Aerospace and Defence Industries (ASD) – Board meeting

Summary - key messages for the Commissioner

The European Commission's Green Deal is a game changer – for the future of aviation, for a climate-neutral EU by 2050 and for achieving at least 50% less emissions by 2030.

It is an exceptional opportunity for European industries to lead this transition globally and maintain a competitive advantage.

Research and innovation will play a key role in the transitions that are necessary for this to happen.

At least 35% of the Horizon Europe budget will be mainstreamed for climate-related activities, including potential public-private partnerships such as Clean Aviation.

Such public-private partnerships should be more impactful, more inclusive, more flexible and cross-cutting that they are currently.

I ask industry to co-invest with us and commit to the ambitions we have laid out for Horizon Europe, including in securing the overall budget we have foreseen.

Open competitive calls should be the basis - to include the best to deliver and deploy tangible results.

Alternative fuels, electrification and digitalisation can be part of the solutions - to be safely integrated.

The current joint undertakings under Horizon 2020 (i.e. Clean Sky 2) should focus on executing their activities, while the preparation of institutionalised partnerships under Horizon Europe is a political process led by the Commission services.

We need to exploit synergies with other parts of Horizon Europe and with other EU programmes, to tackle issues "end-to-end" from inception of ideas to deployment of solutions.

This means applying aerospace to new emerging needs – such as fighting forest wildfires brought about by climate change.

You can count on me to bridge education, skills and innovation within your sectors.

Scene setter

ASD is the European association of Aerospace, Security and Defence industries. [redacted] has invited you to the ASD Board meeting on 11th December (11:30, Stanhope Hotel). The purpose is to discuss how ASD industries could support you in your new role as Commissioner. ASD Board Members are CEOs of 27 companies, including [redacted]

ASD represents more than 3000 companies which provide for 850,000 high-skilled jobs. ASD industries' annual turnover exceeds €225 billion. More than half is in civil aviation, mainly aircraft, engines and aviation systems manufacturers. The rest is in defence (air, land, naval) and space.

Aviation worldwide is responsible for more than 2% of the CO2 emissions and more than 3% of the greenhouse gases human-made. While air traffic is increasing by 4.5% per year, aviation emissions increase more than 3% per year. This is not consistent with the agreed international objectives of the Paris Agreement.

The path to climate neutrality in 2050 is not obvious in aviation. Solutions elsewhere - such as new fuels, fuel cells and batteries - cannot be directly transferred. In order to ensure safety and efficiency, any potential solution requires in-depth research, tests and certification before adoption in aviation. However no single country or company in Europe has the financial, technological and human resources to put aviation on the path to climate neutrality.

In order to improve the sustainability and competitiveness of aviation in Europe, research and innovation should, firstly, accelerate the development and deployment of more efficient aeronautics technologies in existing aircraft configurations. Secondly, it should enable ambitious projects which develop innovative technologies, integrating for example electrification and digitalisation, and advanced aircraft configurations.

The members within ASD co-leads the current public-private partnership, CleanSky 2, under Horizon 2020. Most CleanSky 2 research results have not been taken up in aircraft development yet, hence their actual environmental and commercial impact is limited. [redacted]

Horizon Europe envisages a potential Clean Aviation Partnership (to succeed Clean Sky 2), which will focus on improving the environmental footprint of aviation, and potential partnerships for Air Traffic Management, waterborne transport and Space. Impact assessments are ongoing for those partnerships proposed to take 'institutionalised' form under Articles 185 and 187 of the EU Treaty.

Members of the ASD Board may use this meeting to hand over to you a technical proposal for the potential European Partnership on Clean Aviation - for the Commission services to analyse.

In reply to the recent public consultation on candidate future partnerships under Horizon Europe, the main ASD companies show a clear preference to focus on the development and effective deployment of technology and to use synergies with other programmes. This includes digital areas as quantum technologies and artificial intelligence (as mentioned at meeting on 28 Nov 2019 between Director-General J-E Paquet and [redacted]).

Objective(s)

- Obtain the continued commitment of the assembled CEOs to co-lead a potential Clean Aviation Partnership under Horizon Europe - one that is more impactful, transparent and inclusive in helping Europe to achieve climate neutrality by 2050.

