



Annual Activity Report 2010

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1 INTRODUCTION

Clean Sky (CS) is a unique public private partnership aiming to develop environmentally friendly technologies impacting all flying segments of commercial aviation with the aim of contributing to the ACARE targets for reduction of emissions and noise in Air Transport in Europe¹ thus contributing to improving the Air Transport system worldwide. It shall spearhead the contribution of aviation in minimising the impact of anthropogenic activities on climate change, thus provide socio-economic benefits to European citizens and society and increase the competitiveness of the European aeronautical industry.

To implement CS, the European Community, represented by the Commission (EC), and the major aeronautical stakeholders in Europe have agreed to set up a Joint Undertaking as a legal entity for the period up to 2017. The Council Regulation² setting up the CS JU was adopted by the Council of Ministers on 20 December 2007, and was published in the Official Journal of the European Union on 4 February 2008. The Statutes of the CS JU are an integral part (Annexed) to the Council Regulation.

The objective of the CS Joint Undertaking (CS JU) is achieved through the coordination of research activities that pool resources from the public and private sectors, and that are carried out by the main aeronautical stakeholders (private CS members) directly and by partners selected following the response to open and competitive Calls for Proposals. The total budget of CS, equally divided between the EC and private members and divided between the EC and partners according to funding rules similar to FP7, is up to € 1.6 billion.

Clean Sky is organised in six Integrated Technology Demonstrators, each led by two founding members and active through a matrix structure:

- Smart Fixed Wing Aircraft (SFWA) led by Airbus and Saab;
- Green Regional Aircraft (5GRA) led by Alenia Aeronautica and EADS Casa;
- Green Rotorcraft (GRC) led by Agusta-Westland and Eurocopter;
- Sustainable and Green Engines (SAGE) led by Rolls-Royce and Safran;
- Systems for Green Operations (SGO) led by Thales Avionics and Liebherr Aerospace;
- Eco-design (ED) led by Dassault Aviation and Fraunhofer Gesellschaft;

A Technology Evaluator (TE) led by Thales Avionics and DLR is at the core of CS with the purpose of assessing the environmental performance of the technologies developed in CS at sub-system, system and system of systems level.

The present Annual Activity Report (AAR) describes the status of the execution of the activities of the CS JU performed in year 2010, which is the first one of autonomous operations, the autonomy having been granted to the Joint Undertaking in November 2009. The JU staff grew up from 10 to 20 along the year, now close to the level of 24 foreseen in the Staff Policy Plan.

¹ Europe in this context means Member States and countries associated to the 7th Framework Programme (FP7) i.e. Switzerland, Israel, Norway, Iceland, Liechtenstein, Turkey, Croatia, the Former Yugoslav Republic of Macedonia, Serbia, Albania and Montenegro (April 2008).

² Council Regulation (EC) No 73/2008 O.J. L 30 4.2.2008 p.38

2 KEY OBJECTIVES 2010 AND ASSOCIATED RISKS

The JU's key objectives, as described in the Annual Implementation Plan (AIP), are twofold:

- operational objectives, which are the milestones and deliveries defined for each ITD: they will be addressed below, in Chapter 4
- management objectives, at the level of the JU, which include research activities, administration and finances.

These management objectives are addressed in the table below, extracted from the AIP and complemented by the assessment made by the Executive Director at the end of the year. The key objectives reached satisfactorily are the following:

- a quality system, internal to the JU, was built, based on a process approach: six main processes are defined, each of them being split into "level 2" processes; a full mapping of these processes was performed by mid-2010;
- the calls for proposals have been run efficiently, with 5 calls in 2010, involving a lot of experts for the evaluations;
- a Quality Manual and a Manual of Financial Procedures (internal to the JU), a Management Manual (for the relationship of the JU and the ITDs), have been written out and enforced; a Development Plan (for the operational objectives and technical content) is well advanced and will be submitted to the Governing Board in March 2011;
- the JU processes have been analyzed and mapped, providing for a full framework for the processes management – a Manual of Financial Procedures has been written out;
- a first internal audit plan and the ex-post audits strategy have been adopted by the Governing Board.

Besides that, a Programme Strategy was proposed to the GB and adopted in June, in order to have a clear, refined definition of the demonstrators and the relevant schedules. This is now part of the Development Plan under finalization.

Some objectives are still not fully reached, with actions still in progress. The main areas where a significant progress is necessary are:

the negotiation process after the calls for proposals selection phase; a target of 3 months has been set, but the administrative process is still significantly above this figure. The fast learning curve of the new Project Officers will bring strong improvements per se, and process improvement actions are planned in 2011. This resulted in an under spending of payment appropriations for Partners (beneficiaries of Calls for Proposals), while the Members spending is close to the budget plan. However, it is important to note that this under spending does not imply a delay in related activities, which could be started before the completion of the administrative conditions.

Some important items linked to the Internal Control Standards full implementation had to be delayed, due to the workload in this ramp-up phase just after the autonomy; e.g. the ethical framework definition, or the full availability of indicators; while the internal audits did start by the end of 2010, the first ex-post audits had to wait for 2011, while the external service provider was being selected in cooperation with the other JTIs.

Risk management

As one major element of the Internal Control Framework, the JU, in its building up, started focusing on the management of risks during the third quarter of 2010. A Risk Management Manual was established, in order to identify, manage and report critical risks.

Within the context of the CSJU's mission the risk management framework aims to contribute to the achievement of the following four categories of objectives:

- Strategic (high-level goals, aligned with and supporting its mission)
- Operations (effective and efficient use of its resources)
- Reporting (reliability of reporting)
- Compliance (compliance with applicable laws and regulations).

Operational Risks are closely related to Risk Management within the ITDs, for which the JU has identified its requirements in its Management Manual. This process, just implemented, starts at the beginning of 2011. For each Level 1 Work Package of the program, a risk analysis is conducted by the Work Package Manager regarding the technical performance (achievement of the objectives) and the schedule. From now on the risks are reported:

at Work Package Level once a year by the ITD to the JU in the Annex 1B of the GAM Amendment

at Sub Project Level by the ITD to the JU in the Quarterly Report

at ITD Level to the Executive Director via the Quarterly Dashboard

The ITDs Risk Registers at Sub Project Level and ITD level are consolidated in the CSJU Risk Register for those risks which can impact the objectives of the programme.

As concerns the global risk management in the JU, the Risk Management Manual allowed to build up both a top-down and a bottom-up approach.

The top-down approach resulted in a Risk Register included in the AIP 2011.

An information session was held within the Executive team led by the Quality Management Officer and the Internal Control Coordinator in order to fully inform and complement the knowledge of the team on risk management. Following this, the entire team participated in a workshop wherein a 'bottom-up' risk assessment was performed.

It was complemented afterwards by the bottom-up approach involving the full JU staff through two dedicated workshop. A first set of objectives was defined for the processes (NB. a refinement of these objectives is foreseen in 2011), potential risks were identified, the impact and likelihood were assessed and mitigation actions were defined.

It must be noted that the Internal Auditor has performed her own, independent risk assessment, which is the basis for the current Internal Audit Strategy. This is reported in the Internal Auditor's annual report, as mentioned below in paragraph 3.2.

As this risk assessment process took place by the end of the year – due to other, still more urgent priorities in setting the JU – its outcome cannot be fully reported here. Nevertheless, the major risks which had to be handled in 2010 are the following:

Technical contingencies, increases in cost of technologies development or strategic issues could result in a loss of environmental efficiency of the Programme, and non-achievement of environmental targets. The mitigation action meets a programme management objective, which was to have a first assessment of environmental forecasts in 2010,

despite the Technology Evaluator tools will be available only at the end of 2011. This was done through a coordinated, bottom-up action involving all key technologies and all ITDs, and results in a dedicated chapter of the Development Plan to be adopted by the Governing Board in March 2011. The situation with respect to the initial objectives will be assessed at this moment, but already appears satisfactory in average.

Strategic, technical or resources contingencies could result in delays of some activities, resulting in delays in the demonstrators development, and in an under spending in the budget execution. Two main actions were taken:

To update all demonstrators schedules and check if all of them were consistent, with a sufficient margin, with the 2017 closure date; for some of them, measures were taken to revise the planning and find back these necessary margins;

To have a mid-year assessment of the resources and budget consumption at mid-year; this resulted in a re-allocation of some commitment and payment appropriations, in order to keep close to the expected activity profile along the year.

- The heavy workload of the JU team, particularly at the beginning when only 10 staff members were available, could result in a loose management of calls for proposals, which are a heavy and constrained process involving a lot of external experts and the relevant logistics, as well as a close coordination with ITDs. This was given a very high priority and the actions taken included regular ITDs coordination meetings (phone conferences) and a close monitoring by the JU management. A robust advisory support from the European Commission helped the JU staff to get trained in the organization of the evaluations and problem solving. All five calls were launched, and the evaluations performed, in due time. The evaluations were performed to the satisfaction of each independent observer, appointed by the JU to oversee the fairness of the panel's discussions and the conformance to the rules.

The lack of experience of the JU and ITD teams in administrative processes, added to tight resources, resulting in a lengthy process for finalizing the Grant Agreement for Partners, could jeopardize the start of activities and the budget execution. Several significant actions were started to speed up the learning curve, to improve the process in itself, to add to the current staffing and to check that the technical activities could start in due time. These actions were successful as concerns the timeliness of most technical activities with respect to the demonstrators needs. The budget execution was satisfactory as well for commitments. This is not the case however for payments, which have been significantly delayed by several months, resulting in an under spending in 2010 for these administrative reasons.

3 CLEAN SKY GOVERNANCE

The CS JU governance is composed of three bodies: the Governing Board, the Executive Director and the ITD Steering Committees. It is also supported by three advisory groups: the Scientific and Technological Advisory Board, the General Forum and the National States Representatives Group.

