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RESEARCH DIRECTORATE-GENERAL

Directorate H - Transport

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FP7-TRANSPORT 2010-35

Issues Paper: Towards Work Programmes 2012-13 for Transport (including Aeronautics)

AAT, SST and TPT calls

(Indicative total budget for 2012: € 21 ! illion)[1]

1. Grand challenges, policy framework and strategic objectives

"rans#ort is an essential human activity $%ic% su##orts and drives econo ! ic gro$t%& Ho$ever, "rans#ort %as beco ! e one of t%e grand societal c%allenges $%en it %as lead to traffic congestion and e'cessive use of fossil fuels, $%ic% are ! a(or contributors to)H) e ! issions and t%us to global $ar ! ing and #ollution& "%e socio-economic challenge for "rans#ort is to make growth and sustainability compatible, b* decou#ling environ ! ental i ! #acts fro ! econo ! ic gro$t%, $%ile adding to t%e co ! #etitiveness of t%e +uro#ean trans#ort industr* and en%ancing social inclusion b* striving to #rovide ! obilit* for all& +cono ! ic do$nturn, increasing scarcit* of non,rene$able energ* sources, aging, ! igration, increasing de ! and for ! obilit*, urbani-ation, and t%e globali-ation of t%e econo ! * are a ! ong t%e ot%er social and econo ! ic c%allenges to be ans$ered b* "rans#ort researc%&

.dditionall*, at a ti ! e of tig%t financial resources, researc% efforts need to be #ooled and coordinated to avoid frag ! entation, costl* du#lication and overla#s& B* better #ooling our efforts and focusing on e'cellence, and b* creating a true +uro#ean /esearc% .rea, t%e +0 can en%ance t%e 1ualit* of researc% and +uro#e%s #otential for ! a(or brea3t%roug% and increase t%e effectiveness of t%e invest ! ents needed to get ideas to ! ar3et& In a global environ ! ent, +uro#e ! ust also develo# its o$n distinctive a##roac% to innovation, $%ic% builds on its strengt%s and ca#italises on its values& In t%is conte't, t%e en%anced collaboration bet$een t%e different D)s involved in +0 trans#ort researc% (D) /"D, D) 4O5+, D) +6"/ and D) I678O) beco ! es even ! ore ! eaningful&

"%e 3e* #olic* fra ! e$or3 to ! eet t%ese c%allenges and define strategic ob(ectives is t%e follo$ing:

.& 9olic* fra ! e$or3 alread* set out and being i ! #le ! ented:

- The Seventh Framework Programme and its Specific Programme 'Cooperation', $%ere t%e overall ob(ectives and researc% activities of t%e Transport theme are defined for t%e #eriod 200:,1 &
- The uropean conomic *!* ecovery Plan, $%ere a ! ong ot%er ! easures, t%e "European Green Cars Initiative (EGCI)" $as launc%ed ai ! ing at brea3t%roug%s in t%e use of rene$able and non,#olluting energ* sources, as $ell as in safet* and ! obilit*, in road trans#ort&
- The "arine and "aritime *!* esearch Strategy, $%ic% %ig%lig%ts t%e i ! #ortance of integration bet$een establis%ed ! arine and ! ariti ! e researc% disci#lines in order to reinforce e'cellence in science and to reconcile t%e gro$t% of sea,based activities $it% environ ! ental sustainabilit*&

[1] 0nder t%e condition t%at t%e #reli ! inar* draft budget for 2012 is ado#ted $it%out ! odifications b* t%e budgetar* aut%orit*&

- The #und $eclaration, $%ere it is said t%at "European research must focus on the Grand Challenges of our time", $%ic% $ill be a #rere1uisite for continued econo ! ic gro$t%&
- The Political guidelines of President %arroso for the new Commission, $%ere it is stated t%at "the next Commission needs to maintain the momentum towards a low emission economy, and in particular towards decar onising our electricity supply and the transport sector ! all transport, including maritime transport and aviation, as well as the development of clean and electric cars" #ecar onising electricity supply and transport will also ring additional enefits in terms of security of energy supply"&
- The &TS 'ction Plan and the &TS $irective, $%ic% set a fra ! e$or3 for standards and innovations in I"8 for road trans#ort and its interfaces $it% t%e ot%er trans#ort ! odes&
- The Commission Communication ' urope ()() * ' strategy for smart+ sustainable and inclusive growth', $%ic% e ! #%asi-es t%at essential ele ! ents of t%e trans#ort #olic* s%ould be better integration of trans#ort net$or3s, #ro ! oting clean tec%nologies, and u#grading infrastructure& "$o of t%e seven flags%i# initiatives of t%is strateg* $%ic% are #articularl* relevant for "rans#ort researc% are:
  a) "%e '&nnovation ,nion', $%ic% ai ! s at re,focusing /<D and innovation #olic* on t%e c%allenges facing our societ*& "%e =o ! ! ission =o ! ! unication $Europe %&%& 'lagship Initiative(Innovation)nion * +ransforming Europe for a post*crisis world, $ill be ado#ted in October 2010&
  b) "%e '!esource efficient urope', $%ic% ai ! s at su##orting t%e sustainable ! anage ! ent of resources and t%e reduction of carbon e ! issions, $%ile ! aintaining t%e co ! #etitiveness of t%e +uro#ean econo ! * and its energ* securit*& . =o ! ! unication on -Clean +ransport .ystems- foreseen for 6ove ! ber 2011 $ill develo# a consistent long,ter ! strateg* on t%e substitution of oil as trans#ort fuel b* alternative fuels&
- The Commission Communication on ' ' uropean strategy on clean and energy efficient vehicles', $%ic% sets out a strateg* for encouraging t%e develo# ! ent and u#ta3e of clean and energ* efficient %eav*, (buses and truc3s) and lig%t,dut* ve%icles (cars and vans) as $ell as t$o, and t%ree,$%eelers and 1uadric*cles&

