



**PUBLIC CONSULTATION DOCUMENT**  
ECONOMIC REGULATION AGREEMENT

2021-2025

## MESSAGE FROM THE CHAIRMAN & CEO



Augustin de Romanet  
Chairman & CEO

**Drawing on its experience and skills, Aéroports de Paris wants to share new horizons with all stakeholders, to feed growth today and prepare for tomorrow. This is the ambition of the proposal for the 2021-2025 Economic Regulation Agreement (ERA), which is the subject of this public consultation document.**

The preparation of an Economic Regulation Agreement is a unique moment to build, through an open and transparent process, a collective project to enhance the attractiveness of the platforms of the Paris region, with all airlines, the French State and local authorities, our partners, our shareholders and our employees. Aéroports de Paris proposes that these discussions continue beyond regulatory obligations, after the publication of this public consultation document.

*« Achieving our short-term, medium-term and long-term goals »*



TRAFFIC CAGR

**+2.6%**

*« Aéroports de Paris is able and willing  
to share new horizons with all stakeholders to continue  
today's growth and prepare for tomorrow's growth. »*

### Achieving our short-term, medium-term and long-term goals

This proposal is part of a key moment in Aéroports de Paris's industrial development in Paris. It seeks to be successful in the short term, medium term and long term.



INVESTMENT PLAN

**€6Bn**

In the short and medium terms, operational robustness and performance must be continuously guaranteed and airline development needs to be satisfied. We propose continuing our efforts to maintain and optimise our infrastructures without seeking to cut corners on these requirements despite high investment needs elsewhere. Similarly, we want to prioritise the improvement of access to our platforms and the fluidity of the passenger pathways in our terminals, especially given Paris's hosting of the Olympic and Paralympic Games in Paris in 2024.



EFFORTS ON REGULATED  
EXPENSES

**-€130M**

In the long term, Aéroports de Paris's duty is to anticipate the development of the platforms to make them sustainable levers economically and environmentally.



AVERAGE ROCE = REGULATED WACC

**5.6%**

We have an opportunity to make Paris take a decisive step ahead of other airports thanks to our unique capacity reserves in Europe. We must seize it now without delay. Accordingly, we propose beginning the construction on the next terminal 4 at Paris-Charles de Gaulle and, more broadly, making our investments sustainable over the long term.



2021 - 2025 CAGR RATES

**IPC + 1.35%**

### Put the performance of Aéroports de Paris to the service of all

Thanks to an economic model that encourages performance and the efforts of all our employees, the results obtained in recent years have made it possible to reconcile these time horizons without having to choose between the short, medium and long terms. Aéroports de Paris no longer needs to focus on building financial performance, but on consolidating it, so that it can benefit everyone

simultaneously during the 2021-2025 period, by seeking to simultaneously satisfy four requirements.

The first requirement is to achieve an investment plan nearly twice as large as the previous one, which was already extremely ambitious. As an infrastructure manager, Aéroports de Paris is convinced that competitiveness will come from the quality of the investments it is making to the benefit of passengers, partners and airlines. It is through investment that Île-de-France airports will be able to expand and gain in performance and competitiveness.

The second requirement applies to the company itself by pursuing its cost-management strategy and continuous improvement in operational performance and quality of service. To achieve this, it is also necessary to continue an attractive policy for all of our employees and have a managerial culture that can develop talent, in line with the company's social model.

The third requirement is to achieve a fair return on capital employed within the regulated scope, which is an essential condition for guaranteeing

long-term financing for the development of Paris's airport infrastructure. Only if it is profitable enough to attract investors will the growth of the Île-de-France airport infrastructure be able to generate lasting positive externalities.

Finally, the last requirement is the pursuit of a moderate pricing strategy comparable to previous years, despite the strong investment dynamic. Aéroports de Paris has chosen a smooth pricing policy, which will become clearer during the 2021-2025 ERA.

By reconciling the short, medium and long terms and reconciling investments, fair remuneration for capital and fair pricing, the proposal contained in this public consultation document is balanced. It is a sign of the confidence we have that Aéroports de Paris's industrial and financial model can handle the many challenges it is facing.

Aéroports de Paris can and wants to share new horizons with all stakeholders, to nurture today's growth and prepare for future growth.





## PRELIMINARY USER CONSULTATION

1. The economic regulation framework for Aéroports de Paris is defined by the provisions of the law of 20 April 2005 on airports and its implementing regulations, which are now codified in the French Transport Code and the French Civil Aviation Code.

This framework favours a multi-annual regulation model, which is a factor of visibility and performance, based on economic regulation agreements (ERA) of up to five years, signed between the French Government and Aéroports de Paris. This regulation governs the pricing fees for services rendered, investment programmes and level of quality of service.

This framework is confirmed, under the same conditions, by the draft law on corporate growth and transformation (loi "Pacte"), which is currently being adopted by the French Parliament.

2. Pursuant to II of article R. 224-4 of the French Civil Aviation Code, the first mandatory stage in drafting the Economic Regulation Agreement is the publication of a public consultation document in which the company's detailed proposals are presented. This is the purpose of this document that presents Aéroports de Paris' proposal for the Economic Regulation Agreement covering the 2021-2025 period.

Whilst the consultation is only required after this first stage, Aéroports de Paris has chosen to involve users and other stakeholders early in the discussion process and preparation work for the public consultation document. The schedule and modalities for these discussions have been subject to prior discussions with all stakeholders.

3. This preliminary discussion phase began at the start of 2018, when Aéroports de Paris presented the Paris-Charles de Gaulle Terminal 4 project to airlines. This project arose from the needs expressed by users and airport capacity/air traffic match studies.

Following this initial discussion phase, two meetings were organised during summer 2018 with the member companies of the International Air Transport Association (IATA) based on the first functional elements of the project, i.e.:

- forecasts of air traffic and the capacity contribution of the project;
- the different ground plan options;
- the initial considerations on aircraft taxiing;
- the functionalities and primary layout of the future building.

These initial discussions fed Aéroports de Paris' work and technical studies and enabled a comparison between each stakeholders' analyses, notably on long-term traffic forecasts and capacity requirements, which were shared with the airlines on several occasions up to the start of 2019.

All of these discussions confirmed the airlines' perspective of the requirement for a new capacitive infrastructure at Paris-Charles de Gaulle airport, and outlined the integration principles for this new terminal in the general functioning of the platform and its interface with the hub. These discussions also enabled the identification of potential ways to increase the density and optimise the use of the existing infrastructure, thus pushing back the first delivery of passenger boarding capacity for Terminal 4 to 2028, and define of the phasing

principles for this new infrastructure in the short, medium and long terms.

Aéroports de Paris has chosen to organise a voluntary public consultation on this Terminal 4 project, which began on 12 February 2019. At that time, and in the continuity of the previous discussions, new meetings were organised to discuss the content of the consultation dossier with the main airlines as well as the professional organisations that requested to join.

The 2021-2025 ERA public consultation document is an additional stage in this work, providing information about the financial conditions which could be those of the terminal's first development phase.

4. In addition to this long-term view, throughout the second half of 2018 and up to this document's publication, Aéroports de Paris met users to collect their needs for the 2021-2025 period.
5. At the start of 2019, Aéroports de Paris also consulted users on its industrial project over the short, medium and long terms, notably to align its 2021-2025 platform development project covered by the upcoming Economic Regulation Agreement with longer term evolution. This consultation will continue well after this document's publication, as Aéroports de Paris has notably committed to holding meetings under the aegis of the International Air Transport Association (IATA).
6. Lastly, this preliminary phase was fed by the work and debates that took place within the Economic Advisory Commission of the Paris-Charles de Gaulle and Paris-Orly airports, and within the Consultative Economic Commission of Paris-Le Bourget, according to the schedule and modalities discussed with the companies and professional organisations.

This is how Aéroports de Paris voluntarily organised, before the publication of this document, and in the absence of any regulatory obligations, four meetings of the Consultative Economic Commission of Paris-Charles de Gaulle and Paris-Orly airports and one meeting of the Consultative Economic Commission of Paris-Le Bourget airport.

For Paris-Charles de Gaulle and Paris-Orly airports, on 8 March 2019, users were able to debate on traffic forecasts and the match between airport capacities and traffic, as well as Aéroports de Paris' investment programme. On 12 March 2019, the Commission was able to discuss the tariff structure, the quality of service and customer satisfaction. On 14 March 2019, users were consulted on the change in economic performance and the overall balance of the next Economic Regulation Agreement. Lastly, on 19 March 2019, the Commission met again so that Aéroports de Paris could provide specific insight in response to questions raised during the previous Commission meetings.

For Paris-Le Bourget, the Consultative Economic Commission met on 15 March 2019.

Once again, the consultation of users by the Consultative Economic Commissions will continue after the publication of this document: additional meetings (if required, in a restricted format in the form of workshops), are programmed, to provide additional information on the different subjects as required.

7. Aéroports de Paris is now being called upon to make public a consultation document in which the detailed proposals by the company concerning the 2021-2025 ERA are presented. Such is the purpose of this dossier, open for public consultation for a period of one month which may be extended by an additional period of 15 days on the Government's decision. During this period, stakeholders are invited to send their comments to the Minister in charge of Civil Aviation and Directorate-General for Competition, Consumer Affairs and Prevention of Fraud, who will transmit them to Aéroports de Paris.

The Minister in charge of Civil Aviation will then seek the opinion of the Consultative Airport Commission (created under Article L. 228-1

of the Civil Aviation Code) on the orientations of the 2021-2025 ERA. The ERA project will then be submitted to the Regulation Authority indicated in article R.224-8 of the French Civil Aviation Code for approval.

Aéroports de Paris believes that the signature of the agreement may take place during 2020, for its coming into force at the beginning of the tariff period starting on 1 April 2021.

This document contains all the elements indicated in II of article R.224-4 of the French Aviation Code and presented in the correlation table below.

Mandatory information		Section of the consultation dossier
<b>Summary of the current Economic Regulation Agreement</b>		Appendices
<b>Preparation of the upcoming Economic Regulation Agreement</b>	Traffic assumption	Section 1.1
	Change in airport capacity	Section 1.2
	Investment programme	Section 2
	Appropriateness of the public services in relation to users' needs	Section 2
	Quality of the public services	Section 4
	Change in tariffs and adjustments thereto	Section 3
	Assessment of the economic and financial impact of the selected assumptions and alternative assumptions	Section 5

The scope of activities mentioned in Article R. 224-3-1 of the Civil Aviation Code, also called the "regulated scope", is defined in Article 1 of the Order of 16 September 2005 regarding fees for services rendered in aerodromes. This encompasses the range of activities used to assess the company's profitability in order to determine the level of fees for airport public services (see Section 5.1 - Economic regulation framework and the regulated scope).

The draft law on corporate growth and transformation (loi "Pacte"), which is currently being considered by the French Parliament, reiterates but does

not change the main principles of this definition, which should be clarified in regulations. No changes are anticipated to this scope.

Finally, this document includes a long-term forward vision of Aéroports de Paris' projects that go beyond the five-year framework of the upcoming Economic Regulation Agreement. This vision is presented to give more information about the investments proposed for that period and is subject to change. More generally, all proposed projects are subject to approval by the relevant administrative authorities.



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## 2021-2025 ERA ECONOMIC REGULATION CONTRACT

*Three months after the liberation of Paris, Alain Bozel, Secretary General of the Ministry of War, proposed the creation of an airport of global importance in Paris to General de Gaulle: "What should Paris airport be? It's not just a landing field, hangars, repair facilities and a passenger station, important though they may be. It's a new city fully designed for the multiple services it will have to render and ready for any extensions and transformations progress will require." Alain Bozel continued: "A special underground motorway or railway to Paris is required that can handle travel at maximum speeds from one end to the other, for a trip no longer than about ten minutes."*

Since its creation, the airport was not meant to be a mere infrastructure, but a service as well. It is not a simple station but an open city. It is not isolated but connected to Paris by an express train. It is not static but can quickly adapt at any time. More than 70 years later, Aéroports de Paris continues its mission to serve the common good with the determination to live up to the legacy it has inherited.

Aéroports de Paris has evolved by adapting, diversifying and becoming more complex without ever denying its original DNA. As a manager of infrastructure, its mission takes place in time. As an airport operator, it operates a rigorous real-time strategy. As a manager of traffic flows, it must guarantee the accessibility of its platforms and the efficiency of its passenger areas. As an economic actor, it must capture global growth, locate it in France and diversify its activities to create airport cities. As a socially responsible company, it preserves its ecosystem and develops

the skills of its employees. It is in this spirit that Aéroports de Paris plans to sign the next economic regulation agreement.

Aéroports de Paris has infrastructures with a unique potential in Europe that can capture growth and claim a decisive advantage in global competition (I). For this reason, it has a duty to make the most of this asset by investing for long-term development (II).

The conduct of a long-term growth policy must, however, be accompanied by continued efforts to guarantee the primary missions of an airport operator. This is why Aéroports de Paris hopes to also consolidate its fundamentals, (robustness and operational performance and a guaranteed standard of service for airlines and passengers) (III). Beyond that commitment, Aéroports de Paris wants to maintain its promise to reinforce platform accessibility as well as simplify the passenger path and make it more fluid notably with the prospect of Paris hosting the Olympic and Paralympic Games in 2024 (IV).

All of this is only possible by relying on the performance of Aéroports de Paris's economic model, which allows it to pursue a policy of pricing moderation, ensure an acceptable level of profitability and finance almost twice the amount of investments relative to the previous ERA.

The performance achieved will enable a moderate increase in tariffs to ensure an active investment policy as a guarantee of competitiveness for all stakeholders in the airport and the region.



## I. AN ADVANTAGE: INFRASTRUCTURES UNIQUE IN EUROPE

Aéroports de Paris's proposal for the upcoming 2021-2025 Economic Regulation Agreement is in keeping with a context favourable for all stakeholders through a dynamic air traffic market and a Parisian infrastructure which offers many advantages. Aéroports de Paris has infrastructures with a unique potential in Europe that can capture growth and even take a decisive advantage in the global competition.

### Constantly growing air traffic

Global traffic has been rising steadily since the early 1970s: a 5.8% annual increase between 1971 and 1985, a 4.0% annual increase between 1986 and 2000, a 5.6% annual increase between 2001 and 2016 and a 6.8% annual increase between 2016 and 2017. This global air transport dynamic is driven by technological advances, the growth of the global economy, lower costs and increased accessibility to air transport. Traffic could well double over the next 20 years. This means that the global traffic should reach 8 billion passengers in 2037, compared to 3.7 billion in 2016 and 4.0 billion in 2017.

Against this backdrop, competition between the world's airport hubs is intensifying. Major capacity expansion projects are launched in Europe and elsewhere in the world, including in Frankfurt, London, Amsterdam, Rome, Istanbul and Moscow. The "niche" hubs (Helsinki to North Asia, Dublin and Reykjavik to North America, Lisbon to South America) are a threat to Paris-Charles de Gaulle's calling to be a general hub.

However, thanks to the attractiveness of Paris and of France internationally, as well as a top-tier economic and jobs environment, the quality of the natural and historical heritage of the Île-de-France region and a remarkable location, from which all of the major cities of Western Europe are under two hours away by air, the three Paris platforms can consolidate their position or even take a decisive lead in this global competition.

Paris airport traffic has increased by 2.4% per year on average over the past 15 years. Over the next 20 years, traffic growth estimates for Paris are between 2% and 3% per year, in line with the traffic forecasts for Europe.

For the period of the 2021-2025 economic regulation agreement, Aéroports de Paris is assuming average passenger traffic growth of 2.6% per year (see *Section 1.1 – Traffic outlook*). This forecast takes account of the eurozone's moderate economic growth prospects as well as the growth prospects of the regions of destination, which are more dynamic, in particular for long-haul routes.

This expected growth in air traffic will be met by a policy to support the development of air routes and connectivity in Paris. The priority targets will be the intercontinental routes connecting Europe to Asia (mainly China), which is the continent with the highest rate of growth

in air transport demand. The other developing markets notably the intra-European medium- and short-haul market will not be neglected.

Furthermore, forecasts show that, given the increase in the average aircraft load rate for platforms in the Île-de-France airport system, the number of aircraft movements will not increase in line with growth in passenger numbers. Accordingly, Aéroports de Paris assumes an average aircraft movement growth rate of 0.3% per year over the period 2021-2025.

### A Paris airport system with a unique potential in Europe

It is Aéroports de Paris's responsibility to accompany this significant traffic growth potential in order to make it a true lever in terms of business, employment, growth and sustainable development. This requirement is all the stronger because the Paris airport system, as enshrined in the draft law on corporate growth and transformation (loi "Pacte") currently being reviewed by the French legislature, constitutes the largest capacity reserves in Europe.

Having three complementary Paris airports and general-purpose airfields in Île-de-France will, over time, enable Aéroports de Paris to envisage maximising the operational, economic and financial efficiency of the airport system for its airlines and passenger customers, shareholders and employees as well as the local communities. These infrastructures permit a multimodal general-purpose transport service for all types of passengers and goods: long- and medium-haul, domestic, connecting, low-cost, leisure, charter, business and freight.

Since the creation of Aéroports de Paris in 1945, the infrastructures of the Paris region have adapted in order to cope with the strong growth in demand for air transport and meet new constraints (environmental in particular) and new challenges (technical advances, changes in air transport with hubs, quality of service issues, etc.). With ten runways and available land, the system still has unique development potential in Europe to meet medium- and long-term challenges and needs. At Paris-Charles de Gaulle especially, the capacity of the runway system is higher than its European peers and its land reserves allow the construction of new terminals and the extension of the cargo areas, with no increase in the size of the airport sites (see *Section 1.2 – Change in capacity*).

## An engine for the local, regional and national economy

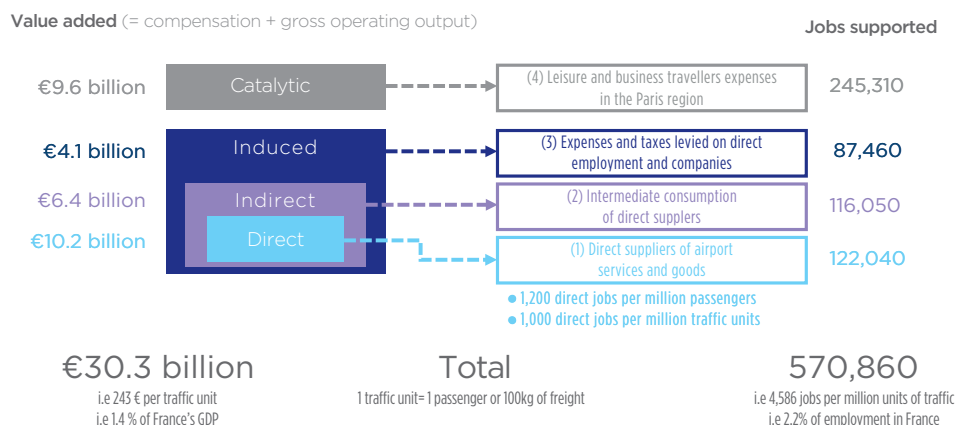
The business activity of the Île-de-France airports largely benefits the local, regional and national economy. According to the latest study conducted by Utopies in 2017, the overall economic activity generated by the Paris airport system in 2016 amounted to €30.3 billion, or 4.9% of Île-de-France's gross domestic product (GDP) and 1.4% of French GDP.

With 570,860 jobs supported, including 473,800 in Île-de-France, the economic activity generated by the presence of the Paris airports represents 8% of salaried employment in Île-de-France, or 2.2% of salaried employment in France. The direct employment associated with companies present at the airports represents a quarter of these jobs, i.e. 122,040 jobs, of which 95% are open-ended contracts.

In 2016, international customers who visited Île-de-France and used Paris-Charles de Gaulle and Paris-Orly airports amounted to 16.7 million

passengers, i.e. 20% of foreign visitors arriving in France. In order to meet all of its passenger needs (French and international) in terms of goods and services, 261,500 paid jobs are required in Île-de-France. The two main Paris airports contribute 15.5% to salaried employment linked to tourism in Île-de-France. The economic impact from tourist traffic on Paris airports was €9.6 billion in 2016.

According to that same study, over the period 2014 to 2016, each additional million passengers enabled the creation of approximately 720 direct jobs for Paris-Charles de Gaulle airport and about 590 for Paris-Orly airport. terminal 4 alone could, through a scale effect, generate around 50,000 new direct jobs at Paris-Charles de Gaulle by the time of its completion.



## Growth mindful of its environment and neighbouring communities

It is possible to pursue an active development policy while respecting the operational framework that applies to the three Aéroports de Paris platforms.

For Paris-Orly, the possibility of load factor growth is an important lever that will support passenger traffic while respecting the cap on movements. For Paris-Charles de Gaulle, thanks to a constant decrease in the noise pollution from air traffic, growth is possible in the long term. Paris-Le Bourget's specialisation in business aviation gives it the opportunity to form a world-class specialised aviation cluster.

For over 20 years, Aéroports de Paris has also been implementing a very active environmental policy. This strategy involves monitoring the impacts from activities, publishing the results of the studies conducted and participating in the search for mitigation and offsetting measures. Accordingly, in addition to regulatory control mechanisms, Aéroports de Paris carries out various actions to limit the impact of noise pollution, preserve air quality and biodiversity, combat global warming and optimise water and waste management on the platforms (see Section 4.3 – Sustainable development).

## II. A DUTY: INVESTING FOR LONG-TERM DEVELOPMENT

Because of the unique potential of its infrastructures, Aéroports de Paris wants to make the upcoming economic regulation agreement the cornerstone for the long-term development of Paris airports. The investment policy proposed by Aéroports de Paris marks a turning point because not only will it meet the security, maintenance, capacity development and quality of service needs for the 2021-2025 period, it will also launch structuring operations for the long-term development of the three Parisian platforms.

### A turning point in the investment policy: reconciliation of short-, medium- and long-term investments

To absorb the continuous rise in traffic, Aéroports de Paris has been pursuing a strategy to densify existing infrastructures for several years. The “one-roof” (terminal fusion) concept that marked the 2016-2020 Economic Regulation Agreement increased the capacity of the Paris-Orly and Paris-Charles de Gaulle platforms, while improving flexibility and passenger comfort and avoiding the construction of new terminals. These efforts enabled the Île-de-France airport system to cross the 100 million passenger mark in 2017 with no major new infrastructures.

This strategy must now be completed by larger accomplishments because densification opportunities within existing terminals will no longer be able to cope with the sustained growth of traffic in Paris after 2026-2028. Moreover, the choice to densify the current terminals has resulted in a saturation of access to which we must now find a structural response by improving the overall operation of the platforms.

The conciliation of capacity growth needs of the platforms in the long-term with those in the short- and medium-term capacity needs is the challenge that Aéroports de Paris wants to address in the

2021-2025 Economic Regulation Agreement (see Section 1.2 – *Change in capacity*). For this reason, Aéroports de Paris wants to include each new infrastructure in a master plan for long-term development. In other words, the investments made in response to the 2021-2025 challenges are, as much as they can be, the first stages of more structural projects that go beyond the horizon of the next economic regulation agreement.

Pursuing this strategy implies the implementation of an investment plan over the 2021-2025 period (twice that of the previous one) of around €6.0 billion. Beyond the launch of the works of the future terminal 4 of Paris-Charles de Gaulle (€1.6 billion on 2021-2025 ERA), this investment policy will pursue the transformation and development of the three platforms in the Paris region, while preserving investments to ensure operational robustness (notably maintenance for €1.3 billion) to improve the quality of service and the company's environmental policy. In addition, special attention will be paid to improving access and rendering it more fluid; two conditions for the future development of Aéroports de Paris platforms, through the investment of nearly one billion euros. (see Section 2.1 – *Investment programme overview*).

## Ongoing transformation of Paris-Orly

To date, transformation has consisted mostly of the “New Departure” project, for which delivery of the junction building in April 2019 is the high point, but the development of Paris-Orly platform is not yet at full maturity. Development potential is still possible under the existing rules of operation (curfew and capping of the number of movements), thanks to the optimisation of the slot portfolio and the steady increase in the load factor, against a backdrop of noise reduction enabled by technological advances and low-noise flight procedures. Aéroports de Paris is resolutely committed to supporting the renewal of aircraft fleets through its tariff structure to progressively eliminate the noisiest and most polluting.

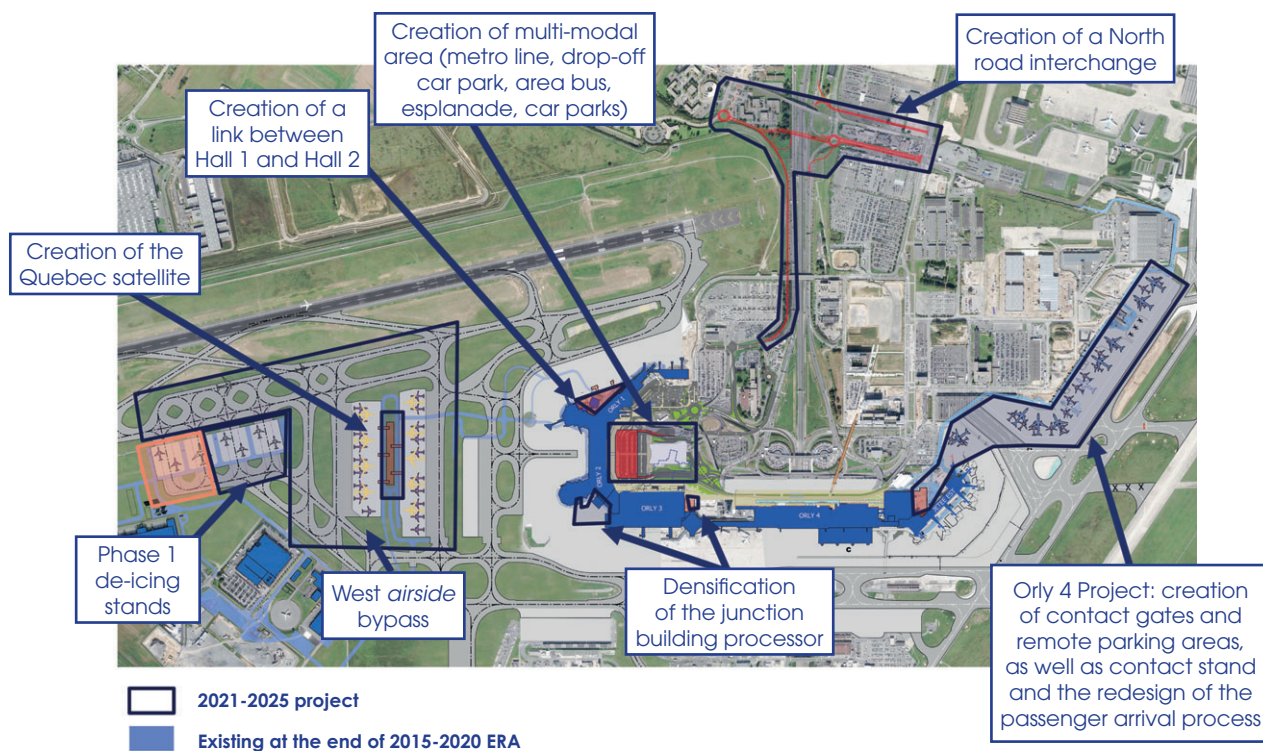
The first stage of the sustainable development of passenger traffic at Paris-Orly is to develop the Western part of the platform. The first objective is to adapt Orly 1 and 2 (formerly Orly West) to improve reception of passengers and to guarantee the operational performance of airlines through an increase in contact aircraft.

The implementation of this master plan requires, starting with the next economic regulation agreement, the reconfiguration of the airside

infrastructures through the creation of bypass taxiways, the extension of aircraft areas and the creation of the first de-icing areas. A boarding satellite that is fully connected to the terminals *via* a dedicated and innovative path must also be created for the Quebec areas on the Western part of the platform. In addition to welcoming the increase in traffic between 2023 and 2028, this satellite will accommodate traffic during all phases of infrastructure development and ensure robust operation if traffic turns out to be higher than planned.

At the same time, to handle growing traffic, several investments are being proposed for the 2021-2025 period: (i) completion of the “New Departure” project and continued renovation of existing infrastructures; (ii) creation of additional long-term capacity; and (iii) alignment with a long-term vision, through the creation of an aircraft parking stand at Orly 3 (formerly Orly West Hall 3). For instance, the merger of Halls 1 and 2 and the reshaping of Hall 4 (large hall and arrival process). Finally, the creation of an initial “Pivot” extension for the Hall 3 junction building, upgrading landside capacity to direct flows to the Quebec satellite (see Section 2.4 – Paris-Orly capacity investments).

### 2021-2025 ERA INVESTMENTS – PARIS-ORLY FORWARD VISION





## The need for a new terminal at Paris-Charles de Gaulle

At Paris-Charles de Gaulle, the opening of a new terminal with separate road access that can be connected to other terminals is becoming a necessity. It is the best scenario that can be considered to meet the capacity needs of Paris airports starting in 2028.

To respond to this growth while maintain the attractiveness of the site, the terminal 4 project involves building a set of buildings, traffic lanes and road and rail networks within the platform. The reception capacity of terminal 4 will eventually be in the range of 35 to 40 million passengers per year. According to the provisional schedule, work will begin in 2021 and terminal 4 should be fully completed by 2037. Several road infrastructures and aircraft areas will be delivered starting with the 2021-2025 period of the economic regulation agreement. The first building opening will take place in 2028. Subsequent terminal 4 construction phases will take place between 2028 and 2037 to build and adapt the infrastructure if needs change.

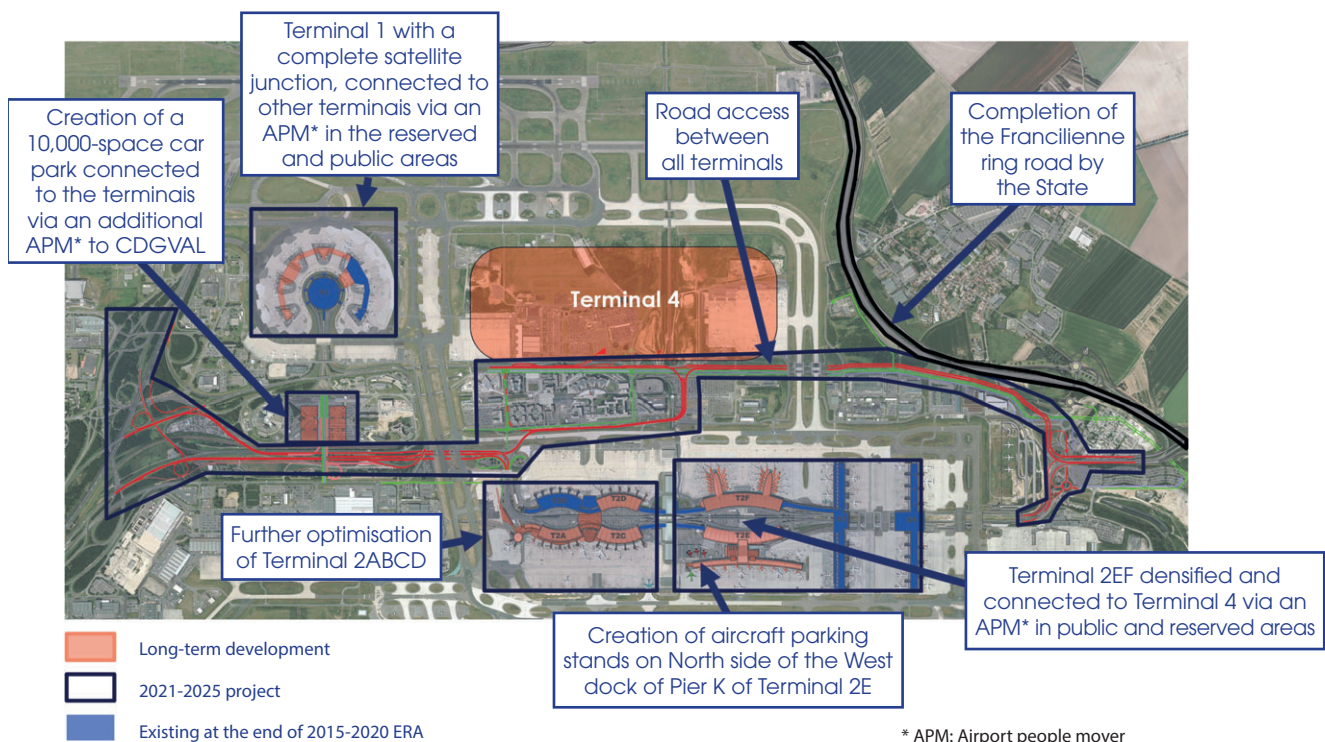
This project to create a terminal 4 is the subject of a prior voluntary consultation from 12 February 2019 to 12 May 2019 under the auspices of four guarantors appointed by the National Public Debate Commission.

This consultation is a participatory mechanism whose purpose is to gather the opinions of stakeholders and the general public before project is launched. It covers several topics, including environmental issues (noise impacts, air quality, biodiversity, and greenhouse gases), platform accessibility conditions, and local direct and indirect job creation that will be created by the construction and operation of the new terminal.

You can participate in this consultation: [https://www.parisaeroport.fr/passagers/paris-aeroport-change/paris-cdg-change/terminal4-cdg?&xtor=SEC-4-GOO-\[terminal\\_4\\_Exact\]-\[search\\_classique\]-S-\[terminal%204\]](https://www.parisaeroport.fr/passagers/paris-aeroport-change/paris-cdg-change/terminal4-cdg?&xtor=SEC-4-GOO-[terminal_4_Exact]-[search_classique]-S-[terminal%204])

Over the 2021-2025 period, terminal 4 construction will consist of the preparation of the plots, the launching of civil engineering work for the passenger trains in the reserved area, the completion of some of the access points to the terminal, the construction of aircraft taxiways and de-icing bays in the North, and work on the first phases of the terminal 4 building (see Section 2.3 – Paris-Charles de Gaulle capacity investments).

### ERA 2021-2025 INVESTMENTS - POSITIONING OF TERMINAL 4 - PARIS-CHARLES DE GAULLE FORWARD VISION



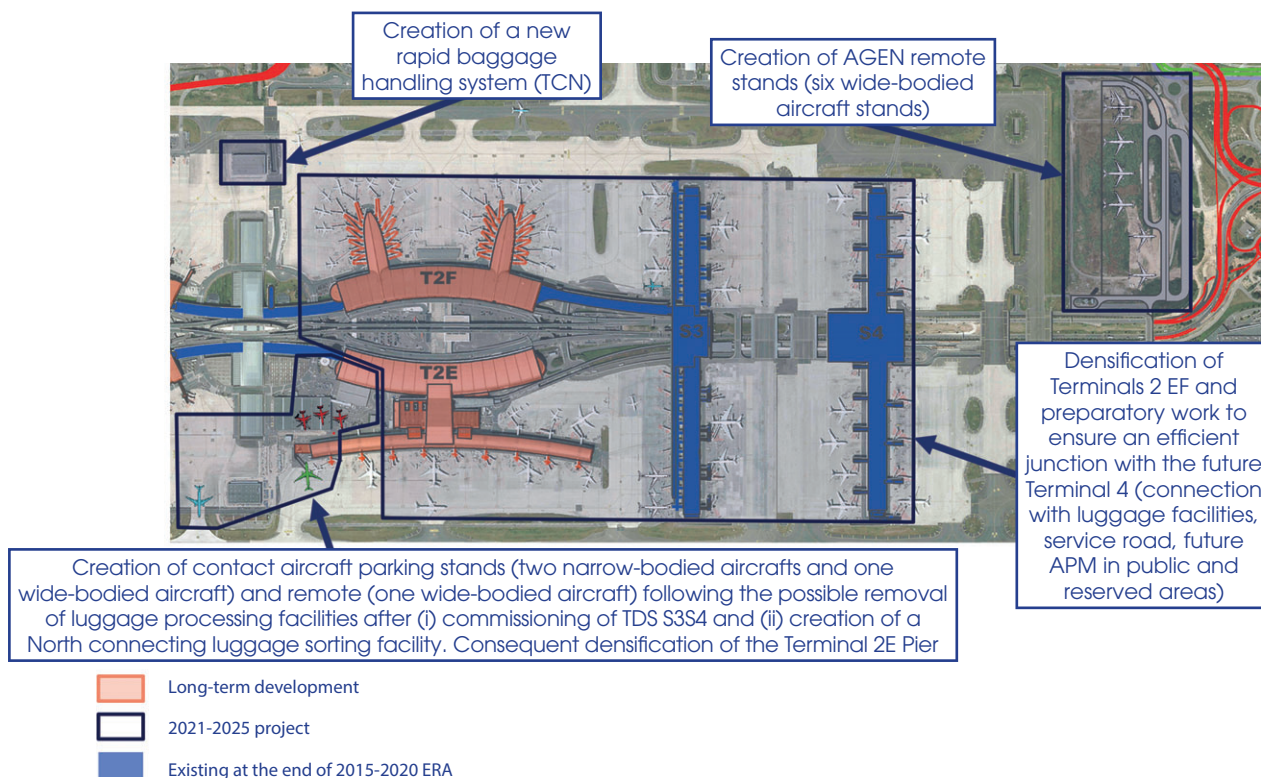
## Optimisation of terminals 2 EFG at Paris-Charles de Gaulle

While awaiting the terminal 4 that could accommodate some or all of the growth of the Skyteam alliance, it is necessary to undertake major optimisation efforts for the hub, both landside and airside, to cope with the growth of traffic until 2026-2028. Accordingly, it is suggested to create remote and contact aircraft stands, develop wide pathways, gain space through internal building improvements and upgrade all secondary resources. In particular, after the opening of the terminal 2E S3S4 baggage handling systems, it is envisaged to create contact

stands on the North face of the West dock of terminal 2E, Pier K. (see *Section 2.3 – Paris-Charles de Gaulle capacity investments*).

Development of the hub will also be facilitated thanks to the early opening of the future terminal 4 road access paths which will also benefit to terminal 2 from the East. Aircraft areas will also be delivered in advance.

### DENSIFICATION OF PARIS-CHARLES DE GAULLE TERMINALS 2 EFG IN ERA 2021-2025



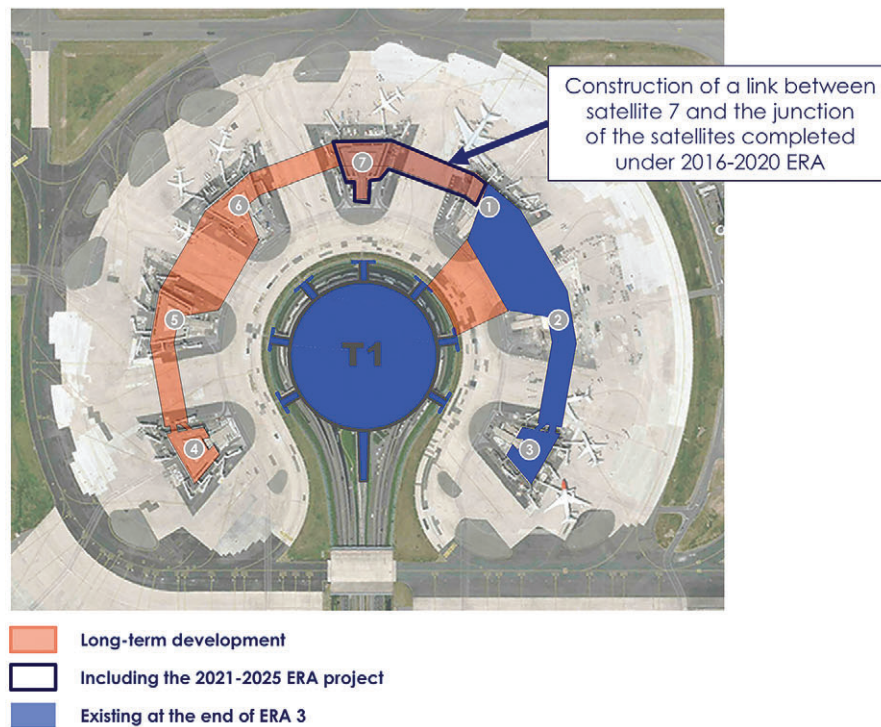


## Continued connection of terminal 1 satellites at Paris-Charles de Gaulle

Initiated during the 2016-2020 Economic Regulation Agreement, the redesign of terminal 1 will continue during the next agreement in three major areas: (i) the continued connection of the international satellites with a new connection between Satellites 1 and 7 using the same model as that already being used and, if traffic requires it, between Satellites 7 and 6, (ii) the gradual transfer of Schengen traffic from Satellites 6 and 7 to Satellites 4 and 5, and (iii) an initial reconfiguration phase for the primary facilities of the terminal, which will include the development of landside areas, as well as and the creation of check-in counters.

This project is part of the long term development of terminal 1 that was shared with Paul Andreu for several months before his death. This vision illustrates a terminal 1 fully “crowned” with reconfigured primary facilities inside it (creation of an underground hall under the Alpha pathway reserved for departure and arrival border control, pooling of Schengen safety check points). It aims to make terminal 1 a tool suitable for Star Alliance airlines that will compete with the best global infrastructures (see Section 2.3 – Paris-Charles de Gaulle capacity investments).

### ERA 2021-2025 INVESTMENTS – PARIS-CHARLES DE GAULLE TERMINAL 1 FORWARD VISION



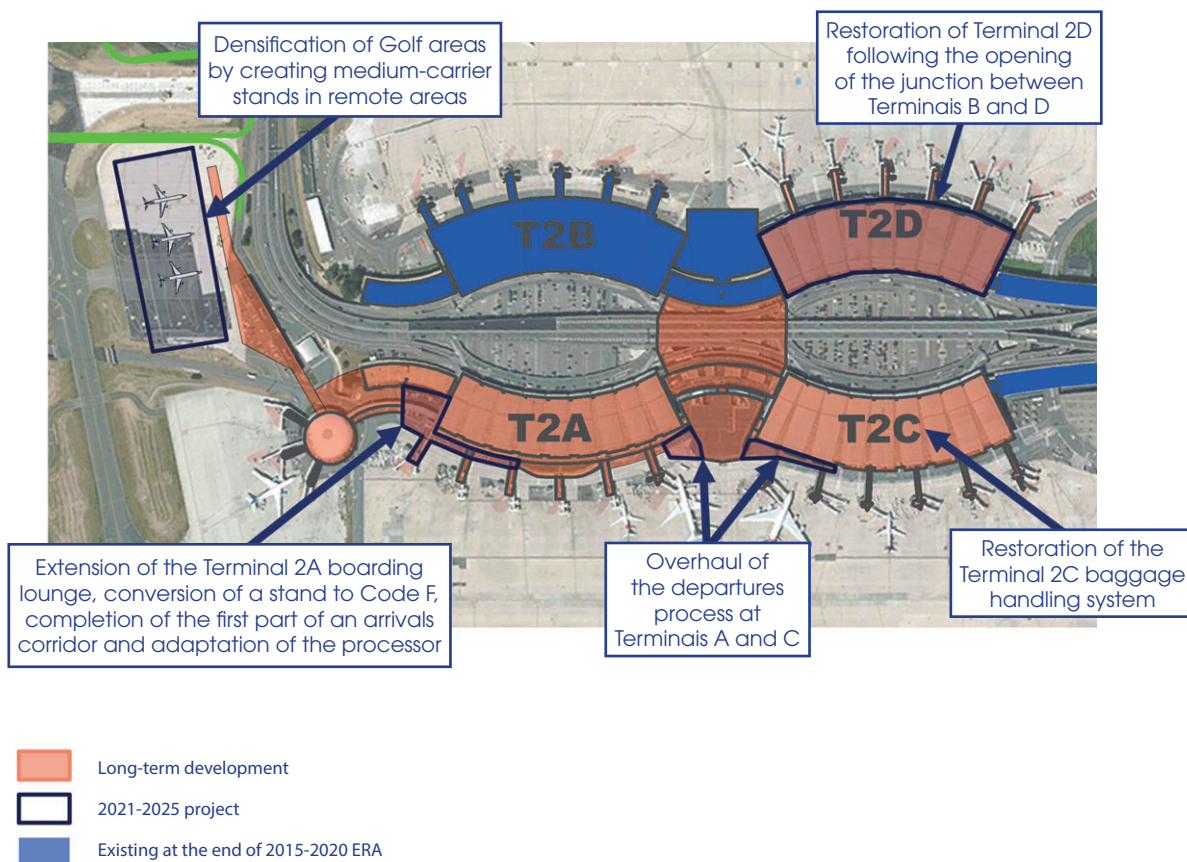
## Ongoing improvement of Paris-Charles de Gaulle terminals 2 ABCD and terminal 3

After the delivery of the link between terminals 2A and 2C and pending delivery in 2020 of the new terminal 2B and the link between terminals 2B and 2D, Aéroports de Paris is preparing the next upgrades to the ABCD terminals to meet the best global standards.

Ultimately, the terminals could be merged into a single terminal with four high-quality boarding lounges. During the period of the 2021-2025 Economic Regulation Agreement, it will be necessary to complete the

transformation of terminal 2D and prepare the merging of the arrivals process at terminals 2A and 2C. The 2A boarding lounges will also be improved and their extension to the Golf areas prepared. Finally, in order to ensure operational robustness, the baggage handling system in terminal 2C will be renovated (see Section 2.3 – Paris-Charles de Gaulle capacity investments).

### ERA 2021-2025 INVESTMENTS – PARIS-CHARLES DE GAULLE TERMINAL 2 ABCD FORWARD VISION



At the same time, to cope with growth in traffic, terminal 3 will be densified thanks to the pooling and modernisation of security checkpoints, the increased number of boarding gates and the creation of additional bus stops to match the number of gates to access the aircraft stands.

## Launch of the Paris-Le Bourget transformation

The Paris-Le Bourget platform will benefit from the arrival in 2024, before the Olympic Games, of the metro line 17, which will enhance the platform's attractiveness and accessibility and foster infrastructure maintenance and upgrading operations in the area. This momentum will be accompanied by a gradual reinvestment by Aéroports de Paris in the management of aircraft parking areas, which will come about in the medium term through increasing the capacity of aircraft areas, reinvestment in historic buildings and the development of the North area and the West area (Dugny) for aircraft maintenance activity.

The 2021-2025 Economic Regulation Agreement will see an initial stage in this development plan through the renovation of hangars and construction of parking areas around the central area, for the maintenance of Category C and other aircraft (see Section 2.5 – Paris-Le Bourget investments).

Finally, throughout the execution of the 2021-2025 Economic Regulation Agreement actions will be carried out to correct the obsolescence of the infrastructures of several general airfields and bring them into compliance: total refurbishment of the Toussus-le-Noble, Pontoise and Saint-Cyr-l'École runways, renovation of buildings, surroundings and networks.

### III. A PRINCIPLE: STRENGTHEN THE FUNDAMENTALS

The conduct of a long-term growth policy must be accompanied by continued efforts to guarantee the primary missions of an airport operator, ready to act in real time. Throughout the 2021-2025 Economic Regulation Agreement, Aéroports de Paris hopes to consolidate its fundamentals of operational robustness and performance, which are the guarantee of a standard of services for airlines and passengers, notably through inclusion in airport fees of certain primary services and equipment and the maintenance of its ambitious sustainable development policy.

#### Robustness and operational performance

Our relations with our customers and partners must reflect our confidence in the operating security and safety conditions we offer them. This is consolidated thanks, on the one hand, to the reliability and availability of the equipment, facilities and services that we place at their disposal, and the seamlessness and flawless continuity of our day-to-day operations, on the other hand to order to guarantee these basic concepts, Aéroports de Paris will work on three main areas: regulatory compliance, maintenance policy and continuous improvement of its operations.

During the period 2021-2025, Aéroports de Paris must comply with increasingly strict regulatory and environmental requirements. The investment plan thus includes several compliance projects notably concerning the protection of buildings (through the removal of vehicles from buildings and treatment of façades), increased video protection, and bringing rainwater treatment at Paris-Charles de Gaulle into compliance (see Section 2.2 – *Regulatory compliance and maintenance investments*).

In addition, to cope with the ageing of some of its airport infrastructure and IT system, Aéroports de Paris plans to pursue its maintenance policy, so that it can converge and eventually stabilise overall obsolescence at Paris-Charles de Gaulle and Paris-Orly at a level that meets the standards of well-maintained airports. The Group has expressed and prioritised the level of maintenance according to a methodology that takes the materiality of disorders observed into account (TB Maestro methodology).

In this respect, the primary maintenance projects focus on the rehabilitation of runway 1 at Paris – Charles de Gaulle, the restructuring of terminal 2D (renovation of obsolete key systems, electricity and air conditioning), the renewal of passenger boarding bridges at several Paris-Charles de Gaulle terminals, the replacement of the Orly 4 façade, and the renovation of the terminal 2 railway station building and the 2E and 2F terminals.

Aéroports de Paris is also continuing to improve its operations, in particular through the construction of a unified command station for the entire Paris-Charles de Gaulle platform, improvement of aircraft taxiway safety, and the strengthening of the robustness of baggage handling systems.

Finally, to cope with the growing saturation of its airport resources concerning mainly aircraft parking stands; Aéroports de Paris is proposing adjustments of the tariff structure to promote shorter rotation times (ii), the towing of aircraft towards remote stands and (iii) the use of aircraft that can accommodate more passengers. These measures will also be accompanied by continued pooling and the harmonisation of airport resources (boarding, check-in, parking, and baggage handling) to improve the optimisation of operations that enable economies of scale.

#### Guaranteeing a standard of services

During the 2021-2025 period, Aéroports de Paris wants to continue the ongoing improvement for a better quality of services to passengers and airlines through time management. More specifically, this will be achieved by the automation of the passenger process, personalisation of customer relations through the development of digital tools and the development of the “Parisian experience”. In particular, it will be imperative to deliver the best service to our customers during the 2024 Olympic and Paralympic Games and address issues of hospitality, multimodality and innovation to accommodate the 15 to 20 million visitors expected, as well as official delegations and athletes.

To achieve this, Aéroports de Paris is committed to developing the highest standards of quality of service, guaranteeing the availability of resources required by airlines and the performance of the quality of services perceived by passengers.

To guarantee operational efficiency for airline customers, Aéroports de Paris is committed to making all resources available, be they primary resources (such as the availability of parking positions), secondary resources (such as the availability of baggage carousels at arrivals) or baggage sorting resources (such as the availability of baggage sorters). As with the 2016-2020 Economic Regulation Agreement, these commitments will trigger a penalty if they are not respected.

Aéroports de Paris’s commitment to improving passenger satisfaction will cover the entire travelling experience: departure, arrival and connection. Unlike the 2016-2020 Economic Regulation Agreement, Aéroports de Paris abandons any “bonus” linked to good performance of these commitments, which are considered fundamental elements of the promise of delivering quality to passengers. On the other hand, in the event of underperformance, Aéroports de Paris proposes paying a penalty that would take the form of an expense paid to a specific investment budget to improve customer satisfaction. The airlines would be participants in the budget allocation, the utilisation of which would be subject to the consultation process at Consultative Economic Commission meetings (see Section 3.4 – *Rate change cap adjustment mechanisms*).

Finally, together with all the stakeholders involved, with the purpose of improving the overall performance of Île-de-France platforms, a number of indicators will be monitored, such as punctuality of flights, waiting times for screening, border crossing and baggage delivery, passenger satisfaction with surroundings, cleanliness of facilities and staff courtesy.

## Fundamentals of service at an all-inclusive price

The principle of pooling airport resources and equipment is in Aéroports de Paris' DNA. It permits a genuine optimisation of airport operations, as well as the best adaptation to changes in process technologies. Faced with the growing saturation of its infrastructures and expectations in terms of operational performance, Aéroports de Paris has chosen to continue and have this pooling finalised by the 2021-2025. economic regulation agreement.

This harmonisation process will be embodied in a tariff policy that seeks to move towards an "all-inclusive" policy by incorporating ancillary fees into main fees, which will in turn simplify the rate schedule.

## Preservation of the environment

In line with its roadmap for energy transition, and notably the carbon neutrality objective set for 2030, Aéroports de Paris's sustainable development ambitions are extremely high for the period 2021-2025 and integrate solutions into its platforms (see Section 4.2 – *Social responsibility and sustainable development*).

There will be development on several areas during this period, in particular:

- ◇ continued renovation of lighting and air conditioning/ventilation/heating systems to improve occupant and passenger comfort and energy performance;
- ◇ continued development of thermal renewables as a key focus of Aéroports de Paris's carbon neutrality. Heating represents 70% of internal platform emissions. At Paris-Charles de Gaulle, we suggest the installation of a deep geothermal energy system (ultimately 35 to 45% of additional renewable heat). At Paris-Orly, we plan to install a heat pump to optimise existing geothermal energy and a new substation to import more waste heat (ultimately 16% of additional renewable heat);
- ◇ equipment of contact stands with mobile air conditioning units (ACUs) to allow the use of mobile aircraft air-conditioning equipment by groundhandlers and limit the use of APUs (Auxiliary Power Units) and reduce local emissions of pollutants and CO<sub>2</sub>;
- ◇ infrastructure development to promote soft mobility (pedestrians, cyclists, etc.);
- ◇ electrification and deployment of city side and airside charging stations for all stakeholders and further greening of Aéroports de Paris's service fleet;
- ◇ calculation of gaseous emissions levels (NOx) from aircraft in the landing fee.

# IV. A PROMISE: GUARANTEEING ACCESSIBILITY AND EFFICIENCY

In addition to long-term development and the consolidation of fundamentals, over the period of the 2021-2025 Economic Regulation Agreement, Aéroports de Paris wants to correct the structural shortcomings regarding the accessibility of its platforms by road and rail. It also wants to keep its promise of offering a simple and efficient passenger experience in all of its terminals.