3.1 Governing Board

The CS JU Governing Board had 4 meetings during 2010. Two written procedures were performed, for the approval of the provisional annual accounts of 2009 and for the recruitment of one staff member.

The Governing Board is composed of 19 members: the EC, with veto rights on matters of public concern, the 12 founding members of Clean Sky and one Associate member for

each of the 6 ITDs, representing itself and the other Associates in the same ITD. Chair and Vice-Chair of the Governing Board are selected on a voting basis and the mandate is of one year renewable once. On its meeting of March 18th, 2010, the Governing Board re-elected Marc Ventre (Safran) and Rafael Acedo (EADS-CASA) for a second and last mandate as Chair and Vice-Chair. On its meetings of October 14th and December 17th, 2010, the Governing Board respectively elected Charles Champion (from Airbus) and Rolf Henke (from DLR) as Chair and Vice-Chair for 2011.

It can be noted that most of the decisions have been adopted unanimously, showing a smooth and efficient decision-making process. Each Governing Board is prepared by a "Sherpa Group" meeting, managed by the JU.

The CS JU Governing Board had 4 meetings during 2010, on

18th March 2010

17th June 2010

7th October 2010

17th December 2010

Four written procedures were performed:

1 - February 2010 for the approval of the provisional annual accounts of 2009 and for the recruitment of one staff member

2 - May 2010 for the approval of the STAB selected members

3 - October 2010 for the adoption of the results of Call 2, Call 3, Call 4

4 - Modification of the Art.9 of the Governing Board Rules of Procedure - Written procedure

The Governing Board is composed of 19 members: the EC, with veto rights on matters of public concern, the 12 founding members of Clean Sky and one Associate member for each of the 6 ITDs, representing itself and the other Associates in the same ITD. Chair and Vice-Chair of the Governing Board are selected on a voting basis and the mandate is of one year renewable once. On its meeting of March 18th, 2010, the Governing Board re-elected Marc Ventre (Safran) and Rafael Acedo (EADS-CASA) for a second and last mandate as Chair and Vice-Chair. On its meetings of October 14th and December 17th, 2010, the Governing Board respectively elected Charles Champion (from Airbus) and Rolf Henke (from DLR) as Chair and Vice-Chair for 2011.

The Governing Board has adopted during 2010 the following key documents (non-exhaustive list):

18th March 2010

Modifications to the core GAP models

Scientific and Technical Advisory Board (STAB), Terms of Reference

17th June 2010

Clean Sky JU General Strategy

Clean Sky JU Communication strategy

2009 annual activity report – assessment of the AAR by the Governing Board (Article 40 (2) of CSFR

2010 Annual Budget Plan, Establishment Plan 2010, and AIP 2010

Revised 2010 Staff Policy Plan
Draft Budget for 2011 and Draft Establishment Plan 2011
2011 – 2013 Staff Policy Plan
2009 final accounts
Delegation of powers from the GB to the ED for placing contracts

7 October 2010

Amendment to model GAM
Budget Transfer
Internal Control Standards
General Forum Recommendations
ITD annual reports 2009

17th December 2010

Annual Implementation Plan and Annual Budget Plan 2011 and Establishment Plan 2011
Ex-Post Audit Strategy

It can be noted that most of the decisions have been adopted unanimously, showing a smooth and efficient decision-making process. Each Governing Board is prepared by a "Sherpa Group" meeting, managed by the JU.

3.2 Executive Director

The Executive Director is the legal representative and the chief executive for the day-to-day management of the CS JU in accordance with the decisions of the Governing Board in line with Article 6 of the CS JU Statutes.

The first staff of the CS JU have gradually taken up their positions during the first six months of the year. 10 staff members had been recruited in 2009; 10 additional staff members have been recruited in 2010. Up to four more are envisaged in 2011.

The Executive Director is supported by two managers: the Coordinating Project Officer and the Head of Administration and Finances. One Project Officer per ITD allows the JU to play its coordination role.

An Internal Auditor was appointed and performed a significant "consultancy" in order to build up the processes, the internal control and in particular, the risk management. An Internal Audit Strategy was proposed to the Governing Board and adopted. A first audit started in November, still in progress at the turn of the year. The Internal Auditor writes out her own, independent Annual Report, referred to in this Executive's Director Annual Activity Report.

As already mentioned in the Objectives chapter, in 2010 the main settings of the Joint Undertaking have been established: the Quality Manual, the Manual of Financial Procedures, the Management Manual, the Development Plan.

Processes definition and mapping, roles and backups, relationships of the JU with the ITDs, ITDs quarterly reporting requirements, risk management at both ITD and JU levels,

technical content of the demonstrators, schedules, Technology Readiness Levels, environmental forecasts, and also communication events such as the Clean Sky public conference on June 18th, are the major achievements of 2010 from the Executive Director standpoint.

3.3 ITD Steering Committees

Each Integrated Technology Demonstrator (ITD) is in charge of one specific technology line within the CS programme. The ITD and TE Steering Committees are responsible for technical decisions taken within each ITD and the TE and have met regularly in the course of 2010. The relevant Project Officer, supported when needed by the Coordinating Project Officer or the Executive Director, attends these meetings. The Executive Director in particular chairs the TE Steering Committee meetings.

3.4 Scientific and Technical Advisory Board

A Scientific and Technological Advisory Board (STAB) was set up in June 2010, with Terms of Reference adopted by the Governing Board, after a call for interest and a selection process involving the Executive Director and members of the Governing Board. The STAB is a body of 11 high-level scientists and engineers, all independent from Clean Sky stakeholders. Its purpose is to focus on the scientific and technical analysis of Clean Sky from different perspectives: besides environmental impact; technology and scientific forecast; societal aspects; economics.

The STAB is requested to provide for opinions and recommendations on:

- the global consistency of the Initiative: schedule, critical milestones, interfaces
- the status of the Programme with respect to the environmental targets
- the updates of the environmental targets, following possible evolutions in the technical content
- the innovative content of the Programme
- major changes in the technological content, the demonstrators or the schedule
- the socio-economic outcome of the JTI
- any scientific or technical topic on which the Governing Board wishes to be advised on.

The first meetings took place in July and November 2010. While the first meeting was dedicated to a general presentation of Clean Sky technical content, the second was dedicated to presentations on particular issues; the first item on which the STAB is currently working is the Development Plan (technology readiness levels, environmental forecasts) on which recommendations are expected at the beginning of 2011.

The STAB is chaired by David Ewins, Professor at the Bristol University and the Imperial College.

3.5 National States Representatives Group

The National States Representative Group (NSRG) is an advisory body to the Clean Sky Joint Undertaking. It is provided for in the Statutes and its job is to be the interface between the National States and the Joint Undertaking especially in relation to relevant national research programmes and activities. It is to identify potential areas of cooperation

as well as take specific measures at national level with regard to dissemination events, dedicated technical workshops and communication activities.

It consists of one representative of each EU Member State and of each other country associated to the Framework Programme. It is chaired by one of these representatives. To ensure that the activities are integrated, the Clean Sky Executive Director and the Chair of the Governing Board and/or their representatives attend the NSRG meetings and the Chair of the NSG attends as an observer at the Clean Sky Governing Board.

During 2010 the NSRG, in line with development of Clean Sky progressed from development into an operational state, and is now concentrating more on its' monitoring and advisory role. By harnessing Industry, Europe and the National States working together, Clean Sky is part of delivering the ACARE vision.

The National States Representatives are very supportive of Clean Sky and are specifically interested in the development of the Technology Demonstrator as the glue to integrate the whole project. They are also anxious to ensure that the Clean Sky initiative and National programmes are complementary. The aim is to avoid unnecessary duplication and to fill possible gaps. To that end discussions have started in bilateral meetings with Member States on their research topics and projects. The coordination is being looked at in an overall context and will include the AirTN ERA Net work. There may even be topics which are desirable but cannot be accommodated within Clean Sky and so, could be items for national programmes.

Specific ongoing activities relate to monitoring the planning for and outcome of calls for proposals, the involvement of SMEs and extending the range of States involved in applications.

The NSRG pays particular attention to ensuring and demonstrating transparency and accountability. The "Independent Observer" in the evaluation process is critical to this and the NSRG receives the report of the Independent Observer following each call.

In 2010, the observers have reported that the evaluations are fair and impartial and the rules are respected and enforced. Many suggestions from observer's reports have been successfully adopted. It is the opinion of the NSRG that, while there have been very minor issues detected, the experience and quality is comparable with FP7 and similar evaluation systems. The NSRG has also dealt with any issues raised to its attention with the full cooperation of the JU which has also led to improvements in the running of calls in general.

Currently the most effective format for information days has been considered as the number of calls is making the traditional one meeting per call somewhat questionable. Some form of regular open days dealing with the overall annual plan, future calls and the overall outcome of previous calls has then proved appropriate.

On the initiative or with the support of the Member States Representatives, several information days or conferences have been held in different countries, as reported in the "Communication" section.

The NSRG has also discussed the annual review carried out on each of the ITDs as well as the development of the Technology Evaluator.

The NSRG members are very interested in and are represented in the discussions on the future of the JTI concept.

At the completion of their initial 2 year terms of office in 2010, Jim Lawler (Chairman) & Gerben Klein Lebbink (Vice-Chairman) were both re-elected unanimously for a further period of 2 years.

3.6 General Forum

On 18 June, all the stakeholders of the Clean Sky Joint Undertaking gathered for the first Meeting of the Clean Sky General Forum. Part of the day was dedicated to a public Conference on the latest developments of the Clean Sky programme.

The General Forum, a statutory assembly composed of all members and partners of the Clean Sky programme, was opened by Marc Ventre, Chairman of the Clean Sky JU Governing Board.

During this forum, most of the aspects of the Clean Sky programme were reviewed.

