

Kepler Project: IBAS Turnaround 3.0

Kepler: What & Why

Kepler modules overview

Kepler value for IBAS and for our customers: Vueling case

01

Kepler



What is Kepler?

KEPLER is the new IBAS operational management tool that will unify the 22 apps historical used in the company on a single one, to connect all business units in only 4 modules: resource planning, real time operation, billing services and data analysis.

The main Kepler capability is its ability to share and receive information from internal and external systems - such as airlines DCS, airport data, aircraft data, telegraphy and other operational data in real time, totally customizable from a ground handling agent point of view, to manage any process of a ground turnaround.

**Kepler is a AMS commercial product owned and developed by SITA: <https://www.sita.aero/resources/videos/better-decisions-with-ams>*

Why Kepler?

Because KEPLER will let us deploy a complete digital turnaround – **IBAS Turnaround 3.0** – thanks to:

- Integrate and connect of all management tools in a single one: employees, airline SLAs, operation, and billing
- Provide a better access to operational data and a more agile way of communication between all turnaround stakeholders in real time
- Allow high level of tool setting customization to each of our airline customers and operational standards
- Possibility to explore all data recorded from a new holistic perspective



Why Kepler?

From a ground operation perspective:

- Improves communication with hub control console thanks to mobility devices
- All operational data Integrated in real time
- The functionalities of Kepler are adapted to the needs of airports: same system adjusted to activity and staff size
- Greater agility and autonomy in making decisions and solving incidents
- Tasks optimization, avoiding duplication and manual record of information
- We carry out tasks from a single mobile device: no papers, no radios

From an IT perspective:

- From 22 in-house systems, “old-fashioned” and with high costs of maintenance, to a 1 single solution: KEPLER by SITA (AMS)
- Collaborative developed by IBAS & SITA to adapt AMS solution to ground handling needs
- Configurable & simple architecture
- Scalable for different airport models and sizes



Kepler modules overview



RESOURCE PLANNING: optimize our resources levels to activity with AI algorithms.



REAL TIME OPERATION: Module composed by Gantt charts and flight tables for consoles and mobile devices for front line workers on terminal and ramp. All turnaround stakeholders connected for receiving and updated real time data, aligned to make the best decision on time in front of any incident.



BILLING SERVICES: Possibility to record on mobile devices any ad-hoc services as well fully control airlines standard contractual SLA.



DATA ANALYSIS: All operational data available for the first time to achieve a 360° vision of the operative with simple dashboards. We and our customer get the right Information to put focus in operational target.

Module 1 RESSOURCE PLANNING

A more efficient way to
contract working hours

User: **IBAS (Internal)**

Module 2 REAL TIME OPERATION

Better Access to operational
data to anticipate decisions

User: **IBAS + VUELING**

Module 3 BILLING SERVICES

Full control and tracking of
services contracted

User: **IBAS (Internal)**

Module 4 DATA ANALYSIS

Global visibility of IBAS
operation in a single database

User: **IBAS + VUELING**

Kepler Overview

Module 1: Resource Planning

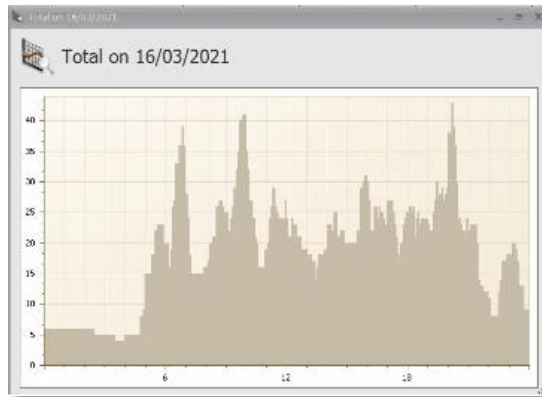
Inputs: *(non-exhausted)*

- Flight schedule (seasonal)
- Airlines contracts with task standards (Example: 2 boarding agents per flight from STD -50 to STD+5)
- CBA Parameterization (Collective Business Agreement): shift rules by contract
- Staff data: skills and type of contract by agent (agent profile)

Outputs:

- Automated workload calculation
- Automated staff roster: shift hours, bank holidays, furlough, etc. by employee
- People engagement through better shifts rostering

Workload view:



