



Amendment nr. 1 to Work Plan 2015-2017

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In accordance with Article 8 (h) of the Statutes as annexed to Council Regulation (EU) No. 558/2014 of 6 May 2014 establishing the Clean Sky 2 Joint Undertaking and Articles 31 (4) of the Financial Rules of the Clean Sky 2 Joint Undertaking, the undersigned, Ric Parker, Chairperson of the Governing Board hereby approves the above referenced document.

Done in Brussels on 24th September 2015

A handwritten signature in blue ink, appearing to read "Ric Parker", with a long horizontal flourish extending to the right.

Ric Parker

Chairperson of the Governing Board

Clean Sky 2 Joint Undertaking



Clean Sky 2 Joint Undertaking Amendment nr. 1 to Work Plan 2015-2017

– September 2015 –

Important Notice on the Clean Sky 2 Joint Undertaking (JU) Work Plan 2015-2017

The Amendment nr.1 to Work Plan covers the years 2015, 2016 and 2017. The information contained in this Work Plan (topics list, budget, planning of calls) may be subject to updates. Any further amendments of the Work Plan will be announced and published on the JU's website.

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Clean Sky 2 Joint Undertaking

Amendment nr. 1 to Work Plan 2015-2017

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Revision History Table

Version n°	Issue Date	Reason for change
V1	23/06/2015	First Release - Adoption by the Governing Board
V2	24/09/2015	Second Release - Adoption by the Governing Board of the Amendment nr. 1 to the Work Plan 2015-2017 which includes the addition of Chapter 23 - ANNEX III: 3rd Call for Core Partners: Summary List of Topics, pp. 262 to 276.

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1. CLEAN SKY 2 JU - INTRODUCTION

Clean Sky Public Private Partnership

Clean Sky today epitomises a true Public Private Partnership (PPP). It represents a strategic and successful input to the Europe 2020 objectives: boosting private investments in research and innovation and making the best use of public research funding in a vital and growing sector. Five years into the Programme, the step-change improvement potential targeted, such as up to 30% reduction in CO₂ emissions and (depending on the aircraft segment) 60% reduction in noise footprint, are all within reach. Stakeholder participation is a huge success: first time participation from many SMEs and their success rate in the Calls for Proposals is over twice that of any other FP7 instrument. Industry is increasingly using *Clean Sky* as the centrepiece of their R&T programmes because of the flexibility of the instrument; and the JU has proven its efficiency as a management body.

Horizon2020 and Clean Sky 2: new challenges and objectives

This is one of the reasons why the European Commission proposed in July 2013, within the European Innovation Investment Package, to continue *Clean Sky* in the framework of Horizon 2020: a *Clean Sky 2* Regulation was built to address the **Joint Technical Proposal** put together by the leading companies, “founders” of *Clean Sky 2* and coordinated by the JU. Regulation No 558/204 of 6 May 2014 establishing the *Clean Sky 2* Joint Undertaking was adopted by the Council on 6th of May, 2014 after consultations with the European Parliament and published on the 7th of June 2014¹.

The aeronautical sector, in particular through *Clean Sky 2*, will be a critical player in contributing to one of the key Societal Challenge ‘*smart, green and integrated transport*’ defined in **Horizon 2020**. The *Clean Sky 2* Programme will serve society’s needs and strengthen global industry leadership. It will enable cutting edge solutions for further gains in decreasing fuel burn and CO₂ and reducing NO_x and noise emissions. It will contribute strongly to the renewed ACARE SRIA².

Clean Sky 2 will be more than twice the size of *Clean Sky*, with widened scope and objectives: higher level of integration of technologies while taking also into account some lower-TRL, longer-term targets; reaching for a new set of environmental targets – assuming that those of the current *Clean Sky* will actually been achieved as expected – while ensuring the future global leadership of the European industry and supply chain, creating jobs through a reinforced competitiveness.

Clean Sky 2 will build on the success of *Clean Sky* and will deliver full-scale in-flight

¹ OJ L 169/77 of 7 June 2014.