Part of the day was also dedicated to a public conference entitled 'The aviation industry goes green'.

This event gathered more than 300 representatives from the aviation industry, the scientific and research community, national public authorities, and non governmental organisations.

"As a Joint Technology Initiative, Clean Sky is the embodiment of the working together capability of the private and the public, the big and the small, the industry and the academics, in one programme" stated Eric Dautriat, Executive Director of the Clean Sky Joint Undertaking.

An exhibition featuring the latest developments of the 6 Technology Demonstrators, the Technology Evaluator, and links between the Clean Sky and the Sesar programmes, the European Commission FP7 activities and ACARE, was open all day.

The General Forum is a meeting open to all participants to CS, at least once a year, with the purpose of providing them information about activities and progress of the CSJU and receiving recommendations from them on any managerial or operational item.

During the first General Forum, the first Terms of Reference were adopted; it was provided with the relevant information on the operations and finances, and it adopted 14 recommendations to the Joint Undertaking, mostly to improve the information to the applicants in the Calls for Proposals, and to the Partners once selected and involved in Clean Sky activities. The actions taken in response to these recommendations are part of the JU action plan.

4 RESEARCH ACTIVITIES

4.1 Clean Sky Research objectives

The CS JU shall support research activities carried out by the non-EC members of Clean Sky and by partners selected following open and competitive Calls for Proposals, independent evaluations and negotiations leading to the conclusion of partners Grant Agreements.

Clean Sky research objectives

The CS JU shall adopt the overall objectives of the Clean Sky programme outlining the research activities to be supported by the CS JU and finalised to the testing of the final demonstrators.

Clean Sky aims to create a radically innovative Air Transport System based on the integration of advanced technologies and full scale demonstrators, with the target of reducing the environmental impact of air transport through reduction of noise and gaseous emissions, and improvement of the fuel economy of aircraft. The activity will cover all main flying segments of the Air Transport System and the associated underlying technologies identified in the Strategic Research Agenda for Aeronautics developed by the Aeronautics Technology Platform ACARE.

Clean Sky is built upon 6 different technical areas called Integrated Technology Demonstrators (ITDs), where preliminary studies and down-selection of work will be performed, followed by large-scale demonstrations on ground or in-flight, in order to bring innovative technologies to a maturity level where they can be applicable to new generation "green aircraft". Multiple links for coherence and data exchange will be ensured between the various ITDs. The ITDs are:

The SMART fixed wing aircraft ITD, focused on active wing technologies that sense the airflow and adapt their shape as required, as well as on new aircraft configurations to optimally incorporate these novel wing concepts.

The Green Regional Aircraft ITD, focused on low-weight configurations and technologies using smart structures, low-noise configurations and the integration of technology developed in other ITDs, such as engines, energy management and mission and trajectory management.

The Green Rotorcraft ITD, focused on innovative rotor blades and engine installation for noise reduction, lower airframe drag, diesel engine and electrical systems for fuel consumption reduction and environmentally friendly flight paths.

The Sustainable and Green Engine ITD will integrate technologies for low noise and lightweight low pressure systems, high efficiency, low NO_x and low weight core, novel configurations such as open rotors or intercoolers.

The Systems for Green Operations ITD will focus on all-electric aircraft equipment and systems architectures, thermal management, capabilities for "green" trajectories and mission and improved ground operations.

The Eco-Design ITD will address the full life cycle of materials and components, focusing on issues such as optimal use of raw materials, decreasing the use of non-renewable materials, natural resources, energy, the emission of noxious effluents and recycling.

A Technology Evaluator will be the first available European complete integrated tool delivering direct relationship between advanced technologies, still under development, and high-level local or global environment impact. It will consider inputs from both inside and outside the "Clean Sky" perimeter to deliver environmental metrics and the levels of aircraft, airport and aircraft fleet level.

As aircraft fuel economy is also influenced by flight trajectory management strategy, Clean Sky will establish close links with the SESAR Joint Undertaking which investigates Air Traffic Management (ATM) technologies in line with the "Single Sky" initiative of

the Commission. These links will be established via the Technology Evaluator, as well as via the Systems ITD that develops the avionics equipment interfacing with ATM.

5 ACTIVITIES CARRIED OUT BY NAMED BENEFICIARIES

5.1 SFWA – Smart Fixed Wing Aircraft ITD

SFWA has been focussed on achieving progress on key SFWA target technologies. Already in 2009 the eight “SFWA Aircraft Concepts” had been defined:

- High Speed Demonstrator Passive (HSDP)
- Low Speed Demonstrator (LSD)
- Short Range Aircraft Concept (SRA)
- Low Sweep Bizjet Concept (LSBJ)
- High Speed Demonstrator Active (HSDA)
- Long Range Aircraft Concept (LRA)
- High Sweep Bizjet Concept (HSBJ)
- CROR Engine Demo FTB

The year 2010 work program was dominated by the preparation of different elements for ground and flight test demonstration for the HSDP, the continuation of the feasibility study for the CROR demo-FTB and a number of configuration studies related to the integration of innovative engine concepts for large transport aircraft and for Bizjets.

A further down selection of concepts for high performance high-lift concepts that can be integrated into a smart wing design had taken place in 2010. Active loads control activities have been studied in order to support the concept of a smart wing.

43 topics have been published and most of them successfully evaluated. Thus a lot of new partners joined SFWA-ITD. A wide range of subjects was related to the manufacturing, treatment, and repair and testing of surfaces for laminar wing panels, the design and development of innovative sensors and actuators for control surfaces in laminar wings. Year 2010 calls also included major work packages to attribute to the design and build parts of the laminar wing flight test articles.

Cross cutting coordination has been established, in particular with the SAGE –ITD and to some extent, where appropriate with the SGO-ITD and the Eco Design -ITD.

The major achievements of the year 2010 are:

The aerodynamic definition of the laminar wing design. A lot of specific design items and technical details have been checked in order to ensure a flight worthy layout of the wing. Permit to flight activities have been included at this stage as well. Structural laminar wing concepts has been proposed and approved.

The feasibility phase for the CROR-engine integration and CROR demo-FTB including numerical simulation, and subscale ground testing, has been performed.

The gate to launch the design and manufacturing of the High Speed Demonstrator Passive flight test articles has been passed positively with only a few action items to be completed.

The first laminar wing ground demonstrator (the upper wing panel) has been successfully manufactured and activities for further feature demonstrators has been launched.

The SFWA-ITD Annual Progress Review has been carried out, showing quite positive results; actions that deemed to be necessary in order to further improve the activities have been clearly formulated.

Advance Lip Acoustic Panel was flown on an A380 with RR Trent 900 engines and showed that the ALEAP technology works as expected. (first flight test within Clean Sky program)

Flight test with Falcon F7X, which proved the technology to visualize laminar flow on real structure in flight by an infra-red camera

A detailed follow-on year 2011 work and budget plan, as well as a Consortium Plan 2011 has been issued

In the SFWA WP1 Smart Wing Technology Development, similar objectives about NLF wing have been defined, issuing both numerical and experimental methodologies.

In the SFWA WP2: –New Configuration, “smart” wing concepts, innovative powerplant concepts (especially focussed on CROR (Counter-Rotating Open Rotor)) and innovative after bodies, has been initiated. The related assessment has been passed to the Technology Evaluator.

Following an update of the project plan in the second half of 2010, which showed the reactivity and responsiveness within the ITD, in the SFWA WP3 the ALEAP activities have been launched and successfully performed. As CROR is one of the main aims in this work package, the way for Flight Test Demonstration has been followed, mainly in terms of criteria for industrial implementation. Detailed scheduling of respective activities has been performed with engine suppliers leading to a more mature status of the planning. The related engine test bed is scheduled to fly in 2016. Delivery of the engine is still foreseen for 2015.

The major objectives set for the year 2010 has been achieved, including the definition of requirements and detailed design work for the HSDP laminar wing flight test onboard the Airbus A340-300 test aircraft, and detailed studies to integrate the CROR demo engine in the rear fuselage of the Airbus A340-600 test aircraft.

5.2 GRA – Green Regional Aircraft ITD

GRA continued the execution of the work packages defined in the baseline program, with enhanced internal review of the technologies.

GRA has also integrated in the plans of each WP the activities conducted by the partners.

The areas where the work has been performed are the following:

GRA1 – Low Weight Configuration (LWC) domain

GRA2 – Low Noise Configuration (LNC) domain

GRA3 – All Electrical Aircraft (AEA) domain

GRA4 - Mission and Trajectory Management (MTM) domain

GRA5 – New Configuration (NC) domain

Three domains activities, LWC, LNC and AEA reached significant milestones in 2010, including preliminary definition of 3D model of the Natural Laminar Flow wing, architecture of All Electrical Aircraft concept, intelligent Structural Health Monitoring (SHM) demonstration in the scale of the wing panel, improvement of composite materials characteristics (positive laboratory test on hail impact). These domains are the contributors to Flight Test that is currently planned using an ATR aircraft.

LWC and LNC also contributed to Large Scale Ground Test, as some selected structural technologies has been tested on the Ground, including exploitation of potential of nano-modified composites and FOBG (fibre optics) for SHM. It is worth to mention that number of projects selected during the 1st Call of Clean Sky has been finished in the course of 2010 and GRA-ITD members have been supplied with either sensor for SHM or improved composites.

Number of Research topics (CfP) related to structural materials (improvement of mechanical characteristics, conductivity, lightning strike, etc.) has been launched. As well as topics related to intelligent SHM, repair technologies of multifunctional and multilayer composites, smart maintenance techniques, etc. Design of important composite structural elements such wing box has been also initiated. Overall TRL level for technologies developed under LWC and LNC was 3.

