HubstartParisRegion
GATEWAY TO BUSINESS, LINK TO THE WORLD

AEROTROPOLIS ATLANTA

9th Annual

Sustainable Areas Airport International Seminar

October 15-16, 2019

Atlanta, GA

Aerotropolis ATLANTA Community Improvement Districts

GIP EMPLOI Roissy CDG

GROUPE ADP

Hartsfield-Jackson Atlanta International Airport®

ARC ATLANTA REGIONAL COMMISSION

OUR WARMEST THANKS TO OUR SPONSORS

Aerotropolis ATLANTA Community Improvement Districts

GIP EMPLOI Roissy CDG

ARC ATLANTA REGIONAL COMMISSION

PORSCHE

CHOOSE PARIS REGION

INVEST ATLANTA Atlanta's Development Authority

GROUPE ADP

Hartsfield-Jackson Atlanta International Airport

DAFC DEVELOPMENT AUTHORITY of FULTON COUNTY

HubstartParisRegion GATEWAY TO A SUSTAINABLE AIRPORT AREA

AEROTROPOLIS® ATLANTA LAND HERE. TAKE OFF.

DAY
2

THE IMPACT
OF BIG DATA, TECHNOLOGY AND INNOVATION

WEDNESDAY OCT 16

MORNING

8:30 - 10:45 AM PANEL III - HOW BIG DATA AND NEW TECHNOLOGIES WILL HELP IN TRANSFORMING AIRPORT AREAS INTO SMART, RESILIENT AND ATTRACTIVE COMMUNITIES

10:45 - 11:00 AM NETWORKING COFFEE BREAK

11:00 AM - 1:00 PM PANEL IV - USING BIG DATA AND NEW TECHNOLOGIES TO TRANSFORM AIRPORT AREAS INTO TOURIST DESTINATIONS

12:00 - 1:00 PM NETWORKING LUNCH

START-UPS
THEIR SOLUTIONS

Mr François CHAZELLE

Partners and CCO

Safety Line

AIRSIDE WATCH

Radar Data at work

AirsideWatch Analytics – SSAIS 2019, Atlanta
François Chazelle, Partner & CCO

SAFETY LINE
Big Data applied to Aviation

SAFETY LINE - BIG DATA SOLUTIONS FOR EFFICIENCY

Pierre Jouniaux

Aircraft Accident Investigator

Airline pilot

FLIGHT DATA

Machine Learning
Performance Models

IN-FLIGHT
FUEL SAVINGS

RADAR DATA

AIRSIDE WATCH
Radar data at work

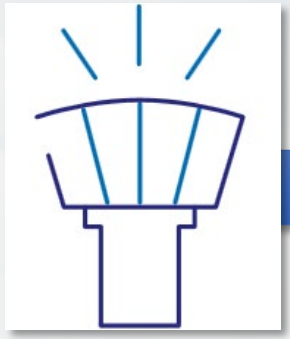
ANALYTICS

MORE EFFICIENT
SAFER, GREENER,
AIRSIDE OPERATIONS

GROUND RADAR DATA - AN UNDER-USED RESOURCE

Primary & secondary RADAR

Air Traffic Control



Live monitoring

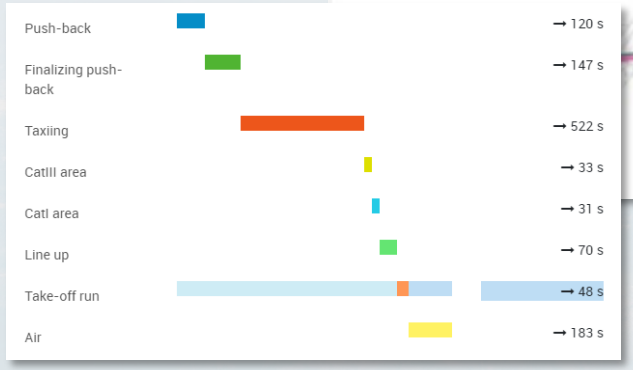
Stored for ‘replay’