² Advisory Council on Aviation Research in Europe, Strategic Research and Innovation Agenda (2012)

demonstration of novel architectures and configurations. Advanced technology inserted and demonstrated at full systems level will enable step-changes in environmental and economic performance and bring crucial competitiveness benefits to European industry. By *jointly* pursuing this research on new breakthrough innovations and *demonstrating* new vehicle configurations in flight, the Programme will provide the proving grounds for concepts that would otherwise be beyond the manageable risk of the private sector. It will give the necessary funding stability to the private sector to develop and introduce game-changing innovations within timeframes that are otherwise unachievable. Compared to the best available aircraft in operation in 2014, up to a 30% reduction in fuel burn and related CO₂ emissions, similar or greater reductions in NO_x emissions and up to a 75% reduction in noise affected communities will accrue from this focused and programmatic approach. These pace-setting gains will enable the European Aviation Sector to satisfy society's needs for sustainable, competitive mobility towards 2050. By doing this, *Clean Sky 2* will be *the key European instrument* to speed up technology development, overcome market failure and guarantee a sustainable advancement of aviation. *Clean Sky 2* will significantly contribute to the Innovation Union, create high-skilled jobs, increase transport efficiency, sustain economic prosperity and drive environmental improvements in the global air transport system.

The *Clean Sky 2* Programme is jointly funded by the European Commission and the major European aeronautics companies, and involves an EU contribution from the Horizon 2020 Programme budget of €1.755 bn. It will be leveraged by further activities funded at national, regional and private levels leading to a total public and private investment of approximately €4 bn. *Clean Sky 2* will run for the full duration of Horizon 2020 actions, i.e. from 2014 to 2023. A phased approach will be taken to the start-up of *Clean Sky 2* projects and align them closely and adequately with *Clean Sky* on-going projects (to be completed in the period 2014-2016). It will be endorsed and supported by the leading European aeronautic research organisations and academia. Small and medium-size enterprises and innovative sub-sector leaders will continue to shape promising new supply chains. In so doing, *Clean Sky 2* will engage the best talent and resources throughout Europe and over 3,000 highly skilled staff (FTEs) will be consistently employed over a ten year period.

Synergies with the structural funds

The European Structural and Investment Funds (ESIF) will invest approximately €100 billion in innovation and research in the period 2014-2020. Article 20 of the Horizon 2020 Regulation and Article 37 of the Rules for Participation encourage synergies between Horizon 2020 and other European Union funds, such as ESIF. The Clean Sky 2 JU is called by its founding Regulation n° 558/2014 of 6th May 2014 to develop close interactions with ESIF.

Synergy does not mean to replace the private contribution to be brought in the CSJU action by ESIF or to combine them for the same cost item in a project although a CSJU project can benefit from additional funding from ESIF at national or regional level for complementary or additional activities not covered by the CSJU grant. Synergy means to expand the scope and

impact of a CSJU project through ESIF funds in terms of scientific excellence and contribution to the Clean Sky 2 Programme objectives.

In the framework of its calls, the CSJU encourages the submission of proposals containing a separate and clearly identified Work Package (ESIF WP) that is independently funded or eligible for funding through ESIF under the applicable national/regional funding scheme/call. Activities proposed under the ESIF WP, where applicable, should be of complementary nature to the core scope of the Call topic, should contribute to the overall objectives of the Clean Sky 2 Programme but are or may be exclusively funded through ESIF. In the context of the calls for proposals, the complementary activities will be assessed by the JU outside the call for proposal framework, its evaluation and applicable rules.

The CSJU encourages also synergies with ESIF also by amplification of the scope, parallel activities or continuation of a CSJU co-funded project through ESIF in synergy with the Programme and by stimulating the use of ESIF to build capacity and capabilities in the fields related to the Programme.

PART A – *CLEAN SKY PROGRAMME*

D. Types of action: specific provisions and funding rates^{38,39}

Research and innovation actions⁴⁰

Description: Action primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. For this purpose they may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment.

