA Research and Innovation action, Single Stage, January 19. 2017;*
19. ***NMBP-15-2017:Nanotechnologies for imaging cellular transplants and regenerative processes in vivo :*** *CSA Coordination and support action, Single Stage, January 19, 2017;*

H2020	Industrial Leadership	H2020-ICT-2016-2017	19 January 2016 12 April 2016 8 November 2016 25 April 2017

INFORMATION AND COMMUNICATION TECHNOLOGIES CALL

Scene Setter:

The novelty in Horizon 2020 is the Pilot on Open Research Data which aims to improve and maximise access to and re-use of research data generated by projects. Projects funded under the ICT call of the Work Programme 2016-17 will by default participate in the Pilot on Open Research Data in Horizon 2020.

Projects have the possibility to opt out of the Pilot. Participation in the Pilot is not taken into account during the evaluation procedure. In other words, proposals will not be evaluated favourably because they are part of the Pilot and will not be penalised for opting out of the Pilot.

A further new element in Horizon 2020 is the use of Data Management Plans (DMPs) detailing what data the project will generate, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved. The use of a DMP is required for projects participating in the Open Research Data Pilot. Other projects are invited to submit a DMP if relevant for their planned research. Only funded projects are required to submit a DMP.

Further guidance on the Pilot on Open Research Data and Data Management is available on the Participant Portal.

Topics:

1. ***ICT-01-2016: Smart Cyber-Physical Systems:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
2. ***ICT-02-2016: Thin, Organic and Large Area Electronics:*** *IA Innovation action, RIA, Research and Innovation action, Single Stage, 12 April, 2016;*
3. ***ICT-03-2016:SSI - Smart System Integration:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
4. ***ICT-06-2016:Cloud Computing:*** *IA Innovation action, RIA, Research and Innovation action, Single Stage, 12 April, 2016;*
5. ***ICT-10-2016: Software Technologies:*** *RIA, Research and Innovation action, Single Stage, 12 April, 2016;*
6. ***ICT-12-2016: Net Innovation Initiative:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
7. ***ICT-13-2016: Future Internet Experimentation - Building a European experimental Infrastructure:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
8. ***ICT-14-2016-2017: Big Data PPP: cross-sectorial and cross-lingual data integration and experimentation:*** *IA Innovation action, Single Stage, 12 April, 2016;*
9. ***ICT-15-2016-2017: Big Data PPP: Large Scale Pilot actions in sectors best benefiting from data-driven innovation:*** *IA Innovation action, Single Stage, 12 April, 2016;*
10. ***ICT-17-2016-2017:Big data PPP: Support, industrial skills, benchmarking and evaluation:*** *RIA Research and Innovation action, Single Stage, 12 April, 2016;*
11. ***ICT-18-2016: Big data PPP: privacy-preserving big data technologies:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
12. ***ICT-21-2016: Support technology transfer to the creative industries:*** *IA Innovation action, Single Stage, 12 April, 2016;*

    Topic Description

    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.
13. ***ICT-22-2016: Technologies for Learning and Skills:*** *IA Innovation action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*

14. ***ICT-24-2016: Gaming and gamification*****:** *IA Innovation action, Single Stage, 12 April, 2016;*
15. ***ICT-25-2016-2017: Advanced robot capabilities research and take-up*****:** *IA Innovation action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
16. ***ICT-26-2016:System abilities, development and pilot installations*****:** *IA Innovation action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
17. ***ICT-29-2016:Photonics KET 2016*****:** *CSA Coordination and support action, IA Innovation action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*

Specific Challenge:

Europe's photonics industry is facing fierce global market competition and has to cope with a very high speed of technological developments in the field. Further major S&T progress and research and innovation investments are required for sustaining Europe's industrial competitiveness and leadership in photonic market sectors where Europe is strong (e.g. in laser-based manufacturing, medical photonics, sensing, lighting) and to exploit new emerging market opportunities.

Moreover, Europe is experiencing the existence of many fragmented and rather uncoordinated developments between many different national and regional players. Europe suffers also from a slow innovation process for turning many good R&D results into innovative products ('Valley of Death'). This requires a joined-up approach, covering missing links in the value chain, such as assembly and packaging of photonics components. Finally, Europe needs to better exploit the large enabling potential of photonics in many industrial sectors and in solutions addressing major societal challenges such as health and well-being, energy efficiency or safety …..

In order to capitalise on the opportunities coming from advances in Photonics for laser-based production, a topic addressing these is proposed in collaboration[[The Photonics PPP contributes 10M€ funding to this topic in the FoF Work Programme.]] with Factories of the Future topic FOF-13-2016 - Photonics Laser-based production.

Scope:

a. Research and Innovation Actions

Application driven core photonic technology developments for a new generation of photonic devices (including components, modules and sub-systems): Actions should demonstrate strong industrial commitment, be driven by user needs and concrete business cases supported by strong exploitation strategies, and cover the value/supply chain as appropriate. Actions should address manufacturability and validation of results for the target applications and should include standardisation activities as appropriate. Actions may also include the related materials. Focus is on one of the following themes:

i. **Biophotonics: advancing imaging for in-depth disease diagnosis:** The objective is to develop innovative, compact, easy to operate non- or minimally invasive functional imaging systems that are multi-band and multimodal (including photonics in combination with non-photonic techniques) to support the in vivo diagnosis of age and life-style related diseases like cancer, cardiovascular, osteoarticular, eye diseases and various neuro-pathologies, after a positive screening ….. **Breakthrough in miniaturization of SSL light engines and systems***:* Research into breakthrough miniaturization of SSL (LED and OLED) light engines and systems allowing for new types or revolutionary designs of luminaires and lamps with new form factors and expanding application fields, such as in automotive, signalling, wearables, and through the integration into building materials in the construction sector.

ii. **Pervasive high-specificity and high-sensitivity sensing for a safer environment***:* Breakthrough advances in cost-effective, compact, high-performance (both in specificity and sensitivity) photonic devices (including sources) for pervasive (i.e. large area coverage) near- and mid-infrared sensing applications (spectral range of 2 to 12 µm) for a safer environment, such as monitoring of water or air quality at large scale….

The Commission considers that proposals requesting a contribution from the EU of between EUR 2 and 4 million would allow this area to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Minimum one action per theme will be selected.

b. Innovation Actions

Focus is on one of the following themes:

i. **Application driven core photonic devices integrated in systems:** Focus is on **microdisplay-based immersive, augmented and virtual reality visualisation systems.** Actions should address validation and demonstration of new micro-display based visualization systems for key applications in e.g. healthcare, maintenance & training, entertainment, tourism or sports ……

ii. **Pilot line for Assembly and Packaging**[[Wherever appropriate, actions could seek synergies and co-financing from relevant national/regional research and innovation programmes, or from structural funds addressing smart specialisation. Actions combining different sources of financing should include a concrete financial plan detailing the use of these funding sources for the different parts of their activities. The objective is to set-up a pilot line for the assembly and packaging of integrated photonic.

The Commission considers that proposals requesting a contribution from the EU between EUR 2 and 4 million (for theme b.i), and between EUR 6 and 14 million (for theme b.ii) would allow these themes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Minimum one action per theme will be selected.

c. Coordination and support actions

i. **Coordination of regional photonics strategies:** The objective is to stimulate collaboration of photonics clusters to extend the range of Go-To-Market services for SMEs (including access to finance) through exchanging and adopting best practises, to network the SMEs with potential collaborators, business partners and customers, and to coordinate regional, national and European strategies and financial resources to the benefit of the local ecosystem and the regional smart specialisation strategies. Actions should build on on-going support actions in this field.

ii. **Photonics enhanced MakerLabs**[[Wherever appropriate, actions could seek synergies and co-financing from relevant national/regional research and innovation programmes, or from structural funds addressing smart specialisation. Actions combining different sources of financing should include a concrete financial plan detailing the use of these funding sources for the different parts of their activities.]] **:** The objective is to raise awareness, support hands-on learning and enhance skills of students, technicians and young professionals interested in photonics by extending existing facilities in order to provide access to photonic components, photonics-based equipment and related support services.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 1.5 million would allow these themes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. Minimum one action per theme will be selected.

Expected Impact:

Proposals should describe how the proposed work will contribute to the listed corresponding expected impacts and provide metrics, the baseline and concrete targets.

a. Research and Innovation Actions

i. Biophotonics: advancing imaging for in-depth disease diagnosis

- Substantially improved in-depth diagnosis and more effective treatment of age and life-style related diseases;
- Secured and reinforced industrial leadership in the biophotonics related market for Analysis and Diagnostic Imaging Systems.

ii.. Breakthrough in miniaturization of SSL light engines and systems

- Improved cost/performance ratio and higher energy efficiency of miniaturized SSL light engines and systems;
- Innovative lighting, expanding application fields and markets for lighting solutions and maintained European industrial leadership in the global lighting market.

iii. Pervasive high-specificity and high-sensitivity sensing for a safer environment

- Better and pervasive environmental sensing and a safer environment;
- Secured and reinforced industrial leadership in sensing applications for the environment.

b. Innovation Actions

i. Microdisplay-based immersive, augmented and virtual reality visualisation systems

- Major benefits for the users and end-markets from immersive, augmented and virtual reality visualisation systems;
- Increased market presence in augmented and virtual reality visualisation systems.

ii. Pilot line for Assembly and Packaging

- Industrial assembly and packaging of integrated photonic components in Europe and providing cost effective assembly and packaging solutions for SMEs;
- Strengthening Europe's position in the manufacture of integrated photonic components and covering the full value chain in Europe.

c. Coordination and support actions

i. Coordination of regional photonics strategies

- Improved coordination of strategies and resources within Europe and effective reinforcement of the European photonics sector.

ii. Photonics enabled MakerLabs

- A larger and better skilled photonics workforce and improved innovation capacity in photonics**.**

18. ***ICT-34-2016:Pre-Commercial Procurement open:*** *PCP Pre-Commercial Procurement: Single Stage, 12 April, 2016;*
19. ***ICT-35-2016:Enabling responsible ICT-related research and innovation:*** *RIA, Research and Innovation action, Single Stage, 8 November, 2016;*
20. ***ICT-36-2016:Boost synergies between artists, creative people and technologists:*** *CSA Coordination and support action, IA Innovation action, Single Stage, 8 November, 2016;*
21. ***ICT-04-2017:Smart Anything Everywhere Initiative:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 8 November, 2016;*
22. ***ICT-07-2017:5G PPP Research and Validation of critical technologies and systems:*** *IA Innovation action, RIA, Research and Innovation action, Single Stage, 8 November, 2016;*
23. ***ICT-08-2017:5G PPP Convergent Technologies:*** *IA Innovation action, RIA, Research and Innovation action, Single Stage, 8 November, 2016;*
24. ***ICT-09-2017:Networking research beyond 5G:*** *RIA, Research and Innovation action, Single Stage, 8 November, 2016;*
25. ***ICT-19-2017:Media and content convergence:*** *CSA Coordination and support action, IA Innovation action, Single Stage, 8 November, 2016;*
26. ***ICT-05-2017:Customised and low energy computing:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 25 April, 2017;*
27. ***ICT-11-2017:Collective Awareness Platforms for Sustainability and Social Innovation:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 25 April, 2017;*
28. ***ICT-16-2017:Big data PPP: research addressing main technology challenges of the data economy:*** *RIA Research and Innovation action, Single Stage, 25 April, 2017;*
29. ***ICT-17-2016-2017:Big data PPP: Support, industrial skills, benchmarking and evaluation:*** *RIA Research and Innovation action, Single Stage, 25 April, 2017;*