B& 9olic* fra ! e$or3 (for "rans#ort and for /"DI) under #re#aration or to be i ! #le ! ented:

- The -ew Transport .hite Paper, $%ic% constitutes t%e ! ain fra ! e$or3 for "rans#ort #olic*&
- The Strategic Transport Technology Plan, $%ic% $ill res#ond to t%e need for clearer long ter ! tec%nolog* #ers#ective, better ! anage ! ent of innovation #at%$a*s and a stronger align ! ent of researc%, innovation and trans#ort #olicies&
- The !eflection Paper for FP/, $%ic% sets t%e fra ! e for t%e #re#arator* $or3 regarding t%e ado#tion of 79>, and addresses t%e 3e* 1uestions as to $%at s%ould be funded in t%e future and according to $%ic% deliver* ! odes& . #olic* #a#er for 79> $ill be issued earl* 2011&

Ot%er #olicies of t%e 0nion $%ic% are also of relevance for "rans#ort researc%, #articularl* t%e $.ustaina le #evelopment .trategy, and t%e $/arine .trategy 'rameworO #irective, and .E+*1lan&

Based on all t%e above, t%e strategic ob(ectives of "rans#ort researc% for 2012,1 can be su ! ! ari-ed as follo$s:

- $ecarbonising and 0greening1 the Transport system, b* reducing or eli ! inating O_2 e ! ission or using carbon neutral fuels, en%ancing energ* efficienc*, and drastic reduction of #ollutants suc% as 8O·, 6O· and #articles&
- &ncreasing the efficiency of the whole Transport system, including all trans#ort ! odes, urban trans#ort #lanning and ! obilit*, as $ell as co, ! odalit*, notabl* b* t%e use of I=" to set u# a s ! art trans#ort s*ste ! &
- &mproving safety 2 security of #assengers, aircraft, ve%icles and vessels, and infrastructures&

- Strengthening the competitiveness of the uropean industry, b* i!#roving cost efficienc* and #ro!oting eco,innovation in t%e !anufacturing of airborne and surface ve%icles as $ell as $aterborne vessels&
- Pioneering the Transport of the future 3long term perspective4, focusing on brea3t%roug% tec%nologies ai!ed at ac%ieving ste# c%anges in t%e "rans#ort s*ste!&
- nhancing and strengthening the *!'*, b* t%e structuring effect of researc% #ro(ects, (oint underta3ings and ot%er initiatives, and #ro!oting coordination of 48;.8&
- "obility for all ?e&g& in t%e urban conte't in order to #rovide an inclusive and affordable trans#ort s*ste! to all citi-ens&

"%is $ill be t%e basis to define and select to#ics and fund promising ideas and technologies, $%ic% %el# to !eet t%ese strategic ob(ectives& .n overarc%ing target in 2012,1 $ill be to identif* and #re#are, b* using t%e e'isting instru!ents for coordination and i!#le!entation, #otential future uropean &nnovation Partnerships and 5oint Programming &nitiatives su##orting /<I in t%e "rans#ort sector& .ssessing and develo#ing 3e* enabling tec%nologies and broadening t%e 3no$ledge base under#inning "rans#ort /<I $ill be in t%e forefront of researc% actions $%ilst !a3ing t%e best use of e'isting researc% infrastructure and designing ne$ ones&

2. Operational framework, consultation, coordination and programming

2.1. Transport research in the Commission

"%e "rans#ort t%e!e of t%e 79: =oo#eration 8#ecific 9rogra!!e is !anaged b* D)/"D, D)4O5+ and D)+6"/& "%e D)/"D #art of t%e "rans#ort @or3 9rogra!!e focuses on technological advances $it% t%e strategic ob(ectives !entioned above&

D)4O5+ is in c%arge of researc% on transport policies 3including &TS policy4 and demonstration actions(6 8i!ilarl* D)4O5+ $or3s as $ell as on organi7ation+ operation and management of trans#ort s*ste!s and infrastructures, including S S'*!*, $%ic% is full* e!bedded in trans#ort #olic* to #ro!ote innovation t%roug% a consistent researc%,develo#!ent,de#lo*!ent strateg* in a #ublic,#rivate #artners%i# a##roac% $it% t%e sa!e above, !entioned ob(ectives&

D)+6"/ is in c%arge of *8*alileo in coordination $it% t%e)688 8u#ervisor* .ut%orit* ()8.)& /esearc% activities !anaged b* /"D, 4O5+ and +6"/ are integrated in t%e "rans#ort t%e!e in a co%erent $a* and i!#le!ented via clearl* identified se#arate calls& In addition to t%at, it is D)1678O $%o is !ostl* dealing $it% tec%nological researc% on &ntelligent Transport Systems (as #art of t%e I=" "%e!e a##lied to trans#ort), and D)+6"/ $%o is !ostl* res#onsible for t%e Transport Security issues (included in t%e 8ecurit* "%e!e) and $%o %as a broader #olic* role over t%e uropean *8*reen Cars &nitiative 3 *8*C&4 including issues related to financial engineering and regulation&

In t%e =o!!ission, 5ice,9resident Aallas %as ta3en t%e lead on trans#ort researc% in coo#eration $it% =o!!issioner 4Bire)eog%egan,Cuinn, in c%arge of researc% and innovation #olic*& "%is i!#lies a co!#lete coo#eration bet$een t%e t$o services and t%e develo#!ent of a +uro#ean 8trategic "rans#ort "ec%nolog* 9lan to ensure a co!!on strateg* for researc% and innovation in trans#ort"