## Redesign of road access and car parks

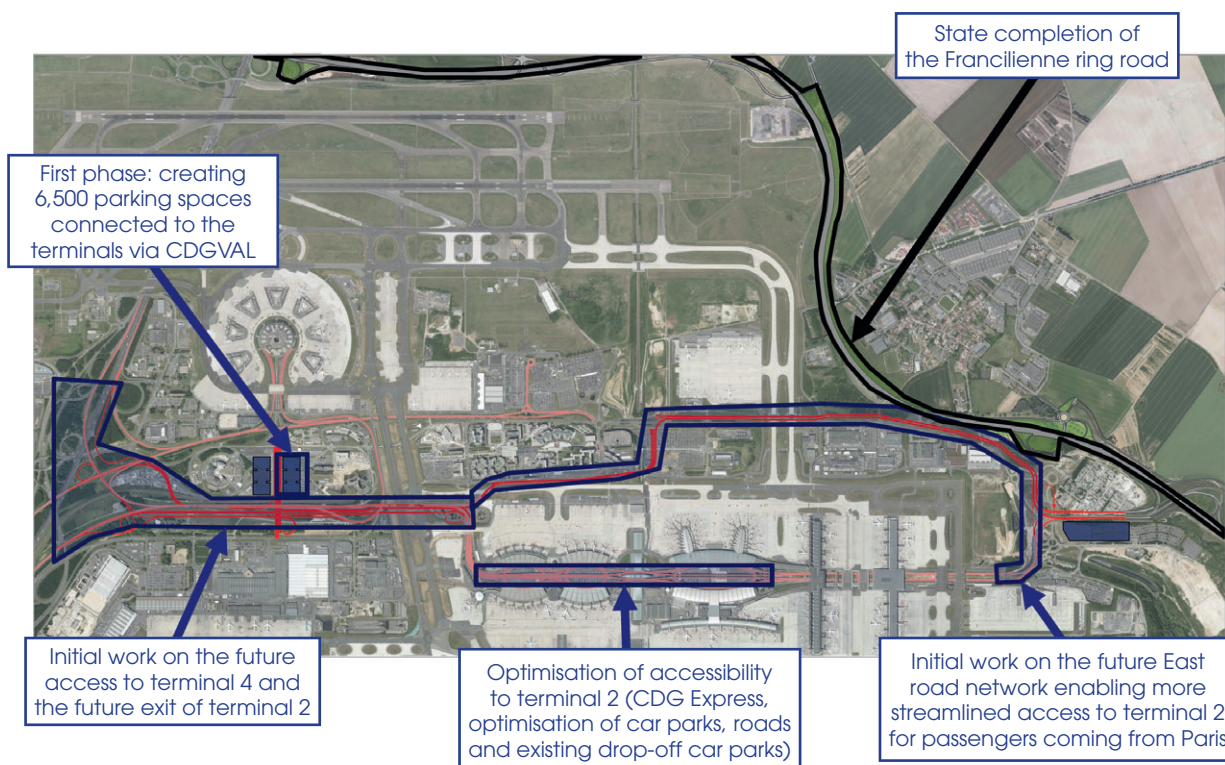
By undertaking extensive work to encourage long-term growth for each of the platforms, Aéroports de Paris wants to improve accessibility by redesigning the overall operation of the Paris-Orly and Paris-Charles de Gaulle platforms (see Section 2.6 – *Access and car park investments*).

At Paris-Orly, the road network will be completely redesigned after the opening of the Grand Paris station to facilitate access to Halls 1, 2, 3 and 4. A multi-storey car park will be built in that station. A large forecourt will be built to improve the functioning of drop-offs and bring them in line with traffic in the halls and to create a bus station in the heart of the intermodal hub. Finally, a new interchange will be built at the north of the platform, arriving from Paris, in order to streamline traffic.

At Paris-Charles de Gaulle, the launch of construction of a new terminal will be an opportunity to rethink the overall operation of the platform through the creation of a new road network to access terminal 2. The creation of a multi-storey PR car park (phase 1 for 6,500 spaces) will also improve service to that terminal by diverting part of the road traffic that now uses the viaduct. At the same time, CDG Val capacity will be increased by the purchase of two additional trains and a change in technology to increase frequencies. Finally, the existing infrastructures in the terminal 2 EF – ABCD environment will be optimised (review of drop-offs, optimisation of access to car parks). This project will become more important with the intended looping by the French State of the Paris region circular motorway.



## IMPROVED ACCESS TO ERA 2021-2025 AT PARIS-CHARLES DE GAULLE



### The opening of new rail links

The three platforms will enjoy improved rail access starting in 2024 with the arrival of metro line 14 at Paris-Orly, Line 17 at Paris-Le Bourget and the CDG Express at Paris-Charles de Gaulle.

The extension of Line 14 of the Paris Metro to Paris-Orly means that the airport will be directly connected to the Paris city centre (Saint-Lazare station) with travelling time reduced to less than 30 minutes compared with almost one hour at present. The comfort and ease of the trip will be enhanced for passengers and airport employees through a simpler route with seamless movement. In order to accommodate this new rail link, a land transport interconnection station will be built in the immediate proximity of the airport terminal enabling rapid access for passengers and employees.

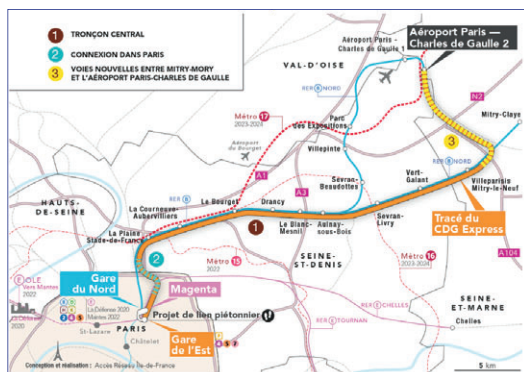
At Paris-Charles de Gaulle, the major shortcoming for passenger accessibility is the absence of a direct link with the centre of Paris, as is the case for other international airports. The CDG Express project

involves the creation of a fast and direct rail link between Paris (Gare de l'Est) and Paris-Charles De Gaulle. The journey time will be 20 minutes, with a train every 15 minutes between 5.00am to midnight. The CDG Express, which has been in the planning stages for many years, has now been approved and will be completed by a concession company whose shareholders are Aéroports de Paris, SNCF Réseau and Caisse des Dépôts.

The CDG Express project complements the RER B and the metro Line 17 project, bringing the modal share of rail transport from around 37% to almost 60%. With a travel time of 20 minutes and a frequency of 15 minutes, this line will carry 2,000 passengers per hour in each direction.

Finally, the new Metro Line 17 should serve the Bourget (as of 2024), Gonesse and Grand Roissy areas by connecting them directly to the Plaine Saint-Denis and finally to the Paris-Charles de Gaulle airport via a train station located at the future terminal 4.

## PARIS-CHARLES DE GAULLE RAIL CONNECTIONS



## PARIS-ORLY RAIL CONNECTIONS



## Commitment to a simple and efficient passenger experience

Aéroports de Paris expects to be ready to welcome the 2024 Olympic and Paralympic Games to Paris. Reception and hospitality should be guaranteed to the 15 to 20 million visitors expected on that occasion, who will begin and end their trip in our terminals.

Today, the equipment offered to passengers and airlines differs from terminal to terminal and is not fully deployed. For the 2021-2025 period, Aéroports de Paris wants to deploy the "smart airport" project, which is based on three principles: standardisation, generalisation and pooling.

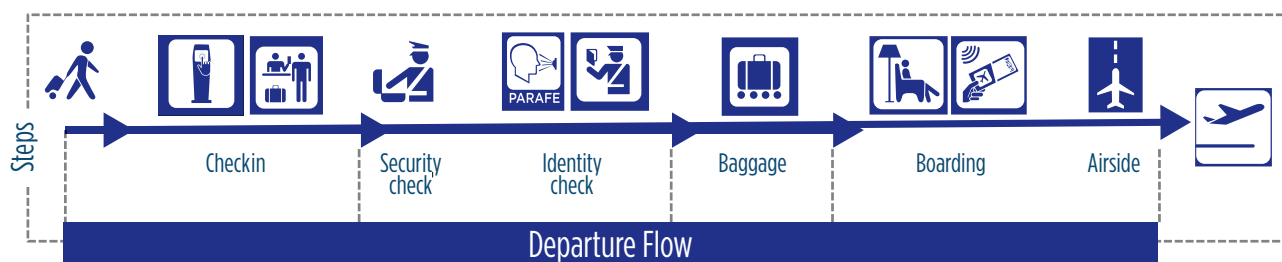
The use of innovative tools and new digital technologies will allow the implementation of a simple and efficient passenger experience, with no interruptions or excessive waiting. This optimisation will be implemented at all terminals and at each stage of the passenger experience, thus allowing passengers to manage their time more effectively (see Section 2.7 – Smart airport investments). Thus:

- for the check-in process, we want to standardise two stages with the provision of new generations of Common Use Self-Service (CUSS)

terminals (which include check-in and payment of ancillary services) and automatic luggage drop-off (which includes baggage injection and an automatic tag reading system);

- for the control process, we want to implement optimised safety controls through the deployment of next-generation security checkpoints (SCP) and body and shoe scans and to complete the deployment of PARAFEs with facial recognition for border crossings;
- for the boarding process, we want to install self-boarding gates (SBGs).

This equipment policy will be supplemented by a "baggage process" component, through the deployment of Radio Frequency Identification (RFID) technology at Paris-Charles de Gaulle and baggage tracking and reconciliation tools such as the "Baggage Reconciliation and Tracking System" or Bagradar. Aéroports de Paris will also be experimenting with face-recognition biometrics for the entire experience (end-to-end biometrics), from check-in to baggage drop-off, controls and boarding.



We view our work on a more efficient passenger experience as part a broader approach to optimise the ground operations of airlines through:

- the provision of equipment such as tensaguides, totems, arches and counters, to facilitate check-in, boarding and baggage disputes;
- the facilitation of airside operations, deployment of timers & mires at all contact stands and commercial areas including remote areas and freight areas (minimum 50 mvmts/station/year), all contact stands at 400Hz and remote areas at 50Hz, the electrical supply for ACU equipment at all stands;
- dissemination of a production measurement culture (waiting time, flows and management of equipment and facilities).

Finally, in the first half of 2019, Aéroports de Paris wants to launch a major project to pool runway equipment at the Paris-Orly platform for gradual implementation over the 2021-2025 economic regulation period. All of these actions will ensure better oversight of airport management through the use of technology in order to make all resources optimally productive against a backdrop of fast-growing traffic. This policy will be facilitated by the opening of the Centralised Command Posts (APOCs) at Paris-Orly, in place since January 2019 and at Paris-Charles de Gaulle, scheduled for 2021.



## V ONE CONDITION: RELYING ON THE FINANCIAL PERFORMANCE OF AÉROPORTS DE PARIS

The 2021-2025 Economic Regulation Agreement (ERA) will be based on the performance of the Aéroports de Paris business model in order to ensure a policy of moderate tariffs, a legally guaranteed level of profitability and a near doubling of capital expenditure. The current performance is already sufficient to self-finance long term development operations and thus ensure moderate increases in fees while, at the same time, financing the necessary short and medium term capital expenditure.

### Sustainability of an incentivising economic model

The framework of economic regulation provides the visibility and stability necessary for the financing of the aeronautical business. It also provides an incentive, thanks to the adjusted-till system, to make the most of the various activities of Aéroports de Paris. This framework, set by the law of 20 April 2005, codified (transport code and civil aviation code) and stipulated by decrees and orders, is expected to be confirmed by the draft law on corporate growth and transformation (loi "Pacte") currently being examined by the French parliament (see Section 5.1 - Economic regulation regime and regulated scope).

Aéroports de Paris therefore makes its proposal for the period 2021-2025 within a framework of stable regulation that create value for the company, for all the players in the aeronautics sector and the regions, while encouraging efficiency and competitiveness. In addition, Groupe ADP's proposal is based on unchanged methods and principles for the preparation of regulated accounts, particularly with regard to the allocation of assets, revenue and expenses within the regulated scope (see Section 5.2 - Principles for preparation of regulated accounts).

### Fair remuneration for the average amount of capital employed over the period 2021-2025, based on the weighted average cost of capital

After the establishment of the adjusted-till system in 2010, the 2011-2015 ERA was designed to be a «transition» agreement. The 2016-2020 ERA was a «convergence» agreement since Aéroports de Paris sought, as part of an effort-sharing process between shareholders, the company and customers, to reach a level of profitability for the regulated scope equal to the weighted average cost of capital at the end of the period. The upcoming 2021-2025 agreement will be a «consolidation» agreement.

For the 2021-2025 ERA, Aéroports de Paris has set itself the objective of achieving profitability for the regulated scope, as an average over the five years, at the level of the weighted average cost of capital used for the regulation agreement. The principle of fair remuneration, based

on objective market parameters, constitutes the guarantee that it will remain worthwhile to continue to invest in the Paris airport infrastructure over the long term.

During the previous ERAs, the weighted average cost of capital used was comparable and equivalent to the actual Groupe ADP rate due to the low proportion of international business. Since the full integration of TAV Airports in July 2017, followed by Airport International Group in April 2018, the Groupe ADP rate no longer faithfully reflects the risk inherent in the company's regulated business activities in Paris within the regulated scope. Therefore, for the purposes of the 2021-2025 ERA it will be necessary to estimate the weighted average cost within the limits of the regulated scope of Aéroports de Paris.

Obtained through objective market data and parameters applicable to comparable businesses, on the basis of long term historical trends, this weighted average cost of capital for the regulated scope is estimated, for the period 2021-2025, in terms of nominal central value after tax, at 5.6% (see Section 5.3 - Weighted average cost of capital).

### Financial performance for rate moderation

Despite the considerable increases in capital expenditure that are required to properly develop the platforms in the Paris region, the performance of Aéroports de Paris, based on a business model that creates value for all stakeholders, ensures that the company's policy of moderate rates is able to continue. Therefore, thanks to the adjusted-till system, Aéroports de Paris has not only been able to finance the investments necessary for the development of these platforms, but has also created a dynamic which will allow it to also finance some future capital expenditure.

The very moderate rate increases for air transport are also made possible by continued strict financial discipline.

During the period of the 2016-2020 ERA, keeping the commitments made in terms of cost control in a context of expanding air traffic led to the 2020 per passenger objective for the control of regulated costs to be revised from -10% to -15% in comparison to 2015 (vs. -8% initially). Combined with an increase in traffic, this financial discipline should enable the company to achieve a profitability objective or Return on Capital Employed (ROCE) of between 5.6 and 5.8% (vs. 5.4% initially)

for the regulated scope. This outperformance will be fully reinvested in the 2021-2025 ERA.

For the 2021-2025 ERA, Aéroports de Paris has once again opted for a determined and ambitious approach aiming to keep current expenditure firmly under control. Indeed, the proposal calls for an effort of almost €130 million on regulated costs by 2025, thus making it possible to limit the increase to 2.4% per annum over the period of the 2021-2025 ERA, to be compared to an underlying trend in the order of 4.2% per annum, against a backdrop of high inflation, dynamic air traffic and an ongoing expansion of the capacity of the Paris platforms. Expressed per passenger, and having removed the effect of inflation, (in constant euros), costs for the regulated scope, already lower for the period of the 2016-2020 ERA (between -10% and -15%) are expected to be further reduced by almost 10% over the period of the 2021-2025 ERA.

This very deliberate cost control policy will require the company to be even more demanding in terms of its purchasing policy by working specifically with the operational and functional teams to optimise the structure of the contracts and the level of requirements. In addition, there will be an effort to control payroll costs by not renewing a part of the retirements in functions undergoing transformation, while ensuring the ongoing transmission of skills that are vital for the operation of the airport platforms and meeting the needs of expanding functions. This approach will be accompanied by other measures aiming at containing growing payroll costs, as well as a continuous performance plan in every department of the company. (See Sections 5.4 and 5.5 – Operating costs and income in the regulated scope)

These savings will build on those already achieved in the 2016-2020 ERA to enable a real moderation of tariffs during the 2021-2025 ERA for users and enhance the competitiveness of the Paris platforms.

## Tariff moderation despite historically high levels of investment

With its financial performance based on a business model that creates value for all stakeholders, Groupe ADP proposes that its tariff moderation policy be continued in the upcoming 2021-2025 economic regulation agreement (see Section 3.1 – Tariff periods and fees subject to the cap).

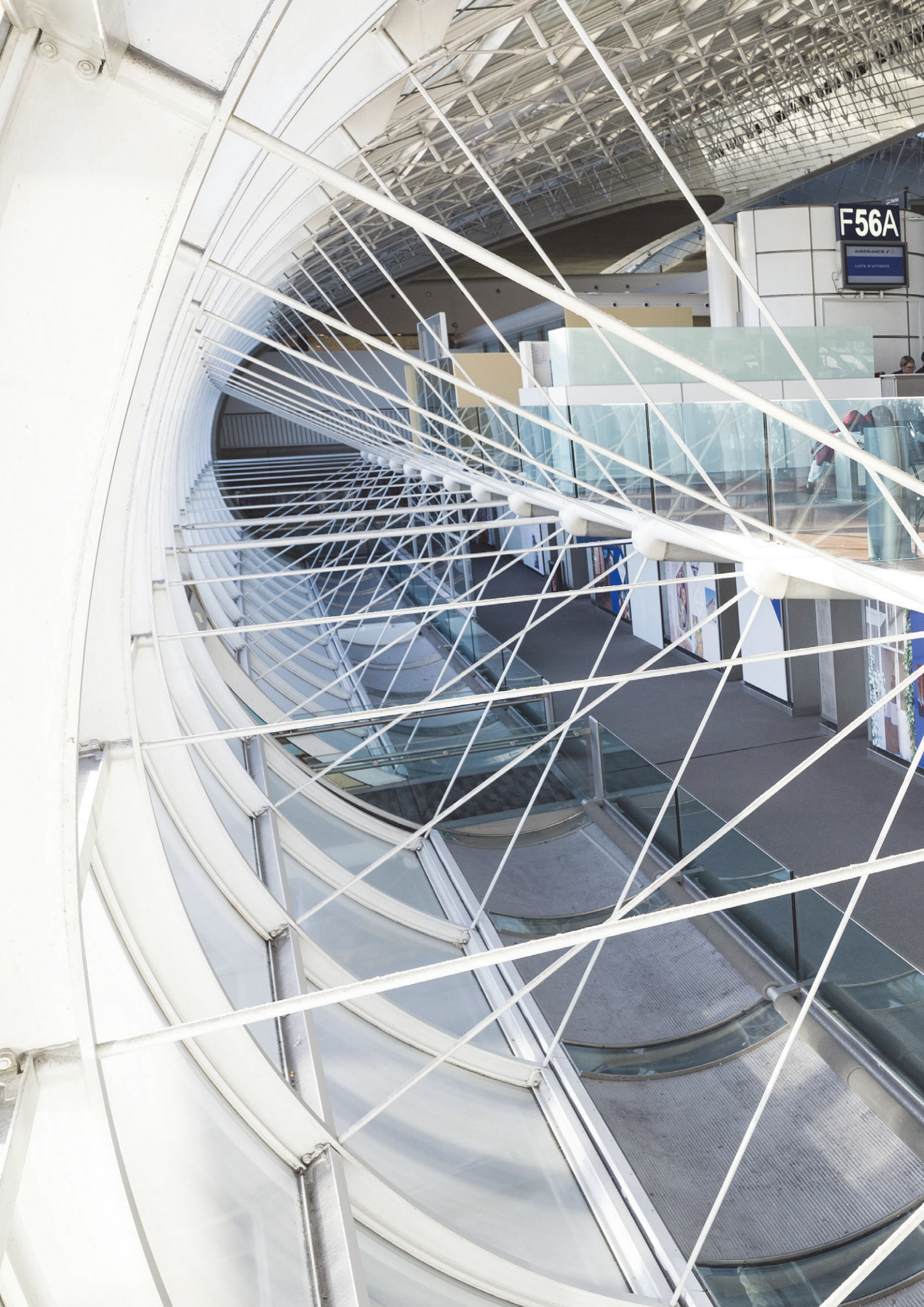
This policy would thus result in an annual change in fee tariffs equal to the level of inflation plus 1.35 points for the 2021-2025 period (see Section 3.2 – Proposed average rate change of fees subject to the cap).

This moderate tariff policy enables Aéroports de Paris to keep fees at a level which is equivalent to the average of comparable airports, or indeed at a lower level (London Heathrow and Frankfurt in particular). It also provides real visibility for users, especially the airlines, which do not appreciate having significant or unpredictable rates variances being imposed from one year to the next as a result of capital expenditure cycles (it is sometimes the case for other platforms in Europe). On the contrary, the amount of investment in the regulated scope, almost double that of the 2016-2020 ERA, is not expected to substantially alter the pattern of tariff evolution that Aéroports de Paris works to control in a context of high demand for investment by certain airlines.

In total, the company's performance means that it can self-finance the long term development operations that the Paris platforms need in order to be able to accommodate future traffic, while ensuring moderate tariff increases over the period of the 2021-2025 ERA and financing the operations that the airlines need in the short to medium term.







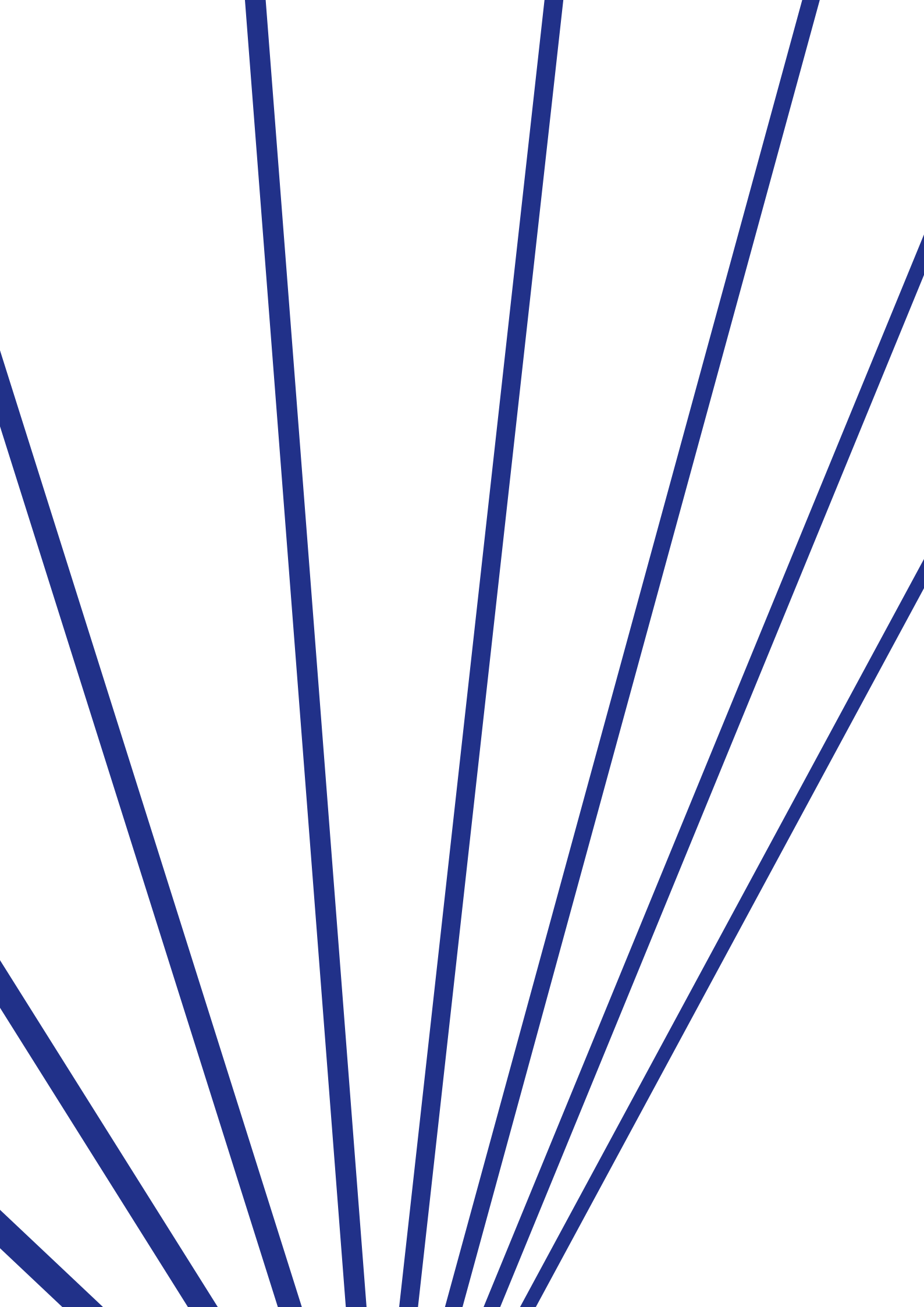
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LISTE D'ARTISTES



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01

# TRAFFIC AND CAPACITY

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## 1.1 TRAFFIC OUTLOOK

The traffic forecasts relate to the expected change in the number of passengers, number of air traffic movements (ATM) and landing weight over the 2021-2025 period.

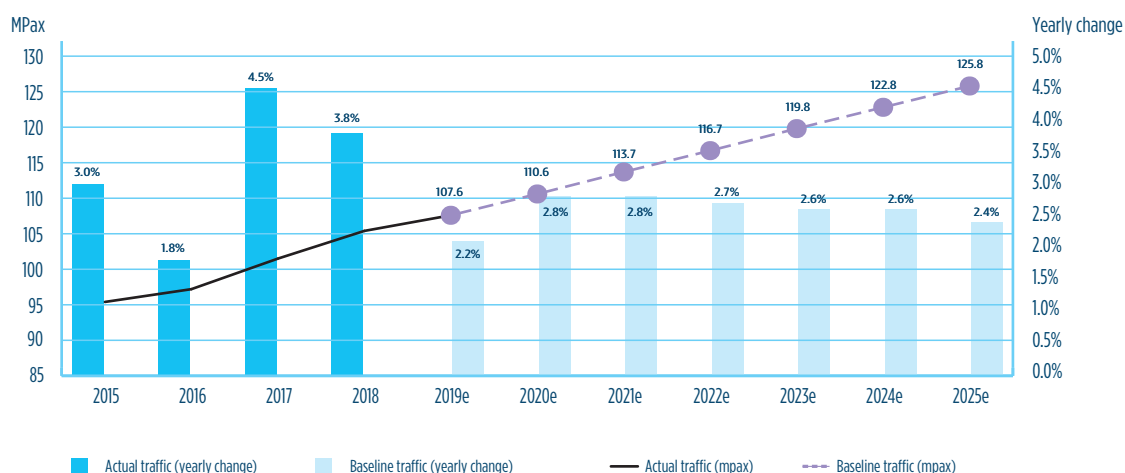
Over this period, the Aéroports de Paris proposal takes into account the outlook for:

- growth factors affecting traffic in regions of destination, in particular Gross Domestic Product (GDP) and the population of each region;
- the domestic market, taking into account the development of high-speed rail between 2016 and 2020.

These assumptions have led Aéroports de Paris to assume an average annual increase of 2.6% in passenger traffic over the 2016-2020 ERA period. This forecast is based on growth driven by international traffic and, to a lesser degree, by European traffic. Domestic traffic, still impacted by competition from high-speed rail, will experience significantly less growth than the other segments.

The share of connecting traffic, driven in part by domestic traffic, will be comparable to that of the 2016-2020 ERA period. The traffic forecast does not provide for a fundamental change in balance by type of airline compared with the current situation, apart from significant growth in low-cost airlines to the detriment of traditional airlines.

PASSENGER TRAFFIC – 2015 TO 2025E



The following table summarises average annual growth rates over the 2021-2025 period by segment:

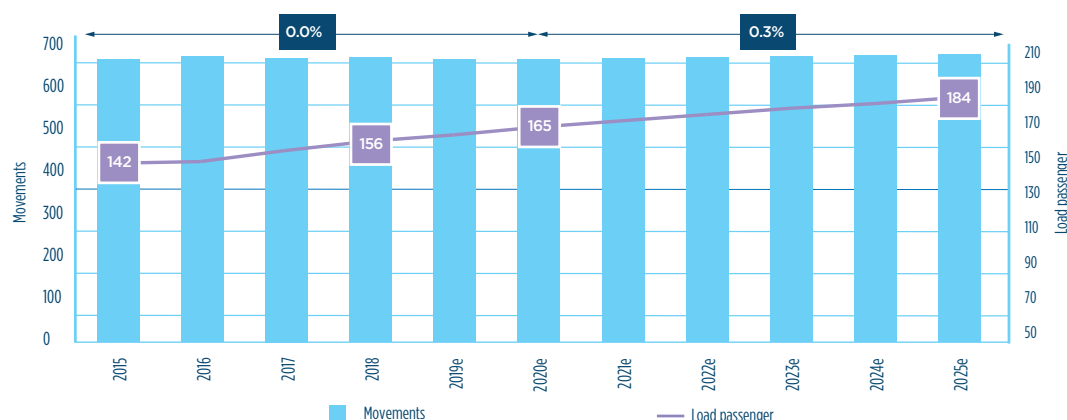
Passenger traffic	AAGR, 2021-2025 ERA
Domestic	0.6%
Schengen	2.2%
Other EU	2.8%
French overseas territories	3.2%
International	3.5%
<b>TOTAL</b>	<b>2.6%</b>

In terms of aircraft movements, in keeping with the vision of Aéroports de Paris over the 2016-2020 period, a traffic growth assumption was formulated for average passenger load, in line with the trend of the past few years:

◇ at Paris-Orly, the load factor is expected to increase from 145 passengers per movement (excluding cargo) in 2018 to 168 in 2025. The increase in load factor observed over the 2016-2020 period has been much faster than expected: while the assumption made under 2016-2020 ERA for Paris-Orly was 138.5 passengers per movement in 2020, this threshold was exceeded as early as 2017. The combined

effect of the increase in load factor and the size of the aircraft will enable Paris-Orly<sup>1</sup> to grow while complying with the limitation of 250,000 annual movements;

◇ at Paris-Charles de Gaulle, further growth of aircraft size on all routes will continue, although on a more limited scale than forecasted under the 2016-2020 ERA. As a result, the load factor is expected to increase from 160 passengers per movement (excluding cargo) in 2018 to 192 passengers in 2025. While the forecasted load factor under the 2016-2020 ERA was 169 passengers per movement in 2020, the forecast for 2021-2025 ERA is 171 passengers.



The average annual growth in the number of movements is estimated at +0.33% over the 2021-2025 ERA. After a slight drop in 2019, the number of movements will pick up again in 2020. Total landing weight will also increase as aircraft get larger, and the forecast over the 2021-2025 ERA period shows an average annual increase of 2.1%.

After several years of decline, business traffic at Paris-Le Bourget has grown since 2016. In addition, while the main type of aircraft at Bourget has evolved by getting larger, their maximum take-off weight remains under 50 tonnes. Over the 2021-2025 period, Aéroports de Paris expects average annual growth of 1.1% in the number of movements.

<sup>1</sup> As a reminder, for Aéroports de Paris as a whole, the load factor was 76.1% in 2010. In 2018, it stood at 85.6%.

## 1.2 CHANGE IN CAPACITY

To support the continued rise in traffic, Aéroports de Paris has for many years conducted a strategy of optimisation and densification of its existing infrastructure. The “one roof” (joining terminals) concept was a key feature of the investment policy under the 2016-2020 ERA. This concept made it possible to link up the existing infrastructures to improve their operational performance and increase the number of passengers being handled at both Paris-Charles de Gaulle and Paris-Orly. It also postponed the need to build new terminals.

For the 2021-2025 period, Aéroports de Paris will continue this optimisation policy in order to ensure that capacity meets traffic demands; thus taking

full advantage of the existing infrastructures. Beyond 2025, this strategy may no longer be tenable as the densification of existing terminals will no longer be able to deal with the expected growth in traffic. From the first year of the next ERA, major structural operations should be initiated to develop platforms after 2025.

The densification and extension projects for the 2021-2025 period contribute to unify runway (airside) and terminal (landside) capacities and are scaled to the needs of airlines that operate from Paris-Charles de Gaulle and Paris-Orly. These works prefigure the subsequent development of our platforms.

### Change in the capacity of the Paris-Charles de Gaulle terminals

Following the reopening of terminal 2B in 2020, total capacity of Paris-Charles de Gaulle terminals will reach around 80 million passengers. Through targeted renovation and optimisation projects and the implementation of new technologies, capacity needs can be met until the end of the ERA 2021-2025 without opening new terminals.

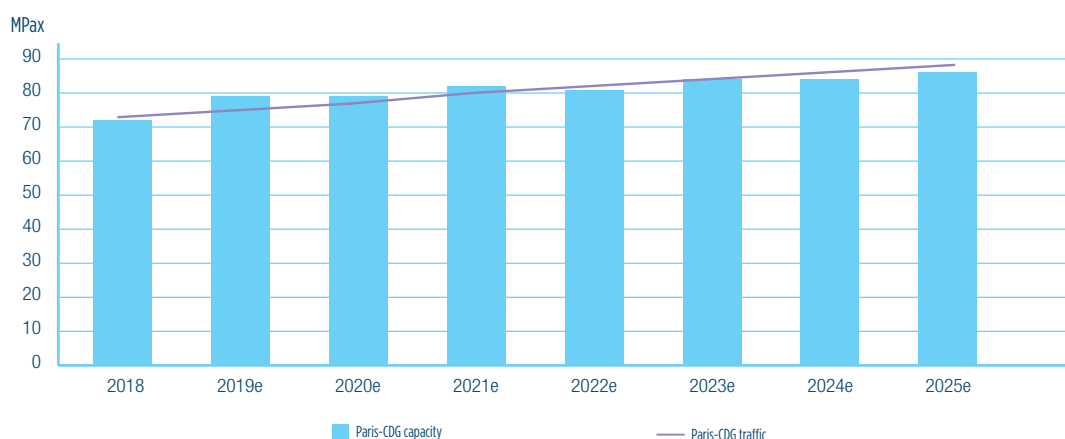
Aéroports de Paris proposes to adapt infrastructures to allow the main airlines and major alliances that operate from Paris-Charles de Gaulle and Paris-Orly to develop as much as possible within the terminals they occupy today. Either by reinforcing existing lines or opening new ones, particularly at peak times and for wide body aircrafts.

This optimisation strategy will result in:

- ◇ optimisation work on terminals 2E and 2F to support the growth of the Skyteam Alliance over the 2021-2025 period;
- ◇ modernisation and extension work on terminal 2A, upgrading the baggage handling system in terminal 2C and refurbishment of terminal 2D;
- ◇ the continuation of the international satellites junction on terminal 1, with a new junction building between satellites 1 and 7, and the reorganisation of the satellites dedicated to passengers from the Schengen area;
- ◇ densification of terminal 3.

After the delivery of these facilities, the capacity of the Paris-Charles de Gaulle terminals is estimated at nearly 86 million passengers in 2025 (and 92 million full year effect).

TRAFFIC/CAPACITY MATCH – PARIS-CHARLES DE GAULLE



The capacity assessment, presented here nominally, reflects a balance between:

- ◇ airside capacity, defined as the number of aircraft stands and their yield, driven by the average size of aircraft and the frequency of associated aircraft; and

- ◇ landside capacity, whose yield can be improved through the optimisation of passenger flows and the technological upgrade of the check-in, baggage-handling and boarding systems.

This assessment does not take into account any mitigation of the impact of traffic peaks (due to the extension of the daily high-activity period), that would increase annual capacity on a like-for-like basis (same facilities and aircraft sizes).

The various investments planned in the 2021-2025 ERA are intended to improve performance in terms of airside capacity:

- ◇ by creating new aircraft stands (creation of parking stands, in particular in the West dock of Hall K in terminal 2E and the Golf stands area in terminal 2A);
- ◇ by improving the yield of existing stands by optimising the facilities (joining the international satellites of terminal 1);

- ◇ by achieving a better match between existing landside and airside capacity (construction of remote gates and deploying more effective equipment through digitalisation).

Beyond 2025, the Paris-Charles de Gaulle master plan assumes the phased construction of a terminal 4 whose final capacity could eventually reach 35 to 40 million additional passengers.

## Change in the capacity of Paris-Orly

The major investments made at Paris-Orly over the past ten years have enabled traffic growth to be optimally supported, the South and West terminals to be linked and to adapt to the Schengen/non-Schengen passenger flows in the terminals to achieve a capacity of around 33 million passengers.

To meet the requirements associated with the growth in traffic, the infrastructure improvements must be supported through the creation of additional capacity. To do this, Aéroports de Paris proposes:

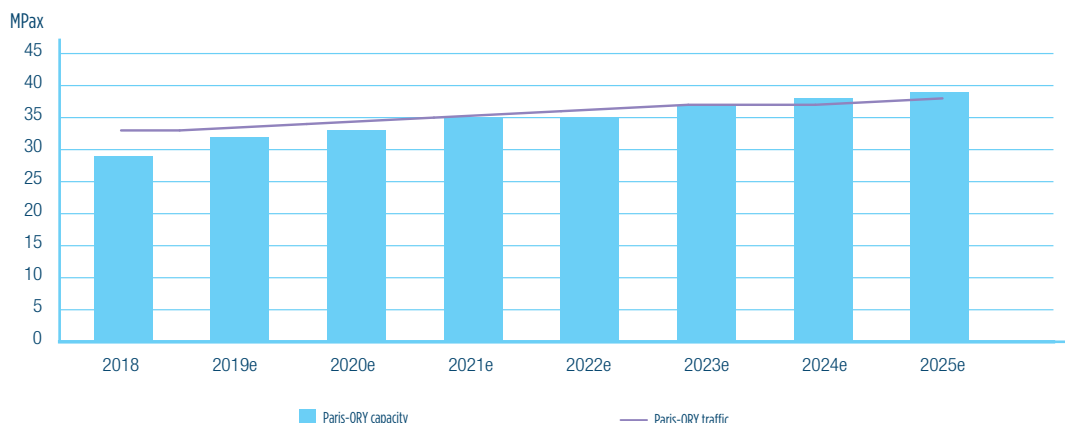
- ◇ the creation of boarding capacity on the Quebec and November remote stands areas;

- ◇ the creation of a junction between Hall 1 and Hall 2, based on the “one roof” concept already being pursued;

- ◇ the optimisation of Orly 4.

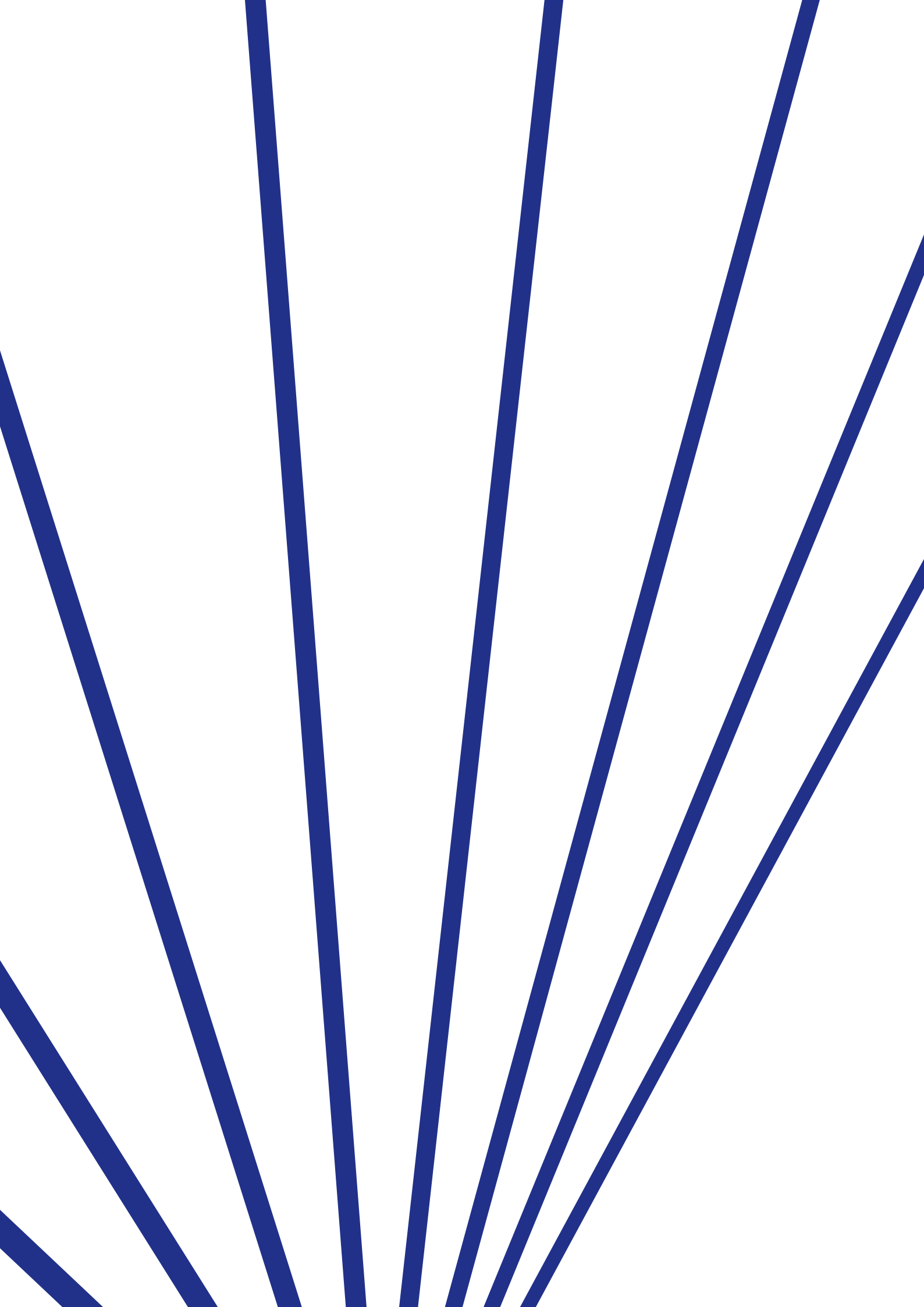
After completion of these facilities, the capacity of the Paris-Orly terminals will be around 39 million passengers in 2025 (full year effect).

TRAFFIC/CAPACITY MATCH - PARIS-ORLY



The runway system of the Paris-Orly airport is capable of handling the expected traffic growth. The forecasts are compatible with the regulatory cap of 250,000 movements allocated per year up to 2025.







02

## INVESTMENT PROGRAMME

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## 2.1 INVESTMENT PROGRAMME OVERVIEW

### Summary of the investment plan

Continual alignment of airport capacity with growth in traffic, as described in the first part, requires pursuit of a strategy with short-, medium- and long-term goals. For the next Economic Regulation Agreement, an investment plan of around €6.0 billion, twice the size of the previous plan, will be implemented out over the 2021-2025 period. This plan is organised around four priorities.

- 1 Emphasis on effective maintenance practices for the least recent parts of airport infrastructure

In addition to the investments required due to regulatory changes, especially in terms of rainwater management and public safety, Aéroports de Paris will continue to invest heavily to maintain its buildings. The implementation of 2021-2025 ERA will contain the deterioration of the infrastructures and unify the overall condition of Paris-Orly and Paris-Charles de Gaulle.

- 2 Continuous efforts to support the growth in traffic

Due to the ongoing growth in traffic, short-, medium- and long-term master plans must be implemented in order to:

- ◆ **optimise the capacities of existing structures.** At Paris-Charles de Gaulle, the 2021-2025 ERA calls for the densification of the "hub" through the optimisation of terminals 2E and 2F, modernisation and extension of terminal 2A, and the restructuring of terminal 2D, continuing to connect terminal 1's international satellites and the densification of terminal 3. At Paris-Orly, the projects will include the creation of Quebec areas aircraft stands, the junction between Halls 1 and 2, added capacity at Orly 4 and the reconfiguration of airside capacities on the west side of the airport;
- ◆ **start construction of terminal 4**, a source of long-term capacity, by launching preparatory works: site preparation, starting construction

of the building, civil engineering works for passenger trains in airside areas, construction of northern aircraft access areas.

- 3 Guaranteeing accessibility and efficient traffic flow

Aéroports de Paris has made improving traffic flows one of the main objectives of the 2021-2025 ERA, in the following two ways:

- ◆ **increasing capacity for road and rail access:** at Paris-Charles de Gaulle, by increasing capacity for road access, to the west, east and around terminal 2, parking PR a multi-storey car park; at Paris-Orly, building a drop-off esplanade to reduce congestion on access roads, alleviating the congestion points on the roads leading to the airport and building a station to accommodate the Grand Paris subway line 14.
- ◆ **improving passenger traffic flow using technology and biometrics within terminals:** digitising the passenger journey through biometrics and facial recognition, automated check-in and boarding, passenger apps dedicated to helping them find their way through the airport, real-time passenger flow management, etc.

- 4 Working to promote more sustainable development

Aéroports de Paris has set an objective to achieve carbon neutrality in 2030 and has positioned itself as a services integrator allowing its partners to contribute to achieving this objective through the availability of electric vehicle recharging terminals, the introduction of meters, the use of geothermal energy, etc.

Other investments contribute to improving the quality of service, the reliability of airport processes, especially baggage handling equipment, and developing airport real estate and information systems.

### Key data from the ERA 2021-2025 investment programme

#### // BREAKDOWN OF THE INVESTMENT PROGRAMME OF THE REGULATED SCOPE BY MAIN INVESTMENT CATEGORIES

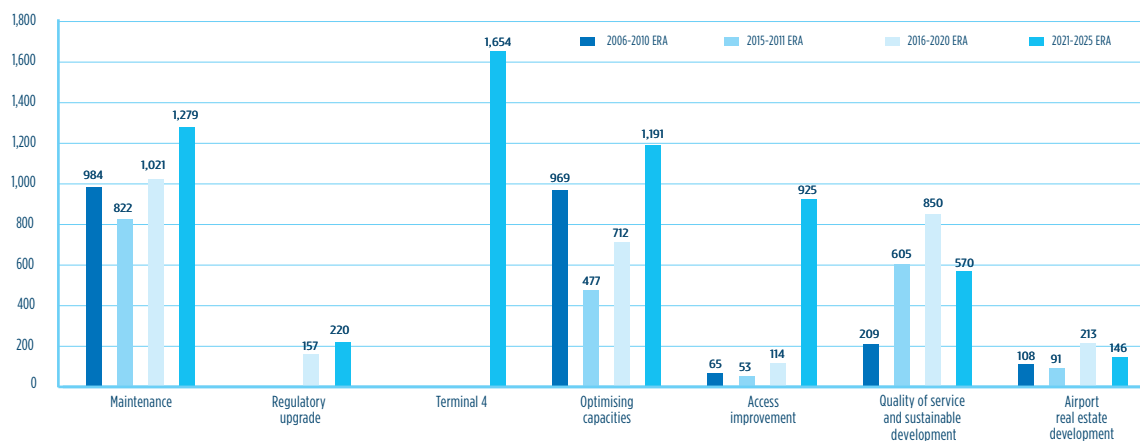
(IN 2019 MILLIONS OF EUROS)

In 2019 millions of euros - including project costs	2021e	2022e	2023e	2024e	2025e	Total 2021e-2025e
<b>Maintenance and regulatory upgrades</b>	303	292	308	293	303	1,499
Terminal 4	80	246	343	433	552	1,654
Capacities at Paris-Charles de Gaulle	153	176	127	136	112	704
Capacities at Paris-Orly	103	99	143	97	22	464
Capacities at Paris-Le Bourget	3	5	5	5	5	23
Airport access improvement	129	227	176	217	176	925
Smart Airport	32	40	41	37	31	181
Quality of service and sustainable development	49	54	68	50	29	250
Airport real estate	69	41	18	12	6	146
Other investments	31	25	19	31	33	139
<b>TOTAL</b>	<b>952</b>	<b>1,205</b>	<b>1,248</b>	<b>1,311</b>	<b>1,269</b>	<b>5,985</b>

NB: The sequencing by year is provided for indicative purposes.

// CHANGES IN THE INVESTMENT PROGRAMME OF AÉROPORTS DE PARIS SA BETWEEN THE 2006-2010, 2011-2015, 2016-2020 AND 2021-2025 ERAS, BY INVESTMENT CATEGORY <sup>1</sup> - REGULATED SCOPE

(IN 2019 MILLIONS OF EUROS)



02

## Costing and implementation methods

## Developing an investment programme

The investment programme of the 2021-2025 ERA was defined after an extensive survey of the needs and the prioritisation of operations. The cost of each project selected has been optimised at the following stages:

- 1 projects costed by internal design and engineering consultants based on the unit costs of the most competitive projects completed;
- 2 benchmarking with comparable projects at other competitor airports;
- 3 a reduction of unit costs on some projects, considered to be ambitious and up to the limit of 10% (with budget restrictions imposed);
- 4 continued pressure on study costs, with the target of holding the cost of studies over the 2021-2025 ERA period at a level comparable with the previous ERA, despite the increase in the workload of the internal engineering consultants due to the stepped-up investment plan.

## Implementation methods for the investment plan

Four levers enable the engineering and monitoring teams of Aéroports de Paris to handle the growth in investments under the 2021-2025 ERA:

- 1 visibility on the main investments in the 2021-2025 ERA before it takes effect, so as to evenly distribute the workload involving the studies. Studies for some projects to be completed at the start of the 2021-2025 ERA and agreed upon by the airport community have been or will be initiated during the last two years of the 2016-2020 ERA (the West and East access at Paris-Charles de Gaulle for example). By working upstream, some operations will be completed in the first year of the 2021-2025 ERA, based on the studies already conducted;
- 2 targeted additional recruitment for strategic jobs in order to implement the new methods for carrying out projects. The costs associated with these employees will be recognised primarily as assets and, as a result, will not weigh on the trajectory of operating expenses;
- 3 a redesign of the processes, in particular through digitisation, and continued efforts to improve the productivity of the entities responsible for engineering;
- 4 increased use of (i) design-implementation, for example for multi-storey car parks, transport systems and luggage sorter systems, and (ii) subcontracting to deal with peaks of activity on projects having little interaction with airport operations.

## ◆ PRICES IN AN INFLATIONARY CONTEXT

The 2021-2025 investment plan will be carried out against the backdrop of inflationary pressure in the construction and public works sector, which exists today and is expected to increase.

The various price indices in the construction and public works sector have risen sharply since 2016. For example, the index of the average cost of construction rose by 4.4% between August 2016 and August 2018. The index for framework and metalwork rose by 9% in 2017.

The ongoing Grand Paris project, which represents close to €35 billion plus an additional €4 billion devoted to improving existing rail networks, in large part explains this price inflation. Consequently, there is a market pressure on both employees and equipment (e.g. tunnel boring machines, cranes) and less ability for builders to simultaneously bid for multiple public contracts, causing prices to rise.

This pressure will weigh on project prices during the next two ERAs, since the implementation of the Grand Paris project will stretch from 2024 to 2030.

<sup>1</sup> The data concerning the 2006-2010 and 2011-2015 investment programmes by topic is given as an indication only.

## 2.2 INVESTMENTS IN MAINTENANCE AND REGULATORY COMPLIANCE

### Investment in regulatory compliance

#### // BREAKDOWN OF THE PROGRAMME BY YEAR

<i>In 2019 millions of euros – including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Regulatory upgrade</b>						
Regulatory upgrade - Paris-Charles de Gaulle investments	49	40	30	8	8	135
Regulatory upgrade - Paris-Orly investments	18	8	12	12	7	57
Regulatory upgrade - Paris-Le Bourget investments	5	1	10	1	0	17
Regulatory upgrade - Airport real estate investments	3	2	2	2	2	11
<b>TOTAL REGULATORY UPGRADES</b>	<b>75</b>	<b>51</b>	<b>54</b>	<b>23</b>	<b>17</b>	<b>220</b>

The main regulatory upgrades planned over the 2021-2025 ERA relate to the following:

◆ **upgrade projects for new public safety regulations at Paris-Charles de Gaulle and Paris-Orly.** Several measures will strengthen protection of infrastructure, individuals and computer systems against the risk of terrorist attacks:

- ◆ protecting both buildings, by keeping vehicles away from them, and facades to meet regulatory requirements and those relating to risk analyses in terms of safety;
- ◆ increased video surveillance through improved technology and covering unprotected areas, including a portion which falls within the scope of new regulations on the handling of unclaimed baggage;
- ◆ improved protection of information systems.

◆ **upgrade projects for rainwater treatment systems at Paris-Charles de Gaulle.** Two projects involve the treatment and diversion of rainwater towards the Seine and Marne rivers:

- ◆ the “Canalisation Marne” project, through which rainwater is discharged from Paris-Charles de Gaulle into the Marne river, i.e. around ten kilometres of underground pipes. This project concerns the second phase of the “Rainwater” project launched under the 2016-2020 ERA;
- ◆ the “Bassin versant Seine” project intended to increase the current storage capacity of rainwater discharged into the Seine river.

◆ **smoke extraction project for the baggage sorting systems, in order to reduce the fire risk in terminal 2E.** Changes in regulations require strengthened fire safety through installing mechanical smoke extraction systems in the West gallery of the East baggage sorter (TBE).

### Maintenance expenditures

#### // BREAKDOWN OF THE PROGRAMME BY YEAR

<i>In 2019 millions of euros – including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Maintenance</b>						
Maintenance - Paris-Charles de Gaulle investments	104	118	133	148	161	664
Maintenance - Paris-Orly investments	95	95	95	96	96	477
Maintenance - Computer networks and systems	17	17	17	19	18	88
Maintenance - Paris-Le Bourget investments	8	7	6	4	8	33
Maintenance - Airport real estate investments	4	4	3	3	3	17
<b>TOTAL MAINTENANCE</b>	<b>228</b>	<b>241</b>	<b>254</b>	<b>270</b>	<b>286</b>	<b>1,279</b>



Maintaining facilities in operating condition is required for both safety and efficiency. It also contributes to the quality of service provided to airport users. The facilities must be constantly monitored and needs prioritised using the “TB *Maestro*” methodology.

Stabilisation of the ageing index of airport facilities at Paris-Charles de Gaulle and a reduction of the ageing index were achieved at Paris-Orly over the course of ERA 2016-2020. The challenge faced during the 2021-2025 ERA consists in dealing with the ageing of the infrastructure, in particular related to the early signs of deterioration of terminals 2E and 2F at Paris-Charles de Gaulle.

