#165e 2015.gada decembris *(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*;
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Dr.A.Ūbeļa darba adrese aizvien ir Šķūņu ielā 4, Rīgā, tel. 29498659,
Latvijas Universitātes zinātnes institūtu asociācija FOTONIKA-LV,
Rīgas Fotonikas centrs

Skaistu Ziemasvētku laiku!

Laimīgu un veiksmēm dāsnu

Jauno 2016. gadu!

Saturs:

1. Šī brīža aktualitāte

2.1. *Quo vadis Latvija – laiks pamosties!!!*

Latvijas tauta ir smagi zaudējusi kiberkarā ar saviem ienaidniekiem. Šī kiberkara stratēģiskais mērķis ir **atņemt tautai prātu** un ģenerālštābu statistika liecina, ka mēs ciešam smagus dzīvā spēka zaudējumus.

Kā rāda statistikas dati, Latvijā 2014.gadā bija 4500 (t.i. ieslodzīti) cietumnieku (http://ec.europa.eu/eurostat/statistics-explained/index.php/Crime_statistics/lv) un tikai 3748 zinātnieku (http://www.csb.gov.lv/statistikas-temas/zinatne-galvenie-raditaji-30423.html).

Salīdzinājumam Somijā ir 5 miljoni iedzīvotāju, gandrīz 40 000 zinātnieku un pēc Latvijas proporcijas tur vajadzētu būt 60 000 cietumnieku. Izrādās viņiem ir tikai 3000 cietumnieku. Atgādināšu, ka Latvijā 1990. gadā bija vismaz 30 000 zinātnieku.

Tie ir skaitļi, kuri liek domāt par to, cik lieli ir tautas gara spēka zaudējumi un kādi ir mūsu ienaidnieku ieguvumi, atņemot tautai prātu.

Jo mazāk valstī gudru cilvēku, jo labāk jūtas *„melnā biznesa"* aprindas Latvijā, un ar viņiem kopā priecājas impērijas restaurētāji aiz Latvijas austrumu robežām. Labi jūtas arī *„birokrātijas kalpi"* valsts iestādēs un sabiedrības *„krējums"*, kur regulāri apgrozās valsts augstākie ierēdņi un amatpersonas. Jo mazāk gudru cilvēku valstī, jo mazāka konkurence *(vai pat nav konkurences*) uz mūža amatiem valsts lēmējvarā un izpildvarā. Labi izkopta birokrātiski koruptīvā sistēma ir vide, kur plaukst un zeļ tikai *„melnais bizness"*, bet normāli cilvēki tiek dzīti projām no valsts – sākot ar zinātniekiem un beidzot ar strādnieku-savas zemes patriotu, kurš grib par savu godprātīgu darbu saņemt normālu atalgojumu un uzturēt bērnus un vecākus, tas ir, nodrošināt valstij pašu svarīgāko - ģimeņu un dzimtu pastāvēšanu daudzās paaudzēs. Tas ir tas, kas nodrošina piederību savai tēvu zemei un stiprina valsti.

Nav saprotams, kas notiek valstī. Tikai pēdējais kliedzošais fakts - cilvēks no valsts amatpersonu *„elites"* savā visatļautībā var pārvadāt savā privātā mašīnā pusmiljonu eiro skaidrā naudā savu *„darījumu"* kārtošanai. Tas ir skaidrs indikators tam, kādi ir korupcijas mērogi valstī, un reti kurš noticēs, ka tā nav masveida prakse. Pašreizējais tirgus par posteņiem valdībā ir tam vēl viens apliecinājums.

Zinātniekiem nav skaidrs, kā viena biznesa konsultāciju kompānija ar 2-3 strādājošiem var saņemt no valsts budžeta 2-3 miljonus par ieteikumu izsniegt „Air Baltic" 80 miljonu eiro, acīmredzami, atmaksu neprasošu, aizņēmumu, lai notiktu Krievijas kompānijā ražotu lidmašīnu iepirkums. Latvijā nav neviena zinātnes institūta, kura bāzes finansējums pārsniegtu 3 miljonus eiro. Savukārt, divu lielāko universitāšu Rektori ir spiesti sacensties savā starpā ar komplimentiem IZM *„elitei*", lai dabūtu no valsts budžeta 2-3 miljonus eiro, ar kuriem var nodrošināt algas universitāšu personālam ceturdaļslodžu līmenī.

Vienkārša aritmētika rāda, ka ar 50 miljoniem eiro pietiktu, lai nodrošinātu 4000 Latvijas zinātniekiem 12 500 euro atlīdzību gadā, nomaksājot visus nodokļus un atstājot zinātnieka kabatai apmēram 600 eiro mēnesī, kas varētu būt 50% no zinātniekam pienākošās mēnešalgas Latvijas ekonomikas apstākļos. Tas ir tas līmenis, kuru definēja, kā pēdējo slieksni un nosacīti optimālu proporciju starp bāzes finansējumu un projektu konkursos iegūto finansējumu, savulaik IZM nolīgtie TEHNOPOLIS eksperti, atsaucoties uz Somijas pieredzi.

Latvia. Innovation System Review and Research Assessment Exercise: Final Report, TECHNOPOLIS, April 20, 2014, ***see page 22***:

> *"Only 17% of research funding is institutional (ERAWATCH Country Report, 2011), making Latvia's one of the most highly 'contested' systems in the world. While there is no clear international benchmark for what the proportion of institutional funding should be, there is some consensus that 50% is the minimal viable level. The Finnish Research and Innovation Council recently observed that the share of competitive funding in the university research system has recently approached that value and that to do any further would be dangerous*
>
> *Low relative levels of institutional funding are normally argued to undermine continuity, the ability to invest in facilities and equipment and therefore ultimately quality.* ***A degree of institutional funding stability is also a requirement in order to establish good links with industry.*** *Without this, it is hard to be a credible research partner for the longer term".*

50 miljonu eiro ieguldījums zinātnē un tehnoloģijās gada laikā nodrošinātu Latvijai pamatni, no kuras var sākties valsts izaugsme zināšanu ekonomikas apstākļos. Šādas naudas ieguldījums vienā privātā kompānijā negarantē valstij neko, tieši pretēji - draud ar naudas pazaudēšanu. Ir jau labi, ka esam ieguldījuši nacionālās bibliotēkas celtniecībā 250 miljonus

eiro. Bet šie ieguldījumi *"ķieģeļos"* nesīs salīdzināmu atdevi labi ja 50 gadu laikā! Ja Latvija 5 gadus pēc kārtas būtu ieguldījusi zinātnes bāzes finansējumā 50 miljonus eiro, tad tagad ekonomikas *"high tech"* sektors būtu ar gada apgrozījumu vismaz viens miljards eiro. To rāda mūsu pētījumi par Latvijas fotonikas sektora 20 uzņēmumiem, kuru kopīgais apgrozījums pašreiz ir vairāk kā 100 miljoni eiro *(izaugsme 6-10% gadā)* , bet kuru vēl iespaidīgāku izaugsmi un konkurētspēju specifiskās pasaules tirgus nišās ierobežo augstas kvalitātes zinātnieku trūkums valstī. Piemēram: uzņēmums *„Baltic Scientific Instruments Ltd*" ir viens no trim sekmīgajiem uzņēmumiem Latvijā atraktīvajos HORIZONTS 2020 SMS instrumenta konkursos *(Latvijai no 110 projektu pieteikumiem ir tikai 3 finansēti projekti).* Šī uzņēmuma *(apgrozījums ap 3 miljoni eiro gadā)* direktors un īpašnieks šo projektu rakstīja pats kopā ar mūsu FOTONIKA-LV ekspertiem. Tas uzskatāmi rāda, kādas grūtības izjūt uz zinātni orientētie uzņēmumi.

2016. gada valsts budžeta apspriešanas kolīzijas, līdzās citiem objektīviem ekonomikas rādītājiem, bija skaidrs indikators, ka TEHNOPOLIS ekspertu 2014.gada prognoze par neizbēgamu valsts ekonomikas lejupslīdi *(mēs kļūstam par agrāru, dabas resursus tirgojošu valsti)*, sāk piepildīties:

> *The production of knowledge is of course one very important reason for funding research; but the production of human capital is probably an even more important reason for doing so. Lack of human capital means not only that the country has difficulties in exploiting its own knowledge production but also, crucially, that it is hard to exploit the more than 99% of new knowledge that is generated abroad.* ***Without these capabilities, the country will enter a declining spiral that infects the performance of the economy as a whole****. Citated from page 41*

Ne velti kāda *„vecmāmiņa"*, esot atbildīgā amatā, bija nobažījusies, ka presē lieto nepieklājīgu terminoloģiju par budžeta jostu savilkšanu, un, kāds no FM aprindām, runājot par nacionālo izaugsmi, spēja pateikt tikai to, ka patreizējie 3 %*(± ??? ķļūda)* iekšzemes kopprodukta pieauguma ir patēriņa izaugsmes rezultāts. Pareizi, jo vairāk tiek izdzīti cilvēki no valsts darbos ārzemēs, jo vairāk aug patēriņš. Viņiem Latvijā ir palikuši tuvi cilvēki, kurus viņi atbalsta ar naudas sūtījumiem, un paši tērē naudu atvaļinājumos Latvijā. Nodokļu ienākumi valstī ir pietiekoši un birokrātijas mašīnas dedzina valsts resursus uz nebēdu.

5000 gadus ciltis, no kurām ir cēlusies mūsu tauta ir apdzīvojušas teritoriju, kuru tagad saucam par Latviju. Totāls zaudējums modernajā kiberkarā padzīs mūs no šīs zemes tuvākos 20 gados**!!!**

Vēlreiz statistika, skaitļu valoda un paradoksāli fakti: *(http://ec.europa.eu/eurostat/statistics-explained/index.php/Crime_statistics/lv)**;***

Latvijā uz 100 tūkstošiem iedzīvotāju bija 316 ieslodzītie, kas ir viens no augstākajiem rādītājiem pētījumā aplūkoto valstu vidū. Vairāk nekā Latvijā ieslodzīto uz 100 tūkstošiem iedzīvotāju ir vien Krievijā (546,1), Gruzijā (541,2), Azerbaidžānā (417) un Ukrainā (347,7).

Igaunijā uz 100 tūkstošiem iedzīvotāju bija 252,6 ieslodzītie, bet Lietuvā - 311,3 ieslodzītie.

Tepat kaimiņos Eiropā ir arī valstis, kur ieslodzīto skaits nepārsniedz simtu uz 100 tūkstošiem iedzīvotāju, piemēram, Islandē (46,8), Somijā (60,7), Dānijā (71), Norvēģijā (71,8) un Vācijā (86,8).

Divu gadu laikā Latvijas cietumos ir būtiski sarucis ieslodzīto skaits, un pašlaik tas ir nostabilizējies pie 4500 cilvēkiem, LNT pastāstīja Ieslodzījuma vietu pārvaldes vadītāja Ilona Spure (INTERNETA prese 2015. gada 31. jūlijā plkst. 15:35). Pēdējo divu gadu laikā ieslodzīto skaits ir ievērojami samazinājies, jo ir notikušas izmaiņas krimināLsodu politikā, būtiski samazinot sodus. Pašlaik cietumos ir 4500 ieslodzītie, no kuriem trešā daļa ir apcietinātie, kuri vēl gaida tiesu, bet pārējie ir notiesātie, kuriem sodi jau stājušies spēkā. Spure lēsa, ka pie šī ieslodzīto skaita vajadzētu arī palikt un tālākajos gados būtiskas ieslodzīto skaita svārstības vairs nav gaidāmas. Jauns cietums Liepājā tiek gaidīts 2018.gada nogalē, un pašlaik IeVP aktīvi strādā ar projektētājiem. Galvenā atšķirība jaunajā cietumā no pašreizējiem cietumiem būs kameras - tās vairs nebūs kopmītņu tipa telpas, kas apgrūtina efektīvu sodu izpildi.

Jaunā cietuma būvniecība izmaksās līdz 78 miljoniem eiro, to plānots uzbūvēt līdz 2018.gadam. Gaidis Bērziņš Latvijas Radio raidījumam „Pēcpusdiena" atzina, ka kopumā iecerēts būvēt trīs jaunus cietumus, taču konkrēti lēmumi būs atkarīgi no finansējuma un ieslodzīto skaita. Jāatzīmē, ka sākotnēji tika runāts par jaunu cietumu Olainē par 15 miljoniem eiro, tagad šī summa pieckāršojusies un ir samērojama ar naudu, ko LU un RTU kopā izlietoja savu jauno mācību korpusu celtniecībā. http://www.liepajniekiem.lv/zinas/sabiedriba/tm-jauna-cietuma-projektesana-tiks-sakta-2015-gada-sakuma-buvnieciba-2016-gada-117267

Kā mūs iznīcina!!!

Kādi ir galvenie tautas pastāvēšanu apdraudošā kiberkara ieroči, metodes un stratēģijas? Mūsu ienaidnieki neko nav slēpuši un ceturtā vara par to ir runājusi. Ļoti precīzi šo stratēģiju alegoriski pasaka kāda bijušā premjera *(kurš savā pirmajā Ziemassvētku runā apsolīja šo valsti pārvaldīt kā privātu uzņēmumu*) spārnotais izteikums *"jūrmalgeitas"* sarunās: *"Kurš lielāks kretīns to vajag virzīt!"* Zinātnes politikai pazīstamos atlases terminos šo uzstādījumu var

pārfrazēt sekojoši: IZM augstākai ierēdniecībai ir jāprasa *„atbilstība”* vismaz vienam no diviem *“ekselences”* kritērijiem:

- Maksimāli augsts *“K-kretīnisma”* (H - Hirša) indekss vai arī, ja tas neizdodas, tad
- Maksimāli augsts agresīvs diletantisms (*Ir teiciens: bīstamāks par muļķi ir muļķis ar iniciatīvu).*

Mūsu ienaidnieki saprot, ka intelektuāli vāja IZM un tās struktūras savietojumā ar maksimālu birokrātiju ir nepieciešams nosacījums, lai valstī būtu bezjēdzīga zinātnes un inovāciju politika un tiktu bremzēta valsts izaugsme pat tad, ja ES spiediena rezultātā neizdodas izvairīties no Strukturfondu investīcijām zinātnē un tehnoloģijās. *“Impotenta”* un birokrātiski koruptīva IZM ir nepieciešams nosacījums tam, lai tautā gudru cilvēku paliktu aizvien mazāk. Velnišķīga, nerakstīta noruna un pragmatiski apsvērumi, kuri vieno visus mūsu ienaidniekus. Mazāk gudru cilvēku valstī, labāk sokas melnajā biznesā, priecīgas zināmas impēriskās aprindas aiz valsts austrumu robežām, nav konkurences uz ierēdņu un politiķu vietām, nav konkurences uz profesūru. Jo vājāki augstskolu un universitāšu absolventi, jo dumjāka tauta un tas garantē sistēmas pastāvēšanu gadu desmitiem.

Esam nonākuši līdz tādam zaudējumu līmenim, ka, alegoriski runājot, IZM viss balstās uz iekšēju pretrunu un intrigu plosītas *“troikas”* vājajiem pleciem.

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;
- Kliedzošs IZM dienestu sabotāžas vai menedžmenta impotences gadījums ir valsts budžeta mērķfinansējums *(nieka 31 000 €)* FP7 FOTONIKA-LV projekta specifiskiem uzdevumiem. Lēmums bija 2014.gada decembrī. LU pēc garām un, naudā rēķinot, dārgām birokrātiskām procedūrām to saņēma tikai 2015.gada septembrī.

Desmitiem miljonu eiro ES Strukturfondu naudas, kuru varēja likt lietā zinātnē un lietišķos pētījumos ir iesaldēti vismaz un nepilnu gadu. 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 zudēts.

Zinātnieki valstī vidēji tagad saņem algas ceturtdaļslodzes apmērā. Tajā pašā laikā IZM ierēdniecības birokrātiskā mašīna strādā ar pilniem apgriezieniem ar vidējām algām augstākā līmeņa ierēdņiem 1500 eiro mēnesī un vairāk. Zinātnieku aprindās slavenās VIAA budžets *(200 darbinieki)* sasniedz 4,5 miljonus eiro gadā. Ārpakalpojumos *“draudzīgām”* kompānijām par neprofesionāliem padomiem, kuri gremdē Latvijas zinātniski tehnoloģisko kapacitāti IZM tērē kopsummā miljonus no struktūrfondu resursiem, kuri domāti valsts pārvaldes administratīvās kapacitātes paaugstināšanai un nodrošina šo *„paaugstināšanu”* jau kopš 2004.gada.

