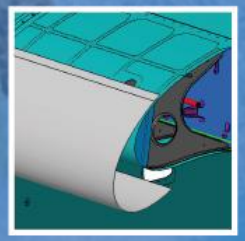











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Thematic Topics

"Where the Bottom-Up

meets

the Top-Down" …

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CfP10 Overview – Thematic Topics

List of Topics for Calls for Proposals (CFP10) – Part B

Identification Code	Title	Type of Action	Value (Funding in M€)
JTI-CS2-2019-CFP10-THT-07	Ultra-High Aspect ratio wings	RIA	2.00
JTI-CS2-2019-CFP10-THT-08	Experimental and numerical noise assessment of distributed propulsion configurations	RIA	2.00
JTI-CS2-2019-CFP10-THT-09	Disruptive Active Flow Control for aircraft engine applications	RIA	1.50
JTI-CS2-2019-CFP10-THT-10	Non-intrusive, seedless measurement system: design, development, and testing	RIA	1.50

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Thematic Topics - Background

- **Thematic topics as new instrument to bring in new ideas contributing to CS2 HLO/complementing CS2 programme**
- **Features of thematic topics:**
  - Problem-oriented statements allowing research / technology routes to be selected and proposed by applicants
  - Allow for **retention of multiple projects against a topic**, where justified
  - Down-selecting on basis of clear contribution to CS2 HLO
  - Avoid duplication with H2020 calls in terms of both topic scope [narrower] and descriptions [more focused yet broader than CfP topics to date]

CfP- typology of topics

a. Complementary Topics

- CS2JU specificity
- Topics launched **inside** the complementary framework of one IADP/ITD/TA
- Directly linked to the action implemented by the Clean Sky 2 Members under grant agreements for members
- They contribute to the achievement of the results of specific ITD/IADP/TA.

b. Thematic Topics

- Topics launched **outside** the complementary framework of one IADP/ITD/TA
- Not directly linked to the action implemented by the Clean Sky 2 Members under specific ITD/IADP/TA
- They contribute to the achievement of the High Level Objectives (HLGs) of the Clean Sky 2 Regulation
- Different special conditions of admissibility apply to the thematic topics.

JTI-CS2-2019-CFP10-THT-07: Ultra-High Aspect ratio wings

Type of action (RIA/IA/CSA):		RIA	
Programme Area:		N/A	
(CS2 JTP 2015) WP Ref.:		N/A	
Indicative Funding Topic Value (in k€):		2000	
Topic Leader:	N/A	Type of Agreement:	N/A
Duration of the action (in Months):	42*	Indicative Start Date (at the earliest)[133]:	> Q1 2020

**The JU considers that proposals requesting a contribution of 2000k€ over a period of 42 months would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts and/or proposing different activity durations.*

Short description
The most "easy" way to improve the aerodynamic efficiency and performance of an aircraft is to increase its aspect ratio of its wings. Increasing the aspect ratio has a direct effect on the induced drag. Increasing the aspect ratio while satisfying the design constraints that have to date limited aspect ratios of modern transport aircraft wings, such as aero-elasticity and buffeting; structural design and weight limitations; fuel capacity; and practical issues such as airport runway/taxiway and gate dimensions may yield a sizeable potential benefit in fuel burn and emissions. Long, slender wings may necessitate radically different structural and manufacturing concepts. Load control systems may prove essential to the feasibility of very high aspect ratio designs. Optimal wing span may lead to the need for folding outer wing sections. This topic aims to provide a preliminary design study involving the capture of the current state of the art, an analysis of potential gains through the use of very high aspect ratio wings in the various transport aircraft market segments [regional, short-medium and long range]. Different design concepts should be analysed, paying particular attention to design constraints such as those mentioned above. A proposed 'best in class' conceptual/preliminary design should be completed, starting from a selected reference aircraft for comparison in terms of performance. The estimated gains should be validated experimentally by scaled model wind tunnel tests, at least in terms of aerodynamic performance, possibly in terms of noise performance as well.

