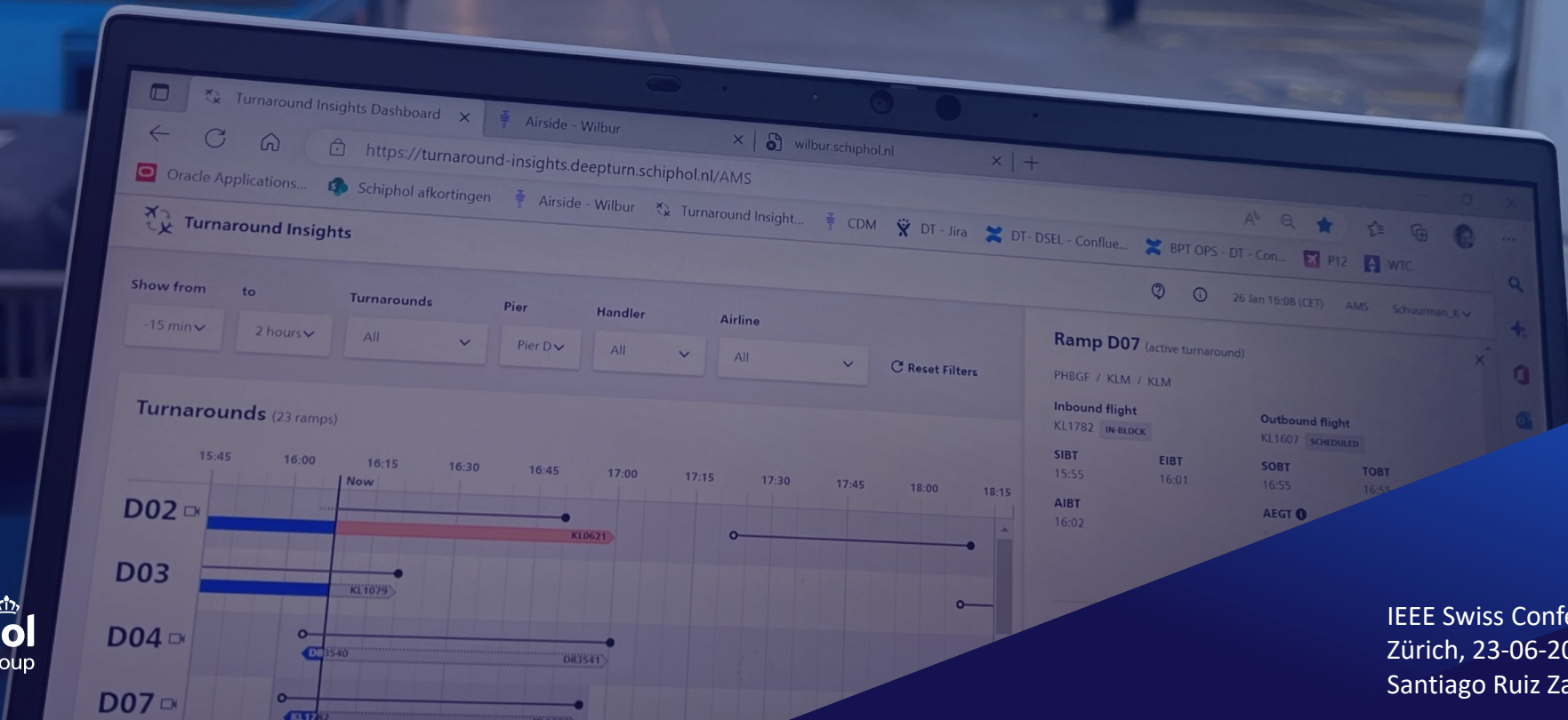


Deep Turnaround

Getting grip on flight delays in the turnaround process with AI



Schiphol in numbers 2022



52.5 million passengers



313 direct destinations



37% transfer passengers



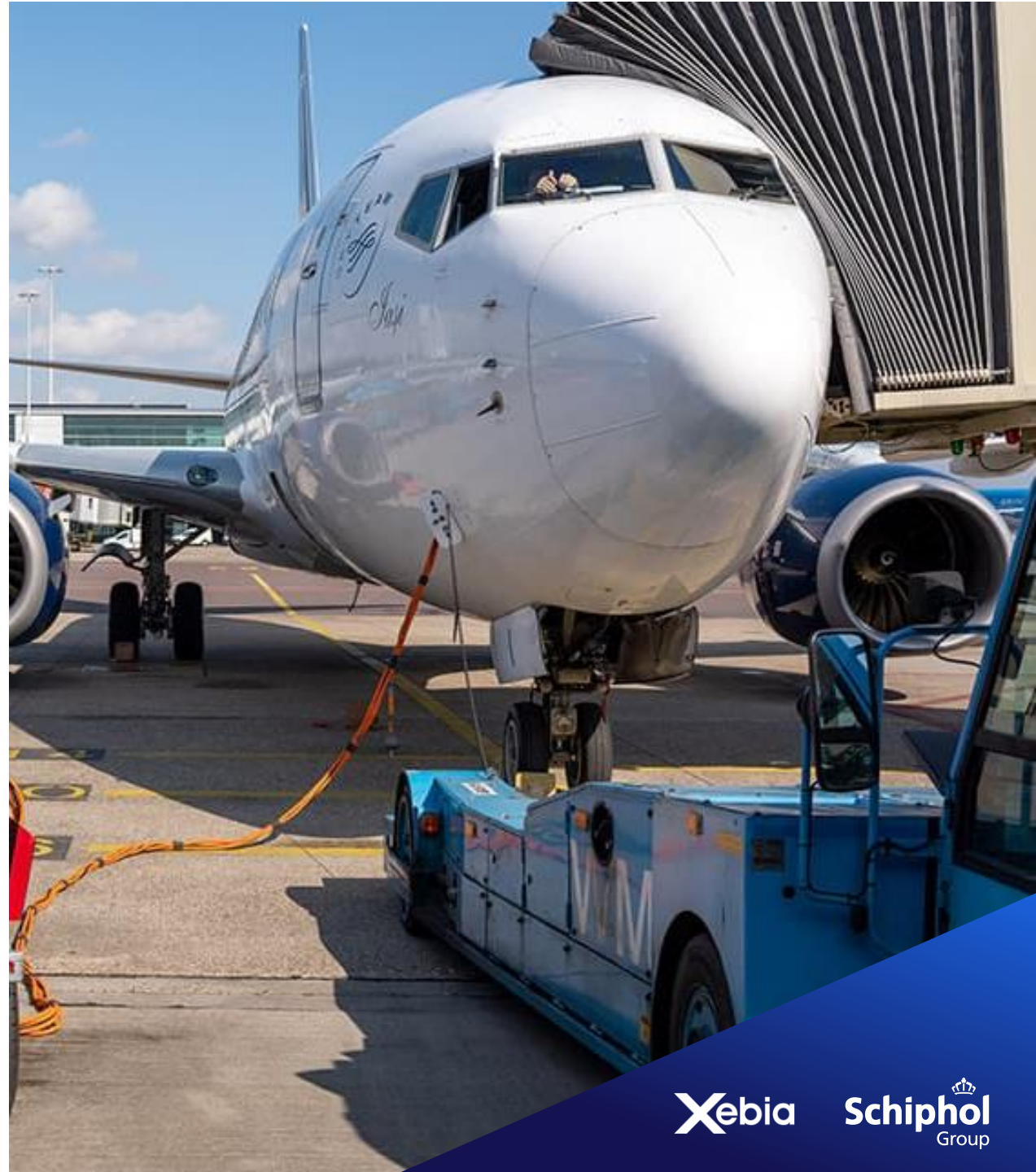
397,646 movements



123 ramps



6 runways



Our reality

Key challenges at Schiphol



Delayed flights

Airlines, airports & ground handlers experience operational and financial implications from delayed flights



Runway capacity

Airports are constrained in the runway capacity and want to optimize runway usage