Atvainojos daudziem kolēģiem par skarbiem vārdiem bet jums pietrūkst pilsoniskās drosmes un varbūt arī kvalifikācijas, lai runātu par šīm lietām. Ir laiks atmosties! LZA, LZP, LZS, Rektoru padome un citi sociālie partneri zinātnes un tehnoloģiju sektorā valstī ir tikai demokrātijas butaforijas, jo delegātus šajās struktūrās *(katram ir sava zinātnes grupa vai institūts)* ir iespējas šantažēt ar no struktūrfondiem pamestiem izdzīvošanai nepieciešamiem *“graužamajiem kauliņiem*”. Neskatoties uz caurspīdīgiem konkursiem *(tik caurspīdīgi, ka neko nevar ieraudzīt),* IZM un *„troikas”* rīcībā vienmēr atradīsies instrumenti, kā šantažēt vai pat uzsūtīt *“killeri”* vienai, otrai vai trešai zinātnes struktūrai „vienlaidus kolektivizācijas” aizsegā *(1949.gadā labāko viensētu*

zemniekus sūtīja uz Sibirīju, tagad labākos zinātniekus piespiež izbraukt. Ir daudz kopīga starp labu zemkopību un zinātni. Lauksaimniecības zemes ir tik dažādas. Gudrs, „inovatīvs" un čakls viensētas saimnieks prot savā saimniecībā radīt maksimālu labumu. Analoģiski ir ar zinātni. Konkrētā tēma ir specifiska un parasti to risina neliela zinātnieku grupa, kura, protams, dažādā veidā ir sadarbībā ar kolēģiem Latvijā un pasaulē. Arī viensētnieki kooperējas, vai rīko talkas apsējību un apkūlību laikos).

Sarunas ar minētiem sociāliem partneriem un zinātnieku auditoriju netiek dokumentētas. Argumentētas un loģiskas atbildes uz ieteikumiem netiek sniegtas. Uz e-pasta vēstulēm atbildes saņem tikai izredzētie. Visas apspriešanas ir klasiski demokrātijas „simulācijas" paraugi, kuri daudziem pazīstami no padomju varas un PSKP *„demokrātiskā centrālisma"* laikiem.

Zinātnieku virzienā skan daudz IZM un it īpaši *„troikas"* ģenerētu pārmetumu un tikai retais žurnālists atzīmē, ka zinātnieki aizvien ir lielākie mecenāti un patrioti valstī, jo turpina strādāt un gaida labāku politiku, saņemot algā ceturtdaļu no tā, kas pienāktos. Spriediet paši, kurā kiberkara frontes pusē ir IZM koruptīvi birokrātiskā mašīna *(Ja kāds jūt apvainojumu no šī raksta, tad vajag atcerēties, ka strādāšana IZM un klusēšana, redzot ka valstī viss attiecīgā sektorā iet šķērsām, ka ministrijā notiek bezjēdzīgas darbības un naudas izšķērdēšana - arī ir merkantili koruptīva, neprofesionāla un arī krimināli sodāma darbība pret valsti un Latviju kā tēvzemi).*

Vēlreiz kopsavilkumā. Tikko runāju par sabotāžu, bet būtībā tas ir smalki izplānots *„hiberkarš".* Visiem iekšējiem un ārējiem sakārtotas un plaukstošas Latvijas ienaidniekiem ir skaidrs: augstā profesionālā līmenī strādājoša IZM un ar to saistītās struktūras ir ***nepieciešamais*** nosacījums valsts uzplaukumam. Lai ārējie ienaidnieki varētu realizēt Pētera I ambiciozos plānus, un, koruptīva valsts pārvalde nodrošinātu labu dzīvi nacionāliem un internacionāliem blēžiem, ir vajadzīgs selekcionēt augstāko IZM ierēdniecību nevis pēc ekselences *(H-Hirsch indeks),* bet pēc *„K"* vai *„karojoša diletantisma*" indeksiem. Turklāt procesam ir jābūt pašuzturošam - *„kretīni"* un *„karojošie diletanti*" *(atvainojos, kā mana novadnieka Kulakova slavenajā dziesmā)* uz vakancēm atlasa jaunus ..... ***Nevienam zinātniekam, vai zinātniskai struktūrai netiek nekas vaicāts un nav nekādu iespēju vērtēt ierēdņu darbu un izteikt argumentētu neuzticību.*** Tā mums ar to IZM ir gājis jau gadu desmitiem. Minētie reitingi ir visu laiku auguši un apburto loku nebūs viegli pārraut.

Mana pilsoniskā atbildība un Latvijas Republikas Satversmes 2. pants man liek par to rakstīt. Gan es, gan jaunie un talantīgie zinātnieki, jo vairāk, var katrs individuāli iesūdzēt valsti tiesā un uzvarēt savā prasībā pret valsti. Visi IZM kabinetos radītie politiskie dokumenti viennozīmīgi saka, ka zinātne Latvijā tiks attīstīta un tiks piesaistīti resursi zinātnei un pētniecībai. Ir bijuši pat projektu konkursi, kur tika piesaistīti jauni zinātnieki. Praksē viss ir otrādi. Projekts beidzas, jauns un spējīgs zinātnieks tiek atlaists. Viņa zinātniskās izaugsmes plāni ir sagrauti ģimenes labklājība un jauno ģimeņu bērnu nākotne apdraudēta. Tas ir klajš ***„tiesiskās paļāvības principa pārkāpums***" un šim jaunajam zinātniekam no valsts pienākas kompensācija. Mums ir jāsāk domāt šādās kategorijās un būs simtiem uzvarētu prāvu, kur valsts segs gan morālo kaitējumu, gan tiesas izdevumus. Būtu jau labi, ja maksātu tie ierēdņi ar augstiem ***„K „*** indeksiem un lielām algām, jo viņi valstiskos dokumentos solīja spožu izaugsmi, bet praksē ir *„darbojušies"* lai izaugsmes nebūtu. IZM nepadarīto darbu saraksts ir tikai viens piemērs.

Esmu gatavs arguments pret argumentu diskutēt gan ar tiem, kuri domā, ka viss notiek kā jānotiek, gan ar tiem, kuri domā, ka ir vēl sliktāk. Kopumā ir skaidrs, ka tālākais draud ar intelektuālu katastrofu un ir vajadzīgs forums, kurš meklē izeju.

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

Aizvien vēl ir brīnums, ka bada maizē turētā un valsts *„vareno"* necienītā Latvijas zinātnes saime pirmo divu gadu HORIZONTS 2020 konkursos pēc dalības sekmības 14.72% ir virs ES vidējā. Sekmības procents pēc finansējuma – 10.67%, diemžēl, sāk tālu atpalikt no attīstīto valstu rādītāja. Tālāk tabulā ir doti statistikas pamatskaitļi un tās pēdējā kolonnā 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, krītas 2015.gadā.

Katrs, kuram atradīsies laiks iedziļināties tabulas skaitļos, un pietiks spēka analītiskai piepūlei, pats var izdarīt savus secinājumus un spriest, vai šo rindu autoram ir taisnība.

IZM kultivē viedoklis, ka Latvijas zinātne ir nekvalitatīva un nekonkurētspējīga un tamdēļ tai nevajag finansējumu. Turpretī Tabulā 1 dotie sekmības rādītāji ES līmeņa konkurencē rāda, ka kvalitatīvi un individuāli zinātnieki ir vienā līmeni ar Skandināvijas valstīm un ES lielvalstīm. Mums pārliecinoši priekšā ir Igaunija, bet Lietuva sāk atpalikt no mums pēc absolūtiem skaitļiem. Par Igauniju viss skaidrs - tur attieksme pret zinātnes finansējumu un arī NKP darbu ir radikāli cita. Lietuva gan relatīvi, gan absolūti finansē savus zinātniekus labāk, kā Latvija, bet Lietuva formalizēja birokrātiskā sistēmā savus NKP ekspertus jau pēc Piektās Ietvara programmas un tas bija viens no iemesliem kamdēļ viņu panākumi sāka samazināties no programmas uz programmu. Latvija šo procesu uzsāka, startējot HORIZONTS 2020 programmā, un *„panākumi"* nebūs ilgi jāgaida. Jau tagad sekmība un aktivitāte krītas no konkursa uz konkursu. IZM iezīmētais mērķis - 100 milj. eiro programmas noslēgumā ne tuvu netiks sasniegts un būs kārtējais apliecinājums zinātnes politikas un menedžmenta bezjēdzībai valstī. Gandrīz divi HORIZONTS 2020 konkursu gadi jau apkārt un mums kasē ir tikai 15 miljoni. Turklāt, IZM par zinātni atbildīgais departaments un tā vadītāja kopā ar VIAA nedara neko tādu, kas radikāli mainītu situāciju. Tā vietā ar reformām tiek restrukturizēti un gada garumā tiek traucēts Eiropas Zinātnes telpā atpazīstamu H-2020 līmenī konkurētspējīgu institūtu un zinātnieku grupu zinātniskais darbs. Saturiski NKP sistēmā viss ir tā pat, kā 2014.gada beigās. NKP ekspertu skaits nav palielināts. Viens eksperts ir atbildīgs par 2-3 jomām. Vienlaicīgi bezjēdzīgi tiek tērēta nauda tā saucamās NKP darba infrastruktūras nodrošināšanai un ieviestas papildus štata vietas NKP ekspertu uzraudzībai. Tas bija uzskatāmi redzams arī nupat notikušā VIAA patronāžas konferencē LU jaunajā mājā. Šis konferences budžets ir noslēpums, bet vērtēju, ka tas pārsniedza 5000 eiro un tā ir viena NKP eksperta gada darba alga. Turklāt ap 300 konferences dalībnieku x 8 stundas, tas ir 2400 darba stundas izniekotas, lai klausītos runas, kuru satura lietišķo daļu viegli var atrast HORIZONTS 2020 mājas lapās. Nebija nevienas kvalificētāko NKP ekspertu prezentācijas tikai tukšvārdība no IZM un VIAA pirmajām personām. Augsta līmeņa ES zinātnes un inovāciju DG eksperta klātbūtne netika racionāli izmantota. Faktiski tika ignorēta, jo netika nodrošināta efektīva komunikācija ar auditoriju.

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	**598**	**88** **FP7 356**	**15.913** **FP7 49.938**	**14,72**	**10,67**	**3748*(2014)*** **3625*(2013)*** **3904*(2012)***
Igaunija	1061	158 **FP7 540**	44.557 **FP7 88.643**	14.89	13.33	4 407
Lietuva	802	78 **FP7 417**	10 835 **FP7 54.771**	9.73	5.21	8 557
Somija	4 362	533 **FP7 2 628**	218.786 **FP7 866.560**	12.22	9.90	39 196
Zviedrija	5 755	816	379.724	14.18	12.84	62 043
Polija	3 971	459	103.435	11.56	8.40	71 472
Dānija	4 302	621	299.586	14.44	13.51	40 858
Īrija	3 182	445	179.615	13.98	12.17	15 732*(2012)*
Nīderlande	11 542	1 769	914.047	15.33	15.42	72 325
Austrija	5 142	794	318.922	15.44	14.05	39 924
Vācija	23 693	3 658	2 311.000	15.44	18.34	360 900
Lielbritānija	24 134	3 557	1 688.038	14.74	13.40	259 347
Francija	15 111	2 550	1 220.001	16.88	16.04	265 177

Turcija	1 721	174	41.357	10.11	7.97	82 121
Baltkrievija	108	16 **FP7 52**	2.179 **FP7 3 765**	14.81	10.44	18 500
Ukraina	425	53 **FP7 214**	6.698 **FP7 23.810**	12.47	7.85	66 200
Krievija	132	42 **FP7 545**	2.302 **FP7 72.324**	31.82	17.63	459 504
Indija	72	15	1.156	20.83	17.40	????

Kā redzams no tabulas, kopā Latvijai uz 2015.gada novembri bija tikai 88 līdzdalības finansētos projektos. Panākumi gūti konkursos, kur varbūtība finansējuma iegūšanai bija 10-15% robežās.

ICT joma ir atnesusi Latvijai H-2020 investīcijas 2,6 M€, nanotechnoloģijas 0,549 M€, Adv. Materiāls – 0,257 M€; Health 1,92 M€, Food 1,40 M€, Energy 3, 273 M€, Spreading excellence and Widening 1,576 M€ un Marie-Scklodowska-Curie projekti – 1,276 M€.

Latvijai šobrīd ir 598 līdzdalības HORIZONTS 2020 projektu pieteikumos, no kuriem 120 ir SMEs instrumenta projekti. Diemžēl tikai 3 projekti ir finansēti, no kuriem HEE PHOTONICS Ltd un BSI Ltd projektu uzrakstīšanā būtisku palīdzību sniedza FOTONIKA-LV ekspertu grupa. Citi 6 tās atbalstīti projekti ir saņēmuši izcilu vērtējumu – virs 12.5 punktiem.

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.

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	28	84	9	16	8	26	11	37	0	5	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, Riga Technical University	26	71	4	10	11	28	9	29	2	4	3
4	Institute of Solid State Physics, University of Latvia	22	78	8	9	5	33	7	31	2	5	4
5	Institute of Physics, University of Latvia	22	48	9	11	3	17	10	17	0	3	2
6	**FOTONIKA-LV**, University of Latvia	21	83					8	24	1	17	
	FOTONIKA-LV, University of Latvia									0	8	
	Institute of Atomic Physics and Spectroscopy, University of Latvia	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	1‘	0	0	0	0	1	1			1
7	RSU and A.Kirhenshtein Institute of Microbiology and Virology	18	94	3	16	3	20	8	37	4	20	3
8	Institute of Physical Energetics	17	32	8	10	2	9	5	9	2	4	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 (*Prof. Talis Tisenkopfs*)	14	33	3	8	5	11	5	11	1	3	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	Institute of Polymer Mechanics, University of Latvia	6	42	0	14	5	14	1	14	1	7	2
16	Institute of Electronics and Computer Science	6	24	2	4	2	7	1	11	1	9	4

Tabula 3 parāda Latvijas augstskolu sekmes HORIZONTS 2020 konkursos uz 2015.gada novembri. Kā redzams, Rektoriem ir nopietna viela pārdomām un ir vajadzīga drosme

„draudzīgām” sarunām, IZM, FM un Saeimā. Citādi sāksim domāt vai mūsu Rektori ir Latvijas patrioti

		TOTAL	TOTAL	FP5	FP5	FP6	FP6	FP7	FP7	H-2020	H-2020
1	University of Latvia									11	69
2	Riga Technical University									6	63
3	Riga Stradina University									4	20
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	Liepājas Universitāte									0	4
12	Rīgas Ped&Vad Augstskola									0	2
13	Stockholm School of Econ									0	3
14	UN BIZNESA ADMINISTRACIJAS AUGSTSKOLA									0	1
15	INFORMACIJAS SISTEMU MENEDZMENTA AUGSTSKOLA SIA									0	1
16	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 17 MVU, kuri saņēmuši H-2020 finansējumu dažādos konkursos. Kopumā šobrīd ir zināms, ka apmēram 160 Latvijas MVU ir atrodami HORIZONTS 2020 projektu pieteikumu konsorcijos, no kuriem puse ir startējusi SMEs instrumenta konkursos.

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

Rank	MVU, kam ir projekti FP7unH-2020	TOTAL	TOTAL	FP5	FP5	FP6	FP6	FP7	FP7	H-2020	H-2020
1.	EKODOMA SIA	12	34	6	7	2	6	1	5	3	16
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 MET	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	BALTIJAS KONSULTĀCIJAS SIA	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	2							1	2
16	RENESCO SIA	1	2							1	2
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	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	5	0	0	1	1	0	2	0	1
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		

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 40 lpp apjomā. Rūpīgas izpētes gadījumā tā dos iespēju lasītājam piedāvāt savai zinātniskai grupai, vai institūtam stratēģiju un ceļa karti līdzdalībai HORIZONTS 2020 uzdevumu izpildē.