UNLIMITED USER DEFINED SEARCHES

AIRSIDE WATCH

Radar data at work

PARIS CDG AIRPORT - ANALYZE TAXI TIMES & STOPS



AIRSIDE WATCH
Radar data at work

« AirsideWatch provides us with unprecedented visibility on everything that happens at any location on our aprons, taxiways and runways, at any given time. »

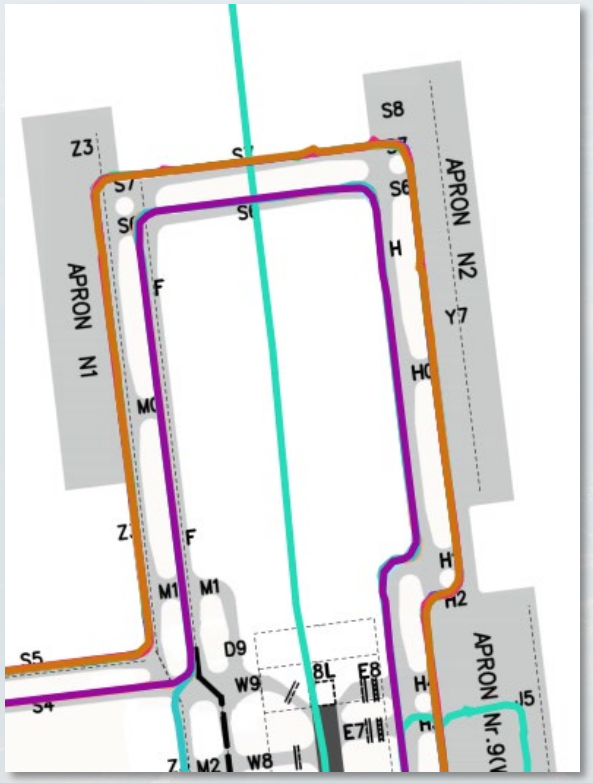
Edward Arkwright, Deputy CEO of Groupe ADP

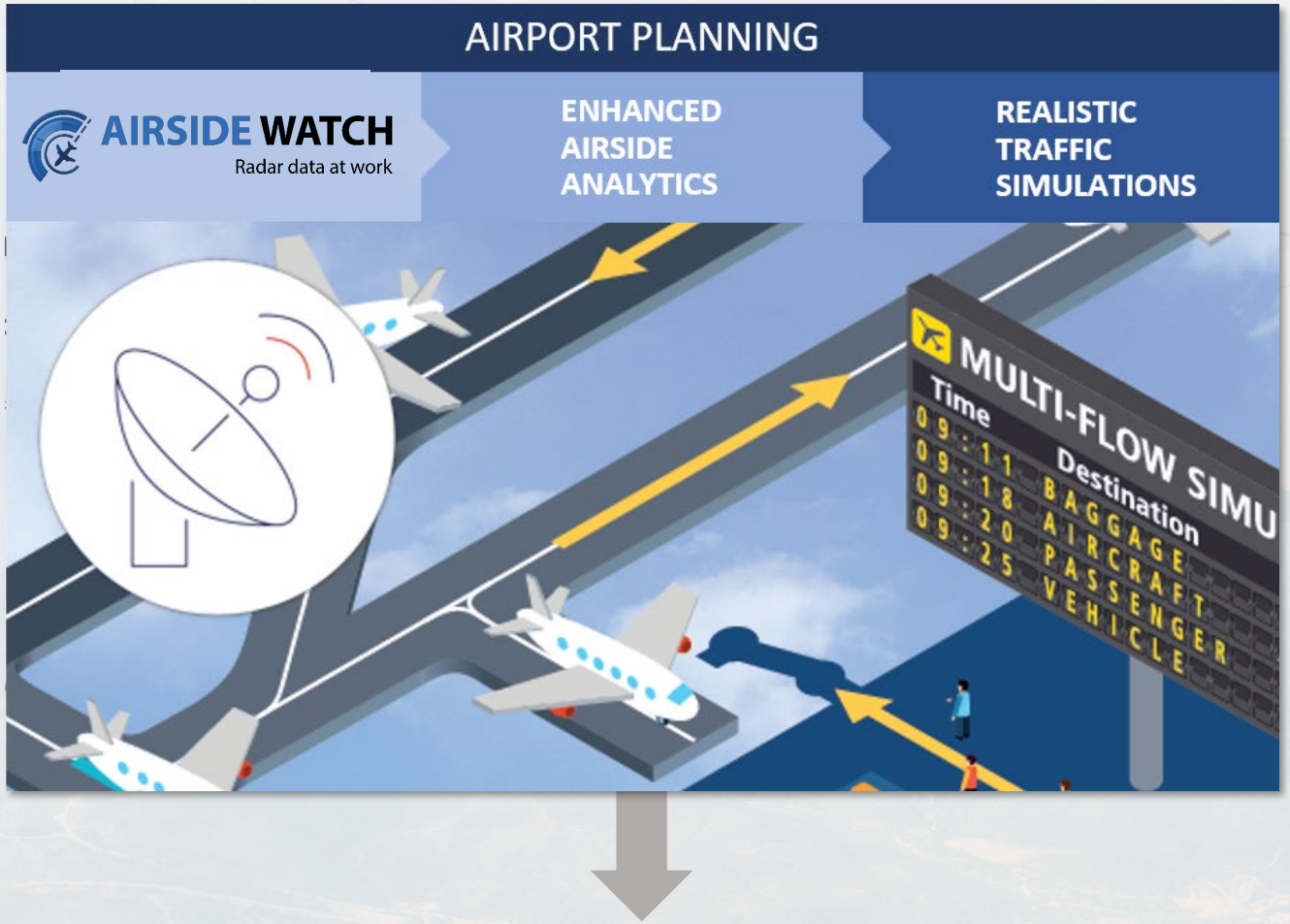
- Reduce taxi times
- Save fuel
- Reduce emissions