30. ***ICT-20-2017:Tools for smart digital content in the creative industries:*** *RIA Research and Innovation action, Single Stage, 25 April, 2017;*
31. ***ICT-23-2017:Interfaces for accessibility:*** *RIA Research and Innovation action, Single Stage, 25 April, 2017;*
32. ***ICT-27-2017:System abilities, SME & benchmarking actions, safety certification:*** *IA Innovation action, PCP Pre-Commercial Procurement, RIA Research and Innovation action, Single Stage, 25 April, 2017;*
33. ***ICT-28-2017:Robotics Competition, coordination and support:*** *CSA Coordination and support action, Single Stage, 25 April, 2017;*
34. ***ICT-30 - 2017:Photonics KET 2017:*** *CSA Coordination and support action, IA Innovation action, RIA Research and Innovation action, Single Stage, 25 April, 2017;*
35. ***ICT-31-2017:Micro- and nanoelectronics technologies:*** *CSA Coordination and support action, IA Innovation action, RIA Research and Innovation action, Single Stage, 25 April, 2017;*
36. ***ICT-32-2017:Startup Europe for Growth and Innovation Radar:*** *CSA Coordination and support action, IA Innovation action, Single Stage, 25 April, 2017;*
37. ***ICT-33-2017:Innovation procurement networks:*** *CSA Coordination and support action, Single Stage, 25 April, 2017;*
38. ***ICT-39-2016-2017: International partnership building in low and middle income countries:*** *IA Innovation action, Single Stage, Deadline 25 April, 2017.*

H2020	Societal Challenges	H2020-EEB-2016-2017	19 January 2016; 15.September 2016 21 January 2017; 07. June 2017;

CALL: ENERGY EFFICIENCY CALL 2016-2017

Topics:

8 EE-06-2016-2017:Engaging private consumers towards sustainable energy. *CSA Coordination and support action Single Stage, Deadline 15 September, 2016;*
9.EE-09-2016-2017:Engaging and activating public authorities. *CSA Coordination and support action Single Stage, Deadline 15 September, 2016;*
10. EE-11-2016-2017:Overcoming market barriers and promoting deep renovation of buildings. *CSA Coordination and support action Single Stage, Deadline 15 September, 2016;*
11. EE-13-2016:Cost reduction of new Nearly Zero-Energy buildings. *CSA Coordination and support action Single Stage, Deadline 15 September, 2016;*
12. EE-14-2016-2017:Construction skills. *CSA Coordination and support action Single Stage, Deadline 15 September, 2016;*
13. EE-16-2016-2017:Effective implementation of EU product efficiency legislation. *CSA Coordination and support action Single Stage, Deadline 15 September, 2016;*
14. EE-21-2016:ERA-NET Cofund actions supporting Joint Actions towards increasing energy efficiency in industry and services. ERA-NET-Cofund ERA-NET Cofund. *Deadline 15 September, 2016;*
15. EE-22-2016-2017:Project Development Assistance. *CSA Coordination and support action Single Stage, Deadline 15 September, 2016;*
16. EE-24-2016-2017:Making the energy efficiency market investible. *CSA Coordination and support action Single Stage, Deadline 15 September, 2016;*
17. EE-25-2016:Development and roll-out of innovative energy efficiency services. *CSA Coordination and support action Single Stage, Deadline 15 September, 2016;*
18. EE-01-2017:Waste heat recovery from urban facilities and re-use to increase energy efficiency of district or individual heating and cooling systems. *IA Innovation action, Single Stage, Deadline 19 January,, 2017;*
19. EE-02-2017:Improving the performance of inefficient district heating networks . *CSA Coordination and support action Single Stage, Deadline 19 January,, 2017;*
20. EE-12-2017:Integration of Demand Response in Energy Management Systems while ensuring interoperability through Public Private Partnership (EeB PPP). *IA Innovation action, Single Stage, Deadline 19 January,, 2017;*
21. EE-20-2017:Bringing to market more energy efficient and integrated data centres. *IA Innovation action, Single Stage, Deadline 19 January,, 2017;*
22. EE-15-2017:Increasing capacities for actual implementation of energy efficiency measures in industry and services. *CSA Coordination and support action Single Stage, Deadline 07 June,, 2017;*
23. EE-18-2017:Energy efficiency of industrial parks through energy cooperation and mutualised energy services. *CSA Coordination and support action Single Stage, Deadline 07 June,, 2017;*
24. EE-19-2017:Public Procurement of Innovative Solutions for energy efficiency. *CSA Coordination and support action Single Stage, Deadline 07 June,, 2017;*
25. EE-23-2017:Innovative financing schemes. *CSA Coordination and support action Single Stage, Deadline 07 June,, 2017;*

H2020	Societal Challenges	H2020-MG-2016-2017	20 January 2016; 26 January 2016; 29 September 2016; 26 January 2017; 01 February 2017; 19 October 2017

CALL: 2016-2017 MOBILITY FOR GROWTH

Scene Setter:

Transport is on the brink of a new era of "smart mobility" where infrastructure, transport means, travellers and goods will be increasingly interconnected to achieve optimised door-to-door mobility, higher safety, less environmental impact and lower operational costs. In order to achieve efficiency at system-level, targeted efforts are needed to develop and validate new solutions that can be rapidly deployed, notably on corridors and in urban areas. They will address transport means and infrastructure and integrate them into a user friendly European transport system of smart connected mobility and logistics. Research and innovation on equipment and systems for vehicles, aircraft and vessels will make them smarter, more automated, cleaner and quieter, while reducing the use of fossil fuels. Research and innovation on smart infrastructure solutions is necessary to deploy innovative traffic management and information systems, advanced traveller services, efficient logistics, construction and maintenance technologies.

As indicated in the Specific Programme, the "activities will be organised in such a way as to allow for an integrated and mode-specific approach as appropriate". Therefore, the contents of the 'Mobility for Growth' call have been structured as follows:

A) Areas addressing mode-specific challenges (technical and socio-economic)
1. Aviation
2. Waterborne

B) Areas addressing cross-modal and/or transport integration specific challenges (technical and socio-economic)
3. Safety
4. Urban
5. Logistics
6. Intelligent Transport Systems
7. Infrastructure

C) Cross-cutting issues
8. Socio-economic and behavioral research and forward looking activities for policy making

Topics:

1. **MG-4.3-2017:Innovative approaches for integrating urban nodes in the TEN-T core network corridors.** CSA Coordination and support action. Single-stage, Deadline February 01, 2017
2. **MG-5.2-2017:Innovative ICT solutions for future logistics operations.** RIA Research and Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
3. **MG-5.4-2017:Potential of the Physical Internet.** CSA Coordination and support action. Single-stage, Deadline February 01, 2017
4. **MG-7.1-2017:Resilience to extreme (natural and man-made) events.** RIA Research and Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
5. **MG-7.2-2017:Optimisation of transport infrastructure including terminals.** RIA Research and Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
6. **MG-7.3-2017:The Port of the future.** CSA Coordination and support action. Single-stage, Deadline February 01, 2017.
7. **MG-8.2-2017:Big data in Transport: Research opportunities, challenges and limitations.** CSA Coordination and support action. Single-stage, Deadline February 01, 2017.
8. **MG-8.4-2017:Improving accessibility, inclusive mobility and equity: new tools and business models for public transport in prioritised areas.** RIA Research and Innovation action. Single-stage. Deadline February 01,2017.
9. **MG-8.5-2017:Shifting paradigms: Exploring the dynamics of individual preferences, behaviours and lifestyles influencing travel and mobility choices.** RIA Research and Innovation action. Single-stage. Deadline February 01,2017.

H2020	Societal Challenges	H2020-ART-2016-2017	20 January 2016 29 September 2016 26 January 2017 27 September 2017

CALL: 2016-2017 AUTOMATED ROAD TRANSPORT

Scene Setter:

Road vehicle automation is one of the major trends that will shape the future of road transport and of our mobility. It holds the promise to help address many of the major challenges of today's transport system, such as user safety, energy efficiency, air quality and congestion, and to enhance the drivers' individual comfort and convenience. At the same time, it represents a critical testing ground for the ability of the European automotive industry to preserve and consolidate its global leadership. Automakers around the world are unanimous in predicting the emergence of systems for automated driving sometime in the near future.

Current technology will evolve further towards semi-automation and eventually towards full automation in real moving traffic. This evolution is very promising and may help to drastically reduce road fatalities to near zero, as more than 90% of road accidents are partly or fully due to human errors. Nevertheless, there are still many challenges related to technology, digital infrastructure, user and societal acceptance, driver behavior, regulation and legislation, and business models, which need to be tackled to enable the deployment of automated driving on European roads.

The main contribution of this call will be to support the short term introduction of passenger cars automated driving level 3 (Conditional Automation - Full driving performed by an automated driving system with the expectation that the human driver will respond appropriately to a request to intervene in real traffic conditions)[[The SAE International's standard J3016 identifies six levels of driving automation from "no automation" to "full automation"]] including safe stops, and of truck platooning in real traffic conditions from 2020 onwards. The main focus of this call is on demonstrations of automated driving systems for passenger cars, trucks and urban transport. Demonstrations will be complemented by further research on digital infrastructure to ensure the necessary level of safety, reliability and efficiency of automated driving systems and by a comprehensive analysis of safety aspects in relation to mixed traffic conditions and their influence on end user acceptance. This call includes also an action to assess road infrastructure requirements for higher levels of vehicle automation and to coordinate and support all research and innovation activities on automated driving both at European and international levels.

Cooperative systems and connectivity, based on communication of real-time vehicle data, as important means to increase the performance of automated driving will also be addressed in other calls, such as Mobility for Growth (topic MG-6.2-2016 on 'Large-scale demonstration(s) of cooperative ITS'). There is considerable complementarity between the development and deployment of Intelligent Transport Systems and that of Automated Road Transport. ICT components e.g. sensors and microsystems and data fusion which are important elements of automated road transport will be addressed in the LEIT/ICT Work Programme, as well as in the ECSEL Joint Undertaking. The 'Internet of Things' call [Work Programme Part Cross-cutting activities (Focus Areas) – Annex 20] addresses a pilot on 'Autonomous vehicles in a connected environment' which focuses on technology research in a broader IoT context, including horizontal elements such as ethics and privacy, trust and security, validation, standards and interoperability, user acceptability and human factor, liability and sustainability. There is also complementarity with the LEIT/Space Work Programme part, in particular with the call 'Applications in Satellite Navigation – Galileo', topic 'Galileo-1-2017 – EGNSS Transport'.

TOPICS:

1. **ART-01-2017:ICT infrastructure to enable the transition towards road transport automation.** IA Innovation action. Two-stage. Deadlines January 26, September 27, 2017.
2. **ART-03-2017:Multi-Brand platooning in real traffic conditions.** IA Innovation action. Two-stage. Deadlines January 26, September 27, 2017.
3. **ART-03-2017:Multi-Brand platooning in real traffic conditions.** IA Innovation action. Two-stage. Deadlines January 26, September 27, 2017.
4. **ART-07-2017:Full-scale demonstration of urban road transport automation.** IA Innovation action. Two-stage. Deadlines January 26, September 27, 2017.

H2020	Societal Challenges	H2020-GV-2016-2017	26 January 2016 01 February 2017

CALL: 2016-2017 GREEN VEHICLES

Scene Setter:

The European Green Vehicles Initiative (EGVI) represents an essential component of road transport research and innovation. It includes research, technological developments, innovation and demonstration in support of improvements in energy efficiency of road transport vehicles and the use of new types of non-conventional energies in road transport such as electricity, CNG and LNG, renewable and tailored fuels. All this is also aimed at achieving a positive impact on health issues due to polluting and noise emissions, particularly in urban environments.

The scope of the EGVI activities include both advanced power-train technologies and new vehicle architectures, weight reduction, improved aerodynamics and rolling resistance and component development for alternative fuel vehicles. Concerning new forms of energy, the interfaces between the vehicles and the

recharging infrastructure will also need to be taken into account with particular attention to standardisation issues. Demonstration activities will play an essential role in ensuring a proper and timely deployment of the new technologies.

This call has been defined taking into account the other calls and initiatives where the Transport Challenge is concerned, particularly the calls on 'Mobility for Growth' and 'Smart Cities and Communities', and the 'Fuel Cells and Hydrogen 2' joint undertakings. Multi-sectorial research involving other research and innovation areas such as Energy and Environment coupled with research on new materials, advanced production and Information and Communication Technologies will be encouraged, particularly in fields such as advanced energy storage systems and interfaces between vehicles and energy recharging infrastructures.