JTI-CS2-2019-CFP10-THT-08: Experimental and numerical noise assessment of distributed propulsion configurations

Type of action (RIA/IA/CSA):		RIA	
Programme Area:		N/A	
(CS2 JTP 2015) WP Ref.:		N/A	
Indicative Funding Topic Value (in k€):		2000	
Topic Leader:	N/A	**Type of Agreement:**	N/A
Duration of the action (in Months):	42*	**Indicative Start Date (at the earliest)[136]:**	> Q1 2020

**The JU considers that proposals requesting a contribution of 2000k€ over a period of 42 months would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts and/or proposing different activity durations.*

Short description
This thematic topic focuses on the assessment of noise reduction opportunities associated to new aircraft configurations, more specifically those related to electrically driven propulsors. The expected project outcome is to deliver an improved understanding of key noise aspects involved in such distributed electric propulsion (DEP) configurations, at experimental and numerical level. This will enable an initial assessment of the overall noise level achievable for typical DEP options including the evaluation of key noise contributors and efficiency of their respective mitigation means.

JTI-CS2-2019-CFP10-THT-09: Disruptive Active Flow Control for aircraft engine applications

Type of action (RIA/IA/CSA):		RIA	
Programme Area:		N/A	
(CS2 JTP 2015) WP Ref.:		N/A	
Indicative Funding Topic Value (in k€):		1500	
Topic Leader:	N/A	**Type of Agreement:**	N/A
Duration of the action (in Months):	42*	**Indicative Start Date (at the earliest)[139]:**	> Q1 2020

**The JU considers that proposals requesting a contribution of 1500k€ over a period of 42 months would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts and/or proposing different activity durations.*

Short description

Reducing aviation emissions calls for disruptive technologies to go beyond the most efficient projected improvements in current technologies. Achieving this goal requires a ground breaking improvement of flow control devices to push engine efficiencies beyond their current limits and improve their operability. Despite the vast range of existing flow control solutions, most of the active flow control systems described in the literature are still far from being implemented on engines. Thus there is a need to explore the design of compact actuators compliant with aeronautics requirements in terms of weight, volume, reliability, and integration (thermal management). Moreover, several flow control technologies, such as plasma based technologies, seem very promising but require a non-negligible amount of energy to function. Therefore, the development of disruptive actuators is closely linked to the proposal of an innovative energy supply. Hence, the aim of this topic is to increase the Technology Readiness Level (TRL) of active flow control technologies for engine applications. Proposals are expected to provide the design and manufacturing of an actuator system fitting control specifications and compliant with aeronautics requirements, before demonstrating its ability to achieve reliable control performance and fuel burn reduction, justifying a TRL 4 achievement of the control technology.

JTI-CS2-2019-CFP10-THT-10: Non-intrusive, seedless measurement system: design, development, and testing

Type of action (RIA/IA/CSA):	RIA		
Programme Area:	N/A		
(CS2 JTP 2015) WP Ref.:	N/A		
Indicative Funding Topic Value (in k€):	1500		
Topic Leader:	N/A	Type of Agreement:	N/A
Duration of the action (in Months):	36*	Indicative Start Date (at the earliest)[142]:	> Q1 2020

**The JU considers that proposals requesting a contribution of 1500k€ over a period of 36 months would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts and/or proposing different activity durations.*

Short description

Inlet flow distortion measurements are usually carried out using discrete pressure and temperature rakes. These devices are however poorly adapted to highly distorted flows where non-intrusive methods could be better suited. Well known non-intrusive methods usually require seeding particles, the use of which can be troublesome during engine operation and can account for significant release of fine particles in the atmosphere. The main objective of the current topic is to design, develop a non-intrusive, seedless measurement system, set-up and validate it at laboratory level and provide a demonstrator which will then be tested on a realistic aerodynamic test rig.

Applicant's Proposal Submission System

Templates for submitting a valid proposal:

1. Part A *[Administrative Section (Coordinator ID, Legal LEAR etc.)]*
2. Part B.I *[Technical Section: 3 EVAL Criteria and technical and financial content linked to DoA]*

NOTE: 30-page limitation for thematic topics in Part B.I

3. Part B.II *[Admin Section: members of consortium (participants, operational capacity, etc.), (potential) ethics and security issues identified by the applicant]*
4. Part C *[ESIF Complementary Activities – OPTIONAL]*
5. Part D *[Declaration on the Participation of any Affiliated Entities to Private Members of CS2JU in this Proposal and Declaration(s) of Interests]*

These templates (as published with this call) will be available via the H2020 Funding & Tenders Opportunities Portal and in the Submission System.

Any questions?

Info-Call-CFP-2019-01@cleansky.eu

Last deadline to submit your questions:
5th July 2019, 17:00 (Brussels time)

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