Maintenance for the buildings planned under the 2021-2025 ERA should make it possible to obtain, by the end of the ERA, a rate of investment that matches the rate of deterioration of the facilities. This choice is based on four principles:

- ◆ the convergence of both airports toward an identical condition at the end of the 2021-2025 ERA;
- ◆ the improvement of Paris-Orly's condition to reduce its ageing;
- ◆ stepped up efforts at Paris-Charles de Gaulle due to the early stages of deterioration of terminals 2E and 2F;
- ◆ inclusion of Paris-Le Bourget in these efforts.

02

#### ◆ TB MAESTRO METHODOLOGY

Originating from Anglo-Saxon countries and used by major infrastructure managers (local authorities, hospitals, universities, airports, etc.), the methodologies for managing assets assess the condition of the facilities and monitor any changes.

The airports of Paris-Charles de Gaulle (since 2009), Paris-Orly (2012) and Paris-Le Bourget (2014) use the “TB *Maestro*” methodology. This system is based on the regular assessment of the assets which are rated using various materiality criteria, making it possible through long-term forecast to prioritise investment choices.

The main indicator used is the ageing condition index. It is defined as the amount required for asset's maintenance (amount of investment required over five years to stabilise or improve the buildings) divided by the current replacement value (infrastructure construction and fitting-out costs).

The main maintenance operations planned for the 2021-2025 ERA include:

- ◆ **airport apron and taxi way refurbishment:** at Paris-Charles de Gaulle, refurbishment of runway 1 and a portion of the apron of the two parallel northern roadways, refurbishment of the upper layer of runway 4 and renovation of multiple roadways. At Paris-Orly, the refurbishment of runway 2 and aircraft stands;
- ◆ **replacing passenger boarding bridges** in several Paris-Charles de Gaulle terminals: further replacement of “pre-airbridges” and airbridges of terminal 1 satellites, replacing the airbridges in terminals 2C and 2F to ensure their performance and operability;
- ◆ **refurbishment of the roads, car parks and utilities** (generation and distribution of energy, water cycle). Renovation of the car park in terminals 2C and 2D, the secondary road network (green network), and of the fluid-carrying pipes at Paris-Charles de Gaulle and all the car parks linked to Paris-Orly;
- ◆ **densification of renovation operations on the rail station's building facilities in terminal 2 and terminals 2E and 2F.** The moving walkways and the oldest and most used elevators, electrical facilities and air treatment systems;
- ◆ **renovation of terminal 2D:** the expenditure component of the terminal 2D renovation which covers the renovation of the support systems (electricity, air conditioning);

- ◆ **renovation of terminal 2C's baggage handling system** to ensure more reliability;
- ◆ **renovation of power generators, lighting and indoor climate control in the various Paris-Charles de Gaulle terminals** (terminals 1, 3, 2AC, 2F and more periodically in terminal 2E);
- ◆ **monitoring and renovation, where appropriate, of engineering structures at Paris-Orly**, in particular road bridges providing access to the airport;
- ◆ **renovation of the Orly 4 facade (former South terminal).** Paris-Orly's emblematic facade, dating from 1962, is 500 metres long and 15 metres high, covering a total area of 7,500 sq.m. It shows substantial signs of ageing;
- ◆ **renovation of building at Paris-Le Bourget;**
- ◆ **renovation of the runways of Paris regional general aviation aerodromes**, particularly in Pontoise, and Toussus-Le Noble.

The other maintenance expenditures (current budgets) are intended to deal with the condition of the aerodromes (renovation of walls and surfaces, replacement of equipment, etc.), aeronautical infrastructure and aircraft parking areas, accesses, car parks and networks, in addition to the maintenance of IT systems and networks to keep them in good operating condition (periodic renewal and heavy maintenance).

## 2.3 TERMINAL 4 PREPARATORY WORK

### Breakdown of the 2021-2025 ERA Programme per year

<i>In 2019 millions of euros – including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Terminal 4</b>						
Construction of buildings (processor and North-East pier)	0	57	137	170	238	602
Engineering works for passenger rail transportation	19	66	71	119	156	431
Site preparation and construction of aircraft stands and taxiways	40	109	98	88	84	419
Energy (including geothermal) and water networks	21	0	21	37	31	110
Baggage handling system	0	14	16	19	43	92
<b>TOTAL TERMINAL 4</b>	<b>80</b>	<b>246</b>	<b>343</b>	<b>433</b>	<b>552</b>	<b>1,654</b>

The construction of terminal 4 aims to support the growth of traffic expected at Paris-Charles de Gaulle airport. The first phase of terminal 4 will open to the public during the 2026-2030 ERA. Upon completion, the terminal's total capacity will be between 35 and 40 Mpx/year.

The investments undertaken for terminal 4 during the 2021-2025 ERA aim to prepare and enable the partial opening of the terminal to passengers during the 2026-2030 ERA. However, some infrastructure (mainly aircraft parking stands) will be partially opened during the 2021-2025 period.

#### LOCATION OF FUTURE TERMINAL 4 AT THE PARIS-CHARLES DE GAULLE AIRPORT



### General description of the terminal 4 project

The terminal 4 project aims to responsibly and sustainably meet the forecast growth in air traffic to and from Paris over the next 20 years. In addition, the terminal must meet the challenges related to quality of service, improving passenger traffic flow and access to Paris-Charles de Gaulle airport.

Given the expected under-capacity at Paris-Charles de Gaulle's terminal infrastructure, only the commissioning of additional capacity, with road access separate from that of existing terminals, will allow to keep pace with traffic growth, which is expected to increase between +2% and +3%

over the next 20 years. Aéroports de Paris has defined its objectives as follows:

- ◆ **first objective:** build a terminal that accommodates additional passengers at Paris regional airports, expected between 35 to 40 million by 2037;
- ◆ **second objective:** address growing competition by providing airlines with facilities that improve their operational performance and productivity;
- ◆ **third objective:** ensure that passengers receive high quality service, with an emphasis on innovation, new services, environmental performance and reaffirming the importance of improving the passenger experience;
- ◆ **fourth objective:** offer a good working environment to all airport employees;
- ◆ **fifth objective:** ensure uncongested access to the terminal *via* road networks and public transport;
- ◆ **sixth objective:** reinforce the role of the Paris-Charles de Gaulle airport as a driver of both economic and social development in the Paris region.

In addition to these six objectives, Aéroports de Paris is committed to being a model of corporate social responsibility. Its ambition in this regard will reflect in all aspects of the project. Aéroports de Paris believes that the airport experience should contribute to the reputation of Paris as a leading world capital and reflect its values of excellence, sustainability and inclusion. Through the terminal 4 construction project, Aéroports de Paris has established itself as a responsible player, able to contribute to both national and local growth while retaining strict control over its impact.

## The project's land area

The project's area covers 167 hectares in the centre of the airport. It is bordered by taxiways to the East, West and North and by the Roissy pole district to the South. The high-speed train (TGV) that provides service to the Paris-Charles de Gaulle airport passes through the area in a north-south direction.

Most of the area is currently used for aviation activities. It includes:

- ◆ terminal 3 (3.3 hectares of buildings and 8 hectares of aeronautical areas with a capacity of four million passengers per year);
- ◆ aircraft parking areas in the outlying part of the terminal (15.5 hectares);
- ◆ various facilities to be moved by 2028 (heat, cold and power production plant, car park, garage-workshop and CDGVal maintenance; long-distance bus station; Air France administrative building);

The area that is currently unpaved covers 90 hectares, i.e. 54% of the total surface area.

## Composition of the project

The key characteristic of the terminal 4 project involves the construction of a building ultimately able to accommodate around 30-40 wide-bodied aircraft and aircraft stands for 25 mid-size carriers or aircraft stands for around 75-90 mid-size carriers and 6 wide-bodied aircraft. The estimated floor area of future terminal 4 is 650,000 sq. m. (floor area) excluding baggage processing areas.

The completed project will include all of the following:

- ◆ airport buildings: terminal, baggage sorting and boarding piers;

- ◆ aircraft areas, taxiways, including covering the TGV railway line and the service roads in the restricted area;
- ◆ an internal road network from the West and East accesses;
- ◆ public interface system in the terminal: contact parking, esplanade or parvis of terminal 4;
- ◆ a multimodal transport hub, its interfaces with existing or future public transport including the Grand Paris metro Line 17 station, a bus station and the relocation of CDGVal's current garage-workshop;
- ◆ new internal public transport at the airport (guided transport) linking the outer car parks to the terminals;
- ◆ other railway transport links in the security areas linking terminal 2 to terminal 4 and beyond up to terminal 1 and an automated baggage handling system and tunnel infrastructure;
- ◆ making the various networks of future terminal 4 and the forecourt area viable, utilities supply and evacuation systems for the boarding piers;
- ◆ making hydrant refuelling readily available at all aircraft stands;
- ◆ relocation of the heat, cold and power production plant onto the site of the project and geothermal deep drilling;
- ◆ redesigning to ensure taxiways access to the future terminal including the creation of a North-East "taxiway perimeter" (aircraft by-pass area) and de-icing areas.

At this stage of the project, the configuration of the building(s) and taxiways has yet to be approved. Technical discussions to determine the best positioning are ongoing, with Government agencies (particularly those dealing with air navigation and civil aviation safety) and airlines. Given this progress, a final plan for the project cannot be presented.

## Connecting the new terminal to the rest of the airport

### TERMINAL 4 LOOKS OUT ONTO THE AIRPORT

One of the project's biggest challenges will be to gradually improve its connectivity with the airport throughout its construction. This will be accomplished by restricting private car access, facilitating passenger movements and guaranteeing optimal connection times between the various points of interest.

The internal road network between terminals is currently at full capacity on the West Side. The construction of terminal 4 will transform the airport's physical aspect and passenger journeys. Located to the East, it will have access to the airport's passenger network and an internal secondary network in order to rebalance to all internal traffic flows.

In the airside area, the challenge is to guarantee optimal connection times between terminal 4 and existing terminals. For this reason, some connection paths will be equipped with automatic "people mover" transport systems (whose operating principle will be similar to the LISA line that now links piers L and M in terminal 2E). The connection paths, which is around 3 kilometres long, will connect terminal 4 and terminal 2 facilities in six to nine minutes. This system will then be extended up to terminal 1.

In the public area, more parking will gradually be made available at the airport's two entrances throughout the construction of the future terminal. A new public transport loop will also be made available. Passengers will be able to park upon arrival at Paris-Charles de Gaulle

and access an automatic, high service-quality, and quick “people mover” *internal* transport system (with an operating principle similar to that of CDGVal). Terminal access times will be optimised and not affected by traffic conditions.

#### TERMINAL 4 - VITAL TO THE AIRPORT CITY AND CONNECTED TO THE REST OF THE AIRPORT

The airport’s accessibility from Paris and the region as a whole will also be reassessed as part of the terminal 4 project. There are currently two multimodal transport hubs at the Paris-Charles de Gaulle airport, served by the RER (Regional Express Network): the Roissypole (CDG1) station and CDG2 station, where the CDG Express will also go. The introduction of a future Line 17 station in terminal 4 prefigures the new multimodal transport hub. terminal 4 will be a multimodal transport hub, accessible from the Roissypole and Line 17 stations (by 2030).

The terminal will be linked to external road access by new roads that supplement the internal network. When the planned Paris region ring road is completed, the airport will have an additional point of access. An estimated 40% of the passengers will come through the East entrance, thus alleviating the airport’s West entrance.

Lastly, terminal 4 will include new lines providing internal access to the airport. The terminal 4 project’s goal is to better interconnect Paris-Charles de Gaulle terminals, in order to facilitate the movement of passengers, baggage and employees between the various areas that make up the airport.

These various projects to improve access to the Paris-Charles de Gaulle airport, from which terminal 4 will benefit, are detailed below under the heading “Access and car park investments”.

#### Investment undertaken during the 2021-2025 ERA

During the 2021-2025 ERA, capital expenditures undertaken for terminal 4 amount to €1,654 million (excluding redesigning and improving access included in a separate capital expenditures budget). These works include:

- ◆ the majority of the preparatory work on terminal 4’s land plot and covering TGV tracks;
- ◆ the first phase of construction of the main processor and boarding lounges, including a baggage sorting system;
- ◆ the link between future terminal 4 and other terminals to move passengers throughout the airport. For this purpose, civil engineering work conducted by Airport People Movers in the public and restricted areas will also be started;
- ◆ a portion of the taxiways and North aircraft stands;
- ◆ energy works (construction of a heat-cold-electric power production plant with geothermal system) and water networks.



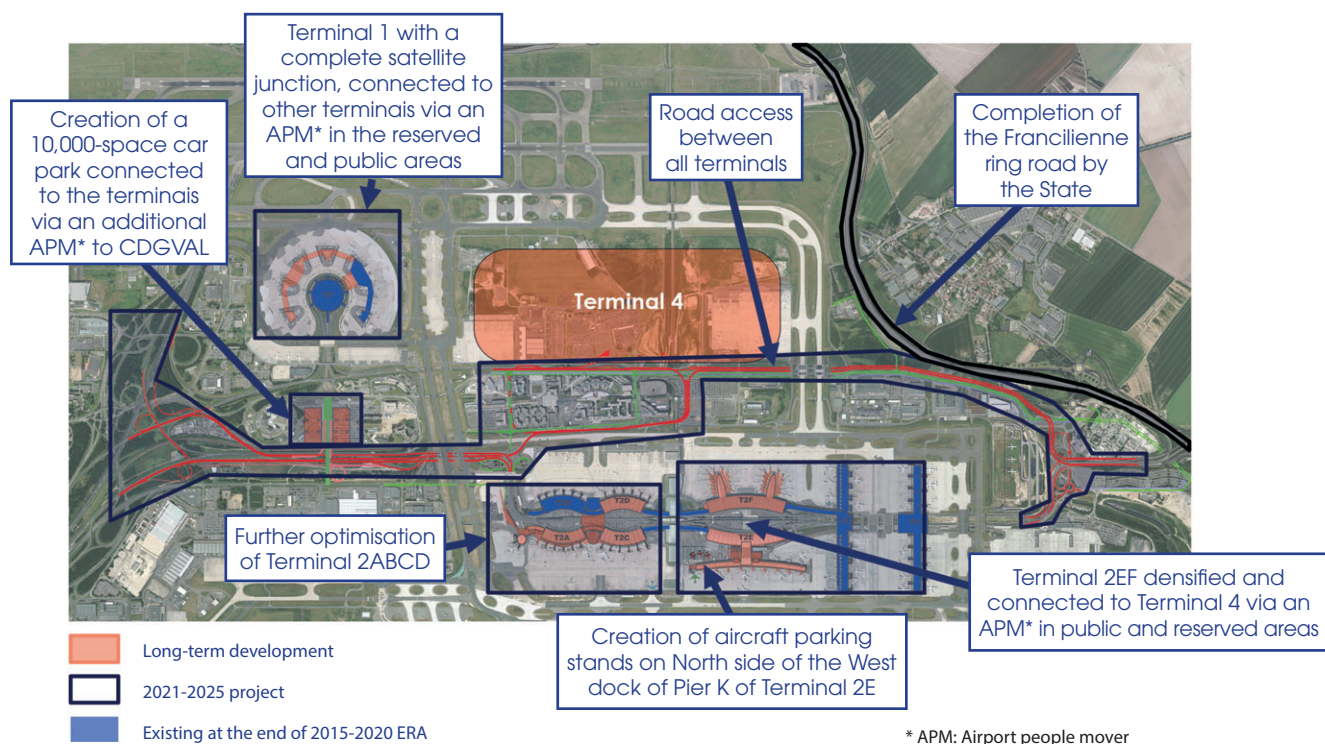
## 2.4 PARIS-CHARLES DE GAULLE CAPACITY INVESTMENTS

### // BREAKDOWN OF THE 2021-2025 ERA PROGRAMME PER YEAR

02

<i>In 2019 millions of euros - including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Paris-Charles de Gaulle capacity investments</b>						
T2EF - Hub densification	51	57	48	34	31	221
T2A - Creation of a boarding lounge and remote areas	22	24	27	23	13	109
T1 - Joining satellites 1-7 and reconfiguration of central body	19	12	15	23	15	84
T2D - Restructuring	2	2	2	34	40	80
North East taxiway perimeter	20	55	0	0	0	75
Operational base (APOC)	11	12	18	10	0	51
Other Paris-Charles de Gaulle capacity projects	13	6	6	6	9	40
Taxiway and remote area capacities	12	5	6	4	4	31
T3 - Densification	3	3	5	2	0	13
<b>TOTAL PARIS-CHARLES DE GAULLE CAPACITIES</b>	<b>153</b>	<b>176</b>	<b>127</b>	<b>136</b>	<b>112</b>	<b>704</b>

### // MAP OF THE MAJOR DEVELOPMENT AND CAPACITY OPTIMISATION PROJECTS AT PARIS-CHARLES DE GAULLE





## // JUNCTION OF SATELLITES 1 AND 7 OF TERMINAL 1 AND REORGANISATION OF PRIMARY FACILITIES



During the 2016-2020 ERA, Groupe ADP launched a long-term project to (i) merge the satellites of Terminal 1 over the long term and (ii) reconfigure the terminal central area: creation of an underground hall under the Alpha pathway dedicated to departure and arrival border control, pooling of Schengen security checkpoints terminal central area.

This project will support the growth of international traffic through increases in long-haul capacity at peak times and configuration for new high-capacity aircraft (A380, B747, A350), to make Terminal an asset in competition with the best global infrastructures and suitable for Star Alliance airlines.

The 2016-2020 ERA covered the first phase of the project, via the merging of the international satellites (1, 2 and 3) and the regrouping and enlarging of the boarding lounges. The commissioning of this first leg is scheduled for the end of 2020.

Construction will continue during the 2021-2025 ERA in three main areas: (i) continuation of the linking of international satellites with a new junction between Satellites 1 and 7 according to the same model used previously, (ii) the transfer of Schengen traffic from Satellite 7 to Satellite 5, and (iii) an initial reconfiguration phase for the terminal central area.

### Key information

- ◇ Creation between Satellites 1 and 7 of a two-storey, high quality service junction (arrival and departure) with medium- and wide-bodied aircraft contact parking stands (A);
- ◇ Transfer of Schengen traffic from Satellite 7 to Satellite 5 (B);
- ◇ Reconfiguration of Terminal 1's central area with, in particular, the creation of check-in counters, the extension of luggage belts at arrivals and the optimisation of space in public areas (C).

### Relevance of the project:

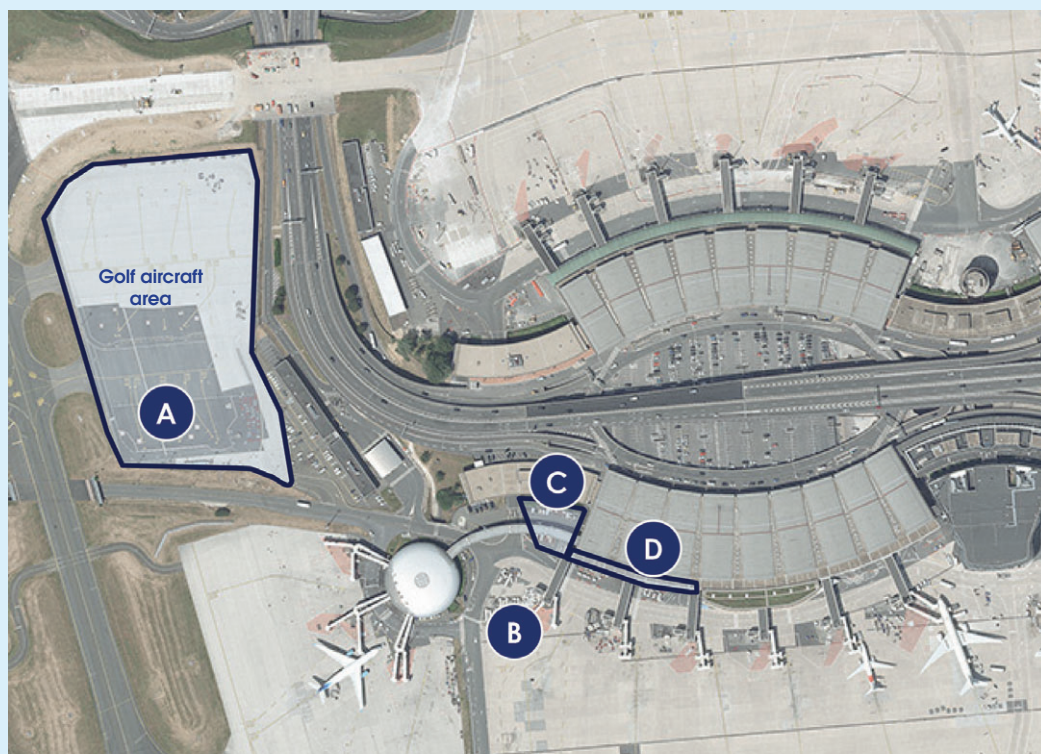
The project to link Satellites 1 and 7 as well as the reconfiguration of the primary facilities and the internationalisation of Satellite 7 enables:

- ◇ increased space in public areas and check-in capacity;
- ◇ better quality of service thanks to the passage of passengers boarding via Satellite 7 through the junction;
- ◇ the desaturation of baggage delivery;
- ◇ greater flexibility within the international area via the connection of Satellite 7 to the junction.

### Expected capacity gain:

Joining Satellites 1 and 7 will accommodate an additional 1.6 million passengers per year.

## // CREATION OF A BOARDING LOUNGE AND REMOTE AREAS AT TERMINAL 2AC



In the long term, the T2 ABCD terminals could be combined into a single terminal with a common departure process and four boarding lounges. A station built for the future passenger rail system at the centre of the ABCD terminals in a public area, and a station in a restricted area, could connect it to the Paris-Charles de Gaulle access and connection networks, thus offering increased connectivity with the current hub and the future terminal 4.

The 2011-2015 ERA made it possible to pool security check and border crossing functions at departure in a junction building between terminals 2A and 2C. The 2021-2025 ERA will see the finalisation of the creation of an integrated AC terminal whose boarding capacity will be increased by extending terminal 2A in the West and transforming a long haul stand to accommodate code F aircraft, as well as the landing corridor to avoid crossing flows and departures.

As for the aircraft stands, the 2021-2025 ERA will see the configuration of the Golf areas north-west of terminal 2A as remote medium-haul stands. This operation would be the first step in a project to extend the boarding lounges from terminal 2A to the Golf areas, which during the 2026-2030 ERA would enable the creation of 3 to 4 medium-haul contact stands.

In the final phase towards this target, the 2026-2030 ERA could finally see the creation of a single baggage delivery area for terminals A and C and a single border control on arrival, like the BD link.

### Key information

The terminal 2AC densification project for the 2025-2030 ERA consists of:

- ◆ the reconfiguration of the Golf areas West of terminal 2A to accommodate remote parking for three or four medium-haul aircraft (A);
- ◆ the transformation of a wide-bodied aircraft stand to allow it to accommodate code F aircraft (B);
- ◆ the creation of a boarding lounge at the code F stand (C);
- ◆ construction of an arrival corridor at terminal 2A (D);
- ◆ standard 3 security check processes for hold baggage.

### Relevance of the project

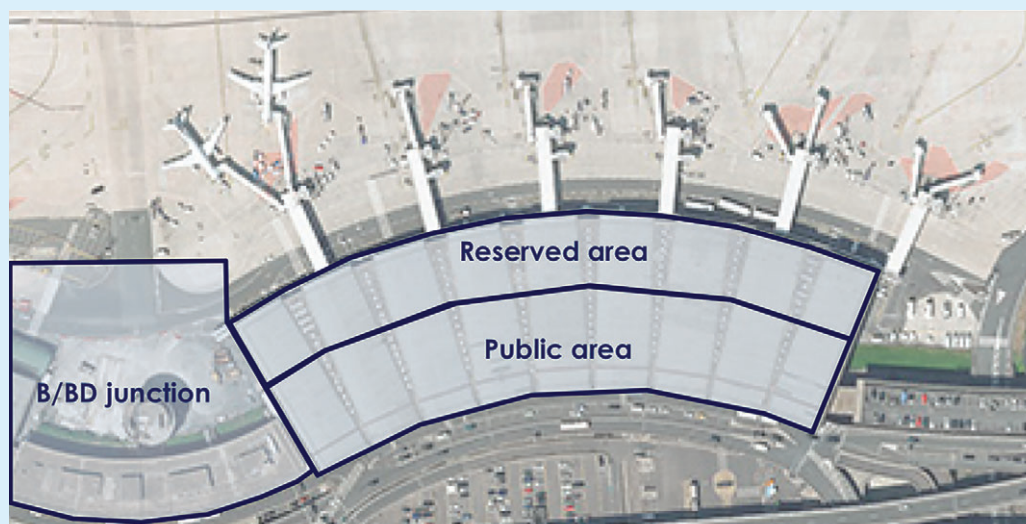
The densification project enables:

- ◆ the increase in the capacity of (i) aircraft contact stands using the code F station reconfiguration and (ii) remote stands due to the reconfiguration of the Golf areas to medium-haul format;
- ◆ the increase in the terminal's capacity by creating a boarding lounge;
- ◆ the separation of the arrivals and departures flows in terminal 2A.

### Expected capacity gain

The densification of terminal 2A will accommodate 1.4 million additional passengers.

## // RESTRUCTURING OF TERMINAL 2D



The 2016-2020 ERA saw the initial phase of the project via (i) the renovation of terminal 2B, mixed international and Schengen, and (ii) the construction of a junction building between terminals 2B et 2D, with delivery scheduled for 2020.

The 2021-2025 ERA will finalise the functional scheme for the 2BD terminal through restructuring of the 2D terminal. The positioning of the screening and border crossing functions in the junction building will result in space savings for the check-in and boarding functions.

This project is part of the long-term vision to combine terminals A, B, C and D into one terminal with four high-quality boarding lounges, connected to the rest of the hub and the future terminal 4 through the future passenger rail network in public and restricted areas.

### Key information

The terminal 2D reconfiguration project includes:

- ◆ the optimisation of the public area and boarding lounges through reuse of the areas freed up following the commissioning of the B-BD link in 2020;

- ◆ the transition to Standard 3 of the check-in baggage screening process;
- ◆ a part of the technical renovation of the building scheduled, because of its ageing.

### Relevance of the project

The project will enable:

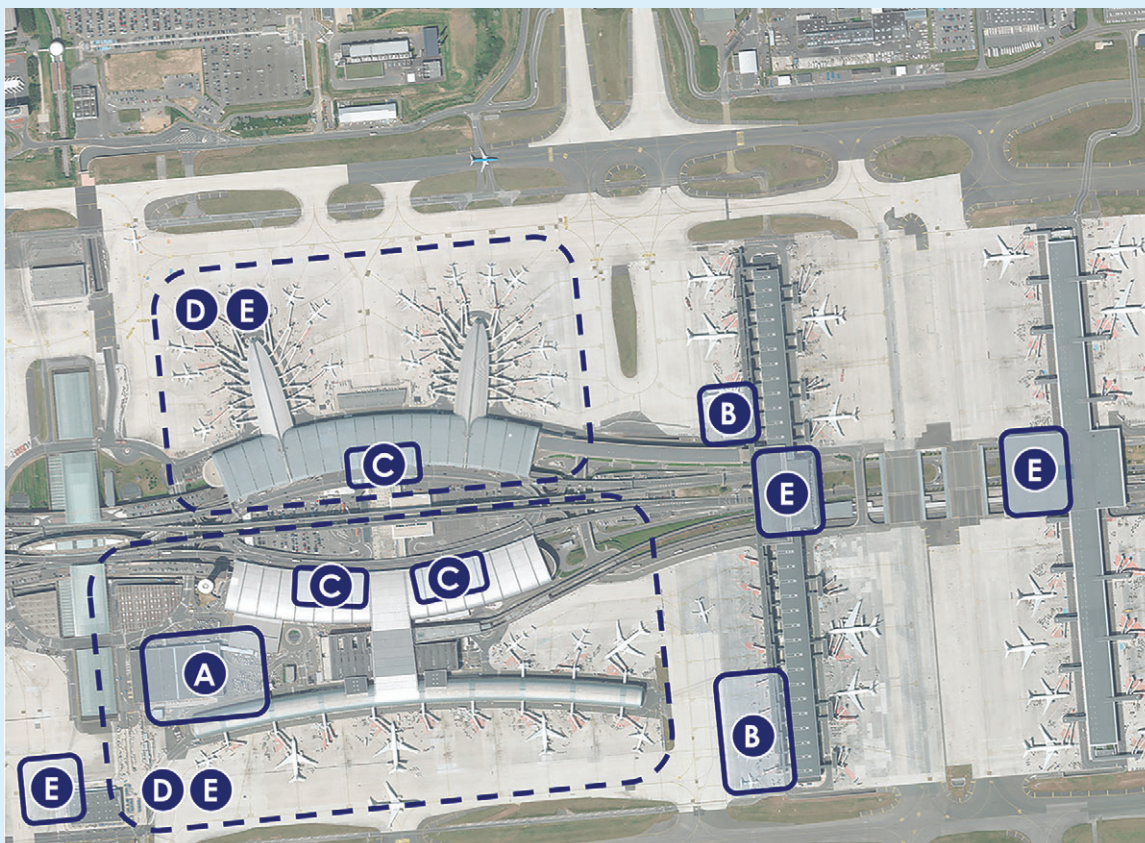
- ◆ improved quality of service in terms of atmosphere and space;
- ◆ the modernisation of the check-in and security screening processes.

### Expected capacity gain

The restructuring of 2D will accommodate 1.3 million additional passengers.



## // DENSIFICATION OF PARIS-CHARLES DE GAULLE TERMINALS 2 EF



02

The commissioning of the first phase of the future terminal 4 by 2028 makes it necessary to densify terminal 2 EF to accommodate the growth of traffic in the meantime. The hub has not experienced any major developments since the opening of terminal 2E Satellite 4 in 2012, except for the construction of all luggage sorter for Satellites 3 and 4 (TBS3S4) during the 2016-2020 ERA.

During the 2021-2025 ERA, a series of projects will create additional capacity by (i) creating space in public areas, (ii) adjusting border screening and baggage delivery processes, (iii) equipping additional remote boarding lounges; and (iv) increasing the number of aircraft parking stands. Other actions will be conducted during the 2026-2030 ERA in this same vein.

This construction is performed by taking into account the integration of the hub into the future terminal 4 hub to form a coherent industrial asset for the competitiveness of the Paris-Charles de Gaulle hub and the Skyteam Alliance.

### Key information

The hub terminal densification project includes:

- ◇ the creation of aircraft stands at Hall 2EK made possible by moving the baggage handling systems sorters: 3 medium-bodied stands of which at least two are contact and one wide-bodied contact, accompanied by a boarding area **(A)**;

- ◇ creation or reconfigurations of other contact stands **(B)**;
- ◇ additional in floor areas within terminals **(C)**;
- ◇ upgrading registration and boarding resources **(D)**;
- ◇ optimisation of baggage systems (creation of storage and a link between the terminal 2F and TDS3 baggage systems) and security processes **(E)**.

### Relevance of the project

The project will enable:

- ◇ an increase in the capacity of terminals 2EF to support the growth of hub traffic, especially at peak times;
- ◇ better quality of service due to the creation of public areas;
- ◇ greater efficiency in the passenger experience thanks to the optimisation of the SCPs.

### Expected capacity gain

The densification of the hub will accommodate 2.5 million additional passengers.

## // DENSIFICATION OF REMOTE AIRCRAFT STANDS OF THE PARIS-CHARLES DE GAULLE HUB AND CONSTRUCTION OF A TAXIWAY ON THE NORTH-EAST PERIMETER



Other hub densification projects include (i) remote parking stands, in the AGEN-Aires Grand Est Nord areas (finalisation at the beginning of ERA 2021-2025 of a project initiated in the 2016-2020 ERA and creation of remote aircraft parking areas on the current PX car parking areas, and (ii) securing runway traffic, with the construction of a taxiway perimeter for the northern runways. This taxiway will improve aeronautical safety by limiting the crossings of the parallel northern runways. These projects will be integrated into the vision of the terminal 4 project.

### Key information

The runway component of the hub densification project includes:

- ◆ the creation of remote parking areas (Agen Areas) that can accommodate 6 wide-bodied aircraft **(A)**;
- ◆ the creation of remote parking areas on the current PX car park, which can accommodate 2 medium-sized carriers **(B)**;

- ◆ potential use of de-icing areas as remote parking stands (4 wide-bodied aircraft) **(C)**;
- ◆ the remote parking of a wide-bodied aircraft **(D)**;
- ◆ the creation of a taxiway perimeter **(E)** to avoid the majority of crossings of the inner north runway.

### Relevance of the project

The project will enable:

- ◆ an increased number of remote parking stands to handle traffic growth;
- ◆ securing runway crossing.

### Expected capacity gain

The densification of the hub will allow the creation of up to 11 heavy-load stands.



## // DENSIFICATION OF TERMINAL 3



02

Within the scope of the 2021-2025 ERA, Terminal 3 will be densified to handle the growth in traffic due to the pooling and modernisation of security checkpoints, the increased number of boarding gates and the creation of additional bus stops to match the number of gates to access the aircraft stands, and the increase in baggage delivery capacity.

### Key information

terminal 3 densification will enable:

- ◇ expansion of the boarding lounge; the increase in the number of boarding gates and the overhaul of the bus system to transport passengers to the runways in line with the increase the number of gates **(A)**, the pooling of security checkpoints and implementation of optimised screening checkpoints;
- ◇ Pooled and optimised security checkpoints **(B)**;
- ◇ improved international arrival circuits and baggage delivery **(C)**.

### Relevance of the project

The project will enable:

- ◇ additional passenger capacity, as of the beginning of the 2021-2025 ERA, against a backdrop of pressure on passenger capacity;
- ◇ the flexibility of passenger capacity allocation between Schengen and International traffic;
- ◇ better traffic flow at security checkpoints;
- ◇ enhanced customer satisfaction *via* enlarged boarding areas;
- ◇ a decrease in negotiated security costs.

### Expected capacity gain

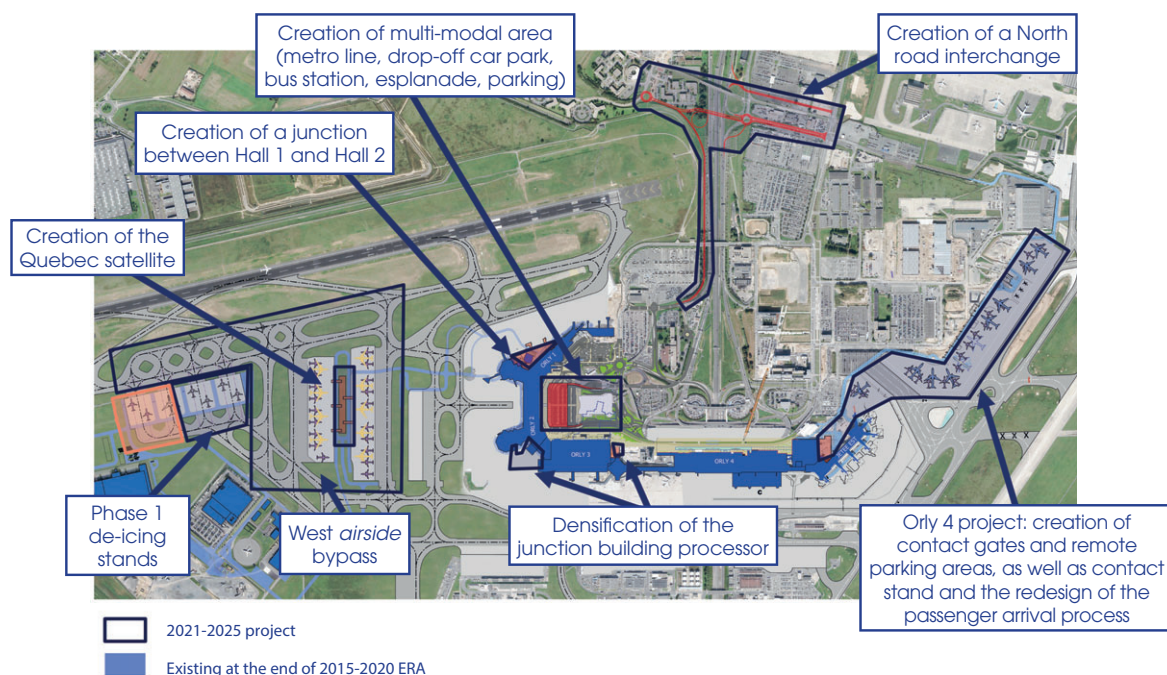
terminal 3 densification will enable additional capacity of 1.5 million passengers, and offer flexibility between Schengen and International traffic.

## 2.5 PARIS-ORLY CAPACITY INVESTMENTS

### // BREAKDOWN OF THE 2021-2025 ERA PROGRAMME PER YEAR

<i>In 2019 millions of euros - including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Paris-Orly capacity investments</b>						
Airside Infrastructure restructuring (West of Paris-Orly)	28	31	48	25	0	132
Creation of a Quebec Lounge	20	21	33	17	0	91
Link between Halls 1 and 2	13	12	15	27	15	82
Orly 4 Project	13	18	28	14	0	73
Other Paris-Orly capacity projects	23	10	8	8	7	56
Creation of de-icing areas	6	7	11	6	0	30
<b>TOTAL PARIS-ORLY CAPACITIES</b>	<b>103</b>	<b>99</b>	<b>143</b>	<b>97</b>	<b>22</b>	<b>464</b>

### // MAP OF THE MAJOR DEVELOPMENT AND CAPACITY OPTIMISATION PROJECTS AT PARIS-ORLY



## // CREATION OF A QUEBEC SATELLITE



02

The first stage to support the growth in passenger traffic at Paris-Orly must involve the development of the Western part of the airport. The first stage in this development requires building capacities that can be adapted to accommodate higher-than-expected passenger traffic. This will be achieved via the project to build a satellite next to the Quebec area during the 2021-2025 ERA. This dual-status satellite will be connected to the Orly 2 and Orly 3 sectors by a rapid and innovative road link (autonomous transport solution under review) and boost capacity by 3 to 5 million passengers per year.

The 2020-2025 ERA will also see the creation of an initial building extension for the Hall 3 junction building, upgrading check-in and boarding capacity at the Junction and Hall 3, to direct flows into the Quebec satellite.

### Key information

- Creation of a satellite between the Quebec and November aircraft stands to service 12 narrow-bodied aircrafts or 6 wide-bodied aircraft

(in contact or nearly in contact with the lounge), and linked to the terminal by a dedicated bus service;

- creation of a "pivot" processor upgrading check in and boarding capacities of the Junction and Hall 3 to direct flows to the Quebec satellite;

### Relevance of the project

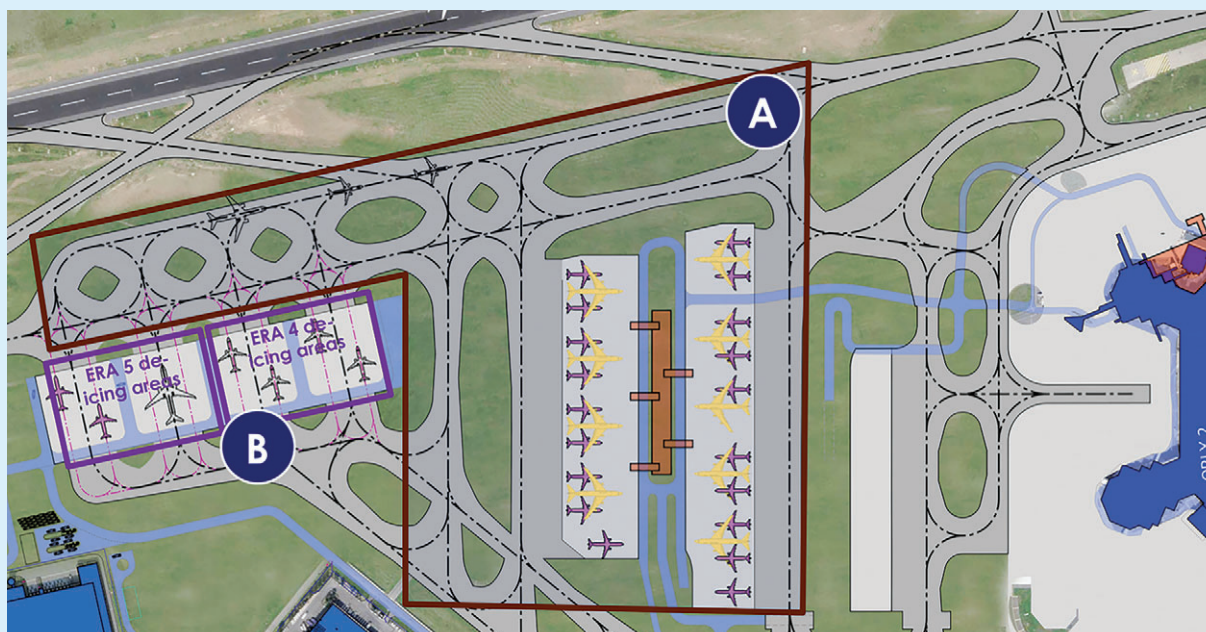
- Supports Orly 1, 2 and 3 traffic overflow and the rapid adaptation in case of higher-than expected traffic flows;
- the pivot eliminates the most likely congestion points: borders, boarding gates, and operating premises.

### Expected capacity gain

The project will increase Paris-Orly capacity by 3 to 5 million passengers and offer International and Schengen flexibility.



## // AIRSIDE INFRASTRUCTURE RESTRUCTURING WEST OF PARIS-ORLY



There is scope to improve the airside West of Paris-Orly airport in terms of safety and operational reliability: better aircraft traffic flow to the west of the airport requires moving the terminal's current North - South taxiways and creating taxiways that will not be impacted by aircraft push-back and by improving access to the runway threshold. In addition, to improve traffic flows and safety, a graded separation between service roads and aircraft taxiways will be installed.

The 2021-2025 ERA will also provide the opportunity to create the first de-icing stand near the three main runway thresholds (the two thresholds of runway 4 and the West threshold of runway 3), and a centralised de-icing area reducing the proportion of aircraft de-iced at the stands. The commissioning of these areas involves building new access routes to them, and will boost departure capacity from Paris-Orly during the winter season.

### Key information

The project consists of two components:

#### The Western bypass of the airport (A):

- ◇ the refurbishment of ageing infrastructure (taxiways, aircraft stands, service roads),
- ◇ standardising aircraft taxiway crossings by service routes by installing a graded separation system for service roads.

#### De-icing bays (B):

- ◇ creation of de-icing stands in two stages,
- ◇ creating access routes to de-icing areas to the West of Paris-Orly.

#### Relevance of the project

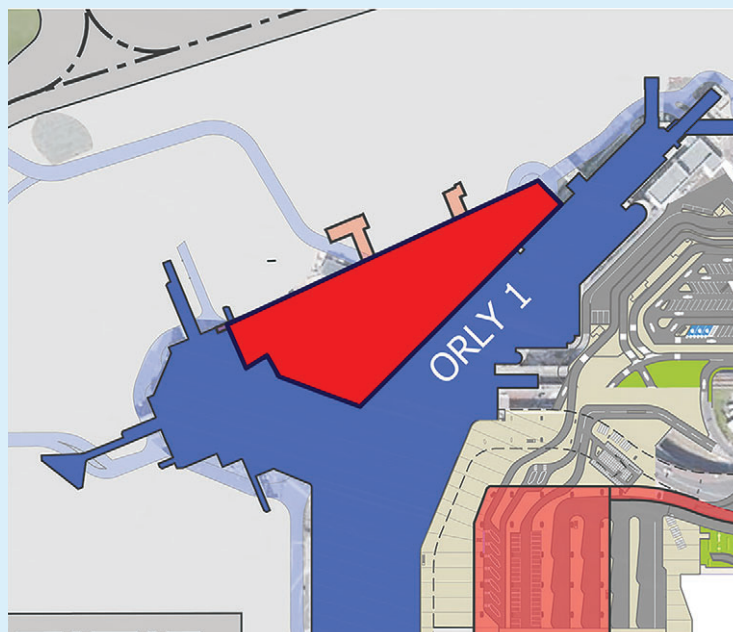
The project will enable:

- ◇ improving aircraft traffic flows by creating taxiways that will not be impacted by aircraft push-back and by improving access to the runway threshold;
- ◇ improving vehicle traffic flows and making runway crossings safer;
- ◇ improving traffic flows to de-icing areas ahead of runway thresholds areas and improving parking stands yield during winter;
- ◇ increasing capacity of remote aircraft refuelling stands in the Quebec and the November areas.

#### Expected capacity gain

- ◇ Creation of four wide-bodied or eight narrow-bodied aircraft stands during 2021-2025 ERA;
- ◇ increased departure capacity in winter.

## // LINK BETWEEN HALLS 1 AND 2



02

The continued renovation of the Orly 1 sector (formerly Hall 1 and Hall 2 of West Orly) should enable new capacity to be built within the scope of the next ERA, under existing operating rules.

The 2016-2020 ERA saw the extension of the boarding lounges on the North side of Hall 1 with the construction of a new building with four narrow bodied aircraft contact stands and the creation of capacity for 0.7 million passengers per year.

The 2021-2025 ERA will continue to upgrade the Orly 1 sector to address the problems of departure lounge under-capacity and the obsolescence of previous generation security checkpoints. The purpose of the project to join Halls 1 and 2 is to improve the functioning of Hall 2 by increasing the size of the boarding gates, to create an IFU link between Hall 1 and the rest of Paris-Orly, to optimise security checkpoints and improve the reliability of baggage screening checkpoints.

### Key information

- ◆ The construction of a three-storey building between Halls 1 and 2, on the runway side;

- ◆ the expansion of the boarding gates;
- ◆ the optimisation of the security checkpoints;
- ◆ creation of a baggage redundancy system between Halls 1 and 2.

### Relevance of the project

The project will enable:

- ◆ the alignment of the Paris-Orly Schengen terminal and airside capacities;
- ◆ enlarged boarding gates for passengers;
- ◆ direct passenger access from the Orly 1 and 2 carpark;
- ◆ reduced security tender costs by pooling security checkpoints.

### Expected capacity gain

The link between Halls 1 and 2 will enable the Schengen capacity of the terminal to be increased by 1 million passengers. The check-in and boarding capacity at Orly 1 will thereby be increased to match that of the aircraft stands.



## // ORLY 4 PROJECT: CREATION OF A CONTACT STAND, NORTH GOLF AREAS, ADAPTATION OF THE BAGGAGE DELIVERY, PUBLIC HALL REFURBISHMENT



The 2016-2020 ERA boosted the capacity of the terminal to the East of the Paris-Orly airport, via the opening in 2016 of the Orly 4 (formerly Orly South) Eastern Pier for international flights, and the redesign of the international departure process (RPDI project).

The 2021-2025 ERA will enable the upgrade of the East side of the airport to be completed by (i) upgrading boarding, baggage belts and arrivals area capacities, and (ii) creating contact aircraft parking stand capacity (creation of an MI8 stand) and remote parking stand areas (creation and reconfiguration of the Golf stands).

### Key information

- ◇ Creation of the North Golf remote stands (2 mixed wide-bodied aircraft stands) **(A)**;
- ◇ reconfiguration of three narrow-carrier aircraft stands (South Golf Areas) into combined narrow-carrier/wide-bodied aircraft stands **(B)**;
- ◇ creation of the MI8 stand directly in contact with the East Pier with demolition of the old freight station **(C)**;

- ◇ adapting the Orly 4 baggage delivery capacity by creating 3 additional baggage belts and moving to the current remote gate **(D)**;
- ◇ repositioning and enlarging the remote boarding gate;
- ◇ reuse of vacated space in the public area to redesign the arrivals hall and customs exit in the public area, and ambience upgrade;
- ◇ improving connection routes to and from Orly 4.

### Relevance of the project

- ◇ Increase remote aircraft stand capacity;
- ◇ creation of a contact parking stand;
- ◇ increase baggage capacity and improved baggage delivery;
- ◇ improvement of the public zone space and ambience.

### Expected capacity gain

The project will boost Paris-Orly international capacity by an additional one million passengers.

## 2.6 CAPACITY INVESTMENTS AT PARIS-LE BOURGET

### // BREAKDOWN OF THE 2021-2025 ERA PROGRAMME PER YEAR

02

<i>In 2019 millions of euros – including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Capacity investments at Paris-Le Bourget</b>						
Le Bourget capacities	3	5	5	5	5	23
<b>TOTAL LE BOURGET</b>	<b>3</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>23</b>

### // PARIS-LE BOURGET CAPACITY



The Paris-Le Bourget airport will benefit from the arrival, in the medium term, of metro Line 17, which will enhance the airport's attractiveness and accessibility to all industries wanting to locate their activities near this centre of excellence.

This momentum will be accompanied by a gradual reinvestment by Aéroports de Paris in the management of its asset, by, in the medium term, increasing the capacity of aircraft parking areas, reinvestment in historic buildings and the development of the North-Atlas area and studies of the West area (Dugny) for aircraft maintenance activity. The 2021-2025 ERA will see an initial stage through the rehabilitation of hangars and parking areas around the central area enabling new generations of business aircraft to be accommodated, for maintenance or parking, among others Category C and other aircraft.

#### Key information

- ◇ Creation of a RESA ("Runway End Safety Area") at the joint threshold of the two runways 07-25 and 09-27 **(A)**;

- ◇ increased aircraft parking capacity in the South of the airport **(B)**;
- ◇ the development of the central zone: creation or improvement of parking areas and buildings **(C)**;
- ◇ increased parking capacity in the North-East of the airport **(D)**;
- ◇ development of buildings on the border area **(E)**.

#### Relevance of the projects

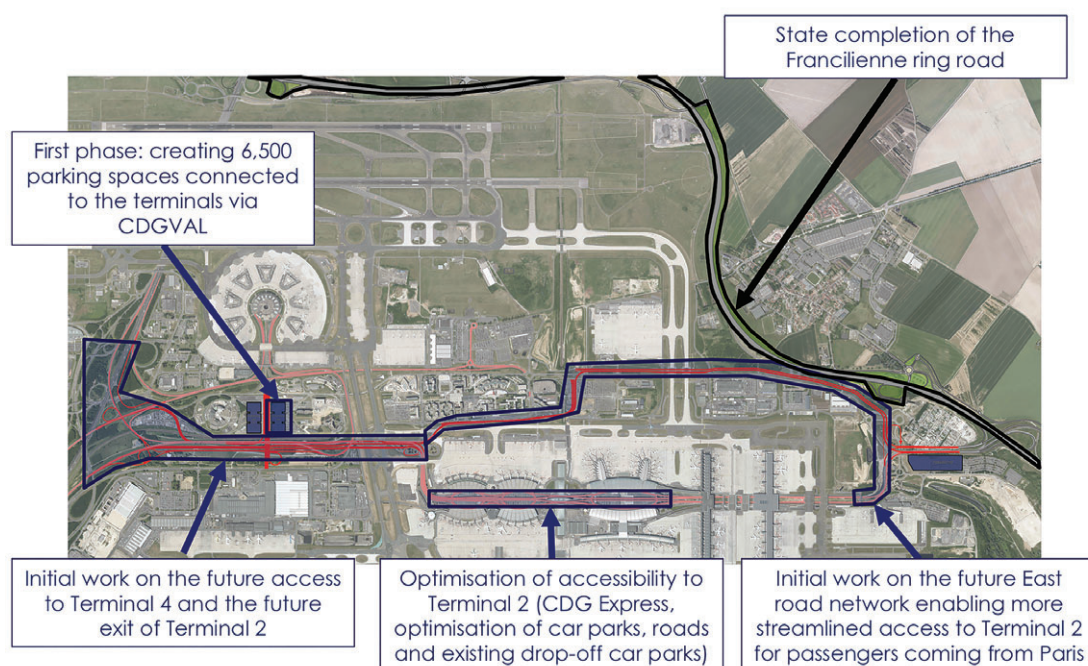
- ◇ Supporting the growth in traffic by increasing the aircraft parking capacity and hangar capacity;
- ◇ adapting parking areas and hangars to changes in aircraft size;
- ◇ supporting the development of the aeronautical industrial zone and synergies between the airport's stakeholders.

## 2.7 ACCESSES AND CAR PARK INVESTMENTS

### // BREAKDOWN OF THE 2021-2025 ERA PROGRAMME PER YEAR

<i>In 2019 millions of euros - including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Development of accesses</b>						
Terminal 4 car parks and accesses	5	76	85	113	104	383
Road access from the East side of Paris-Charles de Gaulle	32	28	9	56	37	162
Creation of a multi-storey car park at Paris-Charles de Gaulle	27	46	18	0	0	91
Road access from the West side of Paris-Charles de Gaulle	12	19	31	15	10	87
Construction of a drop-off car park at Paris-Orly	11	9	12	20	12	64
Building a station for line 14 to Paris-Orly (ADP part)	27	9	1	0	0	37
CDGVAL - purchase of two trains and new technology	0	24	2	0	2	28
Other access projects	5	5	3	4	9	26
Improved access to T2ABCD at Paris-Charles de Gaulle	4	5	7	4	0	20
Improved access to T2EF at Paris-Charles de Gaulle	3	4	6	3	0	16
Construction of a road interchange to the North of Paris-Orly	3	2	2	2	2	11
<b>TOTAL ACCESS</b>	<b>129</b>	<b>227</b>	<b>176</b>	<b>217</b>	<b>176</b>	<b>925</b>

### // MAP OF STRUCTURAL PROJECTS RELATED TO ACCESS IMPROVEMENT AT PARIS-CHARLES DE GAULLE





## // MOVING THE “PARK AND RIDE” CREATION OF A MULTI-STOREY CAR PARK TO AN UPPER LEVEL



02

The short-term growth in traffic, densification of the hub, the closure of the PX car park converted into aircraft parking stands, and the opening of terminal 4 in the long term, all require the creation of additional parking capacity connected to the airport's transport networks.