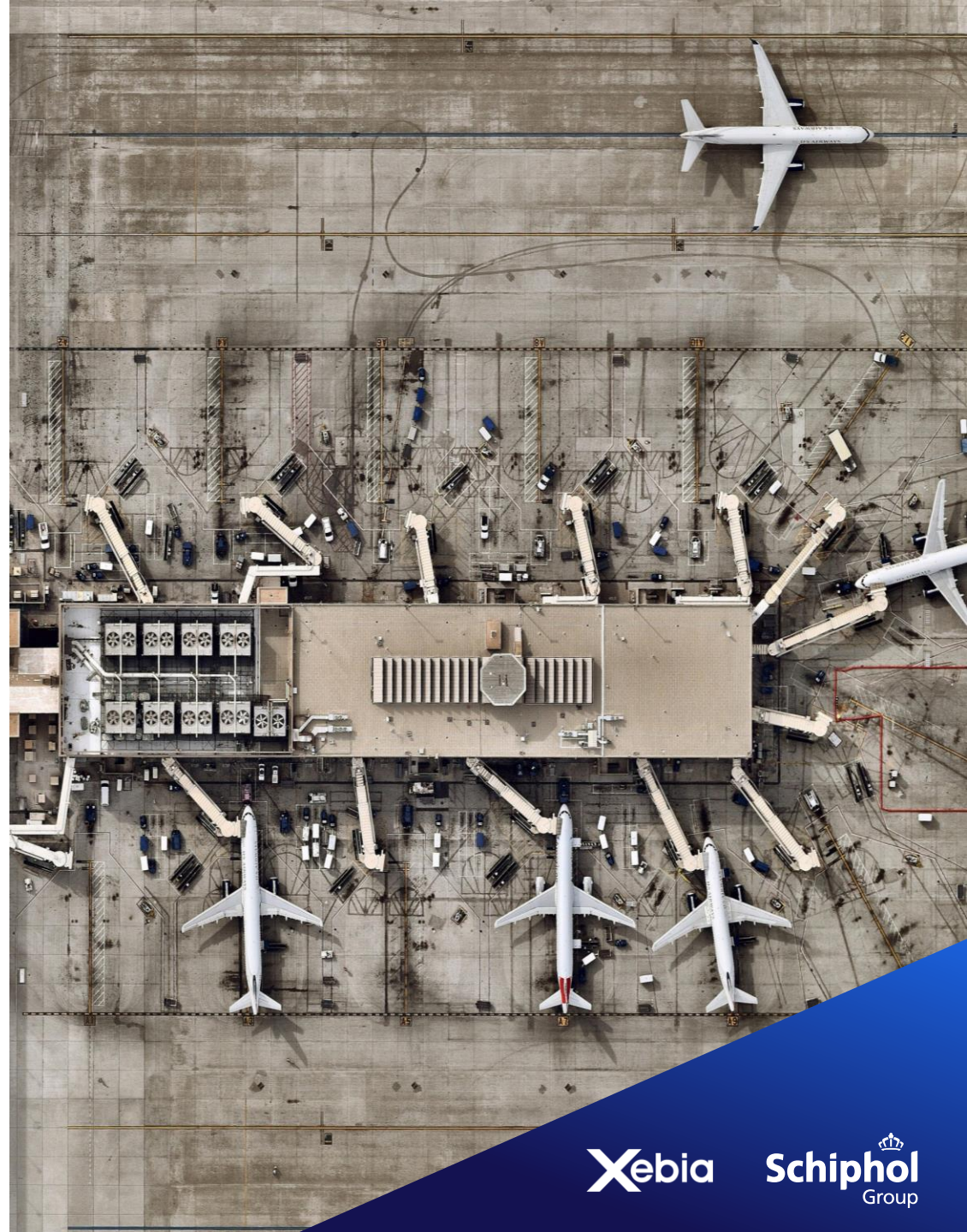
Ramp Capacity

Airports have limited insight into inefficiencies of turnaround process and want to optimize usage of gate capacity