2.2. Preparation of the final calls of FP7 (2012-2013)

"%e first t$o @or3 9rogra!!es (200:, 200>) e!braced t%e entire sco#e of t%e "rans#ort #art of t%e 8#ecific 9rogra!!e& .multi-annual strategy $as #ro#osed for t%e #eriod 2010,11 to ensure a balanced a##roac% and co!#le!entarit* a!ong =alls $%ile res#ecting t%e annualit* of budget consu!#tion& 7or t%e #eriod 2012,1, a !ulti,annual strateg* is #ro#osed again focusing on t%e above #olic* fra!e$or3& @or3 9rogra!!es 2012,1 $ill be t%e last ones of 79: and a s!oot% transition to$ards 79> s%ould also be ensured, in #articular via @or3 9rogra!!e 201&

[2] I"8.ction 9lan s%ould be i!#le!ented as t%e first s#ecifications under t%e I"8 Directive are alread* ado#ted& 6o calls $ere #ublis%ed for 200D&

7urt%er ! ore, to ac%ieve critical ! ass, @or3 9rogra ! ! es 2012,1 $ill focus on a limited number of very strategic priorities described in ter ! s of broader ob(ectives and enlarged sco#e #roviding t%e ! $it% si-eable budgets& "%e* res#ond to t%e strategic ob9ectives ! entioned above and t%e #otential leverage effect and , added-value of t%ese researc% #riorities to boosting #ublic and #rivate involve ! ent and coordination to$ards t%ese ob(ectives& . t%oroug% a##roac% %as been ta3en in order to identif* t%e strategic #riorities and ! ost #ro ! ising tec%nolog* areas to attain t%e ! & It ta3es into account t%e consultations $it% ot%er += services, t%e "rans#ort .dvisor*)rou#, 48;.8 and sta3e%olders (including t%e "rans#ort "ec%nolog* 9latfor ! s of t%e four ! odesE and t%e +)=I .dvisor*)rou#), $%ic% ensure t%e +0 added,value at +0 level, co ! #le ! entarit* $it% national #rogra ! ! es and s*nergies of t%e #riorities;to#ics #ro#osed& "%e results of t%e 200:, 200> and 2010 calls %ave also been considered $%en ! a3ing t%e #resent #ro#osal&

=ollaborative researc% under t%e "rans#ort t%e ! e is being i ! #le ! ented b* ! eans of t%e 79: funding sc%e ! es, i&e& collaborative #ro(ects, coordination and su##ort actions, etc& In addition to t%is #ro(ect,based a##roac%, t%e "rans#ort t%e ! e also features a ***0***programming***1*** approach since t%e earl* stages of 79:, $%ic% reinforces t%e leverage effect and +0 added,value, suc% as t%e "Clean .*0*y" *2*oint +echnology Initiative, t%e .ingle European .*0*y *3*ir +raffic /anagement *4*esearch (.E.*34*), t%e European /arine and /aritime *4*esearch .trategy (+he *5*cean of +omorrow), and t%e European Green Cars Initiative& F=lean 83*G and 8+8./ are i ! #le ! ented b* se#arate ! ec%anis ! s, %ave a defined budget and are sub(ect to s#ecific evaluations& "%e 79: 4id,ter ! /evie$ results and so ! e ne$ Hoint 9rogra ! ! ing initiatives under assess ! ent are to be 3e#t in ! ind $%en #re#aring @or3 9rogra ! ! es 2012 and 201 &

3. Specific objectives and implementation in Work Programmes 2012-13 (WP2012 and WP2013)

"%e "rans#ort activities ! anaged b* D)/"D belong to t$o sub,t%e ! es: .eronautics and .ir "rans#ort (.."") and 8ustainable 8urface "rans#ort (88")& Hori-ontal activities ("9") for t%e i ! #le ! entation of t%e "rans#ort t%e ! e, as $ell as socio,econo ! ic researc% and cross,cutting issues are also included&

9articular attention is #aid in t%ese activities to trans#ort innovations addressing ! a(or societal c%allenges and +uro#ean trans#ort #olic* ob(ectives, building on t%e +0 leaders%i# in 3e* tec%nologies and t%e #otential t%ese ! ar3ets offer for innovative businesses and en%ancing +0 co ! #etitiveness& "%ese activities ! ust involve t%e full c%ain of sta3e%olders in t%e /"DI c*cle: not onl* ! a(or co ! #anies, but also 84+s, researc% centres, universities, #ublic ad ! inistration, regulators, civil societ* organi-ations, etc& according to t%eir s#ecific role and on a case b* case basis& .ctivities could also address t%e trans#ort s*ste ! as a $%ole, discarding t%e distinctions bet$een t%e different ! odes, to develo# an effectivel* integrated s*ste ! t%at translates into sea ! less trans#ort&

3.1. Aeronautics and Air Transport (AAT)

"%e structure of t%e 79: @or3 9rogra ! ! es enco ! #asses t%e follo$ing si' activit* lines:

+he Greening of *3*ir +ransport
Increasing +ime Efficiency
Ensuring Customer .atisfaction and .afety
Improving Cost Efficiency
*1*rotection of *3*ircraft and passengers
*1*ioneering the *3*ir +ransport of the 'uture

@%ile t%e first t$o .." calls (200: and 200>) $ere o#ened to all si' activit* lines, @or3 9rogra ! ! e 2010 (t%ird call) focused on u#strea ! Ievel,1 #ro(ects (=9,79) $it% strong e ! #%asis on Greening, Cost Efficiency, and *1*ioneering $it% fe$ or no to#ics o#ened for t%e ot%er activit* lines& @or3 9rogra ! ! e 2010 included for t%e first ti ! e coordinated calls $it% /ussia and =%ina& @or3 9rogra ! ! e 2011 (fourt% call) focuses on do$nstrea ! Ievel,2 (=9,I9), $it% Ievel,1 to#ics restricted to *1*ioneering& .ll @or3 9rogra ! ! es included =8.,8. to su##ort t%e #rogra ! ! e i ! #le ! entation&