The creation of a multi-story car park on the current PR car park will create additional capacity without occupying any new ground level surface area. It is currently served by the CDG VAL, whose flows will be increased by the acquisition of two additional trains within the scope of the 2021-2025 ERA, and will eventually be linked to the future passenger train in the public area, connected to terminal 4.

The project will have two phases: phase 1 during the 2021-2025 ERA, with the creation of 6,500 parking spaces and phase 2 during the next ERA, with the creation of 3,500 places. The rear car-rental base will be integrated into this ensemble in phase 2 and thus free up parking spaces in the immediate vicinity of the terminals.

### Key information

- ◇ Creation of 6,500 parking spaces over the 2021-2025 ERA;
- ◇ connection of the PR car park to the passenger road network;
- ◇ reserve for the creation of a second phase within the scope of the 2026-2030 ERA in conjunction with a car-rental base;

- ◇ reserve for the creation of a road network to access car parks;
- ◇ reserve for the passenger rail line in the public zone between terminals 2 and 4.

### Relevance of the project

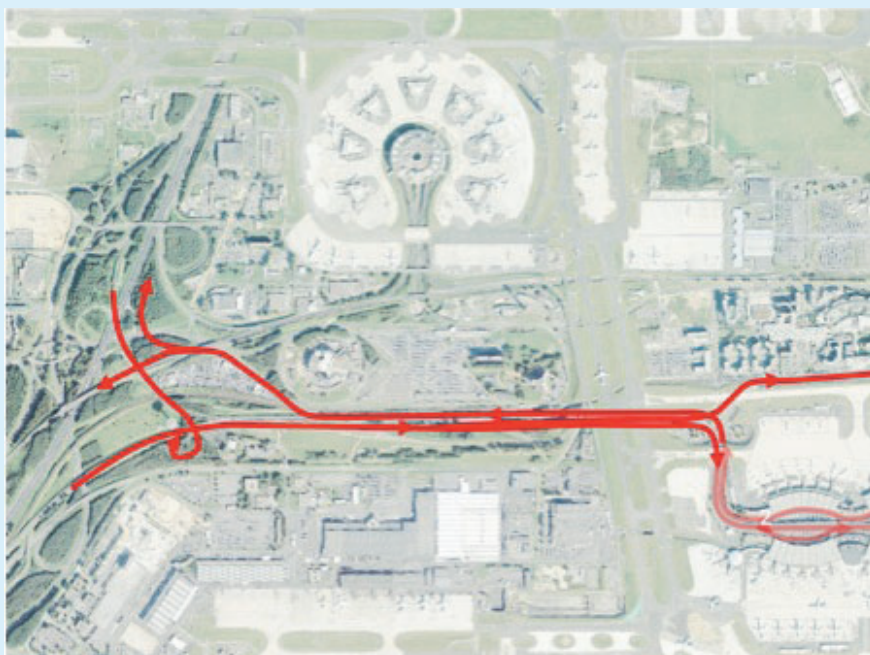
The project will enable:

- ◇ the creation of additional parking spaces to meet the growth in traffic and hub densification, the closure of the PX car park and the opening of terminal 4;
- ◇ the direct connection of these parking spaces to the rail network serving the terminals (CDGVAL and then the future passenger train in the public zone in the medium-term), and the passenger road network;
- ◇ the creation of capacity without occupying any ground level surface area by creating a multi-storey car park;

### Expected capacity gain

The project will have two phases: phase 1 during the 2021-2025 ERA, with the creation of 6,500 parking spaces and phase 2 during the next ERA, with the creation of 3,500 places.

## // IMPROVE TRAFFIC FLOW FROM THE WEST OF THE PARIS-CHARLES DE GAULLE AIRPORT



The project to improve traffic flow to the West of the Paris-Charles de Gaulle airport is the first of three axis of the action plan to decongest road access in the short-, medium- and long-term.

The objective for the 2021-2025 ERA project is to build road networks to improve access to terminal 2 by increasing (i) the number of traffic lanes from Paris by the West and (ii) building a new slip road towards Paris to decongest traffic in the Roissypôle area.

It will also support the development of terminal 4 in the long-term.

### Key information

- ◆ Increase in the number of road lanes coming from Paris to the West;
- ◆ Creation of a separation of road networks to allow a streamlined outlet toward Paris from terminal 2 and, in the long term, from terminal 4.

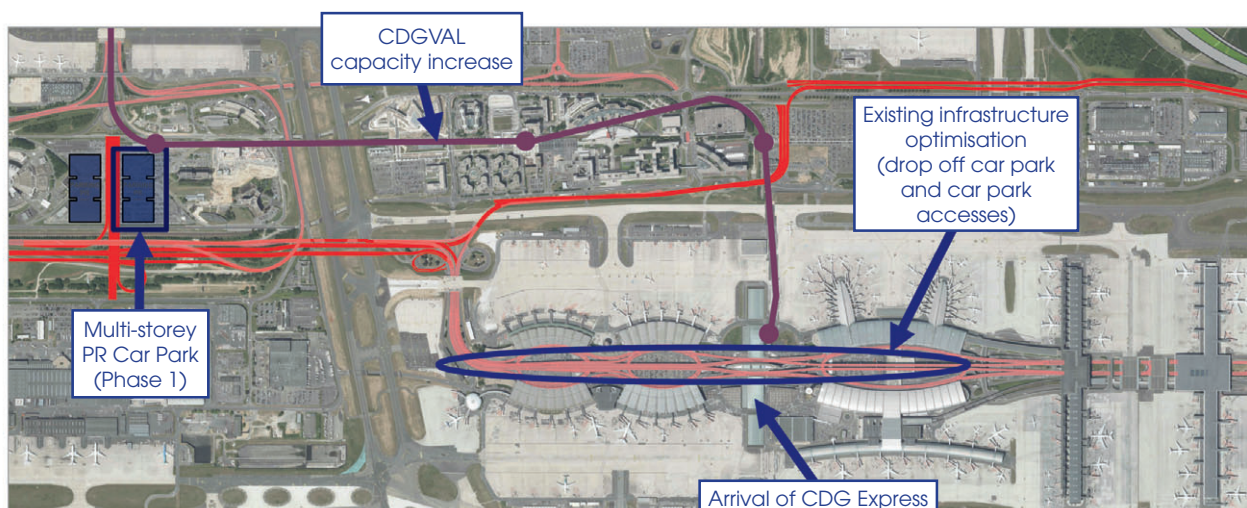
### Relevance of the project

The project will improve traffic flow at the airport's West entrances.



## // IMPROVING TRAFFIC FLOW TO TERMINAL 2 OF PARIS-CHARLES DE GAULLE

02



The project to improve traffic flow to terminal 2 of Paris-Charles de Gaulle is the second axis of the action plan to decongest road access in the short-, medium- and long-term. It will address the expected growth in the *hub*'s traffic levels between now and the beginning of the first phase of terminal 4 by 2028.

Several short-term actions, initiated during 2016-2020 ERA, will improve existing infrastructure, such as drop-off parking, car-park access and the purchase of two additional trains for CDGVAL.

The accesses will also benefit from the commissioning of the CDG Express in 2024 which will reduce the share of cars and thus contribute to decongesting road access.

### Key information

- ◇ Optimisation of existing infrastructure in the terminal 2 ABCD EF environment (e.g. drop-off parking, car-park access, etc.);

- ◇ arrival of CDG Express in 2024 to reduce the share of cars at Paris-Charles de Gaulle and therefore limit the increase in terminal access time;

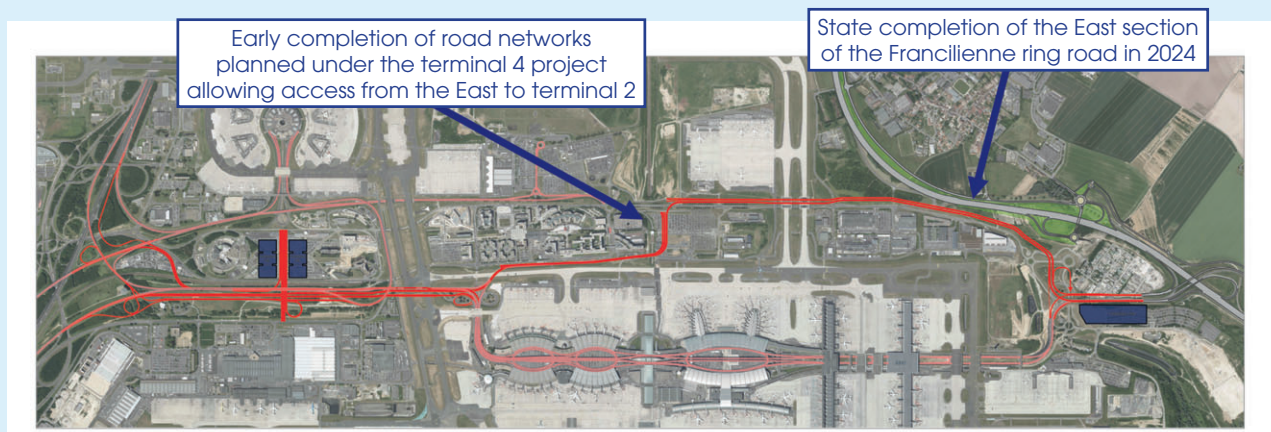
- ◇ acquisition of two additional CDGVAL trains together with a change in technology to modify the automation of trains to switch to self-drive mode and thus reduce intervals between trains.

### Relevance of the project

The project will enable ADP to:

- ◇ manage road-access times at terminal 2 pending the commissioning of terminal 4 in 2028;
- ◇ increase CDGVAL flows by up to 50% to facilitate travel between the multi-storey PR car park installed, terminals 1 and 2 and the multi-modal Roissypôle station.

## // IMPROVE TRAFFIC FLOWS BY THE EAST OF THE PARIS-CHARLES DE GAULLE AIRPORT



The project to improve traffic flows by the East of Paris-Charles de Gaulle airport is the third and last axis of the action plan designed to decongest road access in the short-, medium- and long-term.

The proposed future main access network to terminal 4 by the East of the airport will increase the share of road traffic to, or from the airport by the East, and de-congest access by the West.

The project involves building a road network to the North of terminal 2 to the future terminal 4, so traffic can leave the airport towards the East.

This project is consistent with the Government's plan to finalise the A104 motorway or Paris region ring road. The Paris region ring road stops before Paris-Charles de Gaulle, to the North of the town of Roissy. This leads to traffic congestion on the A1 and A3 motorway which impacts Paris-Charles de Gaulle and the surrounding towns at certain times. This project will ensure road access to the airport from the East,

by improving access to the terminals in the East of the airport, including the future terminal 4.

### Key information

- ◇ Prefigure the future terminal 4 red network to the East of the airport to enable vehicles to leave *via* the East of the airport and thus reducing traffic in the West;
- ◇ Aéroports de Paris' contribution to the completion by the Government of the Paris region ring road in the East by 2024 enabling passengers from Lille and northern France to access terminal 2 from the east.

### Relevance of the project

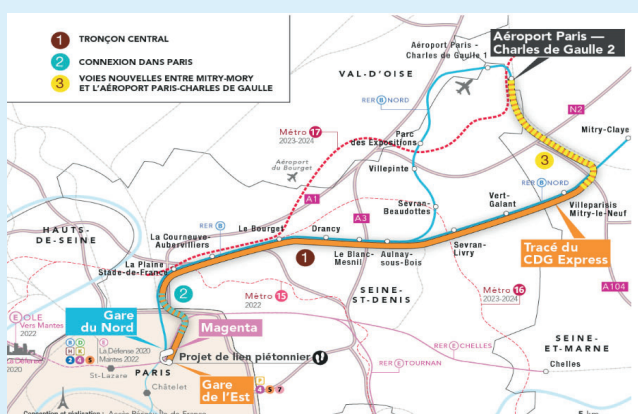
This project will reduce access times from the North and exit times to the East from terminal 2 and terminal 4 in the future.

## // IMPROVED ACCESS TO PUBLIC TRANSPORT

The two projects will meet the growth in traffic by providing satisfactory access to the airport and also absorbing the increase in public transport use.

02

### CONSTRUCTION OF THE CDG EXPRESS



At Paris-Charles de Gaulle, the major shortcoming for passenger accessibility is the absence of a direct link with the centre of Paris, as already exists for the majority of the large international airports. The CDG Express project involves the creation of a fast and direct rail link between Paris (Gare de l'Est) and Paris-Charles De Gaulle. The journey time will be 20 minutes, with a train every 15 minutes from 5.00am to midnight.

The CDG Express, which has been on the drawing board for many years, has now been approved and will be built by an operating company whose shareholders are Aéroports de Paris/SNCF Réseau/Caisse des Dépôts. The Transport Minister signed the concession contract for the CDG Express on 11 February 2019.

The challenge is to offer a reliable access and service tailored to the needs of airline passengers, to strengthen the economic appeal of Paris and its region and to make connections between different transport methods easier. The CDG Express, with a capacity of 76,000 seats per day will absorb a large part of the passenger flow to terminal 4.

The CDG Express is complementary to the RER B and the Line 17 project and will increase the share of rail transport from around 37% to almost 60% (socio-economic studies for the CDG Express and L17 projects). With a travel time of 20 minutes and a frequency of 15 minutes, this line will carry 2,000 passengers per hour in each direction. The average forecasted load factor for the CDG Express is 33%, and it is estimated that it will carry 21,500 passengers/day by 2020 and 25,000 passengers/day in 2035.

### ARRIVAL OF LINE 17



The new metro line 17 of the Grand Paris Express will serve the Bourget, Gonesse and Grand Roissy areas, with a direct link to Plaine Saint-Denis and serve Paris-Charles de Gaulle airport via a station in the future terminal 4.

Line 17 will be commissioned during the ramp up of terminal 4: the Saint-Denis-Pleyel and Le Bourget Aéroport section in 2024, up to the Triangle de Gonesse in 2027 and to Paris-Charles de Gaulle airport and Mesnil-Amelot by 2030.

Line 17 will be used by the site's employees and by passengers not travelling directly from Paris. There will be 10 trains/hour, i.e. an hourly transport capacity of 5,000 passengers/hour/per direction in 2030.

Capacity is estimated at between 30,000 and 40,000 passengers/day for terminal 2, increasing to between 50,000 and 60,000 when the whole line comes into service in 2030.

### INCREASE IN THE CAPACITY OF THE RER B

Both projects are complementary with the Regional Authority's plan to improve RER B by changing the line's rolling stock by 2025 to increase train capacity by 25% (from around 1,600 to 2,000 passengers).

## // STRUCTURAL PROJECTS TO IMPROVE ACCESS TO PARIS-ORLY

### THE ADAPTATION OF THE ORLY ROAD NETWORK: NEW DROP-OFF CAR PARK AND NORTH PARIS-ORLY INTERCHANGE

NEW DROP-OFF CAR PARK (ORLY 1, 2 AND 3)



NORTH INTERCHANGE



Growth in Paris-Orly traffic, has made it necessary to upgrade access to the airport. The existing drop-off car park in Orly sectors 1, 2 and 3 will not be able to accommodate traffic growth in the next 10 years. In addition, the existing viaduct located opposite the terminal façade does not meet the safety requirements (a minimum of 30 metres between the vehicles and the façade).

The aim of the “Estacade” project is to address this issue by building a slab above the future bus station, supporting a large-capacity drop-off car park for private vehicles and taxis. The opening is planned to coincide with the arrival of metro line 14 (Grand Paris project). A bus station will be created on the current esplanade of the P3 car park, directly connected with the metro line 14.

North of the airport, improving the road interchange would solve various saturation points by separating traffic caused by real estate development from passenger traffic, and improving the link between the Orlytech area and the terminal.

#### Description

- ◇ Creation of a slab above the future Paris-Orly 1-2-3 bus station as well as a drop-off parking directly serving sectors 1-2-3;

- ◇ new vertical connections linking the arrivals and departures levels;
- ◇ converting the existing viaduct into pedestrian walkways and soft modes of traffic;
- ◇ Improving the North road interchange to separate traffic flows between passengers, employees, other users and the airport.

#### Relevance of the project

- ◇ Improve traffic flows to the airport;
- ◇ upgrade drop-off and taxi capacity with traffic of sectors 1-2-3;
- ◇ move vehicles away from the terminal façade, making it possible to carry out large-scale entrance doors projects;
- ◇ partial covering of the bus station;
- ◇ ensure comfortable pedestrian paths.



## // IMPROVED ACCESS TO PUBLIC TRANSPORT

### ARRIVAL OF LINES 14 AND 18 AT PARIS-ORLY



The extension of metro line 14 from central Paris to Paris-Orly airport in 2014 as part of the Grand Paris Express will cut travel time from 54 minutes to 27 minutes. The north of the Paris-Orly airport and the

adjacent business zones will be served by a "Pont de Rungis" station on this line. In 2027, line 18 will link Paris-Orly directly with the Paris-Saclay scientific centre.

### CONSTRUCTION OF AN INTERMODAL STATION



The société du grand Paris (SGP) will build a metro station at the centre of the Paris-Orly airport with Aéroports de Paris for line 14, with direct pedestrian access to the terminals. This station will also be the

terminus for line 18 which will ultimately link Orly to Versailles via the Saclay centre. The station will also accommodate a 10-storey car park for 2,000 vehicles.

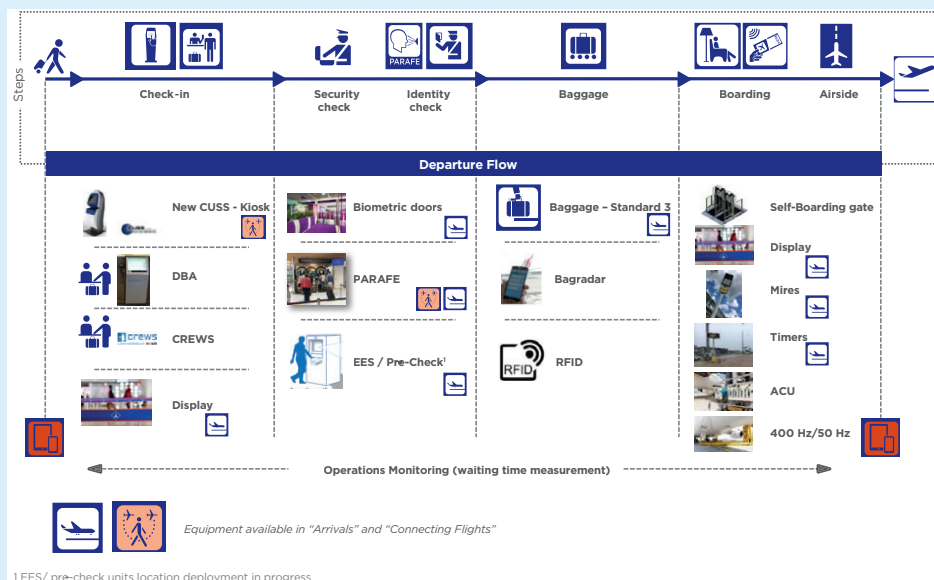
## 2.8 SMART AIRPORT INVESTMENTS

### // BREAKDOWN OF THE 2021-2025 ERA PROGRAMME PER YEAR

<i>In 2019 millions of euros – including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Smart Airport</b>						
Seamless travel equipment	15	23	23	19	14	94
Other Smart Airport projects	7	7	7	7	6	34
Airport operational monitoring tools	4	4	5	5	5	23
Deployment of guidance lights and timers	4	4	4	4	4	20
Self-driving vehicle projects	2	2	2	2	2	10
<b>TOTAL SMART AIRPORT</b>	<b>32</b>	<b>40</b>	<b>41</b>	<b>37</b>	<b>31</b>	<b>181</b>

### // DETAILED OF THE SMART AIRPORT PLAN

Given the constant growth in traffic levels and its impact on waiting times and the disruption it causes in passenger processing, Aéroports de Paris will focus on ensuring efficient traffic flows within the terminals. The Smart Airport programme meets this goal by relying on digital technologies and facial recognition.



The aim of the Smart Airport is to enhance the experience and satisfaction of passengers by implementing an end-to-end solution that is smart, automated, fluid and seamless. The project will enable ADP to:

- ◆ provide passengers with a smoother, shorter and more enjoyable travelling experience;
- ◆ monitor passenger flows, in order to react in real time;
- ◆ optimise the productivity of certain resources and ensure the continuity of current practices and equipment;
- ◆ generate cost savings for airlines (maintenance, purchase of equipment, rental charge for storage).

The Smart Airport involves redesigning the four main processes: check-in and boarding, security checks, baggage and aircraft parking stands.

### REGISTRATION AND BOARDING PROCESS

Smart Airport aims to provide passengers with a biometric and fluid travelling experience from the moment they walk into the terminal until boarding by deploying new generation equipment in all terminals.

Smart Airport interacts with the check-in process in two stages:

- ◆ check-in *via* a new generation self-service terminal (NEW CUSS terminal);
- ◆ baggage drop *via* an automatic baggage drop-off terminal.

The standard boarding process will be replaced by the systematic installation of automatic boarding gates with biometric readers.

This journey will improve the flow of passenger procedures, cut staff costs over the medium term and optimise the use of bottleneck equipment (e.g. check-in counters).

At the same time, Smart Airport will enable passengers to see and know where they are, provide tools for the management of flows, installations and equipment throughout the passenger journey, and remedy the disparity in support tools used for ground operations by airline companies. To do this, Smart Airport provides for:

- ◆ the Aéroports de Paris making support equipment and unmarked tensaguides available for check-in, boarding and baggage disputes;
- ◆ a streamlining of ground processes with production measurements (wait times, flows, management of facilities, etc.).

### PROCESS CONTROLS

Smart Airport provides for the generalisation:

- ◆ from the pre-control stage *via* the installation of EES (Entry/Exit System) passenger terminals upstream of passenger controls to reduce screening checkpoint time and ensure that passenger data for the police on entry and exit dates, the length of stay and possible offences is reliable;
- ◆ PARAFE (Automated Rapid Border Crossing) with facial recognition for passing through border police checks;
- ◆ optimised Security Checkpoints (SCP) that can process 300 passengers per hour, compared to 150 for standard SCPs;
- ◆ shoe and body scanners.

### BAGGAGE PROCESS

In order to limit the specificities of the Baggage Handling Systems (BHS) at each terminal, Smart Airport is developing the RFID technology (Radio Frequency Identification) for the Paris-Charles de Gaulle airport and new tools (e.g. Bagradar, a baggage traceability and reconciliation system). Updating standard 3 of the BHS is also taken into account. In this way, Smart Airport is supporting the implementation of the new IATA 753 standard and facilitates the traceability of baggage at take-off, during stop-overs and upon arrival by using RFID technology and baggage data exchange.

### AIRCRAFT STAND PROCESS

With an approach based on process optimisation and enhancement, the Smart Airport project includes the deployment of guidance lights and timers to all contact stands and commercial areas as well as power supply to the contact stands (400Hz, and 50Hz for outlying stands) for the installation of *Air Conditioning Unit (ACU)* plugs. These developments will limit the environmental footprint and aircraft stand operations will be improved and optimised in terms of punctuality, ground management, aircraft security and the simplification of ground-handling operations.

## 2.9 OTHER QUALITY OF SERVICE AND SUSTAINABLE DEVELOPMENT INVESTMENTS

### // BREAKDOWN OF THE 2021-2025 ERA PROGRAMME PER YEAR

<i>In 2019 current € millions – including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Other Quality of Service and Sustainable Development investments</b>						
Quality of service and sustainable development	14	15	17	15	14	75
Other quality of service projects	22	15	10	11	9	67
Improvement of the general atmosphere and passenger services:						
Toilet blocks	4	8	26	11	0	49
Improvement of connecting traffic	5	11	11	9	4	40
Improvement of connecting traffic	4	5	4	4	2	19
<b>TOTAL OTHER QUALITY OF SERVICE AND SUSTAINABLE DEVELOPMENT</b>	<b>49</b>	<b>54</b>	<b>68</b>	<b>50</b>	<b>29</b>	<b>250</b>

#### Breakdown of the service quality programme

The main operations dedicated to service quality over the 2021-2025 ERA other than Smart Airport and those resulting from the renovation, modernisation and construction of infrastructures, are related to the following themes:

- ◆ the reconfiguration of the Paris-Charles de Gaulle and Paris-Orly boarding gates with an improvement in terms of the atmosphere, comfort and the passenger service offering and ensuring compliance with our quality standards Framework of our service quality standards;
- ◆ the continued improvement of basic services on the passenger journey, including the refurbishing the toilet blocks, the creation of new smoking spaces, investment in city/airport transfers and the mechanisation of certain long circuits;
- ◆ the deployment of the "Connections" identity and the implementation of the works required to improve the entire plan of the passenger journey;
- ◆ the overhaul of signage both at Paris-Charles de Gaulle and Paris-Orly, including the modifications necessitated by the commissioning of the CDG Express and the arrival of Line 14 at Paris-Orly.

#### Breakdown of the sustainable development programme

For Aéroports de Paris, sustainable development is a priority area of focus in the 2021-2025 ERA. The challenge is significant: in 2017 the three Paris platforms emitted in excess of 1.9 million tonnes of CO<sub>2</sub>, of which 60% emitted by planes, 36% by access roads and ground facilities.

Aéroports de Paris has set itself the objective of achieving carbon neutrality in 2030. This objective will be prepared during the 2021-2025

ERA through an investment budget of almost €200 million, spread across the different investment categories. Aéroports de Paris is determined to position itself as a solution integrator on its platforms with several major operations:

- ◆ continuing **the renovation of lighting and air conditioning**, ventilation and heating installations to improve the comfort of occupants and passengers and energy performance;
- ◆ **development of renewable heat** to support the "decarbonisation" of the platforms, with, in particular, the installation of a **deep geothermal** system at Paris-Charles de Gaulle and a heat pump at Paris-Orly. These developments will reduce the percentage of heat in internal CO<sub>2</sub> emissions (70% today) and achieve the long-term goal of 30% of renewable energies on the platforms;
- ◆ construction of a new **de-icing area** at Paris-Orly to recover and process winter effluent;
- ◆ **provision of ACU** (Air Conditioning Unit) electrical plugs in plane parking places to enable the connection of mobile plane air conditioning equipment by assistants during stopovers. This will result in limiting the use of APUs (*Auxiliary Power Units*), which currently account for 5% of the total CO<sub>2</sub> emissions of the platforms;
- ◆ developments to favour **active mobility** (pedestrians, cyclists...);
- ◆ **electrification and deployment of charging points** on city side and runway side for all stakeholders;
- ◆ continuation and intensification of the **greening of the fleet** of Aéroports de Paris service vehicles.

These different projects are mainly contained in the different investment categories of the 2021-2025 ERA. A specific budget of €75 million focusing on several investment objectives specified below.



## // BREAKDOWN OF THE SPECIFIC SUSTAINABLE DEVELOPMENT BUDGET

- ◇ Provision of electrical plugs in plane parking places for ACU (*Air Conditioning Unit*);
- ◇ electrification and deployment of charging points on city side and runway side;
- ◇ continuation and intensification of the greening of the fleet of Aéroports de Paris service vehicles;
- ◇ developments to favour active mobility on the platforms (pedestrians, cyclists...);
- ◇ other investments in terms of renewable energy and environmental efficiency.

02

## 2.10 AERONAUTICAL REAL ESTATE DEVELOPMENT

### // BREAKDOWN OF THE 2021-2025 ERA PROGRAMME PER YEAR

In 2019 current € millions – including project costs	2021e	2022e	2023e	2024e	2025e	Total 2021e-2025e
<b>Airport real estate</b>						
Duo Cargo Station	21	24	0	2	0	47
Other Cargo projects	12	8	12	2	2	36
Other airport real estate projects	4	4	4	4	4	20
Dhalia Cargo Station	18	0	0	0	0	18
Rehabilitation of the hangars	5	4	2	4	0	15
Midi Cargo Station	9	1	0	0	0	10
<b>TOTAL AIRPORT REAL ESTATE DEVELOPMENT</b>	<b>69</b>	<b>41</b>	<b>18</b>	<b>12</b>	<b>6</b>	<b>146</b>

### // DETAIL OF MAJOR AERONAUTICAL REAL ESTATE PROJECTS

The development of aeronautical real estate must make it possible for Paris-Charles de Gaulle to consolidate its place in the air freight field in the face of fierce competition from the other major European freight hubs, through supporting the growth of existing customers, the refurbishment of existing infrastructures and welcoming new customers.

Driven by e-commerce, the cargo market is currently booming and the occupancy rate of the Paris-Charles de Gaulle cargo city border

warehousing space is at record levels (close to 100% in the third quarter 2018). The investments specified in 2021-2025 ERA for aeronautical real estate must fit into the framework of the real estate strategy for the freight zone and the recovery of the ownership of assets by repositioning Aéroports de Paris as an investor. Almost 80,000m<sup>2</sup> additional cargo terminal installations will be created by 2025. Several major projects are planned for this period including the DUO and MIDI projects.



**DUO**



**MIDI**

#### Description

- ◆ Creation of two new cargo stands in the passive premier front on the "Fret 5" and "Fret4" parcels, creating:
- ◆ for DUO, on two floors: 36,000m<sup>2</sup> of warehousing, 3,500m<sup>2</sup> of operating offices and 500 spaces for parking light vehicles;
- ◆ for MIDI: between 9,000 and 12,000m<sup>2</sup> of warehousing, between 1,800 and 2,400m<sup>2</sup> of mezzanine offices, between 2,000 and 2,400m<sup>2</sup> of office space and 300 spaces for parking light vehicles.

#### Relevance of the project:

- ◆ additional cargo capacity (thanks in particular to the second floor for the DUO project), in an area close to breaking limit, saving land;
- ◆ supporting the significant growth of demand for connected cargo installations on the Paris-Charles de Gaulle side.

Other aeronautical real estate development will be conducted during 2021-2025 ERA in order to continue the development of Paris-Charles de Gaulle cargo city. The 2021-2025 ERA will in particular include the delivery of the India areas at the start of the ERA and the continued development of the FEDEX zone.

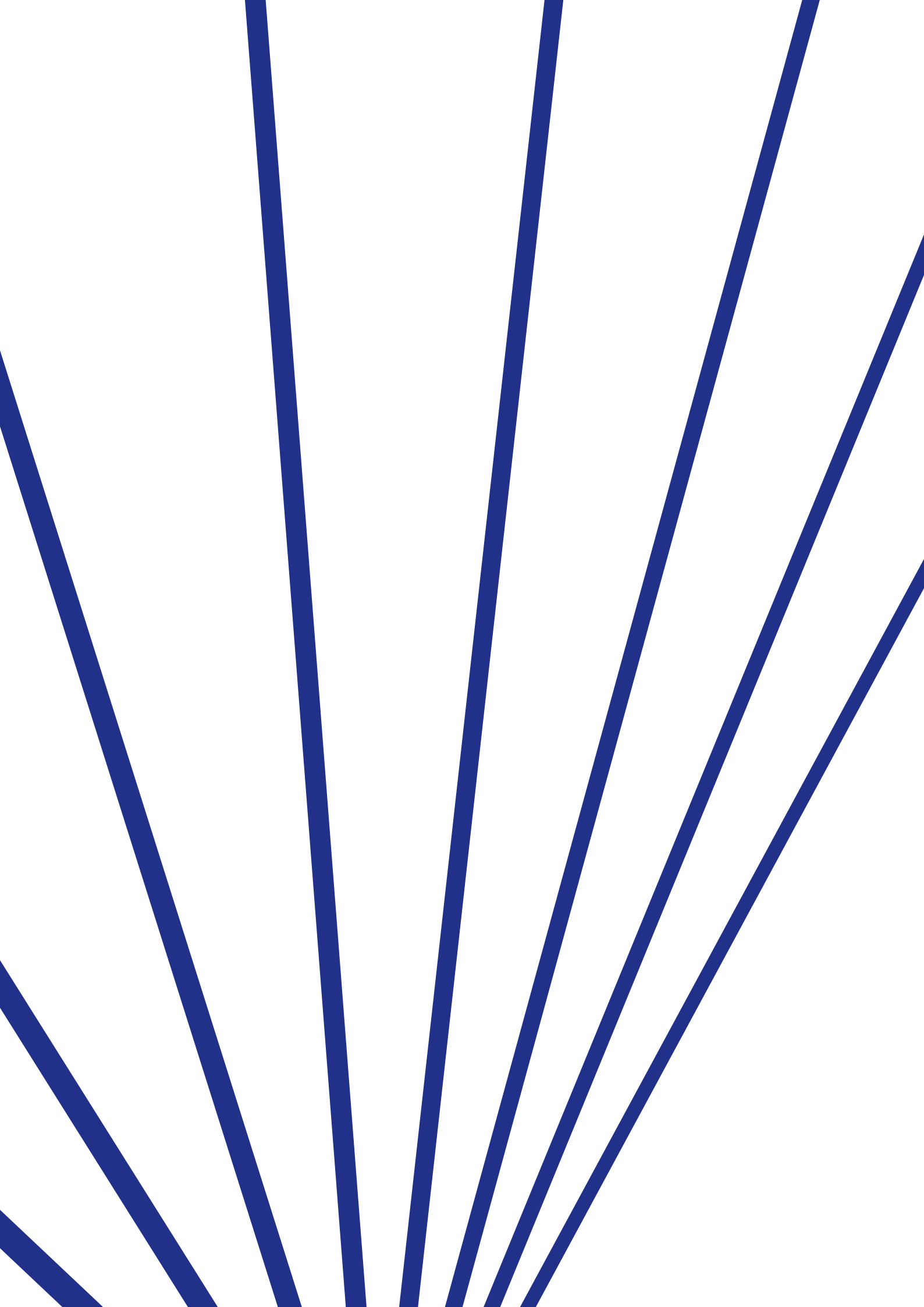
## 2.11 OTHER INVESTMENTS

### // BREAKDOWN OF THE 2021-2025 ERA PROGRAMME PER YEAR

02

<i>In 2019 current € millions – including project costs</i>	2021e	2022e	2023e	2024e	2025e	<b>Total 2021e-2025e</b>
<b>Other investments</b>						
IT systems	13	13	12	12	12	62
Studies for 2026-2030 ERA	0	0	0	14	16	30
Cross-cutting functions	5	5	5	4	4	23
Other current investments	11	5	0	0	0	16
Innovation	2	2	2	1	1	8
<b>TOTAL OTHER INVESTMENTS</b>	<b>31</b>	<b>25</b>	<b>19</b>	<b>31</b>	<b>33</b>	<b>139</b>

Other investments required for the implementation of 2021-2025 ERA: developing information systems (developing tools for the airport, infrastructures and networks, cybersecurity, robustness of the IT systems of the support services), studies for ERA 2026-2030, cross-cutting investments (in particular orientation and communication) as well as investments in airport innovation.







03

## PROPOSED TARIFFS

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## 3.1 TARIFF PERIODS AND FEES SUBJECT TO THE CAP

Article R.224-4 of the French civil Aviation Code defines the obligatory content of Economic Regulation Agreements (ERA). This article provides in particular, the setting through the Economic Regulation Agreement, of successive tariff periods not exceeding one year: the start of each period corresponds to the expected date of entry into force of the changes in fees covered by the agreement.

In accordance with the choices made in the first three Economic Regulation Agreements and with the aviation seasons, Aéroports de Paris proposes that the successive tariff periods covered by the next Economic Regulation Agreement be as follows:

- ◇ 2021 period: 1 April 2021 to 31 March 2022;
- ◇ 2022 period: 1 April 2022 to 31 March 2023;
- ◇ 2023 period: 1 April 2023 to 31 March 2024;
- ◇ 2024 period: 1 April 2024 to 31 March 2025;
- ◇ 2025 period: 1 April 2025 to 31 March 2026.

Pursuant to Article R. 224-4 of the Civil Aviation Code, the Economic Regulation Agreement must also anticipate the conditions of change of to certain fees for services provided, which includes, means *at least*, the fees mentioned in 1 of Article R. 224-2 (landing, parking and per passenger fees) and the main ancillary fees, with the exception of the fees whose pricing conditions are set contractually under the conditions of 2° of Article R. 224-2.

The list of fees above may change during the execution of the ERA, in the limits set by the aforementioned provisions of the Civil Aviation Code.

The fees listed above are those of Aéroports de Paris for the 2019-2020 period. This list is subject to change and if a fee deriving from a public airport service was created between the present time and the date of signing the Economic Regulation Agreement, it would naturally enter in the list of fees subject to the pricing change ceiling defined by the Economic Regulation Agreement.

Moreover, Aéroports de Paris envisages changing the tariff structure, in particular by merging several fees during the pricing periods of the 2021-2025 ERA. These possible changes would not impact the envisaged pricing ceiling. These changes are presented in the part "Clarification on the changes in the pricing structure".

The fee for assisting people with disabilities and reduced mobility (PDRM) is not subject to the tariff adjustment cap. It is set according to an annual basis as provided by the Civil Aviation Code, by (EC) Regulation No. 1107/2006 concerning the rights of persons with disabilities and persons with reduced mobility when travelling by air, so that the projected revenue from this fee is intended to cover at most the costs linked to that activity.

Pursuant to these provisions, the fees which will be adjusted in line with the Economic Regulation Agreement are the following:

- ◇ the passenger fee at Paris-Charles de Gaulle and Paris-Orly airports;
- ◇ the landing fee at Paris-Charles de Gaulle, Paris-Orly and Paris-Le Bourget airports;
- ◇ the parking fee at Paris-Charles de Gaulle, Paris-Orly and Paris-Le Bourget airports;
- ◇ the fee for the provision of check-in and boarding counters and the handling of local baggage at the Paris-Charles de Gaulle and Paris-Orly airports;
- ◇ the fee for the provision of connecting baggage handling facilities at Paris-Charles de Gaulle airport;
- ◇ the fee for computer check-in and boarding (CREWS) for Paris-Charles de Gaulle and Paris-Orly airports;
- ◇ the fee for the provision of fixed electrical supply facilities for aircraft (400Hz and 50Hz) at Paris-Charles de Gaulle and Paris-Orly airports;
- ◇ the fee for provision of facilities <sup>1</sup> for the de-icing of aircraft at Paris-Charles de Gaulle airport;
- ◇ the fee for entry passes to restricted areas (badges) at Paris-Charles de Gaulle, Paris-Orly and Paris-Le Bourget airports;
- ◇ the fee for the use of wastewater sieving stations at Paris-Charles de Gaulle and Paris-Orly airports.

<sup>1</sup> Facilities categorised as centralised ground-handling infrastructure, pursuant to Article R. 216-6 of the Civil Aviation Code.

## 3.2 PROPOSED AVERAGE TARIFF EVOLUTION OF FEES SUBJECT TO THE CAP

Aéroports de Paris will undertake, within the framework of the Economic Regulation Agreement for the 2021-2025 period, to use all available levers to maintain its moderate tariff policy despite the ambitious investment plan.

This moderate tariff policy enables Aéroports de Paris to keep a level of fees at a level which is equivalent to the average of comparable airports, even at a lower level (London Heathrow and Frankfurt in particular). Moreover, it offers real visibility to all stakeholders, starting with airlines

that are not subject to significant rate variations from one year to the next (as may be the case for other platforms in Europe).

The profitability level already reached and the continuation of a demanding financial discipline concerning charges enables Aéroports de Paris to present an investment programme of an unprecedented size, an amount twice the size of the one concerned by 2016-2020 ERA, while still guaranteeing a moderate pricing increase comparable to the 2016-2020 ERA.

03

Aéroports de Paris proposes, for the 2021-2025 Economic Regulation Agreement, an average annual increase of airport fees, on a like-for-like services basis, of CPI +1.35%:

2021e	2022e	2023e	2024e	2025e	CAGR 2021e-2025e
CPI +1.35%	CPI +1.35%	CPI +1.35%	CPI +1.35%	CPI +1.35%	CPI +1.35%

*CPI: consumer price index (4018E).*

This proposal takes into account the traffic forecast based on an average annual growth of +2.6% for the 2021-2025 period.

## 3.3 FEE ADJUSTMENT

Pursuant to Article L. 6325-1 of the Transport Code, the amount of fees may be subject, for general interest reasons, to limited changes in order to reduce or offset harm to the environment, improve the use of infrastructures, favour the creation of new liaisons or meet requirements concerning continuity and town and country planning.

Regarding the reduction or offsetting harm to the environment, Article R. 224-2-2 of the Civil Aviation Code specifies that landing fees may be adjusted according to the period of the day, the day of the week and the performance of aircraft in terms of acoustic or gas emissions.

Since 2009, Aéroports de Paris has granted users an adjusted landing fee on Paris-Charles de Gaulle and Paris-Orly Airports based on the acoustic performance of aircraft. It is proposed to renew this modulation for the 2021-2025 period.

During the Consultative Economic Commission meetings prior to the publication of the public consultation document, Aéroports de Paris also invited users to introduce a new measure emanating directly from the

working groups carried out as part of the "Assises nationales du transport aérien" (National Air Transport Conference), aiming to integrate a factor relating to NOx gas emissions, calculated in euros per kilogramme of emissions. This measure would be neutral pour Aéroports de Paris: the excess income would be offset by an accentuation of the financial bonus for the best acoustic groups (groups 5a and 5b). From the discussions in the Consultative Economic Commission, it has become clear that whilst environmental issues are a major concern for all stakeholders, the measure proposed by Aéroports de Paris could be improved or adapted. In light of this finding, Aéroports de Paris has undertaken to continue the technical discussions with all stakeholders in order to refine this new tariff modulation in the months after the publication of the public consultation document.

Concerning the fee adjustment for assistance for the disabled and people with reduced mobility, Aéroports de Paris is proposing to renew the tariff adjustment in force during the 2016-2020 Economic Regulation Agreement, based on the notification rate with notice of at least 36 hours by airlines.

## 3.4 PROPOSED MECHANISM FOR ADJUSTING THE TARIFF CHANGE CAP

### 3.4.1 Adjustment linked to cost control

In order to pursue a moderate tariff policy in a context of strong increase in investments, Aéroports de Paris will continue its efforts in the area of financial discipline. In order to do this, it is proposed to renew the price adjustment mechanism linked to performance of Aéroports de Paris on controlling its operating expenses within the regulated scope ("OPEX" malus).

This malus will be applicable for the 2025 pricing period only. To respect the deadlines for the publication of the regulated scope financial statements (published during the first half of the following year), the estimation of the possible malus to be applied to the pricing period for the year 2025 will be based on the level of regulated charges in 2023.

For the application of the OPEX factor, the operational costs cover all of the operational charges allocated to the regulated scope (net of internal transfers) with the exclusion of income tax and duties, external energy expenses, relating to de-icing and the winter service and assistance for the disabled and people with reduced mobility. If the operational costs for 2023 exceeded a franchise of 105% of a reference amount of €849 million, 50% of the cost variation registered in 2023 compared with the 105% franchise would be reduced from the fee tariff change cap for the 2025 pricing period, within the limit of a 1% impact on the annual change in fees.

### 3.4.2 Traffic-related adjustment

Pursuant to the Civil Aviation Code, the tariff change cap for fees governed by the 2021-2025 ERA incorporates an adjustment mechanism, based on the discrepancy recorded between actual traffic and the initial forecast.

Aéroports de Paris proposes to renew the mechanism for the 2016-2020 ERA (which has resulted in tariff maluses), on the basis of the following configuration:

- ◆ keeping the indicator contingent on the number of passengers;
- ◆ buffer zone corresponding to an annual increase in passenger traffic of +/-0.5%;
- ◆ renunciation of the tariff malus when passenger traffic increases by more than 3.5%, imposing the launch of new capacity operations not anticipated in the investment plan. Such new investments would be financed by the income stemming from the additional traffic. The new capacity operations shall be presented in the Consultative Economic Commission;
- ◆ introduction of the first application of the TRAF factor based on 2022 traffic accordingly in the 2023 pricing period.

With regard to the scale of the tariff penalty applicable in the event of over-performance of traffic, during the meetings of the Consultative Economic Commission prior to the publication of the public consultation document, Aéroports de Paris initially proposed to users to renew the same mechanism as the one in force during the 2016-2020 ERA, i.e. the TRAF factor effect is capped at +0.2%/-0.5% on the tariff change cap for each period of application, leading to an asymmetrical distribution of the risk between ADP and the companies beyond the buffer zone of around 70%/30%.

Following this prior consultation phase and in response to requests from companies to recover a larger share of any traffic over-performance, Aéroports de Paris has chosen to modify its proposal in a way that favours the airlines by proposing to take a larger share of this risk. The TRAF factor effect will be capped at +0.2%/-0.6% on the tariff change cap for each period of application, corresponding to a new risk distribution of 75%/25%.

### 3.4.3 Adjustment linked to quality of service

The proposal of Aéroports de Paris is based on a dual system benefiting airlines: a malus in the event of non-achievement of objectives concerning operational efficiency (availability of airport resources) and

the provisioning of a budget dedicated to service quality investments if passenger satisfaction objectives are not attained (departure, arrival, connections). The mechanism is presented in Chapter 4 (service quality).



### 3.4.4 Adjustment linked to the investments made

In line with the 2016-2020 ERA, it is proposed to renew the principle of an adjustment factor encouraging Aéroports de Paris to respect a schedule for completing the structuring projects listed hereafter, defined on the basis of the following milestones:

		2021				2022				2023				2024			
Investment objective		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
North plane areas (CDG) <sup>1</sup>	Opening of 10 remote areas																X
Agen Area (CDG) <sup>2</sup>	Opening				X												
T1: Junction of the Satellites 1/7 (CDG) <sup>3</sup>	Covered area															X	
T2AC: Golf areas	Opening									X							
Multi-storey PR Car Park	Opening								X								
Runway renovation <sup>1</sup>	Reopening								X								
New road access to T2 from Paris	Opening												X				
Québec area	Opening															X	
Hall 1/2 link	Covered area																X

<sup>1</sup> This delivery is dependent on obtaining the Terminal 4 environmental authorisation in Q3 2020.

<sup>2</sup> This delivery is dependent on obtaining Environmental authorisation n° 2 in Q3 2019.

<sup>3</sup> This delivery is dependent on the feasibility of recovering the oléo réseau network.

In response to requests from users expressed during the Consultative Economic Commission prior to the publication of the Public Consultation Document, Aéroports de Paris also decided to propose an annual monitoring of the change in the cost of investment projects eligible for the INV factor and thus provide explanations on the budgetary changes of these projects year after year. This monitoring will also be accompanied by a report on the progress of these projects, their main execution risks or uncertainties and the main changes compared to the initial programme. These elements could be presented during the annual Consultative Economic Commission, in addition to the progress report on the ERA investment programme and thus be debated with the airlines and their representatives.

### 3.4.5 Other adjustments

In a similar manner to measures in the 2011-2015 ERA and 2016-2020 ERA, Aéroports de Paris is proposing other adjustment factors being taken into account, in particular if changes to legislation or regulations impact the level of costs or revenues of the regulated scope or in the event of a

change of the scope of the services covered by the fees subject to the tariff ceiling.

The principle adopted in these respective cases would be that of neutrality with respect to these events on the projected margin generated by the regulated scope.

### 3.4.6 Clarifications on changes to the tariff structure

Under the regulations, the evolution of the tariff structure is not solely linked to the Economic Regulation Agreement (ERA), but also annual consultations and decisions concerning changes to fees. For the sake of clarity, the key principles of the proposed changes are outlined below.

These modifications of the tariff structure were presented to the members of the consultative committees of the Paris platforms during the consultation prior to the publication of this public consultation file.

The different measures envisaged can be organised into four categories:

#### ◆ pooling and simplification

Pooling resources and services and the simplification of the tariff structure would result in the following measures:

- ◆ including in the aircraft parking fee, the charge for the provision of fixed installations for the supply of electrical power for aircraft at Paris-Charles de Gaulle and Paris-Orly Airports, and extending the service fee of this charge to connected docking guidance systems and timers;

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- ◆ integration in the passenger fee of the CREWS services, once the service will be provided in all Aéroports de Paris terminals, and extending the service scope of this fee to self-boarding gates;
- ◆ revising the de-icing fee to simplify it, prior to the possible integration, during the ERA, of the fixed part of this fee into the landing fee;
- ◆ integration in the fee for the provision of check-in and boarding counters and the handling of local baggage of the CUSS (Common-Use Self-Service) kiosks and automatic baggage drop off points.

◆ encouraging development

The process of encouraging the development of airlines and in particular those based at the airports, will continue with the renewal of the night-time parking exemption and the possible adaptation of the fee structure (in particular the passenger fee) to increase the competitiveness of the Paris platforms.

◆ optimising infrastructures

The traffic-capacity fit during the 2021-2025 period shows signs of a certain tension concerning availability of airport resources, and more particularly aircraft stands. In order to respond to this situation, Aéroports de Paris envisages putting in place a pricing policy that will encourage the optimisation of operations, through three measures:

- ◆ renewal of the modulation benefiting fast rotations, developed in part 3.4.7 "Proposal for incentive measures for better use of infrastructures";
- ◆ possibility to introduce a price incentive, namely through a tariff increase of contact aircraft stand fee, for long-term contact parking;
- ◆ changing the parking fee for the benefit of aircraft with greater capacity.

◆ environmental impact

In order to translate its environmental concerns, Aéroports de Paris proposes to put in place, embedded in the landing fee, a factor related to the NOx level of gaz emissions, that will be compensated by an increase of the acoustic modulation of the most efficient aircraft as described in part 3.3 (fee modulation). Whilst environmental issues are a major concern for airlines, they consider that the measure proposed by Aéroports de Paris could be improved or adapted. Aéroports de Paris has undertaken to continue the technical work with all stakeholders in order to refine this important measure for the environment.

All the structural changes envisaged will be carried out under the condition of economic neutrality with respect to the revenue of Aéroports de Paris. With regard to the implementation of these different measures, Aéroports de Paris will favour a tariff change from the 2021 tariff period as indicated in the ERA. If the equipment or services concerned cannot be deployed in a uniform way across the Parisian platforms from 2021, the ERA could provide for the possibility of implementation during a later tariff period.

## 3.4.7 Proposal for incentive measures for better use of infrastructures

### Incentive measures for the development of traffic

Aéroports de Paris had put in place, for the 2011-2015 ERA, an incentive measure for the development of traffic based on a single "departure passenger" basis, then during 2016-2020 ERA, for the same reason, two separate incentives: an incentive for "Origin/Destination" passengers and an incentive for "Connecting" passengers.

For the 2021-2025 period, Aéroports de Paris is proposing not to renew these two incentive measures. Indeed, as they were not taken into account in the calculation of the regulated scope. They are not to be included in the Economic Regulation Agreement. Aéroports de Paris envisages replacing these measures for developing traffic with measures focused on a "Development Route" approach, making it possible to adapt the incentive system to the requirements expressed by airlines and market trends.

### Incentive measures designed to optimise infrastructures

Furthermore, in the 2016-2020 period, Aéroports de Paris put in place a measure designed to optimise the use of infrastructures, by rewarding fast turn arounds. In the context of the increasing saturation of Aéroports de Paris airports anticipated in the 2021-2025 period, mainly concerning

aircraft stands, it appears preferable to renew this measure focused on better use of contact parking stands.

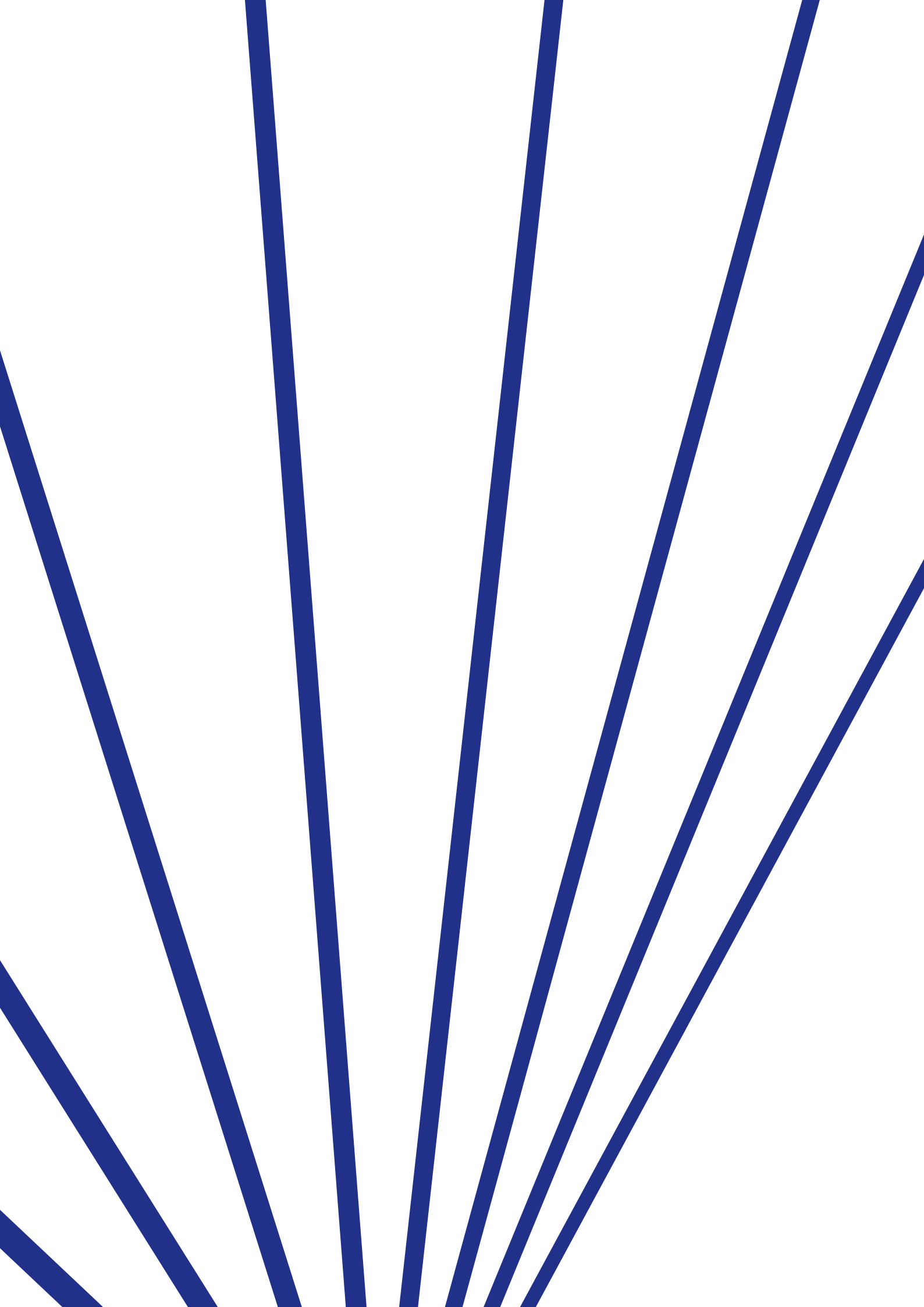
Aéroports de Paris envisages capping this measure at €5.5m for the first pricing period concerned by the next Economic Regulation Agreement. The envisaged system would make it possible to reward all contact parking of under 45 minutes, thanks to a discount of the parking fee granted on the overall contact invoice (fixed part and variable part) excluding night parking.