Tā faktiski ir vienīgā iespēja Latvijas zinātniskiem institūtiem un atsevišķām zinātniskām grupām pastāvēt neatkarīgi no valsts un IZM destruktīvās attieksmes pret zinātni. 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.

> *TEHNOPOLIS vērtējumā tikai retais būtu ticis pie atzīmes 4. Tikai ar nacionālo finansējumu maz ticams, ka būtu izdzīvojuši Koksnes Ķīmijas Institūts, Materiālu Zinātņu institūts RTU, Fizikas institūts, Enerģētikas institūts, Polimēru mehānikas institūts un vairāki citi. Par savu pastāvēšanu nebūtu droši LU Matemātikas un datorzinātņu institūts, Biomedicīnas centrs, Elektronikas un datorzinātņu institūts un pat LU Cietvielu Fizikas Institūts, kura gandrīz vienīgā izaugsmes cerība ir panākums TEAMING konkursa otrajā kārtā.*
>
> *Ja Organiskās sintēzes institūts nebūtu ieguvis piekto daļu (vairāk kā 10 miljoni eiro) no Latvijas kopīgā ieguvuma FP7 programmā, tad ļ. cien. akadēmiķim I.Kalviņam būtu nopietni jāizvērtē katrs vārds, ko viņš pareizi saka par Latvijas zinātnes politiku. Ja LU asociācijas FOTONIKA-LV trīs institūti nebūtu ieguvuši gandrīz desmito daļu (vairāk kā 4,3 miljoni eiro) no Latvijas kopīgā ieguvuma FP7 programmā un tā rezultātā nebūtu radikāli nostiprināti cilvēku resursi, nebūtu iegūta atpazīstamība ES Vienotā zinātnes telpā un sagatavota nopietna pamatne (atgriezta apritē vai no jauna radīta zinātnes infrastruktūras fundamentāliem un lietišķiem pētījumiem par apmēram 20 miljoniem eiro) izaugsmei, tad IZM un arī LU varētu dzīvot bez rūpēm. Tagad šī komanda, neatkarīgi no „nomenklatūras" darbībām, plāno savu tālāku izaugsmi un panākumus HORIZON 2020 konkursos un rokas ir par īsām, lai to bremzētu nacionāla „melnā skaudība vai vēl sliktāk" .*

Pateicoties ES Ietvara programmām aizvien vēl Latvijā ir zinātnes izcilības saliņas un patriotisku zinātnieku kopums un tas nav saskaņā ar patreiz piekopto *„zinātnes politiku"* tās iznīcināšanas virzienā. Skarbi, bet es vēl esmu no tiem, kurš atceras Staļina laikus un pārfrāzēts viņa teiciens lieliski raksturo patreizējo IZM un Valdības attieksmi: *„Ir cilvēks ir problēma, nav cilvēka nav problēmas – ir institūts ir problēma nav institūta nav problēmas".*

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

Tamdēļ 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. Ir runa par 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 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, piemēram, Helsinku Universitāte tagad lepojas ar vairāk, kā 30 ERC grantiem. Turpretī Latvijā ir tikai prof.A.Ambaiņa ERC grants, kurš tiek realizēts LU Datorikas fakultātē.

1.4. Par izmaiņām

HORIZONTS 2020 Latvijas Nacionālā kontaktpunkta mājvieta tagad ir VIAA un NKP grupa tagad strādā pēc Latvijas ierēdniecības *„labākajiem*" standartiem.

Aģentūra ar šādu abreviatūru ir zināma visiem aktīvajiem zinātniekiem Latvijā kā vienmēr klātesošs projektu uzraugs. Tālāko nekomentēšu. Tas, kas daudziem būs pārsteigums - VIAA apmēram 200 darbinieki, kopā ar savu vadītāju savās algās *„apgūst"* 4,5 miljoni € no valsts nodokļu maksātāju naudas un klāt pie tā ir jāpieskaita arī ES nodokļu maksātāju nauda Struktūrfondu un citu resursu veidā. Salīdzinājumam ir jāatgādina, ka Valsts piešķirtais bāzes finansējums visai zinātnei Latvijā 2015.gadā bija tikai 18,4 M€ un tikai Latvijas universitāte ar pāris tūkstošiem zinātnieku ir vienādā *„labvēlības režīmā"* ar VIAA, saņemot no valsts budžeta 4,8 M€.

LU lielu cerību uz pieaugumu nav, bet VIAA turpina palielināt darba vietu skaitu un budžetu, ieviešot aizvien jaunus uzraugus un palielinot atskaitīšanās intensitāti.

Inventarizējot tēriņus visās IZM struktūrās, varētu atrast daudzus miljonus gan zinātnei, gan skolotāju algām. Ja ne citādi, tad pārejot uz daļslodzēm solidaritātē ar zinātniekiem.

Diemžēl IZM un tās struktūru „*labākās aprindas*" nav kalpotāji tautai, bet ir ierēdņi atlasīti pēc iepriekš aprakstītiem indikatoriem. Paradokss ir apstāklī, ka citējamība ceļ zinātnieka *„H-Hirsch"* indeksu, bet kāda ierēdņa kritika no sabiedrības puses ceļ tā *„K"* indeksa vērtību, un ierēdnis kāpj pa karjeras kāpnēm uz augšu!!!

Man nav pieņemama šāda lietu kārtība, un, to es nekad neesmu slēpis. Līdz ar to es neparakstīju darba līgumu ar VIAA par darbošanos H-2020 nacionālo kontaktpunktu sistēmā. Tajā nebija neviena vārda par NKP eksperta darbu, bet bija punkti, kas prasīja *„slavināt"* pastāvošo kārtību. Alegorijās runājot, *„troika",* iepriekš ar mani nerunājot, *„aizmuguriski"* lēma par manu NKP koordinatora un NKP eksperta pienākumu denomināciju un atsaukšanu arī no visiem programmu komiteju delegāta darbiem turklāt. Protams, viens no argumentiem manai *„diskvalifikācijai"* bija manas zināšanas (*Overqualified and therefore disqualified*) un iecerēto reformu kritika. Tagad pēc gada ir labi redzams kurp ved šīs *„reformas".*

Tā rezultātā visas manas formālās attiecības ar VIAA un IZM izbeidzās 2015. gada maijā un turpmāk *„VĒSTIS"* būs mans personīgs profesionāls izdevums, lai visiem kolēģiem būtu iespēja izmantot manu un ar mani kopā esošās FOTONIKA-LV projektu grupas pieredzi un zināšanas panākumu kaldināšanā HORIZONTS 2020 konkursos.

Droši zvaniet un vaicājiet pēc padoma un pieredzes ne tikai darba laikā. Tā tas vienmēr ir bijis aizvadītos 15 gados un ne vienam vien labam zinātnes projektam, uzlabojot pasniegšanas kvalitāti, ir izdevies pārsniegt izcilības slieksni un saņemt finasējumu. Jūsu prieks par panākumiem un jūsu paldies bija mana lielākā alga šo 15 gadu garumā. Mana un FOTONIKA-LV kapacitāte ir jūsu rīcībā jebkurā laikā.

Tālāk tekstā esmu apkopojis materiālus, kuri, esmu drošs, jums noderēs, sastādot savu ceļa karti līdzdalībai konkursos uz H-2020 programmas 2016.-2017.gadu periodu. Apkopojums par H-2020 turpmāko divu gadu konkursiem ir arī mana Jaungada dāvana bijušajiem kolēģiem Nacionālo kontaktpunktu sistēmā un ceru tas palīdzēs viņu izmisīgai vēlmei veicināt līdzdalību.

Diemžēl, pagaidām ir maz cerību uz izmaiņām un ātri taps skaidrs, ka summārais rezultāts 2021.gadā būs divreiz sliktāks, kā *„Dullā Daukas"* līmenī to ir saplānojusi IZM „troika" *(vairāk, kā 100 miljoni eiro).* Būs jāatrod vainīgie un galvenie grēkāži būs NKP sistēmas cilvēki.

Lūdzu lasiet, izmantojiet kā ierosmi papētīt konkursa noteikumus dziļāk un vaicājiet! Vēlreiz atgādinu: kopskata informācija par H-2020 konkursiem 2016-2017.gados ir sarindota pēc to pirmajiem termiņiem, bet katra konkursa tēmas arī ir sarindotas hronoloģiskā secībā un tas ļauj vieglāk atrast un attiecīgi plānot darbību tuvāko konkursu projektu iniciatīvām.

Arī zinātnieki svinēs Latvijas neatkarības simtgadi. Cerēsim uz brīnumu. 2018.gada beigās un tamdēļ r*osinu iniciatīvu: „sagaidot Latvijas simtgadi, zinātnieku skaitam valstī jābūt divreiz lielākam nekā cietumnieku skaitam”.*

Visiem panākumus vēlot un atbalstu solot: Arnolds Ūbelis, 2015.gada 25.decembrī

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 būs 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. Vienlaicīgi ir jāatceras, ka 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 un vienmēr kalpos kā atgādinājums par iespējām. Gandrīz visiem konkursiem 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!!!)*

Ja kāds vēl nav sācis izmantot *„Participant Portal”,* tad attiecīgo konkursu WEB vietnes ir viegli atrodamas arī ar GOOGLE meklētāju izmantojot konkursa abreviatūru.

Sevišķi aicinu visus zinātniekus jau laicīgi pievērst uzmanību M-S-C konkursiem, kuri piedāvā dažādas stipendiju, personāla apmaiņas, zināšanu pārneses un zinātniskā darba treniņa iespējas. Priekš SMEs savukārt ir interesanti tiem specifiski domāti konkursi.

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 *„kiberkarā”,* kurš apjomīgi izvērsts pret Latvijas tautu, sāksim gūt panākumus.

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 izvarīties no kādām pārrakstīšanās kļūdām. Pielabošu VESTIS nākošos laidienos reizi vai divreiz mānesī.

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-01-2016:Pilot lines for manufacturing of materials with customized thermal/electrical conductivity properties*** **:** *IA Innovation action, Two stage: 8 December 2015, 24 May 2016;*
2. ***PILOTS-02-2016:Pilot Line Manufacturing of Nanostructured Antimicrobial Surfaces using Advanced Nanosurface Functionalization Technologies*****:** *IA Innovation action, Two stage: 8 December 2015, 24 May 2016;*
3. ***FOF-13-2016: Photonics Laser-based production*****:** *IA Innovation action, RIA Research and Innovation action: 21 January 2016;*
4. ***SPIRE-01-2016:Systematic approaches for resource-efficient water management systems in process industries*****:** *IA Innovation action, Single stage: 21 January 2016;*
5. ***SPIRE-02-2016:Plant-wide monitoring and control of data-intensive processes*****:** *IA Innovation action, Single stage: 21 January 2016;*
6. ***SPIRE-03-2016:Industrial technologies for the valorisation of European bio-resources into high added value process streams*****:** *IA Innovation action, Single stage: 21 January 2016;*
7. ***SPIRE-04-2016:Industrial furnace design addressing energy efficiency in new and existing furnaces:*** *IA Innovation action, Single stage: 21 January 2016;*
8. ***SPIRE-05-2016:Potential use of carbon dioxide / carbon monoxide and non-conventional fossil natural resources in Europe as feedstock for the process industry*****:** *CSA Coordination and support action, Single stage: 21 January 2016;*
9. ***SPIRE-06-2016:Business models for flexible and delocalised approaches for intensified processing*****:** *CSA Coordination and support action, Single stage: 21 January 2016;*
10. ***FOF-01-2016:Novel hybrid approaches for additive and subtractive manufacturing machines*****:** *IA Innovation action, Single stage: 21 January 2016;*
11. ***FOF-02-2016:Machinery and robot systems in dynamic shop floor environments using novel embedded cognitive functions*****:** *IA Innovation action, Single stage: 21 January 2016;*
12. ***FOF-03-2016:Zero-defect strategies at system level for multi-stage manufacturing in production lines*****:** *IA Innovation action, Single stage: 21 January 2016;*
13. ***FOF-04-2016:Continuous adaptation of work environments with changing levels of automation in evolving production systems*****:** *IA Innovation action, Single stage: 21 January 2016;*
14. ***FOF-05-2016:Support for the further development of Additive Manufacturing technologies in Europe*****:** *IA Innovation action, Single stage: 21 January 2016;*
15. ***FOF-11-2016:Digital automation*****:** *CSA Coordination and support action, RIA Research and Innovation action: 21 January 2016;*
16. ***CIRC-01-2016-2017:Systemic, eco-innovative approaches for the circular economy: large-scale demonstration projects*****:** *IA Innovation action, Two stage: 8 March 2016, 6 September 2016;*

17. ***CIRC-02-2016-2017:Water in the context of the circular economy:*** *IA Innovation action, Two stage: 8 March 2016, 6 September 2016;*
18. ***CIRC-03-2016:Smart Specialisation for systemic eco-innovation/circular economy,*** *IA Innovation action, Single stage: 8 March 2016;*
19. ***CIRC-04-2016:New models and economic incentives for circular economy business:*** *IA Innovation action, Single stage: 8 March 2016;*
20. ***CIRC-05-2016:Unlocking the potential of urban organic waste:*** *IA Innovation action, Single stage: 8 March 2016;*
21. ***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*
22. ***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*
23. ***PILOTS-05-2017:Paper-based electronics:*** *IA Innovation action, Two stage: 27 October 2016, 4 May 2017*
24. ***FOF-06-2017:New product functionalities through advanced surface manufacturing processes for mass production:*** *IA Innovation action, Single stage: 19 January 2017;*
25. ***FOF-07-2017:Integration of unconventional technologies for multi-material processing into manufacturing systems:*** *IA Innovation action, Single stage: 19 January 2017;*
26. ***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;*
27. ***FOF-09-2017:Novel design and predictive maintenance technologies for increased operating life of production systems:****IA Innovation action, Single stage: 19 January 2017;*
28. ***FOF-10-2017:New technologies and life cycle management for reconfigurable and reusable customised products:*** *IA Innovation action, Single stage: 19 January 2017;*
29. ***FOF-12-2017:ICT Innovation for Manufacturing SMEs (I4MS):*** *CSA Coordination and support action, RIA Research and Innovation action: 19 January 2017;*
30. ***FOF-10-2017:New technologies and life cycle management for reconfigurable and reusable customised products:*** *IA Innovation action, Single stage: 21 January 2017;*
31. ***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;*
32. ***SPIRE-08-2017:Carbon dioxide utilisation to produce added value chemicals:*** *IA Innovation action, Single stage: 19 January 2017;*
33. ***SPIRE-09-2017:Pilot lines based on more flexible and down-scaled high performance processing:*** *IA Innovation action, Single stage: 19 January 2017;*
34. ***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;*
35. ***SPIRE-11-2017:Support for the enhancement of the impact of SPIRE PPP projects:*** *CSA Coordination and support action, Single stage: 19 January 2017;*
36. ***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-02-2016:Bioconversion of non-agricultural waste into biomolecules for industrial applications:*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
2. ***BIOTEC-03-2016:Microbial chassis platforms with optimized metabolic pathways for industrial innovations through systems biology:*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
3. ***NMBP-01-2016:Novel hybrid materials for heterogeneous catalysis:*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
4. ***NMBP-02-2016:Advanced Materials for Power Electronics based on wide bandgap semiconductor devices technology:*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
5. ***NMBP-03-2016:Innovative and sustainable materials solutions for the substitution of critical raw materials in the electric power system :*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*