Workload (red) & roster coverage (green + grey):



Roster. Shifts population by agent:

Num...	Last Name	First Name	FPC	Contrac	Organization	Role	Skills	Monday 13/01/2020	Tuesday 14/01/2020	Wednesday 15/01/2020	Thursday 16/01/2020	Friday 17/01/2020	Saturday 18/01/2020	Sunday 19/01/2020	Horas complement Jan/2020	Hrs 13/Jan	PT
402242				FJR	BCN CIC SPVR FJR	BCN CIC SPVR (BCN C5, BCN CIC AGENTES HOJAS DE CARGA, BCN C1, BCN ...	CAA- COORDINACION AMERICAN AIRLINES, CBA- COORDINACION BRIST ...	14:30-22:00	14:30-22:00	14:30-22:00	Day Off	Day Off	05:45-13:15	05:45-13:15	0%	37.5	
010472				EV	BCN CIC AGENTES EV	BCN CIC AGENTE (BCN C4, BCN CIC AGENTE CONSOLA, BCN C1, BCN ...	CCOR- COORDINACION PISTA	06:00-10:00 11:00-13:00	06:30-10:00	Day Off	Day Off	05:30-14:00	05:30-07:30	11:00-13:15	0%	22.25	
109524				FJR	BCN CIC AGENTES FJ	BCN CIC AGENTE (BCN C4, BCN CIC AGENTE CONSOLA, BCN C1, BCN ...	CAA- COORDINACION AMERICAN AIRLINES, CBA- COORDINACION BRIST ...	06:00-13:30	06:00-13:30	06:00-13:30	06:00-13:30	06:00-13:30	Day Off	Day Off	0%	37.5	
923683				FJR	BCN CIC AGENTES H	BCN CIC AGENTES HOJAS DE CARGA (BCN CIC AGENTE CONSOLA, BCN ...	CLSH- HOJAS DE CARGA, CCOR- COORDINACION PISTA, CCON- CONSOL ...	Day Off	Day Off	16:30-00:00	16:30-00:00	16:30-00:00	16:30-00:00	16:30-00:00	0%	37.5	
012675				FJR	BCN CIC AGENTES FJ	BCN CIC AGENTE (BCN C4, BCN C1, BCN C2, BCN C3, BCN ...	CCOR- COORDINACION PISTA, CCON- CONSOLAS CIC	Day Off	Day Off	06:00-13:30 BCN CAGNCON	06:00-13:30 BCN CAGNCON	08:00-16:00	06:00-13:30	06:00-13:30 BCN CAGNCON	0%	38	
980316				EV	BCN CIC AGENTES EV	BCN CIC AGENTE (BCN C5, BCN CIC AGENTE CONSOLA, BCN C1, BCN ...	CBA- COORDINACION BRITISH, CEK- COORDINACION EMIRATES, CCO ...	Day Off	17:30-19:30	Day Off	08:00-11:00	19:00-21:00	19:00-23:00	19:00-23:00	0%	15	
010468				EV	BCN CIC AGENTES EV	BCN CIC AGENTE	CCOR- COORDINACION PISTA	22:00-01:00	Day Off	17:00-19:30	Day Off	14:00-16:00	16:00-21:30	19:00-22:00	0%	16	
980517				EV	BCN CIC AGENTES EV	BCN CIC AGENTE (BCN C2, BCN C3, BCN ...	CBA- COORDINACION BRITISH, CCOR- COORDINACION PISTA	Day Off	Day Off	18:30-21:30	18:00-21:45	17:30-20:30	18:30-21:00	21:00-00:00	0%	15.25	



Business value:

Resource coverage according to services defined for each airline at each airport, consistently and homogeneously

Kepler Overview

Module 2: Real-Time Operation

Inputs: (non-exhausted)

- Staff Roster: Shift, Employee skill
- Airlines DCS (Check In and Load Sheet data): Resiber, Go Now, Altea, Fly
- AENA (Infrastructure data): stands, gates, check in desks, baggage belts allocation
- CDM data: TSAT, TOBT, CTOT, etc.
- TELEX data (Arr/Dep): LDM, CPM, ASM, PSM, MYT (Arr/Dep) + SITA address book
- Crew data: Merlin & VY daily
- Fuel data: Nimbus system
- IBAS operational data

