



RFI Passenger Flow & Capacity *Introduction*

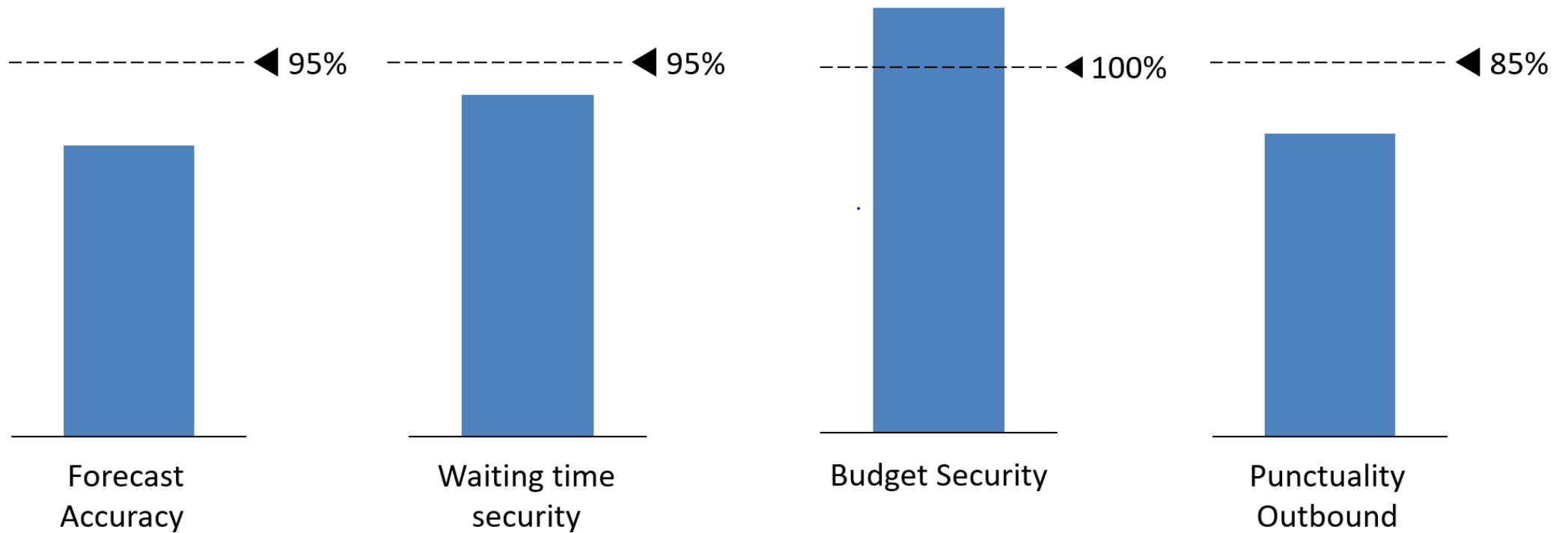
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Scope of this document

This document contains Schiphol's challenges, vision, ambition for a major improvement of our flow and capacity management to meet growing demand and restrictions on available capacity.

To be able to solve these challenges and fulfill our ambition Schiphol is looking for (a) partner(s) to collaborate on delivering the platform needed to improve on Passenger Flow & Capacity management.

Our challenge: We are not meeting our performance targets



Our ambition: We want to be the best planned airport

1.
**Optimise use
of existing
assets**, given
limited
possibilities to
extend



2.
**Deliver smooth
operations:**
passenger waiting
times, flight
punctuality
etc.



3.
**Realise best
operational
cost**



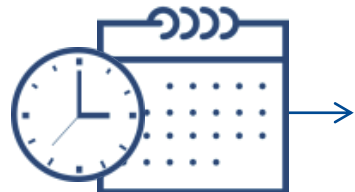
4.
**Be best
served by
Eurocontrol**



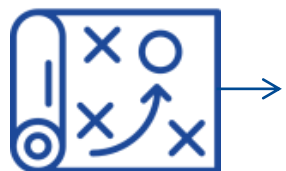
5.
**Enable partners with
detailed and accurate
forecast data**



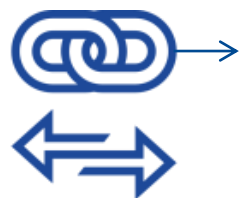
Our Vision: An integral plan (time, processes and chain)



1 approach
five year till one hour ahead



1 plan
Integral for all processes



1 chain
joined plan with Airlines & Handlers

To define our way forward, we identified 4 maturity levels, where level 4 aligns with SESAR ambitions

We need improve to facilitate growth at current capacity & meet increasing passenger expectations and agreed service levels



Current maturity



Level 1
Initial

- Forecasting is available for all airport processes
- Capacity management is implemented
- Resource allocation is implemented
- PDCA is ad-hoc and based on expert judgement
- Poor proactive steering or performance management