6. ***NMBP-09-2016:Biomaterials for diagnosis and treatment of demyelination disorders of the Central Nervous System:*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
7. ***NMBP-10-2016:Nanoformulation of biologicals:*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
8. ***NMBP-17-2016:Advanced materials solutions and architectures for high efficiency solar energy harvesting:*** *IA Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
9. ***NMBP-18-2016:Advanced materials enabling the integration of storage technologies in the electricity grid :*** *IA Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
10. ***NMBP-19-2017:Cost-effective materials for "power-to-chemical" technologies:*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
11. ***NMBP-20-2017:High-performance materials for optimizing carbon dioxide capture:***
12. *IA Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
13. ***NMBP-23-2016:Advancing the integration of Materials Modelling in Business Processes to enhance effective industrial decision making and increase competitiveness:*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
14. ***NMBP-26-2016:Analytical techniques and tools in support of nanomaterial risk assessment:*** *RIA Research and Innovation action, Two Stage, December 8, 2015, May 24, 2016;*
15. ***NMBP-08-2016:Affordable weight reduction of high-volume vehicles and components taking into account the entire life-cycle:*** *CSA Coordination and support action, Single Stage, January 21, 2016;*
16. ***NMBP-11-2016:ERA-NET on Nanomedicine:*** *ERA-NET-Cofund ERA-NET Cofund, Single Stage, January 21, 2016;*
17. ***BIOTEC-01-2016:ERA-NET Cofund on Biotechnologies:*** *ERA-NET-Cofund ERA-NET Cofund, Single Stage, January 21, 2016;*
18. ***NMBP-21-2016:ERA-NET on manufacturing technologies supporting industry and particularly SMEs in the global competition:*** *ERA-NET-Cofund. Single Stage, January 21, 2016;*
19. ***NMBP-24-2016:Network to capitalise on strong European position in materials modelling and to allow industry to reap the benefits:*** *CSA Coordination and support action, Single Stage, January 21, 2016;*
20. ***NMBP-27-2016:Promoting safe innovation through global consolidation and networking of nanosafety centres and strengthening the European industry through cooperation in nanosafety:*** *CSA Coordination and support action, Single Stage, January 21, 2016;*
21. ***NMBP-30-2016:Facilitating knowledge management, networking and coordination in the field of formulated products:*** *CSA Coordination and support action, Single Stage, January 21, 2016;*
22. ***NMBP-31-2016: Presidency events:*** *CSA Coordination and support action, Single Stage, January 21, 2016;*
23. ***NMBP-33-2016:Networking and sharing best experiences in using regional clusters strategies with a focus on supporting innovation in the NMBP thematic area:*** *CSA Coordination and support action, Single Stage, January 21, 2016;*
24. ***NMBP-36-2016:Policy support for Industry 2020 in the circular economy:*** *CSA Coordination and support action, Single Stage, January 21, 2016;*
25. ***BIOTEC-04-2016:KET Biotechnology foresight identifying gaps and high-value opportunities for the EU industry:*** *CSA Coordination and support action, Single Stage, January 21, 2016;*
26. ***BIOTEC-05-2017:Microbial platforms for CO2-reuse processes in the low-carbon economy:*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
27. ***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;*
28. ***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;*
29. ***BIOTEC-08-2017:Support for enhancing and demonstrating the impact of KET Biotechnology projects:*** *CSA Coordination and support action, Single Stage, October 27, 2016;*
30. ***NMBP-04-2017:Architectured /Advanced material concepts for intelligent bulk material structures :*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
31. ***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;*
32. ***NMBP-06-2017:Improved material durability in buildings and infrastructures, including offshore :*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
33. ***NMBP-07-2017:Systems of materials characterisation for model, product and process optimisation :*** *RIA Research and Innovation action, Single Stage, October 27, 2016;*
34. ***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;*

35. ***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;*
36. ***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;*
37. ***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;*
38. ***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;*
39. ***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;*
40. ***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;*
41. ***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;*
42. ***NMBP-34-2017:Governing innovation of nanotechnology through enhanced societal engagement:*** *CSA Coordination and support action, Single Stage, January 19, 2017;*
43. ***NMBP-13-2017:Cross-cutting KETs for diagnostics at the point-of-care:*** *RIA Research and Innovation action, Single Stage, January 19. 2017;*
44. ***NMBP-15-2017:Nanotechnologies for imaging cellular transplants and regenerative processes in vivo :*** *CSA Coordination and support action, Single Stage, January 19, 2017;*

H2020	Excellent science	MSCA-ITN-EJD European Joint Doctorates	10-01-2016

MARIE SKŁODOWSKA-CURIE INNOVATIVE TRAINING NETWORKS

The Innovative Training Networks (ITN) aim to train a new generation of creative, entrepreneurial and innovative early-stage researchers, able to face current and future challenges and to convert knowledge and ideas into products and services for economic and social benefit.

ITN will raise excellence and structure research and doctoral training, extending the traditional academic research training setting, incorporating the elements of Open Science and equipping researchers with the right combination of research-related and transferable competences. It will provide enhanced career perspectives in both the academic and non-academic sectors through international, interdisciplinary and intersectoral mobility combined with an innovation-oriented mind-set.

ITN supports competitively selected joint research training and/or doctoral programmes, implemented by partnerships of universities, research institutions, research infrastructures, businesses, SMEs, and other socio-economic actors from different countries across Europe and beyond.

H2020	Excellent science	H2020-MSCA-NIGHT-2016	13-01-2016

EUROPEAN RESEARCHERS' NIGHT

The European Researchers' Night aims to bring researchers closer to the general public and to increase awareness of research and innovation activities, with a view to supporting the public recognition of researchers, creating an understanding of the impact of researchers' work on citizen's daily life, and encouraging young people to embark on research careers.

Activities focus on the general public, addressing and attracting people regardless of the level their scientific background, with a special focus on pupils and students. Activities can combine education aspects with entertainment, especially when addressing young audience. They can take various forms, e.g. hands-on experiments, science shows, simulations, debates, games, competitions, quizzes, etc. Where appropriate, engagement with educational institutions should be sought in order to encourage formal and informal science education with the aim to improve the scientific knowledge base.

H2020	Industrial Leadership	H2020-EUK-2016	19 January 2016

EU-SOUTH KOREA JOINT CALL

Topics:

- ***EUK-01-2016:5G – Next Generation Communication Networks:*** RIA Research and Innovation action, Single stage;
- ***EUK-02-2016:IoT joint research:*** RIA Research and Innovation action, Single stage;
- ***EUK-03-2016:Federated Cloud resource brokerage for mobile cloud services:*** RIA Research and Innovation action, Single stage.

H2020	Industrial Leadership	H2020-EUJ-2016	19 January 2016

EU-JAPAN JOINT CALL

Topics:

- ***EUJ - 01-2016:5G – Next Generation Communication Networks*:** RIA Research and Innovation action, Single stage;
- ***EUJ-02-2016:IoT/Cloud/Big Data platforms in social application contexts*:** RIA Research and Innovation action, Single stage;
- ***EUJ-03-2016:Experimental testbeds on Information-Centric Networking*:** RIA Research and Innovation action, Single stage.

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-37-2016:CHINA: Collaboration on Future Internet*:** *CSA Coordination and support action, Single Stage, 19 January, 2016;*
2. ***ICT-38-2016: MEXICO: Collaboration on ICT*:** *CSA Coordination and support action, Single Stage, 19 January, 2016;*
3. ***ICT-01-2016: Smart Cyber-Physical Systems*:** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
4. ***ICT-02-2016: Thin, Organic and Large Area Electronics*:** *IA Innovation action, RIA, Research and Innovation action, Single Stage, 12 April, 2016;*
5. ***ICT-03-2016:SSI - Smart System Integration*:** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
6. ***ICT-06-2016:Cloud Computing*:** *IA Innovation action, RIA, Research and Innovation action, Single Stage, 12 April, 2016;*
7. ***ICT-10-2016: Software Technologies*:** *RIA, Research and Innovation action, Single Stage, 12 April, 2016;*
8. ***ICT-12-2016: Net Innovation Initiative*:** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
9. ***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;*
10. ***ICT-14-2016-2017: Big Data PPP: cross-sectorial and cross-lingual data integration and experimentation*:** *IA Innovation action, Single Stage, 12 April, 2016;*
11. ***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;*
12. ***ICT-17-2016-2017:Big data PPP: Support, industrial skills, benchmarking and evaluation*:** *RIA Research and Innovation action, Single Stage, 12 April, 2016;*
13. ***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;*
14. ***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.

15. ***ICT-22-2016: Technologies for Learning and Skills:*** *IA Innovation action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
16. ***ICT-24-2016: Gaming and gamification:*** *IA Innovation action, Single Stage, 12 April, 2016;*
17. ***ICT-25-2016-2017: Advanced robot capabilities research and take-up:*** *IA Innovation action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
18. ***ICT-26-2016:System abilities, development and pilot installations:*** *IA Innovation action, RIA Research and Innovation action, Single Stage, 12 April, 2016;*
19. ***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**.**

20. ***ICT-34-2016:Pre-Commercial Procurement open*****:** *PCP Pre-Commercial Procurement: Single Stage, 12 April, 2016;*
21. ***ICT-35-2016:Enabling responsible ICT-related research and innovation*****:** *RIA, Research and Innovation action, Single Stage, 8 November, 2016;*

22. ***ICT-36-2016:Boost synergies between artists, creative people and technologists:*** *CSA Coordination and support action, IA Innovation action, Single Stage, 8 November, 2016;*
23. ***ICT-04-2017:Smart Anything Everywhere Initiative:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 8 November, 2016;*
24. ***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;*
25. ***ICT-08-2017:5G PPP Convergent Technologies:*** *IA Innovation action, RIA, Research and Innovation action, Single Stage, 8 November, 2016;*
26. ***ICT-09-2017:Networking research beyond 5G:*** *RIA, Research and Innovation action, Single Stage, 8 November, 2016;*
27. ***ICT-19-2017:Media and content convergence:*** *CSA Coordination and support action, IA Innovation action, Single Stage, 8 November, 2016;*
28. ***ICT-05-2017:Customised and low energy computing:*** *CSA Coordination and support action, RIA Research and Innovation action, Single Stage, 25 April, 2017;*
29. ***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;*
30. ***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;*
31. ***ICT-17-2016-2017:Big data PPP: Support, industrial skills, benchmarking and evaluation:*** *RIA Research and Innovation action, Single Stage, 25 April, 2017;*
32. ***ICT-20-2017:Tools for smart digital content in the creative industries:*** *RIA Research and Innovation action, Single Stage, 25 April, 2017;*
33. ***ICT-23-2017:Interfaces for accessibility:*** *RIA Research and Innovation action, Single Stage, 25 April, 2017;*
34. ***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;*
35. ***ICT-28-2017:Robotics Competition, coordination and support:*** *CSA Coordination and support action, Single Stage, 25 April, 2017;*
36. ***ICT-30 - 2017:Photonics KET 2017:*** *CSA Coordination and support action, IA Innovation action, RIA Research and Innovation action, Single Stage, 25 April, 2017;*
37. ***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;*
38. ***ICT-32-2017:Startup Europe for Growth and Innovation Radar:*** *CSA Coordination and support action, IA Innovation action, Single Stage, 25 April, 2017;*
39. ***ICT-33-2017:Innovation procurement networks:*** *CSA Coordination and support action, Single Stage, 25 April, 2017;*
40. ***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:

1. EE-03-2016:Standardised installation packages integrating renewable and energy efficiency solutions for heating, cooling and/or hot water preparation. *IA Innovation action, Single Stage, Deadline 21 January, 2016;*

2. EE-04-2016-2017:New heating and cooling solutions using low grade sources of thermal energy. ***RIA Research and Innovation action, Single Stage, Deadline 21 January, 2016;***

3. EE-05-2016:Models and tools for heating and cooling mapping and planning. ***RIA Research and Innovation action, Single Stage, Deadline 21 January, 2016;***

4. EE-07-2016-2017:Behavioural change toward energy efficiency through ICT. *IA Innovation action, Single Stage, Deadline 21 January, 2016;*

5. EE-08-2016:Socio-economic research on consumer's behaviour related to energy efficiency. ***RIA Research and Innovation action, Single Stage, Deadline 21 January, 2016;***

6. EE-10-2016:Supporting accelerated and cost-effective deep renovation of buildings through Public Private Partnership (EeB PPP). *IA Innovation action, Single Stage, Deadline 21 January, 2016;*

7. EE-17-2016-2017:Valorisation of waste heat in industrial systems (SPIRE PPP). *IA Innovation action, Single Stage, Deadline 21 January, 2016;*

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-1.1-2016:Reducing energy consumption and environmental impact of aviation.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
2. **MG-1.4-2016-2017:Breakthrough innovation.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
3. **MG-2.2-2016:Development, production and use of high performance and lightweight materials for vessels and equipment.** IA Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
4. **MG-2.3-2016:New and improved transport concepts in waterborne transport.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016..
5. **MG-3.3-2016:Safer waterborne transport and maritime operations.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
6. **MG-3.5-2016:Behavioural aspects for safer transport.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
7. **MG-3.4-2016:Transport infrastructure innovation to increase the transport system safety at modal and intermodal level (including nodes and interchanges).** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
8. **MG-4.5-2016:New ways of supporting development and implementation of neighbourhood-level and urban-district-level transport innovations.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
9. **MG-5.1-2016:Networked and efficient logistics clusters.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
10. **MG-6.1-2016:Innovative concepts, systems and services towards 'mobility as a service'.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
11. **MG-6.2-2016:Large-scale demonstration(s) of cooperative ITS.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
12. **MG-1.5-2016-2017:Identification of gaps, barriers and needs in the aviation research.** CSA Coordination and support action. Single-stage, Deadline January 26, 2016.
13. **MG-3.1-2016:Addressing aviation safety challenges.** RIA Research and Innovation action. Single-stage. Deadline January 26, 2016.
14. **MG-3.6-2016:Euro-African initiative on road safety and traffic management.** CSA Coordination and support action. Single-stage, Deadline January 26, 2016.
15. **MG-4.4-2016:Facilitating public procurement of innovative sustainable transport and mobility solutions in urban areas.** CSA Coordination and support action. Single-stage, Deadline January 26, 2016.
16. **MG-5.3-2016:Promoting the deployment of green transport, towards Eco-labels for logistics.** CSA Coordination and support action. Single-stage, Deadline January 26, 2016.
17. **MG-6.3-2016:Roadmap, new business models, awareness raising, support and incentives for the roll-out of ITS.** CSA Coordination and support action. Single-stage, Deadline January 26, 2016.
18. **MG-8.3-2016:Assessing future requirements for skills and jobs across transport modes and systems.**
19. IA Innovation action. Single-stage. Deadline January 26, 2016.
20. **MG-8.1-2016:Research, technology development and market trends for the European transport manufacturing industries.** CSA Coordination and support action. Single-stage, Deadline January 26, 2016.
21. **MG-8.6-2016:Innovation awards for students and researchers in the context of the Transport Research Arena conference - TRA 2018.** CSA Coordination and support action. Single-stage, Deadline January 26, 2016.
22. **MG-1.2-2017:Reducing aviation noise.** RIA Research and Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
23. **MG-1.3-2017:Maintaining industrial leadership in aeronautics.** RIA Research and Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
24. **MG-2.1-2017:Innovations for energy efficiency and emission control in waterborne transport.** IA Innovation action. Two-stage. Deadlines January 26, October 19, 2017..
25. **MG-2.4-2017:Complex and value-added specialised vessels.** IA Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
26. **MG-3.2-2017:Protection of all road users in crashes.** RIA Research and Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
27. **MG-4.1-2017:Increasing the take up and scale-up of innovative solutions to achieve sustainable mobility in urban areas.** IA Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
28. **MG-4.2-2017:Supporting 'smart electric mobility' in cities.** IA Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
29. **MG-4.3-2017:Innovative approaches for integrating urban nodes in the TEN-T core network corridors.**

30. CSA Coordination and support action. Single-stage, Deadline February 01, 2017
31. **MG-5.2-2017:Innovative ICT solutions for future logistics operations.** RIA Research and Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
32. **MG-5.4-2017:Potential of the Physical Internet.** CSA Coordination and support action. Single-stage, Deadline February 01, 2017
33. **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.
34. **MG-7.2-2017:Optimisation of transport infrastructure including terminals.** RIA Research and Innovation action. Two-stage. Deadlines January 26, October 19, 2017.
35. **MG-7.3-2017:The Port of the future.** CSA Coordination and support action. Single-stage, Deadline February 01, 2017.
36. **MG-8.2-2017:Big data in Transport: Research opportunities, challenges and limitations.** CSA Coordination and support action. Single-stage, Deadline February 01, 2017.
37. **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.
38. **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-02-2016:Automation pilots for passenger cars.** IA Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
2. **ART-04-2016:Safety and end-user acceptance aspects of road automation in the transition period.**
3. RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
4. **ART-05-2016:Road infrastructure to support the transition to automation and the coexistence of conventional and automated vehicles on the same network.** RIA Research and Innovation action. Two-stage. Deadlines January 20, September 29, 2016.
5. **ART-06-2016:Coordination of activities in support of road automation.** CSA Coordination and support action. Single-stage Deadline January 26,2016.
6. **ART-01-2017:ICT infrastructure to enable the transition towards road transport automation.** IA Innovation action. Two-stage. Deadlines January 26, September 27, 2017.
7. **ART-03-2017:Multi-Brand platooning in real traffic conditions.** IA Innovation action. Two-stage. Deadlines January 26, September 27, 2017.
8. **ART-03-2017:Multi-Brand platooning in real traffic conditions.** IA Innovation action. Two-stage. Deadlines January 26, September 27, 2017.
9. **ART-07-2017:Full-scale demonstration of urban road transport automation.** IA Innovation action. Two-stage. Deadlines January 26, September 27, 2017.