Landing Gear for Low Noise Configuration has been developed (basic 3D model) and number of topics covering wind tunnel tests in order to develop numerical codes for identification of acoustic sources has been performed although it is still too early to do down selection of technologies. Similar status is in terms of design and testing low noise HLD (high lift devices). Some projects/work addressing for example exploitation of MSA (memory shape alloys) have been initiated after summer break 2010 only.

Unfortunately, first down selection of LWC technologies has been postponed till the end of 1st quarter of 2011 mostly due to not finalized projects from initial calls (late start of calls).

AEA domain was a major contributor to Flight test with some advanced systems (WIPS, ECS, EMA etc) equipments and Energy Management Systems. Work regarding anti-/de-icing technologies has been addressed by SGO. Energy management system has been defined on the highest level and to large extent on the second level defining quasi-static behaviour/modelling of onboard equipment. Based on that progress, a detailed modelling task was launched via CfP in respect to selected sub-assemblies such as Landing gear.

The integration across the ITDs has been significantly improved, with SGO and Eco-Design for the topics of GRA 3 and with SGO the GRA 4.

A GRA Annual Technical Review was conducted in June demonstrating pretty good progress although some items such as engine data for elaboration of a model of a regional aircraft were provided with not sufficient details.

In December 2010 GRA entered into negotiations with MTU in respect to potential (virtual) installation on the GRA concept 130 pax aircraft a GTF (geared turbo fan). GTF is the third power-plant option for this size of the aircraft, previously only ATF (advanced turbo fan) and CROR (counter rotating open rotor) have been envisaged.

An important event of 2010 was a/c pre-PDR in respect to integrated in-flight demonstrator hosted by ATR.

Another remarkable achievement on implementation side was successful development and adaptation of Risk Management Plan (including Risk Register).

GRA has also worked closely with TE for the definition of the aircraft concepts to be used for assessment of performance and benefits resulting from the introduction of technologies in the future aircraft. The GRA aircraft concepts have been set as follow:

GRA turboprop (90 passenger seats), and

GRA turbo-jet (130 passenger seats).

However, as of today, there are 2 versions of turboprop and 3 versions of turbo-jet still under elaboration. The best (and single) conceptual aircraft would be defined in the course of the programme.

One important factor related to the calculation of environmental impact is the reference plane. Although ATR 72-500 and Embraer 195 have been named as such still there is a need for rescaling of those reference planes to the relevant size based on technologies deployed on them. This issue need further work at the beginning of 2011.

5.3 GRC – Green Rotorcraft ITD

GRC1 – Innovative rotor blades

Assessment of the potential for active and passive rotor technologies in order to achieve a commercially viable solution that enables reduced rotor power consumption and reduced rotor acoustic signature has been conducted.

The active twist concept from Friendcopter has been explored and evaluated.

Parametric study of active and passive blade lay-out for global rotor benefits has been initiated.

Development of methods necessary for the optimisation of blade design, actuation system integration, sensory data transmission, and power transfer and control algorithms has been performed.

Open loop control algorithms to manage the active control system behaviour, has been initiated.

Passive Model Rotor Test (new passive concept), Active Model Rotor Test (new active concept) and Assessment of benefits provided by innovative rotor blades has been performed during the year as scheduled with expected technical progress.

GRC2 – Drag reduction of airframe and non lifting rotating systems

With the aim to increase airframe and non lifting rotating systems efficiency, activities has continued this year for the reduction of various rotorcraft (Helicopter and Tilt Rotor A/C) components drag.

Innovative techniques, both passive and active are under development for drag abatement of helicopter rotor hub, helicopter and tilt rotor fuselage and empennage, tilt rotor wings, and engine installation architectures.

The definition of both modelling and wind tunnel testing has been defined.

The technology reviews has been completed, and planning and specification of new activities to be conducted in following phases has been set.

GRC3 – Integration of Innovative Electrical Systems

The launch of the partner activity on the electrical tail rotor took place in November, which is a major milestone for GRC3.

A coordination activity with Eco-design and SGO has been conducted to clarify the interfaces regarding the replacement of “non-green” hydraulic systems on rotorcraft by electrically-powered systems, which will improve the overall rotorcraft efficiency, with consequent reduction of carbon (and other undesirable) emissions through new electrical system technologies.

GRC4 – Integration of a Diesel engine on a light helicopter

The aim of this work package is to integrate the turbocharged Diesel engine technology on helicopters and drastically reduce their gas emission level, taking advantage of the extremely low specific fuel consumption.

The study of the Diesel engine and the optimisation of the helicopter to be powered have been launched, and the evaluation took place early 2011, leading to a successful selection for the 2 topics.

The integration of flying helicopter demonstrator roadmap has been set, with the adaptation of helicopter specifications to an aeronautical Diesel engine and transformation of a turbine powered light helicopter.

The output of the activities carried out this year allowed the definition of the way forward for future helicopter products.

GRC5 – Environment-friendly flight paths

The active tasks are GRC5.1 - Requirement Analysis & Specifications Definition, whose main target in 2010 is

The specification for Environment-Friendly Flight Paths and Low Noise Procedures, following a review of the existing requirements applicable to the H/C flight, has been performed.

Air Navigation Requirements (PANS-OPS) for IFR and Piloting and Guidance Systems (FMS, Navigation Means) are nearly completed. The definition of Airport/Heliport Constraints, and Specific Tilt Rotor Aspects, just started.

Analysis and development of specific methodologies to evaluate the engine emissions, based on the selected partner from the first CFP, started and will be continued next year.

GRC7- Technology Evaluator for Rotorcraft

In 2010, the work plan had been reviewed and reshuffled to align the activity with both the TE requirements and GRC expectations. A significant effort was dedicated to the implementation of the platform of simulation called PHOENIX (standing for *Platform Hosting Operational & Environmental Investigations for Rotorcraft*). This platform will gather flight dynamics, emission and noise modelling of the different class of helicopters modelled and due to be assessed at the end.

GRC will be used as the test-pilot case to set-up and test the detailed framework of the TE. This will lead to get preliminary assessments on GRC about the environmental targets.

On top of that and to determine the fleet reference of Year 2000, a large effort was made to collect the data of the different helicopter representative of the 6 different class of helicopters.

5.4 SAGE – Sustainable and Green Engine ITD

The activities for the 5 demonstrators of SAGE were further developed.

SAGE 1, the PDR scheduled for October 2010 has been postponed by a year since it would not be possible to pass the review until the engine configuration has been agreed. The analysis of open rotor wind tunnel test data has progressed and the noise modelling

tools have been revised to reflect new learning from the rig tests. The definition of the gas generator has been refined and the required modifications to the donor engine have been developed in greater detail, with limited manufacturing trials completed.

SAGE 1 with GRA has defined the Regional aircraft open rotor engine requirements.

The environmental targets have been revised and transmitted to TE.

SAGE 2: Snecma has performed a trade off study between the direct drive and geared Open rotor. The conclusion of this trade off has been shown to the CSJU and 3 independent experts in September 2010.

In the CROR, the gas generator is similar to a military engine, and SNECMA will use for the demonstrator an existing M88 engine.

Key technologies for the geared CROR are:

High speed propeller blades

Pitch Control Mechanism (PCM)

Gear box (reliability, oil and cooling system (risk of coaking of oil after engine stop), carcass distortion)

Contra-rotating big casings for the propeller rows.

Pylon interaction (pylon blowing) for noise efficiency

The test programme has slipped and ground test is scheduled for mid 2015. This demonstrator will not be optimised in terms of weight and will not constitute a flight worthy systems configuration.

SAGE 3, Roll-Royce held a Concept Design Review in Q4 2010, also affecting the "Structures and Systems" and "Integration and Test". LPT demonstration will be on a later build of ALPS, not on build 1, but the concept was delivered.

The programme is on track and most of the planned milestones were passed, like:

Annulus filler design concept selection review

Annulus filler material and manufacture process review

Composite casing material and manufacture process review

Provide LPT concept for demonstrator engine-build 1

Launch of material property generation test campaign

Modelling of build 1 config using actuator disc complete

Release of intermediate intake lines

Preliminary issue of Component Requirements Document for intake

Intake C_fP topic failed so no Partner selected yet.

SAGE 4, the PDR (project design review) has been postponed by few months and should take place in March/April 2011. The main reason was the selection of the donor engine and its availability. The following milestones have been passed successfully and most of the deliverables are available:

Initial Modules and Engine Modifications Concept Design Review

Initial High Pressure Compressor Concept Design Review

Initial High-Speed Low Pressure Turbine Concept Design Review

Initial Engine Modifications Concept Design Review

Initial Structures & Systems Concept Design Review

Initial Advanced Fan Drive Geared System Assessment

Initial Geared Fan Demonstrator Concept Design Review

SAGE 5, Turbomeca conducted in December 2010 the Design Review for the SAGE 5 covering Core Study and the Whole engine study. Many technologies were passed into review, and selection was done for the demonstrator. CSJU was invited to this review.

5.5 SGO – Systems for Green Operations ITD

The major areas of this ITD are WP2 Management of Aircraft Energy (MAE) and WP3 Management of Trajectory and Mission (MTM).

WP1 (Definition of Aircraft Solutions and exploitation strategies):

In WP1.1 – In 2010, WP1 mainly concentrated on MAE activities. Requirement for both Large aircraft and Regional aircraft types have been analysed. The roadmap for the development of the technology readiness levels has been further specified, especially for the MAE – components; including the down selection of technologies

The framework has been defined on the working assumptions for the comparison of aircraft data (type, size, configuration, propulsion) and operational scenarios (operational context in which the aircraft will operate).

In WP2, the work was done in two areas:

- Further development of the modelling tools to assess various architectures on aircraft level; further specification of the architecture of the electrical architecture
- Further maturation of the technologies of the various components, like ice protection systems, power generators/converters, electrical environmental control system, electrical engine nacelle systems.