Line to take

- I would welcome your commitment for the ambitions of Horizon Europe and its potential partnership initiatives, especially for a Clean Aviation partnership which can play a strong role in driving climate neutrality by 2050, with tangible outputs taken up in your products and services.
- I expect such partnerships to be more impactful than their predecessors, and equally to engage more disruptive technologies and actors from other sectors.
- I encourage you to exploit synergies among the different parts of Horizon Europe, and among the different EU programmes, in order to tackle issues “end-to-end” from inception of ideas to deployment of solutions.

Speaking points

Dear [redacted]

Dear ASD Board Members,

Thank you for inviting me to your Board meeting. It is a real pleasure to be here with you this morning.

As you know, from the Digital portfolio I am now "*landing*" at the Research, Innovation, Culture, Education and Youth portfolio within the Commission. It is a fascinating and challenging endeavour. I am ready to devote all my energy to creating tangible benefits for European citizens and businesses.

We are very proud of the European Aeronautics, Space and Defence industries. You have thrived and innovated to become global players in a hugely competitive sector. Research and innovation have been crucial factors in achieving this current prominence.

In this new phase, I would like to continue counting on your support in order to achieve our policy ambitions.

Aeronautics, Space and Defence are at the crossroads in the priorities of this Commission, with sustainability and security at their heart.

[Green Deal & Aviation]

President Ursula von der Leyen is proposing a "European Green Deal" which will be the key headline ambition of this Commission. It will cover a wide range of policies, among which clean aviation.

Our ambition is very high: to become the world's first climate-neutral continent by 2050.

By 2030 we plan to reduce overall emissions by at least 50%, or even 55%.

But, let me assure you, the plan will be based on social, economic and environmental impact assessments that provide a level playing field and stimulate innovation, competitiveness and jobs.

We have huge challenges ahead of us for climate-neutral aviation. Research and innovation are again vital towards achieving this objective.

The aviation industry must fully contribute to the achievement of the Paris Agreement objectives, and in reaching the goal of climate neutrality by 2050.

We need a series of impactful measures: including enhanced aircraft and airspace efficiency, increased use of sustainable aviation fuels and market-based measures.

Public pressure on the sector to neutralise climate impact will continue to rise fast.

Failing to deliver the new technologies and improved aircraft in time on the market, will have a negative effect on the aviation industry and European competitiveness in the sector.

For aviation, we should regard this climate challenge more as an opportunity than a threat. Decarbonising air transport is an exceptional opportunity for European industries to lead this transition globally. ASD has a key role to play here.

All in all, at least 35% of the Horizon Europe budget will be mainstreamed for climate-related activities, including potential public private partnerships and collaborative research.

[Research & Innovation incl. Partnerships]

Europe maintains a leadership role in global innovation. At the same time, many competitors are investing faster than us, and they are thinking big.

Nobody can rest on their laurels. We need to bolster both public and private spending if we are to stay ahead of the game.

I ask industry for committing to Horizon Europe and its potential public private partnerships. I ask for bold steps and investing and working with us.

You all know what it takes to invest together in partnerships like these, even with some of your biggest competitors. You have realised that, in this tough global environment, it is sometimes better to work together with a competitor than not to work at all.

By working together, we will be able to deliver more research and innovation and produce better results - we will have the joint capacity to focus on priorities, notably the Green Deal and digitalisation initiatives, that will underpin growth and jobs in key sectors of the economy;

And we will certainly be able to multiply the investment effect.

With the existing partnerships in Horizon 2020, we are making some progress, but, of course, we cannot settle for what we have achieved so far; we cannot stand still.

We need to make much more progress in terms of real and relevant impact in the market and on citizen’s lives.

This is why we need to make these partnerships even better, more impactful, flexible, cross-cutting and open to engage other key actors.

This will ensure that these partnerships remain inclusive, open to anyone in Europe on the basis of open competitive calls, to ensure we make the most of our collective brain power.

This will allow these partnerships to build on cross-cutting approaches, from climate, energy and digital solutions to land, naval transport, aviation and space.

This should also aim not only at developing solutions but also at deploying them, aligning and leveraging all the investment programmes available.