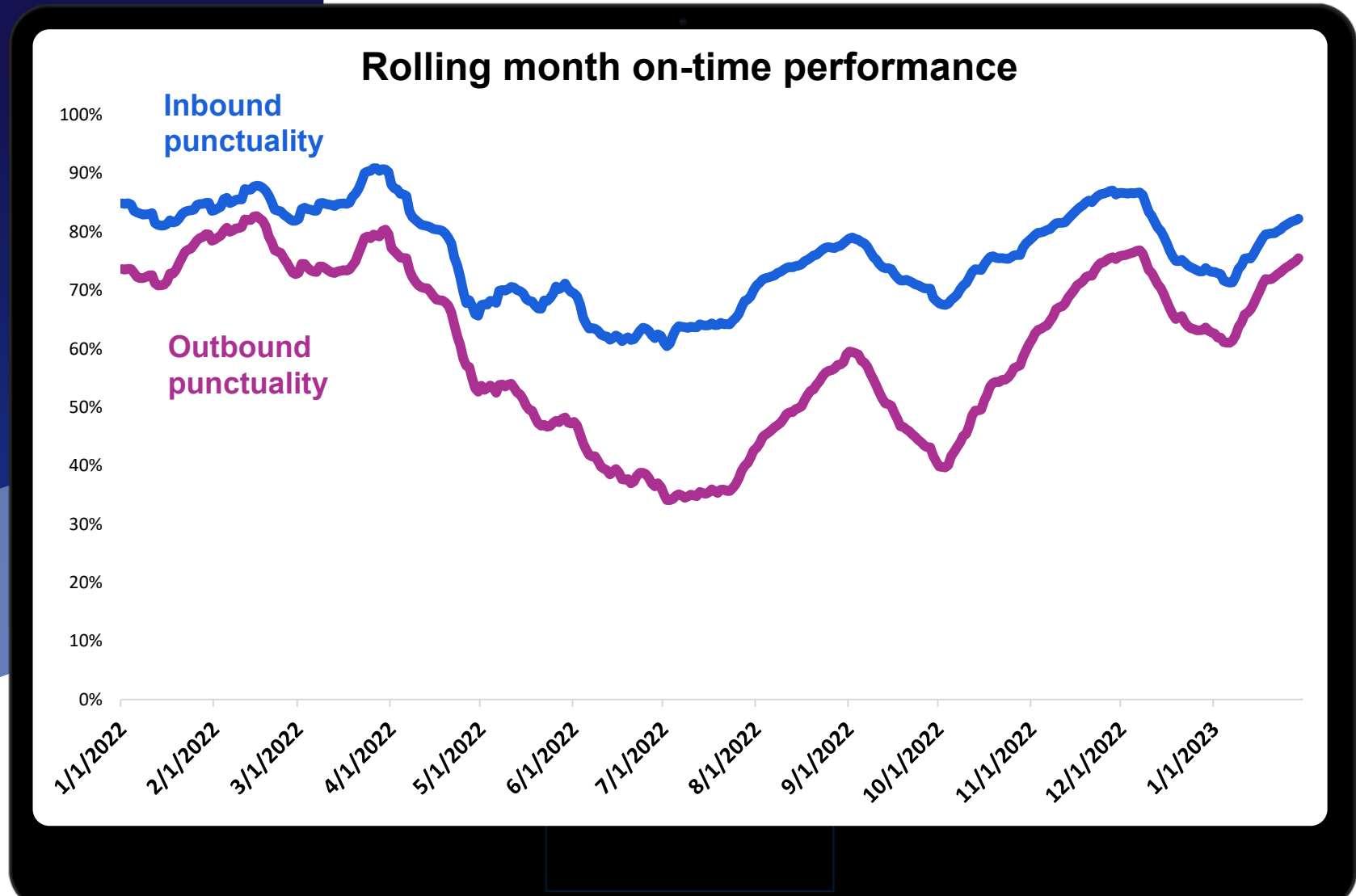


Collaboration

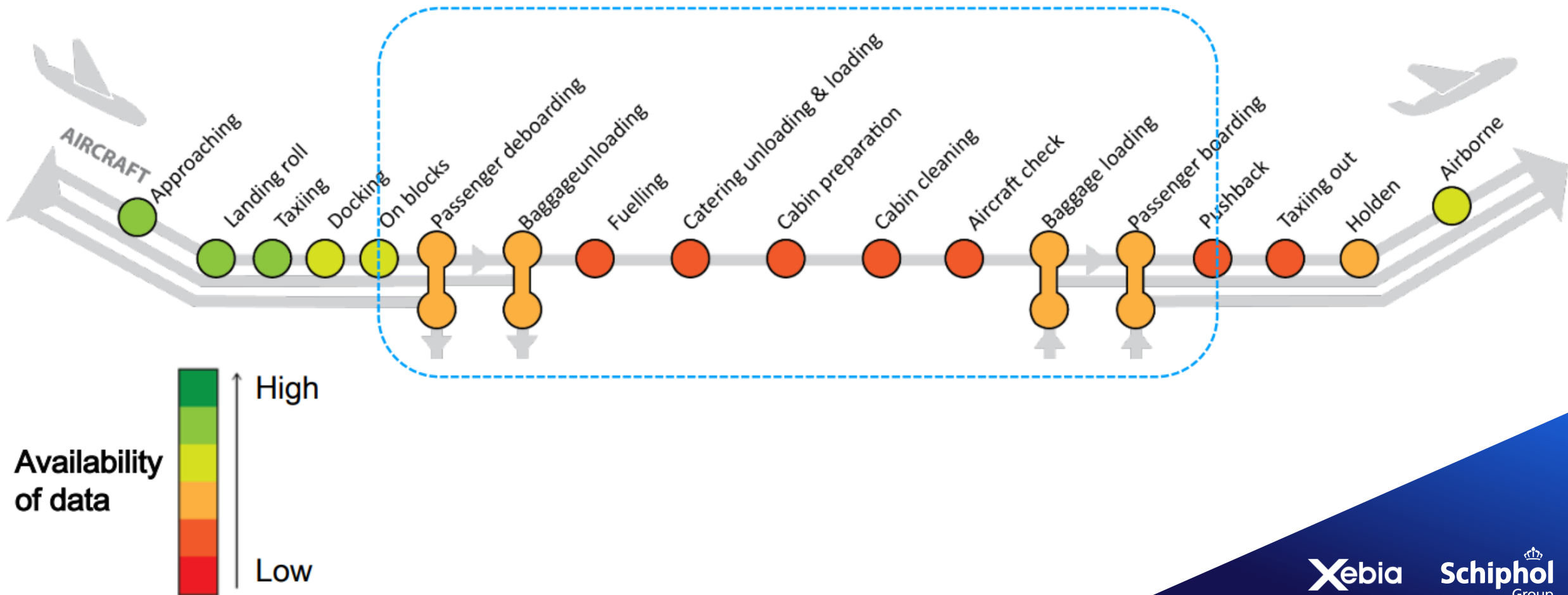
Collaboration challenges between airlines, ground service providers & airports. Desire for actionable insights and integration into existing systems.