Outputs:

- Tracking Grid: customized flight tables
- Gantt Panel: task allocation
- Mobility: integrated information at the aircraft

Tracking Grid (flight table): 100% customizable for each console. Adapted to each airport and user

Tracking Grid

Home

Base Data

Resources

Undo

Redo

Load

Auto Commit

Commit

Create

Create Arrival

Create Departure

Delete

Edit

Multi-Edit

Comment Log

Audit Log

Open Services

Open Activity Flow

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Swap Tail Link

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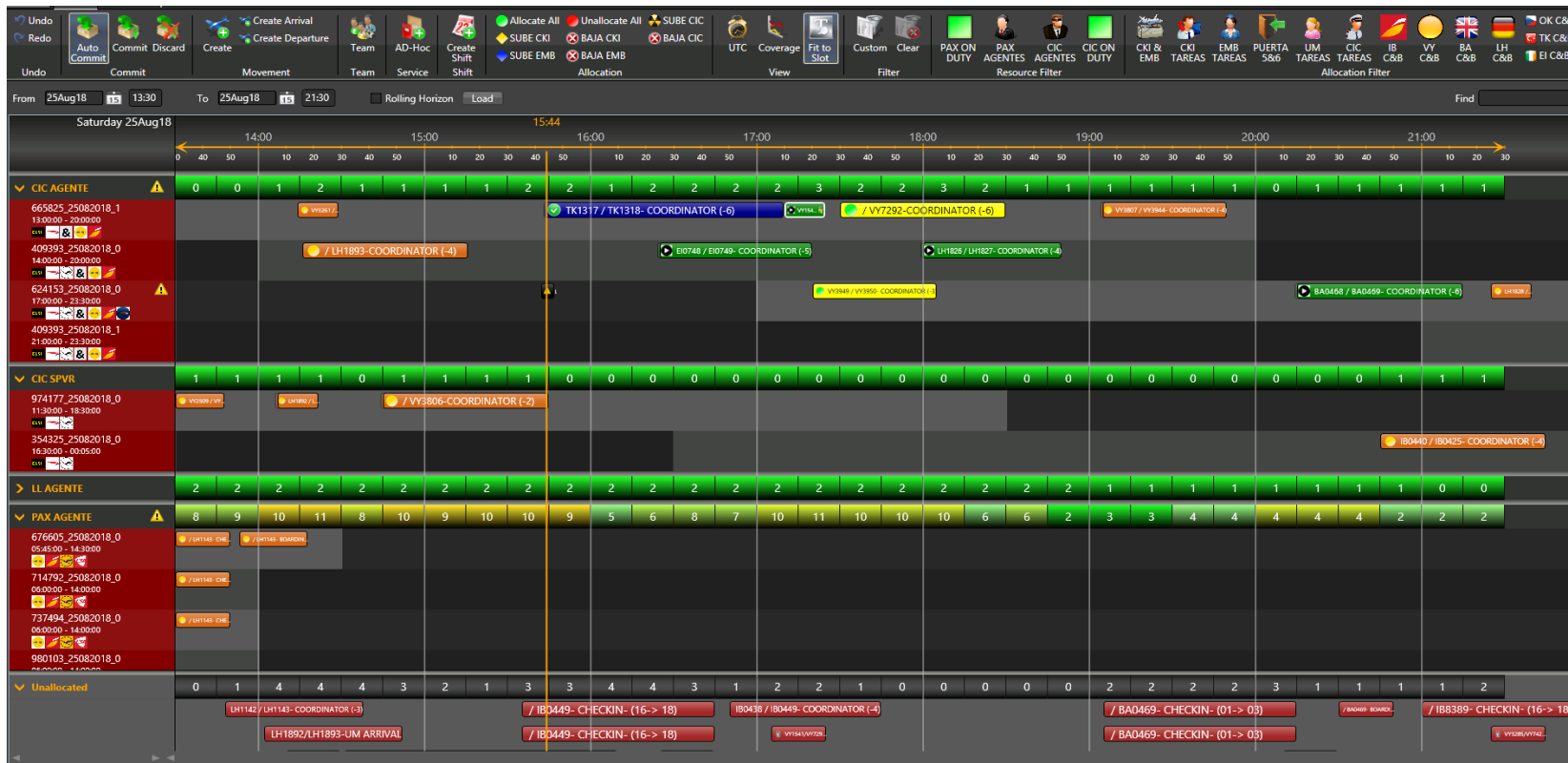
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Gantt Panel: timeline (x-axis), employees on duty (y-axis), allocated tasks (grid)