GROUPE ADP

BEIJING AIRPORT - BETTER DATA FOR BETTER PLANNING

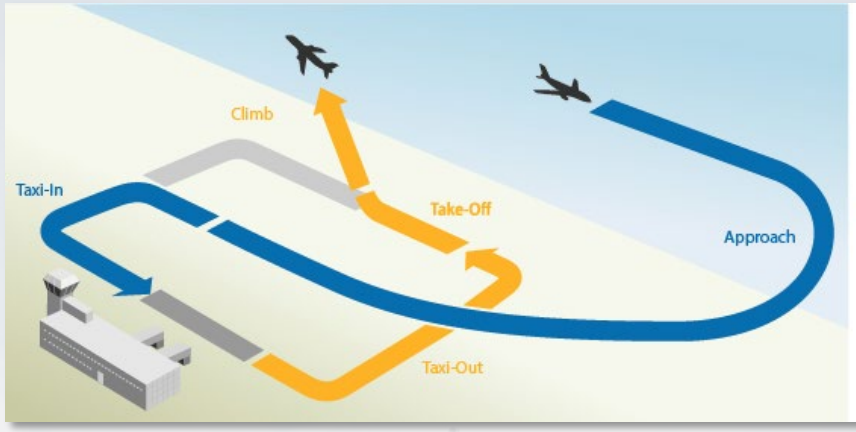
BCIA





Realistic simulations for validation
of best engineering solution to **reduce taxi times**

EMISSIONS MODELING



LTO cycle

Mode	Thrust	Time
Take-off	100%	0.7 min
Climb	85%	2.2 min
Approach	30%	4.0 min
Taxi	7%	26 min