Level 2
Control each process

- Performance of process is measured structurally and available to stakeholders (i.e. dashboards)
- PDCA cycle is implemented for each process and tooling/ systems updated regularly accordingly
- Proactive steering information is shared with operators in real time
- Performance management information is delivered

Level 3
Integrate AAS processes

- AAS Forecasting , capacity management and resource planning integrated into a single process (i.e. interdependencies taken into account)
- Performance of process is measured through chain and fed forward (PDCA)
- Proactive steering information includes effects on flow, and scenario based decision making
- Performance management information includes Root Cause Analyses in flows

Level 4
Total Airport Management

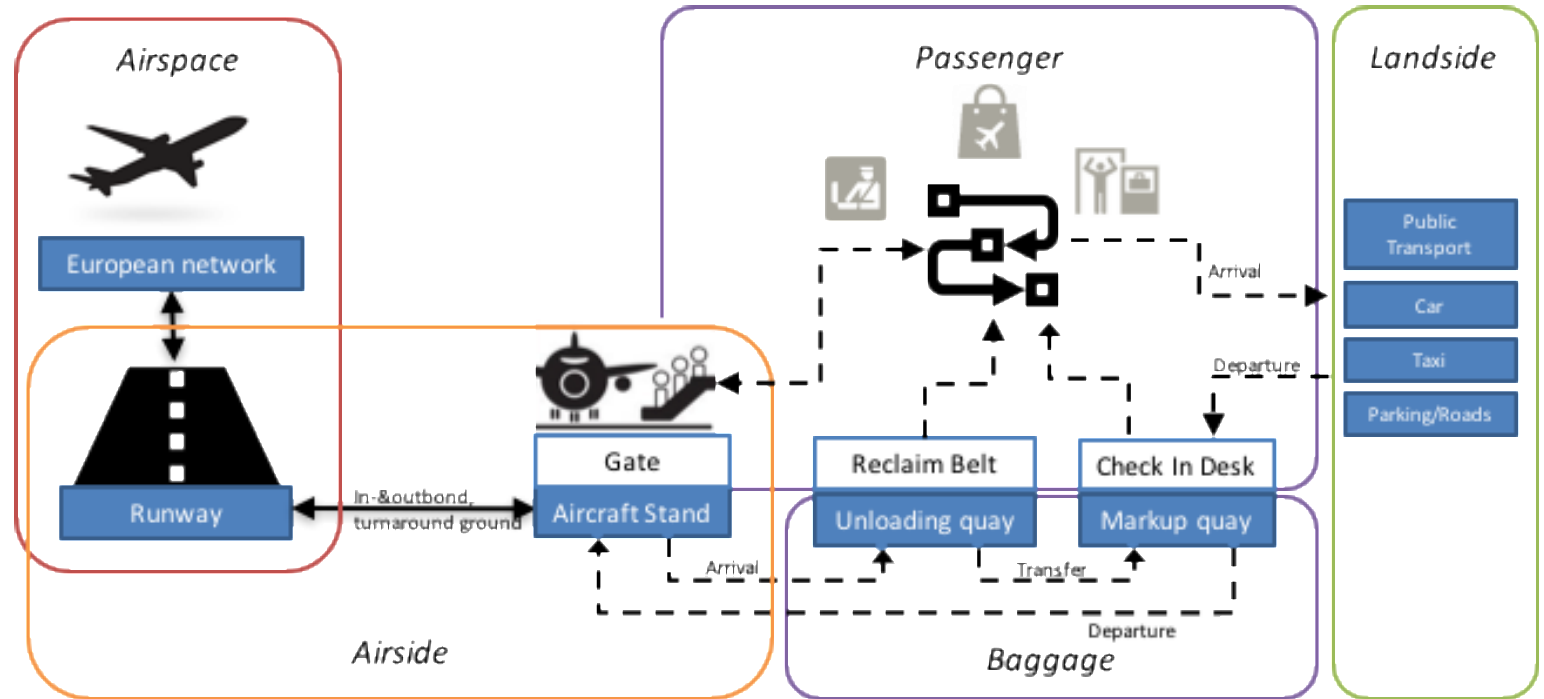
- Sector Forecasting , capacity management and resource planning integrated into a single process (i.e. interdependencies taken into account)
- Proactive steering information includes effects on flow of sector partners
- Performance management information includes sector partners (impact analysis)
- Improvement measures are developed jointly with sector partners
- The Airport Operational Plan (AOP) and Airport Operations Center (APOC) are used by all sector partner as information platform to make collaborative decisions

Process Groups

We identify five process groups:

1. Airspace; all travel patterns/flows between the European airspace and runway
2. Airside; all travel patterns/flows between runway and aircraft stands including all other airside traffic.
3. Passenger; all travel patterns/flows between the gate and check-in desks, reclaim and other gated, including non standard processes e.g. PRM, VIP.
4. Baggage; All travel patterns/flows between the aircraft stands and markup/unloading quays.
5. Landside; All travel patterns/flows between check-in desk and the various transport options.