*5*verall approach for %&6%*67

"%e last t$o calls (fift% and si't%) on aeronautics researc% $ill ensure continuity and coherence $it% t%e #revious @or3 9rogra! !es& In addition, @92012 and @9201 s%ould also be co%erent $it% t%e #olic* fra!e$or3 #resented in section 1 of t%is #a#er and increasingl* su##ort broader +uro#ean air trans#ort #olicies& It s%ould also start to reflect t%e ne$ #olic* orientations of $Europe %&%&, and its flags%i#s (see section 1)& 4ean$%ile, @92012 and @9201 $ill %ave to ans$er ne$ c%allenges arising fro! a continuousl* evolving global $orld, in #articular $it% regard to t%e use of ne$ energ* sources and stronger integration $it% ot%er trans#ort !odes&

"%erefore, a %olistic a##roac% $ill be i!#le!ented, including so!e e!erging strategic #riorities& .!ong #otential sub(ects for s#ecific consideration to fostering innovation could be, for e'a!#le, alternative fuels, co,!odalit* and t%e integration of un!anned airborne s*ste!s& "%e needs of t%e end,users of t%e air trans#ort s*ste!, of air#orts and airlines as $ell as of #olic* !a3ers $ill be better reflected in t%e researc% actions& De#ending on t%e outco!e of t%e different initiatives under$a*, s#ecific to#ics related to t%e volcanic as% crisis on t%e +uro#ean air trans#ort s*ste! !a* be considered&

"%e follo$ing i!#le!entation sc%e!e is suggested:

.hare etween *8*evel*6 (*86*) and *8*evel*% (*8%*) in *9 1%&6%* and *9 1%&67*

"%ere $as an agree!ent to ac%ieve a K0L,K0L s%are of t%e collaborative researc% budget bet$een I1 and I2 #ro(ects over t%e duration of 79:& In order to #rovide so!e fle'ibilit* and ac%ieve t%e above !entioned target, t%e #resence of a !i' of I1 and I2 in bot% calls is t%e best solution, $it% @92012 !ainl* focused on I1 $%ile @9201 $ill #ut e!#%asis on I2&

Introduction of *8*evel*& (*8&*)

"%is ne$ t*#e of action $ill a##l* in t%e activit* -*1*ioneering the *3*ir +ransport of the 'uture- to sti!ulate and incubate ne$ funda!ental 3no$ledge and disru#tive ideas t%at %ave a strong #otential for innovation& I0 $ill be at t%e foundation of t%e /"D c*cle $it% t%e ai! of strengt%ening t%e 3no$ledge base and 3no$ledge ca#acit* needs for /<I actions at %ig%er tec%nolog* readiness levels& I!#le!entation of I0 $ill ta3e #lace via studies (=8.,8.) or researc% #ro(ects (=9,79)& .si!#lified #rocedure for #ro#osal sub!ission and evaluation is envisaged in order to allo$ for 1uic3 action on #ro!ising e!erging ideas& .li!ited !a'i!u! funding #er #ro(ect $ill be defined& "%ese #ro(ects $ould re#resent a s!all financial !ass& "%is ne$ co!#onent $ill #rovide also ne$ o##ortunities for %it%erto less favoured #la*ers, including acade!ic researc% in a larger nu!ber of 4e!ber 8tates and .ssociated =ountries&

*8*evel *6* (C*1*'*1* and C.*3*C*3*)

"%e #ro#osed focus for @92012 is as follo$s:

- $Greening, and $Cost Efficiency, $ill sta* full* o#en to su##ort environ!ental concerns and co!#etitiveness issues&
- $Increasing +ime Efficiency, $ill re!ain focused on a li!ited nu!ber of to#ics ta3ing into account t%at t%e 8+8./H0 coordinates ."4 /esearc%& 9ossible to#ics $ill be on longer ter! ."4 researc% and on air#ort related issues&
- $Customer satisfaction and safety, $ill be #artiall* reo#ened, ta3ing into account t%e res#onse to t%e I2 to#ic on cabin environ!ent in @92011 (fourt% call) and t%e fact t%at it contributes not onl* to t%e co!#etitiveness of +uro#ean o#erators but also to t%e inclusion of ne$ social grou#s as consu!ers of air trans#ort services&
- $*1*rotection of *3*ircraft and passengers, $ill re!ain focused on ver* s#ecific a##lications to air trans#ort in coordination $it% t%e 8ecurit* @or3 9rogra!!e, $%ic% covers $ider a##lications of securit* tec%nologies and #rocesses&
- $*1*ioneering the *3*ir +ransport of the 'uture, $ill be o#en for a li!ited nu!ber of to#ics $%ere t%e re1uired !aturit* for a I1 %as been reac%ed&

*8*evel % (C*1*I*1*)

Level 2 to#ics $ill be selected in t%e vie$ of co!#le!enting t%e landsca#e of #revious I2 researc% #ro(ects and ongoing de!onstration $or3 in t%e $Clean .0y, Integrated "ec%nolog* De!onstrators and 8+8./ De!onstrators& "%e* $ill contribute in different degrees to t%e first five activit* lines (see above)& "%e* $ill be identified in consultation $it% t%e !anufacturing industr* and ot%er sta3e%olders of t%e air trans#ort s*ste!& "o#ics $ill be #laced in eit%er call, de#ending on budget available for t%e call, #riorities and

availabilit* of t%e under#inning tec%nologies fro ! #revious researc% at lo$er tec%nolog* readiness levels at t%e ti ! e of t%e call& "%e #rinci#le guide is t%e fulfil ! ent of t%e 8trategic /esearc% . genda and 5ision 2020 goals&