ICAO Advanced Engine Emissions Databank

AIRSIDE WATCH
Radar data at work

Model Emissions based on actual trajectories

Taxiing times

Accelerating Turning Constant speed or braking Stopped

AIRSIDE WATCH PROJECTS IN 2019

AIRSIDE WATCH
Radar data at work

- Efficiency
- Safety
- Emissions

NEXT STEPS

How can

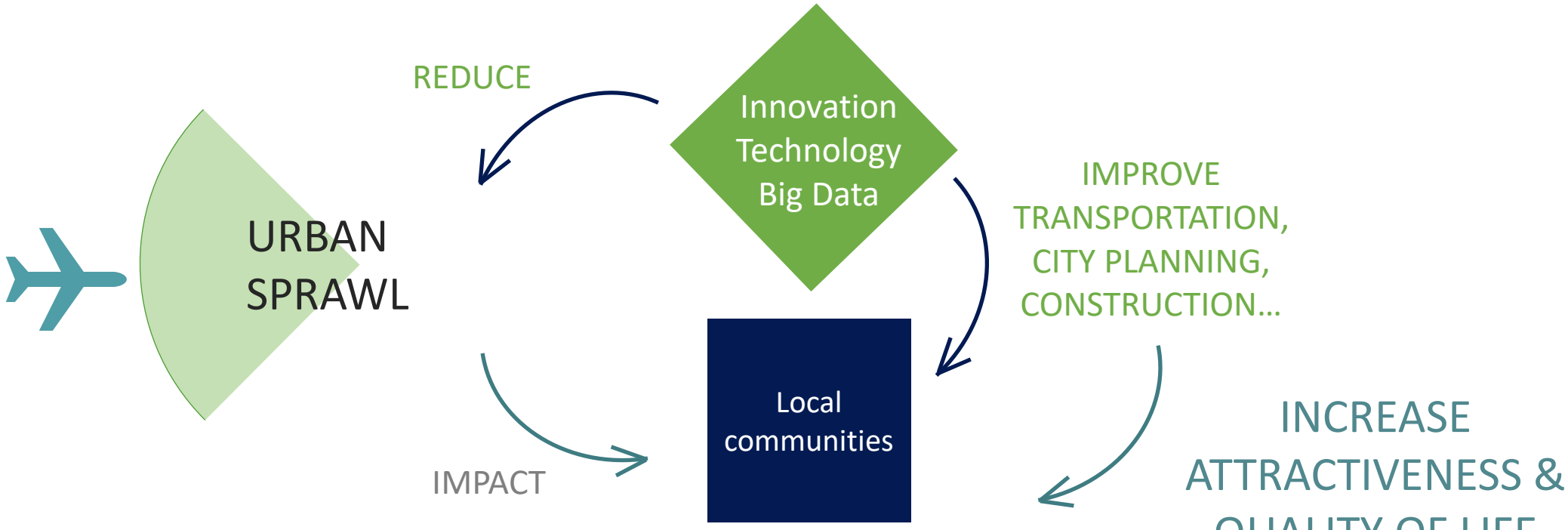
data benefit Hartsfield-Jackson Atlanta Aiport ?

- ✓ ‘KPI Hunt’ with Operations, Safety, Environment, Maintenance, Planning teams
- ✓ POC on a batch of historical ground radar data

Better data for a more **efficient, safer, greener airport**

PANEL 3

How big data and new technologies will help in transforming airport areas into smart, resilient and attractive communities



PANEL 3

How big data and new technologies will help in transforming airport areas into smart, resilient and attractive communities

MODERATOR

Max Hirsh
Hong-Kong & Airport Urbanism

SPEAKERS

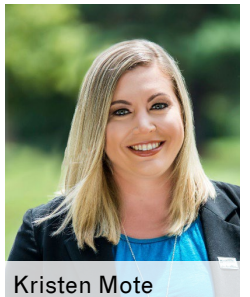
Pieter Van der Horst
Airport City Academy

Arja Lukin
City of Vantaa

Sergyi Ivannikov
Teichmann & Compagnons

Chis LeTourneur
MXD Development Strategists

Ying Ma
BNA Institute of Smart & Ecological Tech. Company LTD



Kristen Mote
Aerotropolis Atlanta Transit Plan & Greenway Plan

Olivier Guichard
ADP Ingenierie

Pieter van der Horst
AIREA
NACO
pvdhorst@airea.nl

Schiphol

Amsterdam, the Netherlands

How big data and new technologies help in transforming airport areas.