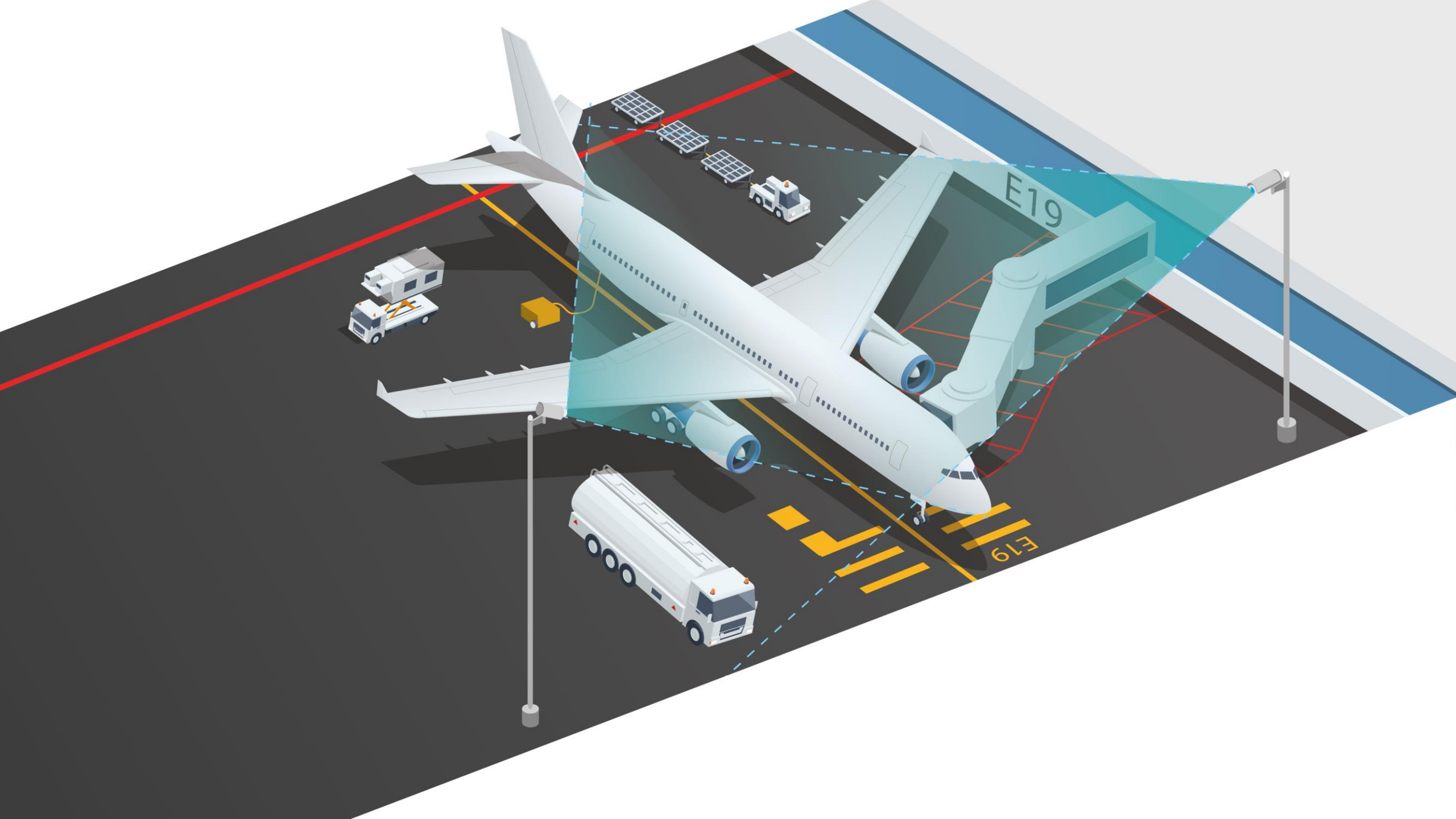


Something is happening on the ground



Turnaround process







The end-to-end AI model gives an accurate depiction of what is going on at the ramp in real-time



```
state_AircraftAppears_to_AircraftDisappears -
state_AircraftStopsInPosition_to_AircraftMovesOutOfPosition -
state_FirstCateringTruckAppears_to_LastCateringTruckDisappears -
state_FirstCateringTruckCompletesAscent_to_LastCateringTruckCompletesDescent -
state_FirstFuelTruckAppears_to_LastFuelTruckDisappears -
state_FirstFuelTruckConnects_to_LastFuelTruckFinalizes -
state_FirstFuelTruckStopsInPosition_to_LastFuelTruckMovesOutOfPosition -
state_FirstPaxBridgeConnects_to_LastPaxBridgeStopsInParkPosition -
state_FirstTugAppears_to_LastTugDisappears -
state_PaxDoorFirstFrontRightOpen_to_PaxDoorFirstFrontRightClosed -
state_PowerConnects_to_PowerDisconnects -
state_TugIdleConnectedStarts_to_TugIdleConnectedEnds -
```