H2020	Industrial Leadership	H2020-EEB-2016-2017	21 January 2016

CALL FOR ENERGY-EFFICIENT BUILDINGS

Scene Setter:

The buildings industrial sector (residential and non-residential) is the first economic sector in the construction market, as construction and refurbishment activities account for 85% of the total construction sector output. It represents about 7 % of the EU28 non-financial business economy and provides ***11.5 million direct jobs*** *(about 8.8% of total employment in the non-financial business economy)[[Based on EUROSTAT statistical business survey [sbs_na_sca_r2] and as also reflected in table 1.1. (page 17) and table 1.3 (page 21)in the JRC study available at: http://iet.jrc.ec.europa.eu/energyefficiency/system/tdf/eur26888_buildingreport_online.pdf?file=1&type=node&id=9069]]. Furthermore the built environment affects the life and work of all EU-citizens: The construction sector also has a crucial impact on the EU environment and energy policies as buildings use* ***40 % of total EU energy consumption*** *and* ***responsible for 36% of Green-House Gases*** *in Europe while the replacement rate of the existing stock is very small (1-2% per year).*

The buildings sector is on the critical path to decarbonise the European economy by 2050. In order to achieve this objective it must enable reducing its CO2 emissions by 90% and its energy consumption by as much as 50%. This is a unique opportunity for sustainable business growth provided that products and related services for both new and refurbished buildings are affordable and of durable quality, in line with several current or future European Directives. Yet, together with the 2050 deadlines, such Directives are putting more constraints on a sector which is directly impacted by the on-going financial and economic crisis, taking into account that, although Europe has major companies, ***this sector is highly fragmented with over 95% of SMEs****.*

The objective of the Energy-efficient Buildings *Public-Private Partnership (PPP) Initiative is to drive the creation of a high-tech building industry which turns energy efficiency into a sustainable business, fostering EU competitiveness in the construction sector on a global level.*

This call will complement the call on Energy Efficiency of the Energy societal challenge, by helping deliver, implement and optimise building and district concepts that have the technical, economic and societal potential to drastically reduce energy consumption and decrease CO2 emissions, both in relation to new buildings and to the renovation of existing buildings. This new initiative should have a large payoff, as it will increase the market for energy-efficient, clean and affordable buildings. Priority will be given to delivering new building technologies, materials and components for energy saving and energy generation, thermal energy storage systems, advanced insulation systems, thermal distribution systems, lighting, windows and glazing, energy generation systems based on renewable sources. Priorities also include reliable simulation and prediction tools, including assessment methods that integrate economic, social and environmental issues, including comfort and safety. To date, the construction industry has difficulty to effectively integrate key technologies into its operations in order to achieve sustainable, long-term competitiveness and such integration should also be promoted.

Activities supported under the EeB PPP are expected to contribute to EU industrial leadership and the grand societal challenges.

The participation of public authorities may be an asset for some projects, as public authorities own a large part of the building stock at European level.

The EeB cPPP will support a high-tech building industry which turns the need for energy efficiency into an opportunity for sustainable business, fostering EU competitiveness in the construction sector at the global level.

Topics:

1. ***EEB-01-2016:Highly efficient insulation materials with improved properties**, IA Innovation action. Single Stage;*
2. ***EEB-02-2016:Performance indicators and monitoring techniques for energy-efficiency and environmental quality at building and district level**, CSA Coordination and support action, Single Stage;*
3. ***EEB-04-2016:New technologies and strategies for the development of pre-fabricated elements through the reuse and recycling of construction materials and structures**,* IA Innovation action. Single Stage;
4. ***EEB-01-2016:Highly efficient insulation materials with improved properties**,* IA Innovation action. Single Stage.

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-02-2016:Technologies for low emission light duty powertrains.** RIA Research and Innovation action. Single-stage. Deadline January 26,2016.
2. **GV-03-2016:System and cost optimised hybridisation of road vehicles.** IA Innovation action. Single-stage. Deadline January 26,2016.
3. **GV-11-2016:Stimulating European research and development for the implementation of future road transport technologies.** CSA Coordination and support action. Single-stage Deadline January 26,2016.
4. **GV-12-2016:ERA-NET Co-fund on electromobility.** ERA-NET-Cofund ERA-NET Cofund. Single-stage Deadline January 26,2016.
5. **GV-01-2017:Optimisation of heavy duty vehicles for alternative fuels use.** IA Innovation action. Single-stage. Deadline February 01, 2017.
6. **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.
7. **GV-05-2017:Electric vehicle user-centric design for optimised energy efficiency.** RIA Research and Innovation action. Single-stage. Deadline February 01, 2017.
8. **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.
9. **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.
10. **GV-08-2017:Electrified urban commercial vehicles integration with fast charging infrastructure.** IA Innovation action. Single-stage. Deadline February 01, 2017.
11. **GV-09-2017:Aerodynamic and flexible trucks.** IA Innovation action. Single-stage. Deadline February 01, 2017.
12. **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-25-2016:Celebrating European Science.** CSA Coordination and support action. Single-stage. Deadline January 26, 2016.
2. **SwafS-01-2016:Participatory research and innovation via Science Shops.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2016.
3. **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.
4. **SwafS-03-2016-2017:Support to research organisations to implement gender equality plans.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
5. **SwafS-04-2016:Opening Research Organisations in the European Research Area.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
6. **SwafS-05-2017:New constellations of Changing Institutions and Actors .** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
7. **SwafS-06-2017:Engaging industry – Champions for RRI in Industrial Sectors.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
8. **SwafS-07-2016:Training on Open Science in the European Research Area.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
9. **SwafS-08-2017:European Community of Practice to support institutional change .**CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
10. **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.
11. **SwafS-15-2016:Open Schooling and collaboration on science education.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
12. **SwafS-16-2016:Mapping the Ethics and Research Integrity Normative Framework.** CSA Coordination and support action. Single-stage. Deadline August 30, 2016.
13. **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.
14. **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.
15. **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.
16. **SwafS-20-2016:ERA Mobility and Career Day.** Coordination and support action. Single-stage. Deadline August 30, 2016.
17. **SwafS-10-2017:Putting Open Science into action.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2017
18. **SwafS-11-2017:Science education outside the classroom.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2017
19. **SwafS-12-2017:Webs of Innovation Value Chains and Openings for RRI.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2017
20. **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.
21. **SwafS-14-2017:A Linked-up Global World of RRI.** RIA Research and Innovation action. Single-stage. Deadline August 30, 2017.
22. **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.
23. **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.
24. **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.
25. **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-CS2-CPW03-2015-02	4 February 2016

CALL: CLEAN SKY 2 CALL FOR CORE PARTNERS WAVE 3

TOPICS:

1. **JTI-CS2-2015-CPW03-AIR-01-04:Next generation movables for high speed aircraft.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
2. **JTI-CS2-2015-CPW03-AIR-02-09:Design, manufacture and deliver Technology Demonstrator of high visibility, crashworthy, low-drag integrated cockpit section for next generation civil tiltrotor (NGCTR).** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
3. **JTI-CS2-2015-CPW03-AIR-02-10:Design, manufacture and deliver Technology Demonstrator of high visibility, crashworthy, low-drag integrated cabin section for next generation civil tiltrotor (NGCTR).** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
4. **JTI-CS2-2015-CPW03-AIR-02-11:Design, manufacture and deliver Technology Demonstrator of high visibility, crashworthy, low-drag integrated Rear Fuselage and Tail sections for next generation civil tiltrotor (NGCTR).** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
5. **JTI-CS2-2015-CPW03-AIR-02-11:Design, manufacture and deliver Technology Demonstrator of high visibility, crashworthy, low-drag integrated Rear Fuselage and Tail sections for next generation civil tiltrotor (NGCTR).** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
6. **JTI-CS2-2015-CPW03-ENG-01-08:HP Core module and its associated control laws and equipment for the UHPE demonstrator.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
7. **JTI-CS2-2015-CPW03-ENG-03-03:VHBR Engine - HP Turbine Technology.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
8. **JTI-CS2-2015-CPW03-ENG-03-04:Demonstration of CFD capability in the simulation of air-oil flow in complex aero-engine bearing chambers - a systematic approach.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;

9. **JTI-CS2-2015-CPW03-ENG-03-05:Development of large volume, mass optimised, integrated oil storage systems for large VHBR engines.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
10. **JTI-CS2-2015-CPW03-FRC-01-01:Design, development, testing and flight qualification of smart fly-by-wire actuators for primary flight control of a civil tiltrotor.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
11. **JTI-CS2-2015-CPW03-FRC-02-03:New generation landing gear for a compound fast rotorcraft.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
12. **JTI-CS2-2015-CPW03-FRC-02-04:LifeRCraft Main Gear Box.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
13. **JTI-CS2-2015-CPW03-FRC-02-05:Electrical Wiring Interconnection System for a compound fast rotorcraft.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
14. **JTI-CS2-2015-CPW03-FRC-02-06:Innovative actuators for compound rotorcraft flight control.** CS2-IA Innovation action. Single stage. Deadline 04 February 2016;
15. **JTI-CS2-2015-CPW03-LPA-01-08:Engine Mounting System for the CROR Flight Test Demo. CS**2-IA Innovation action. Single stage. Deadline 04 February 2016;
16. **JTI-CS2-2015-CPW03-LPA-01-09:Aircraft Configuration Studies and Demonstration (Scaled Flight testing, Instrumentation). CS**2-IA Innovation action. Single stage. Deadline 04 February 2016;
17. **JTI-CS2-2015-CPW03-LPA-01-10:Aircraft and Hybrid Propulsion System Architecture, Integration and Verification. CS**2-IA Innovation action. Single stage. Deadline 04 February 2016;
18. **JTI-CS2-2015-CPW03-SYS-02-03:Short TAT braking system - Optimized tyre design for improved brake cooling. CS**2-IA Innovation action. Single stage. Deadline 04 February 2016;
19. **JTI-CS2-2015-CPW03-SYS-02-04:High efficient compact electro-mechanical brake for small aircraft and helicopters with advanced brake disc material. CS**2-IA Innovation action. Single stage. Deadline 04 February 2016;
20. **JTI-CS2-2015-CPW03-SYS-02-05:High efficient structural landing gear parts based on advanced carbon fiber material systems and highly automated production technologies for helicopter and aircraft. CS**2-IA Innovation action. Single stage. Deadline 04 February 2016;
21. **JTI-CS2-2015-CPW03-SYS-02-06:HVDC Power Center and Functions. CS**2-IA Innovation action. Single stage. Deadline 04 February 2016;
22. **JTI-CS2-2015-CPW03-SYS-02-07:Detection and Characterization of Icing Conditions Contributing to Ice Protection Optimization. CS**2-IA Innovation action. Single stage. Deadline 04 February 2016;
23. **JTI-CS2-2015-CPW03-SYS-02-08:Electro-Thermal Wing Ice Protection System For Large Aircraft. CS**2-IA Innovation action. Single stage. Deadline 04 February 2016.

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-11-2016/2017:Understanding the transformation of European public administrations.** CSA Coordination and support action, RIA Research and Innovation action. Single-Stage. Deadline 04 February 2016;
2. **CULT-COOP-11-2016/2017:Understanding the transformation of European public administrations.** CSA Coordination and support action, RIA Research and Innovation action. Single-Stage. Deadline 04 February 2016;

3. **CULT-COOP-01-2017:Democratic discourses and the rule of law.** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
4. **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;
5. **CULT-COOP-03-2017:Cultural literacy of young generations in Europe.** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
6. **CULT-COOP-04-2017:Contemporary histories of Europe in artistic and creative practices.** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
7. **CULT-COOP-05-2017:Religious diversity in Europe - past, present and future .** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
8. **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;
9. **CULT-COOP-07-2017:Cultural heritage of European coastal and maritime regions.** RIA Research and Innovation action. Single-Stage. Deadline 02 February 2017;
10. **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;
11. **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;
12. **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-02-2016:User-driven innovation: value creation through design-enabled innovation.** CSA Coordination and support action. Single Stage. Deadline 04 February 2016.
2. **CO-CREATION-02-2016:User-driven innovation: value creation through design-enabled innovation.** CSA Coordination and support action. Single Stage. Deadline 04 February 2016.
3. **CO-CREATION-03-2016:Piloting demand-driven collaborative innovation models in Europe.** IA Innovation action. Single Stage. Deadline 04 February 2016.
4. **CO-CREATION-05-2016:Co-creation between public administrations: once-only principle.** CSA Coordination and support action, IA Innovation action. Single Stage. Deadline 24 May 2016.
5. **CO-CREATION-08-2016/2017:Better integration of evidence on the impact of research and innovation in policy making.** RIA Research and Innovation action. Single Stage. Deadline 04 February 2016.

6. **CO-CREATION-09-2016:A European map of knowledge production and co-creation in support of research and innovation for societal challenges.** CSA Coordination and support action. Single Stage. Deadline 04 February 2016.
7. **CO-CREATION-01-2017:Education and skills: empowering Europe's young innovators.** IA Innovation action. Single Stage. Deadline 02 February 2017.
8. **CO-CREATION-04-2017:Applied co-creation to deliver public services.** IA Innovation action. Single Stage. Deadline 02 February 2017.
9. **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.
10. **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-01-2016:An empirically informed European theory of justice and fairness.** RIA Research and Innovation action. Single Stage. Deadline 04 February 2016;
2. **REV-INEQUAL-02-2016:Contemporary radicalisation trends and their implications for Europe.** RIA Research and Innovation action. Single Stage. Deadline 04 February 2016;
3. **REV-INEQUAL-03-2016:Dynamics of inequalities across the life-course.** ERA-NET-Cofund ERA-NET Cofund. Single Stage. Deadline 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. Deadline 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. Deadline 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. Deadline 04 February 2016;
7. **REV-INEQUAL-07-2016:Spatial justice, social cohesion and territorial inequalities.** RIA Research and Innovation action. Single Stage. Deadline 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. Deadline 04 February 2016;
9. **REV-INEQUAL-10-2016:Multi-stakeholder platform for enhancing youth digital opportunities.** CSA Coordination and support action. Single Stage. Deadline 04 February 2016;
10. **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-03-2016:Increasing digital security of health related data on a systemic level.** RIA Research and Innovation action. Single Stage. Deadline 16 February, 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 25 August, 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.** RIA Research and Innovation 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	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-18-2016:Big Data supporting Public Health policies :*** *RIA Research and Innovation action. Single-Stage. Deadline 16 Februaris 2016;*
2. ***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;*
3. ***SC1-HCO-01-2016:Valorisation of FP7 Health and H2020 SC1 research results :*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
4. ***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;*
5. ***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;*
6. ***SC1-HCO-05-2016:Coordinating personalised medicine research:*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
7. ***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;*
8. ***SC1-HCO-10-2016:Support for Europe's leading Health ICT SMEs :*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
9. ***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;*
10. ***SC1-HCO-12-2016:Digital health literacy:*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
11. ***SC1-HCO-13-2016:Healthcare Workforce IT skills:*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
12. ***SC1-HCO-14-2016:EU-US interoperability roadmap :*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
13. ***SC1-HCO-15-2016:EU eHealth Interoperability conformity assessment :*** *CSA Coordination and support action. Single-Stage. Deadline 13 April 2016;*
14. ***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;*
15. ***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;*
16. ***SC1-PM-05-2016:The European Human Biomonitoring Initiative :*** *COFUND-EJP COFUND (European Joint Programme). Single-Stage. Deadline 13 April 2016;*
17. ***SC1-PM-06-2016:Vaccine development for malaria and/or neglected infectious diseases:*** *RIA Research and Innovation action. Single-Stage. Deadline: 13 April 2016;*
18. ***SC1-PM-09-2016:New therapies for chronic diseases :*** *RIA Research and Innovation action. Single-Stage. Deadline: 13 April 2016;*
19. ***SC1-PM-11-2016-2017:Clinical research on regenerative medicine :****RIA Research and Innovation action. Single-Stage. Deadline: 13 April 2016;*
20. ***SC1-PM-12-2016:PCP - eHealth innovation in empowering the patient :*** *PCP Pre-Commercial Procurement. Single-Stage. Deadline: 13 April 2016;*
21. ***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;*
22. ***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;*
23. ***SC1-PM-02-2017:New concepts in patient stratification :*** *RIA Research and Innovation action. Two-Stage. Deadlines: 04 October 2016, 11 April 2017;*
24. ***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;*
25. ***SC1-PM-08-2017:New therapies for rare diseases*** *: RIA Research and Innovation action. Two-Stage. Deadlines: 04 October 2016, 11 April 2017**;***
26. ***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**;***
27. ***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;*