Business value:

All operational data integrated in real time, designed for each team and airport needs. Dynamic control of tasks and staff on duty

Module 2: Real-Time Operation

Inputs: (non-exhausted)

- Staff Roster: shift, Employee skill
- Airlines DCS (Check In and Load Sheet data): Resiber, Go Now, Altea, Fly
- AENA (Infrastructure data): stands, gates, check in desks, baggage belts allocation
- CDM data: TSAT, TOBT, CTOT, etc.
- TELEX data (Arr/Dep): LDM, CPM, ASM, PSM, MYT + SITA address book
- Crew data: Merlin & VY daily
- Fuel data: Nimbus system
- IBAS operational data

Outputs:

- Tracking Grid: Customized flight tables
- Gantt Panel: Task allocation
- Mobility: Integrated information at the aircraft

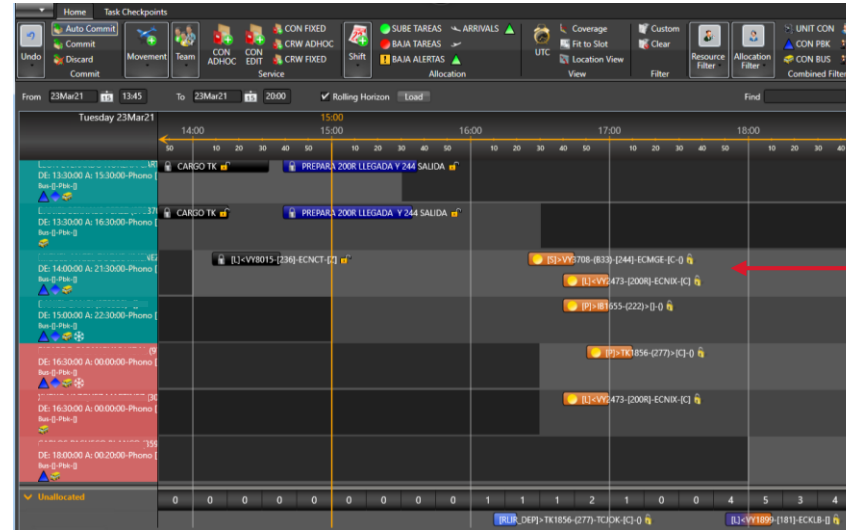


Business value:

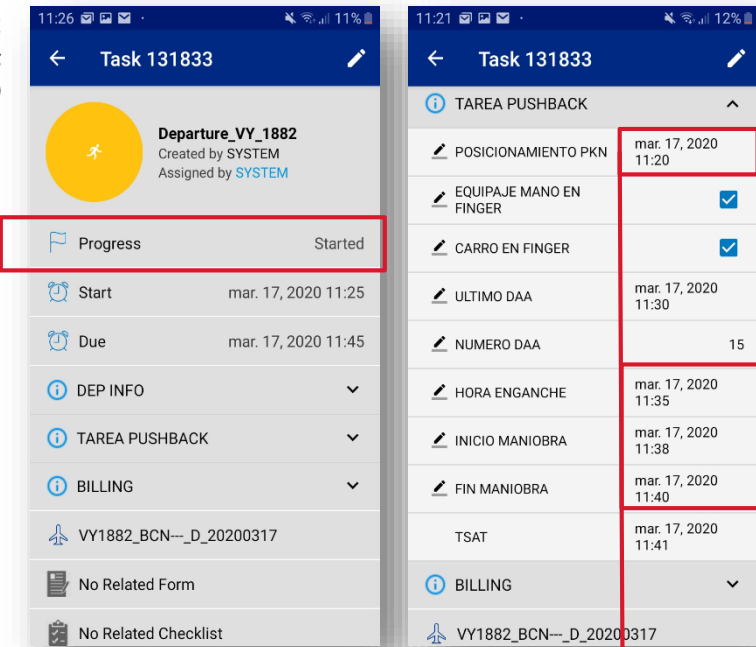
Better communication with real time info in mobile devices. Total control of tasks status and employee availability. First system to record and control process milestones (remotely)