In WP3 the promising functions for MTM have been further investigated and the following ones have been retained:

- Green take-off and climb function
- Green Cruise function (stepped climb as well as continuous climb)
- Green approach function.

The overall Verification and Validation strategy for the technologies to be developed in this project has been implemented, including the methodology and process for the management of the Technology Readiness Levels (TRLs). The TRL – development strategy has been defined in co-ordination with all other involved ITD's: for the electrical part (MAE), specifically with GRA, ED and GRC, while for the MTM-part, the interface is with GRA

In 2010 the link with SESAR was further developed. SESAR and Clean Sky projects have as common objective to develop solutions to reduce the impact of the air traffic on environment. Both SGO (MTM-part) and Technology Evaluator have participated in co-ordination meetings with SESAR.

In this framework, the applicability of existing modelling tools (for noise, emissions, etc.) was investigated together with SESAR and Eurocontrol Experimental Centre. For the SGO-part, the Air Traffic Management constraints defined in SESAR CONOPS (concept of operations) for all flight phases, have been considered and incorporated in the MTM – activities.

In WP 4: A planning has been set-up for all the large-scale ground and flight demonstration activities and for the test-rig developments. On the PROVEN test rig

preparatory tests have been performed on short circuit and HVDC network stability and quality.

WP5 Aircraft level assessment and exploitation: according to schedule, no substantial activities performed in 2010.

5.6 ED – Eco-Design ITD

The Airframe Application of the Eco-Design ITD is meant to tackle the environmental issues by focusing on the following challenges:

- To identify and mature environmentally sound (“green”) materials and processes for a/c production.
- To identify and mature environmentally sound (“green”) materials and processes for a/c maintenance and use processes.
- To improve the field of end-of-life a/c operations after several decades of operation, including reuse, recyclability and disposal (“elimination”) issues.
- To provide means for an economic design process on order to minimize the overall environmental impact of a/c production, use/maintenance, and disposal.

These areas will be considered for significant parts of the aircraft: Structure, cabin covering and furniture, vehicle systems components / equipments, engine components, electronics.

In 2010 work in the frame of the Eco-Design ITD – Airframe Application continued on the following Work Packages:

- WP A.1 Alternative Solutions Requirements,
- WP A.2 Technology Development,
- WP A.3 Application Studies.

Among the most significant results, in the frame of WP A.3, there is the analysis of existing LCA tools and associated databases. Furthermore, standardisation efforts on the European level such as the European Platform on Life Cycle Assessment (EPLCD) and the European Reference Life Cycle Data System (ELCD) has been taken into account. The milestone to be reached at T + 24 is a Report on usability of LCA tools in consideration of special requirements in aircraft industry.

In the frame of WP A.2, other main achievements are related to:

- Selection of technologies to be developed in WP 2, through a down selection process: selection of 135 technologies out of 235.
- Identification of 11 clusters that will be the basis for demonstration to be performed within WPs 4, 5 and 6. The selected technologies have been mapped within those clusters.
- Technology “scoping” to mature some promising technologies prior to the down-selection process: this task is now completed in WP A.2.1 to A.2.4.

In 2010, in the frame of the Eco-Design ITD – Systems, work continued on the feasibility of an all-electrical aircraft, through the study of innovative energy management architectures, requiring joining forces to provide appropriate requirements to Systems ITD.

The general objective of this part of the Eco-Design ITD is to make a significant step towards the concept of the all-electric vehicle systems aircraft, by removing of hydraulic fluid (with significant benefits in terms of aircraft maintenance and disposal environmental impact); by on-board power by wire. The use of electricity as only media offers a lot of possibility in terms of energy management (e.g.: Intelligent load shedding, power regeneration on actuators, sharing of Electrical Control Unit over actuators). For the purpose of the all electric small a/c objective, the existing work packages are completed with activities hosted by the GRA, GRC and SGO ITDs.

Among the significant achievements of 2010 there are:

- Deployment of the Modelling Computer Platform (MCP): system requirements and validation plan issued in November 2010.
 - Choice of simulation tool for Electrical Network Analysis Model (ENAM) (SABER) and the corresponding specification / documentation documents have been issued in October 2010.
 - Development of a SABER conversion software tool: CfP "SMART" project kicked-off in September 2010.
 - Implementation of the first aircraft Thermal Model modules (generic heat source, physical transport processes, environment models...) started in January 2010.
 - Reviewed the Ecolonomic Objectives Presentation in February 2010, yielding preliminary economic analyses (private vs. commercial small A/C application).
 - Established the Generic Architecture Guidance, giving applicable rules to technology and architecture trade-offs, in September 2010.
 - Elaboration of Generic Architecture electrical and thermal subsystems requirements continued throughout 2010.
 - Electrical Bench Requirements, review started in December 2010, finalization in progress.
 - Thermal Bench Requirements, review started in December 2010, finalization in progress.
 - Electrical Tests Requirements, review started in July 2010, on-going refinement.
 - Complete set of Business Jet architectures defined in September 2010.
 - Preliminary System Sizing and Design for each architecture, initiated in September 2010.
 - Continued development of the Electrical Iron Bird throughout 2010: EPGCS architecture frozen, preliminary characteristics of the rotating machines (generators and starter-generators) and static converters derived.
- Refurbishment of the fuselage parts to be used as aircraft thermal mock-ups for the Thermal Test Bench started in September 2010.

5.7 TE – Technology Evaluator

All TE Work packages were active in 2010:

- WP0: TE Management and Coordination
- WP1: TE Requirements and Architecture
- WP2: Models Development and Validation
- WP3: Simulation Framework Development + IVV
- WP4: Assessment of impacts and Trade-off studies

The general objective of WP1 is the definition of Requirements and Architecture of the Clean Sky Technology Evaluator. The 2010 main task was to complete and to detail the basic TE requirements issued in 2009. Requirements have been defined, in particular with respect to the first assessment cycle and to the trade-off studies needs.

Among the significant achievements of 2010 are:

The analysis of results of External related projects (including Sourdine II, OPTIMAL, and ERAT...), and related Networks of Excellence. The scope was to investigate the experiences with the used models, data, and assessment procedures, in order to verify potential for synergies and collaborations.

Exchanges with SESAR have also been initiated, together with SGO, with some dedicated workshops. In 2011 the implementation of more detailed collaboration will be possible thanks to the signed MoU between Clean Sky and SESAR.

In WP3.3, the models have been integrated into the Simulation Framework for combining the three assessment levels: Mission, Operation, and ATS.

Model development was started in line with the three assessment levels:

The Mission level, concerning single aircraft operations. A comprehensive set of models has been collected to be able to assess the technologies at mission level: mission models, air vehicle ITDs' models, flight path models, platforms or components noise models (if needed for trade-off studies), atmospheric model, airport area models (3D geometry), noise propagation or carpet noise models for a single flight, mission fuel burn models, mission energy management models, mission emissions models, and finally simplified life cycle models. Conceptual and reference aircraft and rotorcraft models will be delivered by SFWA, GRA, and GRC ITDs, as ITDs specific models. Additional models will be developed in the TE, where necessary.

The Operational level concerns the air traffic movements at and around airports, including local surrounding airspace like Control Zones, Terminal Manoeuvring Areas, and Control Areas. Simulation models include airport models (generic and specific), including aircraft models and scenarios with traffic and procedures, and databases of the surrounding population, has been collected.

The ATS level concerns air traffic operations at Regional/Global level. Y2000 Flights/movements and Fleet reference build-up models, a Y2020+ Traffic demand, Fleet, Routing, and Missions forecast model, a Y2020+ simplified life cycle model, and a Y2020+ Emissions Inventory model, has been defined.

Since two assessment complete cycles are proposed, model development has been broken down into two phases, so that for the first cycle an initial set of models will be available, and the final models will be available, for the second cycle.

Among the significant achievements of 2010 there are:

Development of models at mission level necessary for the GRC case study;

Initiation of development of models at mission level necessary for the first assessment.

Specification consolidation of the three simulation infrastructures relative to the three levels of evaluation

Development of the TE Simulation Framework prototype (including the TE Information System) used for the TE internal 2010 demonstration, in preparation for the mid-term 2011 demonstration

Development of the prototype of the three platforms (infrastructures and models integrated)

Verification and Validation for the three platforms

TE Computer System (Overall Integrated TE System) first version dedicated to the TE internal 2010 demonstration, in preparation of the version for the mid-term 2011 demonstration.

Specific assistance to the JU and interfacing with all ITDs for the assessment and revision of the environmental targets of Clean Sky both at technology and vehicle levels.

6 CALLS FOR PROPOSALS

At least 25 % of the EU funding to the CS JU must be allocated to Partners selected via Calls for Proposals. Topics are defined by each ITD. They serve the dual purpose of widening the participation to Clean Sky to other organisations and to identify R&D performers called in to participate to the mainstream activities of Clean Sky. Partners selected via Calls for Proposals are being funded in compliance with the upper funding limits set in the Rules of Participation of the 7th Framework Programme.

Activities to be carried out by Partners selected via Calls are an essential part of the core R&D activities of Clean Sky and will have to lock in with the activities carried out by CS JU members other than the European Community.

What is peculiar for Clean Sky Calls for Proposals is that the content of the activities is much more focused, i.e. they are topics and not research themes, with limited duration and specific targeted results expected (at higher Technology Readiness Levels). The topics are prepared by the Topic managers of the ITDs and checked by the Project Officers at the Clean Sky Joint Undertaking (JU).

Another difference from collaborative research calls is that the budget is defined by the topic value, and not by the maximum funding: this to allow a wider participation from all types of entities, independently from the actual eligibility for funding.

Furthermore, a single entity can present proposals, with no need for a consortium to be created.

Differently from Collaborative research, there is always one winner per topic, provided suitable proposals are submitted and positively evaluated.