For instance, greener aviation development means not only new aircraft but also the ground infrastructure to enable new fuels and electrification at airports. For this, the Connecting Europe Facility programme can be instrumental.

Aerospace and defence were the driver of many new technologies and solutions, then applied to other sectors. Examples are light composite structures or computer-aided design solutions such as Dassault's CATIA.

Today aerospace and defence can benefit by adopting greener and digital solutions spearheaded in other sectors, while adapting them to ensure efficiency, safety and security. Examples are hybrid-electric propulsion, quantum computing, cybersecurity and artificial intelligence.

Horizon Europe offers a broad spectrum of technologies and instruments to cross-fertilise innovation. This includes collaborative research, the European Innovation Council (especially suited for SMEs) and, of course, potential public-private partnerships.

[Partnerships preparation]

The preparation of new institutionalised partnerships is a political process that is led and coordinated by the respective Commission services.

As a result, it is the responsibility of the Commission to bring together and negotiate with current and potential future private and public partners;

The financial contribution from industrial partners is an issue to be discussed with the Commission, not with existing Joint Undertakings. The latter must focus above all on implementing its last years under Horizon 2020 and on showing the real impact of their activities so far.

Evidently, support and mobilisation from your side in favour of a sufficiently large budget - especially from finance ministers and heads of government - is very welcome. It will be crucial as we negotiate the next EU multiannual financial framework of the EU and on the budget envelopes for programmes such as Horizon Europe.

This is particularly relevant for the Pillar II of Horizon Europe (Global Challenges and Industrial Competitiveness). This is the pillar addressing sectors such as aviation, naval, land transport, energy, digital, industrial technologies and space.

As you know, EU Member States propose that the majority of the budget in Pillar II of Horizon Europe shall be allocated to actions outside of European partnerships.

This budgetary capping on Horizon Europe-supported Partnerships has several consequences.

Firstly, we need to secure the overall budget envelope for Horizon Europe, in order to secure the envelope for Partnerships.

Secondly, to focus the Partnerships where impact is higher and in line with EU political priorities - including on sustainability.

Thirdly, to exploit synergies between partnerships, both in terms of complementary content and common services.

Fourthly, to be proactive also in other parts of Horizon Europe, such as collaborative research, and also in other EU investment programmes to exploit synergies.

This includes an open, flexible and collaborative approach to integrate promising SMEs and start-ups at due time into the partnerships.

Some of these new disruptive companies may be incubated through the European Innovation Council and the wider ecosystem that the EU is putting in place - to give Europe's many entrepreneurs every opportunity to become leading companies.

[Synergies to seek - examples]

We all need to break our traditional silo approach and seek synergies and new applications. We should ask ourselves “what can we do with other programmes, with other actors, to tackle emerging needs?”

Let me illustrate one example of potential synergies we are exploring to boost, serving both citizens’ security and Green Deal with aerospace, research and innovation.

More and more EU citizens suffer directly from forests wildfires. Not only in southern Europe. In 2018 fires killed hundreds and ravaged forests from Portugal, Spain, France, Italy, Greece … up to United Kingdom and Sweden – not to mention the massive disasters in other parts of the world.

This is an increasing security concern. This is also consequence of climate change. And not only consequence, also double contributor to climate change. Massive are the direct emissions from these fires to the atmosphere. And massive are the tons of CO2 no longer captured by the forests burnt.

Some experts say wildfires can account for up to 20% of total global greenhouse gas emissions – well above the emissions from commercial aviation, about which we are talking so much.

However surprising may it seem, the aerial means used to extinguish fires are very old. For instance, when the night comes, firefighting planes stop operating due to pilot safety. And the wildfires go on.

Better aerial means can make a difference. More capable firefighting planes, helicopters and drones. To prevent, detect and extinguish wildfires in all conditions. To ensure safer operations and even evacuation.

Climate change is an enemy to combat with all means. This is also a fight worth fighting. Cutting-edge solutions from aerospace and defence can be brought to bear.

Citizens will then acquire a better appreciation of the industry.

This is just one of the many synergies we can exploit together, with support from EU programmes including research and innovation.

[Skills]

Given my previous and current portfolio as Commissioner, you can count on me to merge digital and physical innovations, and to bridge education, skills and innovation, also in your sectors.