Projects may contain closely connected but limited demonstration or pilot activities aiming to show technical feasibility in a near to operational environment.

The activities performed will not exceed TRL 6.

Funding rate: 100%

Innovation actions

Description: Action primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

The activities performed will not exceed TRL 6.

Funding rate: 70% (except for non-profit legal entities, where a rate of 100% applies)

Coordination and support actions

Description: Actions consisting primarily of accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies, including design studies for new infrastructure and may also include complementary activities of strategic planning, networking and coordination between programmes in different countries.

Funding rate: 100%

³⁸ Eligible costs for all types of action are in accordance with the Financial Regulation and the Rules for Participation. In addition, as training researchers on gender issues serves the policy objectives of Horizon 2020 and is necessary for the implementation of R&I actions, applicants may include in their proposal such activity and the following corresponding estimated costs that may be eligible for EU funding:

- i. Costs of delivering the training (personnel costs if the trainers are employees of the beneficiary or subcontracting if the training is outsourced);
- ii. Accessory direct costs such as travel and subsistence costs, if the training is delivered outside the beneficiary's premises;
- iii. Remuneration costs for the researchers attending the training, in proportion to the actual hours spent on the training (as personnel costs).

³⁹ Participants may ask for a lower rate.

E. Technology readiness levels (TRL)

Where a topic description refers to a TRL, the following definitions apply, unless otherwise specified:

- TRL 1 – basic principles observed
- TRL 2 – technology concept formulated
- TRL 3 – experimental proof of concept
- TRL 4 – technology validated in lab
- TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 7 – system prototype demonstration in operational environment
- TRL 8 – system complete and qualified
- TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

F. Evaluation

I. Calls for Core Partners

Selection Criteria

a) *Financial capacity*: In line with the Financial Regulation, at the proposal stage, applicants for Core Partners will be invited to complete a self-assessment using an on-line tool. The CSJU may perform a risk assessment based on the financial information provided by the applicant. This will apply also to the entities composing a grouping in case of applications submitted by groupings jointly applying as a one entity⁴¹.

b) *Operational capacity*: As a distinct operation, experts will indicate whether the participants meet the selection criterion related to operational capacity (as described in section B 3 above), to carry out the proposed work, based on the capabilities, competence and experience of the individual participant(s).

Award criteria

Experts will evaluate the applications on the basis of the criteria 'excellence', 'impact' and 'quality and efficiency of the implementation'. The aspects to be considered are set out in the table below, unless stated otherwise in the call.

Type of action	Excellence	Impact	Quality and efficiency of the implementation
	The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work plan.	The extent to which the outputs of the project should contribute at the European and/or International level to:	The following aspects will be taken into account:
Research and innovation; Innovation;	<ul style="list-style-type: none"> - Relevance and adequacy of the required key capabilities, competences and track record in the relevant topic area and experience with respect to the Topic (e.g. capability to efficiently contribute to a permit-to-fly application) and the overall level of key capabilities required to implement the Programme; - Clarity and pertinence 	<ul style="list-style-type: none"> - Level of technical contribution and key capabilities brought to the IADP/ITD and Programme objectives - The expected impact as described under the relevant topic and the strategic contribution brought to the Programme and the; - Enhancing innovation capacity and integration of new knowledge; - Strengthening the competitiveness and 	<ul style="list-style-type: none"> - Consistency of the proposed activity with the background, skills and competences as described; - Coherence and effectiveness of the application, including appropriateness of the allocation of tasks and resources; - Appropriateness of the management structures and procedures, including risk and innovation management;

⁴¹ See footnote 44.