1) Mobility: Agents on Terminal and Ramp are provided with a mobile device to look up flight information, update tasks status and record process milestones (Example: Pushback task)

2) The agent update task status (Gantt Panel) on the phone (black = ended, blue = started, orange = planned)



3) Process follow – up in hub control consoles draw from mobility inputs.
(Example: state of pushback maneuver: arrival to stand, connection, movement start, end: ▲▲▲▲▲)

[illegible]

Kepler Overview

Module 3: Billing Services

Inputs: (non-exhausted)

- Flight Schedule
- Mobility: ADHOC services performed by flight (ex. rear stairs, towing, AC connection)
- Airline contracts: including basic handling services and ADHOC services to be billed if performed
- Automated rules by service

Outputs:

- Record of all services provided
- Services to be billed directly integrated in IBAS invoice system
- SAAP Integration - Pending

Services recorded on mobility based on airlines contracts. Available on Billing Tracking Grid per flight:

The diagram illustrates the process of recording and billing services. It starts with a mobile app screen for 'Task 131833' showing flight details for 'Departure_VY_1882'. A red arrow points from the 'BILLING' section of this screen to a detailed billing screen. This second screen shows a list of services: 'PUSHBACK CON BARRA' (checked), 'EQUIPAJE DE MANO' (checked), and 'VY1882_BCN--_D_20200317'. Another red arrow points from the 'PUSHBACK CON BARRA' service to a 'Tracking Grid' table at the bottom, which lists various flight services and their associated costs.

Status	ARR CIA	ARR VLO	STA	REG	ACR	BAL	CAC	CAN	CAM	CBS	CHK	CMB	CRM	DES	E1M	E1	E2	E3	ELH	FLC	GNM	GPL	GPM	GPU	GPU_2	HH	INA	MAS	MEM	MIC	MIT	OLB	SCC	SEG	SPV	AUM	POS	Ground Time Estimated	DEP CIA	DEP VLO	STD	AC Min	AC_FLAG
IB	0700	23Mar21	08:20	ECMXU			Yes		Yes	Yes													0	0												47	IB	0905	23Mar21	09:05			
VY	3903	23Mar21	09:25	ECMKO					Yes	Yes						45	45						45	0							1	0											
VY	3713	23Mar21	09:35	ECMXG					Yes	Yes						45	45						45	0							1	0											
VY	3515	23Mar21	09:40	ECNBA					Yes	Yes						45	45						45	0							1	0											
IB	0830	23Mar21	09:50	ECNER			Yes		Yes	Yes													0	0												54	IB	1035	23Mar21	10:35			
VY	1421	23Mar21	10:05	ECMEA			Yes		Yes	Yes						45	45						45	0							1	0											
VY	2114	23Mar21	11:05	ECNU					Yes	Yes						45	45						45	0							1	0											
VY	3215	23Mar21	11:20	ECMLE					Yes	Yes						45	45						45	0							1	0											
IB	1130	23Mar21	12:45	ECMXU			Yes		Yes	Yes													0	0												49	IB	1331	23Mar21	13:25			
VY	8015	23Mar21	14:30	ECNCT			Yes		Yes	Yes						45	45						45	0							1	0											
TK	1855	23Mar21	15:40	TCJOK					Yes	Yes													0	0												83	TK	1856	23Mar21	17:05			
IB	1430	23Mar21	15:50	ECNER					Yes	Yes													0	0												65	IB	1655	23Mar21	16:55			
VY	2473	23Mar21	17:05	ECNIX					Yes	Yes													0	0																			
IB	1630	23Mar21	17:50						Yes	Yes													0	0												45	IB	1835	23Mar21	18:35			
VY	1899	23Mar21	17:55	ECKLB					Yes	Yes													0	0																			



Business value:

Billing procedure fully defined and parameterized by contract, service, client and airport

Kepler Overview

Module 4: Data Analysis

Inputs: (non-exhausted)

- Data from Kepler Module 1, 2, and 3: flight schedule, airline standards, staff data, roster, DCS, AENA infrastructure, flight information, crew & fuel data, telegraphy, tasks status, operational inputs from mobility (process times, incidents, delays codes, check list, etc.), billing