I am well aware of the skills challenge - to create and retain talent.

To encourage more students into science, technology, engineering and maths.

To update the content of the university studies and vocational training with the new industry needs, for instance in terms of digitalisation and electrification.

To inspire students and give them the chance for a career in your sectors, wherever in Europe, whatever their gender and whatever their background.

[Closing]

The recent European elections showed that European citizens expect us to do more to meet their needs.

Europe must take the lead in the transition towards a clean planet.

Europe must remain a responsible global leader with all means to act in defence of its citizens.

That means European institutions and Member States mobilising all their efforts and means to support growth and innovation, particularly through public private partnerships, and by getting our people together.

We can only achieve our ambitious goals with a strong economy. That is why we will invest huge sums in cutting-edge research and innovation with those willing to make a real impact for Europe.

The challenges for the aeronautics, space and defence sector in the coming years will be massive. You can count on my support for making innovation and investment in aerospace and defence a political priority.

My services and myself remain at your disposal to discuss and deliver together tangible results for Europe.

Defensive points

Why are you considering changing the Partnerships approach in Horizon Europe?

The overall partnership landscape has become overly complex and fragmented. The interim evaluation identified the need to rationalise the overall European research and innovation partnership landscape, to improve their openness and transparency, and to link them to future EU R&I missions and strategic priorities.

The Horizon Europe proposal itself did not renew existing partnerships nor establish new ones. It provided the framework for a possible new partnership approach, including harmonisation among existing Joint Undertakings (for example in their establishment and exit criteria).

Is the Commission considering merging the current SESAR and CleanSky Joint Undertakings operating under Horizon 2020?

In principle we do not envisage merging the two initiatives. Their objectives and approaches are different, underlining a distinction between infrastructure/services (cover SESAR/ATM) and vehicles (CleanSky).

While being both indispensable to the future aviation value chain, the ATM partnership will focus on digital transformation and Clean Aviation on energy transition and decarbonisation.

Nevertheless, the two initiatives will have to work closely exploiting synergies and complementarities but keeping the implementing structures independent.

We will have to review the current coordination mechanisms, which should exercise policy steering and oversight avoiding overlapping or conflicting activities and double funding.

Is the Commission considering a green tax aiming at reducing air traffic?

Should a green tax aiming at reducing air traffic be used to correct for the negative externalities of air travel, it will require a very careful impact assessment.

The Commission is aware that the impact of such a measure would bring to the economic sustainability of air transport and implicitly EU tourism industry, as well as their effect on the catalytic impact of air transportation on national and regional economies, notably in terms of employment and economic development.

Corroboration with other measures that may have equivalent effect (such as the review of Energy Taxation Directive, the reduction of free ETS allowances for airlines or the participation to the IACAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)) shall be also considered to avoid excessive burden on air travel competitiveness.

Background notes

Aviation overview

Nowadays aviation is:

- The safest and fastest mode of transport.
- The only one suitable for rapidly covering mid- and long-range distances.
- A highly competitive industrial sector, contributing directly to the EU economy around EUR 200 billion per year (75 % through exports).

Challenges ahead include:

- Environment - without transformative solutions, aviation's CO2 emissions could more than double by 2050, compared to 2020.
- Competitiveness - new actors from China (COMAC), and partly, Russia (UAC) are developing aircraft to challenge the current duopoly (Airbus - Boeing).
- Safety - changes in aircraft require timely and thorough certification by authorities, as sadly reminded by the accidents of Boeing 737 Max.

Aircraft development, certification and EASA

Costs of development of new large aircraft can exceed EUR 10 billion. If a design issue is detected at a late stage, safety can be compromised and the development costs can increase by 10%. The cycle research-design-build-test-redesign drives up costs and time.

Certification is the gateway from research & development to market uptake, as a compulsory guarantee of safety and environmental compliance. The cost, time and uncertainty related to certification are important factors in preparing new products and services. It can take more than 5 years from preparation to completion of certification tests for large aircraft.

The European Union Aviation Safety Agency (EASA) is in charge of certification in Europe, including for products stemming from technologies developed in EU research & innovation programmes. The sooner and closer involvement in research, the sooner and better preparation of certification.