Topics:

1. **GV-01-2017:Optimisation of heavy duty vehicles for alternative fuels use.** IA Innovation action. Single-stage. Deadline February 01, 2017.
2. **GV-04-2017:Next generation electric drivetrains for fully electric vehicles, focusing on high efficiency and low cost.** RIA Research and Innovation action. Single-stage. Deadline February 01, 2017.
3. **GV-05-2017:Electric vehicle user-centric design for optimised energy efficiency.** RIA Research and Innovation action. Single-stage. Deadline February 01, 2017.
4. **GV-06-2017:Physical integration of hybrid and electric vehicle batteries at pack level aiming at increased energy density and efficiency.** IA Innovation action. Single-stage. Deadline February 01, 2017.
5. **GV-07-2017:Multi-level modelling and testing of electric vehicles and their components.** RIA Research and Innovation action. Single-stage. Deadline February 01, 2017.
6. **GV-08-2017:Electrified urban commercial vehicles integration with fast charging infrastructure.** IA Innovation action. Single-stage. Deadline February 01, 2017.
7. **GV-09-2017:Aerodynamic and flexible trucks.** IA Innovation action. Single-stage. Deadline February 01, 2017.
8. **GV-10-2017:Demonstration (pilots) for integration of electrified L-category vehicles in the urban transport system.** IA Innovation action. Single-stage. Deadline February 01, 2017.

H2020	Science with and for Society	H2020-SWAFS-2016-17	26 January 2016 30 August 2016 30 August 2017

CALL: SCIENCE WITH AND FOR SOCIETY

TOPICS:

1. **SwafS-01-2016:Participatory research and innovation via Science Shops.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2016.
2. **SwafS-02-2016:ERA-NET Cofund – Promoting Gender equality in H2020 and the ERA.** ERA-NET-Cofund ERA-NET Cofund. Single-stage. Deadline August 30, 2016.
3. **SwafS-03-2016-2017:Support to research organisations to implement gender equality plans.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
4. **SwafS-04-2016:Opening Research Organisations in the European Research Area.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
5. **SwafS-05-2017:New constellations of Changing Institutions and Actors .** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
6. **SwafS-06-2017:Engaging industry – Champions for RRI in Industrial Sectors.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
7. **SwafS-07-2016:Training on Open Science in the European Research Area.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
8. **SwafS-08-2017:European Community of Practice to support institutional change .**CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
9. **SwafS-09-2016:Moving from constraints to openings, from red lines to new frames in Horizon 2020.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
10. **SwafS-15-2016:Open Schooling and collaboration on science education.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
11. **SwafS-16-2016:Mapping the Ethics and Research Integrity Normative Framework.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
12. **SwafS-17-2016:The Ethics of informed consent in novel treatment including a gender perspective.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
13. **SwafS-18-2016:The Ethics of technologies with high socio-economic impact and Human Rights relevance.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
14. **SwafS-19-2016:Networking of National representatives and resources centres on Gender in R&I .** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
15. **SwafS-20-2016:ERA Mobility and Career Day.** Coordination and support action. Single-stage. Deadline August 30, 2016.

16. **SwafS-10-2017:Putting Open Science into action.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2017
17. **SwafS-11-2017:Science education outside the classroom.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2017
18. **SwafS-12-2017:Webs of Innovation Value Chains and Openings for RRI.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2017
19. **SwafS-13-2017:Integrating Society in Science and Innovation – An approach to co-creation.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2017.
20. **SwafS-14-2017:A Linked-up Global World of RRI.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2017.
21. **SwafS-21-2017:Promoting integrity in the use of research results in evidence based policy: a focus on non-medical research.** Coordination and support action. Single-stage. Deadline August 30, 2017.
22. **SwafS-22-2017:The ethical dimensions of IT technologies: a European perspective focusing on security and human rights aspects.** Coordination and support action. Single-stage. Deadline August 30, 2017.
23. **SwafS-23-2017:Responsible Research and Innovation (RRI) in support of sustainability and governance, taking account of the international context.** Coordination and support action. Single-stage. Deadline August 30, 2017.
24. **SwafS-24-2017:Trans-national operation of the EURAXESS Service network.** Coordination and support action. Single-stage. Deadline August 30, 2017.

H2020	Excellent science	ERC-2016-COG	2 February 2016

CALL FOR PROPOSALS FOR ERC CONSOLIDATOR GRANT

Scope:

Objectives

ERC Consolidator Grants are designed to support excellent Principal Investigators at the career stage at which they may still be consolidating their own independent research team or programme. Applicant Principal Investigators must demonstrate the ground-breaking nature, ambition and feasibility of their scientific proposal.

Size of ERC Consolidator Grants

Consolidator Grants may be awarded up to a maximum of **EUR 2 000 000** for a period of **5 years** *[[The maximum award is reduced pro rata temporis for projects of a shorter duration. This does not apply to ongoing projects.]].*

However, up to an **additional EUR 750 000** can be requested in the proposal to cover (a) eligible "start-up" costs for Principal Investigators moving to the EU or an Associated Country from elsewhere as a consequence of receiving the ERC grant and/or (b) the purchase of major equipment and/or (c) access to large facilities [[As any additional funding is to cover major one-off costs it is not subject to pro-rata temporis reduction for projects of shorter duration. All funding requested is assessed during evaluation.]].

Profile of the ERC Consolidator Grant Principal Investigator

The Principal Investigator shall have been awarded their first PhD **over 7 and up to 12 years prior to 1 January 2016**. The effective elapsed time since the award of the first PhD can be reduced in certain properly documented circumstances (see *"Eligible Principal Investigator"* above).

A competitive Consolidator Grant Principal Investigator must have already shown research independence and evidence of maturity, for example by having produced **several important publications without the participation of their PhD supervisor**. Applicant Principal Investigators should also be able to demonstrate a promising track record of early achievements appropriate to their research field and career stage, including significant publications (as main author) in major international peer-reviewed multidisciplinary scientific journals, or in the leading international peer-reviewed journals of their respective field. They may also demonstrate a record of invited presentations in well-established international conferences, granted patents, awards, prizes etc.

H2020	Industrial Leadership	SME-2 SME instrument phase 2	3 February 2016 14 April 2016 15 June 2016 13 October 2016 1 January 2017 6 April 2017 1 June 2017 18 October 2017

HORIZON 2020 DEDICATED SME INSTRUMENT 2016-2017

In phase 2, innovation projects will be supported that address the specific challenges identified and that demonstrate high potential in terms of company competitiveness and growth underpinned by a strategic business plan. Activities should focus on innovation activities such as demonstration, testing, prototyping, piloting, scaling-up,

miniaturisation, design, market replication and the like aiming to bring an innovation idea (product, process, service etc.) to industrial readiness and maturity for market introduction, but may also include some research.

H2020	Societal Challenges	H2020-SC6-CULT-COOP-2016-2017	4 February 2016 2 February 2017

CALL: UNDERSTANDING EUROPE - PROMOTING THE EUROPEAN PUBLIC AND CULTURAL SPACE

Scene Setter:

The resilience and cohesion of European societies are strongly conditioned by beliefs and identities, as well as by collective representations and constructions of past and present realities and expectations about the future. Research in the humanities and social sciences is well-placed for making important contributions to creating a new narrative for Europe by studying the drivers of and obstacles to the emergence of a European public sphere and a European cultural space. The role that technology can play in promoting a better understanding of the richness of Europe's heritage and diversity equally deserves further exploration as well as solutions-driven options.

A thorough and continuous reflection of Europe's cultural and social diversity and its past facilitates tackling societal challenges that European societies face today and will face tomorrow due to endogenous as well as external factors.

Understanding Europe is therefore a sine qua non condition for preparing and shaping the future, thus fostering truly reflective societies in Europe. A better understanding of Europe's cultural, social unity and diversity of its past will inform the reflection about present challenges/opportunities and help to find solutions for shaping Europe's future. Special attention should be dedicated to the accessibility for all and universal design in relation to the role that technology can play in promoting this better understanding.

This call has a link with the CO-CREATION call and with the cultural heritage related Topics of Societal Challenge 5 and other relevant parts of H2020.

TOPICS:

1. **CULT-COOP-01-2017:Democratic discourses and the rule of law.** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
2. **CULT-COOP-02-2017:Improving mutual understanding among Europeans by working through troubled pasts;** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
3. **CULT-COOP-03-2017:Cultural literacy of young generations in Europe.** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
4. **CULT-COOP-04-2017:Contemporary histories of Europe in artistic and creative practices.** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
5. **CULT-COOP-05-2017:Religious diversity in Europe - past, present and future .** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
6. **CULT-COOP-06-2017:Participatory approaches and social innovation in culture.** CSA Coordination and support action, RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
7. **CULT-COOP-07-2017:Cultural heritage of European coastal and maritime regions.** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
8. **CULT-COOP-08-2016:Virtual museums and social platform on European digital heritage, memory, identity and cultural interaction.** CSA Coordination and support action, RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
9. **CULT-COOP-09-2017:European cultural heritage, access and analysis for a richer interpretation of the past.** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
10. **CULT-COOP-10-2017:Culture, integration and European public space.** ERA-NET-Cofund ERA-NET Cofund. Single-Stage. Deadline 02 February 2017;

H2020	Societal Challenges	H2020-SC6-CO-CREATION-2016-2017	4 February 2016 14 May 2016 2 February 2017

CALL: CO-CREATION FOR GROWTH AND INCLUSION

Scene Setter:

Europe has many competitive strengths: the talent and creativity of its people, a strong industrial base, a vibrant services sector, a performing education system, its position as the world's biggest trading bloc and leading destination for foreign direct investment. Likewise, Europe can also count on its strong values, democratic institutions, its consideration for economic, social and territorial cohesion and solidarity, and its respect for the environment and cultural diversity.

Europe is facing the need to identify the obstacles to and to find untapped sources of growth and employment, renewing the legitimacy of public policy-making, especially through greater citizens' involvement, and of delivering better public services for all.

These issues need to be understood and addressed (cf. stronger evidence-base) in order for Europe to progress at socio-economic, political, educational and cultural levels, taking into account an increasingly interconnected and interdependent world. An emerging approach for tackling many of these issues is to encourage creativity and collaboration between various societal actors through co-creation. It is therefore proposed to focus on co-creation for growth and inclusion: engaging citizens, users, academia, social partners, public authorities, businesses including SMEs, creative sectors and social entrepreneurs in processes that span from identifying problems to delivering solutions.

The potential for societal and innovative development through co-creation in all sectors of society is widely recognised and the current socio-economic context, despite many difficulties, provides for manifold opportunities to fully exploit it.

A clear link with co-creation and social innovation in culture may also be found in CULT-COOP call.

Topics:

1. **CO-CREATION-01-2017:Education and skills: empowering Europe's young innovators.** IA Innovation action. Single Stage. Deadline 02 February 2017.
2. **CO-CREATION-04-2017:Applied co-creation to deliver public services.** IA Innovation action. Single Stage. Deadline 02 February 2017.
3. **CO-CREATION-06-2017:Policy-development in the age of big data: data-driven policy-making, policy-modelling and policy-implementation.** CSA Coordination and support action, RIA Research and Innovation action. Single Stage. Deadline 02 February 2017.
4. **CO-CREATION-07-2017:Towards a new growth strategy in Europe - Improved economic and social measurement, data and official statistics.** CSA Coordination and support action, RIA Research and Innovation action. Single Stage. Deadline 02 February 2017.

H2020	Societal Challenges	H2020-SC6-REV-INEQUAL-2016-2017	4 February 2016 2 February 2017

CALL: REVERSING INEQUALITIES AND PROMOTING FAIRNESS

Scene Setter:

Current trends in European societies bring with them opportunities for a more inclusive and united Europe on the one hand and risks and challenges on the other. Large disparities in human and social capacities are counterproductive to a sustainable and creative economy and participatory governance and inclusion. They jeopardise economic growth while threatening the very foundations of democracy, the rule of law and respect of human rights in Europe. These questions have to be analysed from a theoretical perspective and practical solutions to overcome inequalities have to be recommended.