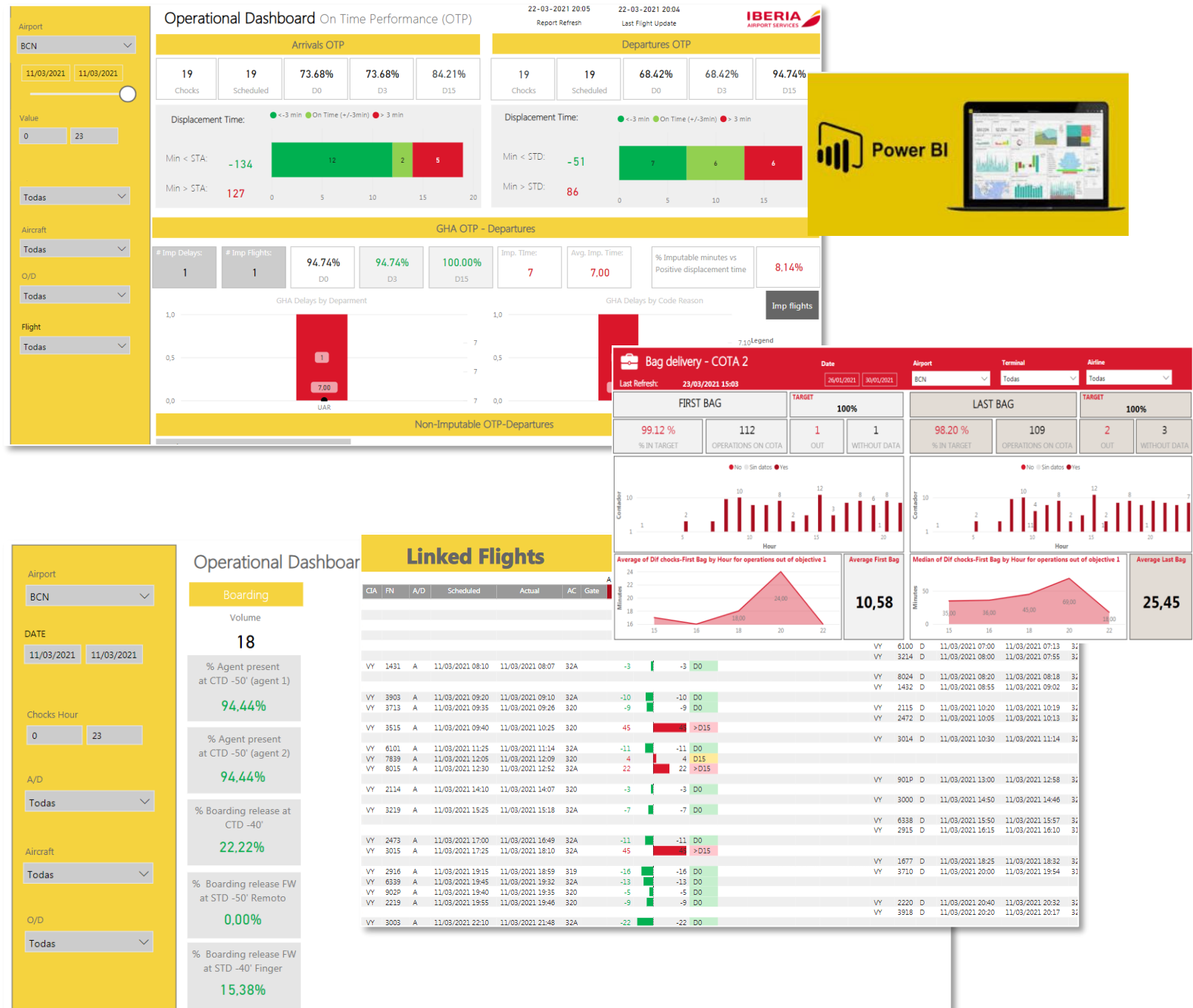
Outputs:

- Operational dashboards (historic and real time data)
- Quality service & performance assessment
- Workload and staff data. Profitability analysis
- Pricing analytics



Business value:

Business analytics. 360 vision of the operation, with consolidated and accessible information on a single database