7ro ! t%e #revious first t%ree calls eig%t I2 #ro(ects are funded and si' ! ore I2 to#ics are included in @92011 (fourt% call)& In t%e last t$o calls a continuous effort at Ievel 2 $ill be needed in #ro#ulsion related tec%nologies, additional effort in aerod*na ! ics and flig%t #erfor ! ance for reduced drag, in securit* related ! atters as $ell as on #ri ! ar* safet* as#ects& 9ursuing en%anced co ! #etitiveness t%roug% actions at Ievel 2 $ill also be needed in as#ects of ! aintenance and ! anufacturing& I2 #ro(ects in con(unction $it% I (M=lean 83*N and 8+8 . /) are essential #illars #aving t%e $a* to definite innovation in aeronautics and air trans#ort&

I2 #ro(ects $ill continue #roviding an e'cellent o##ortunit* for a $ider involve ! ent of t%e +uro#ean tec%nolog* base, including 8 4 +s, as it %as been t%e case in t%e eig%t #ro(ects funded until no$&

"%e 'Clean Sky' *5*oint Technology &nitiative $ill continue realising a 1uantu ! lea# in t%e tec%nological ca#abilit* of +uro#e to #roduce aircraft t%at ! eet environ ! ental targets (5ision 2020 goals) and are econo ! ical* viable& M=lean 83*N focuses on t%e integration of advanced tec%nologies, t%eir validation in co ! #le' ! odels and testing t%e ! on full scale ground and flig%t de ! onstrators (Ievel,)& =oordination $it% ot%er relevant researc% in t%e 7ra ! e$or3 9rogra ! ! e, national or industrial #rogra ! ! es $ill re ! ain a #riorit*& 9articular attention is being #aid to ensuring ade1uate #artici#ation of 8 4 +s& 2=lean 83*2 is par excellence oriented to$ards innovation and global co ! #etitiveness of t%e +uro#ean industr*&

"%e :S S'*! 5*oint ,ndertaking: is dedicated to ! odernising t%e +uro#ean air traffic control infrastructure& It $ill continue to #roduce t%e re1uired ne$ generation of tec%nological s*ste ! s and co ! #onents as defined in t%e definition #%ase& "%e de#lo* ! ent #%ase (201 ,2020) $ill see3 to build t%e ne$ infrastructure at a $ide scale bot% in +uro#e and in #artner countries&

3.2. Sustainable Surface Transport (SST)

<u>5verall approach for %&6%*67</u>

"%e strategic research priorities for 88" in @or3 9rogra ! ! es 2012,1 are also co%erent $it% t%e #olic* fra ! e$or3 #resented in section 1& "$o of t%e flags%i# initiatives of t%e $Europe %&%&, strateg* are of #articular relevance to /"DI in 88": t%e '&nnovation ,nion' and t%e '*!*esource efficient urope'& "%e @or3 9rogra ! ! es 2012,1 $ill contribute to t%ese flags%i# initiatives b* #ro ! oting innovative and ! ore efficient industrial and service tec%nologies t%at su##ort decarbonisation and reduce t%e use of natural resources&

@or3 9rogra ! ! es 2012,1 $ill contribute to t%e decarbonisation of trans#ort and i ! #rove t%e energ* efficienc* of t%e trans#ort s*ste ! b* #ro ! oting eco,innovation in all ! odes of surface trans#ort& "%e* $ill concentrate on t%e electrification of t%e trans#ort s*ste ! and t%e use of innovative fuel,efficient tec%nologies and designs across ! odes'& "%e coordination $it% ot%er t%e ! es (+nerg*, I=" and 6 4 9) $ill be #ursued on t%ese issues&

"%e strategic #riorities for 2012,1 $ill %el# strengt%en t%e competitiveness of +uro#ean trans#ort industr* and services, $ill contribute to t%e reduction of ***8 ; 8*** e ! issions and o#ti ! i-e t%e global efficiency of t%e trans#ort s*ste ! , as $ell as enable t%e efficient use of t%e +uro#ean trans#ort infrastructure and network capacity& . s before, t%e 2012,1 @or3 9rogra ! ! es $ill focus on t%e #erfor ! ance of t%e overall trans#ort s*ste ! (incl& in urban areas), ai ! ing at o#ti ! i-ing logistics, traffic control and co, ! odalit* for #assengers and goods t%us #ro ! oting t%e co ! #etitiveness and social inclusiveness of trans#ort services and e'#loiting t%e relative strengt% of eac% trans#ort ! ode&

. #articular focus of t%e 2012,1 @or3 9rogra ! ! es $ill be on a better interconnection and integration of trans#ort net$or3s and services, and t%erefore %el# to deliver significant i ! #rove ! ents of t%e efficiency and sustainability of the whole transport and mobility system&

<u>+he I+. *3*ction *1*lan</u>

J "%e =o ! ! unication on 0=lean "rans#ort 8*ste ! s0 foreseen for 6ove ! ber 2011 $ill develo# a consistent long,ter ! strateg* on t%e substitution of oil as trans#ort fuel b* alternative o#tions and #ro#ose #ossible acco ! #an*ing legislative ! easure& 7uture "rans#ort alternative o#tions are: electricit* (including batter* and %*drogen #o$ered ve%icles), biofuels and ! et%ane (natural gas and bio ! et%ane)& . re#ort $ill be sub ! itted to t%e =o ! ! ission b* October 2010&