For more inclusive societies to take shape in the medium term, coherent visions will need to be devised on how to foster a social and economic framework that promotes fairness and sustainability in Europe as key policy objectives, while enhancing social dialogue, respecting the continent's diversity and considering the global context.

The rise in inequalities in Europe and other parts of the world comprises hitherto unknown quantitative and qualitative dimensions: in the wake of the financial and economic crisis, highly increased levels of inequality (e.g. income and wealth concentration, gender inequality) can be detected alongside novel types of inequalities (e.g. debt inequality, inequality in access to justice or political life, spatial inequality). Options to reverse inequalities should be evidence-based and suggested at EU level.

These recent trends will need to be fully understood and effectively tackled through comprehensive research and innovation activities. Based on a sound understanding of inequality trends, policies and measures aimed at reversing various kinds of inequalities need to be examined. Different options for policies and measures (e.g. social dialogue, tax policy, new forms of evidence-based education, public service innovation, welfare state reforms, labour market, employment and consumer policies and practices) should be identified and their usefulness be compared. Specific emphasis should be given to the objective of reversing territorial inequalities, equal enjoyment of human rights and the conditions enabling comprehensive urban policies, the mobile provision of social services and an equal access to ICT use.

Most of the Topics of REV-INEQUAL concern primarily the EU, although a certain number of issues clearly have an international dimension. This is particularly the case for Topic 2 on radicalisation and Topic 4 on mobility and migration. The content of these Topics is linked with the ENG-GLOBALLY call (Topics 1 and 3) and with the Societal Challenge 7 Topic SEC-06-FCT-2016: "*Developing a comprehensive approach to violent radicalization in the EU from early understanding to improving protection*". In these Topics the participation of entities from the international partner countries and regions concerned is strongly encouraged.

Topics:

1. **REV-INEQUAL-09-2017:Boosting inclusiveness of ICT-enabled research and innovation.** CSA Coordination and support action. Single Stage. Deadline 02 February 2017;

H2020	Societal Challenges	H2020-DS-2016-2017	16 February, 2016 12 April, 2016 25 August, 2016 25 April 2017 24 August 2017

CALL: DIGITAL SECURITY FOCUS AREA

Call summary

Scene Setter:

ICT-driven transformations bring opportunities across many important sectors but also vulnerabilities to critical infrastructures and digital services, which can have significant consequences on the functioning of society, economic growth and the technological innovation potential of Europe. These challenges are being addressed through innovative approaches that cross the boundaries of individual H2020 pillars, calls and challenges. Therefore the main research & Innovation activities in Digital Security are grouped in a dedicated focus area cutting across LEIT–ICT and Societal Challenges parts of the work programme, including evidently the Societal Challenge 7 on "Secure Societies", but also the Societal Challenge 1 on "Health, demographic change and wellbeing".

Topics:

1. **DS-01-2016:Assurance and Certification for Trustworthy and Secure ICT systems, services and components.** CSA Coordination and support action, IA Innovation action, RIA Research and Innovation action. Single-stage. Deadline 12 April, 2016;
2. **DS-02-2016:Cyber Security for SMEs, local public administration and Individuals.** IA Innovation action, Single-stage. Deadline 25 August, 2016;
3. **DS-04-2016:Economics of Cybersecurity.** RIA Research and Innovation action. Single Stage. Deadline 25 August, 2016;
4. **DS-05-2016:EU Cooperation and International Dialogues in Cybersecurity and Privacy Research and Innovation.** RIA Research and Innovation action. Single Stage. Deadline 25 August, 2016;
5. **DS-06-2017:Cryptography.** RIA Research and Innovation action. Single Stage. Deadline 25 April, 2017;
6. **DS-07-2017:Addressing Advanced Cyber Security Threats and Threat Actors.** IA Innovation action, RIA Research and Innovation action. Single Stage. Deadline 24 August, 2017;
7. **DS-08-2017:Privacy, Data Protection, Digital Identities.** IA Innovation action, Single Stage. Deadline 24 August, 2017.

H2020	Industrial Leadership	nSME-2 SME instrument phase 1	24 February 2016 3 May 2016 7 September 2016 9 November 2016 15 February 2017 3 May 2017 6 September 2017 8 November 2017

HORIZON 2020 DEDICATED SME INSTRUMENT 2016-2017

***In phase 1**, a feasibility study shall be developed in order to verify the technological/practical as well as economic viability of an innovation idea/concept with considerable novelty to the industry sector in which it is presented (new products, processes, design, services and technologies or new market applications of existing technologies). The activities could, for example, comprise risk assessment, market study, user involvement, Intellectual Property (IP) management[[This is not limited to the costs of acquiring and enforcing European or international IPR titles but could include auditing and risk management schemes to protect IP assets across planned supply and distribution chains and more generally IP valorisation plans to enhance return on investment and lever commercial investment into the relevant project.]],*

H2020	Societal Challenges	H2020-SC1-2016-2017	16-02-2016 12-04-2016 13-04-2016 04-10-2016 31-01-2017 11-04-2017

PERSONALISED MEDICINE

Topics:

1. ***SC1-PM-14-2016:EU-Japan cooperation on Novel ICT Robotics based solutions for active and healthy ageing at home or in care facilities:*** *RIA Research and Innovation action. Single-Stage. Deadline 12 April 2016;*
2. ***SC1-HCO-01-2016:Valorisation of FP7 Health and H2020 SC1 research results :*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
3. ***SC1-HCO-02-2016:Standardisation of pre-analytical and analytical procedures for in vitro diagnostics in personalised medicine:*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
4. ***SC1-HCO-04-2016:Towards globalisation of the Joint Programming Initiative on Antimicrobial resistance:*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
5. ***SC1-HCO-05-2016:Coordinating personalised medicine research:*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
6. ***SC1-HCO-06-2016:Towards an ERA-NET for building sustainable and resilient health system models*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
7. ***SC1-HCO-10-2016:Support for Europe's leading Health ICT SMEs :*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
8. ***SC1-HCO-11-2016:Coordinated action to support the recognition of Silver Economy opportunities arising from demographic change:*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
9. ***SC1-HCO-12-2016:Digital health literacy:*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
10. ***SC1-HCO-13-2016:Healthcare Workforce IT skills:*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
11. ***SC1-HCO-14-2016:EU-US interoperability roadmap :*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
12. ***SC1-HCO-15-2016:EU eHealth Interoperability conformity assessment :*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
13. ***SC1-HCO-16-2016:Standardisation needs in the field of ICT for Active and Healthy Ageing :*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
14. ***SC1-PM-01-2016: Multi omics for personalised therapies addressing diseases of the immune system*** *RIA Research and Innovation action. Single-Stage. Deadline 13 April 2016;*
15. ***SC1-PM-05-2016:The European Human Biomonitoring Initiative :*** *COFUND-EJP COFUND (European Joint Programme). Single-Stage. Deadline 13 April 2016;*
16. ***SC1-PM-06-2016:Vaccine development for malaria and/or neglected infectious diseases:*** *RIA Research and Innovation action. Single-Stage. Deadline: 13 April 2016;*
17. ***SC1-PM-09-2016:New therapies for chronic diseases :*** *RIA Research and Innovation action. Single-Stage. Deadline: 13 April 2016;*
18. ***SC1-PM-11-2016-2017:Clinical research on regenerative medicine :*** *RIA Research and Innovation action. Single-Stage. Deadline: 13 April 2016;*
19. ***SC1-PM-12-2016:PCP - eHealth innovation in empowering the patient :*** *PCP Pre-Commercial Procurement. Single-Stage. Deadline: 13 April 2016;*
20. ***SC1-PM-13-2016:PPI for deployment and scaling up of ICT solutions for active and healthy ageing:*** *PPI Public Procurement of Innovative solutions. Single-Stage. Deadline: 13 April 2016;*
21. ***SC1-PM-21-2016:Implementation research for scaling-up of evidence based innovations and good practice in Europe and low- and middle-income countries*** *:RIA Research and Innovation action. Single-Stage. Deadline: 13 April 2016;*
22. ***SC1-PM-02-2017:New concepts in patient stratification :*** *RIA Research and Innovation action. Two-Stage. Deadlines: 04 October 2016, 11 April 2017;*
23. ***SC1-PM-07-2017:Promoting mental health and well-being in the young:*** *RIA Research and Innovation action. Two-Stage. Deadlines: 04 October 2016, 11 April 2017;*
24. ***SC1-PM-08-2017:New therapies for rare diseases :*** *RIA Research and Innovation action. Two-Stage. Deadlines: 04 October 2016, 11 April 2017;*
25. ***SC1-PM-10-2017:Comparing the effectiveness of existing healthcare interventions in the adult population :*** *RIA Research and Innovation action. Two-Stage. Deadlines: 04 October 2016, 11 April 2017;*
26. ***SC1-PM-15-2017:Personalised coaching for well-being and care of people as they age:*** *RIA Research and Innovation action. Single-Stage. Deadline: 31 January 2017;*
27. ***SC1-PM-16-2017:In-silico trials for developing and assessing biomedical products:*** *RIA Research and Innovation action. Single-Stage. Deadline: 14 March 2017;*
28. ***SC1-PM-17-2017:Personalised computer models and in-silico systems for well-being:*** *RIA Research and Innovation action. Single-Stage. Deadline: 14 March 2017;*
29. ***SC1-PM-19-2017:PPI for uptake of standards for the exchange of digitalised healthcare records:*** *PPI Public Procurement of Innovative solutions. Single-Stage. Deadline: 14 March 2017;*
30. ***SC1-PM-03-2017:Diagnostic characterisation of rare diseases :*** *RIA Research and Innovation action. Single-Stage. Deadline 11 April 2017;*

31. ***SC1-HCO-07-2017:Global Alliance for Chronic Diseases (GACD):*** *RIA Research and Innovation action. Single-Stage. Deadline 11 April 2017;*
32. ***SC1-HCO-03-2017:Implementing the Strategic Research Agenda on Personalised Medicine :*** *ERA-NET-Cofund ERA-NET Cofund. Single-Stage. Deadline 11 April 2017;*
33. ***SC1-HCO-08-2017:Actions to bridge the divide in European health research and innovation:*** *CSA Coordination and support action. Single-Stage. Deadline 11 April 2017;*
34. ***SC1-PM-20-2017:Development of new methods and measures for improved economic evaluation and efficiency measures in the health sector:*** *RIA Research and Innovation action. Single-Stage. Deadline 11 April 2017.*

H2020	Societal Challenges	H2020-BB-2016-2017	17 February 2016 13 September2016 14 February 2017 13 September2017

BIO-BASED INNOVATION FOR SUSTAINABLE GOODS AND SERVICES - SUPPORTING THE DEVELOPMENT OF A EUROPEAN BIOECONOMY

Topics:

1. ***BB-04-2016:Intelligent solutions and tools in forest production systems, fostering a sustainable supply of quality wood for the growing bioeconomy:*** ***IA*** *Research and Innovation action. Single-stage. Deadlines: 17 February 2017;*
2. ***BB-05-2017:Bio-based products: Mobilisation and mutual learning action plan:*** *CSA Coordination and support action. Single-stage. Deadlines: 17 February 2017;*
3. ***BB-06-2016:The regional dimension of bio-based industries:*** *CSA Coordination and support action. Single-stage. Deadlines: 17 February 2017*.