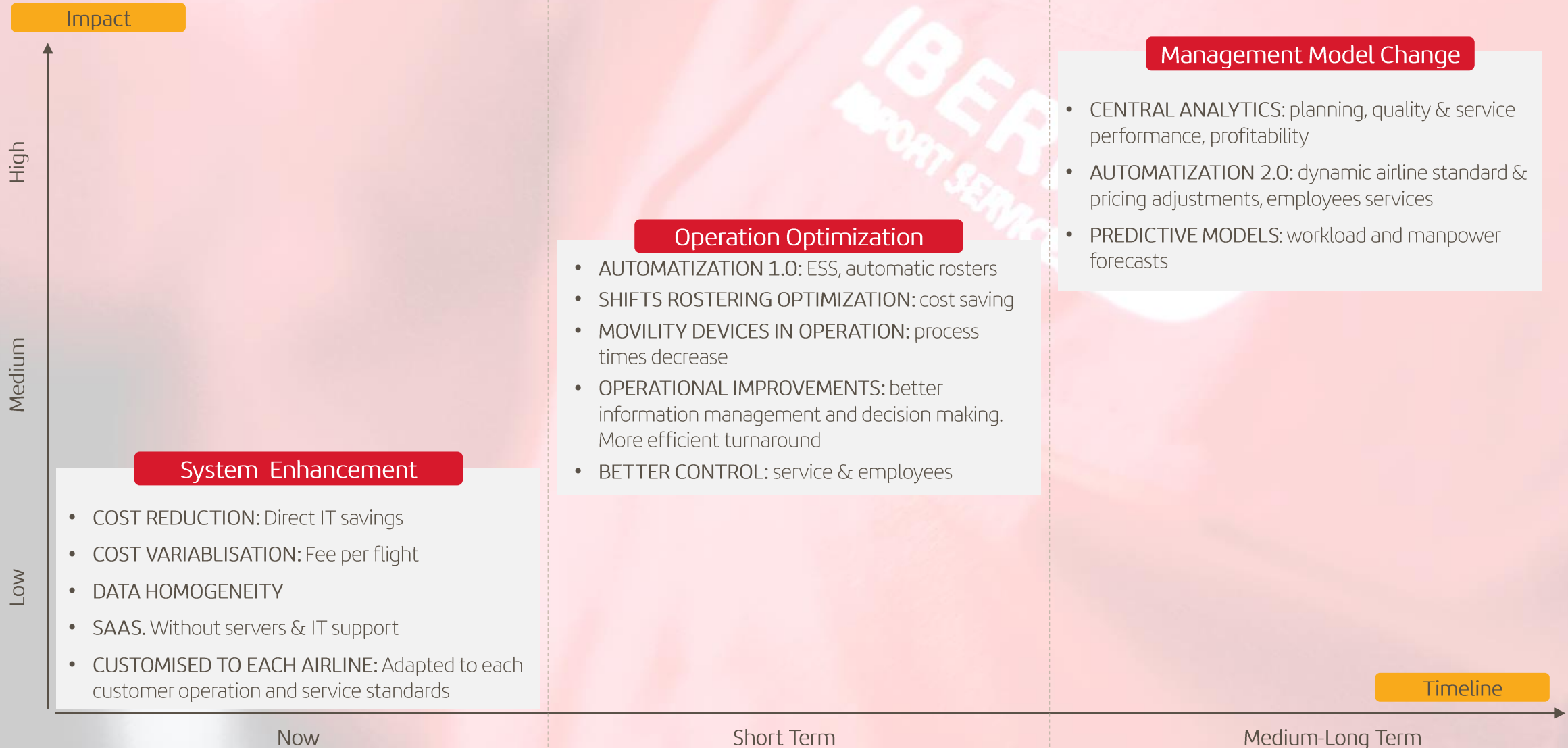




What do we want to achieve with Kepler deployment on the short and long term for our customers?

Deliver IBAS Turnaround 3.0!