"%e I+. #irective includes t%e ado#tion of s#ecifications to ensure co ! #atibilit*, intero#erabilit* and continuit* for t%e de#lo* ! ent and use of I"8, $%ic% in turn $ill i ! #rove t%e efficienc* of t%e trans#ort s*ste ! as a $%ole& +'a ! #les of actions t%at $ould be $elco ! e %ere are a furt%er loo3 at t%e i ! #acts of intelligent s*ste ! s on vulnerable road users, t%e develo# ! ent and testing of intero#erable s ! art tic3eting for cross,border #ublic trans#ort #assengers as $ell as de ! onstration and validation #ro(ects (o#en in,ve%icle #latfor ! , intelligent truc3 #ar3ing, continuit* in traffic ! anage ! ent, etc&)

+he $European Green Cars Initiative, (EGCI)

@it% regard to t%e 8C&, all t%ree #illars $ill be covered in @or3 9rogra ! ! es 2012,1 : 1) electrification of road trans#ortE 2) long distance trans#ortE and) logistics and co, ! odalit*& "%ese t%ree #illars re#resent t%e 3e* areas to ac%ieve %ig%er energ* efficienc*, reduction of)H) e ! issions, as $ell as reliable logistics and sea ! less ! obilit*&

8everal to#ics related to t%e electrification of ve%icles and t%e integration of electric ve%icles in t%e trans#ort s*ste ! $ill be included& 9articular attention $ill be given to ve%icle to grid integration (52)) and to c%arging infrastructure (c%arging $%ic% ada#ts to t%e needs of t%e user and to t%e restrictions of t%e grid, c%arging at en%anced s#eed, and s ! art c%arging $it% bi,directional energ* and infor ! ation transfer ca#abilities)& "%ese to#ics could be i ! #le ! ented in 2012 via a (oint call #ossibl* $it% t%e follo$ing t%e ! es: "rans#ort, I=" and 6 4 9&

. not%er #riorit* for t%e 2012 @or3 9rogra ! ! e $ill be researc% on advanced and lig%t$eig%t ! aterials (suc% as #lastics, #ol* ! er co ! #osites, steels, alu ! iniu ! , ! agnesiu ! , %*brid ! aterials and cras%$ort%* structures) for +lectric 5e%icles&

4oreover, researc% actions $ill be needed on intelligent roads" "%e* $ill allo$ t%e develo# ! ent of ne$ road infrastructure and related co ! ! unication tools, encouraging t%e use of electric ve%icles and also t%e integration of electric ve%icles $it% ot%er ! odes of trans#ort& /esearc% could also include lo$,cost and lo$, e ! ission ! aintenance and construction of roads (including life c*cle anal*sis), t%e develo# ! ent of auto ! ated driving s*ste ! s, based on active safet* s*ste ! s and car,to,car co ! ! unication or to energ* %arvesting s*ste ! s on roads&

@it%in t%e +)=I, it is envisaged to i ! #le ! ent furt%er (oint calls in areas, suc% as advanced and lig%t$eig%t ! aterials for electric ve%icles and infrastructure researc%, $%ere t%e ! ulti,disci#linar* a##roac% re#resents an i ! #ortant co ! #onent of t%e researc%& In 2010 and 2011, t$o successful (oint calls %ave been i ! #le ! ented on electric storage s*ste ! s& "%e involve ! ent of t%e +nviron ! ent, +nerg* and 6 4 9 t%e ! es in furt%er (oint calls $ill be e'#lored&

@it% res#ect to t%e second researc% #illar of t%e +)=I on long distance trans#ort, researc% actions s%ould focus on advanced ve%icle conce#ts and tec%nologies (including innovative solutions for i ! #roving t%e aerod*na ! ic #erfor ! ance of ve%icles, rolling resistance, t%e efficienc* of its constituent sub,s*ste ! s also in ter ! s of t%e #otential for energ* recover*, fle'ible and ! odular truc3,carrier conce#ts)& . t t%e sa ! e ti ! e,)H) e ! issions fro ! freig%t trans#ort $ill %i ! el+),

7aster freig%t trans#ort !a* be o#ti!ised $it%in a !i'ed rail net$or3 b* !ore efficient net$or3 !anage!ent toget%er $it% #rioritised routes $%en a##licable& 8olutions $ill need to ta3e into account flo$s of #assengers and freig%t across t%e +0, bottlenec3s and #ossibl* i!#roved o#eration t%roug% increased o#eration

9ater orne transport

@aterborne researc% $ill concentrate on innovative !aterials and s*ste!s for s%i#s (e&g& faster co!#ositesi #rocessing for larger structures, greener !aterials for s!aller vessels to reduce t%e carbon foot#rint including rec*cling,abilit*), safet* as#ects in #articular regarding t%e !anoeuvring in e'tre!e circu!stances ta3ing into account loading conditions (decision tools, design o#ti!i-ation), and integrated #assive safet* as#ects at design #%ase and %u!an ele!ents& . coordination action s%ould loo3 at t%e ga#s in researc% for t%e develo#!ent of e,guided vessels (e,navigation, #reventive !aintenance, ne$ re!ote services for efficienc* i!#rove!ent, etc)&

/esearc% $ill also focus on t%e facilitation of +0 e,4ariti!e solutions enabling t%e use of advanced infor!ation tec%nologies for $or3ing and doing business in t%e !ariti!e trans#ort sector% t%is ob(ective s%ould be ac%ieved t%roug% t%e #ro!otion of %ar!onisation of services and #rocedures as $ell as t%e use of standards&

In 201 , a large scale collaborative #ro(ect s%ould integrate t%e first findings of t%e #ro(ects fro! t%e 2011 call related to t%e retrofitting of vessels& "%e large scale #ro(ect s%ould include industrial validation&