H2020	Societal Challenges	H2020-SFS-2016-2017	17 February 2016 13September2016 14 February 2017 13September2017

SUSTAINABLE FOOD SECURITY – RESILIENT AND RESOURCE-EFFICIENT VALUE CHAINS

Topics:

1. ***SFS-08-2017:Organic inputs – contentious inputs in organic farming:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
2. ***SFS-09-2016:Spotlight on critical outbreak of pests: the case of Xylella fastidiosa:*** RIA Research and Innovation action, Single-stage. Deadlines: 17 February 2016;
3. ***SFS-10-2017:Research and approaches for emerging diseases in plants and terrestrial livestock:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
4. ***SFS-11-2016:Challenges for disease management: Perennial crops in the tropics and sub-tropics:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
5. ***SFS-12-2016:Support for international research on animal health:*** CSA Coordination and support action. Single-stage. Deadlines: 17 February 2016;
6. ***SFS-13-2017:Validation of diagnostic tools for animal and plant health:*** IA Innovation action. Single-stage. Deadlines: 14 February 2017;
7. ***SFS-14-2016:Understanding host-pathogen-environment interactions:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
8. ***SFS-15-2016-2017:Breeding livestock for resilience and efficiency:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
9. ***SFS-16-2017:Bee health and sustainable pollination:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
10. ***SFS-17-2017:Innovations in plant protection:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
11. ***SFS-18-2016:Framework Partnership Agreement supporting Joint Actions towards Public-Public Partnerships in the Bioeconomy:*** FPA Framework Partnership Agreement. Single-stage. Deadlines: 13 September 2016;
12. ***SFS-19-2016:ERA-NET Cofund: Public-Public Partnerships in the bioeconomy:*** ERA-NET-Cofund ERA-NET Cofund. Single-stage. Deadlines: 17 February 2016;
13. ***SFS-20-2017:Towards a science-based regionalisation of the Common Fisheries Policy:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
14. ***SFS-20-2017:Towards a science-based regionalisation of the Common Fisheries Policy:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;

15. ***SFS-21-2016-2017:Advancing basic biological knowledge and improving management tools for commercially important fish and other seafood species:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
16. ***SFS-22-2017:Smart fisheries technologies for an efficient, compliant and environmentally friendly fishing sector:*** IA Innovation action, single-stage. Deadlines: 17 February 2017;
17. ***SFS-23-2016:Improving the technical performance of the Mediterranean aquaculture:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
18. ***SFS-24-2016:Reinforcing international cooperation on sustainable aquaculture production with countries from South-East Asia:*** CSA Coordination and support action, Single-stage, Deadline: 17 February 2016;
19. ***SFS-25-2016:Support Action to a common agricultural and wider bioeconomy research agenda:*** CSA Coordination and support action, Single-stage, Deadline: 17 February 2016;
20. ***SFS-26-2016:Legumes - transition paths to sustainable legume-based farming systems and agri-feed and food chains:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
21. ***SFS-27-2017:Permanent grassland – farming systems and policies:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
22. ***SFS-28-2017:Functional biodiversity – productivity gains through functional biodiversity: effective interplay of crop pollinators and pest predators:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
23. ***SFS-29-2017:Socio-eco-economics – socio-economics in ecological approaches:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
24. ***SFS-30-2017:Closing loops at farm and regional levels to mitigate GHG emissions and environmental contamination - focus on carbon, nitrogen and phosphorus cycling in agro-ecosystems:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
25. ***SFS-31-2016:Farming for tomorrow - developing an enabling environment for resilient and sustainable agricultural systems:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
26. ***SFS-32-2017:Promoting and supporting the eco-intensification of aquaculture production systems: inland (including fresh water), coastal zone, and offshore*** **:** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
27. ***SFS-33-2016:Understanding food value chain and network dynamics:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
28. ***SFS-34-2017:Innovative agri-food chains: unlocking the potential for competitiveness and sustainability:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
29. ***SFS-35-2017:Innovative solutions for sustainable food packaging*****:** IA Innovation action, Single-stage. Deadlines: 14 February 2017;
30. ***SFS-36-2017:Co-fund on "One Health" (zoonoses – emerging threats):*** COFUND-EJP COFUND (European Joint Programme). Single-stage. Deadlines: 14 February 2017;
31. ***SFS-37-2016:The impact of consumer practices in food safety: risks and mitigation strategies:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
32. ***SFS-38-2016:Impulsivity and compulsivity and the link with nutrition, lifestyle and the socio-economic environment:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
33. **SFS-39-2017:How to tackle the childhood obesity epidemic?:** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
34. ***SFS-40-2017:Sweeteners and sweetness enhancers:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
35. ***SFS-41-2016:EU-Africa Research and Innovation partnership on food and nutrition security and sustainable agriculture:*** ERA-NET-Cofund ERA-NET Cofund. Single Stage. 17 February 2016
36. ***SFS-42-2016:Promoting food and nutrition security and sustainable agriculture in Africa: the role of innovation:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
37. ***SFS-43-2017:Earth observation services for the monitoring of agricultural production in Africa*****:** RIA Research and Innovation action. Single-Stage. 14 February 2017;
38. ***SFS-44-2016:A joint plant breeding programme to decrease the EU's and China's dependency on protein imports:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
39. ***SFS-45-2016:Increase overall transparency of processed agri-food products:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
40. ***SFS-46-2017:Alternative production system to address anti-microbial drug usage, animal welfare and the impact on health:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;

41. ***SFS-47-2017:Management of soil water resources in the EU and China and its impact on agro-ecosystem functions*:** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
42. ***SFS-48-2017:Resource-efficient urban agriculture for multiple benefits – contribution to the EU-China Urbanisation Partnership*.** IA Innovation action. Single Stage. Deadline: 14 February 2017.

H2020	Societal Challenges	H2020-BG-2016-2017	17 February 2016 13.Septembris 2016 14 February 2017

BLUE GROWTH - DEMONSTRATING AN OCEAN OF OPPORTUNITIES

Topics:

1. ***BG-04-2017:Multi-use of the oceans marine space, offshore and near-shore: Enabling technologies*:** *CSA Coordination and support action. Single-stage. Deadline 14 February, 2017;*
2. ***BG-06-2017:Interaction between people, oceans and seas: a strategic approach towards healthcare and well-being* :** *CSA Coordination and support action. Single-stage. Deadline 14 February, 2017;*
3. ***BG-07-2017:Blue green innovation for clean coasts and seas*:** *CSA Coordination and support action. Single-stage. Deadline 14 February, 2017;*
4. ***BG-08-2017:Innovative sustainable solutions for improving the safety and dietary properties of seafood*:** *IA Innovation action. Single-stage. Deadline 14 February, 2017;*
5. ***BG-11-2017:The effect of climate change on Arctic permafrost and its socio-economic impact, with a focus on coastal areas*:** *RIA Research and Innovation action. Single-stage. Deadline 14 February, 2017.*

H2020	Societal Challenges	H2020-SCC-2016-2017	08-03-2016 05-04-2016 06-09-2016

CALL: SMART AND SUSTAINABLE CITIES

Call summary

European cities are forerunners in the transition towards a low carbon and resource efficient economy. A fast growing percentage (currently 72%) of the EU population lives in urban areas, using 70% of our energy. Quality of city life and the attractiveness of cities as environments for learning, innovation, doing business and job creation are now key parameters for success in the global competition for talent, growth and investments.

Key challenges for Smart and Sustainable Cities are to provide solutions to significantly increase cities' overall energy and resource efficiency through actions addressing the building stock, energy systems, mobility, climate change, water and air quality. Such actions should bring profound economic, social and environmental impacts, resulting in a better quality of life (including health and social cohesion), competitiveness, jobs and growth.

This new "Smart and Sustainable Cities" cross-cutting focus area has a clear aims to bring together cities, industry and citizens to demonstrate solutions and business models that can be scaled up and replicated, and that lead to measurable benefits in energy and resource efficiency, new markets and new jobs. The scope will include the creation of urban spaces powered by secure, affordable and clean energy, smart electro-mobility, smart tools and services, innovative nature-based solutions and showcasing economic viability.

Particular focus will be on creating the right enabling frameworks for large-scale innovation at urban scale, including the development and testing of new business, financing and governance models that allow for quick replication at scale.

This cross-cutting call on Smart and Sustainable Cities comprises two distinct but mutually reinforcing parts.

Smart Cities and Communities (SSC1) focusses on demonstrating sustainable, cost-effective and replicable district-scale solutions at the intersection of energy, transport enabled by ICT. They should integrate smart homes, energy efficiency measures, very high shares of renewables, smart grids, energy storage, electric vehicles and smart charging infrastructures, using latest generation ICT platforms (and infrastructure) based on open specifications. This should in turn help to manage a successful transformation towards intelligent, user-driven and demand-oriented city infrastructure and services.
It continues with the 'lighthouse project' approach of the Smart Cities calls since 2014. The 2020 goal is to have a significant number of new lighthouse cities of all sizes all over Europe, in a very large number of Member States with various, climatic and economical positions.

Sustainable cities though Nature-based solutions (SSC2-4) focusses on providing evidence that re-naturing of cities through the deployment of innovative, locally adapted, systemic solutions - that are inspired and

supported by nature - can be a cost-effective and economically viable way to make cities more sustainable, resilient, greener, and healthier. This will also help to increase their attractiveness for citizens, new economic activities and investments.
The replication of successfully demonstrated solutions can be further spread by the European Innovation Partnership on Smart Cities and Communities.

A novelty in Horizon 2020 is the Pilot on Open Research Data which aims to improve and maximise access to and re-use of research data generated by projects. Projects funded under 'Smart and Sustainable Cities' will by default participate in the Pilot on Open Research Data in Horizon 2020.

Topics:

1. **SCC-1-2016-2017:Smart Cities and Communities lighthouse projects.** IA Innovation action. Single Stage. Deadline 05 April;

H2020	Societal Challenges	H2020-SC5-2016-2017	08-03-2016 08-09-2016 07-03-2017 05-09-2017

CALL: GREENING THE ECONOMY

Topics:

1. **SC5-01-2016-2017:Exploiting the added value of climate services .** RIA Research and Innovation action. Single Stage. Deadline 07 March, 2017;
2. **SC5-02-2017:Integrated European regional modelling and climate prediction system.** RIA Research and Innovation action. Single Stage. Deadline 07 March, 2017;
3. **SC5-04-2017:Towards a robust and comprehensive greenhouse gas verification system .** RIA Research and Innovation action. Single Stage. Deadline 07 March, 2017;
4. **SC5-07-2017:Coordinating and supporting research and innovation actions on the decarbonisation of the EU economy.** CSA Coordination and support action. Single Stage. Deadline 07 March, 2017;
5. **SC5-08-2017:Large-scale demonstrators on nature-based solutions for hydro-meteorological risk reduction.** RIA Research and Innovation action. Two Stage. Deadlines 07 March and 05 September, 2017;
6. **SC5-18-2017:Novel in-situ observation systems.** RIA Research and Innovation action. Single Stage. Deadline 07 March, 2017;
7. **SC5-19-2017:Coordination of citizens' observatories initiatives.** CSA Coordination and support action. Single Stage. Deadline 07 March, 2017;
8. **SC5-22-2017:Innovative financing, business and governance models for adaptive re-use of cultural heritage.** RIA Research and Innovation action. Single Stage. Deadline 07 March, 2017;
9. **SC5-26-2017:Pre-commercial procurement on soil decontamination.** PCP Pre-Commercial Procurement. Single Stage. Deadline 07 March, 2017;

H2020	Societal Challenges	H2020-FoodScannerPrize-2015-1	09-03-2016

HORIZON PRIZE - FOOD SCANNER

The goal of this contest is to improve the quality of citizens' health and well-being by helping them to better monitor their food intake with the use of a food scanner. The technological solution(s) submitted should benefit a wide range of the EU population, from healthy citizens to citizens suffering from food intolerance, obesity or allergies, by providing meaningful information on their food consumption. This prize is expected to stimulate creative thinking across established industrial and academic research organisations, resulting in breakthrough solutions that can seed and drive the European industry forward by breaking down the limits in food intake measurements and detection.

The Food Scanner Horizon Prize is a € 1.000.000 challenge prize.