Data Centric AI

Our approach for generating high quality detections



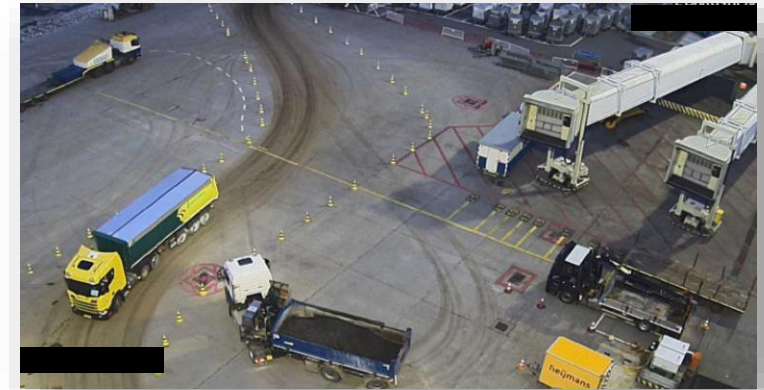
Model detection explainability

To gain trust on the model predictions



Diverse dataset

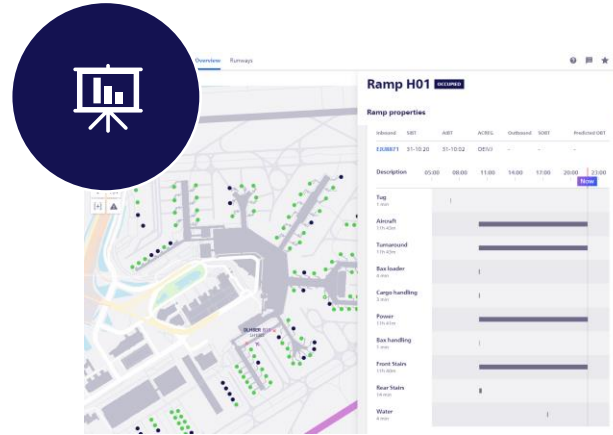
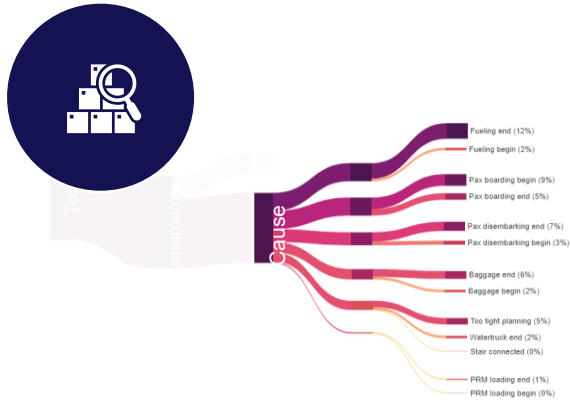
To improve model performance in many different scenarios

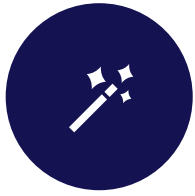


Train model with outliers

To have a model that performs well even during rare scenarios

Is opening the black box enough?





Predictive modelling PEGT

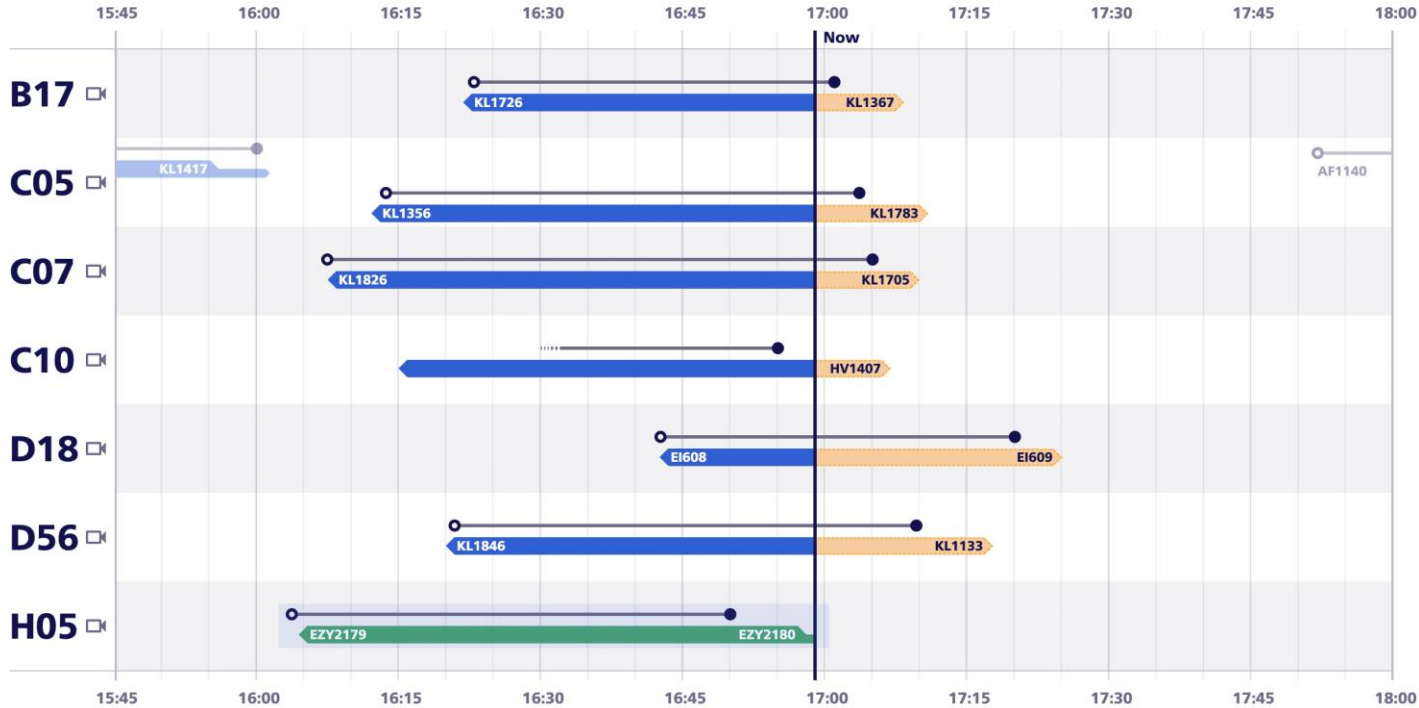
Stand-alone Turnaround Insights dashboard