In the ERA proposal submitted to the prior consultation of users as part of the Consultative Economic Commission, Aéroports de Paris considered that the amount concerned by this modulation should be factored into the profitability calculation of the regulated scope, insofar this measure is directly linked to the parking fee with an objective to better use infrastructures.

It has become clear, from these consultations, that this measure is considered necessary by a large majority of the players concerned, in light of the coming tensions on the availability of aircraft parking stands over the 2021-2025 ERA period. However, there was unanimous agreement for a financing of this incentive measure on the non-regulated scope in the continuation of the current ERA.

Aéroports de Paris has chosen to respond positively to these requests and finally proposes to renew the current system.









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## QUALITY OF SERVICE

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Aéroports de Paris wishes to pursue the continuous improvement approach concerning the quality of services for all its customer for the 2021-2025 period. This is a matter, in addition to the actions already undertaken, of reinforcing the fundamentals and developing the excellence actions required to increase the attractiveness of the Paris platforms.

## 4.1 CUSTOMER STRATEGY

Aéroports de Paris wishes, during the 2021-2025 period, to pursue the approach concerning the continuous improvement of the quality of the services delivered to passengers and airlines. This improvement is based on several key themes:

- ◇ atmosphere (mainly in boarding lounge), cleanliness, ease of orientation, courtesy and professionalism of the personnel are the three key themes concerning the perception of quality;
- ◇ architecture, design, entertainment as well as taking into account the requirements and wishes of all parties with a positive impact on the reputation of the platforms. On the contrary, waiting times on flows (access, border controls and security filtering, baggage delivery), lack of courtesy, potential difficulties concerning connection experience, have a negative impact.

For the 2021-2025 period, the strategic areas of focus for improving service quality concern mastering time, personalisation, and differentiation through the Paris experience. All the employees of Aéroports de Paris and its partner companies will be made aware of the importance of these areas for improvement ensuring its success.

- 1 Mastering time.** The objective is to make it possible for passengers to master the time spent in the airport by making the whole experience more fluid. In order to do this, the passenger handling process will be made smarter at each stage: checking in, border control and filtering inspection, boarding. The process will be made more fluid thanks in particular to the contribution of biometry in facilities: CUSS (*Common Use Self-Service*) kiosks, DBA (Automatic Baggage Drop Off), advance check-in, PARAFE airlocks, shelters "of the future", SBG (*Self Boarding*

*Gates*), latest-generation Security Checkpoints ("SCP", automated and in double lines with a handling capacity of 300 passengers per hour). Lastly, the large-scale programme to overhaul orientation, in particular through information islands and adapted signage will be continued.

- 2 Personalisation.** The customer relationship will be personalised thanks to the use and development of digital tools. Special attention will be paid to passengers with specific needs (the disabled, people with reduced mobility, families, the elderly) as well as connecting passengers. With regard to the latter, the short term objective is to identify and simplify the decision-making points of the passenger experience and improve the information they can obtain thanks to digital tools. In the medium term, Paris-Charles de Gaulle will have a new "product" hub covering an area of 23,000m<sup>2</sup>, and comprised of three connection spaces, eight decision-making points and seven connection points aimed at making the Paris- Charles de Gaulle platform the most popular hub of travellers in Europe by 2025.
- 3 Differentiation through the Paris experience.** In order to consolidate the reputation of our platforms concerning service quality and standing out from the competition, passengers will have a "Parisian" experience in our terminals. Whether it concerns flow spaces or boarding lounges, the atmosphere proposed will be Paris-focused. Cultural and entertainment events will be organised on a regular basis.

This improvement of the quality will be essential to provide the best service to our customers during the 2024 Olympic Games and Paralympics and embrace the hospitality, intermodality and innovation challenges in order to handle the 15 to 20 million visitors expected as well as the official delegations and athletes.

## 4.2 PROPOSED INDICATORS AND OBJECTIVES

Aéroports de Paris undertakes to develop the highest standards of service quality by guaranteeing the availability of the resources required by airlines and the performance of the service quality perceived by passengers. Three categories of indicators are proposed:

- ◇ the "operational efficiency" indicators are a response to the expectations of airlines with regard to the provision by the airport, of airport operating resources. The incentive system associated with these indicators would be based solely on a concept of required minimum level, sanctioned where appropriate by a price penalty;

- ◇ "overall performance" indicators measuring the satisfaction perceived by passengers and concerning which significant improvement is expected. The incentive system related to these indicators would be a malus system which would top up a budget dedicated to investments;
- ◇ the "service integration" indicators focused on the overall performance of 'Aéroports de Paris in the integration of services based on a collaborative approach. It is a response to a strong expectation expressed by all of the air transport stakeholders. These indicators are not related to a financial impact.

### "Operational efficiency" indicators

The operational efficiency indicators reflect the good availability of the airport resources required by airlines being met. Monitoring these indicators will make it possible to enhance the quality of the service offered to airlines, in particular through a more suitable preventive maintenance policy and enhanced responsiveness in the event of incidents.

The incentive system associated with these indicators would be based solely on a concept of required minimum level, sanctioned where appropriate by a price penalty. Aéroports de Paris deems that the "Quality

Standard" indicators should not give rise to a bonus as they relate to the fundamentals expected by customers.

Six "operational efficiency" indicators are proposed which are all availability indicators four of which were already included in the previous Economic Regulation Agreement. These indicators respond to the objective concerning the availability of all airport resource categories: primary resources (parking process), secondary resources (passenger process) and handler resources (baggage process).

Availability of primary resources:

- ◇ availability of aircraft parking stands (DPS). This indicator was also featured in the 2011-2015 ERA and the 2016-2020 ERA. Its scope has been extended to unexpected shutdowns in the previous ERA. It has been decided to maintain this scope in the 2021-2025 ERA;
- ◇ bridge availability (DPT). This indicator was already included in the 2011-2015 ERA and in the 2016-2020 ERA. Its scope has been extended to installation shutdowns. It has been decided to maintain this scope in the 2021-2025 ERA;
- ◇ availability of 400Hz (D4H). This indicator featured in the 2016-2020 ERA and its definition is included in the 2021-2025 ERA.

Availability of secondary resources:

- ◇ availability of the baggage delivery belts (DTB). This indicator was already included in the 2011-2015 ERA and in the 2016-2020 ERA. Its scope has been extended to the installation shutdowns in the previous ERA. It has been decided to maintain this scope in the 2021-2025 ERA;

- ◇ availability of CREWS (DCW) equipment including the availability of computer terminals installed at check-in counters and boarding gates, standard printing peripherals and the management of on board access cards, and printing baggage tags; as well as the printers required for boarding operations; this is a new indicator in the 2021-2015 ERA.

Availability of tertiary resources:

- ◇ sorter Entry (DET) availability measures the sorter saturation level. Indeed, in the event of saturation of a sorter, feeding is slowed down or even stopped. The measurement of this indicator corresponds to the ratio between actual time and theoretical time of operating the process of feeding baggage into the sorters during the check-in process. Actual time is calculated on the basis of the theoretical time identifying all the baggage feeding episodes exceeding 6 seconds.

The period for measuring these indicators, for each of the years N of the 2021-2025 ERA, begins on 1 July of the year (N-1) and finishes on 30 June of year N.

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The objectives set as well as the minimum levels required are as follows:

## // OBJECTIVES OF THE OPERATIONAL EFFICIENCY INDICATORS FOR 2021-2025

Operational efficiency indicators (as a %)		2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
<b>Availability of primary resources</b>						
	<b>ADP Objective</b>	<b>99.50</b>	<b>99.50</b>	<b>99.50</b>	<b>99.50</b>	<b>99.50</b>
<b>DPS</b>	Minimum level	98.10	98.10	98.10	98.10	98.10
	<b>ADP Objective</b>	<b>98.68</b>	<b>98.69</b>	<b>98.69</b>	<b>98.70</b>	<b>98.70</b>
<b>DPT</b>	Minimum level	97.18	97.19	97.19	97.20	97.20
	<b>ADP Objective</b>	<b>97.46</b>	<b>97.59</b>	<b>97.73</b>	<b>97.86</b>	<b>98.00</b>
<b>D4H</b>	Minimum level	95.96	96.09	96.23	96.36	96.50
<b>Availability of secondary resources</b>						
	<b>ADP Objective</b>	<b>98.28</b>	<b>98.46</b>	<b>98.64</b>	<b>98.82</b>	<b>99.00</b>
<b>DTB</b>	Minimum level	96.78	96.96	97.14	97.32	97.50
	<b>ADP Objective</b>	<b>80.00</b>	<b>80.50</b>	<b>81.00</b>	<b>81.50</b>	<b>82.00</b>
<b>DCW</b>	Minimum level	80.00	80.00	80.00	80.00	80.00
<b>Sorter resource availability</b>						
	<b>ADP Objective</b>	<b>95.00</b>	<b>95.00</b>	<b>95.00</b>	<b>95.00</b>	<b>95.00</b>
<b>DET</b>	Minimum level	93.00	93.00	93.00	93.00	93.00

## “Overall performance” indicators

The overall performance indicators reflect the service quality perceived by passengers for departure, arrival or connecting flights. These indicators complete those measuring the availability of airport resource availability through passenger feedback. Monitoring these indicators makes it possible to improve passenger flow in the terminals and also compare the airport's performance levels with those of other airports on a basis of comparable calculation.

The incentive system related to these indicators would be based solely on the notion of the minimum level required, penalised if applicable by a malus. Unlike the Economic Regulation Agreement 2016-2020, no pricing bonus is applied under these indicators, and Aéroports de Paris is proposing scrapping the pricing bonus logic for all of its service quality policy.

Within the framework of the assessment of this overall performance and unlike the operational efficiency indicators, this malus would not impact

fee tariffs but would result in a contribution to a budget dedicated to service quality investments. This proposal would enable the Aéroports de Paris service quality policy to be implemented faster on its Paris platforms without impacting fees.

During the Consultative Economic Commissions on the 2021-2025 ERA, the airlines and their representatives expressed the desire to be associated with drafting the functioning principles of this new penalty mechanism. Aéroports de Paris took into account the expressed opinions with regard to the improvement to quality perceived by passengers, a major challenge that needs to bring together all stakeholders. It proposes to dedicate one or several future Consultative Economic Commissions workshops to co-building this mechanism, in order to meet these expectations.

This collaboration will continue throughout the ERA, given that it is proposed, if the objectives are not met by Aéroports de Paris, to submit

the use the resources of this investment budget once again to user consultation as part of the annual Consultative Economic Commissions.

During the Economic Advisory Commissions on the 2021-2025 ERA, Aéroports de Paris proposed to retain three "overall performance indicators" which are all satisfaction indicators resulting from a survey of passengers questioned in the boarding lounges. These three indicators were already included in the 2016-2020 ERA:

- ◇ overall satisfaction of departing passengers (SGD indicator - ASQ/ACI survey). The indicator aggregates passenger responses to the question "Based on your experience today, please rate this airport for each of the following aspects: (...) Overall satisfaction for this airport";

- ◇ overall arrival satisfaction (SGA indicator - Arrival air passenger observatory survey). The indicator aggregates passenger responses to the question "On the whole, what is your opinion concerning the services you have used in this airport today?";

- ◇ connecting passengers satisfaction (SFC indicator - ASQ/ACI survey). The indicator aggregates passenger responses to the question "Based on your experience today, please rate this airport for each of the following aspects: (...) Ease of connections with other flights".

The period for measuring these indicators, for each of the years N of the 2021-2025 ERA, begins on 1 July of the year (N-1) and finishes on 30 June of year N.

The objectives set as well as the minimum levels required are as follows:

## // OBJECTIVES OF THE OVERALL PERFORMANCE INDICATORS FOR 2021-2025

Overall performance indicators		2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
<b>SGD (departures)</b>	<b>ADP Objective</b>	<b>3.88</b>	<b>3.90</b>	<b>3.92</b>	<b>3.95</b>	<b>4.00</b>
	Minimum level	3.86	3.88	3.90	3.92	3.95
<b>SGA (arrival)</b>	<b>ADP Objective</b>	<b>91.00</b>	<b>91.20</b>	<b>91.40</b>	<b>91.60</b>	<b>92.20</b>
	Minimum level	90.95	91.10	91.20	91.50	92.10
<b>SFC (connection)</b>	<b>ADP Objective</b>	<b>3.62</b>	<b>3.65</b>	<b>3.67</b>	<b>3.70</b>	<b>3.75</b>
	Minimum level	3.62	3.64	3.66	3.68	3.70

Faced with the major challenge of improving the quality perceived by passengers, and in response to airlines which expressed the desire, during the prior Consultative Economic Commissions, to see more commitments in this area, Aéroports de Paris plans to reintroduce the satisfaction as regards directional information indicator into the 2021-2025 ERA. Representing a major challenge for the 2016-2020 ERA, directional information remains a specific attention point during the 2021-2025 ERA, which will see the continuation of the directional information redesign project. If this proposal is favourably received by the airlines, this indicator would also be subject to a possible tariff penalty under comparable conditions to those of the "overall performance" indicator family.

## "Service 'integration" indicators

Lastly, Aéroports de Paris proposes an additional system with four monitoring indicators which are focused on the overall airport performance requiring a strong integration of services based on a collaborative approach. It responds to a strong expectation expressed by all the air transport stakeholders including passengers, airlines, handlers, border police, security teams and catering suppliers.

These indicators make it possible to mobilise the whole airport community around the main challenges such as punctuality of flights or terminal access time.

These indicators do not have a financial impact or predetermined objectives, identical to what already existed during the previous three Economic Regulation Agreements.

The four service integration indicators are as follows:

- ◇ departure punctuality. In a European context in which there is an overall decrease in punctuality, it is essential to commit to this service quality indicator which is decisive for passengers and airlines;
- ◇ terminal access time. In a context of saturation of access to platforms during rush hours and expected traffic growth, Aéroports de Paris has made improving access one of its priorities in the 2021-2025 ERA. Consequently, the objective is to significantly improve the time needed to access terminals, measured from entering the platforms;
- ◇ waiting time at filtering inspection points (PIF), Border Police (PAF) and baggage delivery. These monitoring indicators already

existed in the 2011-2015 ERA. Passenger satisfaction passengers concerning cleanliness, atmosphere and courtesy. This indicator aggregates passenger responses to the ASQ/ACI questionnaire concerning "satisfaction with cleanliness", "satisfaction with overall airport atmosphere" and "satisfaction with personnel courtesy and helpfulness". Satisfaction rates concerning questions relating to atmosphere and courtesy are proposed for the first time in the Economic Regulation Agreement;

- ◇ passenger satisfaction passengers concerning cleanliness, atmosphere and courtesy. This indicator aggregates passenger responses to the ASQ/ACI questionnaire concerning "satisfaction with cleanliness", "satisfaction with overall airport atmosphere" and "satisfaction with personnel courtesy and helpfulness". Satisfaction rates concerning questions relating to atmosphere and courtesy are proposed for the first time in the Economic Regulation Agreement.

### Service integration (continued)

Punctuality <sup>1</sup>
Terminal access time <sup>1</sup>
Waiting time PIF, PAF, baggage
Satisfaction concerning cleanliness, atmosphere <sup>1</sup> , courtesy <sup>1</sup>

<sup>1</sup> New 2021-2025 ERA indicators.

## 4.3 SUSTAINABLE DEVELOPMENT

Between 2021 and 2025 Aéroports de Paris will pursue a sustainable development strategy leading to sensible and responsible growth, paying careful attention to its environment and its nearby residents. Several areas will be developed during this period:

### 1 Helping to reach carbon neutrality by 2030

The energy performance of existing facilities will be improved and every effort will be made to introduce further improvements in the new buildings including the future Terminal 4. Moreover, renewable energy will be introduced locally, including the geothermal power plant at Paris-Charles de Gaulle. Lastly, contracting with green power producers will be developed as well as the energy transformation of the Group's vehicle fleet to clean vehicles;

### 2 Promoting air quality and controlling CO<sub>2</sub> emissions on and around platforms.

Air quality on and around the airports will be measured and the information will be provided to the public in monthly and annual monitoring reports. Parking stands will be equipped systematically with 400Hz plugs and plugs for mobile ACU (Air Conditioning Units). The procedures for taxiing and departure management will be optimised. The electrification of ground-handling vehicles will be encouraged and facilitated. A company and inter-company mobility plan will be defined. Lastly, NOx emission levels will be taken into account in the landing fee;

### 3 Improving water management

Measures to monitor and reduce water consumption will be continued. The management of winter pollution will be improved. At Paris-Orly, a new de-icing area will be built to recover and treat winter run-off;

### 4 Improving waste recovery

Measures on the sorting and treatment of waste will be continued. The waste piers of the terminals will be adapted to allow sorting at source. A road map for the circular economy will be drafted in partnership with all the stakeholders;

### 5 Preserving biodiversity

Inventories of the fauna and flora of airports in the Paris area will be carried out and updated regularly. Biodiversity will be taken into account systematically in project development. The policy of ecological management of green spaces will be reinforced. Lastly, participatory measures with our stakeholders will be adopted in order to raise awareness of biodiversity;

### 6 Contributing to territorial economic development

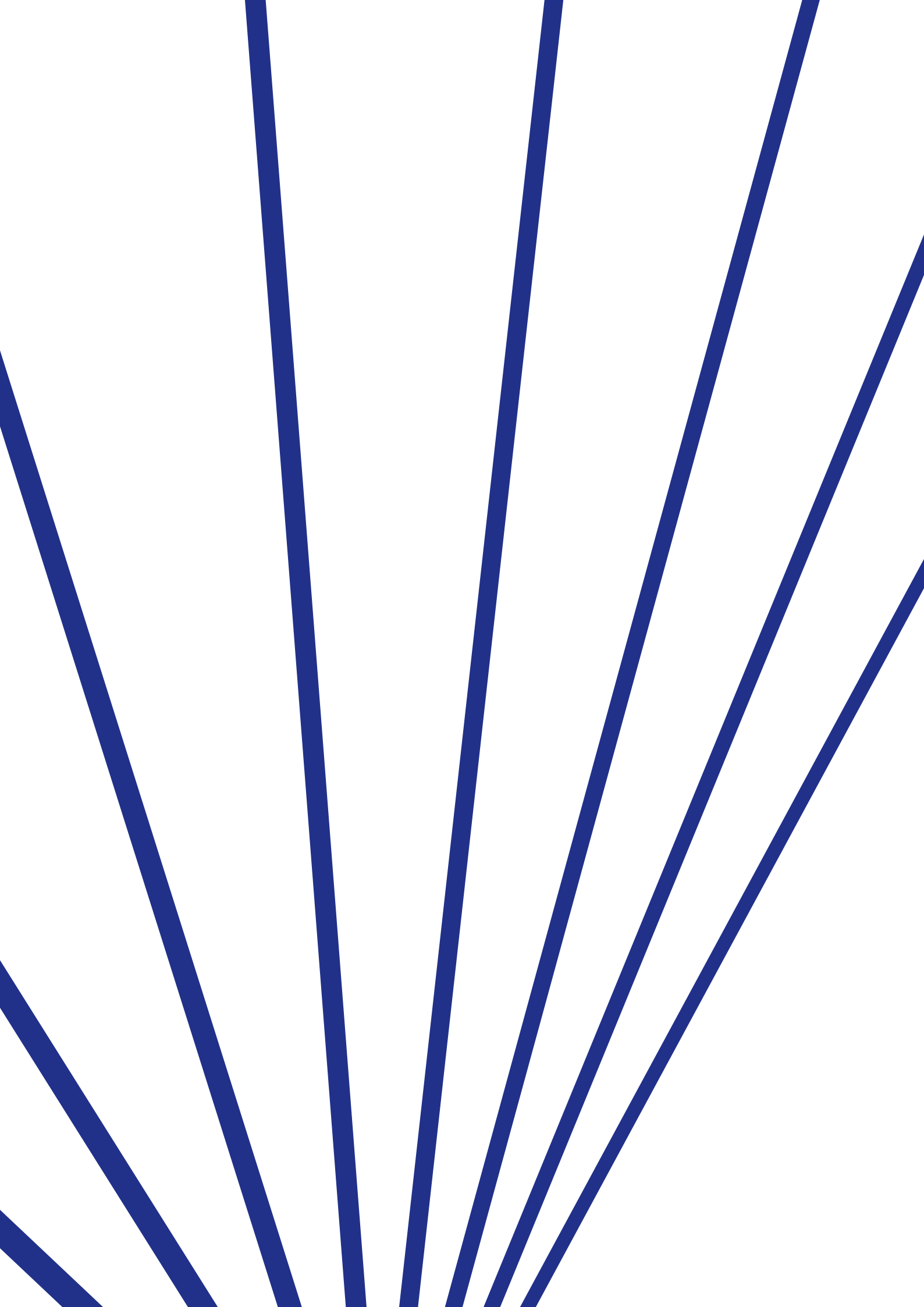
Territorial attractiveness will be a priority in order to favour international projects and business developments and to support the creation and development of local businesses;

### 7 Helping to promote access to jobs by the population

Needs for jobs and skills will be analysed and anticipated in order to promote communications and guidelines for the local population and adaptation of the training offer. Businesses and job seekers will be put in touch with each other. Targeted measures will be undertaken in the priority neighbourhoods of the nearby areas.

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## CHANGES IN ECONOMIC PERFORMANCE

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## 5.1 ECONOMIC REGULATION FRAMEWORK AND REGULATED SCOPE

### Economic regulation framework

The economic regulation framework applicable to Aéroports de Paris was principally defined by the French transport code and the French Civil Aviation code. This regulation notably aims to:

- ◆ give sector players visibility on infrastructure and airport-fee trends, as well as on the quality of services rendered by Aéroports de Paris;
- ◆ fix the conditions related to the profitability of the investments relevant to the regulated scope of activities in order to attain the fair return on the capital invested, guaranteed by the texts (see below) by Aéroports de Paris.

The privileged vehicle of this regulation is the Economic Regulation Agreement of up to five years, signed between Aéroports de Paris and Government authorities after in-depth consultation of the airlines and other stakeholders. This is distinct from the Aéroports de Paris regulatory specifications in which the French State unilaterally defines the public service obligations of the company. The objectives of the Economic Regulation Agreement are to:

- ◆ lay down the company's commitments concerning **investments**;
- ◆ define the **quality of service** targets and determine the associated financial incentives;
- ◆ defining the cap **for increases in the most significant airport fees** landing fees, passenger fees, parking fees, de-icing fees, check-in fees, etc.

The regulatory regime stipulates compliance with fundamental:

- ◆ the fair return on capital invested by Aéroports de Paris is it is assessed by the weighted average cost of capital of the company (WACC) of the regulated scope of activities. The Economic Regulation Agreement sets forth the economic and financial assumptions which also underpin the ADP's business plan and are conducive to ensuring this fair return on the capital invested. Then this fair return is set as follows:

- ◆ measuring the Return on Capital Employed (ROCE) which is equal to the ratio between operating income after tax <sup>1</sup> and the regulated asset base (RAB); it being specified that this regulated asset base may include expenses, linked to infrastructure construction and new installations before their commissioning; and
- ◆ comparing this ROCE to the cost of raising the capital employed by the company (WACC) over the regulated scope, consisting of equity and debt;
- ◆ limiting the overall earnings from airport fees with the cost of services rendered, including the weighted average cost of capital employed (Article 6325-1 of the French Transportation Code). This principle, which applies even in the absence of an Economic Regulation agreement, is assessed at the level of the aviation fund (total income on the one hand and overall cost of airport public services on the other hand) leaves Aéroports de Paris free to define its tariff structure and to apply, if appropriate, limited set-off between the fees collected at Paris-Charles de Gaulle, Paris-Orly and Paris-Le Bourget. Moreover, this principle cannot discourage any attempts by ADP to surpass the performance targets set by the Company. Thus the Company's return on capital employed (ROCE) may prove to be greater than weighted average cost of mobilising capital (WACC) used by the ERA, as indicated by the regulatory authority mentioned in Article R.224-8 of the Aviation Code.

It is specified that the draft law relating to the growth and transformation of companies (the so-called PACTE Act), currently under on the publication date of this document, contains provisions specific to the economic regulation of Aéroports de Paris. It confirms the mandatory nature of the Economic Regulation Agreement and in so doing the intangibility of the level of the WACC level underlying each agreement.

### Regulated scope

The scope of activities mentioned in Article R. 224-3-1 of the Civil Aviation Code, also called the "regulated scope", is currently defined in Article 1 of the Order of 16 September 2005 regarding fees for services rendered in aerodromes and amended by decree on 17 December 2009.

This encompasses the range of activities used to assess the company's profitability in order to determine the level of fees for airport public services.

The regulated scope is defined as follows:

"For Aéroports de Paris, the scope of activities set out in Article R. 224-3-1 of the Civil Aviation Code encompasses all the activities of Aéroports de

Paris carried out at the aerodromes mentioned in Article D. 251-1 of this code, except for the following:

- ◆ at the aerodromes of Paris Charles de Gaulle and Paris-Orly, ground-handling activities other than those mentioned in Article R. 216-6 of the Civil Aviation Code;
- ◆ subject to the provisions of item IV of this Article, activities performed by companies associated with Aéroports de Paris within the meaning of Order no. 2005-649 of 6 June 2005;
- ◆ activities for which the financing falls under Article 1609 *quater* of the General Tax Code;

<sup>1</sup> Net operating income defined by decree of September 16, 2005 concerning fees for services rendered at airports. This differs from net income from operations measured and recognized to include capital gains and losses on asset disposals, any subsidies for capital improvements and employee profit-sharing. Net operating income after taxes is deduced from net operating income by using the standard corporate income tax rate.

- ◇ activities for which the financing falls under Article 1609 *quater* of the General Tax Code;
- ◇ commercial and service activities such as those relating to shops, restaurants, banking and exchange services, hotels, car rental and advertising;
- ◇ property and real estate activities outside the terminals other than those consisting of the supply of land, floor space, buildings or premises for:
  - ◆ ground-handling activities,
  - ◆ the storage and distribution of aircraft fuel,
  - ◆ aircraft maintenance,
  - ◆ activities related to air cargo,
  - ◆ general and business aviation activities,
  - ◆ public/subscription car parks,
  - ◆ public transport;
- ◇ any other activities unrelated to the activity of the above-mentioned aerodromes.”

Accordingly, the regulated scope comprises:

- ◇ the public service airport activities, giving rise to fees for services rendered: For most of these services charges and fees are fixed by Aéroports de Paris and approved by the Independent Supervisory

Authority (ASI) (fees per passenger, landing fees, parking fees, de-icing fees, 400Hz fee, etc.), while other services correspond to services provided in a particular way for certain clients and which give rise to a direct contractualisation which fixes the tariffs with the customers concerned<sup>1</sup>;

- ◇ non-aviation activities with non-regulated prices, the performance of which is likely to reduce the aforementioned fees: these activities include car parks, industrial services, rental activities in the terminals, and airport real estate activities outside the terminals.

The following fall outside of the regulated scope:

- ◇ activities subject to regulatory measures under public authorities (administrative duties financed by airport tax, mainly related to runway safety and security, and management of the tax on aircraft noise pollution (TNSA) to help local residents with soundproofing of their homes);
- ◇ commercial activities, real estate diversification activities and all activities managed by Aéroports de Paris in airports other than those in the Paris region.

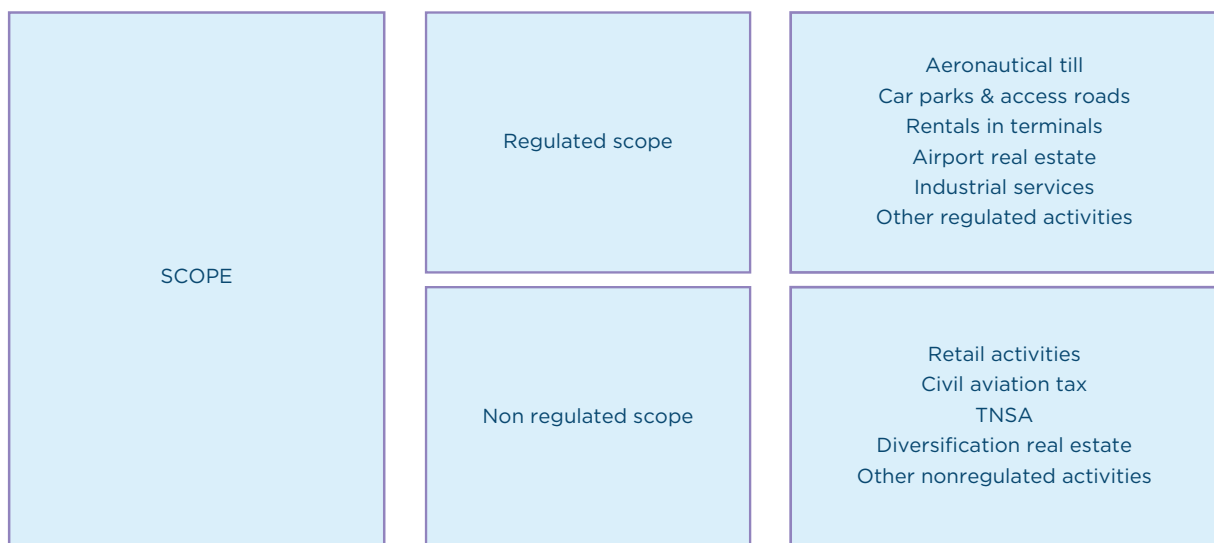
It should be pointed out that the bill relating to business growth and transformation (the so-called PACTE Act) in the process of review on the publication date of this document would uphold the definition of the regulated scope from a legislative standpoint, without any particular change (Article L.6323-4 1 of the Transport Code created by Article 47 of the Bill).

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## 5.2 PRINCIPLES FOR PREPARING THE REGULATED ACCOUNTS

### Scope of regulation

SIMPLIFIED VIEW OF THE CONTENTS OF THE REGULATED AND NON-REGULATED SCOPES OF ADP



<sup>1</sup> The specific fee for assistance to people with disabilities and reduced mobility is regulated by the principles of EC regulation No. 1107/2006 of 5 July 2006 concerning the rights of disabled and mobility-impaired persons when travelling by air.

Pursuant to Articles 59 and 61 of the specifications approved by Decree No. 2005-828 of 20 July 2005, ADP, besides respecting the requirements of the economic relation agreement, must establish a cost accounting system for its different business activities that distinguishes between the following:

- ◆ a regulated scope of activity defined by Article 1 of the Decree of 16 September 2005;

- ◆ scope of the civil aviation tax as per Article 1609 *quater* of the French General Tax Code;

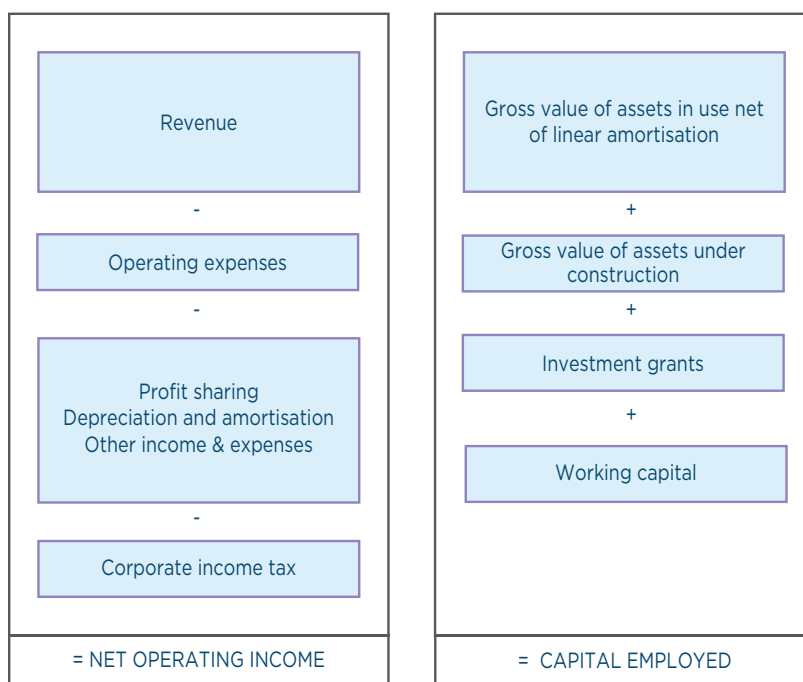
- ◆ scope of the TNSA as per Article 1609 *quater* A of the French General Tax Code.

Regulated accounts are elaborated in accordance with French accounting standards (French GAAP).

## Economic performance

ADP uses the ROCE ("Return on Capital Employed") indicator to measure the economic performance of the different activities produced. The ROCE, defined in Article 2 of the Decree of 16 September 2005 relating to fees for services rendered at airports, is the rate of return on the capital invested as part of the regulated scope of activities, calculated as the ratio between

operating income after corporate income tax and the regulated asset base for the period in question. The ROCE shows the return on the capital invested (or employed) after corporate income tax. The operating income and the regulated asset base are calculated in accordance with the provisions of Article 3 of the aforementioned Decree.



### Operating income net of corporate income tax

Operating income is defined by the Decree of 16 September 2005 as the income made from the normal and current operations of a company's activity post-tax. The financial and exceptional aspects are not taken into account. Operating income is calculated as the difference between:

- ◆ on the one hand: revenue (including capitalised production);
- ◆ on the other hand: current expenses; other operating expenses (profit sharing, depreciation and amortisation); other operating income and expenses.

The operating income used for the calculation of the ROCE is calculated corporate income tax.

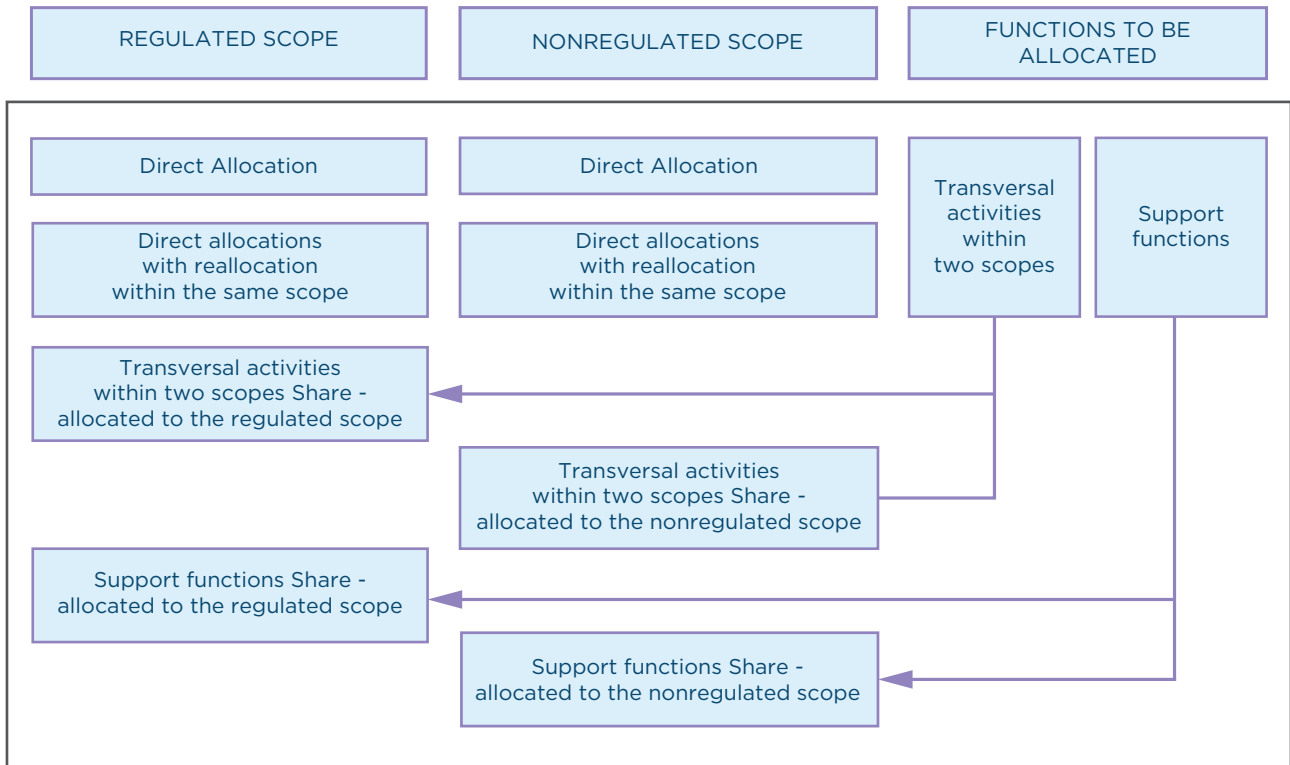
### Capital employed

The capital employed by the Company corresponds to the sum of its fixed assets and its working capital requirement. Fixed assets include:

- ◆ the gross value of the assets in use minus linear amortisation (excluding so-called tax depreciation);
- ◆ the gross value of assets under construction;
- ◆ investment subsidies, which lower the sum of both previous items, which are amortised over the life of the asset;
- ◆ the working capital requirement.



## Rules for allocating expenses, income and assets by scope



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The income statement for both scopes (regulated, nonregulated) is prepared in several stages:

- ◇ the allocation of the items that can be directly associated with each of ADP's external activities, which involves external and internal billing (expenses and income);
- ◇ the allocation of items related to a scope but distributed within this scope;
- ◇ the allocation of items common to the two scopes;
- ◇ the allocation of support function items of the airport management and central management.

The following topics were selected for analysis:

- ◇ external income and expenses: operations carried out with third parties outside ADP;
- ◇ internal income and expenses: operations carried out with services within the legal entity ADP SA. These are items billed at market price e.g. electricity, water, thermal heat, and rental properties;
- ◇ transfers of expenses based on surface cost apportionment: expenses common to more than one activity, which are allocated in proportion to the related surfaces (e.g.: terminal infrastructures);

- ◇ transfers of expenses based on operational cost apportionment: expenses from ADP SA services operating for more than one activity and reallocated based on objective rules;
- ◇ transfers of expenses: expenses at the level of the Company that cannot be allocated to any one activity or group of activities (e.g.: C3S, CVAE, grants to the Works Council). For these expenses, a cost apportionment for the different activities was selected based on the said expense;
- ◇ transfers of expenses of airport managements: expenses of the airports' management, of which reallocation through operational cost apportionment is inoperable. Reallocation to the different activities is made based on the rates charged by the airport's operating activities;
- ◇ transfers of charges from central departments (HR department, accounting department, finance, management and strategy department, etc.) the allocation of which through operational cost apportionments is inoperable. Expenses are transferred based on the rate charges by the operating activities of the different airports.

## // INCOME ALLOCATION

Revenue	Allocation mode
Airport fees Ancillary fees Industrial services revenue Retail activities Rental income Revenues from airport safety and security services Car parks & access roads Other revenue	<p>Since revenue is related to external activities, there is no reallocation. Revenue is comprised of two parts: -</p> <ul style="list-style-type: none"> <li>◆ services provided to third parties external to the legal entity Aéroports de Paris SA;</li> <li>◆ services provided between two activities within the legal entity Aéroports de Paris SA.</li> </ul> <p>Revenue from airport fees, ancillary fees, industrial services and car parks and access roads only relates to the regulated scope.</p> <p>Revenue from retail activities and safety and security services only relates to the nonregulated scope.</p> <p>Rental income relates to:</p> <ul style="list-style-type: none"> <li>◆ the regulated scope for rentals in terminal and airport real estate;</li> <li>◆ the nonregulated scope for diversification real estate.</li> </ul> <p>Internal services concern:</p> <ul style="list-style-type: none"> <li>◆ rental income attached to the terminal rentals and airport real estate sub-scopes;</li> <li>◆ industrial services: electricity, water, heating, refrigeration, waste management.</li> </ul>
Capitalised production	Allocation mode
Capitalised production	<p>Capitalised production is recorded by investment type.</p> <p>The corresponding income is allocated on the basis of the end use of the asset (fixed assets). Preference is given to direct allocation.</p> <p>For significant investment matters impacting multiple activities, the capitalised production is the subject of reallocation to the various activities concerned.</p> <p><u>Example:</u> an investment in a terminal is subject to an allocation in direct proportion to the weighted surface area (see section on surface area keys).</p>
Capitalised production for support functions (central and platform management)	<p>Capitalised production generated by platform management support functions is allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities.</p> <p>Capitalised production generated by central management support functions is allocated <i>pro rata</i> on the basis of operating expenses for external activities.</p>

## // ALLOCATION OF OPERATING EXPENSES

Purchases	Allocation mode
Water, electricity, heating, refrigeration and waste management	<p>Priority is given to the direct allocation of charges to the user's activity.</p> <p>For purchases made on behalf of multiple activities, the charge is recorded to an analytical object attached to an allocation key. This key is based on operational data or on the use made of surface areas.</p> <p>Purchases may be made from an external third party or via Aéroports de Paris services (internal invoicing). In the latter case, the consideration in revenue is recorded within the scope of "Industrial Services".</p> <p>The same methods are used to calculate internal pricing is as those for external third parties, with the possible application of the same volume-related discounts. This rule is applied in accordance with IFRS standards which state that the same principles must apply to services rendered internally and externally.</p> <p>The valuation is obtained by multiplying (i) the number of units consumed by each activity (kW/h) by (ii) the unit price.</p> <p>Expenses = unit price x volume sold</p> <p>The unit price is set at least once per year</p>
Telecoms	<p>A specific process applies to the allocation of telecoms charges. As the service is provided by an Aéroport de Paris subsidiary, the charge must be eliminated at group level.</p> <p>The charge is therefore recorded in the accounts of the IT systems division (in order to facilitate elimination) and is then the subject of an expense transfer via secondary accounting types to the various consumer entities.</p>
Winter products	<p>All winter products are allocated to the regulated scope and are subject to allocation, either directly to fees or indirectly via division between multiple fees. Preference is given to the direct allocation of charges.</p>
Other operating purchases	<p>For purchases made on behalf of multiple activities, the charge is recorded to an analytical object attached to an allocation key. This key is based on operational data or on the use made of surface areas.</p>
(fuel and lubricants, etc.)	<p>The bulk of other purchases is made via the terminal support divisions and central management.</p>
Support function purchases (central and platform management)	<p>Purchases made via platform management support functions is allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities.</p> <p>Purchases made by central management support functions are allocated <i>pro rata</i> on the basis of operating expenses for external activities.</p>

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General sub-contracting	Allocation mode
Cleaning	Sub-contracted cleaning services are allocated on the basis of intended use. These are allocated directly to the extent possible or allocated <i>pro rata</i> on the basis of the surface areas used in the context of the sub-contracted terminal cleaning services.
Airport resources	All sub-contracting of airport resources is allocated to the regulated scope and, more specifically to parking and ancillary fees.
Security	All sub-contracting of security services is allocated to the unregulated scope.
Baggage handler	All sub-contracting of baggage handling is allocated to the regulated scope and, more specifically, to ancillary fees.
Luggage trolley recycling	All sub-contracting of luggage trolley recycling is allocated to the regulated scope and, more specifically to passenger fees.
Winter services	Sub-contracting of winter services is allocated to the regulated scope and, more specifically, to parking and ancillary fees.
Reception	All sub-contracting of reception services is allocated to the regulated scope and, more specifically, to passenger fees and other services within the regulated scope.
Services related to persons with restricted mobility	All sub-contracting of services related to persons with restricted mobility is allocated to the regulated scope and, more specifically, to the restricted mobility services fee.
Other sub-contracting services	Priority is given to direct allocation; this allocation method is valid for external purchases. No internal sub-contracting is carried out. For sub-contracting carried out on behalf of multiple activities, the charge is recorded to an analytical object attached to a distribution key. This key is based on operational data and ultimately enables the expense to be split between external activities.
Sub-contracting of support functions (central and platform management)	Sub-contracting for platform support functions is allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities. Sub-contracting for central support functions is allocated <i>pro rata</i> on the basis of operating expenses for external activities.

Maintenance and repairs	Allocation mode
Maintenance	Maintenance is allocated in direct <i>proportion</i> to the hours recorded for each activity
Maintenance of support functions (central and platform management)	Maintenance for platform support functions is allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities. Maintenance for central support functions is allocated <i>pro rata</i> on the basis of operating expenses for external activities.

Other external services	Allocation mode
Property rental	Property rental expenses are directly allocated to the activity in question. They may however be the subject of reallocation if the premises are used for multiple activities.
Insurance premiums	Insurance policies related to investment projects are allocated to the projects insured as closely as possible to the project's economic reality. Insurance policies related to coverage for security sub-contractors are allocated in direct proportion to the sub-contracting of security services. Insurance policies related to terminal activities are allocated in direct proportion to the revenue generated by the ORY, CDG, LBG platforms. Insurance policies covering buildings owned by Aéroports de Paris SA are allocated on the basis of the allocation of property tax. Miscellaneous insurance policies (car insurance, etc.) are allocated in direct proportion to operating expenses.
COHOR fees	All COHOR contributions are allocated to the "other regulated-scope activities" sub-scope.
FNCA	FNCA expenses are fully allocated to the regulated scope.
Other external services for support functions (central management and platform management)	Other external services for platform support functions are allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities. Other external services for central support functions are allocated <i>pro rata</i> on the basis of operating expenses for external activities.

Taxes & levies	Allocation mode
Payroll tax	The allocation is made at the level of the employee, therefore, as close as possible to his or her activity. All payroll taxes are allocated to the non-regulated scope.
Taxes on compensation	Taxes based on salaries are allocated to the various activities in direct proportion to total payroll.
TFC	The TFC (Territorial Financial Contribution) is comprised of two elements: <ul style="list-style-type: none"> <li>the Company Value-Added Contribution (Cotisation sur la Valeur Ajoutée des Entreprises-CVAE) calculated on the value added for tax purposes is allocated using a key based on the value added for tax purposes of each activity;</li> <li>the Business Property Tax (Contribution Foncière des Entreprises-CFE) calculated on the rental value of assets subject to property tax is allocated using a key in direct proportion to property tax.</li> </ul>
Property tax	Property tax is calculated at the level of each relevant asset; the allocation is made at the level of the asset, therefore, as close as possible to the activity. Given the multiple use of certain assets, the charge may be the subject of a re-allocation which is notably the case for the tax on the terminals; the charge is split in direct proportion to the surface areas used.
Non-recoverable VAT	Any non-recoverable VAT is applicable in the context of activities within the unregulated scope only. It is allocated directly on the basis of the use made of the acquisition.
Parking and office tax	Parking and office tax is calculated on the level of each relevant asset; the allocation is made on the level of the asset, therefore, as close as possible to the activity. Given the multiple use of certain assets, the charge may be the subject of a re-allocation, which is notably the case for the tax on the terminals; the charge is split in direct proportion to the surface areas used.
C3S	The C3S (Company Solidarity Social Security Contribution) is calculated on the basis of revenue (excluding revenue relating to Civil Aviation Tax). The charge is allocated using a distribution key on the basis of external and internal revenue; this allocation method enables invoicing flows between activities within different scopes to be taken into account.
DGAC (Directory-General of Civil Aviation) Fees	The DGAC fee is allocated on the Civil Aviation Tax and the parking fee
Tax on support functions (central and platform management)	Tax levied on platform management support functions is allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities.  Tax levied on central management support functions is allocated <i>pro rata</i> on the basis of operating expenses for external activities.

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Staff	Allocation mode
Wages & holiday pay Bonuses & compensation	The allocation is made at the level of the employee, therefore, as close as possible to his or her activity. It is charged directly. It may however be the subject of reallocation in the context of multiple activities carried out by the employee. This reallocation is carried out on the basis of operating distribution keys. Bonuses and compensation are allocated to the various activities in direct proportion to total payroll.
Social security expenses (URSSAF, pensions, etc.)	The allocation is made at the level of the employee, therefore, as close as possible to his or her activity. It is charged directly. It may however be the subject of reallocation in the context of multiple activities carried out by the employee. This reallocation is carried out on the basis of operating distribution keys.
PERCO	PERCO is allocated to the various activities in direct proportion to the total payroll.
Profit-sharing	Profit-sharing is allocated differently depending on how payment is due: <ul style="list-style-type: none"> <li>the provision for the current year is allocated to the various activities in direct proportion to the total payroll;</li> <li>the expense recorded in the accounts for the current financial year on the basis of the previous financial year is allocated to the employee's analytical object, i.e. as close as possible to the activity.</li> </ul>
Other employee expenses	Other employee-related expenses are allocated either directly or broken down in direct proportion to the total payroll. This allocation is completed on the basis possible allocation to an activity or not.
Support function staff costs (central and platform management)	Employee costs for platform management support functions are allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities.  Employee costs for central management support functions are allocated <i>pro rata</i> on the basis of operating expenses for external activities.



Profit sharing	Allocation mode
Profit sharing paid out during the financial year for the previous financial year	The profit sharing paid out during one financial year is allocated to each employee; the allocation is made at employee level, i.e. as close as possible to the business reality
Profit sharing - provision for the financial year	The provision is allocated <i>pro rata</i> in relation to the total payroll
Profit sharing for support functions (central and platform management)	The profit sharing for platform management support functions is allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities. The profit sharing for central management support functions is allocated <i>pro rata</i> on the basis of operating expenses for external activities.
Depreciation and amortisation	Allocation mode
Depreciation and amortisation	Depreciation and amortisation are recorded analytically on the basis of the allocation of the corresponding assets. As for the other items, preference is given to direct allocation. If an asset has multiple uses, the amortisation charge is re-allocated on the basis of the use made of the underlying asset. Depreciation for terminal infrastructure is recorded in direct proportion to the weighted surface area to the extent that the underlying assets can be attached to a specific activity. In all other cases, the allocation is made depending on the use of the corresponding asset (see section on assets).
Depreciation and amortisation of support functions (central and platform management)	Depreciation and amortisation of platform management support functions is allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities. Depreciation of central management support functions is allocated <i>pro rata</i> on the basis of operating expenses for external activities.
Other income & expenses	Allocation mode
Employee benefit obligation (provision charge)	Employee benefit obligations are allocated to the various activities based on the nature of the obligation: <ul style="list-style-type: none"> <li>◇ the PARDA (Protocole d'Accord de Régime de Départ Anticipée) scheme applies to firefighters only. The corresponding allocation of income and expenses is applied solely within the unregulated scope (Airport Taxes);</li> <li>◇ all other obligations (Retirement Plan, long-service medal, healthcare insurance, defined benefits pension plan) relate to all employees of the company. Allocation in direct proportion to total staff costs has been adopted.</li> </ul> Allocation is therefore applied in two phases: <ul style="list-style-type: none"> <li>◇ direct allocation for items specific to one activity;</li> <li>◇ indirect allocation (<i>pro rata</i> in relation to the total payroll) for all other items.</li> </ul>
Provision charges and reversals Losses on unrecoverable receivables	Provisions for losses on receivables are based on external client invoices for which there is a risk of default. Allocations, reversals and, as applicable, losses match the initial allocation of the invoice in question. As invoicing is allocated on an analytical basis against the final subjects, this also applies to this item. No re-allocation is therefore necessary.
Provision additions & reversals for employment litigation and claims	The provision is attached to a company employee. The allocation is therefore recorded with regard to his or her position.
Client and supplier litigation and claims	Provisions for litigation and claims (clients and suppliers) originate from operations. Income and expenses are allocated with regard to the context. Allocation is therefore direct to the activity relating to the client and supplier at the origins of the dispute.
Royalties, patents and copyright	Charges incurred on royalties, licences and patents are allocated on the basis of the use made of the underlying asset. To the extent possible, the expense is allocated to an end activity. For example, for IT royalties, reallocation is possible.
Other support function (central management and platform management) income and expenses	Other income and expenses for platform management support functions are allocated <i>pro rata</i> on the basis of operating expenses for the platform's external activities. Other income and expenses for central management are allocated <i>pro rata</i> on the basis of operating expenses for external activities.

## // WORKING CAPITAL ALLOCATION

The working capital has a relatively limited weight in the creation of the asset base serving as a benchmark for calculating the ROCE (between 4% and 5% of the capital employed for financial years 2016 and 2017). For that reason, it was decided to simplify the allocation method and apportion costs by major categories of the working capital.

Uses	Allocation mode
Inventories	Allocation in direct proportion to purchases held in inventory.
Trade receivables	Allocation in direct proportion to revenue.
Other uses	Allocation of other uses using an allocation key based on the operation type Example: ◇ employee-related receivables: in <i>direct</i> proportion to staff costs; ◇ prepaid expenses for insurance: in <i>direct proportion</i> to insurance costs.

Resources	Allocation mode
Trade payables	Allocation in direct proportion to external purchases for the last 3 months of the financial year (maximum payment deadlines).
Tax and employee-related liabilities	Allocation in direct proportion to staff expenses related to employee liabilities and to taxation for tax liabilities.
Other resources	Allocation of other resources using an allocation key based on operation type. Example: ◇ depreciation of debtor accounts: in <i>direct proportion</i> to external purchases.

Comment: specific operations of a significant amount that can be allocated to a specific activity will be subject to special treatment.