Type of action	Excellence	Impact	Quality and efficiency of the implementation
	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work plan.</p> <p>of the objectives;</p> <ul style="list-style-type: none"> - Credibility of the proposed approach; - Soundness of the concept, including trans-disciplinary considerations, where relevant; - Relevance and adequacy of proposed work and results as compared with the Topic description; - Extent that proposed work is ambitious, has innovation potential, and is beyond the state of the art (e.g. ground-breaking objectives, novel concepts and approaches) - Suitability of the technologies, approaches and solutions proposed, including the complementary activities, where applicable, with respect to the Topic description and the IADP/ITD area and objectives. 	<p>The extent to which the outputs of the project should contribute at the European and/or International level to:</p> <p>growth of companies by developing innovations meeting the needs of European and global markets, and where relevant, by delivering such innovations to the markets;</p> <ul style="list-style-type: none"> - Demonstrating the environmental and socially important impacts as relevant for the CS2 Programme; - Performance of the "core research" activities within Europe and Associated Countries; - Plan on exploitation of results showing the contribution on the European competitiveness in the sector; - Effectiveness of the proposed measures to exploit and disseminate the project results (including management of IPR), to communicate the project, and to manage research data where relevant; - Level of strategic contribution and key capabilities brought to the IADP/ITD and Programme objectives; - Level of new capabilities and skills brought to the Programme compared to the ones already existing within the Membership; - Probability of application/valorization of technology results, including soundness of the exploitation plan and 	<p>The following aspects will be taken into account:</p> <ul style="list-style-type: none"> - Match of technical capabilities and skills with the Topic and Programme objectives; - strategic ability to work in the topic area; - Coordinating capability in the supply chain and ability to work effectively both with a supply base and into an equal or higher tier industrial organization as integrator/leader; - Capability and management skills for Calls for Proposal coordination, when acting as Topic Manager (where applicable); - Clear demonstration of adequate level of financial and operational resources (committed) based on the Topic value indicated in the call and the overall Programme needs; - Best "value for money" on the activities proposed and efficiency of the allocation of resources; - Complementarity of the participants within the consortium or cluster (where applicable); - Capacity of the cluster or consortium or leader to efficiently coordinate activities of the participants (where applicable).

Type of action	Excellence	Impact	Quality and efficiency of the implementation
	The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work plan.	The extent to which the outputs of the project should contribute at the European and/or International level to:	The following aspects will be taken into account:
		its ability to contribute to the competitiveness of the sector.	
Coordination & support actions	Clarity and pertinence of the objectives; Credibility of the proposed approach; Relevance and adequacy of proposed work and results as compared with the Topic description; Soundness of the concept; Quality of the proposed coordination and/or support measures.	The expected impacts listed in the work programme under the relevant topic Effectiveness of the proposed measures to exploit and disseminate the project results (including management of IPR), to communicate the project, and to manage research data where relevant.	Coherence and effectiveness of the work plan, including appropriateness of the allocation of tasks and resources; Complementarity of the participants within the consortium (when relevant); Appropriateness of the management structures and procedures, including risk and innovation management.

Note: Unless otherwise specified in the call conditions:

Evaluation scores will be awarded for the criteria, and not for the different aspects listed in the above table. Each criterion will be scored out of 5. The threshold for individual criteria will be 3. The overall threshold, applying to the sum of the three individual scores, will be 10.

Complementary activities

If an applicant as Core Partner considers that it has different applications or different technologies or innovative solutions to propose in relationship to one topic, the applicant should present them in the same single application as “complementary activities” in the relevant section of the submission forms (description and budget).

If the applicants indicate complementary activities and innovative solutions within the general topic area related to the topic for which they are applying and within the scope of the IADP/ITD, they should demonstrate that these activities would:

- be in line with Clean Sky 2 Programme key goals and objectives;
- represent an enhancement or improvement of the content of an IADP/ITD and lead to a demonstrable additional move beyond the state of the art in the topic’s general area.

Complementary activities will be evaluated by the independent experts in the framework of the topic evaluation process as indicated by the evaluation criteria mentioned above. However, the inclusion of these complementary activities in any subsequent grant will be subject to the CSJU Governing Board approval and CSJU funding availability.

Priority order for applications with the same score

Unless the call conditions indicate otherwise, the following method will be applied.