7urt%er researc% s%ould focus on inland $ater$a* trans#ort ta3ing into account t%e #riorities in t%e 8trategic /esearc% .genda for Inland @ater$a*s "rans#ort (I@"), a##licable to /%ine, Danube, +lbe, etc& 8i!ulators s#ecific to inland navigation s%ould be develo#ed& /esearc% $ill entail t%e develo#!ent of innovative efficient #ro#ulsion s*ste!s to reduce green%ouse gas e!issions and #articulate !atters (e&g& i!#rove!ent of diesel #o$ered engines, i!#le!entation of I6) and alternative fuels)% design of s%i#s for e'tre!e conditions (s%allo$ and lo$ $ater conditions), develo#!ent of s#ecific I@" si!ulators for training #ur#oses including t%e develo#!ent of soft$are (based on %*drod*na!ics for narro$ and s%allo$ $aters) and %ard$are& /esearc% in ne$!aterials described above s%ould also a##l* for inland vessels&

)r an transport

.s regards urban transport research, t%e 2012,1 @or3 9rogra!!es $ill include researc% actions regarding accessibilit* to trans#ort s*ste!s& .ccessibilit* is of 3e* i!#ortance to !a3e trans#ort s*ste!s in urban areas !ore efficient& 4ore accessible trans#ort s*ste!s can !a3e urban environ!ent serve all citi-ens, #articularl* vulnerable grou#s, li3e older #eo#le, c%ildren or t%e disabled& /esearc% $ill not onl* focus on ne$ tec%nological solutions, but ai! at actuall* #lanning, i!#le!enting, !onitoring and evaluating accessibilit* !easures& Integrated a##roac%es are needed, investigating lin3s $it% land use #lanning and $it% societal c%allenges suc% as t%e ageing societ*&

C&<&T'S is t%e +0Ns biggest initiative in su##ort of innovations in sustainable urban trans#ort& @it% t%e =I5I".8 Initiative, t%e += ai!s to generate a decisive brea3t%roug% b* su##orting and evaluating t%e i!#le!entation of a!bitious integrated sustainable urban trans#ort strategies t%at s%ould !a3e a real difference for t%e $elfare of t%e +uro#ean citi-en& "%e ai! in 201 is to continue to build on t%e e'#erience of #revious de!onstration #ro(ects of t%e =I5I".8 initiative, b* su##orting cities and 3e* trans#ort e1ui#!ent and service #roviders in develo#ing integrated trans#ort s*ste! de!onstrations, net$or3ing activities for disse!ination, #rofessional training #lace!ents, and researc%ing 3e* enabling issues& De!onstrations s%ould #ro!ote dee#er collaboration on s#ecific t%e!es $it% a strong e!#%asis on innovation and trans#ort s*ste! integration&

Ot%er #riorities for urban trans#ort researc% $ill be t%e design of urban #assenger infrastructures and t%e develo#!ent and de!onstration of advanced auto!ated cit* ve%icles in +uro#ean cities and %ig%,s#eed !id, distance rail$a*& /esearc% on #assenger infrastructures $ill cover a##roac%es to %el# cities #lan a full* integrated trans#ort s*ste!, !a3ing !ore efficient use of t%eir infrastructure and #ublic trans#ort net$or3s, #roviding greater accessibilit* for citi-ens, and %el#ing to #ro!ote greater levels of $al3ing and bic*cle use& 4ore #articularl* t%e design and o#eration of ne$ or u#graded efficient trans#ort interc%anges, su##orted b* I=" and various services s%ould be addressed, as $ell as strategies for integrating land use #lanning $it% urban #assenger infrastructure #lanning& "%is s%ould encourage a better co!#le!entarit* and coordination bet$een t%e different !odes of trans#ort and t%eir o#erators, and create #eo#le focused sea!less and energ* efficient (ourne*s on t%e urban net$or3&

4emoval of congestion

/esearc% on auto ! ated and s#ace efficient trans#ort s*ste ! s $ill concentrate on t%e i ! #le ! entation of large,scale #ilot de ! onstration test beds in an urban environ ! ent, socio,econo ! ic researc% and legal and institutional re1uire ! ents for auto ! ated and s#ace,efficient trans#ort s*ste ! s&

3.3. Socio-economic aspects and cross-cutting issues

It is #lanned to dedicate #articular attention to t%ese activities in t%e . . ", 88" and "9" 2012,1 calls& It is suggested to %ave onl* one "9" call for t%e entire #eriod 2012,1 , so to attain critical ! ass and favour s*nerg* bet$een co ! #le ! entar* to#ics& 9olic*,driven and socio,econo ! ic researc% on %ig% +0,added value cross, ! odal issues for i ! #le ! enting t%e "rans#ort $or3 #rogra ! ! e $ill be included in t%is call (#ro#osed for 2012)& Ot%er activities of t%is c%aracter, but focused on #articular trans#ort ! odes, as $ell as cross, cutting actions involving 8<" researc% $ill be included in t%e . . " and 88" 2012,1 calls, including t%e +)=I& "%ese . . ", 88" and "9" activities $ould address:

- Socio-economic research and technology foresight ai ! ed at ac%ieving a co ! #etitive edge to +uro#ean co ! #anies on t%e global ! ar3et b* #ro ! oting innovation and t%e decarbonisation of t%e trans#ort s*ste ! , t%us reducing t%e de#endenc* on scarce energ* sources t%at +uro#e is ! issing (fossil fuels)& 7urt%er, selected actions $ill continue to su##ort t%e #rogra ! ! e i ! #le ! entation for as#ects related to #olic* as $ell as socio,econo ! ic and tec%nical issues& . ctions ! a* also be re1uired to #re#are 79>& 8ocio, econo ! ic researc% on 88" $ill be a #riorit*, given t%e strategic ob(ectives of trans#ort /<I and t%e +)=I 999 in #articular& Iife c*cle assess ! ent, energ* efficienc* fro ! F$ell to $%eelG (co ! #arative assess ! ent $it% res#ect to electrification), e'#ectations and needs of trans#ort users, etc& $ill be included& 7urt%er +/.,6+" 9lus initiatives $it%in t%e +)=I, including socio,econo ! ic researc%, could be included in t%e 2012,1 @or3 9rogra ! ! es