## // ALLOCATION OF SPECIFIC ASSETS

Asset types	Allocation mode
Air bridges	100% from parking fees
Pre-airbridges Areas and facilities for border controls, Luggage trolleys, Medical and miscellaneous services, Premises (animals, sporting facilities, archives, cultural activities)	100% from passenger fees
Terminal parking	100% from terminal rental surface
Environment centre	100% from the other regulated activity sub-scope
CDG1 RER station	Allocation on the basis of a flow study carried out before each ERA. Aéroports de Paris suggests maintaining a 50% allocation of the assets of this station to the CDG1 terminals (rate increased to take into account the ADP employees involved in terminal activities), re-distributed on the basis of the various terminal activities via CDG1 weighted surface areas, the remaining 50% being allocated to real estate diversification activities. (see opinion from the Airport Consultative Commission on the case submitted to the Minister for Ecology, Sustainable Development and Energy, dated 23 May 2014)
CDG2 RER station	Allocation in direct proportion to surface area of the CDG2 terminal
CDG Val (CDG Val line 1)	Allocation in direct proportion to the number of travellers using the CDG1 and CDG2 RER stations in application of the rules for division between the two terminals
LISA connecting Terminal 2E with S3 and S4	100% from passenger fees
Toilet facilities	Toilet facilities in public areas and reserved area: allocation in direct proportion to terminal surface areas Toilet facilities in terminal office space: allocation in direct proportion to surface areas between terminal rentals and shops
Hall, green areas, play areas Vehicle and pedestrian access, delivery areas Vehicle access ramp Areas for religious worship Technical access areas and galleries Crawl space, smoking areas	Allocation in <i>direct</i> proportion to surface area of the terminal
Lifts and lift shafts	Allocation based on exact location of the asset: <ul style="list-style-type: none"> <li>◆ in <i>direct</i> proportion to weighted surface areas for lifts in shared areas;</li> <li>◆ in <i>direct</i> proportion to terminal rental surface for lifts leading to leased office premises;</li> <li>◆ directly to the activity.</li> </ul>
Conference and meeting rooms.	100% of terminal rental surface
Terminals	On proportion of weighted surfaces

## // ALLOCATION METHOD FOR COMMON AIRPORT AREAS

In terms of allocating common assets to more than one activity (mainly assets in terminals), Aéroports de Paris has selected the surface areas occupied for each of the regulation parameters as an apportionment criterion.

The cost apportionment used to allocate these common assets is based on the surfaces of the following different parameters: passenger fees, bank registration fees (ancillary fees), rental in terminal, retail activities. This cost apportionment is adjusted by allocating on a lump sum basis

20% of the common surfaces to retail activities (non-regulated scope) and 80% to the passenger fee.

This apportionment applies to the distribution of expenses relating to common surfaces.

With regard to the apportionment of assets, weighting coefficients on these different allocations scopes are adjusted to take the relative value of the costs of the associated investments into account.

### SURFACE APPORTIONMENT APPLIED TO EXPENSES

Expense types	Passenger fees	Bank fees	Internal rental surface	External rental surface	Luggage sorter	Counters	Retails
Cleaning sub-contracting	x	x	x				
Guarding sub-contracting	x	x	x	x	x	x	x
Insurances	x	x	x		x		
Taxes	x	x	x	x	x	x	x
Electricity	x	x	x				
Cold water	x	x	x	x		x	x
Heat	x		x	x		x	x
Refrigeration	x		x	x		x	x
PCI SSIAP	x	x	x	x	x	x	x

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### SURFACE APPORTIONMENT APPLIED TO ASSETS

Shared areas	Passenger fees	Bank fees	Internal rental surface	External rental surface	Luggage sorter	Counters	Retails
Shared areas Terminal rental			x	x			x
Shared areas Others	x	x	x	x	x	x	x

## Note on figures

### // PRESENTATION OF ADP'S INCOME STATEMENT

The table below shows the operating income of ADP and the regulated scope:

2018 In millions of euros	Aéroports de Paris	Regulated scope	% Regulated scope
<b>REVENUE</b>	3,148	2,015	64%
Airport fees	1,115	1,135	102%
Ancillary fees	255	255	100%
Retail activities	471	0	-
Rental Income	421	277	66%
Revenues from airport safety and security services	499	0	-
Industrial services revenue	144	144	100%
Car parks and access road	173	173	100%
Other revenue	70	31	44%
<b>CAPITALISED PRODUCTION</b>	67	44	66%
<b>OPERATING REVENUE</b>	3,215	2,059	64%
Purchases	-212	-168	79%
General sub-contracting	-493	-239	48%
Maintenance and repairs	-128	-96	75%
Other external services	-208	-146	70%
Taxes other than income taxes	-265	-165	62%
Staff costs	-586	-404	69%
<b>OPERATING EXPENSES</b>	-1,892	-1,218	64%
Profit sharing	-28	-20	71%
Depreciation and amortisation	-452	-347	77%
Other income and expenses	44	-7	-16%
<b>OPERATING INCOME</b>	887	467	53%
Standard income tax	34.43%	34.43%	100%
Income tax expense	-305	-161	53%
<b>NET OPERATING INCOME</b>	582	306	53%
ASSET BASE	7,439	5,584	75%
WCR	-342	-244	71%
<b>CAPITAL EMPLOYED</b>	7,097	5,341	75%
<b>ROCE</b>	8.2%	5.73%	70%

The table below shows the operating income of ADP and of the regulated scope by origin. A distinction is therefore made between the following:

- ◇ external income and expenses, related to operations with third parties external to ADP including subsidiaries;
- ◇ internal income and expenses, operations carried out within ADP between two scopes or activities (sale of energy, water, property rentals). These operations constitute an expense for the consuming entity and revenue for the producing entity;

◇ allocation by cost apportionment:

- ◆ operating expenses of services operating for several activities. The allocation rules were defined after an analysis of the work performed by those services,
- ◆ central services and platform services, this heading also includes the allocation of items taxes.



2018 In millions of euros	Regulated scope	External income & expenses	Internal income & expenses	Allocation via allocation keys	% of direct allocation
<b>REVENUE</b>	2015	1866	48	101	93%
Airport fees	1135	1135	0	0	100%
Ancillary fees	255	255	0	0	100%
Rental Income	277	229	48	0	83%
Revenues from airport safety and security services	0	0	0	0	0
Industrial services revenue	144	43	0	101	30%
Car parks and access road	173	173	0	0	100%
Other revenue	31	31	0	0	100%
<b>CAPITALISED PRODUCTION</b>	44	26	0	18	59%
<b>OPERATING REVENUE</b>	2,059	1,892	48	119	92%
Purchases	-168	-51	0	-117	30%
General sub-contracting	-239	-170	0	-69	71%
Maintenance and repairs	-96	-39	0	-57	41%
Other external services	-146	-14	-19	-113	10%
Taxes other than income taxes	-165	-45	0	-120	27%
Staff costs	-404	-88	0	-316	22%
<b>OPERATING EXPENSES</b>	-1218	-407	-19	-792	33%
Profit sharing	-20	-4	0	-16	20%
Depreciation and amortisation	-347	-206	0	-141	59%
Other income and expenses	-7	16	0	-23	-229%
<b>OPERATING INCOME</b>	467	1,291	29	-853	276%

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## // PRESENTATION OF THE ASSETS OF AÉROPORTS DE PARIS BY SCOPE

The table below shows, as of year-end, ADP's assets broken down based on their use in the different activities of the scopes (regulated and non-regulated) after reallocations to the different scopes. It distinguishes among the items based on the allocation method:

- ◇ direct: assets allocated to a single scope or activity within the scope;
- ◇ indirect: assets allocated to transverse operational and administrative functions.

31 December 2018 In millions of euros	Aéroports de Paris	Allocation direct	Allocation via allocation keys	% of direct allocation
Aeronautical till	3,972	1,983	1,989	50%
Industrial services	273	173	100	63%
Airport real estate	265	197	68	74%
Rentals in terminals	751	83	668	11%
Car parks & access roads	289	275	14	95%
Other regulated activities	34	19	15	56%
<b>REGULATED SCOPE</b>	<b>5,584</b>	<b>2,730</b>	<b>2,854</b>	<b>49%</b>

The table below presents, as of year-end, the assets fully allocated to the regulated scope, specifying the nature of the assets.

31 December 2018 (In millions of euros)	Aéroports de Paris	Regulated scope	% of allocation regulated
<b>AERONAUTICAL TILL</b>	1,983	1,983	100%
Passenger reception infrastructure <sup>1</sup>	391	391	100%
Aircraft parking infrastructure <sup>2</sup>	415	415	100%
Landing infrastructure (runways, etc.) <sup>3</sup>	649	649	100%
Baggage handling system	319	319	100%
De-icing stands	58	58	100%
Check-in counters	70	70	100%
Airside buildings	31	31	100%
Other aeronautical till	50	50	100%
<b>OTHER REGULATED SCOPE ACTIVITIES</b>	747	747	100%
Electric thermal & cooling plant, geothermal power plant, water grids, power plants, etc.	173	173	100%
Freight stations, aircraft hangars, Fedex buildings...	197	197	100%
Short and long term car parks	275	275	100%
Lounges, offices and other private in-terminal spaces	83	83	100%
Installation of self-service drop off systems, Honorary Pavilion, etc.	19	19	100%
<b>REGULATED SCOPE</b>	2,730	2,730	100%

<sup>1</sup> check-in halls, boarding lounges, baggage delivery, etc.

<sup>2</sup> boarding gates, aircraft stands, fuel delivery points, etc.

<sup>3</sup> runways, beacons.

The following table shows at the closing of the accounts the assets of Aéroports de Paris allocated between the two scopes or among several activities within the same scope. Like in the previous table, it shows the items based on the most significant investments.

31 December 2018 (In millions of euros)	Aéroports de Paris	Regulated scope	% of allocation regulated
<b>TERMINAL INFRASTRUCTURE</b>	2,496	2,059	82%
CDG1 & CDG3	250	212	85%
CDG2	1,663	1,386	83%
Orly	582	460	79%
Other terminal infrastructure	1	1	100%
<b>SPECIFIC INFRASTRUCTURE</b>	195	138	71%
RER 1 station	6	3	50%
CDG2 TGV/RER station	43	38	88%
CDG Val	146	97	66%
<b>OTHER ASSETS SUBJECT TO ALLOCATION</b>	1,021	657	64%
CDG, ORY and LBG road access	288	203	70%
Facility grids, signalling devices and landscaping on real estate areas, etc.	254	51	20%
Others	479	403	84%
<b>TOTAL</b>	<b>3,712</b>	<b>2,854</b>	<b>77%</b>

## // OVERVIEW OF THE WORKING CAPITAL

31 December 2018 (In millions of euros)	Aéroports de Paris	Regulated scope	% of allocation regulated
<b>USES</b>	506	331	65%
Inventories	17	9	56%
Trade receivables	391	264	68%
Other uses	98	57	58%
<b>RESOURCES</b>	-848	-574	68%
Trade payables	-413	-292	71%
Tax and employee-related liabilities	-230	-163	71%
Other resources	-205	-119	58%
<b>TOTAL</b>	-342	-244	71%

## 5.3 WEIGHTED AVERAGE COST OF CAPITAL



The weighted average cost of capital (WACC) measures the rate of return required by a company's providers of capital, creditors and shareholders, in line with the risk they take proportionally to the portion of economic assets they hold. It serves to assess the cost of mobilising financial resources outside the company, split into equity and debt respectively.

In terms of asset valuation, the WACC represents a key metric when defining a fair return on capital employed in that it represents the breakeven point, the starting point from which a company creates economic value, as illustrated in the insert below:

*The economic balance sheet concept can be used to break down the assets of any company, as demonstrated below:*

Uses/economic assets (EA)	Resources/capital employed (CE)
<b>Assets</b>	<b>Shareholders' equity (EQ)</b>
Net tangible assets	Share capital/Reserve/Profit/loss
Intangible assets	Minority interests
Financial assets	Other items
<b>Working capital requirement (WCR)</b>	<b>Financial debt net (D)</b>
WCR Trade	Short-term gross financial debt
Inventories/trade receivables/trade payables	Long-term gross financial debt
WCR non-Trade	Cash and cash equivalents
Tax and employee-related liabilities	Current accounts
Other items (e.g. provisions for employee benefits)	Other items

A company creates value once the return resulting from (EA) is greater than the cost of (CE).

Conversely, there is destruction of value if the return on the economic asset is less than the weighted average cost of the capital.

A fair return on capital employed is reached when the return resulting from (EA) is equal to the cost of (CE).

The WACC can be approached and calculated in two ways:

	Target	Formula
<b>Direct approach</b> Based on (EA)	Measure the WACC thanks to the Capital Asset Pricing Model ("CAPM")	$WACC = R_f + \beta (EA) \times PM$
<b>Indirect approach</b> Based on (EQ) + (D)	Measure the WACC as the average of the different sources of financing of the company weighted by their market value	$WACC = [ R_f + \beta(EQ) \times PM ] \times (EQ)/(CE) + [ K(D) \times (1-T) ] \times (D)/(CE)$

The most common approach is the indirect approach where:

- ◇  $R_f$  = risk-free rate;
- ◇  $\beta (EQ)$  = beta of equity, measuring company's specific risk compared with the average of its reference share index (in this case, the SBF 120 index concerning ADP);
- ◇  $PM$  = risk premium reflecting the gap between the profitability expected from the reference share index and the risk-free rate ( $R_f$ );
- ◇  $K (D)$  = cost of debt before tax;
- ◇  $T$  = applicable corporate tax rate;
- ◇  $(EQ)$  = market value of the equity;
- ◇  $(D)$  = value of the net financial debt;
- ◇  $(CE)$  = value of the capital employed, which is the sum of  $(EQ) + (D)$ .

The WACC applicable as part of the 2021-2025 ERA must reflect the risk borne by the creditors and shareholders of ADP as regards the portion of the regulated economic assets held by them. During the previous ERA, this WACC was comparable to and assimilated in the WACC of ADP owing to the limited size of the group's international activities. This approach is no longer possible today in that, since the full consolidation of TAV Airports in July 2017 then of Airport International Group in April 2018, the WACC of ADP no longer faithfully reflects the risk inherent in the company's regulated activities.

Based on the preliminary remarks above as well as current market data, the WACC applicable to the 2021-2025 ERA is now at 5.6% as a central value (par value after tax). The WACC was estimated using the capital asset pricing model based on available market financial data and on the parameters considered for companies engaged in comparable activities, as stipulated in the PACTE law as approved by the French Assemblée Nationale during its second reading.

Parameters	Value	Comments
Risk-free rate ( $R_f$ )	1.9%	10-year French, 10-year average.
Applicable tax rate ( $T$ )	25.8%	Theoretical income tax rate applicable in France from 2022/Uncapped deductability of financial interests.
Leverage $((D)/(CE))$	25.5%	Prospective leverage in line with Groupe ADP historical 10-year average.
Market risk premium ( $MP$ )	6.1%	Ibbotson & Associates en Finance estimate, based on a 8.0% expected market return
Pre-tax cost of net financial debt ( $K (D)$ )	4.1%	Cost of Groupe ADP's net financial debt - 10 years historical average
Equity beta ( $\beta (EQ)$ )	0.75	Historical average based on the beta of the listed companies which are the most comparable to ADP's regulated activities, successively unlevered/relevered on the basis of their historical leverage/Group ADP's historical leverage
	5.6%	

The methodological principles used predominantly to estimate the WACC applicable in the framework of the 2021-2025 ERA are listed below:

- ◇ the parameters of the WACC (risk-free rate, cost of net financial debt, and beta) were defined using benchmarks covering a 10 year period. This choice reflects the reality of an economic cycle so it can be used to measure the aforementioned parameters objectively by restoring them in opposite economic contexts (development vs. diminishing growth);
- ◇ the benchmarks used are related to Groupe ADP whenever these are available and relevant. Concerning the beta of Groupe ADP, it is no longer a relevant benchmark for estimating the level of risk of the regulated activities of ADP, as mentioned above. The beta of the regulated activities is therefore assessed in relation to the beta of the listed companies which are considered to be the most comparable to

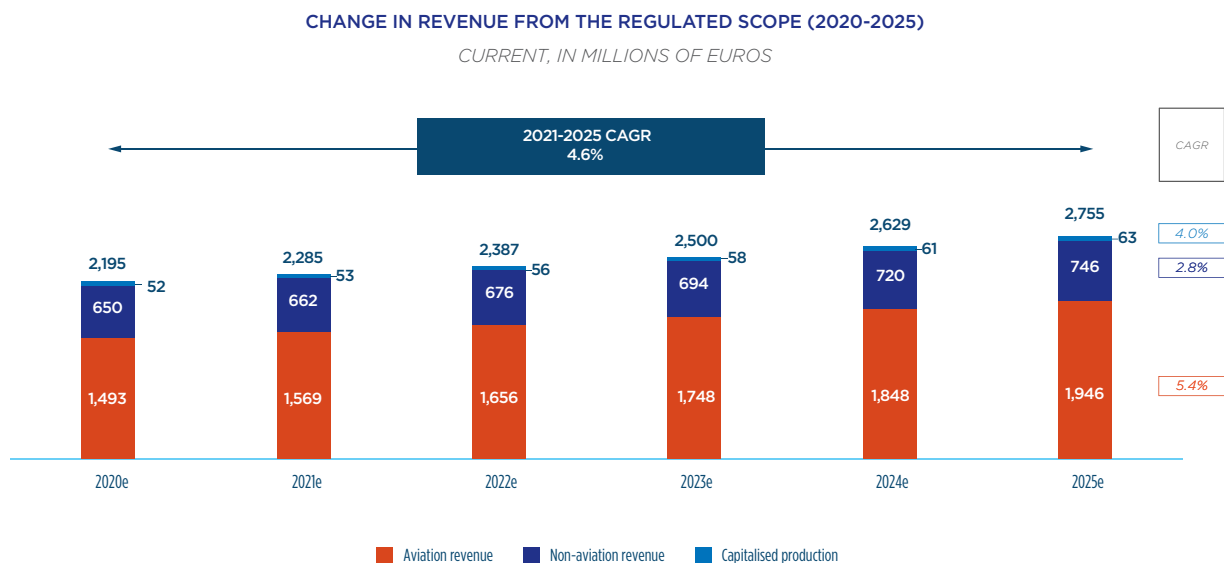
ADP's regulated activities according to the following criteria: availability of information, size of market capitalisation, free float size weight of international activities, and nature of the activity portfolio excluding international activities;

- ◇ the cost of the debt is the cost of the net financial debt as set out in Groupe ADP's financial statements:
  - ◆ the cost of net financial debt is preferred over the cost of gross financial debt because capital sources are weighted on a net basis,
  - ◆ the current cost of ADP bonds is an interesting reference but ADP may not be able to refinance the whole of its debt at that cost,
  - ◆ the cost of historic net financial debt (10-year average) is more representative of the real cost today and over the short and medium term of ADP's net financial debt.

## 5.4 REVENUE FROM THE REGULATED SCOPE

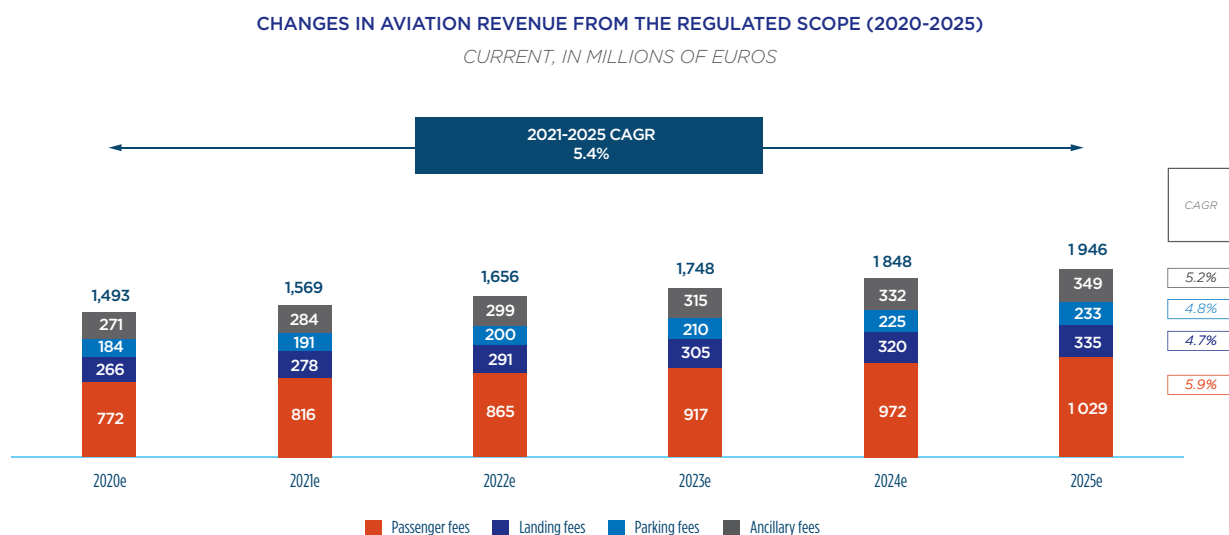
Aviation revenue is expected to grow by +5.4% on average per year in the 2021-2025 ERA due to the combination of the growth in passenger traffic from +2.6 per year on average, the proposed increase in tariffs (inflation +1.35% per year on average) and additional effects such as the opening of new capacities and the changes in traffic mix.

Non-aviation revenue is expected to increase around +2.8% per year on average, resulting mainly from the increase in revenue from car parks, industrial services, airport real estate activities and airport rental activities.



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### 5.4.1 Change in aviation revenue



The expected increase in aviation revenue, of around +5.4% per year on average in the 2021-2025 ERA, reflects ADP's desire to apply moderate pricing corresponding to its competitive positioning and, in general, to obtain an optimal balance amongst the different stakeholders of the airport ecosystem.

In fact, the tariffs for fees covered by the 2021-2025 ERA would increase, in an unchanged services scope, by +1.35% per year on average above inflation, with the remainder of the growth coming essentially from the expected increase in passenger traffic and additional impacts.



Regarding the change in revenues, the increase in revenues from the principal fees, of +5.5% per year on average, would be the combined result of:

- ◇ the expected increase in passenger traffic of +2.6% on average per year;
- ◇ the proposed tariff increase of +1.35 per year on average in addition to inflation (inflation assumption of 1.70% per year on average);

An increase in revenue from specialised fees covering the scope of ancillary fees of 5.2% per year on average, basically due to the volume effect and the aforementioned tariff changes.

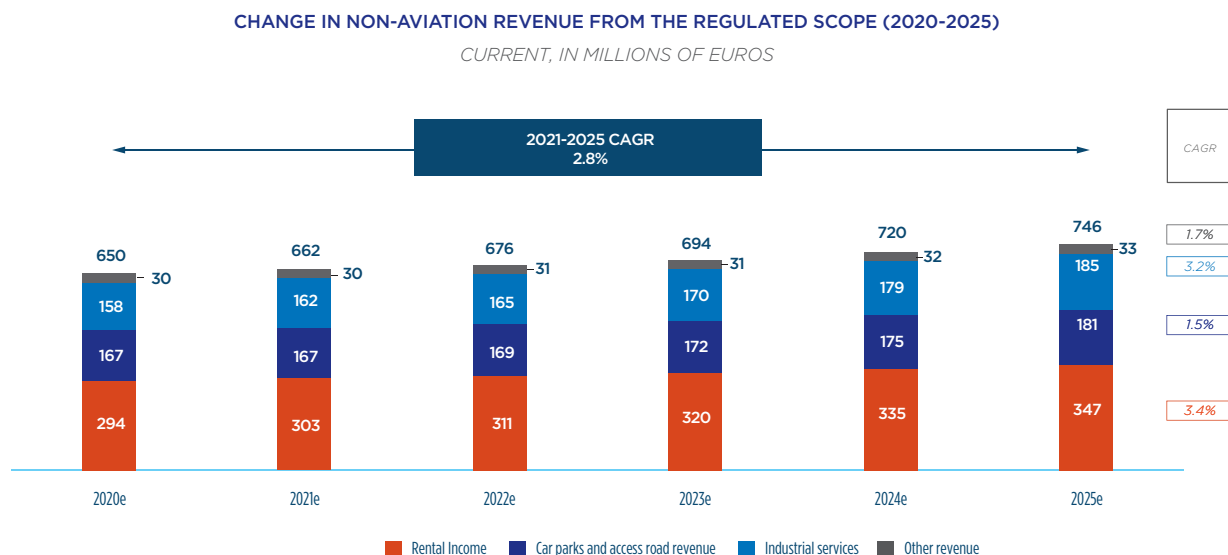
The consolidation of certain ancillary fees within the principal fees, at the start of the ERA or during the ERA may change the weight between the different revenue categories (see section 3.4).

## 5.4.2 Change in non-aviation revenue

The non-aviation revenue from the regulated scope includes rental income (which in turn comprises revenue from rental activities in airports and airport property outside airports) and various services (business centres in airports, ADP lounges, etc.), income from public and subscription car parks, income from industrial services provided to tenants in airports or to

airport real estate clients; lastly, this includes revenue from air navigation services refurbishment work and provision of equipment to tenants, certain specific services (access No. 1, chargebacks for shuttle buses, company catering, etc.)

ADP's receipts from these non-aviation activities is projected to increase by +2.8% per year on average during 2021-2025:



This growth is tied to the growth in regulated rental activities, with their receipts increasing by an average of 3.4% per year, thanks (i) to the continuous development of the cargo activity, as demonstrated by the expected increase in the size of the real estate portfolio devoted to this activity over the 2021-2025 period and (ii) an average increase in the rental index of +2.3% in 2021-2025 in the financial valuation.

The increase would be limited to +1.5% per year on average for car parks:

- ◇ this is explained by the policy of streamlining the number of subscriptions by companies and by the trend observed in the 2016-2020 ERA of a loss in market share of individual cars for transporting passengers to airports;

- ◇ in order to optimise the current price positioning, the increase in tariffs for parking spaces in car lots will be moderate, without, however, waiving the objective of constant improvements in the quality of service related to this activity;

Revenue from industrial services would increase at an average annual rate of 3.2% under the combined effect of the dynamism of energy purchase prices (particularly electricity and gas) and increased volumes linked to continuously growing services to cover.

The growth in other revenues of the regulated scope reflects the continuous increase in capitalised production in a context of a greatly accelerated investment plan and the attempt to optimise the time and costs that can be charged to those investment projects.

## 5.5 OPERATING COSTS FROM THE REGULATED SCOPE

Despite the sharp increase in the investments necessary to successfully develop the airports in the greater Paris region, the performance of ADP, which is based on a value-creating economic model and strict internal discipline ensures the pursuit of the company's policy of moderate pricing. Once again, ADP has a proactive ambitious plan aimed at controlling current regulated costs. To improve its financial performance, ADP will use a set of available levers relating to investments and operating costs, while guaranteeing to all its clients a quality service at a fair price.

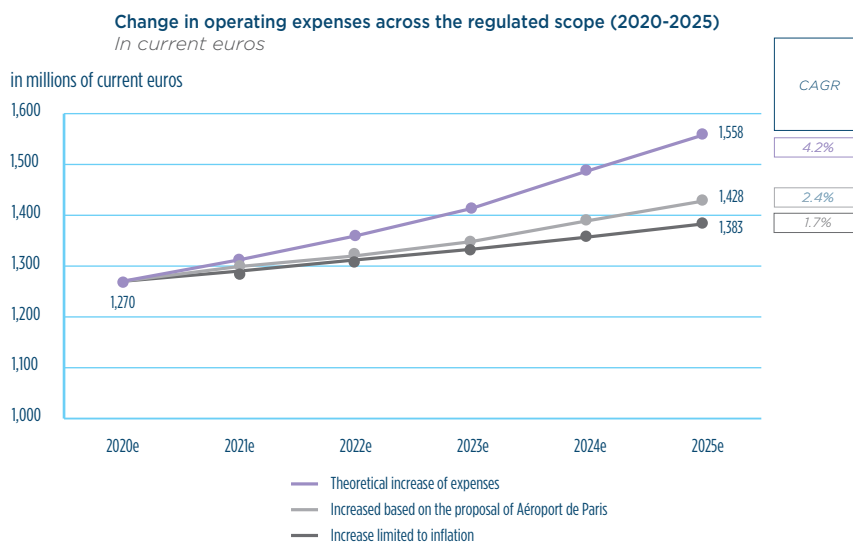
The mechanical increase in regulated operating expenses would approach 4.2% a year, given provisions relating to payroll, indexing clauses of

subcontracting agreements, the change in traffic and the increase in taxes and duties. In terms of the balance of the 2021-2025 ERA, ADP is considering limiting this increase to 2.4% a year including inflation (average assumption of a change in consumer prices of 1.7% a year). This scenario is based in part on preserving the skills indispensable for the operation of airports by ADP and partly on the limitation of general salary increases, the non-replacement of some departures relating to businesses in transformation, the optimisation of the procurement policy and other targeted initiatives.

### CHANGES IN REGULATED EXPENSES IN THE 2021-2025 ERA

IN CURRENT EUROS

Intermediary consumption + staff costs + Taxes and Duties (i.e.: total expenses excluding depreciation and amortisation and other operating expenses)



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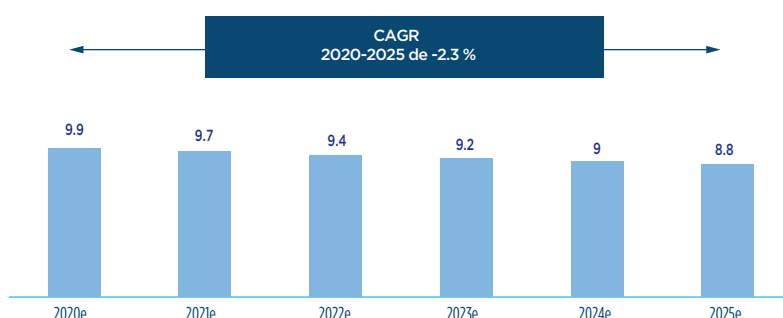
During the 2021-2025 ERA, the financial discipline applied by Aéroports de Paris relating to the control of operating expenses will result in a stabilisation by Aéroports de Paris of the costs per passenger of the regulated scope in current Euros (excluding taxes and duties, depreciation and amortisation and other operating expenses). In real terms this will

lead to a gain in performance comparable to the inflation assumption (consumer price index taken into account for an average of 1.7% per year). Expressed in constant Euros, these expenses per passenger would be reduced by an average of around 2.3% a year).

#### CHANGE IN OPERATING EXPENSES PER PASSENGER ACROSS THE REGULATED SCOPE (2020-2025)

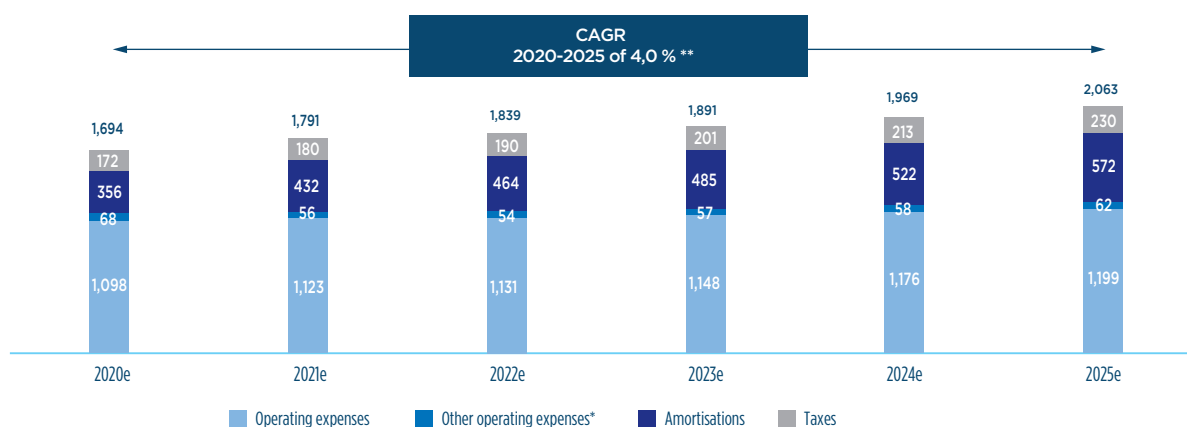
IN CONSTANT 2020 EUROS PER PASSENGER

Operating expenses excluding taxes and duties, depreciation and amortisation and other operating expenses



#### CHANGE IN OPERATING EXPENSES ACROSS THE REGULATED SCOPE (2020-2025)

IN CURRENT EUROS



\* Employee profit sharing, operating subsidies, operating provisions and other income and expenses.

\*\* Growth rate including depreciation. Excluding depreciation and amortization and other operating expenses, expected growth of 2.4% per year after efforts of Aéroports de Paris.

To achieve its goals in terms of financial discipline, ADP will focus a significant part of its efforts on controlling operating costs through three main levers, in accordance with the objective of quality service, presented above.

## Measures relating to payroll

The change in personnel costs in the 2021-2025 ERA is based on:

- ◇ preserving essential skills in jobs which are critical, in development, or other reglementary functions;
- ◇ not replacing some of the departures from jobs undergoing transformation, as allowed by the continued reorganisations;

- ◇ a greater number of retirement departures over the period of the 2021-2025 ERA than in the previous period, generating through renewals a favourable mechanical effect on payroll ("noria" effect);
- ◇ continuation of the effort to limit general increases in favour of individual increases linked to performance.

## Optimisation of procurement policy

The effort considered by ADP regarding procurement is similar to the one approved in the 2016-2020 ERA. The levers to optimise procurement are listed below:

- ◆ renegotiation of flat fees and unit prices for services when renewing contracts (cleaning, PRM, hospitality services, energy and maintenance work in particular) and;

- ◆ adaptation and optimisation of the level of specification of contracts (brain-storming to be done on all the operating agreements) and control of prescription.

## Other targeted initiatives

While preserving its economic model, ADP plans to examine the relevance of other targeted initiatives concerning the following:

- ◆ optimisation of maintenance operations (redefinition of ranges of maintenance, updating of the associated computer tools, redefinition of the associated logistics chain);

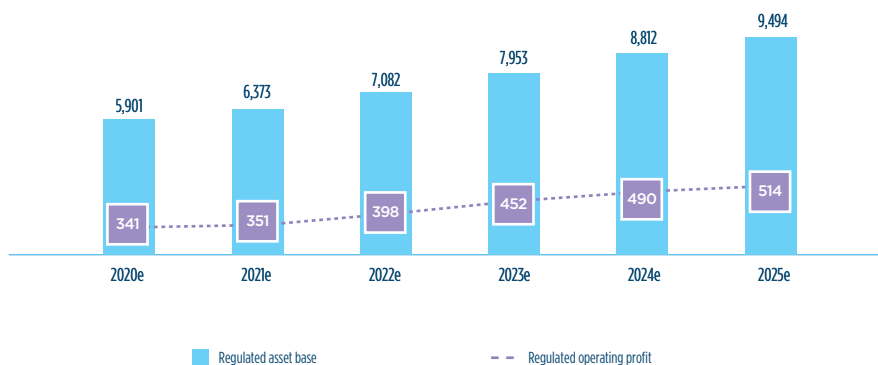
- ◆ streamlining and harmonisation of certain attribution policies in the different departments of ADP.

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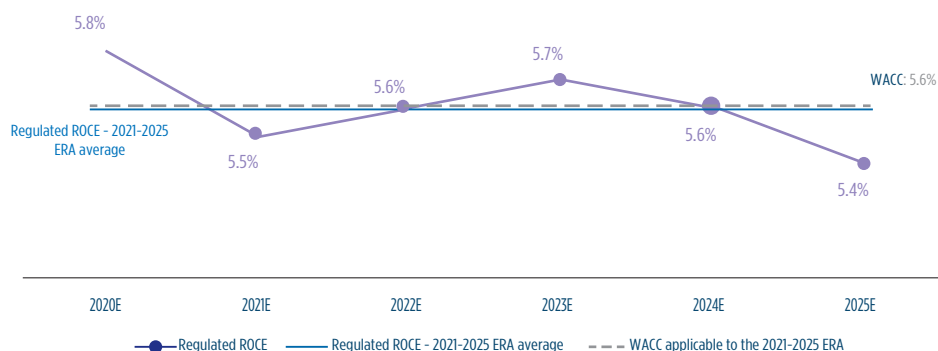
## 5.6 CHANGE IN REGULATED OPERATING INCOME AND THE REGULATED ASSET BASE

After a slight decline in 2021 mainly reflecting the full year effect of the opening of new Paris-Charles de Gaulle infrastructures delivered in 2020 (junction of the international satellites of terminal 1, reopening of terminal 2B and Junction BD, connecting flight baggage sorter under hall M of terminal 2E), generating an additional cost for operating expenses, the operating income of the regulated scope should grow continuously from 2022 onwards under the effect of the growth in traffic and changes in fee rates, thanks to the consequent efforts planned in terms of financial discipline.

The capital employed on regulated activities is expected to increase significantly in a context of investments at the peak of the cycle with an asset base strengthened by an investment program in the order of 6.0 billion Euros (in constant Euros). As a reminder, pursuant to the rules in force during previous ERAs and pursuant to French accounting standards on which the ADP regulated accounts are based, current assets are recorded in the regulated asset base as they are committed (i.e. without waiting for them to enter into service).

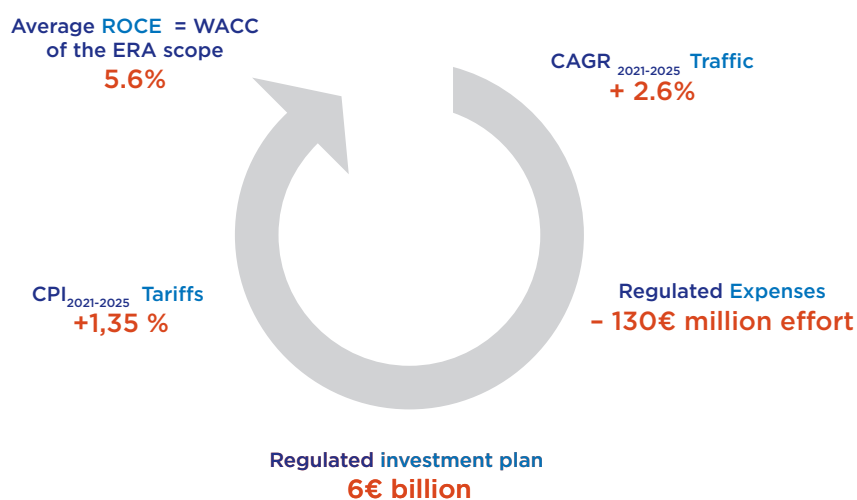


The significant increase in the capital employed in the regulated scope, which is essentially due to an ambitious investment program adding to the regulated asset base, would be almost completely offset by the strong growth in the aforementioned regulated operating income, leading to relative stability of the regulated ROCE on average in 2021-2025, and ensuring that the objective of converging the regulated ROCE and the WACC is met on average in the 2021-2025 ERA.



## 5.7 OVERALL AGREEMENT BALANCE AND SENSITIVITY ANALYSIS

The proposal by ADP for the next 2021-2025 ERA is based on the following balance:

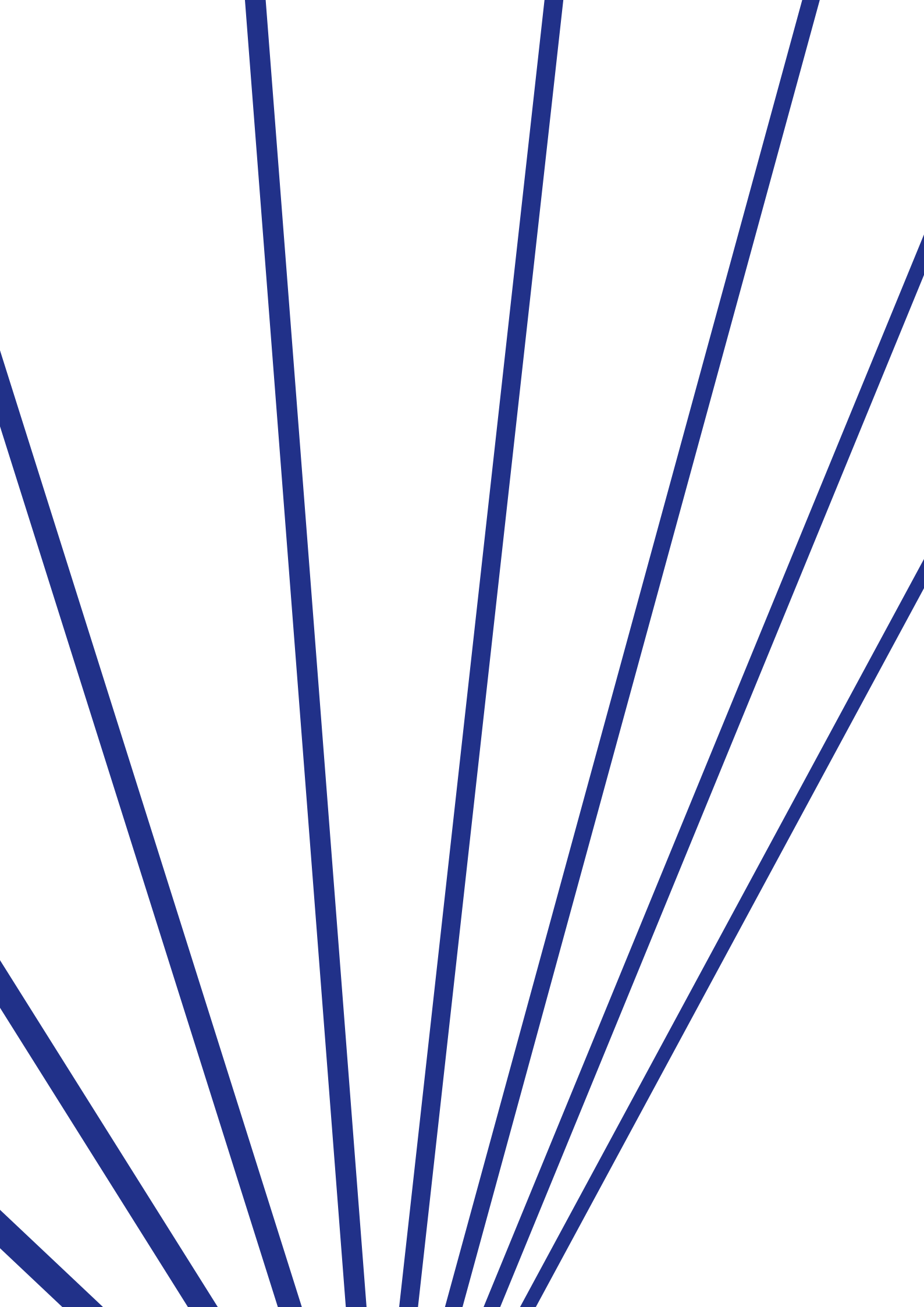




The chart below shows a sensitivity analysis of the average 2021-2025 ROCE of the regulated scope as regards the principal parameters of the business plan:

Sensitivity levers	of the regulated scope
+/- 0.35% of traffic per year over the ERA 2021-2015	+/- 0.1%
+/- 0.25% traffic per year over the ERA 2021-2015	+/- 0.1%
+/- €3.8 million in regulated operating expenses per year over the ERA 2021-2025	-/+ 0.1%
+/- €48.0 million in regulated investment per year over the ERA 2021-2025	-/+ 0.1%







# APPENDICES

## SUMMARY OF THE 2016-2020 ECONOMIC REGULATION AGREEMENT

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## SUMMARY

After two Economic Regulation Agreements devoted mainly to boosting airport capacity to meet the needs generated by growth in air transport, for Aéroports de Paris the purpose of the 2016-2020 ERA is to address the two-fold challenge of competitiveness and attractiveness.

Concerning air passenger traffic, at the beginning of the Agreement, Paris was the first city to suffer from the negative effects of the wave of terrorist attacks in 2015 which eroded its appeal as a tourist destination. However, growth in air passenger traffic recovered the following year in Paris, which enabled the symbolic threshold of 100 million passengers to be crossed in 2017.

Aéroports de Paris has pursued a specific and reinforced investment strategy for the purposes of boosting its airport capacity, maintain and renovate its assets and optimise the use of its infrastructure to enhance operational efficiency for passengers and airlines.

This far-reaching investment strategy is combined with a policy of permanent cost control in order to support Aéroports de Paris' goal to

provide reasonable prices to its clients and ensure a fair return on capital invested to its shareholders. In addition, Aéroports de Paris has managed to limit the increase of airport fees for its customers to stay below the cap authorised by 2016-2020 ERA, while achieving the objective of a fair return on capital invested. The surplus resulting from the scrupulous respect of the commitments made in the economic regulation agreement and from the boom in air traffic, will be used to carry out the investment program proposed in the next economic regulation agreement.

While the investment plan and moderate tariffs have made Paris airports more attractive and more competitive, several factors have weighed on the quality of service provided to passengers and airlines. The 2015 terrorist attacks necessitated a reinforcement of the security measures which impaired the fluidity of the passengers' departure and arrival experience.

Against a backdrop of traffic growth in Paris, enhanced passenger satisfaction and road fluidity will remain major issues for the years to come.

## CHANGE IN PASSENGER TRAFFIC

The overall balance of the 2016-2020 ERA is based on the assumption of a 2.5% increase in passenger traffic per year. Aéroports de Paris' proposal notably takes into account the economic growth outlook for the eurozone, which, has been marked by a serious recession since 2009, and growth prospects for destination areas that were more dynamic, particularly for long-haul routes. The change in the domestic market takes account the development of high-speed rail on certain destinations. For tariff cap appraisal, no adjustment in tariff volumes was provided for when growth in real traffic remained in the franchise zone corresponding to an annual increase/decrease in passenger traffic of +/- 0.5%.

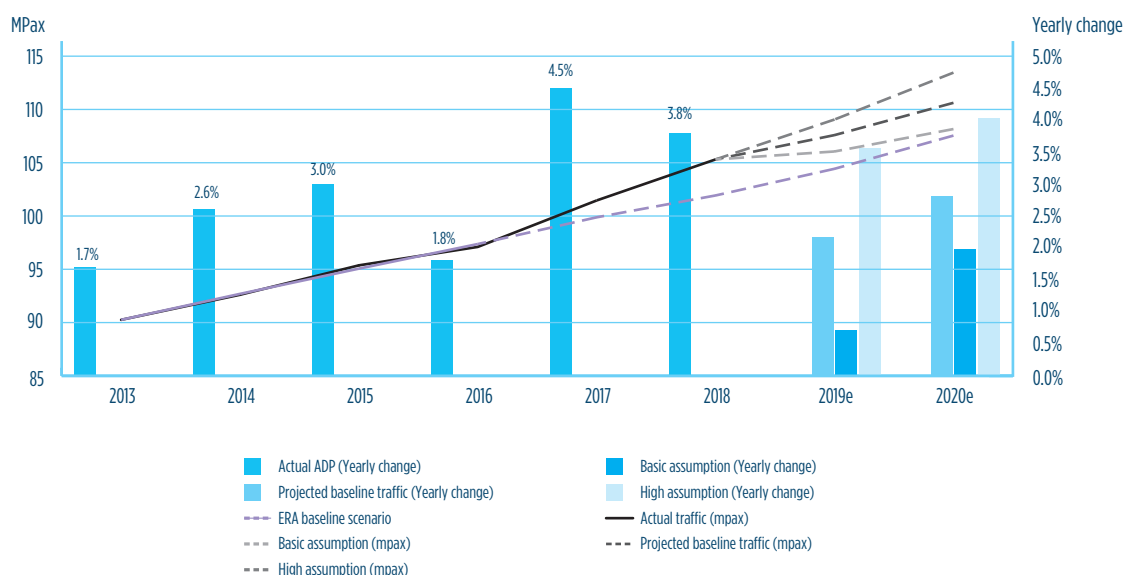
The increase in traffic over the past three years of the 2016-2020 ERA was greater than expected, especially starting in 2017. The average annual

growth rate of Paris-Charles de Gaulle and Paris-Orly during 2015-2018 was +3.4%. This growth in an unstable environment for the most part, was driven by international destinations, particularly North America and the Middle East, and by European destinations. Domestic traffic was sluggish, as it still suffers from competition from high speed trains (TGV). During that period, the growth of Paris-Orly, supported by low-cost airlines, which have seen their market share rise from 33.4% in 2015 to 40.2% in 2018, was significantly higher than that of Paris-Charles de Gaulle.

In the last two years of the 2016-2020 ERA, the baseline scenario seems cautious. The uptick in traffic starting in 2017, could lead to an exit point for the 2016-2020 ERA in a growth range of between +2.8% and +3.2% per average year over the period<sup>1</sup>.

<sup>1</sup> A number of the ADP Group's 2020 objectives were revised upward when the 2018 annual results were presented on 14 February 2019.

Below are the traffic assumptions on which the ERA 2016-2020 was based and the actual changes recorded (passenger traffic excluding transit) between 2015 and 2018, as well as the forecasts for 2019 and 2020:



The tables below respectively show the changes in traffic for Paris-Charles de Gaulle, Paris-Orly and the two airports combined since 2016, as well as the forecasts for 2019 and 2020.

Paris-Charles de Gaulle traffic (excluding transit)	2016	Change	2017	Change	2018	Change	2019e	Change	2020e	Change
<b>Passenger traffic (millions)</b>	<b>65.9</b>	<b>0.2%</b>	<b>69.4</b>	<b>5.4%</b>	<b>72.2</b>	<b>4.0%</b>	<b>74.1</b>	<b>2.6%</b>	<b>76.3</b>	<b>3.1%</b>
Domestic	5.5	2.6%	5.7	4.4%	5.8	1.6%	6.1	4.3%	6.2	1.5%
Schengen	22.7	0.4%	23.9	5.1%	24.7	3.6%	25.4	2.7%	25.2	-0.7%
Other EU	5.6	5.0%	6.0	6.8%	6.2	4.1%	6.3	1.0%	6.5	4.1%
French overseas territories	0.7	10.7%	0.8	10.1%	0.8	2.2%	0.8	-1.6%	0.8	8.3%
Other international	31.4	-1.3%	33.1	5.4%	34.7	4.7%	35.6	2.6%	37.6	5.7%
of which connecting passengers	20.9	0.8%	21.2	1.4%	20.6	-2.8%	21.8	5.5%	22.6	4.0%
Connecting rate		32%		31%		29%		29%		30%
<b>Movements (thousands, incl. freight)</b>	<b>473.0</b>	<b>0.8%</b>	<b>476.0</b>	<b>0.6%</b>	<b>480.5</b>	<b>0.9%</b>	<b>475.8</b>	<b>-1.0%</b>	<b>476.5</b>	<b>0.1%</b>
<b>Average load (passengers/mixed flight)</b>	<b>148.6</b>	<b>-0.5%</b>	<b>155.5</b>	<b>4.7%</b>	<b>160.2</b>	<b>3.0%</b>	<b>166.0</b>	<b>3.7%</b>	<b>170.9</b>	<b>2.9%</b>
<b>Landing weight (millions of tonnes)</b>	<b>28.9</b>	<b>0.2%</b>	<b>29.4</b>	<b>1.6%</b>	<b>30.1</b>	<b>2.4%</b>	<b>30.3</b>	<b>0.7%</b>	<b>31.3</b>	<b>3.4%</b>



Paris-Only traffic (excluding transit)	2016	Change	2017	Change	2018	Change	2019e	Change	2020e	Change
<b>Passenger traffic (millions)</b>	<b>31.2</b>	<b>5.3%</b>	<b>32.0</b>	<b>2.6%</b>	<b>33.1</b>	<b>3.4%</b>	<b>33.5</b>	<b>1.3%</b>	<b>34.3</b>	<b>2.2%</b>
Domestic	10.9	0.4%	10.8	-0.8%	10.4	-3.5%	10.2	-2.5%	10.0	-1.7%
Schengen	10.5	10.8%	10.7	2.4%	11.5	6.6%	11.6	1.1%	12.2	5.5%
Other EU	0.8	28.8%	0.6%	-24.1%	0.3	-44.9%	0.2	-54.5%	0.3	94.3%
French overseas territories	3.3	3.6%	3.4	3.4%	3.7%	10.1%	3.9	5.9%	4.0	2.3%
Other international	5.8	3.8%	6.5	12.5%	7.2	10.5%	7.7	7.2%	7.7	0.5%
of which connecting passengers	2.2	5.2%	2.2	-0.5%	2.2	0.4%	2.2	2.9%	2.3	1.9%
Connecting rate		7%		7%		7%		7%		7%
<b>Movements (thousands, incl. freight)</b>	<b>234.0</b>	<b>1.4%</b>	<b>229.0</b>	<b>-2.1%</b>	<b>229.1</b>	<b>0.0%</b>	<b>225.5</b>	<b>-1.5%</b>	<b>225.7</b>	<b>0.1%</b>
<b>Average load (passengers/mixed flight)</b>	<b>133.5</b>	<b>3.8%</b>	<b>139.9</b>	<b>4.8%</b>	<b>144.6</b>	<b>3.3%</b>	<b>148.7</b>	<b>2.8%</b>	<b>151.9</b>	<b>2.2%</b>
<b>Landing weight (millions of tonnes)</b>	<b>9.1</b>	<b>4.5%</b>	<b>9.2</b>	<b>1.1%</b>	<b>9.5</b>	<b>2.7%</b>	<b>9.4</b>	<b>-0.6%</b>	<b>9.7</b>	<b>2.8%</b>

ADP traffic (excluding transit)	2016	Change	2017	Change	2018	Change	2019e	Change	2020e	Change
<b>Passenger traffic (millions)</b>	<b>97.1</b>	<b>1.8%</b>	<b>101.5</b>	<b>4.5%</b>	<b>105.3</b>	<b>3.8%</b>	<b>107.6</b>	<b>2.2%</b>	<b>110.6</b>	<b>2.8%</b>
Domestic	16.4	1.1%	16.5	0.9%	16.2	-1.7%	16.2	0.0%	16.2	-0.5%
Schengen	33.2	3.5%	34.6	4.2%	36.2	4.5%	37.0	2.2%	37.4	1.3%
Other EU	6.4	7.6%	6.6	3.0%	6.6	-0.7%	6.4	-1.9%	6.8	6.3%
French overseas territories	3.9	4.8%	4.1	4.8%	4.5	8.6%	4.7	4.6%	4.8	3.3%
Other international	37.2	-0.5%	39.6	6.5%	41.9%	5.7%	43.3%	3.4%	45.4%	4.8%
of which connecting passengers	23.1	1.2%	23.4	1.3%	22.8%	-2.5%	23.9	4.8%	24.9	4.2%
Connecting rate		24%		23%		22%		22%		23%
<b>Movements (thousands, incl. freight)</b>	<b>707.0</b>	<b>1.0%</b>	<b>705.0</b>	<b>-0.3%</b>	<b>709.5</b>	<b>0.6%</b>	<b>701.4</b>	<b>-1.2%</b>	<b>702.2%</b>	<b>0.1%</b>
<b>Average load (passengers/mixed flight)</b>	<b>143.4</b>	<b>0.8%</b>	<b>150.2</b>	<b>4.8%</b>	<b>154.9</b>	<b>3.1%</b>	<b>160.2</b>	<b>3.4%</b>	<b>164.5</b>	<b>2.7%</b>
<b>Landing weight (millions of tonnes)</b>	<b>38.1</b>	<b>1.2%</b>	<b>38.6%</b>	<b>1.5%</b>	<b>39.6</b>	<b>2.4%</b>	<b>39.8%</b>	<b>0.4%</b>	<b>41.0</b>	<b>3.2%</b>

Over the 2009-2017 period with the exception of 2011, 2015 and 2016 the number of aircraft movements dipped, despite a sharp increase in passenger traffic. This reflects efforts of airline to improve the load factor

and average number of passenger per movement. Landing weight rose slightly over the same period, despite the drop in movements, confirming the use of aircraft with greater capacity.