As part of the evaluation by independent experts, a panel review will recommend one or more ranked lists for the applicants under evaluation, following the scoring systems indicated above. A ranked list will be drawn up for every indicative budget shown in the call conditions.

If necessary, the panel will determine a priority order for applications which have been awarded the same score within a ranked list. Whether or not such a prioritisation is carried out will depend on the available budget or other conditions set out in the call text. The following approach will be applied successively for every group of *ex aequo* proposals requiring prioritisation, starting with the highest scored group, and continuing in descending order:

(i) Applications that address topics not otherwise covered by more highly-ranked applications will be considered to have the highest priority.

(ii) These proposals will themselves be prioritised according to the scores they have been awarded for the criterion *excellence*. When these scores are equal, priority will be based on scores for the criterion *impact*. In the case of Innovation actions, this prioritisation will be done first on the basis of the score for *impact*, and then on that for *excellence*.

If necessary, any further prioritisation will be based on the following factors, in order: size of budget allocated to SMEs; gender balance among the personnel named in the proposal who will be primarily responsible for carrying out the research and/or innovation activities.

If a distinction still cannot be made, the panel may decide to further prioritise by considering how to enhance the quality of the project portfolio through synergies between projects, or other factors related to the objectives of the call or to Horizon 2020 in general. These factors will be documented in the report of the Panel.

(iii) The method described in (ii) will then be applied to the remaining *ex aequos* in the group.

II. Calls for Proposals (for Partners)

Selection Criteria

a) *Financial capacity*: In line with the Financial Regulation and the Rules for Participation. At the proposal stage, coordinators will be invited to complete a self-assessment using an on-line tool.

b) *Operational capacity*: As a distinct operation, carried out during the evaluation of the award criterion 'Quality and efficiency of the implementation', experts will indicate whether the participants meet the selection criterion related to operational capacity, to carry out the proposed work, based on the competence and experience of the individual participant(s).

Award criteria

Experts will evaluate on the basis of the criteria 'excellence', 'impact' and 'quality and efficiency of the implementation'. The aspects to be considered in each case depend on the types of action as set out in the table below, unless stated otherwise in the call conditions.

Type of action	Excellence	Impact	Quality and efficiency of the implementation
	The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work plan.	The extent to which the outputs of the project should contribute at the European and/or International level to:	The following aspects will be taken into account:
All types of action	Clarity and pertinence of the objectives; Credibility and demonstrated excellence and ambition of the proposed approach.	The expected impacts listed in the work programme under the relevant topic	Coherence and effectiveness of the work plan, and the allocation of tasks and resources; Efficient and well justified application of resources for the expected outcomes and impacts Appropriateness of the management structures and procedures, including risk and innovation management.
Coordination & support actions	Soundness of the concept; Quality of the proposed coordination and/or support measures.	Effectiveness of the proposed measures to exploit and disseminate the project results (including management of IPR), to communicate the project, and to manage research data where relevant.	
Research and innovation; Innovation;	Soundness of the concept and approach, Extent that proposed work is ambitious, has	The expected impact towards the objectives as described under the relevant topic;	Match of technical capabilities and skills with the Topic description and congruent with the Programme objectives

Type of action	Excellence	Impact	Quality and efficiency of the implementation
	<p>The following aspects will be taken into account, to the extent that the proposed work corresponds to the topic description in the work plan.</p> <p>innovation potential, and is beyond the state of the art.</p> <p>Suitability of the technologies, approaches and solutions proposed, with respect to the Topic description and the IADP/ITD area and objectives.</p>	<p>The extent to which the outputs of the project should contribute at the European and/or International level to:</p> <p>Enhancing innovation capacity and integration of new knowledge;</p> <p>Demonstrating the congruence with and progress towards the environmental and socially relevant impacts stated for the CS2 Programme;</p> <p>A clear and credible path towards the exploitation of results showing a demonstrable contribution towards European competitiveness</p> <p>Effectiveness of the proposed measures to disseminate the project results (including management of IPR), to communicate the project, and to manage research data where relevant.</p>	<p>The following aspects will be taken into account:</p> <p>embodied in the topic;</p> <p>Demonstrated ability to work in the topic area;</p> <p>Ability to work effectively within a supply chain and into an equal or higher tier industrial organization;</p> <p>Evidence and quality of the operational resources</p> <p>Ability and efficiency to commit financial resources against the indicative topic value and based on the proposed content and JU funding request;</p> <p>Capacity of the cluster or consortium leader to efficiently coordinate activities of the participants (where applicable).</p>