28. ***SC1-PM-16-2017:In-silico trials for developing and assessing biomedical products:*** *RIA Research and Innovation action. Single-Stage. Deadline: 14 March 2017;*
29. ***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;*
30. ***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;*
31. ***SC1-PM-03-2017:Diagnostic characterisation of rare diseases :*** *RIA Research and Innovation action. Single-Stage. Deadline 11 April 2017;*
32. ***SC1-HCO-07-2017:Global Alliance for Chronic Diseases (GACD):*** *RIA Research and Innovation action. Single-Stage. Deadline 11 April 2017;*
33. ***SC1-HCO-03-2017:Implementing the Strategic Research Agenda on Personalised Medicine :*** *ERA-NET-Cofund ERA-NET Cofund. Single-Stage. Deadline 11 April 2017;*
34. ***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;*
35. ***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-01-2016:Sustainability schemes for the bio-based economy:*** *RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;*
2. ***BB-02-2017:Towards a method for the collection of statistical data on bio-based industries and bio-based products :*** *RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;*
3. ***BB-03-2017:Adaptive tree breeding strategies and tools for forest production systems resilient to climate change and natural disturbances:*** ***RIA*** *Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;*
4. ***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;*
5. ***BB-05-2017:Bio-based products: Mobilisation and mutual learning action plan:*** *CSA Coordination and support action. Single-stage. Deadlines: 17 February 2017;*
6. ***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-01-2016:Solutions to multiple and combined stresses in crop production*:** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016,
2. ***SFS-02-2016:Teaming up for good: Exploiting the benefits of species diversity in cropping systems:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
3. ***SFS-03-2016:Testing and breeding for sustainability and resilience in crops:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
4. ***SFS-04-2017:New partnerships and tools to enhance European capacities for in-situ conservation:*** CSA Coordination and support action, Single stage. Deadline: 14 February 2017;
5. ***SFS-05-2017:Robotics Advances for Precision Farming:*** RIA Research and Innovation action, Single-stage. Deadlines: 14 February 2017;
6. ***SFS-06-2016:Weeding - strategies, tools and technologies for sustainable weed management:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;

7. ***SFS-07-2016-2017:Organic breeding – Increasing the competitiveness of the organic breeding and farming sectors:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
8. ***SFS-08-2017:Organic inputs – contentious inputs in organic farming:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
9. ***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;
10. ***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;
11. ***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;
12. ***SFS-12-2016:Support for international research on animal health:*** CSA Coordination and support action. Single-stage. Deadlines: 17 February 2016;
13. ***SFS-13-2017:Validation of diagnostic tools for animal and plant health:*** IA Innovation action. Single-stage. Deadlines: 14 February 2017;
14. ***SFS-14-2016:Understanding host-pathogen-environment interactions:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
15. ***SFS-15-2016-2017:Breeding livestock for resilience and efficiency:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;
16. ***SFS-16-2017:Bee health and sustainable pollination:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
17. ***SFS-17-2017:Innovations in plant protection:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
18. ***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;
19. ***SFS-19-2016:ERA-NET Cofund: Public-Public Partnerships in the bioeconomy:*** ERA-NET-Cofund ERA-NET Cofund. Single-stage. Deadlines: 17 February 2016;
20. ***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;
21. ***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;
22. ***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;
23. ***SFS-22-2017:Smart fisheries technologies for an efficient, compliant and environmentally friendly fishing sector:*** IA Innovation action, single-stage. Deadlines: 17 February 2017;
24. ***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;
25. ***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;
26. ***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;
27. ***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;
28. ***SFS-27-2017:Permanent grassland – farming systems and policies:*** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
29. ***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;
30. ***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;
31. ***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;
32. ***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;
33. ***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;
34. ***SFS-33-2016:Understanding food value chain and network dynamics:*** RIA Research and Innovation action, two-stage. Deadlines: 17 February 2016, 13 September 2016;

35. ***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;
36. ***SFS-35-2017:Innovative solutions for sustainable food packaging*:** IA Innovation action, Single-stage. Deadlines: 14 February 2017;
37. ***SFS-36-2017:Co-fund on "One Health" (zoonoses – emerging threats)*:** COFUND-EJP COFUND (European Joint Programme). Single-stage. Deadlines: 14 February 2017;
38. ***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;
39. ***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;
40. **SFS-39-2017:How to tackle the childhood obesity epidemic?:** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
41. ***SFS-40-2017:Sweeteners and sweetness enhancers*:** RIA Research and Innovation action, two-stage. Deadlines: 14 February 2017, 13 September 2017;
42. ***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
43. ***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;
44. ***SFS-43-2017:Earth observation services for the monitoring of agricultural production in Africa*:** RIA Research and Innovation action. Single-Stage. 14 February 2017;
45. ***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;
46. ***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;
47. ***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;
48. ***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;
49. ***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-01-2016:Large-scale algae biomass integrated biorefineries*.** *IA Innovation Actions. Single-stage. Deadline 17 February, 2016;*
2. ***BG-02-2016-2017:High value-added specialised vessel concepts enabling more efficient servicing of emerging coastal and offshore activities*.** *IA Innovation Actions. Single-stage. Deadline 17 February, 2016;*
3. ***BG-03-2016:Multi-use of the oceans' marine space, offshore and near-shore: compatibility, regulations, environmental and legal issues*:** *CSA Coordination and support action. Single-stage. Deadline 17 February, 2016;*
4. ***BG-09-2016:An integrated Arctic observation system:*** *RIA Research and Innovation action* ***.*** *Single-stage. Deadline 17 February, 2016;*
5. ***BG-10-2016:Impact of Arctic changes on the weather and climate of the Northern Hemisphere*** ***:*** *RIA Research and Innovation action. Single-stage. Deadline 17 February, 2016;*
6. ***BG-05-2016:ERA-NET Cofund on marine technologies*:** *ERA-NET-Cofund ERA-NET Cofund. Single-stage. Deadline 17 February, 2016;*
7. ***BG-12-2016:Towards an integrated Mediterranean Sea Observing System. R****IA Research and Innovation action. Two-stage. Deadlines 17 February, 2016; 13 Septembris 2016.*
8. ***BG-13-2016:Support to the BLUEMED Initiative: Coordination of marine and maritime research and innovation activities in the Mediterranean*** ***:*** *CSA Coordination and support action. Single-stage. Deadline 17 February, 2016.*
9. ***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;*

10. ***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;*
11. ***BG-07-2017:Blue green innovation for clean coasts and seas:*** *CSA Coordination and support action. Single-stage. Deadline 14 February, 2017;*
12. ***BG-08-2017:Innovative sustainable solutions for improving the safety and dietary properties of seafood:*** *IA Innovation action. Single-stage. Deadline 14 February, 2017;*
13. ***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	Industrial Leadership	H2020-COMPET-2016	03-03-2016

COMPETITIVENESS OF EUROPEAN SPACE SECTOR: TECHNOLOGY AND SCIENCE

Scene Setter:

Competitiveness of European space technology

Competitiveness, non-dependence and innovation of the European space sector must be ensured by fostering the development of space technologies. The overarching objective is to contribute at European level, in conjunction with Member States and ESA, to the safeguarding and further development of a competitive and entrepreneurial space industry (including SMEs) and the strengthening of European non-dependence in space systems. This implies enabling advances in space technologies and operational concepts from idea to demonstration in representative terrestrial environments and/or in space.

Attention will be given to some clear trends in space technology development; on the one hand miniaturization on system and subsystem level, as well as in the development of instrumentation. On the other hand the development to generic technologies coming available for a number of different science and application areas. This leads to obvious synergies that should be promoted.

Competitiveness of European space industry is strongly dependent on performance in a global market, which has a high variability when compared to the institutional market. The ability to react to contract opportunities world-wide with recurring technologies for satellites is a critical success factor, and depends on ready access for integrators to subsystem and equipment capacities in Europe.

To ensure the competitive advantage, subsystems and/or equipment have to be technologically mature (i.e. at adequate technology readiness level (TRL), possibly flight proven) and be accompanied by adequate production rates. European focus in future space technologies, beyond the current state of the art, needs to be strengthened along the entire TRL scale: from low TRL key technologies to in-orbit demonstration and validation. Concrete support for IOD/IOV opportunities is planned for subsequent work programmes (2018-2020), considering previous results and evolving European priorities.

Technologies for satellite communication will be supported in particular in topics COMPET-2-2016 "Maturing satellite communication technologies" and in COMPET-3-2017 "High data rate chain". In addition, the topics COMPET-1-2016/2017 "Technologies for European non-dependence and competitiveness" and COMPET-3-2016 "In-space electrical propulsion and station keeping" address important objectives for the satellite communication industry.

Technologies for Earth observation will supported in particular in topics COMPET-2-2017 "Competitiveness in Earth observation mission technologies" and COMPET-3-2017 "High speed data chain". In addition, the topics COMPET-1-2016/2017 "Technologies for European non-dependence and competitiveness" also contribute to enabling technologies for Earth observation.

Technologies for satellite navigation are addressed in the Galileo part of the work programme.

Technologies enabling recurrence of use contribute to enhancing industrial competitiveness. Research on modular, reusable elements is therefore encouraged. Standardisation of such modular components by existing initiatives such as the European Space Components Coordination (ESCC) and the European Cooperation for Space Standardisation (ECSS), and their interfaces across Europe can optimise the investments and when applied appropriately facilitate access to emerging commercial markets. Synergies with ongoing work with ESA and Member States in the area of technology standardisation will be sought.

Strategic research clusters

In the frame of Horizon 2020 work programme 2014, two strategic research clusters (SRC) were initiated in the fields of In-Space electrical propulsion and station keeping *and* Space Robotics Technologies *– with two coordination and support actions[[EPIC for In-Space electrical propulsion and station keeping and PERASPERA for Space Robotics Technologies]] awarded having as main objective to oversee and prepare European roadmaps for each SRC.*

Subsequently, this work programme dedicates two SRC topics which are in line with the information contained in the aforementioned roadmaps. Additional topics are planned to follow in the years 2018-2020.

Regarding the cluster "Space Robotics Technologies" applicants may also wish to refer to the ICT part of the work programme on Robotics and Autonomous systems*[[*Topics from ICT-05-01 to ICT-05-07.*]] where generic robotic technologies are addressed.*

Within each SRC the beneficiaries of each awarded grant will collaborate for the purposes of the cluster with the beneficiaries of the other awarded grants.

Applicants to both SRC topics are advised to consult the corresponding guidelines[[http://ec.europa.eu/growth/sectors/space/research/horizon-2020]].

Space exploration and science

Europe has, over the years, established a leading position in space exploration and space sciences. The proposed approach is to enable European communities to make a concerted effort to capitalise on current European space sciences, as well as space and planetary exploration infrastructures, and to achieve the highest possible science return from operational and future space missions. Activities which further science in the context of space missions, i.e. supporting scientific instrumentation in support of future or operational missions, will be supported.

Topics:

COMPET-1-2016:Technologies for European non-dependence and competitiveness, RIA Research and Innovation action. Single Stage:

Specific Challenge:

The space sector is a strategic asset contributing to the independence, security and prosperity of Europe and its role in the world. Europe needs non-dependent access to critical space technologies, which is a conditio-sine-qua-non for achieving Europe's strategic objectives. "Non-dependence" refers to the possibility for Europe to have free, unrestricted access to any required space technology. Whenever possible multiple (>1) sources for the critical technologies shall be promoted across Europe. Reaching non-dependence in certain technologies will open new markets to our industries and will increase the overall competitiveness of the European Space sector.

Scope:

Research in technologies for European non-dependence and competitiveness has been undertaken within the frame of the Joint EC-ESA-EDA Task Force on Critical Technologies for European non-Dependence, launched in 2008. The Joint Task Force recently updated the list of actions for 2015-2017[[Excerpt from "Critical Space Technologies for European Strategic Non-Dependence – Actions for 2015/2017" (http://ec.europa.eu/growth/sectors/space/research/horizon-2020)]].

Activities shall address technologies identified on the list of Actions for 2015/2017 focusing on those areas that have not so far benefitted from prior Framework Programme funding and representing the highest potential for being implemented through the types of action available in Horizon 2020.

Accordingly, the following priority technologies have been identified:

- *U14 - Active discrete power components.*
- *U18 - Enhanced performance and space qualified detectors.*
- *U19 - High speed DAC-ADC based on European technology.*
- *U20 - Very high performance microprocessors.*
- *U22 - ASICS: Deep Sub-Micron (DSM).*
- *N27 - RF components.*

COMPET-2-2016:Maturing satellite communication technologies, RIA Research and Innovation action. Single Stage:

Specific Challenge:

Today, it is a critical challenge for Europe to establish a level playing field with its global competitors and support activities to bridge the digital gap across European regions and deliver broadband and telecommunications services to under-served areas and populations.

In the mid to long-term, the competitiveness of the space sector and its ability to serve EU policies, notably the Digital Single Market, depends on the continuous integration of pertinent technologies and the availability of demonstrated/validated systems and sub-systems. While European companies have managed to capture a significant share of the global commercial telecommunications satellite market, technological advances must consolidate competitive positions. An objective of the sector is to move towards the Terabit satellite systems (space and ground segment). Other approaches target constellations in lower Earth orbit.

Scope:

The aim of this topic is to demonstrate, in a relevant environment, technologies, systems and sub-systems for satellite communications. The proposed work should address and demonstrate significant improvements in miniaturisation, power reduction, efficiency, performance, flexibility, resilience, versatility, security and/or increased functionality and should demonstrate complementarity to activities already funded by Member States and the European Space Agency (e.g. the ARTES programme).

Proposals that demonstrate technologies targeting TRL 6 are welcome.

In this context, proposals are sought with relevance for space in the following fields:

- *Advanced communication technologies for feeder or service links, preparing satellite networking in the Terabit-throughput including optical communication and RF communication at high frequencies (Q/V/W). Optical communication technologies will indicatively include laser communication terminals for ground and satellite segment. This could include transmitter and receiver technologies, hybrid RF-photonic technologies, pointing and tracking approaches, ground station design, site diversity technique to adapt to weather conditions, turbulence mitigation techniques (like Adaptive Optics, Predistortion and Transmitter Diversity), gateway management and interface with ground networks.*
- ***Photonics technology (for high capacity reconfigurable payloads).***
- *Active antennas building blocks at different frequencies up to Ka/Ku bands and higher, GaN SSPA - Solid State Power Amplifier.*

- *Flexible repeater (equipment enabling flexible frequency plans, flexible channelization, evolution to new RF bands such as Q- and V-band, etc.).*
- *Reconfigurable coverages, flexible interbeam connectivity, antijamming and interference mitigation techniques, on-board spectrum monitoring, interference management and support for full duplex relaying.*
- *New generation of waveforms and related protocols, as well as photonic building blocks and technologies, devoted to seamless integration of SatCom Systems with terrestrial networks (including hybrid terrestrial-satellite network architectures) with specific focus on mobile machine to machine (m2m) applications, high-security communication services, future internet architectures, SDN and Cloud Computing paradigms, and security needs.*
- *End to end system enablers in telecommunications: technical enablers to increase the security, efficiency and performance of satellite-based communications solutions for weather conditions adaptation and optimisation of EO data distribution.*

COMPET-3-2016-a:SRC - In-Space electrical propulsion and station keeping - Incremental Technologies, RIA Research and Innovation action. Single Stage:

Specific Challenge:

The challenge of this strategic research cluster (SRC) is to enable major advances in Electric Propulsion (EP) for in-space operations and transportation, in order to contribute to guarantee the leadership through competitiveness and non-dependence[[See definition of "non-dependence" in the Joint EC-ESA-EDA Task Force list of actions for 2015-2017 (http://ec.europa.eu/growth/sectors/space/research/horizon-2020).]] of European capabilities in electric propulsion at world level within the 2020-2030 timeframe, always in coherence with the existing and planned developments at national, commercial and ESA level.