H2020	Industrial Leadership	H2020-OpticalPrize-2015	15-03-2016

HORIZON PRIZE – BREAKING THE OPTICAL TRANSMISSION BARRIERS

Scope:

The Horizon Prize for breaking the optical transmission barriers is a €500 000 challenge prize. It will be awarded to a solution that maximises the fibre capacity per channel, spectrum range and/or spectral efficiency and reach. It should also be energy efficient, economically viable, and easy to install and deploy. The solution should have a strong potential to be adopted in future generations of optical-system products. The feasibility of the approach will have to be demonstrated through clear experimental results.

OBJECTIVES

The objectives are:

- *To overcome the current limitations of long-distance, optical transmission systems;*
- *To meet the bandwidth demand explosion;*

- *To provide the resources for future applications;*
- *To address the aspects of energy efficiency and economic viability of such optical breakthrough systems;*
- *To stimulate creative thinking across established SMEs, industrial and academic research organisations, but also to seed new industry to address the key component and system related questions, resulting in breakthrough solutions that can drive the European industry forward.*

H2020	Industrial Leadership	H2020-INNOSUP-2016-2017	17-03-2016

FOR A BETTER INNOVATION SUPPORT TO SMES

Scene Setter:

Small, innovative companies create the majority of new jobs in the European economy. A strong rationale exists for public support to SMEs' innovation activities in order to overcome market failures specific to SMEs and to fully realise their growth potential. The public supports 'SME innovation' with grants, subsidised loans, equity and a wide range of innovation support services. However, SMEs receiving innovation support often remain dissatisfied with the services they receive; while at the same time the public expects a higher return from the support provided. The nature of innovation is changing: open data, open software, open hardware design and crowd-funding make it easier and cheaper to start enterprises with limited own resources – but the challenge arises from scaling these initial offerings to create growth and jobs. Social innovation is required at the interface between public services and private enterprise to maintain the high standard and security of living in Europe. While small enterprises face challenges in recruiting talent - among others as a result of increased mobility – researchers have problems pursuing academic careers and work below their qualifications.

As the nature and environment for innovation changes the public innovation support has not only to follow those developments but also become proactive in shaping them.

The following call for proposal is one element of a broader action to develop the ecosystem of innovation support to SMEs in Europe. Where appropriate, a highly specialised support service may be established at European level to complement existing national and regional services. Generally, the actions are designed to provide opportunities to Member States and regions to enhance their services through collaboration, peer-learning and uptake of new approaches. In the work programme 2016-17 emphasis is put on testing three new approaches to a better innovation support in large pilot actions that should deliver results in time for the start of discussion on the next framework programme for research and innovation. The Enterprise Europe Network, present in all European regions and co-financed by them, the National Contact Points (NCPs) and the Member States are expected to play an important role in implementing these pilot actions and transferring the result 'in-real-time' to their regions.

Topics:

INNOSUP-05-2016-2017:Peer learning of innovation agencies: CSA-LS CSA Lump sum. Deadlines: 18 October 2016; 8 March 2017; 18 October 2017;

INNOSUP-07-2017:Innovating SMEs - segmentation along lifecycle and sectors (analytical research activity): RIA Research and Innovation action. Single-stage. 28 March 2017;

INNOSUP-08-2017:A better access to industrial technologies developed overseas : SGA-CSA Specific Grant agreement and Coordination and Support Action. Single-stage.Deadline 28 March 2017;

INNOSUP-01-2016-2017:Cluster facilitated projects for new industrial value chains: IA Innovation action. Two – stage. Deadlines: 6 April 2016; 8 September 2016;

INNOSUP-04-2016:SMEs for social innovation – Challenge platform: CSA Coordination and support action. Single-stage. Deadline 28 April 2016;

INNOSUP-02-2016:European SME innovation Associate - pilot: CSA Coordination and support action. Single-stage. Deadline 30 June 2016;

INNOSUP-03-2017:Technology services to accelerate the uptake of advanced manufacturing technologies for clean production by manufacturing SMEs: CSA Coordination and support action. Single-stage. Deadline 27 March 2017;

H2020	Societal Challenges	H2020-SC6-REV-INEQUAL-2016-20	04-04-2016

CALL: REVERSING INEQUALITIES AND PROMOTING FAIRNESS

Scene Setter:

Current trends in European societies bring with them opportunities for a more inclusive and united Europe on the one hand and risks and challenges on the other. Large disparities in human and social capacities are counterproductive to a sustainable and creative economy and participatory governance and inclusion. They jeopardise economic growth while threatening the very foundations of democracy, the rule of law and respect of human rights in Europe. These questions have to be analysed from a theoretical perspective and practical solutions to overcome inequalities have to be recommended.

For more inclusive societies to take shape in the medium term, coherent visions will need to be devised on how to foster a social and economic framework that promotes fairness and sustainability in Europe as key

policy objectives, while enhancing social dialogue, respecting the continent's diversity and considering the global context.

The rise in inequalities in Europe and other parts of the world comprises hitherto unknown quantitative and qualitative dimensions: in the wake of the financial and economic crisis, highly increased levels of inequality (e.g. income and wealth concentration, gender inequality) can be detected alongside novel types of inequalities (e.g. debt inequality, inequality in access to justice or political life, spatial inequality). Options to reverse inequalities should be evidence-based and suggested at EU level.

These recent trends will need to be fully understood and effectively tackled through comprehensive research and innovation activities. Based on a sound understanding of inequality trends, policies and measures aimed at reversing various kinds of inequalities need to be examined. Different options for policies and measures (e.g. social dialogue, tax policy, new forms of evidence-based education, public service innovation, welfare state reforms, labour market, employment and consumer policies and practices) should be identified and their usefulness be compared. Specific emphasis should be given to the objective of reversing territorial inequalities, equal enjoyment of human rights and the conditions enabling comprehensive urban policies, the mobile provision of social services and an equal access to ICT use.

Most of the Topics of REV-INEQUAL concern primarily the EU, although a certain number of issues clearly have an international dimension. This is particularly the case for Topic 2 on radicalisation and Topic 4 on mobility and migration. The content of these Topics is linked with the ENG-GLOBALLY call (Topics 1 and 3) and with the Societal Challenge 7 Topic SEC-06-FCT-2016: "*Developing a comprehensive approach to violent radicalization in the EU from early understanding to improving protection*". In these Topics the participation of entities from the international partner countries and regions concerned is strongly encouraged.

Topics:

1. **REV-INEQUAL-01-2016:An empirically informed European theory of justice and fairness.** RIA Research and Innovation action. Single-stage. 04 February, 2016;
2. **REV-INEQUAL-02-2016:Contemporary radicalisation trends and their implications for Europe .** RIA Research and Innovation action. Single-stage. 04 February, 2016;
3. **REV-INEQUAL-03-2016:Dynamics of inequalities across the life-course.** ERA-NET-Cofund ERA-NET Cofund. Single-stage. 04 February, 2016;
4. **REV-INEQUAL-04-2016:Intra-EU mobility and its impacts for social and economic systems.** RIA Research and Innovation action. Single-stage. 04 February, 2016;
5. **REV-INEQUAL-05-2016:Inequalities in the EU and their consequences for democracy, social cohesion and inclusion.** RIA Research and Innovation action. Single-stage. 04 February, 2016;
6. **REV-INEQUAL-06-2016:Tackling inequalities at their roots: new policies for fairness in education from early age .** RIA Research and Innovation action. Single-stage. 04 February, 2016;
7. **REV-INEQUAL-07-2016:Spatial justice, social cohesion and territorial inequalities.** RIA Research and Innovation action. Single-stage. 04 February, 2016;
8. **REV-INEQUAL-08-2016:Fighting inequalities through policies against tax fraud and tax evasion.** RIA Research and Innovation action. Single-stage. 04 February, 2016;
9. **REV-INEQUAL-09-2017:Boosting inclusiveness of ICT-enabled research and innovation.** RIA Research and Innovation action. Single-stage. 04 February, 2016;
10. **REV-INEQUAL-10-2016:Multi-stakeholder platform for enhancing youth digital opportunities.** CSA Coordination and support action. Single-stage. 04 February, 2016;

H2020	Industrial Leadership	H2020-IOT-2016-2017	12-04-2016

INTERNET OF THINGS

Scene Setter:

Internet of Things - Focus Area (IoT- FA) *ambition is to foster the take up of IoT in Europe and to enable the emergence of IoT ecosystems supported by open technologies and platforms. It will be addressed through a complementary set of activities structured around Large Scale Pilots.*

IoT Pilots will make use of the rich portfolio of technologies and tools so far developed and demonstrated in reduced and controlled environments and extend them to real-life use case scenarios with the goal of validating advanced IoT solutions across complete value chains with actual users and proving its enormous socio-economic potential.

Support actions provide consistency and linkages between the pilots and complement them by addressing horizontal challenges critically important for the take-up of IoT at the anticipated scale. These include ethics and privacy[[In the context of this call, the concept of privacy refers to the EU legal provisions applicable at the moment of pilot implementation in relation to both the "right to privacy" (right to respect for private and family life) but as well to the "right to protection of personal data".]], trust and security, respect for the scarcity and vulnerability of human attention, validation and certification, standards and interoperability, user acceptability and control, liability and sustainability. A coordination body will ensure an efficient interplay of the various elements of the IoT-FA and liaise with relevant initiatives at EU, Member States and international levels.

***TOPICS**:*

***IoT-01-2016: Large Scale Pilots**, IA Innovation action, Single stage; Deadline 12-04-2016;*

Specific Challenge:

The challenge is to foster the deployment of IoT solutions in Europe through integration of advanced IoT technologies across the value chain, demonstration of multiple IoT applications at scale and in a usage context, and as close as possible to operational conditions. Compared to existing solutions, the roadblocks to overcome include i) the integration and further research and development where needed of the most advanced technologies across the value chain (components, devices, networks, middleware, service platforms, application functions) and their operation at large scale to respond to real needs of end-users (public authorities, citizens and business), based on underlying open technologies and architectures that may be reused across multiple use cases and enable interoperability across those; ii) the validation of user acceptability by addressing, in particular, issues of trust, attention, security and privacy through pre-defined privacy and security impact assessments, liability, coverage of user needs in the specific real-life scenarios of the pilot, iii) the validation of the related business models to guarantee the sustainability of the approach beyond the project.

***IoT-02-2016:IoT Horizontal activities**, CSA Coordination and support action; Deadline 12-04-2016;*

Specific Challenge:

The challenge is to ensure a sound coherence and exchanges between the various activities of the Focus Area, and notably cross fertilisation of the various pilots for technological and validation issues of common interest across the various use cases. Issues of horizontal nature and topics of common interest, such as privacy, security, user acceptance, standardisation, creativity, societal and ethical aspects, legal issues and international cooperation, need to be coordinated and consolidated across the pilots to maximise the output and to prepare the ground for the next stages of deployment including pre-commercial or joint public procurement. A related challenge is to foster links between communities of IoT users and providers, as well as with Member States' initiatives, and to connect with other initiatives including contractual Public-Private-Partnerships (e.g. in the area of Big Data, Factories of the Future, 5G-infrastructure), Joint Technology Initiatives (e.g. ECSEL), European Innovation Partnerships (e.g. on Smart Cities), other Focus Areas (e.g. on Autonomous transport), and RRI-SSH issues.

***IoT-03-2017:R&I on IoT integration and platforms**, IA Innovation action, Single stage; Deadline 25-04-2016*

Specific Challenge:

The future design of the Internet of Things applications will depend crucially on the development of sophisticated platform architectures for smart objects, embedded intelligence, and smart networks. Most of the today's IoT systems are however mainly focused on sensors, whereas in the future actuation and smart behaviour will be the key points.