These process groups provide a manageable solution space with clear transfer points to allow for individual capability development within the groups while maintaining high cohesion between process groups.



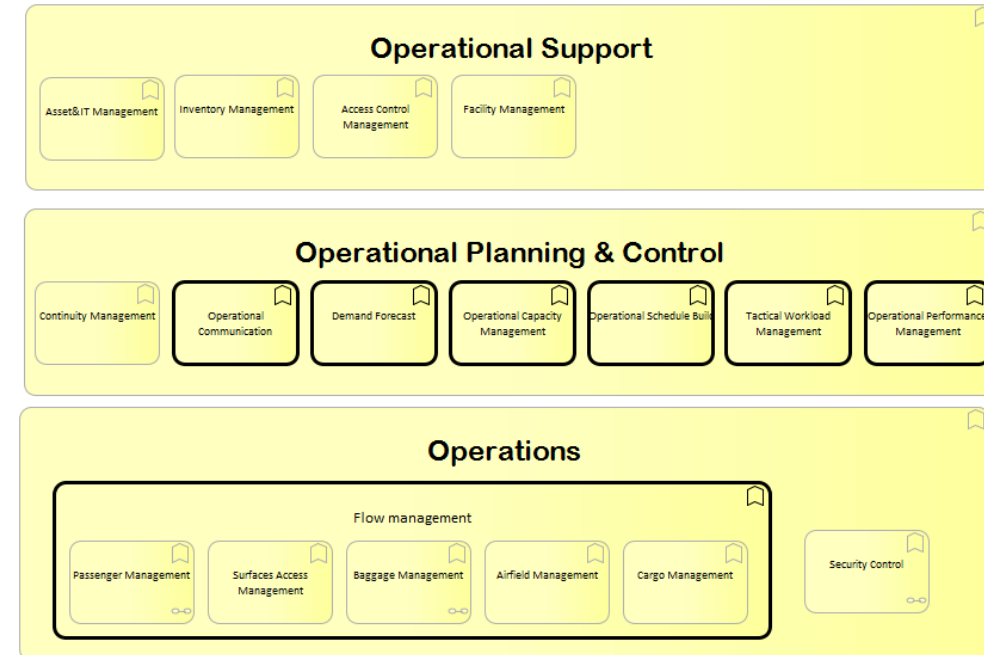
Process groups are linked via a transfer point.

For example, the aircraft stands are linked to the gates. Check-in desks are linked with the markup quays.

Capabilities

In our vision Flow- & capacity management encompasses the following capabilities:

1. Demand forecasting: Estimate expected demand for airport resources over a specified future period. E.g. Forecast amount of passenger on a security filter.
2. Capacity planning: Adjust the capacity of resources to meet a planned demand or load. E.g. allocate more gates to handle increased demand of flights.
3. Schedule Build: Construct the schedule, to implement it against the physical assets that are to be used, and to manage the use of the schedule to achieve the target outcome. E.g. create a check-in or reclaim planning.
4. Workload Management: Allocation of physical and uniquely identifiable facilities and resources to individual tasks, or groups of tasks. E.g. Tasking of a bus driver to pick up passengers at an aircraft stand and transport them to a bus injection point.
5. Flow management: The capability to manage the operational flow at the airport for passengers, baggage, airfield, surface vehicles and cargo. E.g. Reroute a flow of passengers from departure hall 1 to 1a when 1 is busy.
6. Performance management: The capability to gather, measure, monitor and analyze the operational performance of the planned operational activities against service level agreements and targets. E.g. a senior airport control coordinator monitoring Wilbur on disturbances of passenger flows.
7. Operational Communications: The capability to effectively communicate the airport operating plan to all stakeholders including airlines, air traffic control and other airport resources. E.g. communicating the airport status in the CDM portal when the airport is running in degraded mode.



Visualization of operational capabilities with the Flow and Capacity management capabilities highlighted.

Capabilities part of enterprise capability model. Other capabilities left out for clarity.

General Principles

- Flow & capacity management is performed end to end in the process chain.
- We believe in partnerships and collaborative development with industry leaders.
- Flow & capacity management is a core competency of an airport and therefore we want all the applications to be the best in class. This results in a best of breed approach.
- Each tool/platform must be adaptable to maintain its fit in the evolving IT landscape, so the platform can evolve with our changing needs and maturity growth of our flow- & capacity management capabilities.
- Our solution landscape must be highly cohesive to perform support our end-to-end processes, but at the same time loosely coupled so we can migrate or exchange platforms/tools if needed.