Turnaround Insights

2 Jun 16:59 (CEST) AMS marcel.raas@schiphol.nl

Show from to Turnarounds Pier Handler Airline [Reset Filters](#)

Turnarounds (7 ramps)



Ramp H05 (active turnaround)

GEZDJ / 319 / Menzies / easyJet

Inbound flight IN-BLOCK
EZY2179 / MAN

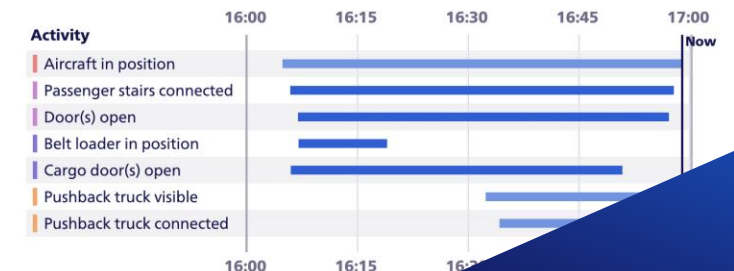
Outbound flight GATE CLOSED
EZY2180 / MAN

ELDT	ALDT	SOBT	TOBT
15:54	15:54	15:55	16:50
SIBT	EIBT	AEGT	TSAT
15:25	16:03	16:58 + PUSHBACK	16:50 (EXPIRED)
AIBT	AOBT	CTOT	-
16:04	-	-	-

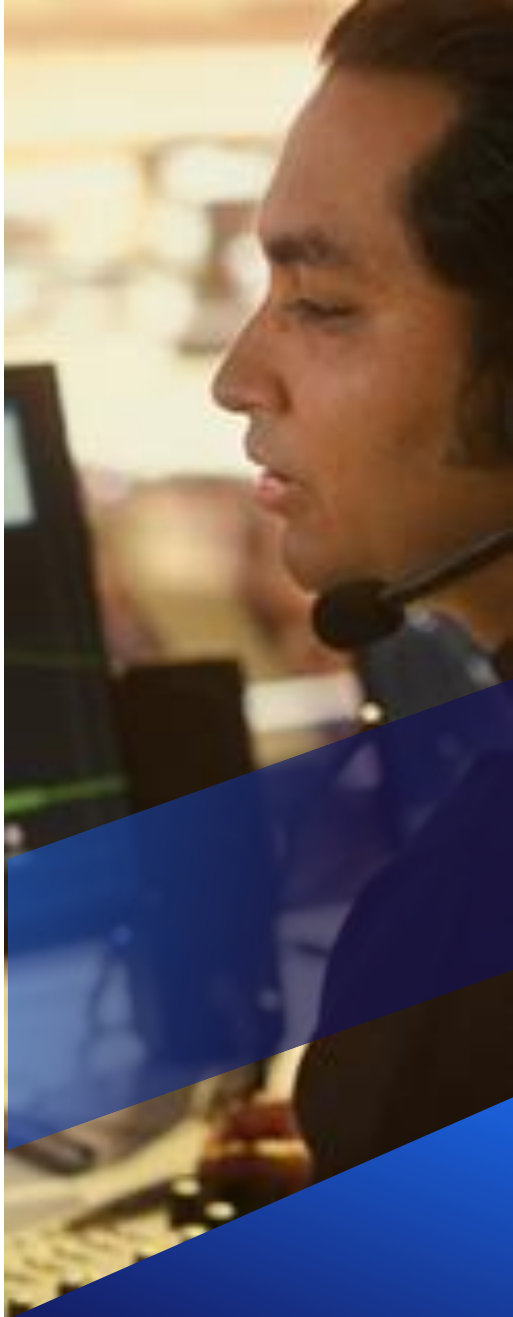
PEGT 16:58

Remaining time (AIBT - TOBT) 0m remaining

Turnaround progress



We aim to strengthen collaboration in the industry – solution available to airports worldwide



See you at the Xebia stand