## Competitive environment

The main competitor of the Parisian platforms is London Heathrow Airport (80.13 million passengers in 2018), which accommodates in particular British Airways and members of the oneworld alliance, followed by Frankfurt Airport (with 69.5 million passengers in 2018), the Lufthansa

hub and its Star Alliance partners. The Parisian platforms are also in competition with hubs further afield, such as Dubai with Emirates airline (89.2 million passengers in 2018), which are striving to become major international hubs between Europe, the Americas and Asia.

## Market share trends

Regarding the market share of airlines in Île-de-France airports, the SkyTeam Alliance accounts for more than half of passenger traffic (51% in 2018) while the share of low-cost airlines has been growing steadily, reaching 22.0% of total traffic in 2018. In 2015, Skyteam Alliance represented 54.5% of the market share and the low-cost airlines 17.8%. On a global scale as regards ADP, the ranking of the top five airline companies has not changed: Air France (Air France group, KLM and

Hop!) is still the main client, followed by EasyJet, Transavia.com, Vueling and Delta.

Regarding cargo and mail traffic, the average annual growth rate in the past five years is +0.8% (traffic in tonnes of cargo and mail on-loaded and off-loaded) despite a decline in activity in 2018. The growth of Aéroports de Paris' business activity masks a significant decline in activity at Paris-Orly and a moderate increase at Paris-Charles de Gaulle.

In 2018, Aéroports de Paris estimates that it handled 2.3 million tonnes of cargo at the Paris-Charles de Gaulle (2.2 million tonnes) and Paris-Orly (0.1 million tonnes) airports.

Total Aéroports de Paris (millions of tonnes)	2015	2016	Change	2017	Change	2018	Change
<b>Cargo and Postal traffic</b>	<b>2.2</b>	<b>2.2</b>	<b>1.1%</b>	<b>2.3</b>	<b>2.4%</b>	<b>2.3</b>	<b>-1.9%</b>
Paris-Charles de Gaulle	2.1	2.1	2.0%	2.2	2.9%	2.2	-1.8%
Paris-Orly	0.1	0.1	-14.3%	0.1	-7.2%	0.1	-4.8%

The aviation activity of the Paris-Le Bourget airport, which is based on business aviation and thus highly sensitive to economic competition, recorded an increase of 2.9% per year in 2017 and 2018.

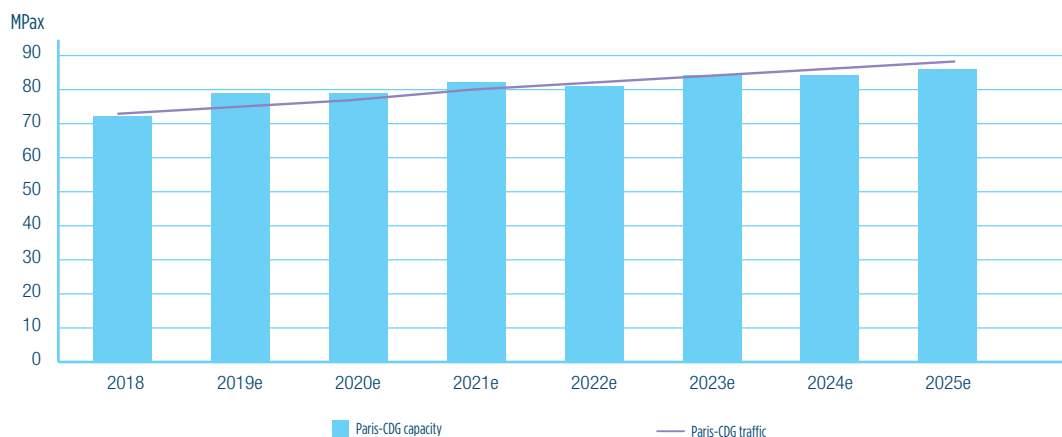
Paris-Le Bourget traffic	2015	2016	Change	2017	Change	2018	Change
<b>TOTAL NUMBER OF MOVEMENTS (THOUSANDS)</b>	<b>54.7</b>	<b>53.6</b>	<b>-2.0%</b>	<b>55.2</b>	<b>2.9%</b>	<b>56.7</b>	<b>2.9%</b>

## CHANGE IN CAPACITY

### Paris-Charles de Gaulle capacity

In 2005, the combined capacity of all Paris-Charles de Gaulle terminals was 47.1 million passengers. Thanks to the investments initiated during the 2006-2010 ERA and continued during the 2011-2015 ERA and the 2016-2020 ERA, the capacity of this airport will have increased by nearly 30 million passengers between 2005 and end-2020. In 2018, traffic was 72.2 million passengers.

TRAFFIC/CAPACITY BALANCE - PARIS-CHARLES DE GAULLE IN MILLIONS OF PASSENGERS



The chart above illustrates an appropriate balance between traffic and capacity on a nominal basis expressed in millions of passengers per year. It shows a slight over-capacity thanks to the strategy implemented on the 2016-2020 ERA for optimising existing infrastructures.

The capacity of Paris-Charles de Gaulle, per terminal, breaks down as follows:

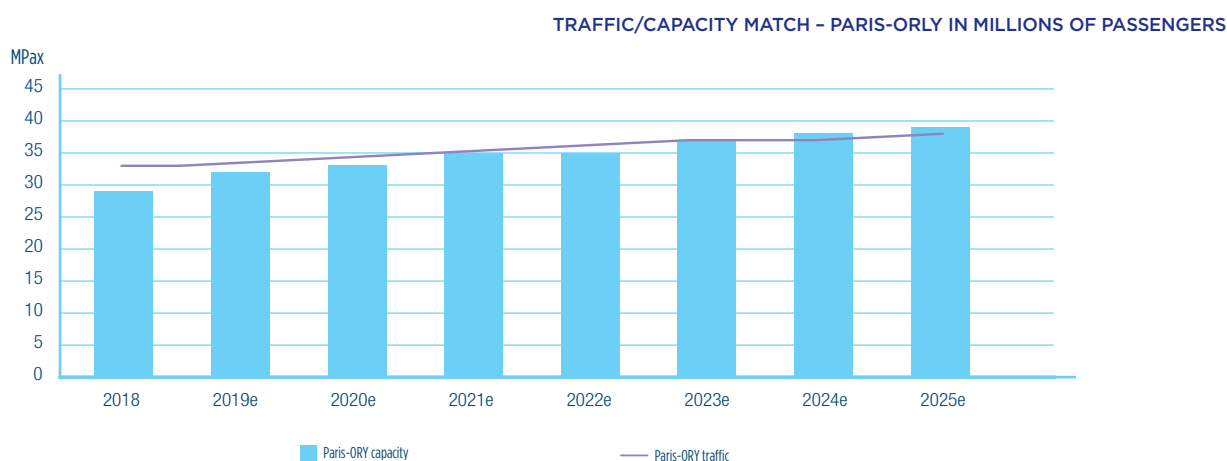
(in millions of passengers/year)	At end 2018	At end 2006
<b>Terminal 1</b>	<b>9</b>	<b>8</b>
<b>Terminal 2</b>	<b>59</b>	<b>36</b>
ABCD <sup>1</sup>	16	21
E	24	5
Of which		
Hall K	7	5
Hall L	9	-
Satellite 4	8	-
F	16	11
G	3	-
<b>Terminal 3</b>	<b>4</b>	<b>4</b>
<b>TOTAL</b>	<b>72</b>	<b>47</b>

<sup>1</sup> NB: Terminal 2B has been closed for renovation since 9 April 2013.

## Capacity of Paris-Orly

While terminal capacity at Paris-Orly (27 million passengers per year) remained unchanged over the 2006-2010 and 2011-2015 ERA periods, significant investments were carried out within the scope of the 2016-2020 ERA, in particular connecting the two Orly terminals to create one

ensemble and thus enable capacity levels to be boosted and service quality offered by the platform to be enhanced. In 2018, the traffic was 33.1 million passengers.



The chart above illustrates an appropriate balance between traffic and capacity on a nominal basis expressed in millions of passengers per year. It shows a lack of capacity until 2018, which could be reflected in a

deterioration in the quality of service in the passengers' travel experience. Starting in 2019, the opening of the Junction will provide additional capacity to absorb a portion of this shortfall.

The capacity of Paris-Orly, per terminal, breaks down as follows:

(in millions of passengers/year)	In 2018	In 2006
South terminal	12.5	10.5
West terminal	16.5	16.5
<b>TOTAL</b>	<b>29.0</b>	<b>27.0</b>

## INVESTMENT PROGRAMME

The 2016-2020 ERA was characterised by a marked increase in investments relative to the previous ERA and with a five-year programme for the regulated scope estimated at €3,085 million<sup>1</sup> versus €2,021 million in 2011-2015.

Following the completion of major infrastructure projects carried out during the two previous economic regulation contracts, Aéroports de Paris' 2016-2020 investment programme prioritised asset preservation and regulatory compliance, and helped to support traffic growth by optimising existing facilities and deploying quality service standards.

The 2016-2020 investment programme focused on:

- ◆ bringing regulations into compliance, especially concerning the runways, following the new regulations in terms of civil aviation security and the water treatment system at Paris-Charles de Gaulle;
- ◆ maintaining assets with maintenance investment designed to deal with the ageing of terminals, runways and aircraft aprons, along with the maintenance of IT systems and networks in good operating condition; a particularly significant effort focused on the Paris-Orly airport, notably

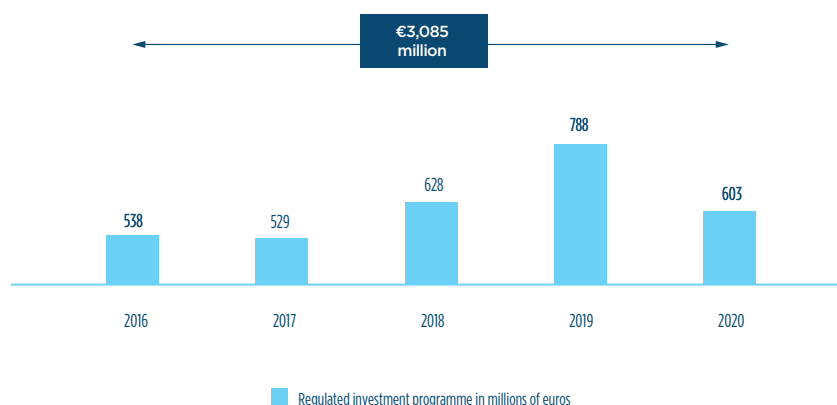
including the renovation of runway 3; targeted operations at Paris-Charles de Gaulle involving the most critical infrastructure and, in particular, the renovation of Terminal 2B;

- ◆ pursuing the "One Roof" concept with the completion of three flagship projects: the connection of the South and West terminals at Paris-Orly, and for Paris-Charles de Gaulle the junction for Terminals 2B and 2D and also the connection of a portion of international satellites in Terminal 1;
- ◆ enhancing the attractiveness of the hub at Paris-Charles de Gaulle and improving the performance of airport processes in a context of increased competition and the changing demands and needs of passengers and airlines. These investments will be focused on the baggage sorting systems in Hall L and Hall M, the deployment of Visual Docking Guidance Systems, the renovation of lounges and the introduction of automatic self-boarding and baggage-deposit systems;

The principal investment operations provided for within the scope of the Economic Regulation Agreement which have been completed or will be planned by the end of ERA 2016-2020.

### Regulated investment programme for 2016-2020

The regulated investment programme over the 2016-2020 ERA period is estimated at €3,085 million.



<sup>1</sup> 2016 euros for 2016, 2017 euros for 2017, 2018 euros for 2018 and 2018 euros for the years 2019 to 2020.

## // INVESTMENTS OF THE REGULATED SCOPE

Regulated scope Amount in €m	2016	2017	2018	2019	2020	Total 2016-2020
<b>ASSET MAINTENANCE</b>						
Paris-Charles de Gaulle – Renovation of Terminal 2B	12	28	27	26	26	119
Paris-Charles de Gaulle – Renovation of Terminal 2D	-	-	-	2	5	7
Paris-Charles de Gaulle – Current investments	121	92	90	105	102	510
Rehabilitation of Runway 2	20	-	-	-	-	20
Other Paris-Charles de Gaulle operations	101	92	90	105	102	490
Paris-Orly – Current investments	61	56	60	174	43	394
Renovation of areas and traffic routes	-	13	15	24	9	61
Renovation of Runway 3	-	-	6	95	-	102
Renovation of Runway 4	19	16	1	-	-	36
Renewal of waterproofing and reinforcing of Bridge 2	-	1	11	16	1	28
Other Paris-Orly operations	42	26	27	39	33	168
Le Bourget – current investments	1	2	1	4	13	21
Current investments – Aeronautical real estate	6	4	8	9	8	35
IT networks and systems	14	19	25	15	15	89
<b>TOTAL ASSET MAINTENANCE</b>	<b>215</b>	<b>201</b>	<b>211</b>	<b>335</b>	<b>213</b>	<b>1,175</b>
<b>REGULATORY UPGRADES</b>						
Regulatory runway investments	19	3	10	15	10	57
Paris-Charles de Gaulle	3	1	1	1	4	10
Paris-Orly	16	1	8	13	2	40
Other (Le Bourget)	-	1	1	1	4	8
Rain water	11	15	5	1	2	35
Other regulatory compliance investments	3	4	1	4	4	16
<b>TOTAL REGULATORY COMPLIANCE</b>	<b>34</b>	<b>22</b>	<b>17</b>	<b>19</b>	<b>16</b>	<b>108</b>
<b>CAPACITY OPTIMISATION AND ONE-ROOF CONCEPT</b>						
Junction of the Terminal 1 satellites at Paris-Charles de Gaulle	4	4	16	34	40	98
Junction of South and West terminals at Paris-Orly	101	88	94	36	17	336
BD junction at Paris-Charles de Gaulle	2	5	29	35	40	112
Other Paris-CDG projects	-	3	1	4	1	9
Other Paris-Orly projects	6	20	7	14	15	61
Airport infrastructure	4	16	9	5	10	44
Paris-Charles de Gaulle	-	1	3	3	7	14
Paris-Orly	4	15	6	2	3	29
Le Bourget	-	-	-	-	-	-
Terminal 4 preparatory work	-	-	1	4	15	20
<b>TOTAL CAPACITY OPTIMISATION AND ONEROOF CONCEPT</b>	<b>117</b>	<b>136</b>	<b>158</b>	<b>132</b>	<b>138</b>	<b>681</b>
<b>ACCESS IMPROVEMENT</b>						
CDGVal	-	-	-	-	-	-
West Access/Secondary network Paris-Charles de Gaulle	5	6	2	6	5	24
Relocation of the taxi base of Paris-Charles de Gaulle	-	7	2	-	-	9
Miscellaneous Paris-Charles de Gaulle projects	6	9	21	15	9	61
Miscellaneous Paris-Orly projects	1	3	9	1	1	15
Grand Paris-Orly station	9	6	5	22	18	60
Of which financed by third parties	9	6	4	21	18	57
Of which financed by Aéroport de Paris	-	-	1	1	-	3
<b>TOTAL ACCESS IMPROVEMENT</b>	<b>22</b>	<b>30</b>	<b>39</b>	<b>45</b>	<b>33</b>	<b>169</b>



Connexion platforms competitiveness and other processes	2016	2017	2018	2019	2020	Total 2016-2020
<b>Terminals</b>	<b>16</b>	<b>10</b>	<b>13</b>	<b>21</b>	<b>12</b>	<b>72</b>
Paris-Charles de Gaulle	9	6	11	17	11	54
Paris-Orly	8	4	2	4	1	19
<b>2E and 2F refit</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Aeronautical areas and movements</b>	<b>3</b>	<b>6</b>	<b>18</b>	<b>37</b>	<b>60</b>	<b>124</b>
Securing the two parallel runways (Paris-Charles de Gaulle)	-	-	-	2	9	11
Aircraft parking areas for wide-bodied aircraft (Paris-Charles de Gaulle)	-	-	1	8	23	31
India areas	-	1	7	18	17	42
Other CDG	3	5	5	9	11	34
Paris-Orly aircraft parking areas	-	-	5	1	-	6
<b>Operational reliability</b>	<b>21</b>	<b>24</b>	<b>31</b>	<b>34</b>	<b>25</b>	<b>134</b>
Paris-Charles de Gaulle	14	12	8	19	16	70
Paris-Orly	6	11	24	15	8	64
<b>Baggage handling systems</b>	<b>55</b>	<b>44</b>	<b>60</b>	<b>48</b>	<b>29</b>	<b>236</b>
Other CDG	5	4	4	12	4	28
TBS4	5	24	37	32	25	123
TDS3	45	16	18	5	-	84
Other Orly	-	-	-	-	-	-
<b>Change in flows</b>	<b>3</b>	<b>2</b>	<b>7</b>	<b>9</b>	<b>-</b>	<b>21</b>
Paris-Charles de Gaulle	1	1	-	-	-	2
Paris-Orly	2	1	7	9	-	19
<b>IT projects</b>	<b>9</b>	<b>11</b>	<b>11</b>	<b>16</b>	<b>12</b>	<b>59</b>
<b>TOTAL HUB COMPETITIVENESS</b>	<b>108</b>	<b>96</b>	<b>140</b>	<b>165</b>	<b>138</b>	<b>647</b>
<b>Quality of service and sustainable development</b>						
<b>Sustainable development</b>	<b>7</b>	<b>8</b>	<b>7</b>	<b>8</b>	<b>3</b>	<b>33</b>
<b>Quality of Service</b>	<b>21</b>	<b>29</b>	<b>53</b>	<b>48</b>	<b>54</b>	<b>204</b>
<b>TOTAL QUALITY OF SERVICE AND SUSTAINABLE DEVELOPMENT</b>	<b>28</b>	<b>37</b>	<b>60</b>	<b>56</b>	<b>57</b>	<b>237</b>
<b>Real estate development</b>						
<b>Paris-Charles de Gaulle</b>	<b>4</b>	<b>9</b>	<b>2</b>	<b>20</b>	<b>3</b>	<b>39</b>
<b>Paris-Orly</b>	<b>1</b>	<b>2</b>	<b>-</b>	<b>1</b>	<b>1</b>	<b>5</b>
<b>Le Bourget</b>	<b>9</b>	<b>-1</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>9</b>
<b>TOTAL AERONAUTICAL REAL ESTATE DEVELOPMENT</b>	<b>15</b>	<b>9</b>	<b>2</b>	<b>23</b>	<b>4</b>	<b>52</b>
<b>PROVISIONS FOR STUDIES RELATED TO ERA4 OPERATIONS (EXCLUDING T4)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>13</b>	<b>4</b>	<b>17</b>
<b>PROGRAMME TOTAL</b>	<b>538</b>	<b>529</b>	<b>628</b>	<b>788</b>	<b>603</b>	<b>3,085</b>

## Differences with the initial investment programme

Regulated scope <i>Amount in €m</i>	Updated initial ERA3 programme					(1)	2016-2020 programme (Q1 2019 forecast)					(2)	(2)-(1)
	2016	2017	2018	2019	2020	Total 2016-2020	2016	2017	2018	2019	2020	Total 2016-2020	Diff in totals 2016-2020
Asset maintenance	215	219	218	221	207	1,080	215	201	211	335	213	1,175	+95
Regulatory upgrades	9	12	46	57	39	162	34	22	17	19	16	108	(54)
Capacity optimisation and OneRoof concept	128	160	197	130	68	683	117	136	158	132	138	681	(3)
Access improvement	33	9	14	5	5	65	22	30	39	45	33	169	+103
Hub competitiveness and other processes	134	145	153	133	98	663	108	96	140	165	138	647	(17)
Quality of service and sustainable development	41	39	43	36	42	201	28	37	60	56	57	237	+36
Real estate development	69	41	54	30	19	213	15	9	2	23	4	52	(160)
Provisions for studies related to 2021-2023 operations (excluding T4)	-	-	-	-	-	-	-	-	-	13	4	17	+17
<b>TOTAL</b>	<b>628</b>	<b>624</b>	<b>725</b>	<b>611</b>	<b>479</b>	<b>3,068</b>	<b>538</b>	<b>529</b>	<b>628</b>	<b>788</b>	<b>603</b>	<b>3,085</b>	<b>+16</b>

The investment programme for the regulated scope of the 2016-2020 ERA which, in 2015, was estimated at €2,978 million at the time of completion, was revised up to €3,068 million in 2018. The last investment programme updated in the first quarter 2019 integrating the real 2018 amount, therefore raises the 2019 and 2020 estimate to €3,085 million<sup>1</sup>.

This programme is only 6 million more than the initial estimate. This balance, however, is the result of wider discrepancies between different types of investments (macro-issues). The reasons for the principal discrepancies are presented below.

◆ Asset preservation: €95 million more than the investment programme budgeted in ERA 2016-2020 is for the most part due to:

- ◆ an upward revision of costs related to the renovation of Terminal 2B at Paris-Charles de Gaulle, the Paris-Orly runway 3 renovation project, stemming mainly from more extensive-than-expected works, inflation, and market updates,
- ◆ the re-allocation of some investments presented in the “regulatory upgrades” macro-issue (Regulatory runway investments – Paris Charles de Gaulle) in the initial 2016-2020 ERA investment programme,
- ◆ taking account of projects aiming at correcting the ageing of infrastructures at Paris-Charles de Gaulle in order to achieve the goal of stabilising the physical ageing index by the end of 2020. This notably includes the rehabilitation and restructuring of car parks (in particular the AB car park), as well as restructuring operations carried out on aircraft taxiways and airport lighting repair,
- ◆ increased maintenance investment for computer systems and networks under operational conditions,
- ◆ the postponement in the Paris-Charles de Gaulle Terminal 2D renovation project to after 2020,

◆ reallocating priority to several ongoing business investments at Paris-Orly;

◆ regulatory upgrades: the €54 million shortfall relative to the amount budgeted in the ERA 2016-2020 investment programme stems mainly from the reintegration of part of the regulatory investments on the Paris-Charles de Gaulle runways regarding the macro-challenge: “Maintenance of assets” (see above);

◆ the OneRoof capacity optimisation and policy: the €3 million shortfall relative to the amount budgeted in the ERA 2016-2020 investment programme stems from the compensation of several effects:

- ◆ the optimisation of costs related to investments in the project to link the South and West terminals at Paris-Orly (including the extension building of the East Pier) taking into account:
  - ◆ the expectation of certain expenses in 2015, notably related to the construction of the Southwest junction building,
  - ◆ the optimisation of the rate of fixed-costs for the entire project over the 2016-2020 period, due notably to the fact that most of the studies had been completed before 2016;
- ◆ an upward revision in Paris-Orly's other investments, including the extension of the Golf areas and improvements made to the baggage sorting system,
- ◆ an upward revision regarding the investment cost of the 2B and 2D terminal junction project at Paris-Charles de Gaulle, notably including an extension of the project scope to include the arrivals zone in the public area, as well as an extension to the boarding lounge and taking into account additional requests (trade shows, WIWO, etc.);

<sup>1</sup> 2016 euros for 2016, 2017 euros for 2017, 2018 euros for 2018 and 2018 euros for the years 2018 to 2020.

- ◇ improved access: €103 million more than the investment programme budgeted in the ERA 2016-2020 stems from:
  - ◆ work related to the construction of the future Grand Paris station in Paris-Orly, which was not included in the ERA 2016-2020 investment programme and which was financed by the Société du Grand Paris,
  - ◆ various new projects at Paris-Charles de Gaulle, including the redesign of Terminal 2B and direct access to the esplanade of Terminals 2E and 2F and at Paris-Orly, the car-park restructuring;
- ◇ competitiveness of the correspondence platform and other processes: the €11 million shortfall relative to the investment programme budgeted in ERA 2016-2020 stems mainly from:
  - ◆ a downward revision in IT project investment estimates,
  - ◆ the downward revision of the projected cost of departure luggage sorter systems under the S3 satellite (known as TDS3) partially offset by the increase in costs of the corresponding TBS4 luggage sorter project at S3 and S4,
  - ◆ the integration of the construction of new areas within the framework of the FEDEX 2020 project, which aim to extend the cargo hub and increase the cargo handling capacity of the Paris-Charles de Gaulle airport;
- ◇ quality of service and sustainable development: the €36 million increase in the investment programme budgeted in ERA 2016-2020 mainly concerns investments related to the quality of service:
  - ◆ creation of orientation islands on both platforms,
  - ◆ air conditioning of bridges and pre-bridges the most exposed to extreme temperatures,
  - ◆ Investments related to signalling, including display screens and the development of new signage systems;
- ◇ aeronautical property development: the €160 million shortfall relative to the amount budgeted stems mainly from:
  - ◆ the review of the scope and the schedule of the FEDEX hub development project at Paris-Charles de Gaulle, with investments focused mainly on the areas of the airport, included within the macro-challenge "Competitiveness of the correspondence platform and other processes" (Areas and Aeronautical Circulation),
  - ◆ the postponement beyond 2020 of the "Embraer" and "TAG" projects at Paris-Le Bourget due to delays incurred in land acquisition,
  - ◆ the postponement beyond 2020 of hangar renovation at Paris-Charles de Gaulle and the demolition of hangars at Paris-Orly.

## // DIFFERENCES BETWEEN THE INVESTMENT PROGRAMME ORIGINALLY BUDGETED IN THE 2016-2020 ERA AND THE AMOUNT ACTUALLY INVESTED

Regulated scope <i>Amount in €m</i>	2016 (actual)	2017 (actual)	2018 (actual)	2019e	2020e	Total 2016-2020
<b>ASSET MAINTENANCE</b>						
Paris-Charles de Gaulle – Renovation of Terminal 2B	9	5	(4)	2	26	39
Paris-Charles de Gaulle – Renovation of Terminal 2D	-	(2)	(6)	(6)	(7)	(22)
Paris-Charles de Gaulle – Current investments	24	(11)	5	15	17	49
Rehabilitation of Runway 2	(5)	-	-	-	-	(5)
Other Paris-Charles de Gaulle operations	30	(11)	5	15	17	55
Paris-Orly – Current investments	(38)	(17)	(18)	93	(48)	(27)
Renovation of parking stands and aprons	(1)	(3)	9	13	(2)	17
Renovation of Runway 3	(1)	(12)	(6)	83	-	65
Renovation of Runway 4	(16)	16	1	-	-	1
Renewal of waterproofing and reinforcing of Bridge 2	-	(15)	(1)	16	1	0
Other Paris-Orly operations	(19)	(4)	(21)	(18)	(47)	(110)
Le Bourget – current investments	(1)	-	-	2	12	14
Current investments – Aeronautical real estate	3	-	4	5	4	17
Computer networks and systems	2	7	12	2	2	24
<b>TOTAL ASSET MAINTENANCE</b>	-	(18)	(7)	114	6	95
<b>REGULATORY UPGRADES</b>						
Regulatory runway investments	11	(5)	(32)	(27)	1	(52)
Paris-Charles de Gaulle	3	1	(32)	(33)	4	(57)
Paris-Orly	8	(7)	(1)	4	(7)	(2)
Other (Le Bourget)	-	1	1	1	4	8
Rain water	11	15	5	(13)	(29)	(11)
Other regulatory compliance investments	3	-	(3)	4	4	8
<b>TOTAL REGULATORY COMPLIANCE</b>	26	10	(29)	(37)	(24)	(54)

Regulated scope <i>Amount in €m</i>	2016 (actual)	2017 (actual)	2018 (actual)	2019e	2020e	Total 2016-2020
<b>CAPACITY OPTIMISATION AND ONEROOF CONCEPT</b>						
Junction of the Terminal 1 satellites at Paris-Charles de Gaulle	(16)	(16)	(4)	14	20	(2)
Junction of South and West terminals at Paris-Orly	1	(13)	(14)	(13)	(16)	(56)
BD junction at Paris-Charles de Gaulle	(1)	(18)	(11)	1	40	12
Other Paris-CDG projects	-	3	1	4	1	9
Other Paris-Orly projects	4	5	(6)	10	15	28
<b>Airport infrastructure</b>	<b>1</b>	<b>15</b>	<b>-</b>	<b>(10)</b>	<b>2</b>	<b>7</b>
Paris-Charles de Gaulle	(2)	-	(5)	(4)	3	(8)
Paris-Orly	4	15	6	2	3	29
Le Bourget	(1)	-	(2)	(8)	(4)	(14)
Terminal 4 preparatory work	-	-	(6)	(3)	8	(1)
<b>TOTAL CAPACITY OPTIMISATION AND ONEROOF CONCEPT</b>	<b>(11)</b>	<b>(24)</b>	<b>(39)</b>	<b>2</b>	<b>71</b>	<b>(3)</b>
<b>ACCESS IMPROVEMENT</b>						
CDGVal	(5)	(6)	-	-	-	(11)
West Access/Secondary network Paris-Charles de Gaulle	(4)	4	(9)	1	-	(8)
Relocation of the taxi base of Paris-Charles de Gaulle	(12)	7	2	-	-	(4)
Miscellaneous Paris-Charles de Gaulle projects	6	9	21	15	9	61
Miscellaneous Paris-Orly projects	(5)	1	6	1	1	5
<b>Grand Paris-Orly station</b>	<b>9</b>	<b>6</b>	<b>5</b>	<b>22</b>	<b>18</b>	<b>60</b>
Of which financed by third parties	9	6	4	21	18	57
Of which financed by Aéroport de Paris	-	-	1	1	-	3
<b>TOTAL ACCESS IMPROVEMENT</b>	<b>(11)</b>	<b>21</b>	<b>25</b>	<b>40</b>	<b>28</b>	<b>103</b>

Connexion platforms competitiveness and other processes	2016	2017	2018	2019	2020	Total 2016-2020
<b>Terminals</b>	<b>(12)</b>	<b>(10)</b>	<b>5</b>	<b>18</b>	<b>10</b>	<b>12</b>
Paris-Charles de Gaulle	(14)	(10)	6	17	11	10
Paris-Orly	3	-	(1)	-	-	2
<b>2E and 2F refit</b>	<b>(18)</b>	<b>(18)</b>	<b>(19)</b>	<b>(19)</b>	<b>(19)</b>	<b>(92)</b>
<b>Aeronautical areas and movements</b>	<b>3</b>	<b>(10)</b>	<b>(0)</b>	<b>19</b>	<b>46</b>	<b>57</b>
Securing the two parallel runways (Paris-Charles de Gaulle)	-	(16)	(9)	(7)	9	(23)
Areas for wide-bodied aircraft (Paris-Charles de Gaulle)	-	-	(9)	(2)	13	2
India aircraft parking areas	-	1	7	18	17	42
Other CDG	3	5	5	9	11	34
Paris-Orly aircraft parking areas	-	-	5	1	(5)	1
<b>Operational reliability</b>	<b>7</b>	<b>11</b>	<b>18</b>	<b>9</b>	<b>7</b>	<b>52</b>
Paris-Charles de Gaulle	8	6	1	(3)	3	15
Paris-Orly	(1)	5	17	12	4	37
<b>Baggage handling equipment</b>	<b>11</b>	<b>(11)</b>	<b>(8)</b>	<b>6</b>	<b>7</b>	<b>5</b>
Other CDG	2	2	-	12	4	19
TBS4	5	13	5	(11)	3	16
TDS3	4	(25)	(14)	5	-	(31)
Other Orly	-	-	-	-	-	-

Connexion platforms competitiveness and other processes	2016	2017	2018	2019	2020	Total 2016-2020
<b>Change in flows</b>	<b>(7)</b>	<b>-</b>	<b>3</b>	<b>6</b>	<b>(2)</b>	<b>(1)</b>
Paris-Charles de Gaulle	(1)	1	-	-	-	-
Paris-Orly	(6)	(1)	2	6	(2)	-
<b>IT projects</b>	<b>(12)</b>	<b>(11)</b>	<b>(12)</b>	<b>(6)</b>	<b>(10)</b>	<b>(50)</b>
<b>TOTAL HUB COMPETITIVENESS</b>	<b>(26)</b>	<b>(49)</b>	<b>(13)</b>	<b>32</b>	<b>39</b>	<b>(17)</b>
<b>QUALITY OF SERVICE AND SUSTAINABLE DEVELOPMENT</b>						
Sustainable development	(3)	1	(4)	2	(8)	(13)
Quality of Service	(10)	(3)	21	18	23	49
<b>TOTAL QUALITY OF SERVICE AND SUSTAINABLE DEVELOPMENT</b>						<b>36</b>
<b>Real estate development</b>						
Paris-Charles de Gaulle	(26)	(14)	(42)	(1)	(15)	(98)
Paris-Orly	(8)	(13)	(10)	(7)	1	(38)
Le Bourget	(20)	(5)	-	1	-	(25)
<b>TOTAL AERONAUTICAL REAL ESTATE DEVELOPMENT</b>	<b>(54)</b>	<b>(32)</b>	<b>(52)</b>	<b>(8)</b>	<b>(15)</b>	<b>(160)</b>
<b>Provisions for studies related to ERA4 operations (excluding T4)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>13</b>	<b>4</b>	<b>17</b>
<b>PROGRAMME TOTAL</b>	<b>(91)</b>	<b>(95)</b>	<b>(98)</b>	<b>176</b>	<b>124</b>	<b>16</b>

## Monitoring obsolescence (ageing index (IVP))

Faced with the further ageing of its oldest airport infrastructure, during the 2016-2020 regulatory period, Aéroports de Paris sought to keep obsolescence at Paris-Charles de Gaulle at its 2016 level and to reduce the

level of obsolescence at Paris-Orly. The level of obsolescence is measured according to the facilities condition index (IVP) based on the TB Maestro method.

### // IVP = DMA DIVIDED BY VAR, WITH

#### ◆ DAM - Asset Maintenance Deficit (€)

Estimate of the amount of investment needed over 5 years to maintain or refurbish the asset and its components to a specific state. These investments are called Asset Maintenance Needs (BMA).

#### ◆ VAR - Current replacement value (€)

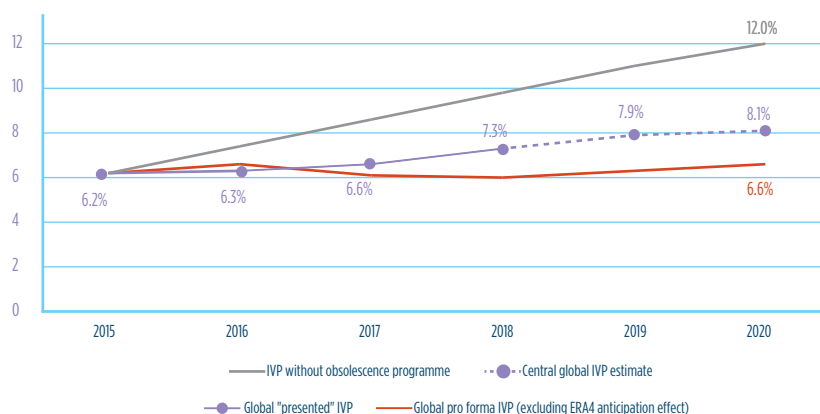
Average cost to build and fit out the buildings, land and infrastructure to achieve an asset with the same characteristics as that of today according to the current design and construction methods.

#### ◆ IVP - Physical ageing index (%)

Measure of the built asset's condition based on the current replacement value.

PARIS-CHARLES DE GAULLE  
IVP - 2015 TO 2020

Composition of CDG IVP in 2020

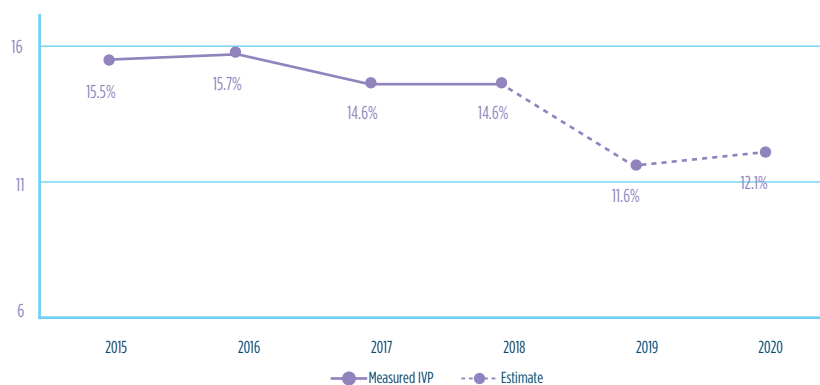


The IVP should be 8.1% in 2020 (compared with 12% without the effects of the 2016-2020 ERA investment programme to delay obsolescence). The IVP factors in deficiencies that are known or can be forecast over five years and thus plans for the impending obsolescence during the 2021-2025 ERA of the latest major facilities at Paris-Charles de Gaulle (terminal

2E Hall L, terminal 2G). By factoring in future obsolescence, the number of known deficiencies should be relatively stable over the 2016-2020 ERA in accordance with Aéroports de Paris' undertakings of a pro forma IVP of 6.6% in 2020 vs 6.2% in 2015.

PARIS-ORLY  
IVP - 2015 TO 2020

Change in ORLY IVP



The IVP for Paris-Orly should drop to 12.1% by the end of the 2016-2020 ERA. Most of the reduction is in aeronautical areas with obsolescence

levels of over 40% in recent years that benefited from the Runway 4 and then Runway 3 rehabilitation programmes in 2016-2020.



## Main operations at Paris-Charles de Gaulle in the 2016-2020 period

### // REHABILITATION OF RUNWAY 2



◆ Renovations in the summer of 2016 included the surface course with planing and a 21cm thick repaving, the clean-up of runway peripheral areas, beacons with LED lit path including multitubes, and ground marking.

The project also included work on compliance with European standards for airport safety (AESAs) with the creation of areas at the end of each runway to reduce risk of damage to aircraft in the case of overruns and corrections of the slopes of the graded runway strip.

### // DEPARTURE BAGGAGE SORTING SYSTEMS AND S3 CONNECTIONS (L GATES OF TERMINAL 2E) AND S4 (M GATES OF TERMINAL 2E) – TBS3S4



◆ completion of a local baggage handling system under Satellite S3 in order to improve the handling of luggage for the S3 and the S4, bring the performance of the East check-in halls of Terminal 2E into compliance, and increase the luggage handling capacities of Terminal 2E. The project was completed in two phases:

- ◆ phase 1: TDS3, luggage sorting at departure from Terminal 2E, finalised in May 2018,
- ◆ phase 2: TBS4, luggage sorting for connecting flights in satellites S3 and S4, planned for 2020;

### // CONNECTION OF THE INTERNATIONAL SATELLITES OF TERMINAL 1



◆ the project consists in constructing a building connecting the current Satellites 1, 2 and 3, that form the East side façades of the terminal. Satellites 1 and 3 will be kept and redesigned, whereas Satellite 2, the only one not renovated, was demolished to be replaced by a larger building;

◆ redesigned in a radial layout, aircraft parking has increased by three medium-haul stands. Work has been in progress since October 2017 and should last until the end of 2020;

### // REHABILITATION OF TERMINAL 2B AND BD JUNCTION



◆ Terminal 2B had to be entirely renovated and restructured to adapt to current operating and service quality standards. The completion of a junction building between Terminals B and D has allowed for the creation of additional surface areas in 2B and the sharing of the security checkpoints (SCP) and baggage reclaim halls of Terminals 2B and 2D, in order to create a BD cluster;

◆ the project should enable the entire 2BD complex to adapt to the expected increase in international medium- and long-haul traffic, notably via the increase in wide-body capacities (which are currently fully used). The work began at the end of 2017, with commissioning planned in 2020;

### // RAIN-WATER BLUEPRINT (FIRST PHASE)



◆ in June 2013 Aéroports de Paris, along with the Prefecture of Seine et Marne, resolved to implement an action plan to improve the management of glycolised rain water in the winter season. The first phase of this action plan, spread out over 2016, 2017 and the beginning of 2018 included the following:

- ◆ the channeling project between the EP B2 basin and the wastewater discharge, will allow the transfer of the highly polluted rain water from basin B2 to the waste water (EU) network,
- ◆ the project to segregate the rainwater of the Marne-side basin consists in separating the highly polluted rain water (sending it to the waste water network) from the “cleaner” water that is transferred to the rain water network.

## Main operations at Paris-Orly for the 2016-2020 period

### // EXTENSION OF THE EAST PIER



◇ The extension of the East Pier of Orly Sud was commissioned in March 2016, in compliance with the commitments made as part of the INV1 factor. In March 2017, two additional contact aircraft parking stands (MI2 and MI3) were commissioned.

The operation consisted in the construction of a building in the extension of the East Pier of Orly Sud, including a new boarding lounge for international departures; the completion of two mixed stands in the redesign of an existing stand named MI2; the renovation of the East Satellite; the enlargement of the immigration hall on the ground floor; the power supply; the anticipated renovation of airside services on the areas surrounding the project as well as the work necessary for the implementation of the fuel network supplying the aircraft parking stands.

The first floor of the extension was dedicated to passenger "Departure" flows and the ground floor for "Arrival" passenger flows. In July 2016 the operation obtained the HQE Bâtiment Tertiaire (Service Building) certification Excellent level;

### // JUNCTION FOR SOUTH AND WEST TERMINALS



◇ this project, which is part of the One Roof strategy under the 2021-2025 ERA, consists of erecting a junction building between the two terminals to allow for the creation of new surface areas to combine and optimise resources (SCP, banks, baggage delivery);

◇ the enclosure of the junction building was completed in the third quarter of 2017, in compliance with commitments taken as part of the INV1 factor;

◇ the opening of the Orly New Departure Junction will occur in April 2019;

### // REHABILITATION OF RUNWAYS



◇ the first phase of the runway 4 renovation work was carried out in the third-quarter of 2016 and the second phase was completed in the third-quarter of 2017; this operation was sequenced in two phases at the request of the Direction Générale de l'Aviation Civile (DGAC) and the airline companies. Works on Runways 4 comprise (i) the preparatory work necessary prior to the closing of the runway to minimise the impact on capacity and safety, and (ii) the renovation and the work for compliance with European airport security standards (AESA) of runway 4, including the change to category III of the runway No. 24 threshold.

◇ The first phase of the renovation of runway 3 of Paris-Orly, initially scheduled to start in 2018, was postponed following discussions with the Direction Générale de l'Aviation Civile (DGAC) and the airline companies. The renovation work will now be completed in one single phase lasting 18 weeks, 17 of which are necessary for the work for which Aéroports de Paris is responsible, starting in the summer of 2019. The finalisation of the work, allowing resumption of runway operation, is expected in the 4th quarter of 2019. Works on Runway 3 comprise renovation and compliance work, including change to category III of runway No. 8 threshold and renovation of the W31 access route (or its relocation).

## Main operations at Paris-Le Bourget for the 2016-2020 period

The acquisition of land belonging to the former Dugny navy air base was delayed resulting in the postponement of the project to develop new maintenance centres combining aircraft stands, hangars and offices. It remains a major project, but is now envisioned after 2020. To compensate for Aéroports de Paris carried out several projects on the historical hangars, on the one hand, and major works on the areas, with

the enlargement of the K1 aircraft area and the creation of INDIA areas, thus enabling the increase of the platform's receiving capacity in particular for major international events on the other hand. For 2020, the partial renovation (1,600 meters) of runway 03-21, including the beaconing over the full runway is also planned.

## QUALITY OF SERVICE AND CUSTOMER SATISFACTION

Aéroports de Paris is committed to developing differentiating actions and strengthening collaboration with airline companies and stakeholders to significantly influence customer perception. ADP also began renovating its terminals, carried out major maintenance work and continued consolidating its acquisitions in terms of quality standards.

The first three years of the ERA 2016-2020 are part of this dynamism. Indicators relate to quality standards, both in terms of equipment availability and satisfaction for fundamental issues of quality of service are improving.

The results of satisfaction indicators deemed “excellent” are either stable or down between the first year and the third year of the 2016-2020 ERA. These changes can be explained by various factors that affected the satisfaction of passenger customers: higher traffic in certain highly demanded terminals, public transportation strikes impacting access to airports, measures to strengthen national border control, creating waits at security checkpoints and, more generally, many work sites in progress in the operating terminals.

During the next two years of ERA 2016-2020, to support the satisfaction of passengers against a complex background, Aéroports de Paris will focus its efforts on the quality policy in three areas:

- ◆ time management and ease of travel: in this period of transformation and work in the terminals, the reduction of wait times (police, security checkpoints, check-in), the deployment of general and orientation information and information on work sites among passengers and all of the airport community continues;
- ◆ personalisation of relationships: in the future, a new airport model, the Smart Airport, will modernise the infrastructures and make passengers more independent; in addition, the continuous improvement of the “Paris Aéroport” App will allow the display availability of services and information related to travel and the airport in real time;
- ◆ finally, differentiation by service and the Parisian experience: Aéroports de Paris will continue rolling out its transformation project “*Bienvenue à Paris*” (Welcome to Paris) based on all aspects of hospitality (improvement of services offered in boarding lounges with the frequent renewal of the free entertainment offering, events on French culture with exhibits, deployment of iconic brands, differentiation by service at all points of sale through design, reception and digital access).

### 2016-2020 ERA Quality of Service indicators

The Quality of service (QoS) indicators of the 2016-2020 ERA are divided into ten indicators with financial impact and five indicators with a tracking obligation, without financial impact.

#### Indicators with financial impact

Two categories with a financial impact have been established: “quality standard” indicators and “excellence” indicators.

“Quality standard” indicators correspond to standard services provided by all airports to their customers (airlines and passengers).

- ◆ A-1 (DEE): electromechanical availability;
- ◆ A-2 (DTB): availability of baggage delivery belts;
- ◆ A-3 (DPS): availability of aircraft parking stands;
- ◆ A-4 (DPS): availability of boarding bridges;
- ◆ A-5 (D4H): availability of 400 Hz power;
- ◆ A-6 (SPR): satisfaction regarding cleanliness;
- ◆ A-7 (SOR): satisfaction regarding orientation information.

The incentive system associated with these indicators is based solely on a concept of required minimum level, sanctioned where appropriate by a

price penalty. As these indicators relate to the fundamental expectations of public service users, no bonus is applied when objectives are exceeded.

These seven indicators have the following characteristics:

- ◆ an “objective” value above which the overall results of Groupe ADP do not generate any bonus to the QoS factor of the pricing adjustment formula, and below which the overall results of Groupe ADP generate a penalty,
- ◆ a “minimum level” value (ml) corresponding to the penalty ceiling generated by the overall results of Groupe ADP for the considered indicator. For the availability indicators alone (DEE, DTB, DPS, DPT, D4H), an objectives revision clause could be triggered if the results of the first year are above the median values between the objectives and lower limits defined for the same period. This clause was applied in the first year of the 2016-2020 ERA. In addition, the 2016-2020 ERA stipulates a revision of the objectives of the SPR and/or SOR indicators when the maximum penalties of these latter apply for two consecutive years. As the SPR and SOR indicators have not been reached until now in this configuration, the revision clause has not been triggered.

The revised values of the objectives and the minimum levels (ml) for the years 2016 to 2020 of the five availability indicators (DEE, DTB, DPS, DPT

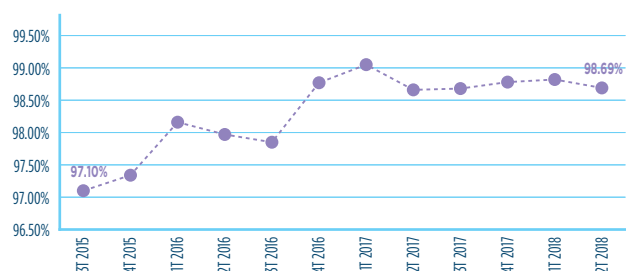
and D4H), the objectives of the two indicators (SPR and SOR) as well as the results of the three first years of the 2016-2020 ERA of all the “quality standard” indicators are shown in the table below:

2016-2020 ERA objectives		Quality standard indicators						
						Cash	Satisfaction	
		DEE	DTB	DPS	DPT	D4H	SPR	SOR
2015-2016	ADP Objective	97.31	98.10	98.60	97.68	97.32	3.88	3.71
	ADP Result	98.06	98.85	99.35	98.43	98.07	3.92	3.80
	Minimum level (ml)	95.81	96.60	97.10	96.18	95.82	3.85	3.68
2016-2017	ADP Objective	97.56	98.10	98.85	97.93	97.32	3.90	3.73
	ADP Result	98.58	99.00	99.55	98.85	95.87	3.91	3.80
	Minimum level (ml)	96.06	96.60	97.35	96.43	95.82	3.85	3.68
2017-2018	ADP Objective	97.81	98.10	99.10	98.18	97.32	3.91	3.75
	ADP Result	98.74	99.22	99.63	98.60	98.73	3.91	3.81
	Minimum level (ml)	96.31	96.60	97.60	96.68	95.82	3.85	3.68
2018-2019	ADP Objective	98.06	98.10	99.35	98.43	97.32	3.93	3.76
	Minimum level (ml)	96.56	96.60	97.85	96.93	95.82	3.85	3.68
2019-2020	ADP Objective	98.31	98.10	99.60	98.68	97.32	4.05	3.87
	Minimum level (ml)	96.81	96.60	98.10	97.18	95.82	3.85	3.68

Note: the following trace the trends in availability indicators, Q3 and Q4 2015 values are given for information purposes without any engagement on the part of Aéroports de Paris, and are not included in the valuation of the overall results of the first year of ERA 2016-2020.

#### CHANGE IN AVAILABILITY OF ELECTRO-MECHANICAL EQUIPMENT (DEE)

##### DEE - Change +1.59 pt

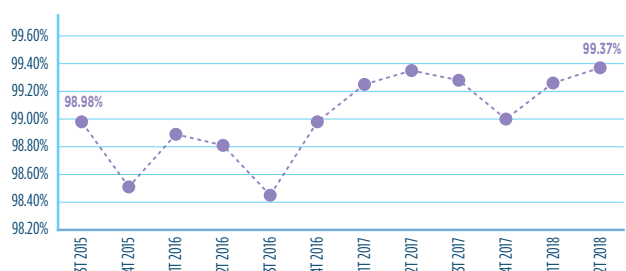


The positive change of this indicator since mid-2015 is mainly the result, both at Paris-Orly and Paris-Charles de Gaulle:

- ◇ of a programme for the continuous replacement and renovation of old equipment (elevators and escalators);
- ◇ of better responsiveness among all players thanks to mobility tools (Séquoia mobile tablets);
- ◇ of the strict management of contracts;
- ◇ of a systematic tracking of dysfunctions on a daily basis, and presently, on a continuous basis (hypervision).

#### CHANGE IN THE AVAILABILITY RATE OF BAGGAGE DELIVERY BELTS (DTB)

##### DTB - Change +0.39 pt

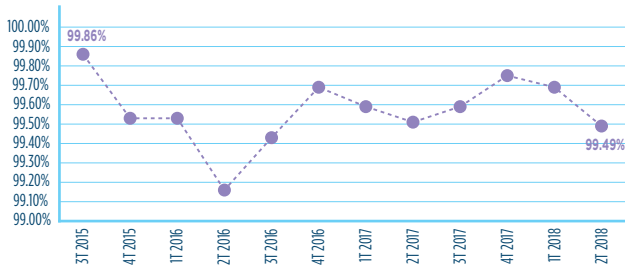


The satisfactory level of this indicator is the result of actions launched at the end of 2016 and which are still on-going to date:

- ◇ investments to maintain the usefulness of old equipment;
- ◇ structural changes aiming to increase reliability and comfort of use;
- ◇ optimisation of automation in the baggage delivery systems;
- ◇ implementation of methods for operating excellence associated with the renovation of certain belts;
- ◇ optimisation of the maintenance policy and better planning of preventive maintenance.