6.1 2010 Calls

The statistics relating to the 5 Calls launched in 2010 are set out in Annex 6 to this report.

6.1.1 Response to the five Call for Proposals of 2010

A total of 150 topics were published in 2010, in the different calls as in the table above. The average response in the year is confirmed at about 2.5 proposal per topic, i.e. more than 350 proposals in total.

The failure rate of topics in the average is 15%, due either to no proposals submitted or to negative evaluation of proposals.

With respect to the first two calls in 2009, a significant improvement has occurred concerning the eligibility aspects, due to the incorrect value of proposals; after the call 3 (first call of 2010) less than 1-2 proposal per call was declared ineligible due to value higher than the threshold stated in the published topic.

Another ineligibility which was clarified in 2010 concerned the involvement of affiliates of members of the ITD issuing the topic.

Based on the global outcome of 2010 calls, another aspect will be monitored, i.e. the value of projects being taken by associates of other ITDs instead of by external partners.

6.1.2 Evaluations outcome

In Annex 6, information on statistics per country in terms of presence in winning proposals is set out in a graph.

6.1.3 Redress statistics

In each call a limited number of redress request were submitted to the JU through the dedicated Call info box.

In call 3 only two redress requests were submitted.

None in Call 4.

Of the four redresses on Call 5, the Redress Committee decided there was necessity to re-evaluate two proposals, due to some inconsistency between the comments and the scoring of the ESR (Evaluation Summary Report) of the specific proposal.

In one case the same expert's evaluation panel was used, while in the other a new panel was engaged for the specific need.

Anyway also in these cases, the final ranking lists of the topics were not affected.

For Call 6, a total of seven Redress were submitted, all with no follow-on actions and no impact on the ranking lists.

The redress deadlines for Call 7 is still open (evaluation in January 2011), so there is no indication about the total numbers for all 5 Calls.

For the first 4 calls of 2010, the total number of redress requests is 13, out of 112 published topics and more than 200 proposals.

No redress has caused the ranking list to change.

6.1.4 Independent observers

To ensure a high degree of transparency, the CS JU invited three different observers in 2010, one for the first two calls (Mario Carbonaro), one for the third and fourth calls (Fulvia Quagliotti) and one for the last call (Peter Hecker).

Each observer had full access to all stages of the evaluation and to consensus meetings. His/her Evaluation Report is available on the website (<http://www.cleansky.eu>).

6.1.5 Grant Agreements

Negotiations with the projects selected for funding in the third Call for Proposals (first of 2010) started before summer 2010 and are in progress. The same applies for Call 4 (second call of 2010), whereas the Call 5 negotiations have started at the end of the year.

Since Call 5, a dedicated Negotiation Kick-off meeting involving the winners of the topics and the related topic managers is held by the JU after about 4 week after evaluation, in order to expedite the dialogue between the future partner and the topic manager, and the preparation of all documents needed for the signature of the Grant Agreement for partners.

7 COMMUNICATION ACTIVITIES

7.1 Strategy

A communication and dissemination strategy was adopted by the Governing Board in June.

7.2 Events

In order to inform widely potential candidates about the calls for proposals launched during the year, the JU held information sessions in Madrid, Vienna, Bologna, Turin and The Hague and London.

The JU organised on 18 June a public conference on the latest developments of the programme. This event gathered over 300 participants from the aviation industry, research institutes and European organisations. An exhibition featuring the activities of the 6 ITDs and the TE was accessible all day.

The Clean Sky initiative was promoted at different external industrial events such, as the ILA Berlin, "Flyg med Framtid" in Stockholm, the ICAS Conference, Farnborough Air Show, Helitech, the Aeroweek, the ASD Convention, , the Imperial College's Green Aviation conference, etc.

7.3 Technical communication

A CS communication network was settled to gather all CS members on communication issues. The first meeting took place on 21st October.

7.4 Web

The CS website was regularly updated with timely information such as press releases, calls for proposals, regular news.

A call for tenders was launched for support in creating a totally new, dynamic and interactive website.

A target group of 3000 recipients were regularly informed via press releases, e-mail announcements about the latest CS developments, and in particular about the launch of the calls for proposals.

7.5 Visual identity

The tagline 'Innovating together, flying greener' was adopted and the logo was simplified. Promotional material such as roll-ups, press kits, ITD fact sheets was produced.

7.6 Media relations

Various press releases on key milestones were issued, together with press kits. The JU has now a contact list of around 50 press contacts including the general, specialized and EU

affairs press. Various interviews were given by the Executive Director to the Flight International, Europolitique, Euractiv, Green Flight Times.

7.7 Newsletter and mailbox

A quarterly Newsletter, "Skyline", was launched. The first two issues were issued in September and in December.

An 'info@cleansky.eu' mailbox answered regularly general information requests from the CS stakeholders.

8 SUPPORT ACTIVITIES

8.1 Personnel

After the Clean Sky JU autonomy on November 16th 2009, the Executive Director decided to use the flexibility clause to modify two foreseen AD8 posts: a post for the Head of Administration and Finances (AD10) and a post for the Project Controller (AD7).

In order to create these two posts, two others (AD8) were cancelled. The flexibility clause allowed these changes which represented less than 20% of the staff plan. On the budget side, the downgrading of two AD8's allowed the recruitment of the AD10 within the existing ceiling. These two urgent new posts were published in October 2009 and their recruitment took place beginning 2010.

In 2010 the Clean Sky JU recruited:

- 1 AD10 - Head of Administration and Finance
- 5 AD9 - Project Officers
- 1 AD 8 - Auditor and Internal Control Officer
- 1 AD7 - Project Controller
- 1 CA FG II – Secretary
- 1 CA FG III – Financial and Legal Assistant

The composition of the CS JU executive team developed significantly in 2010 with the recruitment of additional staff for the team. The team grew in number from 10 staff to 20 by the end of 2010. In order to maximise the efficiency in the work of such a small team, procedures and processes needed to be further defined. The key work areas for the executive team were set out and the underlying processes were mapped in order to clarify the roles and links between the different actions and tasks. Further work is necessary to fine-tune this initial start but the executive team can now use the outcome of these processes in its day-to-day work.

8.2 Housing

In 2010, the 5 Joint Undertakings which were housed at Covent Garden finalised the procurement procedure relating to the final premises with the assistance of the Commission services. On 16 November 2010, the contract for the new premises was signed by all 5 Jus which allowed the works needed on the new building interior to begin. The move date, which was originally scheduled for within 2010 was rescheduled to the middle of January 2011. This outcome was a demonstration of the successful cooperation between all actors. The budgetary authority also gave its approval for this new premise in

2010 following the comprehensive reporting by the Jus to it as set out in the Financial regulations.

8.3 IT

2010 was another busy year for IT infrastructure issues. Among others, the following issues were dealt with in 2010:

A 4 year contract for the installation and maintenance of IT Infrastructure and services over the next 4 years was negotiated and signed. The move from Covent Garden to White Atrium under this contract was organised and successfully completed in early 2011 on schedule. This also involved a lot of liaising with many sub-contractors to ensure all interlinked aspects worked to the same timeframe and in the right order. As the 5 Jus performed this work jointly, it demonstrated the significant strength of the cooperation between the Jus.

A 4 year contract for the installation and maintenance of Telecommunications Infrastructure and services over the next 4 years was signed.

The IT systems were successfully run during 2010 to support 5 calls for scientific proposals, negotiations and other core activities.

The IT Officer worked with DG RTD, DIGIT, REA and others to access and adapt the FP7 tools to support Clean Sky business needs. Highlights include the "convention d'accès" signed between DG RTD and Clean Sky, adaptations to CPM, NEF, EMI and other systems for Clean Sky specific requirements and ensuring a continuous flow of CfP data into EC systems avoiding the need for the JU to manually supply reports / spreadsheets etc when reporting requirements were realised.

Finally, the day-to-day business for the JU team and ITDs where appropriate was supported by the only IT officer of the JU such as on-going enhancement of ICT equipment and services (purchase of laptops and docking stations, Polycom, teleconference services).

8.4 Legal

Legal framework of the Grant Agreements

GAPs: Amendment to the model Grant Agreement for Partners, taking into account the updates following the Lisbon Treaty (adoption 18/03/2010)

GAMs: Amendment to the model Grant Agreement.

Summary of the changes:

Update according to the Lisbon Treaty; Provision of submission of a specific deliverable on financial forecasts regarding the budget consumption; update of the definition of Use to make it coherent with the definition in the Statutes; 'Two years recurrence' for submission of certificates on financial statements is eliminated from the text; The clause of Confidentiality is extended from the 'Project' to the whole 'Programme' duration; Confirmation of eligibility of the costs for obtaining a Certificate on the Methodology; revision of the definition of 'Cluster' to adapt to the current clusters status; formal revision of Annex IV to the GAM..

Modification of Article 9 of the Governing Board Rules of Procedure - Written procedure: silent approval after 10 days from the communication for decisions related to the award of grants to partners.

Delegation of powers to the Executive Director: the Executive Director is delegated by the Governing Board to sign and award procurement contracts, up to an amount of EUR 500,000 and expert contracts up to an amount of EUR 20,000.

The Governing Board shall remain responsible of award decisions related to procurement contracts and expert contracts with a value higher than these amounts. All contracts signed by the Executive Director shall have their basis in the Annual Implementation Plan.

Notification to the Budgetary Authority on CS Housing: procedure foreseen by the CSJU Financial Rules – Article 75a: PROJECTS WITH SIGNIFICANT BUDGET IMPLICATIONS. A decision by the GB has been adopted during the last GB and signed on 30 July 2010.

The tender procedure for the new housing of the Clean Sky JU has been implemented in common with the other JUs, benefiting from the support of the European Commission who initiated the procedure when the JUs were not yet autonomous. The new contract for the final premises of the JU was signed on 16 November 2010.