Research driven by ambitious use cases and benefiting from innovation areas in components, systems, networking and web technologies needs to be carried out to respond to the ever increasing needs of future IoT systems in terms of scalability, heterogeneity, complexity and dynamicity. IoT platforms should be open and easy-to-use to support third party innovatio

H2020	Societal Challenges	H2020-DS-2016-2017	12-04-2016 25-08-2016 25-04-2017 24-08-2017

DIGITAL SECURITY

Scene Setter:

]CT-driven transformations bring opportunities across many important sectors but also vulnerabilities to critical infrastructures and digital services, which can have significant consequences on the functioning of society, economic growth and the technological innovation potential of Europe. These challenges are being addressed through innovative approaches that cross the boundaries of individual H2020 pillars, calls and challenges. Therefore the main research & Innovation activities in Digital Security are grouped in a dedicated focus area cutting across LEIT–ICT and Societal Challenges parts of the work programme, including evidently the Societal Challenge 7 on "Secure Societies", but also the Societal Challenge 1 on "Health, demographic change and wellbeing".

Topics:

1. ***DS-03-2016:Increasing digital security of health related data on a systemic level**: RIA Research and Innovation action, Single stage, Deadline 12 April, 2016;*
2. ***DS-01-2016:Assurance and Certification for Trustworthy and Secure ICT systems, services and components**: CSA Coordination and support action, IA Innovation action, RIA Research and Innovation action, Single stage, Deadline 12 April, 2016;*
3. ***DS-02-2016:Cyber Security for SMEs, local public administration and Individuals**: IA Innovation action, Single stage, Deadline 12 April, 2016;*
4. ***DS-04-2016:Economics of Cybersecurity**: RIA Research and Innovation action, Single stage, Deadline 25 August, 2016;*
5. ***DS-05-2016:EU Cooperation and International Dialogues in Cybersecurity and Privacy Research and Innovation**: CSA Coordination and support action, Single stage, Deadline 25 August, 2016;*
6. ***DS-06-2017:Cryptography**: RIA Research and Innovation action, Single stage, Deadline 25 April 2017;*
7. ***DS-07-2017:Addressing Advanced Cyber Security Threats and Threat Actors**: IA Innovation action, RIA Research and Innovation action, Single stage, Deadline 24 August 2017;*
8. ***DS-08-2017:Privacy, Data Protection, Digital Identities**: IA Innovation action, Single stage, Deadline 24 August 2017.*

H2020	Societal Challenges	H2020-SC6-ENG-GLOBALLY-2016-2017	14-04-2016

CALL: ENGAGING TOGETHER GLOBALLY

Scene Setter:

1. The global environment in which the EU operates is constantly evolving. Recent developments show just how dynamically the strategic and geopolitical contexts are changing. These developments represent intricate challenges but also opportunities for Europe to develop and vary its analysis and build more robust anticipative, proactive and reactive capacities.
2. In such turbulent times, greater emphasis should be placed on fostering new types of actions that allow for engaging together globally, which strengthen the position of Europe on the global scene, including by improving the coordination between EU Member States and broadening its means of external action.
3. To better anticipate and address challenges in key regions, it is essential to maximise the EU's clout in global affairs. Research activities will look into the best means of ensuring synergies and consistency between Member States, EU foreign policy goals and instruments. Maximising its clout also presupposes understanding Europe in a global context and its historical and cultural legacy.
4. It is also imperative to implement the EU strategy for international cooperation in research and innovation by strengthening activities to promote the position of Europe on the global scene, attract international partners to Horizon 2020, enhance research and innovation exchanges and dialogue, and strengthen the European R&I presence in strategic partner countries and regions.
5. In Work Programme 2014-2015 topics focused on issues in the immediate EU neighbourhood regions (both South and East), as well as joint challenges with strategic partners such as cultural, scientific and social relations with Latin America.
6. In complement, this Work Programme presents Topics 1, 2 and 3 on challenges of radicalisation and migration that appear in cross-cutting way in several Topics and Calls of SC6[[Topics REV-INEQUAL-02-2016 and REV-INEQUAL-04-2016 address radicalisation and migration trends within Europe.]] and SC7, as well as integration and science diplomacy. Proposals to this set of topics are encouraged to address issues across these challenges.
7. Topic 4 targets the use of scientific knowledge on the EU's neighbouring countries and regions for EU policy-making. Topic 5 investigates EU external trade strategies and their inter-linkages, coherence and effectiveness vis-à-vis other external policies.
8. Topics 6, 7 and 8 broaden the geographical coverage of the first Work Programme focusing on Asia-Pacific, Central Asia, and China specifically.
9. Topic 9 addresses the challenge of strengthening the position of Europe as a global actor by reinforcing the presence of European research and innovation actors in selected international partner countries and regions.
10. In all Topics the participation of entities from the international partner countries and regions concerned is strongly encouraged.

Topics:

1. **ENG-GLOBALLY-09-2016: Centres/Networks of European research and innovation.** CSA Coordination and support action; *Single stage, Deadline 14 April, 2016;*
2. **ENG-GLOBALLY-01-2017:Strengthening Europe's position in the global context: science diplomacy and intercultural relations.** *RIA Research and Innovation action, Single stage, Deadline 02 February, 2017;*
3. **ENG-GLOBALLY-02-2017:Shifting global geopolitics and Europe's preparedness for managing risks, mitigation actions and fostering peace.** *RIA Research and Innovation action, Single stage, Deadline 02 February, 2017;*
4. **ENG-GLOBALLY-03-2017:The European Union and the global challenge of migration.** *RIA Research and Innovation action, Single stage, Deadline 02 February, 2017;*
5. **ENG-GLOBALLY-04-2017:Science diplomacy for EU neighbourhood policies.** CSA Coordination and support action; *Single stage, Deadline 02 February, 2017;*
6. **ENG-GLOBALLY-05-2017:The strategic potential of EU external trade policy.** *RIA Research and Innovation action, Single stage, Deadline 02 February, 2017;*
7. **ENG-GLOBALLY-06-2017:The Asia-Pacific as a strategic region for Europe.** *RIA Research and Innovation action, Single stage, Deadline 02 February, 2017;*
8. **ENG-GLOBALLY-07-2017:The European Union and Central Asia.** *RIA Research and Innovation action, Single stage, Deadline 02 February, 2017;*
9. **ENG-GLOBALLY-08-2016/2017:EU-China cooperation on sustainable urbanisation.** *RIA Research and Innovation action, Single stage, Deadline 02 February, 2017;*

H2020	Excellent science	H2020-MSCA-RISE-2016	28-04-2016

MARIE SKŁODOWSKA-CURIE RESEARCH AND INNOVATION STAFF EXCHANGE

The RISE scheme will promote international and inter-sector collaboration through research and innovation staff exchanges, and sharing of knowledge and ideas from research to market (and vice-versa).

The scheme fosters a shared culture of research and innovation that welcomes and rewards creativity and entrepreneurship and helps to turn creative ideas into innovative products, services or processes.

RISE involves organisations from the academic and non-academic sectors (in particular SMEs), based in Europe (EU Member States and Associated Countries) and outside Europe (third countries).

H2020	Excellent Science	H2020-FETOPEN-2016-2017-RIA	11 May 2016 17 January 2017 27 September

FET-OPEN - NOVEL IDEAS FOR RADICALLY NEW TECHNOLOGIES

This call aims to support the early stages of joint science and technology research for radically new future technological possibilities. The call is entirely non-prescriptive with regards to the nature or purpose of the technologies that are envisaged and thus targets mainly the unexpected. A bottom-up selection process will build up a diverse portfolio of projects. In order to identify and seize opportunities of long-term benefit for citizens, the economy and society, the early detection of promising new areas, developments and trends, wherever they come from, will be essential.

The FET-Open call also seeks for coordination and support activities to turn Europe into the best place in the world for responsible collaborative research and innovation on future and emerging technologies that will make a difference for society in the decades to come. Finally, a specific topic under this call aims to stimulate innovation by initiating entrepreneurial activities around results from FET research projects.

H2020	Excellent Science	H2020-FETOPEN-2016-CSA	11 May 2016

FET-OPEN - NOVEL IDEAS FOR RADICALLY NEW TECHNOLOGIES

H2020	SOCIETAL CHALLENGES	H2020-SEC-2016-2017	25-08-2016 24-08-2017

CALL: SECURITY

1. **SEC-01-DRS-2016:Integrated tools for response planning and scenario building.** *IA Innovation action. Single stage, Deadline 25 August 2016;*
2. **SEC-02-DRS-2016:Situational awareness systems to support civil protection preparation and operational decision making.** CSA Coordination and support action. *Single stage, Deadline 25 August 2016;*
3. **SEC-06-FCT-2016:Developing a comprehensive approach to violent radicalization in the EU from early understanding to improving protection.** RIA Research and Innovation action. *Single stage, Deadline 25 August 2016;*
4. **SEC-03-DRS-2016:Validation of biological toxins measurements after an incident: Development of tools and procedures for quality control.** *IA Innovation action. Single stage, Deadline 25 August 2016;*
5. **SEC-07-FCT-2016-2017:Human Factor for the Prevention, Investigation, and Mitigation of criminal and terrorist acts.** RIA Research and Innovation action. *Single stage, Deadline 25 August 2016;*
6. **SEC-08-FCT-2016:Forensics techniques on: a) trace qualification, and b) broadened use of DNA.** RIA Research and Innovation action. *Single stage, Deadline 25 August 2016;*
7. **SEC-11-FCT-2016:Detection techniques on explosives: Countering an explosive threat, across the timeline of a plot.** RIA Research and Innovation action. *Single stage, Deadline 25 August 2016;*
8. **SEC-12-FCT-2016-2017:Technologies for prevention, investigation, and mitigation in the context of fight against crime and terrorism.** RIA Research and Innovation action. *Single stage, Deadline 25 August 2016;*
9. **SEC-14-BES–2016:Towards reducing the cost of technologies in land border security applications.** RIA Research and Innovation action. *Single stage, Deadline 25 August 2016;*
10. **SEC-19-BES-2016:Data fusion for maritime security applications.** IA Innovation action. *Single stage, Deadline 25 August 2016;*
11. **SEC-20-BES-2016:Border Security: autonomous systems and control systems.** IA Innovation action. *Single stage, Deadline 25 August 2016;*
12. **SEC-21–GM-2016-2017:Pan European Networks of practitioners and other actors in the field of security.** CSA Coordination and support action. *Single stage, Deadline 25 August 2016;*
13. **SEC-04-DRS-2017:Broadband communication systems.** PCP Pre-Commercial Procurement. *Single stage, Deadline 24 August 2017;*
14. **SEC-05-DRS-2016-2017:Chemical, biological, radiological and nuclear (CBRN) cluster.** RIA Research and Innovation action. *Single stage, Deadline 24 August 2017;*
15. **SEC-09-FCT-2017:Toolkits integrating tools and techniques for forensic laboratories.** PCP Pre-Commercial Procurement. *Single stage, Deadline 24 August 2017;*
16. **SEC-10-FCT-2017: Integration of detection capabilities and data fusion with utility providers' networks.** IA Innovation action. *Single stage, Deadline 24 August 2017;*
17. **SEC-13–BES–2017:Next generation of information systems to support EU external policies.** PCP Pre-Commercial Procurement. *Single stage, Deadline 24 August 2017;*
18. **SEC-15-BES–2017:Risk-based screening at border crossing.** IA Innovation action. *Single stage, Deadline 24 August 2017;*

19. **SEC-16-BES–2017:Through-foliage detection, including in the outermost regions of the EU.** RIA Research and Innovation action. *Single stage, Deadline 24 August 2017;*
20. **SEC-17-BES-2017:Architectures and organizations, big data and data analytics for customs risk management of the international goods supply chain trade movements.** RIA Research and Innovation action. *Single stage, Deadline 24 August 2017;*
21. **SEC-18-BES–2017:Acceptance of "no gate crossing point solutions".** RIA Research and Innovation action. *Single stage, Deadline 24 August 2017;*

H2020	SOCIETAL CHALLENGES	H2020-CIP-2016-2017	25-08-2016

CALL: CRITICAL INFRASTRUCTURE PROTECTION

Topic:

CIP-01-2016-2017:Prevention, detection, response and mitigation of the combination of physical and cyber threats to the critical infrastructure of Europe. IA Innovation action. *Single stage, Deadline 25 August 2016;*

H2020	Societal Challenges	H2020-HOA-01-2015	17-08-2016

HORIZON PRIZE - BETTER USE OF ANTIBIOTICS

The Horizon Prize for better use of antibiotics is also a €1 million prize that will be awarded to the person or team who can most effectively meet the following challenge: Develop a rapid test that can identify at the point of care patients with upper respiratory tract infections that can safely be managed without antibiotics.