- &ntegration of transport modes focussing on co, ! odalit* and on s*ste ! a##roac%, a c%allenge not onl* re1uiring tec%nical i ! #rove ! ents in t%e ve%icles, but also c%anges in #olic* even for t%e $%ole trans#ort s*ste ! & De#ending on t%e outco ! e of t%e 2011 call, so ! e issues (e&g& trans#ort for an ageing societ*) could be reintroduced& Intero#erabilit* bet$een trans#ort ! odes, in #articular #assengersN needs during ! ulti ! odal tri#s and su#ra,regional trans,border ! obilit* sc%e ! es are a ! ong t%e to#ics t%at could be considered&

- Cross-cutting research areas across "rans#ort ! odes and interdisci#linar* researc%& 8uc% actions s%ould be based on t%e strateg* ob(ectives ! entioned in section 1, en%ancing 3no$ledge s#illover a ! ong tec%nologies and solutions, t%us ! a'i ! ising t%e i ! #act of researc% funding& "%e use of alternative fuels in trans#ort and noise ! itigation are e'a ! #les of cross,cutting areas t%at $ill be included in t%e 2012 call, bot% ai ! ed at t%e e'c%ange of 3no$ledge, transfer or ada#tation of t%e latest tec%nologies, #rocedures and best #ractices bet$een all trans#ort ! odes&

- Strengthening the uropean !esearch 'rea and encouraging participation of a larger nu ! ber of 48;.8 and sta3e%olders b* #roviding o##ortunities to e'#loit t%eir s#ecific researc% #otential, $it% s#ecial attention to %it%erto less successful #la*ers $it%out co ! #ro ! ising on 8<" e'cellence& 8u##ort actions could be considered for su##orting t%e launc% of trans#ort,related Hoint 9rogra ! ! ing Initiatives b* a nu ! ber of 48;.8& 0# to no$ S" s %ave ac%ieved a level of #artici#ation and funding above t%e 1KL target (1D&2L in #artici#ation and 1:&JL in funding)[K], #artl* as a result of several sti ! ulation ! easures& 7urt%er ! easures for 2012,1 $ill de#end on t%e anal*sis of t%e results of t%e #artici#ation in t%e t%ird and fourt% calls and of t%e res#onse to a su##ort action to#ic #laced in @92011 (. . " fourt% call)&

- =ploitation and dissemination of research results for transport-related innovation& 8u##ort actions for #ro ! oting innovation $ill be carried out in 2012,201 & "%e* $ill focus on fostering t%at results of researc% #ro(ects are used b* sta3e%olders for bringing innovative #roducts and services to t%e ! ar3et& . lso, in case t%e* $ere not used b* #ro(ect #artners, t%e* s%ould easil* be 3no$n and accessed b* an* entit* t%at is interested in trans#ort innovation: ! anufacturers, o#erators, trans#ort aut%orities, associations of custo ! ers, etc& "%e co ! #osition of #artners%i#s is of #ara ! ount i ! #ortance to e'#loit

[K] Before . #ril 2010

results& 7ro ! researc% and tec%nolog* develo# ! ent to ! ar3et, all actors s%ould be #resent in t%e #ro(ect #artners%i#s $it% t%eir role clearl* outlined, #articularl* in do$nstrea ! researc%&

- &nternational cooperation on t%e basis of ! utual benefit re ! ains an i ! #ortant ! eans to en%ance t%e global co ! #etitiveness of t%e +uro#ean trans#ort industr* and services sector& /esearc% areas $ill be identified t%at are es#eciall* suited for suc% coo#eration (e&g& #re,nor ! ative researc%, or targeting global c%allenges suc% as traffic congestion, energ* efficienc*, environ ! ental i ! #acts, cli ! ate c%ange and infrastructure ! anage ! ent), as $ell as referring to researc% governance and ! anage ! ent, standardisation, I9/ issues, infrastructures, education and training& "%e on,going coo#eration actions $it% countries suc% as /ussia, =%ina, India and 8out% . frica $ill continue, but also ot%er regions, suc% as t%e +uro#ean 6eig%bour%ood countries, Iatin . ! erica, and %ig%l* industriali-ed countries (08., Ha#an, etc&) are being considered for #ossible coo#eration& In . ", eventual actions $ill be conditioned b* t%e outco ! e of on,going collaboration actions $it% /ussia, 03raine, Iatin . ! erica, 8out% . frica, 0nited 8tates and t%e res#onse to to#ics for su##ort actions targeting =anada and Ha#an in @92011 (fourt% call)& 8#ecific activities $it% Ha#an are foreseen& In 88", coo#eration is foreseen in 201 $it% /ussia in t%e field of %eav* freig%t rail trans#ortation& "rans#ort infrastructure ! anage ! ent and ! aintenance issues (including cli ! ate c%ange effects) are considered for coo#eration $it% 8out% . frica, India and 08.& . ctivities for +uro#ean 6eig%bour%ood =ountries $ill focus on to#ics related to "+6," develo# ! ents& 7or electric road and urban trans#ortation, coo#eration $it% 08. is envisaged, based on a $in;$in scenario, benefiting industries as ! uc% as +uro#ean citi-ens& /egarding urban ! obilit* and t%e role of I"8 to ada#t #erfor ! ance of trans#ort s*ste ! s to increased ! obilit* de ! and, es#eciall* in t%e conte't of large events, coo#eration is foreseen $it% =%ina, Bra-il, /ussia and +uro#ean 6eig%bour%ood =ountries&