Furthermore, electric propulsion will have implications on several aspects of space systems, such as the need to increase on-board power supply capabilities, which may be addressed in future calls of this SRC.

Scope:

Incremental technologies are those considered mature enough at the moment to allow for incremental steps to enable capabilities such as dual mode, higher/lower power, Electric Orbit Raising (EOR), required by a number of applications such as telecommunications, LEO / MEO missions, space science and exploration, space transportation which the current systems (some of them qualified and some with flight heritage) are not able to provide.

Proposals shall, therefore, enable incremental advances in the already known technologies for Electric Propulsion systems based on:

1. *Hall Effect Thrusters (HET)*
2. *Gridded Ion Engines (GIE)*
3. *High Efficiency Multistage Plasma Thrusters (HEMPT)*

A detailed description of the above lines is included in the corresponding guidelines[[http://ec.europa.eu/growth/sectors/space/research/horizon-2020]].

Proposals on incremental technologies should demonstrate the readiness and interest to carry the developments further on through future calls of this SRC, by including a long-term plan and specifications for the developments to reach the higher TRLs in 2023-2024 and a business plan on how to access the selected market with a full range of competitive products. These plans and specifications should be analysed in depth through a dedicated work package as an integral part of the proposal.

Proposals should seek to cover developments suited for more than one application domain, in order to widen the achievable capabilities.

A maximum of one proposal per aforementioned technology (1, 2, 3) will be selected, with the target of supporting all three technologies.

The Commission considers that proposals for the incremental technologies requesting a contribution from the EU of between EUR 7.5 and 11 million (line 1 / HET), EUR 5.5 and 7.5 million (line 2 / GIE), EUR 4.5 and 5.5 million (line 3 / HEMPT).

Grants awarded under this sub-topic will be complementary to each other and complementary to grants awarded under sub-topic COMPET-3-2016-b ("complementary grants"). In order to ensure a smooth and successful implementation of this Strategic Research Cluster (SRC), the beneficiaries of complementary grants ("complementary beneficiaries") shall conclude a written "collaboration agreement". The respective options of Article 2, Article 31.6 and Article 41.4 of the Model Grant Agreement will apply.

COMPET-3-2016-b:SRC - In-Space electrical propulsion and station keeping - Disruptive Technologies, RIA Research and Innovation action. Single Stage:

Specific Challenge:

The challenge of this strategic research cluster (SRC) is to enable major advances in Electric Propulsion (EP) for in-space operations and transportation, in order to contribute to guarantee the leadership through competitiveness and non-dependence[[See definition of "non-dependence" in the Joint EC-ESA-EDA Task Force list of actions for 2015-2017 (http://ec.europa.eu/growth/sectors/space/research/horizon-2020).]] of European capabilities in electric propulsion at world level within the 2020-2030 timeframe, always in coherence with the existing and planned developments at national, commercial and ESA level.

Furthermore, electric propulsion will have implications on several aspects of space systems, such as the need to increase on-board power supply capabilities, which may be addressed in future calls of this SRC.

Scope:

A 'disruptive space technology' is an emerging technology that disrupts the status quo of the space sector by replacing the dominant technology and provides a radical improvement in performance that is perceived as valuable by a customer or part of the market, or it opens up new opportunities not possible with the incumbent technology. If a disruptive technology can be identified early enough, accelerating the development of that technology would help sustain advances in performance. Emerging technologies that are potentially 'disruptive' often underperform compared to the dominant technology in early development phases – the underlying physics may not be fully understood for example and more R&D is required to properly ascertain performance attributes.

This topic focuses on promoting promising and potentially disruptive concepts in the field of Electric Propulsion, in order to allow the increase of the currently low or very low TRL of breakthrough concepts which in the long term could change the EP landscape.

Proposals are expected in the areas of disruptive technologies for Electric Propulsion and for EP thrusters, that are currently at low TRL (≤ 4) and not part of the incremental lines mentioned above. Indicatively, these disruptive technologies are based on Helicon Plasma Thrusters (HPT), Electron Cyclotron Resonance plasma thrusters (ECR), Magneto Plasma Dynamic thrusters (MPD), pulsed plasma thrusters (PPT), micro-propulsion electric thrusters. This list is non-exhaustive and any other innovative electric thruster concepts and relevant technologies for disruptive electric propulsion systems not mentioned here can be addressed (e.g. direct drive, radical new PPU architectures, dedicated spacecraft power system architectures and/or materials).

Proposals for disruptive technologies shall not address incremental thruster technologies (e.g. micro-GIE, etc.).

A detailed description of the above lines is included in the corresponding guidelines[[http://ec.europa.eu/growth/sectors/space/research/horizon-2020]].

Proposals should also include a validation plan, including one or more validation methods to apply through the course of the project, which would allow to verify how the development targets are being met and how the landscape disruption shall take place in the future. These plans should be analysed in depth through a dedicated work package within the project.

A maximum of one proposal addressing transversal relevant technologies for disruptive Electric propulsion systems (not thrusters), and a maximum of 4 proposals addressing the remaining ones devoted to specific disruptive EP thrusters will be selected.

The Commission considers that proposals for the disruptive technologies requesting a contribution from the EU of between EUR 1 and 1.5 million, would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Grants awarded under this topic will be complementary to each other and complementary to grants awarded under sub-topic COMPET-3-2016-a ("complementary grants"). In order to ensure a smooth and successful implementation of this Strategic Research Cluster (SRC), the beneficiaries of complementary grants ("complementary beneficiaries") shall conclude a written "collaboration agreement". The respective options of Article 2, Article 31.6 and Article 41.4 of the Model Grant Agreement will apply.

COMPET-4-2016:SRC - Space Robotics Technologies, RIA Research and Innovation action. Single Stage:

Specific Challenge:

The overall challenge of this strategic research cluster (SRC) is to enable major advances in space robotic technologies for future on-orbit satellite servicing (robotics and rendezvous), and the exploration of the surfaces of the other bodies in our solar system.

This specific challenge consists of designing, manufacturing and testing of reliable and high performance common robotic building blocks for operation in space environments (orbital and/or planetary), which will be useful for the SRC (demonstrations of on-orbit satellite servicing and planetary surface exploration). It can also be useful for (i) the wider European space robotics goals; and (ii) potential spin-off and spill-over effects to other areas of robotic activity on Earth (such as automotive or underwater but not limited to those).

Through the mastering of common building blocks, which allow inexpensive re-use across multiple applications, European actors will have a competitive advantage and industrial partnering will be facilitated. For the common building blocks to be successful, particular effort must be made in systems engineering, system performance analysis, reliability, availability, maintainability and safety improvement, rather than an approach based on pure technology development.

Scope:

Proposals shall address one of the following six specific robotic building blocks:

a) Space Robot Control Operating System: *an open source space robot control operating system (RCOS) that can provide adequate features and performance with space-grade Reliability, Availability, Maintainability and Safety (RAMS) properties. RCOS control any robot/spacecraft systems whether for orbital or planetary applications, for all phases and modes of the mission.*

b) Autonomy framework Time/Space/Resources planning and scheduling: *a software framework for the development of highly autonomous space robotics missions. In these a robot system, given a high level goal, will (re)plan, schedule and oversee the execution of elementary actions to attain the goal, considering*

Time/Space/Resources constraints, interleaving planning with execution and providing formal verification capabilities of the functional layer.. The activities will comprise planning/scheduling capabilities to decompose high level commands into sub-tasks; resource management to fulfil in a dynamic way the high level mission/goals; Fault management with reconfiguration capability; Interaction management with other robotic systems to allow cooperation and tasks sharing, guidance, navigation and control to attain execution.

c) Common data fusion framework: *a software framework implementing data fusion techniques for various sensors such as LIDAR, Imagers, radar, sonar, IMUs, and sun sensors capable of localising robots in natural and man-made environments, geometrical/topological reconstruction of environment, map making. Robots need to perceive their environment and to understand where they are with respect to their operational goals. No single sensor can convey reliably localisation and mapping information in all conditions of space.*

d) Inspection Sensor Suite*: a suite of perception sensors that allow localisation and map making for robotic inspection of orbital assets (under space representative conditions and taking into account in-orbit inspection scenario requirements) and for planetary surface exploration. The activities comprise the identification of suitable sensors which may include imaging sensors for inspection operations, stereo imaging sensors, holographic sensors, zoom cameras for inspection and proximity operations, infrared sensors, imaging radar and LIDAR as well as illumination integrated solution considering data processing, realisation of common interfaces for data provision, mechanical and electrical integration.*

e) Modular interfaces for Robotic handling of Payloads: *a set of interfaces (mechanical, data, electrical, thermal) that allow coupling of payload to robot manipulators and payload to other payload (or to a platform) enabling manipulation of payload by robots in orbital and planetary environment assembly of structures out of elemental blocks, spacecraft deployment aid.*

f) Validation Platforms and Field Tests: *test vehicles (platforms or facilities) and validation environment for common testing of building blocks reference implementations. Relying upon existing assets, this would include the provision of test means (e.g. rovers, robots, dynamic robotics, RVD facilities), the support for integration in these of common building blocks, instrumentation and the execution of tests in realistic or analogue environments.*

A detailed description of the above building blocks is included in the corresponding guidelines[[http://ec.europa.eu/growth/sectors/space/research/horizon-2020]].

Each common building block shall be validated in a test scenario by means of a reference implementation (the specific prototype).

A minimum of one proposal per building block (a)-(f) will be selected for funding.

The Commission considers that proposals requesting a contribution from the EU of between EUR 3 and 3.5 million for specific building blocks (a)-(e) and in the range of EUR 1 million for the specific building block (f) would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Grants awarded under this topic will be complementary to each other ("complementary grants"). In order to ensure a smooth and successful implementation of this Strategic Research Cluster (SRC), the beneficiaries of complementary grants ("complementary beneficiaries") shall conclude a written "collaboration agreement". The respective options of Article 2, Article 31.6 and Article 41.4 of the Model Grant Agreement will apply.

COMPET-5-2016:Scientific Instrumentation, RIA Research and Innovation action. Single Stage:

Specific Challenge:

Support the development of scientific instrumentation for science and exploration missions (including planetary exploration missions) enabling increased cooperation between scientists, engineering teams, industry and SMEs across Europe.

Scope:

Scientific instrumentation is understood in this context as mission payloads that perform scientific tasks. Proposals may cover different stages of development of scientific instrumentation from concepts, to breadboarding and prototype demonstration. Proposals are particularly welcome that develop novel and advanced technologies, such as new sensors and other sub-systems that may be used in scientific instrumentation. Projects supported through this call should address planned and future European scientific and exploration missions, as well as collaboration in the context of third country missions as a European contribution to global efforts.

The Commission considers that proposals requesting a contribution from the EU of between EUR 1.5 and 3 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

The integration of scientific teams with engineering and industrial teams will stimulate new and improved instrumentation designs and lead to potential opportunities for spin-in/spin-out effects between space and non-space technology fields. This research topic should attract also active participation of researchers in academia and SMEs.

H2020	Industrial Leadership	EO-1-2016	03-03-2016

EARTH OBSERVATION

Scene Setter:

Horizon 2020 Earth observation (EO) activities are considered an essential element to accompany the investments made by the Union in Copernicus, the Union Earth observation and monitoring programme. Through Copernicus and Earth Observation activities in the Horizon 2020 the European Union also contributes to advancing the Global Earth Observation Systems of Systems (GEOSS).

In particular, activities under the societal challenge for climate action, environment, resource efficiency and raw materials focus on GEOSS, notably the development of comprehensive and sustained global environmental observation and information systems that stimulate the smart use of strategic resources, support the development of evidence-based policies, foster new environmental and climate services, and develop new opportunities in global markets. Activities under the Leadership in Industrial Technologies part focus on the evolution of Copernicus and the exploitation of existing European space infrastructure by promoting the development of innovative products and services based on remote sensing, geo-positioning or other types of satellite enabled data as well as geo-information generated already by services such as Copernicus services.

Moreover, taking into account the wider relevance of EO to all parts of Horizon 2020, proposals addressing application and uptake of EO for the development of innovative applications addressing specific challenges can also be submitted to the Horizon 2020 Societal Challenges where related references are included. To that end, applicants to those parts of Horizon 2020 can also access Copernicus data and information (licensing conditions may apply)[[Access to Copernicus Sentinel data and service information is provided to users on a free, full and open basis. For other satellites data, the DataWareHouse document 2.0 is available at http://www.copernicus.eu/main/library/technical-documents/ and licensing details can be consulted at http://gmesdata.esa.int/web/gsc/dap_document as well as http://gmesdata.esa.int/web/gsc/terms_and_conditions.]].

To facilitate access to opportunities for applicants, the following list includes dedicated Earth observation activities in calls in other work programme parts, in addition to those in this call:

- *Blue Growth – demonstrating an ocean of opportunities (H2020-BG-2016-2017):*
  - *BG-9-2016: An integrated Arctic observing system*
  - *BG-12-2016: Towards an integrated Mediterranean Sea Observing System*
- *Sustainable Food Security – resilient agri-food chains (H2020-SFS-2016-2017):*
  - *SFS-43-2017: Earth Observation services for the monitoring of agricultural production in Africa*
- *Climate Action, Environment, Resource Efficiency and Raw Materials - Earth Observation (H2020-SC5-2016-2017):*
  - *SC5-18-2017 - Novel in-situ observation systems*
  - *SC5-19-2017 - Coordination of citizens' observatories initiatives*
  - *SC5-20-2016 - European data hub of the GEOSS information system*
- *Earth Observation (H2020-EO-2016 and H2020-EO-2017)*
  - *EO-1-2016 and EO-1-2017: Downstream applications*
  - *EO-2-2016: Downstream applications for public sector users*
  - *EO-3-2016: Evolution of Copernicus services*
  - *EO-2-2017: EO Big Data Shift*
- *Competitiveness of the European Space Sector: Technology and Science (H2020-COMPET-2017)*
  - *COMPET-2-2017: Competitiveness in Earth observation mission technologies*
- *SME Instrument (H2020-SMEInst-2016-2017), although not dedicated uniquely to Earth Observation, is particularly well suited for SMEs addressing space based applications*
  - *SMEInst-04-2016-2017: Engaging SMEs in space research and development*
  - *SMEInst-12-2016-2017: Boosting the potential of small businesses in the areas and priorities of Societal Challenge 5*

Topic:

***EO-1-2016:Downstream applications**, IA Innovation action, Single stage:*

Specific Challenge:

Copernicus, the Union's Earth observation and monitoring programme entered into force in 2014 and produces a wealth of data and information regarding the Earth sub-systems (land, atmosphere, oceans) and cross-cutting processes (climate change, emergency and security). Copernicus data and information are mainly made available on a free open and full basis. This is expected to unleash unique market opportunities. It is important to foster market development exploiting the added value of integration of EO observation technologies (both satellite, airborne and ground based) with positioning ones and ICT (enhancing new frontiers opened by web) across different market segments through the development of applications, and encourage their insertion into the market.

For such applications and developments to succeed in the market, the product needs to be shaped according to users' needs and their value to users must be openly demonstrated to the wider user community. This needs to be achieved in an environment integrated at the level of the user, in order for users to accept the innovative potential which the product promises.

Proposals may address a wide variety of applications stemming from the use of Earth observation and its smart integration with other related technologies. Copernicus should be considered as part of the solution which may include other space or non-space inputs. This is likely to lead to greater value,

opportunities and especially market uptake. To this aim, a business model, which includes the phase of the project following the end of the public funding, should be part of the proposal.

EO-2-2016:Downstream services for public authorities, PCP Pre-Commercial Procurement, Single stage;

Specific Challenge:

Copernicus, the Union's Earth observation and monitoring programme entered into force in 2014 and produces a wealth of data and information regarding the Earth sub-systems (land, atmosphere, oceans) and cross-cutting processes (climate change, emergency and security). Such information can be very helpful for reporting obligations of Member States and can enable informed decision-making. At the same time such information needs either adaptation to local conditions and contexts, or adaptation to the specific needs of public authorities as part of workflow and procedures. The challenge is to deepen user integration and thus foster exploitation of Copernicus information to match the needs of public authorities at national, regional or local levels.