H2020	Spreading excellence and widening participation	H2020-WIDESPREAD-2016-2017	17-08-2016

Call summary

The topic WIDESPREAD-01-2016-2017 is open only to those applicants that have been successful in the 2014 Teaming Phase 1 (under the topic WIDESPREAD-1-2014: Teaming, of the call H2020-WIDESPREAD-2014), and who have concluded a Framework Partnership Agreement (FPA) with the Commission in the context of that Call.

WIDESPREAD-01-2016-2017:Teaming Phase 2. SGA-CSA Specific Grant agreement and Coordination and Support Action. Single Stage. 30 August, 2016.

WIDESPREAD-04-2017:Teaming Phase 1. CSA Coordination and support action. Single Stage. 15 November, 2016.

WIDESPREAD-03-2017:ERA Chairs. CSA Coordination and support action. Single Stage. 5 October, 2017

WIDESPREAD-05-2017:Twinning. CSA Coordination and support action. Single Stage. 15 November, 2017.

H2020	Excellent science	ERC-2016-AdG	01-09-2016

CALL FOR PROPOSALS FOR ERC ADVANCED GRANT

Call summary

Advanced Grants are designed to support excellent Principal Investigators at the career stage at which they are already established research leaders with a recognised track record of research achievements. Applicant Principal Investigators must demonstrate the ground-breaking nature, ambition and feasibility of their scientific proposal.

This action is open to researchers of any nationality who intend to conduct their research activity in any Member State or Associated Country.

The ERC's frontier research grants operate on a 'bottom-up' basis without predetermined priorities.
The call 'ERC-2015-AdG' consists of one call with a single deadline applying to each of the three main research domains:
• Physical Sciences & Engineering (Panels: PE1 – PE10),
• Life Sciences (Panels: LS1 – LS9),
• Social Sciences & Humanities (Panels: SH1 – SH6).

H2020	Excellent science	H2020-MSCA-IF-2017	14-09-2016

MARIE SKŁODOWSKA-CURIE INDIVIDUAL FELLOWSHIPS

The goal of Individual Fellowships is to enhance the creative and innovative potential of experienced researchers, wishing to diversify their individual competence in terms of skill acquisition through advanced training, international and intersectoral mobility. Individual Fellowships provide opportunities to acquire and transfer new knowledge and to work on research and innovation in a European context (EU Member States and Associated Countries) or outside Europe. The scheme particularly supports the return and reintegration of researchers from outside Europe who have previously worked here. It also develops or helps to restart the careers of individual researchers that show great potential, considering their experience.

- Support is foreseen for individual, trans-national fellowships awarded to the best or most promising researchers of any nationality, for employment in EU Member States or Associated Countries. It is based on an application made jointly by the researcher and the beneficiary in the academic or non-academic sectors.
- Fellowships take form of European Fellowships or Global Fellowships. European Fellowships are held in EU Member States or Associated Countries and are open to researchers either coming to Europe from any country in the world or moving within Europe.
- eturn and reintegration of researchers into a longer term research position in Europe, including in their country of origin, is supported via a separate multi-disciplinary reintegration panel of the European Fellowships. For the reintegration panel, there shall be mobility into Europe.
- Support to individuals to resume research in Europe after a career break, e.g. after parental leave, is ensured via a separate multi-disciplinary career restart panel of the European Fellowships. To qualify for the career restart panel, researchers must not have been active in research for at least 12 months immediately prior to the deadline for submission.
- Researchers seeking to work on research and innovation projects in an organisation from the non-academic sector will be supported via a separate multi-disciplinary society and enterprise panel of the European Fellowships. The objective of this panel is to facilitate career moves between the academic and non-academic sectors and to open attractive career opportunities for researchers outside academia.
- Global Fellowships are based on a secondment to a third country and a mandatory 12 month return period to a European host. The researcher must comply with the rules of mobility in the country where the Global Fellowship secondment takes place, not for the country of the return phase.

Researchers receiving an Individual Fellowship may opt to include a secondment phase in Europe, notably in the non-academic sector, within the overall duration of their fellowship. For a fellowship of 18 months or less, the secondment phase may last up to three months. For a fellowship of more than 18 months, the secondment phase may last up to six months. The secondment phase can be a single period or be divided into shorter mobility periods. The secondment should significantly add to the impact of the fellowship.

A Career Development Plan should be established jointly by the supervisor(s) and the researcher. In addition to research or innovation objectives, this plan comprises the researcher's training and career needs, including training on transferable skills, planning for publications and participation in conferencies.

H2020	Excellent Science	H2020-MSCA-COFUND-2016	29-09-2016

COFUND - CO-FUNDING OF REGIONAL, NATIONAL AND INTERNATIONAL PROGRAMMES

The COFUND scheme aims to stimulate regional, national or international programmes to foster excellence in researchers' training, mobility and career development, spreading the best practices of Marie Skłodowska-Curie actions.

This will be achieved by co-funding new or existing regional, national, and international programmes to open up to, and provide for, international, intersectoral and interdisciplinary research training, as well as transnational and cross-sectoral mobility of researchers at all stages of their career.

Each proposal funded under the COFUND scheme shall have a sole beneficiary that will be responsible for the availability of the necessary matching funds to execute the proposal.

Applicants submit multi-annual proposals for new or existing doctoral programmes or fellowship programmes which are expected to have an impact on enhancing research- and innovation related human resources on regional, national or international level.

Researchers supported under this scheme shall comply with the mobility rules of the Marie Skłodowska-Curie actions.

H2020	Industrial Leadership	H2020-GALILEO-GSA-2017	01-03-2017

APPLICATIONS IN SATELLITE NAVIGATION – GALILEO – 2017

Scene Setter:

The European Global Navigation Satellite System (EGNSS) encompasses the satellite navigation system established under the Galileo programme and the European Geostationary Overlay System (EGNOS). The Galileo system will provide position, navigation and timing services and increase availability and reliability of other GNSS, while ensuring the European non-dependence from other GNSS. The EGNOS system improves the accuracy and provides information on the reliability of the GPS system, and in the future also of the Galileo system.

Satellite navigation technology is an increasingly common component of innovative applications in different market segment. Over the years satellite navigation has become more affordable and more reliable. GNSS is used all around the globe, with 2.8 billion GNSS devices in use in 2013. By 2019, this is forecasted to increase to over 7 billion – on average one device per person. This large base of satellite navigation powered devices opens a huge opportunity for innovation in terms of applications in transport, consumer and professional markets. In addition, the new generation of GNSS, such as Galileo, brings new specific features and increased performance that can trigger innovation and enable more accurate and robust applications.
Development of downstream applications is key to maximise adoption of Galileo and EGNOS and also to stimulate the EU GNSS downstream industry competitiveness, while capturing public benefits. Small and Medium Enterprises (SMEs) are key players for innovation in the sector of GNSS applications for their capacity of innovating quickly, adapting to this fast growing and changing domain. While EGNOS is already fully operational, Galileo is still in deployment phase and will gradually start to deliver services from 2016 onwards up to a full capability in 2020. The use of the available Galileo initial services and test beds[[List of Galileo test infrastructure is available: http://gnss-test-portal.eu/tools/list_all_in_category/3]] in the course of the proposed projects is encouraged if and when necessary and beneficial for the project.

GNSS technology is advancing fast. Current trends that will influence innovation in the field of GNSS applications should be taken into account by applicants. These trends concern for example the appearance of a multi-constellation environment, leading to new multi-frequency devices that are becoming accessible also for mass market applications, as well as the increased combination of GNSS with other sensors and positioning techniques (e.g. Bluetooth beacons, localisation through Wi-Fi base stations, etc.). GNSS receivers itself are undergoing miniaturisation and are more and more "always connected". Proposals are invited against the following topics[[In accordance with the Commission decision C(2014)4995 these tasks will be implemented by the European GNSS Agency in indirect management and maximum annual Commission contribution will be decided annual in the Horizon 2020 work programme.]]:
Galileo 1 – 2017 – EGNSS Transport Applications;
Galileo 2 – 2017 – EGNSS Mass Market Applications;
Galileo 3 – 2017 – EGNSS Professional Applications;
Galileo 4 – 2017 – EGNSS Awareness raising and capacity building.

To facilitate access to opportunities for applicants the following list includes dedicated 'Applications in Satellite Navigation – Galileo' activities in related calls and topics from the societal challenge Smart, Green and Integrated Transport in addition to those in this call:

- *Societal Challenge Smart Green and Integrated Transport:*
  - *Automated Road Transport:*
    - *ART-02-2016: Automation pilots for passenger vehicles*
  - *Mobility for Growth:*
    - *MG-5.2-2017: Innovative ICT solutions for future logistics operations*
- *SME Instrument (H2020-SMEInst-2016-2017), although not dedicated uniquely to Satellite Navigation, is particularly well suited for SMEs addressing space based applications:*
  - *SMEInst-04-2016-2017: Engaging SMEs in space research and development*

Topics:

1. ***GALILEO-1-2017:EGNSS Transport applications:*** *IA Innovation action, Single Stage, Deadline 1 March 2017;*
2. ***GALILEO-2-2017:EGNSS mass market applications:*** *IA Innovation action, Single Stage, Deadline 1 March 2017;*
3. ***GALILEO-3-2017:EGNSS professional applications:*** *IA Innovation action, Single Stage, Deadline 1 March 2017;*
4. ***GALILEO-4-2017:EGNSS awareness raising and capacity building:*** *CSA Coordination and support action, Single Stage, Deadline 1 March 2017;*

H2020	Industrial Leadership	H2020-CleanAir-2015-1	23-01-2018

HORIZON PRIZE – MATERIALS FOR CLEAN AIR

Scope:

In the European Union, the average life expectancy is estimated to be decreased by 8.6 months, because of exposure to particulate matter resulting from human activities. The inhalation of particulate matter can also lead to adverse effects in the respiratory, cardiovascular, immune, and neural systems. In addition to its effects on the human health, particulate matter can also have adverse effects on climate change and ecosystems.
The Horizon Prize on materials for clean air is a €3 million prize that will be awarded to the person or team who can most effectively meet the following challenge: develop the best innovative design-driven material solution to reduce the concentration of particulate matter in urban areas.

Objective:

The objective pursued by this inducement prize is to reduce particulate matter air pollution in urban areas through the development of innovative material solutions. These solutions should be design-driven, affordable and sustainable, and they should demonstrate that they can effectively remove and/or prevent the formation of particulate matter in the atmosphere (vehicle exhaust systems will be excluded).

3. Vēstis par norisēm HORIZONTS 2020 izpildes procesā, atgādinājumi par Ietvara programmu projektu datu bāzēm, ekspertiem un norisēm konkrētos projektos

Pirmdien, 2016.gada 14.martā notiks LU 74 konferences plenārsēde:

10:00 - 12:00
Raiņa bulv. 19, Mazajā aulā

Plenārsēde "ES finansēta zinātne - iespējas Latvijas un LU zinātnes izcilībām" Norāde
Vadītāji: Rektors, prof. Indriķis Muižnieks, Dr.Arnolds Ūbelis
Plenārlekcijas:

Arnolds Ubelis
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Informācija par finansētiem projektiem to rezultātiem un ieviešanas gaitu atrodama INTERNETa lappusēs – *http://horizon2020projects.com/publications/*
http://cordis.europa.eu/fp7projects_en.htm/ *un* *http://cordis.europa.eu/fp6/projects.htm*,

Darba vietas zinātnē Eiropas Savienībā: *http://ec.europa.eu/euraxess/index.cfm/jobs/index/*