In addition, some procurement procedures were performed by the JU alone or with the cooperation of other Jus. A brief summary of the main procurement procedures performed in 2010 is below:

- New housing: Open procedure 'Kallas'
- IT infrastructure: Lot 1-Managed Infrastructure Services; Lot 2 Telecommunication; Lot 3-Application development and maintenance: Open procedure
- WEB Clean Sky: external support: negotiated procedure
- WEB Clean Sky: web-site: negotiated procedure
- Furniture CSJU for White Atrium: negotiated procedure
- Ex-post audit tender reference: Call for Tender Nr. JTI/EPAS/2010/OP/02. Open procedure: publication in OJ 27.10.2010 Ref: 2010/S 318373

8.5 Financial regulation and implementing rules

As set out in the Treaty, the European Court of Auditors was requested to provide an opinion on the Clean Sky Financial regulation in 2010. A first meeting regarding this opinion was held in December 2010 and the opinion is expected in the first quarter of 2011. Once this opinion is provided, the JU intends to work on the Implementing rules to the Financial rules of Clean Sky. This work will be completed by the end of 2011.

8.6 Internal control framework

As mentioned above the JU continued to establish its internal control framework in 2010, in particular one aspect of this related to the financial procedures undertaken in the JU for the sound management of its budget. A Manual of Financial Procedures was drafted and guidance to all actors in the financial circuit was provided. Again with the experience gained to date, further development of these procedures is planned for 2011 as part of the on-going improvement of the key processes within the JU executive team. Basic

checklists were set out for all types of transactions and were used during the processing of the 2010 financial transactions.

Another milestone in strengthening the JU's Internal Control System was the adoption by the Governing Board of the 16 Internal Control Standards.. These Internal Control Standards (ICS) for effective management are basically the same as applied by the Commission and provide generic management principles and set out the minimum requirements for CS control activities.

Based on the ICS, the CS JU has developed the following documents:

An Action Plan for the further implementation of the internal control system. This Action Plan describes the specific requirements for each of the 16 CS JU ICS, the status of their implementation, the action owner within the CS JU, and the related outstanding issues and timelines.

A Quality Manual, which defines the core elements of a comprehensive management framework for the CS JU, such as description of the processes, internal control framework, organisation, governance, risk management, documentation management, auditing.

The CS JU has meanwhile nominated within its staff an Internal Control Coordinator, a Data Protection Officer, a Local Security Officer and a Local Information Systems Security Officer. Finally, the Internal Audit officer for the JU has been appointed in March 2010.

Staff members have been made aware of the internal control system by dedicated process assessments. Information on the efficiency and effectiveness of the internal control system was not yet sufficient to allow final conclusions for the year 2009.

A Management Manual was developed during 2010 and endorsed by the ITD coordinators as a reference document for reporting to the JU. It sets out key areas for coordinated working and describes key roles and responsibilities of the ITDs and the JU. The links between the JU and ITDs are defined and the expected reporting from the ITDs is set out.

Manual of financial procedures – workflows/checklists

As mentioned above the JU started to put in place its internal control framework in 2010 and one aspect of this related to the financial procedures undertaken in the JU for the sound management of its budget. A Manual of Financial Procedures was drafted and guidance to all actors in the financial circuit was provided. Again with the experience gained to date, further development of these procedures is planned for 2011 as part of the on-going improvement of the key processes within the JU executive team. Basic checklists were set out for all types of transactions and were used during the processing of the 2010 financial transactions.

Controls on Operational Expenditure

In the course of the year 2010 the JU developed the internal procedures for the validation of costs claimed by the CS beneficiaries. The high number of cost claims to be processed required an effective work approach ensuring the utmost reliability of the JU's ex-ante

controls achievable with the given JU's resources. One main element of assurance was the audit certificates on the financial statements of beneficiaries provided by their external auditors. Audit certificates were requested by the JU in all applicable cases without exception according to the Grant Agreements and the FP7 financial guidelines of the Commission. The JU created a checklist for the ITDs in order to improve the quality of submitted cost claims and to clarify the reporting needs for certain aspects of claims where common mistakes or misinterpretations existed. This work will benefit the processing of the 2010 claims. Results of the ex-ante checking process of the JU in the year 2010 will be used for establishing the risk based audit sample for the ex-post audits, which will start in 2011.

Ex-post control of operational expenditure

The JU has developed the ex-post audit strategy of the CSJU, which has been adopted by the GB in December 2010. The strategy is harmonised with the ex-post audit approach applied in the 7th Framework Programme (FP7) of the Commission and has been established in close cooperation with other Joint Undertakings.

The ex-post audits at the beneficiaries will be a key control within the overall JU's internal control system and will support the ex-ante checking of the operational expense of the JU to a high extent. The main benefits derived from the ex-post audit process will be:

- detection of errors on legality and regularity of the operational expenditure of the JU
- indication on the effectiveness of the ex-ante controls
- basis for corrective and recovery mechanisms.

Together with 2 other Jus (IMI and FCH), CSJU launched the procurement procedure for ex-post audit services from external firms since the Jus could not join the audit framework contracts of the Commission. While the latter delayed the target of having the first ex-post audits in 2010 to beneficiaries, it had the advantage of the Jus being able to tailor their ex-post audit strategies to their own needs. The first ex-post audits will take place in the second quarter of 2011 following the signature of the contracts with the winning tenderers. This will provide further assurance to the authorising officer of the legality and regularity of the underlying transactions relating to cost claims for all grant agreements since the beginning of the CS Programme.

The JU's management is aware of the need for further improvement of the design of an efficient and effective validation process. With the alignment of the ex-ante and ex-post controls as envisaged from 2011 onwards, the operational expenditure for the execution of the entire CS programme will be covered by a reliable control mechanism.

Achievements in 2010

In 2010, the JU started to establish its risk assessment methodology. Based on a process approach, the management aims to steer the various tasks of the JU in an efficient and effective way. Each area of work of the JU team is broken into processes which have been mapped out in order to capture the main steps involved for each task and setting out the actors, inputs and outputs of each process.

On process level (bottom-up) and also on Management level (top-down), the assessment of risks has started by agreeing objectives, developing indicators for measuring their

achievement and identifying the related risks after evaluating the controls in place. The assessment has not yet sufficiently covered all processes and will be completed and further developed in 2011. The result of the risk assessment performed so far is reflected in a risk register and a related action plan. Material risks are reported to the GB in the Annual Implementation Plan 2011 and will be subject for assessment in the subsequent AARs.

8.7 Audit findings

In 2010, the JU was audited by the European Court of Auditors as set out in the Statutes. The results of these audits were published in the Annual report of the Court in 2010. The observations of the Court are attached to this report in Annex. The recommendations of the Court have been taken on board by the JU and actions have been or continue to be implemented to further improve the procedures and documentation of the JU.

8.8 Reporting performed

Governing Board /Governing Board Sherpa & Informal Financial Network

The executive team regularly reported to the so-called GB Sherpa group whose main purpose is to prepare the meetings of the governing board but also to be a close partner for exchange of ideas and views on the working methods and future plans of the JU on a working level. The terms of reference for this group were defined in 2010 and a more structured approach to the subjects discussed and presented was developed. Indeed, the sometimes lively interactions between industry, the European Commission and the JU executive team led to open discussions and efficient progress on many issues. Some issues dealt with by this group included the Communication Strategy, the Development Plan, feedback on the Calls process and further improvements to be worked on by all parties, the Internal Audit capability of the JU and all items for adoption by the Governing Board including the annual budget and annual implementation plan documents.

In addition, following the strengthening of the Administration through the recruitment of the Head of Administration and Finance, a Project Controller and a Financial and Legal Assistant, a more dedicated follow-up of financial issues was started in 2010. To date this has taken the form of so-called 'Financial newsflashes' from the JU together with exchanges with the financial contact points within the ITD coordinators group. This has provided the JU executive team with invaluable feedback and enabled it to foresee issues and together with the ITD contacts, find common solutions to the complex structure of reporting and compliance to which the JU is bound. It is hoped to further develop this informal mechanism in 2011 gaining from experience and to take initiatives to ease the administrative burden for all concerned where possible.

9 BUDGET EXECUTION

Clean Sky's budget was managed by the Joint Undertaking alone for the first full year in 2010. This report covers the entire financial year. No additional budget was requested during the year. In 2010, the main structure of the budget was updated in order to insert additional budget lines which allow the reader a more complete picture of the underlying budgeted amounts for the various types of expenses. In particular, in Title 3, each ITD has

its own budget line which provides a clearer picture to the reader for the planning and reporting of the budget.

The budget of the Clean Sky JU is divided in three titles.

Title I covers staff expenditure such as salaries, training and costs associated to recruitment procedures and staff wellbeing.

Title II covers the costs associated to the functioning of the Clean Sky JU such as infrastructure, equipment and IT needs.

Title III covers the Clean Sky JU's operational activities, i.e. the grant agreements signed by the JU for the operational activities carried out by the ITDs and through the calls for proposals answered by applicants who become Clean Sky partners.

These three titles cover the two types of activities of the JU:

- the running activities, including administrative tasks, communication activities, support for operational activities such as evaluation (Title 1 & 2); and
- the operational activities, which are consisting of the support to the research activities (Title 3) and to which the most important part of the budget, by far (at least 97%), is devoted.

The budgetary tables in Annex 5 indicate the main aspects of budget execution for 2010.

Title 1 and 2 - running activities

The budget allocated for these two titles was higher than the final needs of the JU during 2010 and a transfer out was made to Title 3 for 1.1m €. This money was added to the budget line for calls for proposals.