New and innovative solutions are needed to address the existing and emerging societal challenges faced among others by the public sector. Some of these societal challenges require public sector transformations for which no commercial stable solutions exist, and that require a more forward looking public procurement strategy either through incremental or radical innovation.

EO-3-2016:Evolution of Copernicus services, RIA Research and Innovation action, Single Stage

Specific Challenge:

Copernicus operational services are not static, but need to evolve with recognised and emerging user requirements and state of the art methodologies. While immediate service maintenance and enhancement in response to the Copernicus work programme is part of operational tasks, long-term evolutions will need input from R&D outside the programme. A process has been put in place in the Copernicus services by the Entrusted Entities to review service evolution and any emerging adaptation needs as to their urgency, closeness to the operational delivery process, and availability of capacities. R&D activities which are suitable for Horizon 2020 are identified to this end by the Commission and/or the Entrusted Entities for each service. An information document is published together with this work programme[[http://ec.europa.eu/growth/sectors/space/research/horizon-2020]]. The challenge is to have the results of R&D available in a sufficiently timely manner to support an informed discussion, if and under which conditions an evolution of the operational service portfolio of the Copernicus service is appropriate. The schedule of the activities should thus consider the overall planning of the Copernicus programme and its specific services concerned.

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-02-2016-2017:Demonstrating innovative nature-based solutions in cities.** IA Innovation action. Two-Stage. Deadlines 08 March and 06 September 2016;
2. **SCC-03-2016:New governance, business, financing models and economic impact assessment tools for sustainable cities with nature-based solutions (urban re-naturing).** RIA Researh and Innovation action. Single Stage. Deadline 08 March;
3. **SCC-04-2016:Sustainable urbanisation.** ERA-NET-Cofund ERA-NET Cofund. Single Stage. Deadline 08 March;
4. **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. Two Stage. Deadlines 08 March and 06 September, 2016;
   RIA Research and Innovation action. Single Stage. Deadline 07 March, 2017;
2. **SC5-03-2016:Climate services market research.** RIA Research and Innovation action. Single Stage. Deadline 08 March, 2016;
3. **SC5-05-2016:A 1.5 million year look into the past for improving climate predictions.** CSA Coordination and support action. Single Stage. Deadline 08 March, 2016;
4. **SC5-06-2016-2017:Pathways towards the decarbonisation and resilience of the European economy in the timeframe 2030-2050 and beyond.** RIA Research and Innovation action. Single Stage. Deadline 08 March, 2016;
5. **SC5-09-2016:Operationalising insurance value of ecosystems.** RIA Research and Innovation action. Single Stage. Deadline 08 March, 2016;
6. **SC5-10-2016:Multi-stakeholder dialogue platform to promote innovation with nature to address societal challenges.** CSA Coordination and support action. Single Stage. Deadline 08 March, 2016;
7. **SC5-11-2016:Supporting international cooperation activities on water .** CSA Coordination and support action. Single Stage. Deadline 08 March, 2016;
8. **SC5-13-2016-2017:New solutions for sustainable production of raw materials.** RIA Research and Innovation action. Single Stage. Deadline 08 March, 2016;
9. **SC5-14-2016-2017:Raw materials Innovation actions.** IA Innovation action. Two Stage. Deadlines 08 March and 06 September, 2016;
10. **SC5-15-2016-2017:Raw materials policy support actions.** CSA Coordination and support action. Single Stage. Deadline 08 March, 2016;
11. **SC5-16-2016-2017:Raw materials international co-operation.** CSA Coordination and support action. Single Stage. Deadline 08 March, 2016;
12. **SC5-17-2016:ERA-NET Cofund on Raw materials** ERA-NET-Cofund ERA-NET Cofund **.** Single Stage. Deadline 08 March, 2016;
13. **SC5-20-2016:European data hub of the GEOSS information system.** RIA Research and Innovation action. Single Stage. Deadline 08 March, 2016;
14. **SC5-21-2016-2017:Cultural heritage as a driver for sustainable growth.** RIA Research and Innovation action. Two Stage. Deadlines 08 March and 06 September, 2016

15. **SC5-23-2016-2017:Support to confirmed Presidency events (conferences) – Malta, United Kingdom, Estonia.** CSA Coordination and support action. Single Stage. Deadline 08 March, 2016;
16. **SC5-25-2016:Macro-economic and societal benefits from creating new markets in a circular economy.** CSA Coordination and support action. Single Stage. Deadline 08 March, 2016;
17. **SC5-27-2016:Preparing for pre-commercial procurement (PCP) and/or public procurement of innovative solutions (PPI) in support of climate action, environment, resource efficiency and raw materials** CSA Coordination and support action. Single Stage. Deadline 08 March, 2016;
18. **SC5-28-2016:Transformations to sustainability.** ERA-NET-Cofund ERA-NET Cofund. Single Stage. Deadline 08 March, 2016;
19. **SC5-29-2016:Framework Partnership Agreement supporting Joint Actions towards a sustainable green economy in Europe and beyond.** FPA Framework Partnership Agreement, Single Stage. Deadline 08 September, 2016;
20. **SC5-02-2017:Integrated European regional modelling and climate prediction system.** RIA Research and Innovation action. Single Stage. Deadline 07 March, 2017;
21. **SC5-04-2017:Towards a robust and comprehensive greenhouse gas verification system .** RIA Research and Innovation action. Single Stage. Deadline 07 March, 2017;
22. **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;
23. **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;
24. **SC5-18-2017:Novel in-situ observation systems.** RIA Research and Innovation action. Single Stage. Deadline 07 March, 2017;
25. **SC5-19-2017:Coordination of citizens' observatories initiatives.** CSA Coordination and support action. Single Stage. Deadline 07 March, 2017;
26. **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;
27. **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	Societal Challenges	H2020-SESAR-2015-2	16-03-2016

CALL: SESAR2020 IR-VLD WAVE1

Call summary

This is the SESAR Joint Undertakings (SJU) first main programme call for proposals - Wave 1 of its industrial research, validation and preparation for large scale demonstration activities. This call for proposals brings the results from the SESAR Programme 1, requiring further research, as well as new research content aligned with the European ATM Master Plan together in a coordinated programme of activities performed across 28 closely connected actions.**This work will award as a maximum of 28 complementary grants** to be awarded to the Members of the SJU and performed in the context of the SESAR2020 partnership arrangements and managed within a formal governance structure.

This call for proposals is restricted to the pre-qualified 'Candidate Members' of the SJU in accordance with SJU Regulation 219/2007, amended by 721/2014, where explicit reference is made for the SJU to carry out the task of awarding grants to its Members

TOPICS:

1. **SESAR.IR-VLD.Wave1-01-2015:Content Integration.** SESAR-CSA Coordination and Support Action. Single Stage. Deadline 16 March 2016.
2. **SESAR.IR-VLD.Wave1-02-2015:Master Plan Maintenance.** SESAR-CSA Coordination and Support Action. Single Stage. Deadline 16 March 2016.
3. **SESAR.IR-VLD.Wave1-03-2015:Validation and Demonstration Engineering.** SESAR-CSA Coordination and Support Action. Single Stage. Deadline 16 March 2016.
4. **SESAR.IR-VLD.Wave1-04-2015:Increased Runway and Airport Throughput.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
5. **SESAR.IR-VLD.Wave1-05-2015:Integrated Surface Management.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
6. **SESAR.IR-VLD.Wave1-06-2015:Airport Safety Nets.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
7. **SESAR.IR-VLD.Wave1-07-2015:Total Airport Management.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
8. **SESAR.IR-VLD.Wave1-08-2015:Remote Tower for Multiple Airports.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
9. **SESAR.IR-VLD.Wave1-09-2015:Optimised Airspace Users Operations.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
10. **SESAR.IR-VLD.Wave1-10-2015:Advanced Airspace Management.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
11. **SESAR.IR-VLD.Wave1-11-2015:Advanced DCB.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
12. **SESAR.IR-VLD.Wave1-12-2015:Enhanced Arrivals and Departures.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
13. **SESAR.IR-VLD.Wave1-13-2015:Trajectory Based Free Routing.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
14. **SESAR.IR-VLD.Wave1-14-2015:Separation Management En-Route and TMA.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
15. **SESAR.IR-VLD.Wave1-15-2015:Enhanced Air and Ground Safety Nets.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
16. **SESAR.IR-VLD.Wave1-16-2015:Air Vehicle Systems.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
17. **SESAR.IR-VLD.Wave1-17-2015:CNS.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
18. **SESAR.IR-VLD.Wave1-18-2015:Common Services.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
19. **SESAR.IR-VLD.Wave1-19-2015:CWP - HMI.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
20. **SESAR.IR-VLD.Wave1-20-2015:SWIM Infrastructures.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
21. **SESAR.IR-VLD.Wave1-21-2015:4D Trajectory Management.** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
22. **SESAR.IR-VLD.Wave1-22-2015:Integrated Airport Operations (incl. TBS).** SESAR-RIA Research and Innovation action. Single Stage. Deadline 16 March 2016.
23. **SESAR.IR-VLD.Wave1-23-2015:Network Collaborative Management.** SESAR-IA Innovation action. Single Stage. Deadline 16 March 2016.
24. **SESAR.IR-VLD.Wave1-24-2015:Flexible Airspace Management and Free Route.** SESAR-IA Innovation action. Single Stage. Deadline 16 March 2016.
25. **SESAR.IR-VLD.Wave1-25-2015:Arrival Management extended to en-route Airspace.** SESAR-IA Innovation action. Single Stage. Deadline 16 March 2016.
26. **SESAR.IR-VLD.Wave1-26-2015:Enhanced Terminal Airspace using RNP-Based Operations.** SESAR-IA Innovation action. Single Stage. Deadline 16 March 2016.
27. **SESAR.IR-VLD.Wave1-27-2015:Initial Trajectory Information Sharing.** SESAR-IA Innovation action. Single Stage. Deadline 16 March 2016.

28. **SESAR.IR-VLD.Wave1-28-2015:Flight Information Exchange.** SESAR-IA Innovation action. Single Stage. Deadline 16 March 2016.

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: 17 March 2016; 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-S2RJU-2015-01	17-03-2016

CALL: SHIFT2RAIL JOINT UNDERTAKING CALL FOR PROPOSALS 2015

The Shift2Rail Joint Undertaking launched the first calls for proposals for S2R JU members (CFM) and non-JU members (OC), aimed at driving innovation in railways under Horizon 2020.

Topics:

1. **S2R-CFM-CCA-01-2015:Start-up activities for System Platform Demonstrator Integrated Assessment and socio-economic effects.** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
2. **S2R-CFM-CCA-02-2015:Energy and sustainability, including noise and vibrations baselines assessment.** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
3. **S2R-CFM-CCA-03-2015:Integrated Mobility and Safety Management;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;

4. **S2R-CFM-IP2-01-2015:Start-up activities for advanced signalling and automation system;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
5. **S2R-CFM-IP4-01-2015:Shopping, booking and ticketing of multimodal travel solutions;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
6. **S2R-CFM-IP4-02-2015:Travel companion and tracking services;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
7. **S2R-CFM-IP5-01-2015:Development of functional requirements for sustainable and attractive European Rail Freight;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
8. **S2R-CFM-IP5-02-2015:Start-up activities for Freight Automation;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
9. **S2R-CFM-IP5-03-2015:Freight Propulsion concepts;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
10. **S2R-OC-CCA-01-2015:Long-term needs of different actors in the railway sector;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
11. **S2R-OC-CCA-02-2015:Energy usage, generation and saving approaches;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
12. **S2R-OC-CCA-03-2015:Noise reduction methodologies;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
13. **S2R-OC-CCA-04-2015:Safer infrastructure – improved object detection and prevention of safety critical events and integrated mobility;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
14. **S2R-OC-IP2-01-2015:Threat detection and profile protection definition for cyber-security assessment;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
15. **S2R-OC-IP2-02-2015:IT virtualization of testing environment;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
16. **S2R-OC-IP2-03-2015:Technical specifications for a new Adaptable Communication system for all Railways.;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
17. **S2R-OC-IP5-01-2015:Freight Automation on lines and in yards;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
18. **S2R-OC-IP5-02-2015:Improved vehicle/train dynamics;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
19. **S2R-OC-IP5-03-2015:Intelligent freight wagon with predictive maintenance;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;

H2020	Societal Challenges	H2020-S2RJU-201601	17-03-2016

CALL: SHIFT2RAIL JOINT UNDERTAKING CALL FOR PROPOSALS 2016

The Shift2Rail Joint Undertaking launched the first calls for proposals for S2R JU members (CFM) and non-JU members (OC), aimed at driving innovation in railways under Horizon 2020.

TOPICS:

1. **S2R-CFM-IP1-01-2016:Development of concepts towards the next generation of traction systems and management of wheel/rail adhesion;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
2. **S2R-CFM-IP1-02-2016:Development of new technological concepts, standard specifications and architectures for train control and monitoring, with specific applications in train-to-ground communications and high safety electronic control of brakes;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
3. **S2R-CFM-IP3-01-2016:Research into enhanced track and switch and crossing system;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
4. **S2R-CFM-IP3-02-2016:Intelligent maintenance systems and strategies;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
5. **S2R-OC-IP1-01-2016:Tools and methodologies supporting the development of next generation traction systems, and brakes ;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
6. **S2R-OC-IP1-02-2016:Technology feasibility studies supporting the development of next generation TCMS, and safe control for brakes;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
7. **S2R-OC-IP3-01-2016:Research into new radical ways of changing trains between tracks;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;
8. **S2R-OC-IP4-01-2016:Interoperability Framework governance, ensuring its market uptake and sustainability;** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016;

9. **S2R-OC-IP4-02-2016:Interoperability Framework Converters.** Shift2Rail-RIA Research and Innovation action. Single Stage. Deadline 17 March 2016.

H2020	Societal Challenges	H2020-SC6-REV-INEQUAL-2016-201	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	Excellent science	FETPROACT-03-2016	12-04-2016

ERA-NET-Cofund ERA-NET Cofund

Specific Challenge:

Research on quantum technologies in Europe is currently funded through several targeted initiatives at European, national and regional level. The aim is to foster synergy between these initiatives in the area of quantum technologies in order to create collaborations among the best groups in Europe and fostering broader partnerships around them to spread excellence and to broaden the European footprint of this emerging technology area.

Scope: Proposals should coordinate national and regional programmes for research in the area of quantum technologies by implementing a call jointly funded by the participating states with EU cofunding resulting in grants to third parties.

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-EUB-2017	14-03-2017

EU-BRAZIL JOINT CALL

Topics:

EUB-01-2017:Cloud Computing, Single Stage, *RIA Research and Innovation action;*
Specific Challenge:

Cloud computing is now an established global paradigm for the delivery of IT services in all sectors of the digital economy. However, further enhancements are still required in critical aspects of cloud computing, including enhanced security and privacy; trustworthy clouds; resource pooling; data management and traceability; virtualization; and hybrid systems. Support towards intercontinental experimentation on cloud infrastructures and services are necessary as well, especially in the context of EU-Brazil cooperation.

EUB-02-2017:IoT Pilots, Single Stage, *RIA Research and Innovation action*
Specific Challenge:

In order to make use of the rich potential of the Internet of Things (IoT) in real-world scenarios, technologies and tools developed so far need to be demonstrated in controlled environments with the ultimate goal of validation. Given the specific nature of this Call, widely replicable pilots are targeted in view of solving specific societal challenges, in the context of EU-Brazil cooperation.
Given the considerable amount of work carried out on M2M/IoT and Cyber Physical Systems architectures (e.g. IoT-A), platforms (e.g. FIWARE, CRYSTAL, SOFIA) and standards (e.g. oneM2M) over the last few years, pilots are encouraged to exploit this previous work where applicable. The goal is to further demonstrate the generic applicability of these architectures, platforms and standards and to identify where standards are missing or should evolve, as well as relevant pre-normative activities.

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

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/*

Informācija par LU 74.konferences plenārsēdi – ES finansēta zinātne Latvijā tiks izplatīta atsevišķi.