#### CHANGE IN THE AVAILABILITY RATE ON THE AIRCRAFT PARKING STANDS (DPS)

DPS - Change -0.37 pt

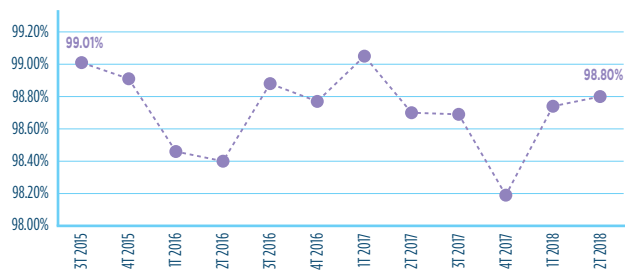


Since the 1<sup>st</sup> quarter of 2016, the overall good performance of this indicator is explained mainly by the scheduling of preventive and curative maintenance throughout the year and by daily monitoring of the status of the work sites, allowing a high level of availability of these stands. The opening of new aircraft parking stands (starting from the third quarter of 2016), the reconfiguration of the assignment of certain companies within the terminals, as well as major work in training and awareness of the teams on quality of service and operating condition maintenance.

It should be noted that 90% of the unscheduled interventions at Paris-Orly are carried out at night during curfew, without impact on the DPS indicator.

#### CHANGE IN THE RATE OF AVAILABILITY OF PASSENGER BOARDING BRIDGES (DPT)

DPT - Change -0.21 pt

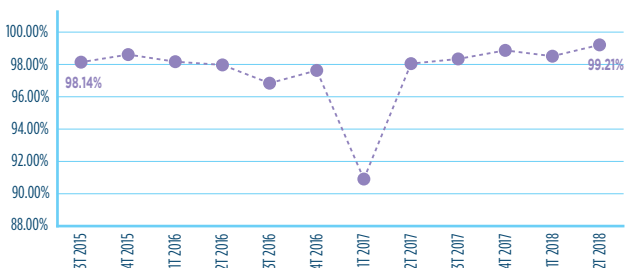


Since the 1<sup>st</sup> quarter of 2016, the good results recorded by this indicator were reached due to several actions: optimisation of preventive maintenance planning and strengthening of corrective maintenance, putting controllers in place in the areas (CSA), a plan for training on maintenance of boarding bridges with emphasis on vigilance, continuation of the plan for replacing old boarding bridges and increased accumulation of experience on the new bridges.

It should be noted that in the last quarter of 2017, at Paris-Charles de Gaulle, the level of availability was negatively affected by a boarding bridge that became unavailable following a collision with a vehicle and by the replacement of a beam supporting the power supply cables of another bridge.

#### CHANGE IN THE AVAILABILITY OF 400HZ POINTS (D4H)

D4H - Change +1.07 pt



The growth of this indicator can be explained by the quality of the equipment proposed, a preventive and corrective maintenance plan put in place at the same time as that of the telescopic passenger bridges and the involvement of teams.

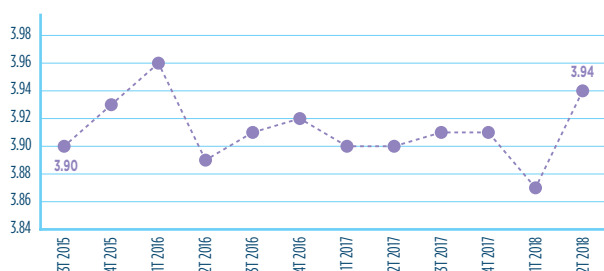
During the winter of 2017, the corrosion of electrical outlets at Paris-Charles de Gaulle caused a significant decrease in availability rates of 400Hz power and a decline in the indicator. Changing most of the outlets and their preventative and corrective maintenance helped to improve the rate of availability once again.

It should be noted that at Paris-Charles de Gaulle the implementation of night maintenance led to improvement in the responsiveness of intervention on the 400Hz equipment.

Passenger satisfaction levels concerning **cleanliness** and **ease of orientation** experienced between mid-2015 and mid-2016 a similar trajectory, with a peak at the very beginning of the 2016-2020 ERA, a period of stability, then a temporary decline before a rise that clearly exceeded the mid-2015 level.

### CHANGE IN PASSENGER SATISFACTION REGARDING CLEANLINESS (SPR)

SPR - Change +0.04 pt



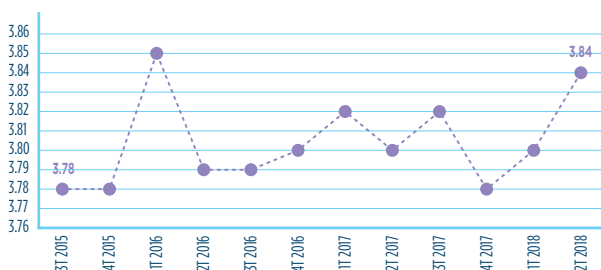
Cleanliness and the perception of cleanliness are two essential elements of quality of service that an airport must deliver to its passenger customers.

“SPM” approaches for managing our service providers (inspired from the Amsterdam Schiphol airport) that enable Aéroports de Paris to maintain a high level of quality, up since mid-2015. After a peak in the 1st quarter of 2016, the perception of the cleanliness of the airports remained stable at its 3rd quarter 2015 level before recording a slight decrease in the 1st quarter of 2018. This change is explained by the strong increase in traffic combined with the on-going major projects in the period.

A number of actions, carried out over the long-term, strongly improve the perception of cleanliness and the cleanliness of the facilities: the continuation of the renovation of the toilet blocks in the terminals or maintaining them at a high level of standard, the renovation of spaces and the operational monitoring of the cleanliness in the terminals exercised through “*tournées qualité*” (quality tours).

### CHANGE IN PASSENGER SATISFACTION REGARDING ORIENTATION INFORMATION (SOR)

SOR - Change +0.06 pt



Between mid-2015 and mid-2018, satisfaction regarding ease of orientation grew noticeably due to the implementation of a number of on-going, complementary actions:

- ◆ deployment of new information signs, translated in Chinese in the terminals concerned;
- ◆ re-organisation and improvement of on-site information by the placing reception islands to provide passenger orientation, in particular in baggage delivery and arrival areas, the deployment of new furniture displaying orientation maps both landside and airside, the installation of display monitors showing wait times at security checkpoints, etc.;
- ◆ at Terminal 1 of Paris-Charles de Gaulle airport, conversion of the passenger pathway originating from CDGVAL.

In addition, the information available on the website is continuously improving and the new version of the digital application “My Paris Aéroport” provides better location information for passengers and their journeys through the airport terminals, thereby facilitating their orientation. The same as the satisfaction indicator for cleanliness, the satisfaction indicator on ease of orientation experienced two atypical quarters at the beginning and the end of the period, this latter explained by the density of traffic handled, in certain periods, in the terminals with work in progress.

The “excellence” indicators are satisfaction indicators concerning quality of service for which significant improvement is expected and/or for which the targeted level is a level of excellence compared with other European airports:

- ◆ A-8 (SFC): Satisfaction – Connections;
- ◆ A-9 (SGD): Overall satisfaction – Departures;
- ◆ A-10 (SGA): Overall satisfaction – Arrivals.

The incentive system associated with these indicators is based on the concept of minimum level required with penalties when appropriate and a concept of higher level targets rewarded by a bonus.

These three indicators have the following characteristics:

- ◆ an “upper buffer” value and a “lower buffer” value between which the overall results of Aéroports de Paris generate neither bonus nor penalty for the QoS factor of the price adjustment formula;
- ◆ an “objective” value corresponding to Aéroports de Paris objective located at the median of the high and low buffer values;
- ◆ a “minimum level” value (ml) that corresponds to the penalty threshold generated by the overall Aéroports de Paris results;
- ◆ a “maximum level” value (MI) corresponding to the bonus threshold generated by the overall Aéroports de Paris results.

In the case in which the maximum bonus/penalty of a given indicator is applied two consecutive years, the level of the objective of the indicator is reviewed. This revision clause was applied to the SFC and SGD indicators in 2017 for the years 2018 to 2020, the maximum level (MI) values having been exceeded in 2016 and 2017.

On the other hand, no “excellence” indicator exceeded its maximum level (MI) and reached the maximum bonus, nor was the maximum penalty applied for the July 2016/June 2017 and July 2018/June 2018 consecutive periods. Consequently, the revision clause was not triggered in the third year of the 2016-2020 ERA.

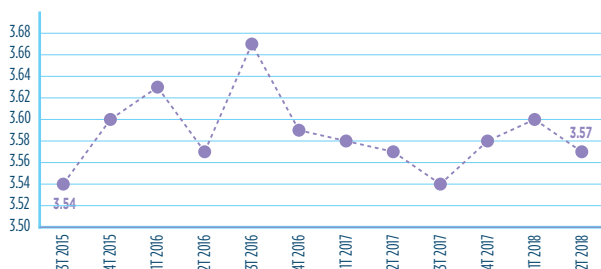


The revised values of the objectives, the minimum levels (ml) and maximum levels (MI), as well as the upper and lower buffers for the years 2018 to 2020 (defined in 2017) of these two indicators as well as the results to date of all of the "excellence" indicators are shown in the table below:

		Excellence indicators		
		Satisfaction		
2016-2020 ERA Objectives		SFC	SGD	SGA
2015-2016	ADP Objective	3.51	3.66	91.00
	ADP Result	3.59	3.75	91.41
	Minimum level (ml)	3.48	3.63	88.00
	Maximum level (MI)	3.54	3.70	99.00
	Upper buffer	3.53	3.68	94.00
	Lower buffer	3.49	3.64	90.00
2016-2016	ADP Objective	3.52	3.67	91.25
	ADP Result	3.60	3.75	91.24
	Minimum level (ml)	3.48	3.63	88.25
	Maximum level (MI)	3.56	3.72	94.25
	Upper buffer	3.54	3.69	92.25
	Lower buffer	3.50	3.65	90.25
2017-2018	ADP Objective	3.57	3.71	91.50
	ADP Result	3.57	3.75	90.85
	Minimum level (ml)	3.52	3.66	88.50
	Maximum level (MI)	3.64	3.78	94.50
	Upper buffer	3.60	3.74	92.50
	Lower buffer	3.54	3.68	90.50
2018-2019	ADP Objective	3.59	3.73	91.75
	Minimum level (ml)	3.52	3.66	88.75
	Maximum level (MI)	3.69	3.83	94.75
	Upper buffer	3.63	3.77	92.75
	Lower buffer	3.55	3.69	90.75
2019-2020	ADP Objective	3.61	3.76	92.00
	Minimum level (ml)	3.52	3.66	89.00
	Maximum level (MI)	3.78	4.03	95.00
	Upper buffer	3.66	3.81	93.00
	Lower buffer	3.56	3.71	91.00

#### CHANGE IN PASSENGER SATISFACTION REGARDING EASE OF CONNECTIONS (SFC)

SFC - Change +0.03 pt



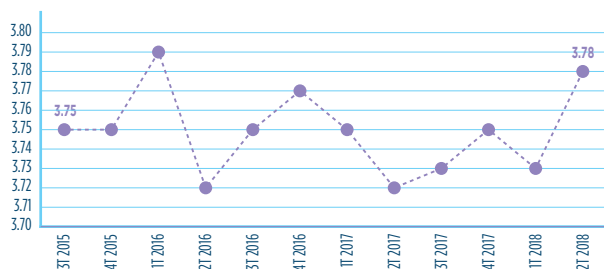
The improvement of the indicator in the beginning of a period is mainly due to the opening of a new connection hub to Hall L from Terminal 2E and to the launch of shuttles with wifi access.

In addition, the implementation of an global approach on the baggage sorters at Paris-Charles de Gaulle and the availability of a new BagRadar tool with the airlines station managers and the ground handlers enabled the increase of the speed and fluidity of the connections for passengers and better baggage tracking in transit by the companies.

However, at the beginning of 2017, connecting passengers were impacted, like all passengers, by having to wait at border checkpoints. Since 2018, actions focusing on improving passenger orientation with the simplification of decision points via the implantation of arches marking the pathway.

### CHANGE OF THE OVERALL SATISFACTION OF DEPARTING PASSENGERS (SGD)

#### SGD – Change +0.03 pt



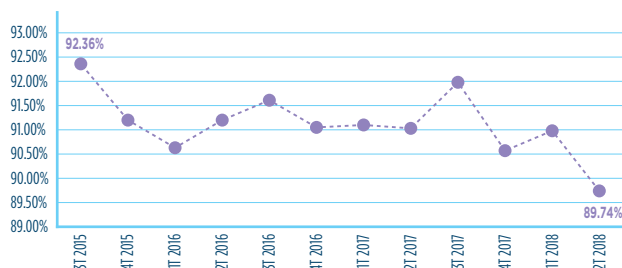
There were fluctuations in the results over the period. Passengers' assessment of renovation and disencumbering of areas (e.g.: creation of the Arch at Paris-Orly) and the improvement of certain key customer oriented processes was disturbed by the strong increase in the waiting time at the border checkpoints.

In response, the installation of new PARAFE automated control gates, the collective work of various players in the airport process and the work undertaken (e.g.: development of the peninsulas of Terminal 2F, the deployment of the services offering, new toilet blocks) allowed the passenger journey to be accelerated and the satisfaction level at departure progressively improved.

The combined effect of a major increase in traffic and the conduct of work under operation in the terminals, however, still does not allow the desired levels of satisfaction to be reached.

### CHANGE OF THE OVERALL SATISFACTION OF ARRIVING PASSENGERS (SGA)

#### SGA – Change – 2.62 pts



The indicator has been decreasing steadily since mid-2015. This is mainly related, in particular since the third quarter of 2017, to a combination of several factors and the background of an increase in passenger traffic:

- ◇ as for departures, the longer wait time at the French border police (DPAF) checkpoints due to the enhancement of checkpoint measures upon entry in the French territory;
- ◇ difficulties encountered in baggage delivery due to the increase in volume of baggage to handle, and the sometimes lengthy routing caused by work in the terminals;
- ◇ work projects started on the terminals curbsides of Paris-Orly and Paris-Charles de Gaulle;
- ◇ seasonal difficulties in reaching Paris in the beginning of 2018 due to SNCF strikes.

Beyond the work projects, the collaborative work started with the airline companies and with the French border police (DPAF) is necessary to remove the difficulties.

#### Indicators with a monitoring requirement, without financial impact

In addition to indicators with financial impact, Aéroports de Paris also used, in view of improving passenger and company satisfaction, indicators with an obligation for follow-up tracking; they are without financial impact and do not trigger either bonus or penalty:

- ◆ B-1 (PIF): wait times at security checkpoints;
- ◆ B-2 (PAF): wait times at border police checkpoints;
- ◆ B-3 (TLB): baggage delivery time;
- ◆ B-4 (DIB): availability rate of baggage delivery belts;
- ◆ B-5 (SCA): satisfaction regarding the city/airport connection.

No specific targets have been set for these indicators during the 2016-2020 ERA period.

These indicators imply, for the passenger journey, the involvement of the entire airport community: airline companies, government services, public transport operators, subcontractors and airport operators.

The definitions and methods of measurement of these indicators are subject to on-going studies during the 2016-2020 ERA, that are subject to information and concerted efforts within the operating quality or service committees in the terminals. For each indicator, and to the extent possible, a definition common to Paris-Charles de Gaulle and Paris-Orly is sought and then consistently deployed on the two platforms.

The results recorded in the first three years of 2016-2020 are the following:

Period of measurement	Levels	SCP	PAF	TLB	DIB	SCA
2015-2016	Results	94.90% <sup>1</sup>		82.64%	feasibility study	3.67
2016-2017	Results	95.32%		80.88%		3.70
2017-2018	Results	94.56%		75.27%		3.66

<sup>1</sup> Only Paris-Orly.

#### Change in passenger wait times at security checkpoints (PIF)

The indicator is defined as the percentage of passengers waiting less than 10 minutes at security checkpoints (PIF); the objective, part of the "traveller commitments" programme made by Aéroports de Paris to its passengers, reached 90% (see 2017 Corporate Social Responsibility Report, p. 61).

Paris-Orly and Paris-Charles de Gaulle are equipped with a measuring system used to record wait times at the security checkpoints. The overall indicator shows that it complies with the 90% objective with a wait time of less than 10 minutes for 94.56% of passengers.

At Paris-Orly, the result improved during the third year of the 2016-2020 ERA in spite of a 2017 3<sup>rd</sup> quarter marked by longer wait times at the security checkpoints. These longer wait times are explained by inadequate security resources to handle the volume of summer passengers and a strengthening of upstream cross-border controls of security checkpoints. Since the end of 2017 the scores are consistently higher and above the objective set in the "traveller commitments".

On the other hand, the unfavourable change in the indicator at Paris-CDG can be explained, in particular at CDGE, by the conjunction of two factors: a 2017/2018 winter marked by higher than forecast passenger traffic and several snow events, and the implementation of new modes of resource management due to the shifting of contracts for security to contracts with "obligation for results". In addition, to improve the wait times at Charles de Gaulle Airport, constructive work was carried out on the coordination between the management of the border police booths and the security checkpoints.

#### Change of wait times at border control checkpoints (PAF)

In July 2017, the French Prime Minister set two objectives for border control: passengers should not wait more than 30 minutes if they hold a European passport, and not more than 45 minutes if they hold another passport. Each week, Aéroports de Paris reports to the Ministry the number of occurrences exceeding 30 and 45 minutes at Paris-Orly and Paris-Charles de Gaulle, as well as the duration of these occurrences.

A monthly Tracking Committee at the level of the Minister's Office, Authorities and Executive Management was put in place to track the results and decide on the actions to take.

#### Change in baggage delivery time (TLB)

The indicator is defined as the percentage of passengers whose baggage was delivered before the compliance time (delivery wait time of first luggage less than 20 minutes for the Schengen area and less than 30 minutes for the international area). It is calculated using the same criteria at both Paris-Orly and Paris-Charles de Gaulle since the beginning of the second year of 2016-2020 ERA and takes into account the average passenger journey time from aircraft exit to their arrival at the place of delivery of the baggage.

The level of the overall performance, in continuous decline since the first year of the 2016-2020 ERA, may be explained by the increase in traffic and thus by the volume of baggage to handle and by difficulties in the organisation of unloading. In response, and in order to optimise deliveries in peak periods, actions were undertaken with baggage handler service providers in the baggage delivery halls, in particular at Paris-Charles de Gaulle.

#### Availability of baggage delivery belts (DIB): feasibility study

A feasibility study on this indicator, conducted at the beginning of the 2016-2020 ERA, found the following:

- ◆ that the baggage delivery belt availability rate alone can be tracked (taking into account only intrinsic stops);
- ◆ that beyond the calculation of this availability rate, it would be possible to study and track the availability of the baggage belt chain on check-in from the baggage deposit belt to the first stage, thereby improving the customer perspective of the baggage check-in chain;
- ◆ that the full availability of the baggage handling chain upon check-in, including all of the equipment, for example the sorters, is currently too complex to study and track (diversity of baggage handling systems).

### Change in passenger satisfaction on city/airport connections (SCA)

The good level of this indicator results from different work sites in progress on city/airport connections: implementation of “Bus directs” between the airports and the various tourist destinations in Paris, fixed rates of taxis for Paris City, implantation of transport information kiosks at arrival points, actions intended to facilitate orientation and fluidity in the terminals, etc.

The decline in the indicator during the third year of the 2016-2020 ERA is explained by the SNCF strikes in the first half of 2018, and more particularly at Paris-Charles de Gaulle where the primary mode of transport to the airport is by train. The passengers’ journey at Paris-Orly was also impeded by the work projects in the airport, however the level of satisfaction should improve with the renovations at the Orly esplanade. It should be noted that the taxi is the means of transportation that grew the most in 2018, in spite of the known difficulties (clandestine taxis, etc.).

## The collaborative approach in addition to the 2016-2020 ERA

In addition to tracking the quality of service indicators, and in order to work on the levers of improvement of the customer experience on the Parisian platforms, Aéroports de Paris continued developing methods of work inspired by CDM (*Collaborative Decision Making*) involving all stakeholders. The regular meetings of the Operational Quality Committees and working groups has provided a better understanding of the challenges and collaborative thinking on some main issues related to the passenger journey such as timeliness, hospitality, check-in and baggage delivery, and reception of disabled persons and persons with reduced mobility (PRM).

### Timeliness

Continuation of the implementation of collaborative methods from *lean management* with the companies and their assistants allowed to improve the punctuality of flights, in particular at the Paris-Orly South terminal.

### Hospitality

The whole chain of persons interacting with passenger customers on their airport journey contributes to their perception of hospitality. Passenger reception is more and more effective due to the use of a good practices standard that is provided in training all agents, as well as the Airport Helpers information relay system. In addition, several supplementary actions have been launched to further develop the reception system:

- ◆ the deployment of the “customer attitude” program since 2017 among all operating managers of Aéroports de Paris and all service providers working in passenger reception;
- ◆ “*Bienvenue à Paris*” (Welcome to Paris), a new reception services organisation progressively deployed since June 2018 with the creation of a new business line (the customer services coordinator) and mobile and proactive personnel over the entire customer journey (departure, arrival, connection);
- ◆ the makeover of the remote customer relationship: since February 2018 Aéroports de Paris has been centralising all customer relations channels and claim management within a single team to more rapidly respond to customers in a more personal manner.

### Luggage check-in and delivery

These two processes lend themselves particularly well to the collaborative measures given that the responsibility of the airlines, their ground handlers and the airport are closely intertwined.

### Reception of disabled persons and persons with reduced mobility (PRM)

The work initiated in this special area shows the value of a collaborative approach: in conjunction with the airlines and the PRM associations, since

2016 Aéroports de Paris has offered personalised assistance to these types of persons as well as specific services, from ergonomics of check-in counters and self-serve wheelchairs, and more.

The actions launched focus mainly on three areas: operating performance, communications, and actions promoting the autonomy of PRM.

Operating performance is based on:

- ◆ the improvement of processes with the establishment of a coordinator in charge of several PRM, the establishment of disembarkation systems by HELP reducing wait times, the on-going deployment of electric carts for better comfort of these passengers;
- ◆ improvement in reporting rates: a modulation of the PRM fee was put in place on 1 April 2016 at Paris-Orly and 1 April 2017 at Paris-Charles de Gaulle to incite the airlines to better report departing, arriving and connecting PRM (with advance notice of 36 hours prior to flight departure), in order to enable service providers to establish better sizing of the assistance service and quality of service;
- ◆ changes in the PRM Manager regulation tool available to the airlines;
- ◆ changes in the reception areas dedicated to PRM.

With respect to communication, several reception booklets for airline companies were published: a welcome booklet for new companies and two booklets “PRM Manager user” for the ground handlers, assistants and check-in agents.

Finally, actions promoting the independence of PRM (self-serve wheelchairs, wheelchair ramps, incentive for independent embarkation, assistance brochures).

At the same time, the contracts for PRM assistance were renewed in 2016 at Paris-Charles de Gaulle and in 2018 at Paris-Orly, accompanied by contractual clauses for performance incentives.

Studying passenger satisfaction and understanding their expectations remain a priority. A survey is conducted every six months in the embarkation lounges among passengers receiving PRM assistance to measure their level of satisfaction concerning the service provided. Its scope bears on four points helping to identify focuses of improvement and priorities for action for the service providers:

- ◆ taking charge: time frame for taking charge;
- ◆ quality of reception by the assistance agent: involvement, helpfulness, ability to listen, etc.;
- ◆ resources/facilities, comfort of equipment provided by the airport;
- ◆ the materials provided such as wheelchairs, shuttles for airside passengers.

The results of the satisfaction survey for overall experience place Paris-Charles de Gaulle and Paris-Orly in the “excellent” range, approximately 9/10.

## Summary of the investment budget dedicated to quality of service

In order to support its customer satisfaction goals, Aéroports de Paris has allocated an investment budget dedicated to service quality in the 2016-2020 ERA. The table below presents investments made during the 2016-2018 period and their update for 2019-2020.

Programme updated in 2018	2016	2017	2018	2019e	2020e	Total
Quality of Service Budget (in millions of euros – regulated scope)	21	29	53	48	54	204

These investments support the priority actions focusing on improvement of spaces and service offerings, on reception, cleanliness, and orientation information (interactive orientation systems and for foreign passengers). They are also intended for better management of flows and thus contribute to improving the fluidity, comfort and ambiance in the terminals.

## TARIFFS

### Setting the Tariff increase cap

Pursuant to the 2016-2020 ERA, the fee tariffs cap was determined based on a "base rate cap" averaging at CPI +1%. This change could have led to adjustments linked (i) to traffic or to commitments of Aéroports de Paris with respect to (ii) quality of service, (iii) investments and (iv) expense control.

The following diagram illustrates the pricing mechanisms applicable during the 2016-2020 ERA, which led to three different levels each year:

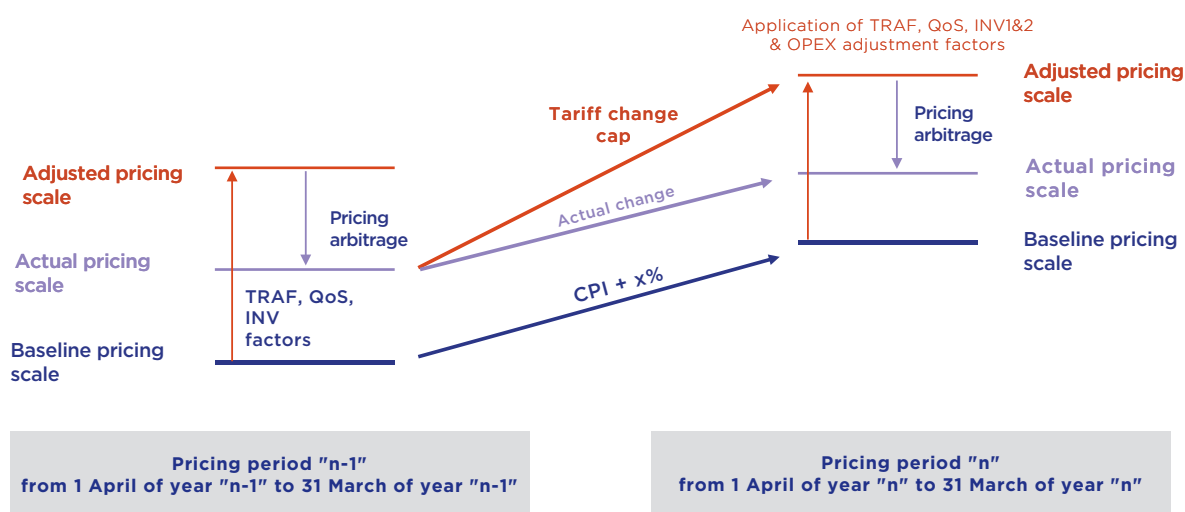
- the "baseline" tariff scale, to which applies the "base increase rate";

- the "adjusted" tariff scale, deducted annually from the previous tariff scale, to which are applied the adjustment factors, which represents de facto the annual price ceiling;

- the "effective" tariff scale, which is the one set by Aéroports de Paris in compliance with the tariffs increase cap.

The difference between the "y-1" benchmark tariff scale and the adjusted "y" tariff scale represented the theoretical tariff cap for the main fees in year "y" (i.e. from 1<sup>st</sup> April of year "y"). For purposes of comparison with the prices actually paid by Aéroports de Paris customers, the tariff increase cap for year "y" was assessed against the actual prices of year "y-1".

The diagram below summarizes the method:



For each pricing period n, the basic cap rate for increases in fees is equal to:

2016	2017	2018	2019	2020
CPI +0.00%	CPI +1.25%	CPI +1.25%	CPI +1.25%	CPI +1.25%

CPI represents the percentage change in the consumer price index, excluding tobacco, published by the INSEE (IPC 4018 E), calculated as the comparison between the index for the month of August in year "n-1" and the month of August in year "n-2".

On the other hand, in the 2019 pricing period, as the 2018 passenger traffic had exceeded the upper limit of the buffer range, the traffic-linked adjustment factor TRAF (2019) reached -0.2785% and thus reduced the cap rate for increasing these fees.

## Adjustment factor linked to traffic

The adjustment factor linked to traffic is measured based on the number of passengers and applied above a buffer zone representing annual changes of 0.5 point higher or lower than the benchmark traffic scenario of the 2016-2020 ERA (corresponding to average annual growth of 2.5% in the number of passengers in 2016 and 2017, 2.2% in 2018, 2.3% in 2019 and 2.8% in 2020). It is calculated such that, above the buffer zone, 50% of the excess or 20% of the shortfall from forecast fee revenue is offset by adjusting the tariffs for these fees, within the limit of an impact of between +0.2 and -0.5 points on the annual change of the adjusted tariff scale of fees.

This factor was applied starting from the 2018 pricing period for which it had no impact.

## Adjustment factor linked to quality of service

The adjustment factor linked to quality of service represents a financial incentive associated with ten indicators: seven "quality of service indicators" and three "excellence" indicators. The performances of the "standards of quality" indicators result in penalties depending on assigned objectives that, for each indicator, can go up to -0.04% of the fees. The "excellence" performance indicators themselves result in bonuses or penalties depending on the performance level reached, representing, for each indicator, between +0.08% and -0.08% of the fees. Consequently, the penalties can represent up to 0.52% of decrease of the price cap every year.

Bonus points were recorded each year over the 2016-2019 ERA period, reflecting the company's strong performance with respect to the targets set. The indicators and their annual performance are listed below:

Indicators		Performance from 1 July 2015 to 30 June 2016	Performance from 1 July 2016 to 30 June 2017	Performance from 1 July 2017 to 30 June 2018	+Bonus/-Penalty 2017	+Bonus/-Penalty 2018	+Bonus/-Penalty 2019
A-1 Indicator (DEE)	Availability of electro-mechanical equipment	98.06%	98.58%	98.74%	0%	0%	0%
A-2 Indicator (DTB)	Availability of baggage belts	98.85%	99.00%	99.22%	0%	0%	0%
A-3 Indicator (DPS)	Availability of aircraft parking stands	99.35%	99.55%	99.63%	0%	0%	0%
A-4 Indicator (DPT)	Availability of passenger boarding bridges,	98.43%	98.85%	98.60%	0%	0%	0%
A-5 Indicator (D4H)	Availability of 400Hz power supply	98.07%	95.87%	98.73%	0%	-0.0387%	0%
A-6 Indicator (SPR)	Satisfaction as regards cleanliness	3.92	3.91	3.91	0%	0%	0%
A-7 Indicator (SOR)	Satisfaction as regards directional information	3.80	3.80	3.81	0%	0%	0%
A-8 Indicator (SOC)	Satisfaction as regards connecting flights	3.59	3.60	3.57	0.08%	0.08%	0%
A-9 Indicator (SGD)	Overall satisfaction upon departure	3.75	3.75	3.75	0.08%	0.08%	0.02%
A-10 Indicator (SGA)	Overall satisfaction upon arrival	91.41%	91.24%	90.85%	0%	0%	0%
<b>QoS Factor</b>					<b>0.16%</b>	<b>0.1213%</b>	<b>0.02%</b>

The ERA 3 2016-2020 specifies five quality of service indicators that must be tracked starting from the date of their implementation, but these indicators did not have any financial impact on the pricing adjustment cap of the fees.



## Adjustment factor linked to the investment schedule

The adjustment factor related to the major investment schedule (INV1), that may result in a penalty not exceeding 0.1% of fees, measured the compliance with the schedule of major operations, which are detailed below with their respective delivery deadlines:

Extension of the East Pier	2 <sup>nd</sup> quarter 2016
Renovation of runway 4 at Orly	4 <sup>th</sup> quarter 2017 <sup>1</sup>
First phase of the runway 3 renovation at Paris-Orly	4 <sup>th</sup> quarter 2019 <sup>1</sup>
Baggage sorter S3 (TDS3)	2 <sup>nd</sup> quarter 2018
Orly New Departure Junction	1 <sup>st</sup> quarter 2018
Junction of B and D terminals	2 <sup>nd</sup> quarter 2019
Junction of the satellites of Terminal 1 at Paris-Charles de Gaulle	2 <sup>nd</sup> quarter 2019

<sup>1</sup> Adjusted objectives.

This indicator was based on a system of bonuses and penalties according to whether the relevant transactions were completed ahead of or behind the baseline schedule. These bonuses and penalties were mutually offset each year (y) and only a possible net penalty was taken into account in the calculation of the INV1 factor. The net annual penalty applicable could potentially represent up to -0.1% of overall revenue.

Applicable from the 2017 pricing period, it had no effect in 2017 and 2018, as different work projects had been finalised in accordance with the objectives set or in advance with respect to these objectives. In fact, the public opening of the extension of the East Pier was completed on 30 March 2016, the renovation of runway 4 of Paris-Orly was carried out in two phases (recalibration of the objective by the Directory-General of Civil Aviation (DGAC)), phase 1 in the 3<sup>rd</sup> quarter of 2016 and phase 2 in the 3<sup>rd</sup> quarter of 2017, the Baggage Handling System of Hall L (TDS3) was opened in the 2<sup>nd</sup> quarter of 2018 and the enclosure of the Orly New Departure Junction was completed in the 3<sup>rd</sup> quarter of 2017.

## The adjustment factor related to capital expenditure, service quality and sustainable development (INV2)

The adjustment factor related to expenditure on current investments, service quality and sustainable development (**INV2**) was intended to apply, where relevant, to the 2020 pricing period in the event that fewer investments (current investments, service quality and sustainable development) were made in the regulated scope than initially forecast. An adjustment would then lead to a reduction in the tariff cap to offset a portion of the annual costs saved.

This possible reduction is measured cumulatively over the 2016 to 2018 calendar years inclusive. If investment expenditure on the regulated scope for these envelopes is less than 85% of the amount initially planned at the end of 2018, 70% of the difference in costs incurred on the regulated scope and over the term of the agreement would be deducted from the cap on changes to fee levels for the 2020 pricing period.

Based on real 2016, the investments made in the "INV2" scope totalled €883 million, i.e. €106m above the minimum threshold of €777 million (85% of €914 million). As such, the level of 2016-2018 investment expenditure will be adequate to prevent the application of pricing penalties.

Details of the amounts by macro-issue and by year is presented in the table below.

<i>Annual regulated amount by macro-issue</i>	<b>Actual 2016</b>	<b>Actual 2017</b>	<b>Actual 2018</b>	<b>Total 2016-2018</b>
Buildings upkeep	184	157	178	<b>519</b>
Hub competitiveness and other processes	57	74	109	<b>240</b>
Quality of service and sustainable development	28	37	60	<b>125</b>
<b>TOTAL INV2 SCOPE</b>	<b>269</b>	<b>267</b>	<b>347</b>	<b>883</b>

## Actual tariff increases implemented

Each year, Aéroports de Paris has, voluntarily and systematically, implemented airports charges below the authorized pricing cap.

Fee tariffs saw an average increase of around 0.3% above the annual average rate of inflation over the period. As such, Aéroports de Paris has satisfied its commitment to moderate tariffs.

Airport and ancillary fees	2016 pricing period	2017 pricing period	2018 pricing period	2019 pricing period	Rate of growth 2016-2019 annual average <sup>1</sup>
Actual change	0.00%	0.98%	2.125%	1.012%	1.03%

<sup>1</sup> Airport fees under the 2016-2020 ERA are available on the Aéroports de Paris website ([www.parisaeroport.fr](http://www.parisaeroport.fr), item Entreprises/Compagnies/Tarifs des redevances).

## Changes in tariff structure

The pricing structure under 2011-2015 ERA, which is essentially based on the charges applicable to departing passengers and aircraft landing weight, penalised the airlines which use the airport facilities in the most efficient way. This situation was detrimental to the optimisation of infrastructure.

Aéroports de Paris proposed to review its pricing policy in order to optimise the use of time slots, by increasing the portion of the landing fees based on the number of movements, and reducing the portion based on landing weight, and promote an increase in load factors by reducing the portion of the fees based on the number of passengers. This structural modification was put in place following a thorough dialogue with the users, on 1 April 2016, and was implemented under the "revenues neutrality" principle.

Due to changes in the tariffs mix, this modification generated less revenue for Aéroports de Paris, on the order of several millions euros per year in the period from 2016 to 2020.

In addition, to boost the traffic of the Paris airports and in compliance with the provisions of the Civil Aviation Code, Aéroports de Paris implemented a set of tariff adjustments which are more attractive than during the previous ERA.

While the previous economic regulation agreement had set an adjustment to the passenger fee to encourage the growth of traffic and better use of infrastructure for all traffic ("origin-destination" and "connecting" traffic), on 1 April 2016 Aéroports de Paris implemented two distinct incentive measures, specific to each class of traffic.

To improve the availability of aircraft parking stands, at that date Aéroports de Paris also implemented an incentive measure bearing on contact parking and intended for companies with fast rotation.

The amounts of these three incentive measures, each limited to €5 million per year (2015 value, with annual change in this limit equal to the average change in fee rates) and exclusively financed by Aéroports de Paris, did not occasion any compensation and were not taken into account in the calculation of the profitability of the regulated scope.

In the 2016 pricing period, Aéroports de Paris also standardised the rate structure of handling of connection luggage between the terminals of the Paris-Charles de Gaulle airport, through the creation of a new fee, put in place an exemption of the variable portion of the parking fee for all night parking at the Paris-Charles de Gaulle airport <sup>1</sup>, and introduced a tariff adjustment of the assistance fee for disabled passengers or passengers with restricted mobility at the Paris-Orly airport.

In the 2017 pricing period, the same type of pricing adjustment was introduced for the assistance fee for disabled passengers or passengers with reduced mobility at the Paris-Charles de Gaulle airport. Aéroports de Paris also made a change in the fee structure for the provision of fixed power supply facilities for aircraft at the Paris-Charles de Gaulle and Paris-Orly airports and introduced a new pricing based only on the segmentation of types of aircraft according to the category and the equipment of aircraft (number of outlets) and the type of power supply of the aircraft at the parking stand.

The pricing structure has not been changed since then and the various adjustments put in place in 2016 and 2017 were renewed in 2018 and 2019.

## The pricing standardisation process

The tariffs structure changes mentioned above were approved by the Independent Supervisory Authority (ASI).

As such, for the 2016 pricing period, the first proposal of Aéroports de Paris had not been approved by the ASI for the reason that the change in the landing fee, reflecting the change in pricing structure allowed by the ERA, could not be viewed as moderate for the users overall, even taking into account the favourable effect of the change for the other

tariffs. Aéroports de Paris consequently adapted its proposal and it was approved on 1 September 2016.

For the 2017 pricing period, the first pricing proposal of Aéroports de Paris, that consisted in the integration of CREWS in the passenger fee, was not approved by the ASI. Aéroports de Paris took note of this refusal and reintroduced the CREWS fee in its proposal whilst reducing its tariff by two thirds. This second proposal was approved on 20 February 2017.

<sup>1</sup> Measure compensated by the revaluation of the variable portion in days and of the fixed portion.

For the 2018 pricing period, on 12 February 2018, the ASI approved the first proposal of Group ADP, except for the fee for assistance to people with disabilities and reduced mobility at Paris-Charles de Gaulle airport. Thus, a second proposal was made, and it was approved by ASI.

Finally, for the 2019 pricing period, the ASI did not approve the first pricing proposal of Group ADP, based on uniform price growth of around +2.94%,

excluding the fees for assistance to people with disabilities and reduced mobility. Following this decision, Aéroports de Paris submitted a second pricing proposal to the ASI with respective price increases of around +1% for Paris-Charles de Gaulle and et Paris-Orly, and 3.52% for Paris-Le Bourget, that was approved on 6 February 2019.

## CHANGE IN ECONOMIC PERFORMANCE

One of the cornerstones of the 2016-2020 ERA is reaching an economic balance at the end of the ERA, resulting in a convergence between the profitability of the regulated economic asset ("ROCE") and the weighted average cost of capital (WACC) of the company, due to a conciliation between:

- ◆ a selective and ambitious investment plan for the regulated scope, that should, among other things, make it possible to accommodate

growth in passenger numbers by 2020 while maintaining the quality of operations and services;

- ◆ pricing moderation for the aviation sector;
- ◆ the implementation of strict internal financial discipline.

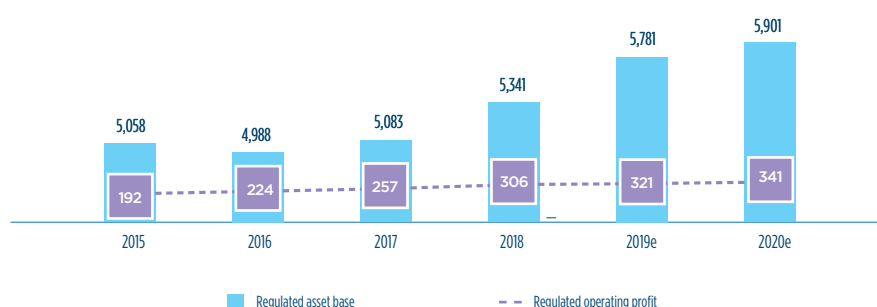
## Development of the asset base and profitability

After the end of the low point in the investment cycle recorded at the beginning of 2016-2020 ERA, the regulated asset base will increase significantly by 2020 due to the intensification of the investment program as well as an increase in negative working capital requirements consistent with this intensification. The investment effort of Aéroports de Paris concerns maintaining the airport platforms, with the finalisation of the renovation of the oldest terminals, the optimisation of the airport capacities allowing to absorb the increase in traffic (part of the "One

Roof" approach), as well as the competitiveness of the connecting flights platform and other processes.

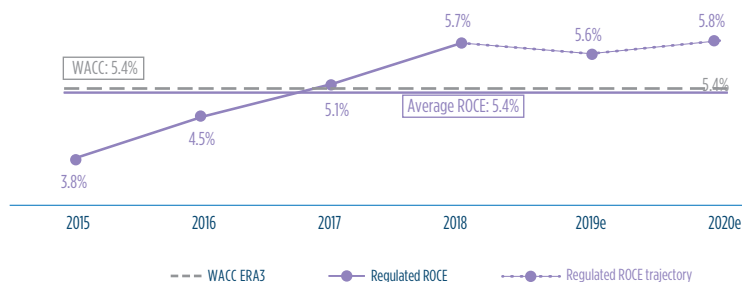
The dynamic growth in regulated operating income, resulting from the stronger-than-expected growth in passenger volumes relative to 2016-2020 ERA estimates, and by efforts carried out to optimise costs and productivity should nonetheless allow to noticeably improve the profitability of the regulated scope.

**Comparative change in operating income and economic assets of the regulated scope (2015-2020)**  
*In millions of current euros*



In fact, the level of profitability of the regulated scope should be higher than anticipated at the 2020 horizon taking into account the above-mentioned elements. The regulated ROCE is currently estimated at 5.8% in 2020 (and at 5.1% on average over the 2015-2020 period), i.e. a level higher than the weighted average cost of capital.

### Change in ROCE of the regulated scope (2015-2020)



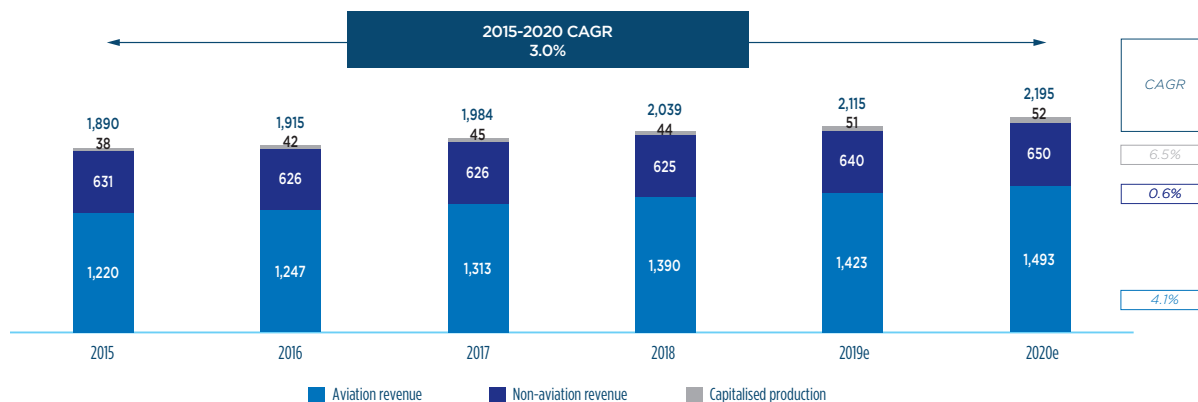
The higher-than-expected results achieved under the ERA, based on a fair return on capital, may be used to finance the more long-term growth of the airports under the 2021-2025 ERA.

## Change in revenue from the regulated scope

Income from the regulated scope should increase by 3.0% per year over the period, driven by growth in aeronautical revenues.

### Change in revenue of the regulated scope (2015-2020)

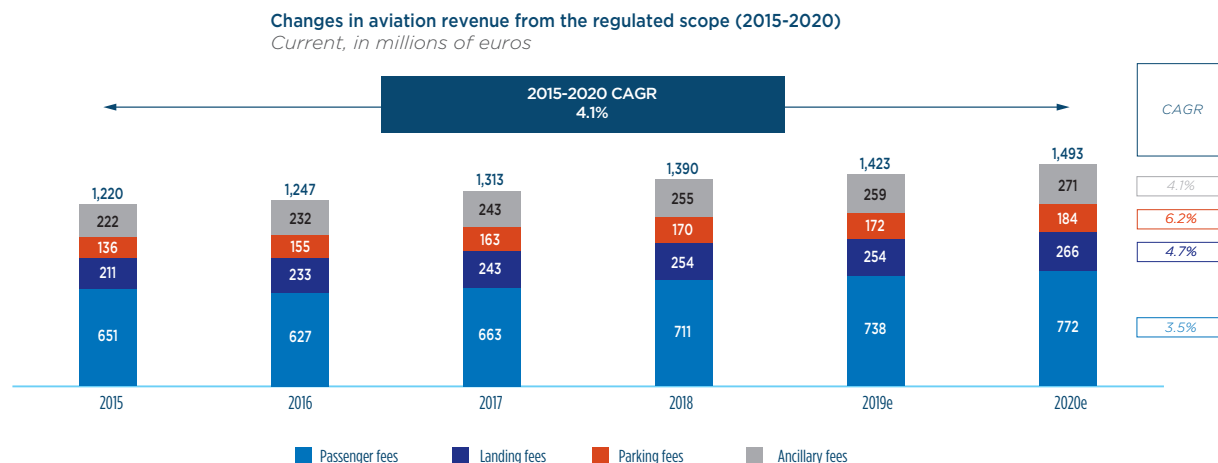
Millions of current euros



The average annual growth in aeronautical revenue estimated at 4.1% mainly stems from the combination of the following:

- ◇ the increase in passenger traffic;
- ◇ an effective increase in tariffs close to the rate of inflation over the period of the 2016-2020 ERA.

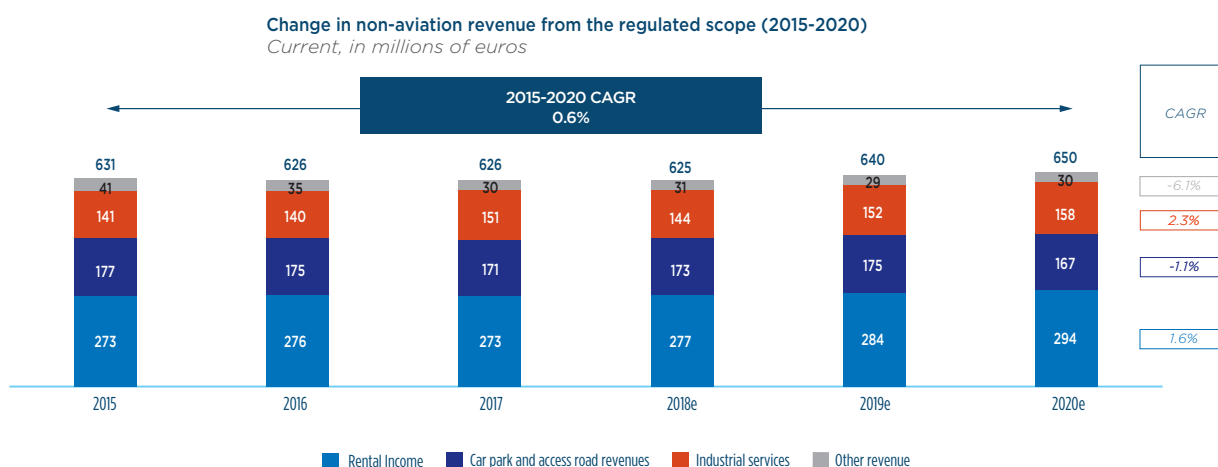
The revenue from car park fees and landing fees should be particularly dynamic over the period with respectively and average annual growth rates of +6.2% and +4.7%.



The growth in non-aviation revenue, estimated to be slightly positive (at approximately +0.6% per year on average), stems notably from the increase in revenue generated by the rental business within the terminals,

or from airport real estate clients, industrial services, and finally those relating to various services that benefit air navigation management services.

The growth in non-aeronautical revenue over the 2016-2020 ERA breaks down as follows:



Activities linked to car parks and access roads as well as industrial services are impacted by an unfavourable environment, with in particular, a decline in demand, and therefore are recording declining revenue, in the order of -1.1% per year on average.

In 2016-2020 Aéroports de Paris implemented new pricing strategies (such as yield management) and new services (such as online sales) to

offset the decline in passenger revenue and boost total revenue in the medium term.

The +6.5% average annual growth of capitalised production over the 2016-2020 ERA results mainly from the increased involvement of the populations working on the asset construction projects that are part of the regulated scope.

## Change in operating expenses of the regulated scope

Aéroports de Paris initiated a policy to control its operating expenses and improve productivity starting from the first ERA in 2006, that was continued and even intensified since 2016.

Measures to lower operating costs under the Connect 2020 strategic plan were intended to cut regulated scope expenses by 8% in constant euros between 2015 and 2020.

Reaching these goals requires:

- ◇ lowering procurement costs by renegotiating with suppliers of gas and electricity, subcontracting reception, disabled/reduced mobility and cleaning services, recycling waste, and other means;
- ◇ reducing the payroll by limiting general increases and not replacing all staff who leave, made possible by the efficiency gains derived from

the massive restructuring of Aéroports de Paris, which affected around 95% of employees in 2016-2020;

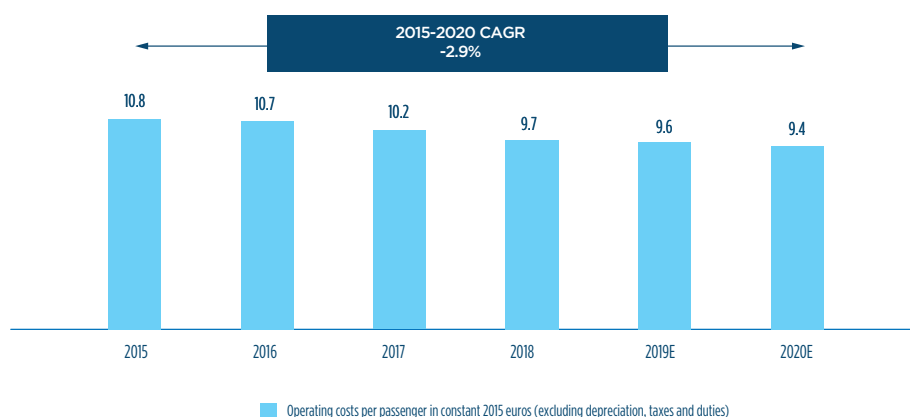
- ◇ achieving permanent savings under the 2016-2020 ERA by targeting specific areas in every Aéroports de Paris department.

For the 2016-2020 ERA, the average yearly growth of operating expenses for the regulated scope, excluding tax and amortisation and depreciation, is estimated at +1.4%, significantly down from that of the 2011-2015 ERA. In constant 2015 euros, that would correspond to a reduction in regulated operating expenses per passenger in the order of €1.40 between 2015 and 2020, which largely exceeds the 8% objective mentioned above. As a result, Aéroports de Paris revised its forecast reduction in regulated expenses per passenger in constant euros (before taxes and amortisation) to 10-15% between 2015 and 2020.

### CHANGE IN OPERATING EXPENSES PER PASSENGER ACROSS THE REGULATED SCOPE (2015-2020)

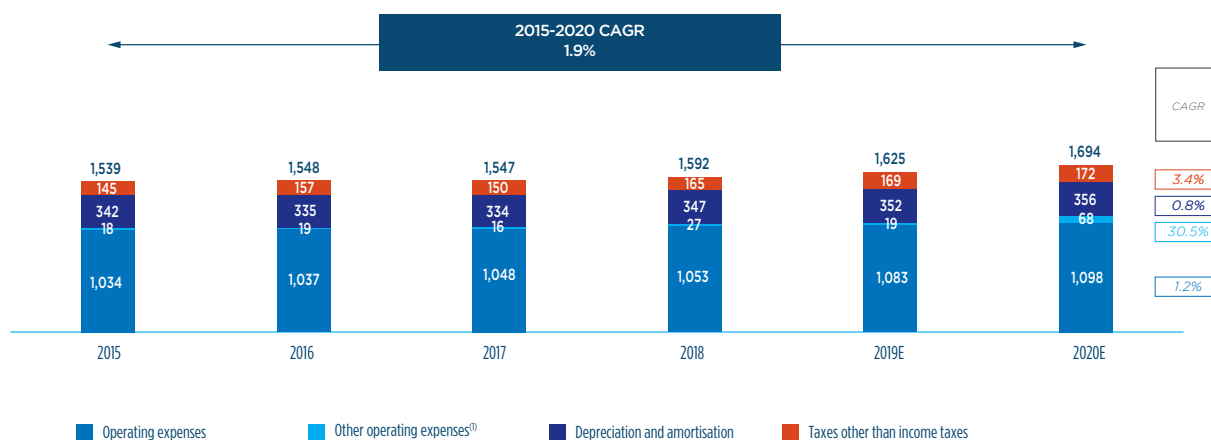
IN CONSTANT 2015 EUROS PER PASSENGER

Operating expenses excluding taxes and duties, depreciation and amortisation and other operating expenses



### CHANGE IN OPERATING EXPENSES ACROSS THE REGULATED SCOPE (2015-2020)

CURRENT, IN MILLIONS OF EUROS



(1) Employee profit sharing operating subsidies, operating provisions and other income and expenses.

In terms of human resources, the average workforce of Aéroports de Paris is projected to fall by 4 to 5% over the 2016-2020 ERA, reflecting the major efforts made by the company against the backdrop of significant increases in business.







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