Title 3 – operational activities

As Title 3 represents 97% of the budget, it is essential for the JU to have sufficient monitoring tools in place to properly manage the allocated budgets both to ITDs for the operational grants and to partners for the Calls for proposals. With regard to the ITDs and members' grants, the original budgeted figures for 2010 were re-examined during the mid-year assessment exercise. This assessment led to an across the ITDs approach to transfer out amounts which would not be executed by the ITD through the main work programme. The resulting transfers were allocated to the Calls for proposals where further funding was available for the remaining calls of 2010. Based on the current estimates from the ITDs, at least 91% of the Members budget was executed in 2010 – these figures will be finalised once the JU has received and processed the claims for 2010 (due to be reported by ITDs on 1 March 2011).

The payments for partners were composed of only pre-financing payments in 2010 relating to the first three calls of the programme. A few cost claims relating to these calls in the form of final reports were received at the end of 2010 and not yet paid.

9.1 Budget update of structure

The Clean Sky JU budget structure was re-set during 2010 in order to bring it in line with the financial rules applicable to Clean Sky and to bring further transparency to the types of income and expenditure estimated for the JU. This new structure also took into account the experience gained so far in the JU with the types of expenses which the JU needed to incur in its daily operations as it develops. Most importantly however, Title 3 of the Budget which covers operational expenditure of the ITDs and the Calls for Proposals budget, now clearly sets out the allocated budget per ITD for Members grant agreements in the year in question and the total budget allocated for calls on separate budget lines. This has also allowed industry to clearly identify the allocation as agreed by the Governing Board.

9.2 Mid year assessment – budget execution and planning effects

As mentioned before, the JU was aware of the need for a closer monitoring of the activities within the ITDs and the budgetary impact of this activity. It was for this reason that the first ‘mid-year assessment’ of the ITD work programmes took place at the end of June 2010. As this was the first such exercise, some teething problems relating to the format of the reporting necessary and the consequences on the ITD budget arising from this assessment needed to be resolved between the JU and industry. These issues were tackled in the best interests of the JU and it is hoped that once the final reports of the ITDs for 2010 are received, the execution of the activities and budget foreseen will reveal a healthier result than in previous years. Currently, the estimates from industry show a 91% execution rate. The actions taken by all parties in order to align to the planning and realistic implementation of the Grant agreements for members will, it is envisaged, prove to be time well spent during 2010. The lessons learned from this exercise include the need for the JU to define its objective target in terms of budget and activities execution which it has done for the 2011 Annual Implementation Plan.

9.3 GAM – assessment of 2 years and outcomes

The increased JU executive team began to process the 2008 and 2009 annual reports of the ITDs, in particular the financial reports in 2010. Again, the cooperation of the ITD coordinators was a critical feature to the success of this work. As this was the first time the reporting of the programme was processed by the JU, the development and implementation of sufficient controls and systems within the JU team was started. Further work is on-going to improve the ex-ante controls in this regard (see also section related to Internal Control Framework).

9.4 GAP achievements

The Calls for Proposals process as described above in section 6 led to an increased number of Grant Agreements to be negotiated and processed from both a legal and financial point of view. In total, 81 GAPs were processed in 2010 for a total of 18.5 m euro. Of this, just under 11 m € was paid out within the 2010 financial year for pre-financing of GAPs. At the end of 2010, the only final reports received for the GAPs were

still being processed by the JU and clarifications with partners on these reports were being sought.

10 INDICATORS

10.1 Specific output indicators 2010

As mentioned in the Objectives chapter, the action of defining quantitative indicators for the major processes is still in progress. Most of the indicators have been defined but not filled in yet. This will be implemented progressively during 2011. A set of key indicators are included in the Annual Implementation Plan 2011, with the relevant targets, and will be addressed in priority. The quarterly reporting from the ITDs, from the beginning of 2011, will be key to the fulfilment of this objective. In particular, the following "dashboard" has been established in principle in October 2010, enforced from the first quarter of 2011:

	Gen.	TE	ITD x	ITD y	ITD z	ITD t	ITD u	ITD v
% budget exec. vs planned								
% deliverables + Milestones on time								
% GAPS signed < 6 months								
% SMEs in winners (number of partners)								
% kick-off meetings with Partners on time								
Gates / reviews passed								
% audit / review recom closed								
Others								

As far as quantitative figures are concerned, the following ones are of interest for the year 2010 at a global level:

Budget execution of 96% for Commitments, 58 % for Payments (see explanations above)
 5 calls involving 172 topics, resulting in an total of 325 partners selected after Call 6, from 22 countries (NB. 2 calls were performed in 2009 – the Call 7 evaluation took place in 2011)

42 % of the winners are SMEs after Call 6

Recruitment procedures performed efficiently with staff recruited within 4 months of vacancy notice date

90% of processes mapped in detail

100% financial delegations defined and agreed

Number of Payment delays reduced by 70%

100% redress procedures unsuccessful (positive result for the JU evaluation process)

10.2 Indicators relating to the ex-post audits to be performed in 2011

The JU has defined its Ex-post audit strategy in 2010 and this was adopted by the Governing Board in December 2010. Some of the main indicators arising from the strategy are set out below:

- Total population for the year
- Total 2010 Representative audits
- Other audits (i.e. not representative)
- Individual error rate (%)
- Representative error rate (%) (Average error rate(AER): $\Sigma(\text{err})/n$ = sum of all individual error rates/sample size)
- Representative error rate - systematic portion: Average systematic error rate: $\Sigma \text{ syst.err}/\text{syst.n}$ (=sum of system. error/syst.rel.sample size)
- Total amount of the auditable JU contribution (population)
- Total non-audited claims of audited beneficiaries (subject to extrapolation)
- Residual error rate (%) ($L*(P-A) - (M*E)$)
- Weighted average residual error rate (%)
- Audit coverage (%)
- Weighted audit coverage (%)
- Budget free from systemic errors (%)

11 CONCLUSION

The year 2010 was the first year of autonomous operations for Clean Sky. The main challenge was to build up the Joint Undertaking team, while proceeding with the operational tasks as the implementation of the annual Grant Agreements for Members and the Calls for Proposals. Despite the work plan was ambitious, most of the objectives were met, on both administration/finance and operational sides. Clear rules and guidelines were defined, internally and in relationship with the ITDs; clear targets have been updated, paving the way for the monitoring of the upcoming years.

While the budget execution is not yet satisfactory, it must be noted that the delay in payments is mainly administrative, due to the negotiation process of the Grant Agreements for Partners; to the opposite of the previous years, when under spending was resulting from under-activity; ways for improvements are clearly identified for 2011. On this matter, it is important to note that the financial processes are well defined, carefully checked and robust.

The technical progress in 2010 is satisfactory and in line with the industrial implementation strategies. A very important achievement is the highly successful attractiveness of Calls for Proposals, in particular to the SMEs, which position Clean Sky as a pro-actively open initiative. As concerns the external communication, a lot has been done to participate in aviation conferences; many invitations were received by the JU, showing a strong interest from the sector at large, in the Clean Sky JTI.; most of them could be positively answered. A public conference in June has gathered around 400 participants.

The first technical, interim outputs started in the second half of 2010, such as flight tests for some devices, manufacturing of important parts for the demonstrators, or mechanical tests for materials.

Clean Sky is now well on track and, while the main demonstrators are not expected before 2013, will deliver more and more from 2011 on.

12 ANNEXES

12.1 Annex 1: STATEMENT OF ASSURANCE REFERRED TO IN ARTICLE 10(4) of the FINANCING AGREEMENT WITH THE EUROPEAN COMMISSION

I, Eric Dautriat, Executive Director of Clean Sky Joint Undertaking, in my capacity as authorizing officer hereby state that I have reasonable assurance that:

- the information contained in this report gives a true and fair view;
- the resources, both financial and human, assigned to the activities described in this report have been used for their intended purpose and in accordance with the principles of sound financial management, and the control procedures put in place give the necessary guarantees concerning the legality and regularity of the underlying transactions;
- this reasonable assurance is based on my own judgement and on the information at my disposal, such as
 - The certificate of the accounting officer
 - The results of my supervisory activities
 - The JU's risk management process
 - The reporting of the Internal Control Coordinator
 - The intensified ex-ante controls of our operational expenditure
 - The findings of the European Court of Auditors to date
- I have taken steps to ensure the further enhancement of some of the controls performed in future, with particular reference to the ex-post controls to be carried out;
- I have also requested the accounting officer to work on the validation of the business processes which provide financial information for the establishment of the accounts, in particular, the system providing financial information about the validation of the cost claims;

I am not aware of anything not reported here which could harm the interests of the Joint Undertaking

The information provided is, to the best of my knowledge, accurate and exhaustive.

Eric Dautriat



Executive Director of the Clean Sky JU

12.2 Annex 2: Assessment of the Annual Activity Report by the Governing Board of the Clean Sky Joint Undertaking



CS-GB-2011-14-6 doc9

GOVERNING BOARD OF CLEAN SKY ASSESSMENT OF THE ANNUAL ACTIVITY REPORT 2010

The Governing Board of Clean Sky was sent the Annual Activity Report 2010 (Authorising Officer's report) on 2nd March 2011 and the Executive Director presented the report during the GB meeting on 31st March 2011.

The Board is of the opinion that this document sets out the relevant highlights of the implementation of the 2010 work programme from both an administrative and operational point of view. The accuracy and completeness of these tools has been improved during the year, which was the first year after the JU autonomy. While a full set of indicators on the operational progress was not yet available at the end of the year, this document clearly reports on the achievements of the objectives set at mid-year on the occasion of the revision of the first budget after the autonomy: the level of achievement is considered as satisfactory. Even if late in the year, the Governing Board is pleased to see the progress made for the first risk assessment exercise in 2010.

Done in Brussels, 14 June 2011

Charles Champion
*Chairman of the Governing Board
Clean Sky JU*