Kepler is IBAS future tool to achieve the new turnaround 3.0 operating model



Added value for our customers



Airlines customization

- Consoles fully dedicated to each airline operation with dedicated teams.
- Remote control of staff from HQ in real time, with possibility to track airline SLAs and procedures
- Boarding control process totally integrated with VY DCS system



Real time process tracking

- Digital track of process defined (passenger, dispatchers and ramp)
- Specific consoles for bags tail to tail service in connections with critical minimum ground time
- Crew schedule changes also integrated



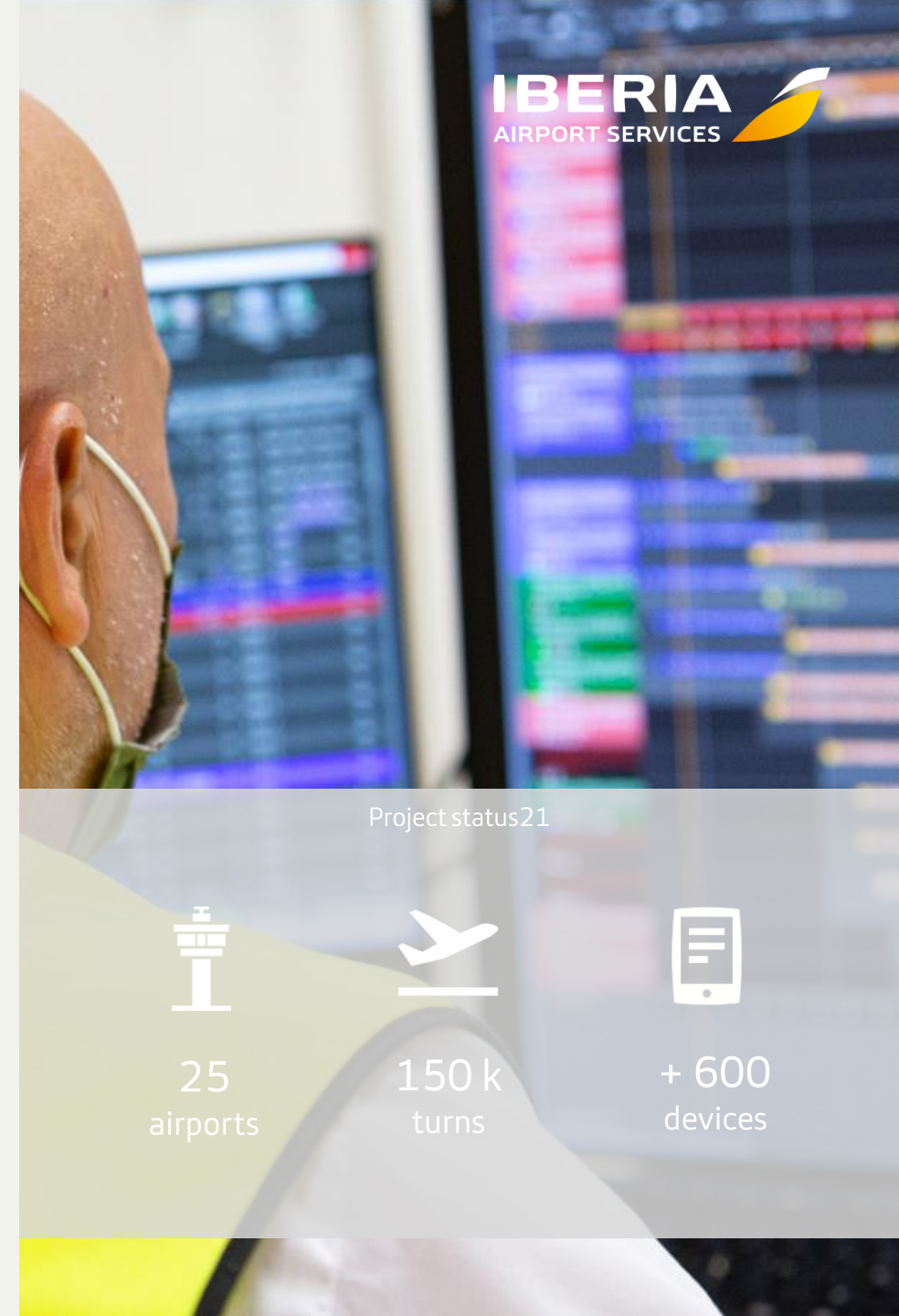
Without on-site calls

- Access to the most updated flight information from a mobile phone
- Data input on the ground available in remote consoles for duty managers



Business analytics

- Access to new KPI's to assess performance & quality in terminal and ramp processes
- Customized dashboards



Project status21



25
airports



150 k
turns



+ 600
devices