Note

Unless otherwise specified in the call conditions evaluation scores will be awarded for the criteria, and not for the different aspects listed in the above table. Each criterion will be scored out of 5. The threshold for individual criteria will be 3. The overall threshold, applying to the sum of the three individual scores, will be 10.

Priority order for proposals with the same score

Unless the call conditions indicate otherwise, the following method will be applied.

As part of the evaluation by independent experts, a panel review will recommend one or more ranked lists for the proposals under evaluation, following the scoring systems indicated above. A ranked list will be drawn up for every indicative budget (for each topic) shown in the call conditions.

If necessary, the panel will determine a priority order for proposals which have been awarded the same score within a ranked list. Whether or not such a prioritisation is carried out will

depend on the available budget or other conditions set out in the call fiche. The following approach will be applied successively for every group of ex aequo proposals requiring prioritisation, starting with the highest scored group, and continuing in descending order:

(i) These proposals will themselves be prioritised according to the scores they have been awarded for the criterion excellence. When these scores are equal, priority will be based on scores for the criterion impact. In the case of Innovation actions, this prioritisation will be done first on the basis of the score for impact, and then on that for excellence.

If necessary, any further prioritisation will be based on the following factors, in order: size of budget allocated to SMEs; gender balance among the personnel named in the proposal who will be primarily responsible for carrying out the research and/or innovation activities.

If a distinction still cannot be made, the panel may decide to further prioritise by considering how to enhance the quality of the project portfolio through synergies between projects, or other factors related to the objectives of the call or to Clean Sky 2 Programme in general. These factors will be documented in the report of the Panel.

(ii) The method described in (i) will then be applied to the remaining ex aequos in the group.

G. Budget flexibility

Budgetary figures given in this work plan are indicative and are based on an estimate of the topic values and the CSJU funding per topic. Unless otherwise stated, final funding may vary following the evaluation of the applications and the negotiation/grant preparation stage.

The funding values shall not be confused with the total topic value. The funding value corresponds to the average funding calculated by the JU based on the experience in the Clean Sky programme. The final funding value per topic will entirely depend on the cost structure of the winning entity, the funding rate, and the scope of work proposed in their application.

25. List of abbreviations

AB: Annual Budget
ACARE: Advisory Council for Aeronautics Research in Europe
AIP: Annual Implementation Plan
ATM: Air Traffic Management
CA: Commitment Appropriations
CDR: Critical Design Review
CfP: Call for Proposals
CfT: Call for Tender
CROR: Counter Rotating Open Rotor
JU: Clean Sky Joint Undertaking/ Clean Sky 2 Joint Undertaking
EC: European Commission
ECO: Eco-Design
EDA: Eco-Design for Airframe
GAM: Grant Agreement for Members
GAP: Grant Agreement for Partners
GRA: Green Regional Aircraft
GRC: Green Rotorcraft
IAO: Internal Audit Officer
ITD: Integrative Technology Demonstrator
IADP: Innovative Aircraft Demonstrator Platform
JTP: Joint Technical Programme
PA: Payment Appropriations
PDR: Preliminary Design Review
QPR: Quarterly Progress Report
SAGE: Sustainable and Green Energy
SESAR: Single European Sky Air Traffic Management Research
SFWA: Smart Fixed Wing Aircraft
SGO: Systems for Green Operation
SPD: System & Platform Demonstrator
TA: Transversal Activity
TE: Technology Evaluator
ToP: Type of Action
TP: Technology Products
TRL: Technology Readiness Level
WP: Work Package