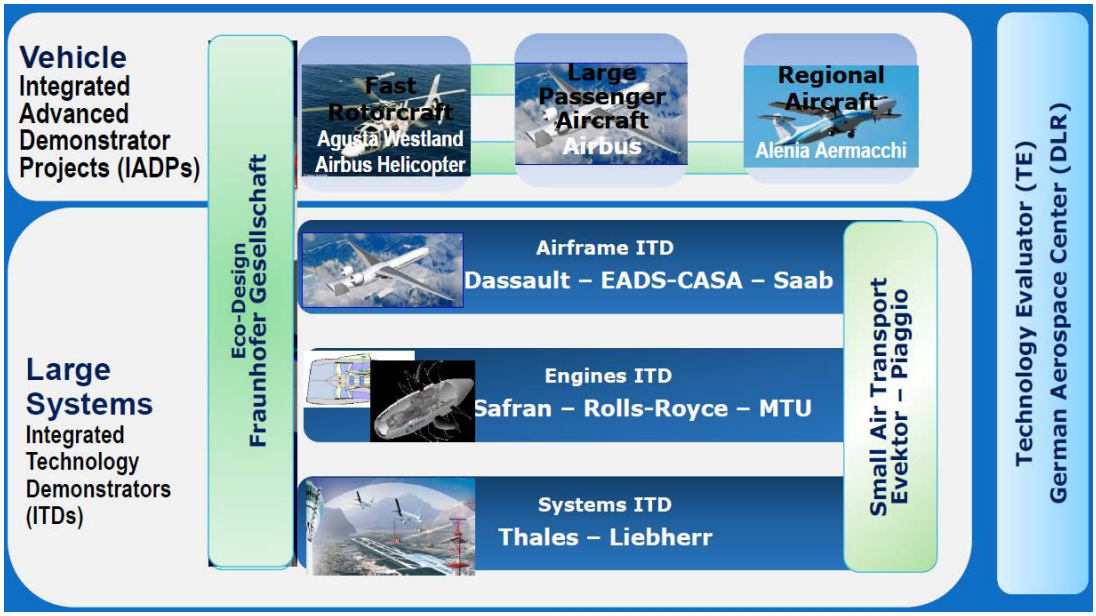
Clean Sky 2 Public-Private-Partnership and ASD

Clean Sky was created in part to permit more mature industrial technology development and demonstration activities – as a public-private partnership between the European Union and the aeronautics industry. Clean Sky has accelerated the European aeronautics industrial roadmaps. It is expected to have a positive economic impact once demonstrators' technologies are applied in products on the market.

Clean Sky 1, under the FP7, had a value of EUR 1.6 billion. The EU paid 50% in cash and industry the other 50% in kind. Clean Sky 1 aimed at demonstrating and validating technologies for halving CO2 and external noise, and for reducing NOx emissions by 80%, along with a green product lifecycle.

Clean Sky 2 has a budget of EUR 4 billion. The EU contributes EUR 1.755 billion and industry EUR 2.2 billion. The aim of Clean Sky 2 is to integrate, demonstrate and validate technologies capable of further reducing CO2 and NOx emissions by 20-30%, and noise emissions levels by up to 5dB. It also aims at maintaining the global industrial competitiveness of European aeronautics.

Clean Sky 2 retains a membership structure of three tiers. 40% of funds go upfront to twelve pre-defined Leaders, including three entities from Airbus (Aircraft, Helicopters and DS - ex EADS-CASA) and two from Leonardo (ex-Agusta Westland and ex-Alenia Aermacchi). Clean Sky 2 programme structure and leaders are in this chart:



Contact: [redacted] **DG RTD.D3), tel.:** [redacted]

List of Annexes

Annexes (DG RTD)

- Annex I – ASD Background.
    - I.1. CV , ASD
    - I.2. ASD main figures, companies and board members.
    - I.3 Invitation e-mail by ASD
    - I.4 ASD and Horizon Europe potential partnerships in Aviation

Annexes (DG GROW + DG HOME)

- Annex – Space, Defence and Security (speaking/defensive/briefing).
    - 1. Space points + briefing (DG GROW, 29/11/2019).
    - 2 Defence points.
    - 3. Security points + briefing (DG HOME, 29/11/2019).