KEY FIGURES

Schiphol / Amsterdam (the Netherlands)

72 mln. passengers **1.7 mln.** tons airfreight

65.000 jobs **239** flight connexions

103 Years

Amsterdam Airport Area

290.000 jobs

Main sectors : Transport & logistics, Finance, Law, agriculture, ICT

Main current project:

New Terminal and A pier

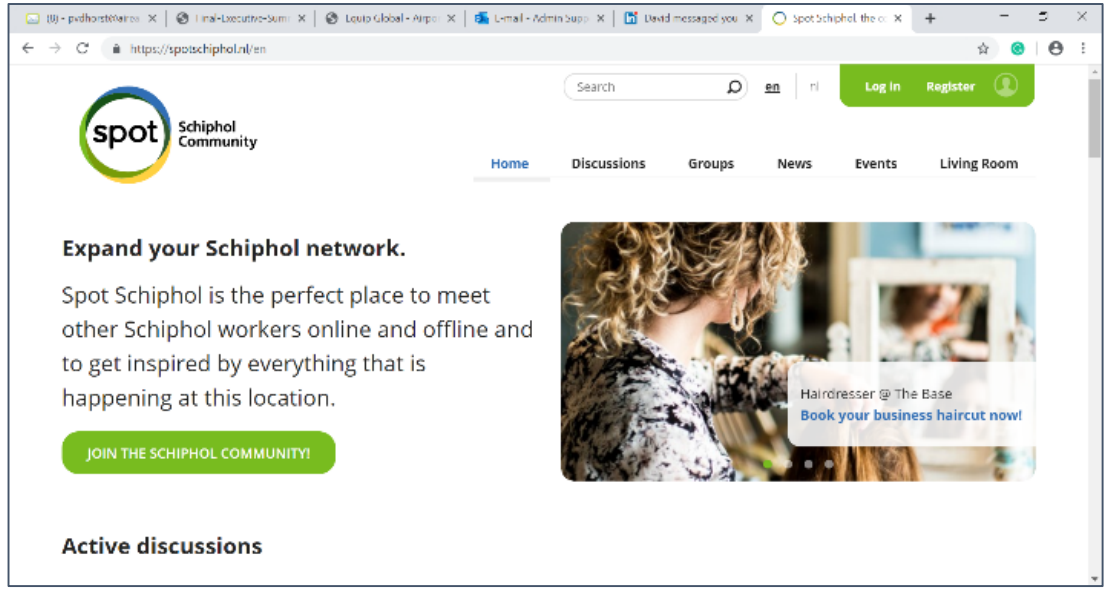
Innovations and Trends

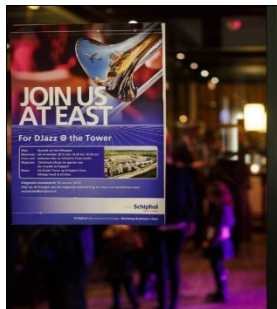
- Transportation
  - Uber and Lyft
  - Hyperloop
  - Self driving (and electric) cars
  - Personal transport pods
  - Last mile
  - Drone delivery
- City Planning
  - Citizens participation
  - Sharing data / using big data
  - Living labs
- Construction
  - 3D modelling and BIM
  - 3D printing
  - Augmented reality
  - Green and innovative materials
- Amenities and services
  - Delivery apps (drone at airport area?)
  - New web based services
  - Real time data to ‘predict’ required services

CASE STUDY

Amsterdam Airport Schiphol

Creating a online community, with offline events



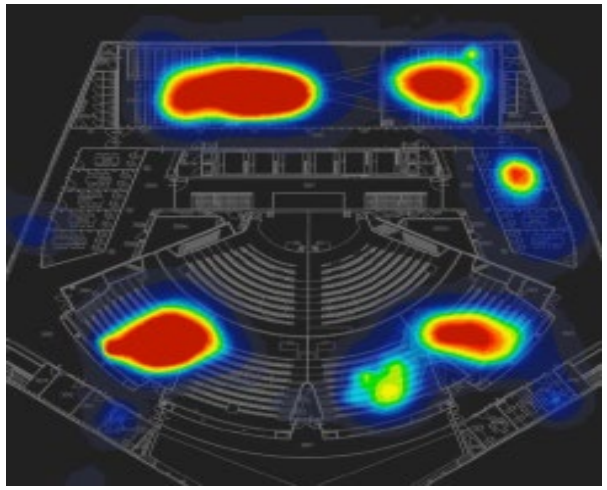


CASE STUDY

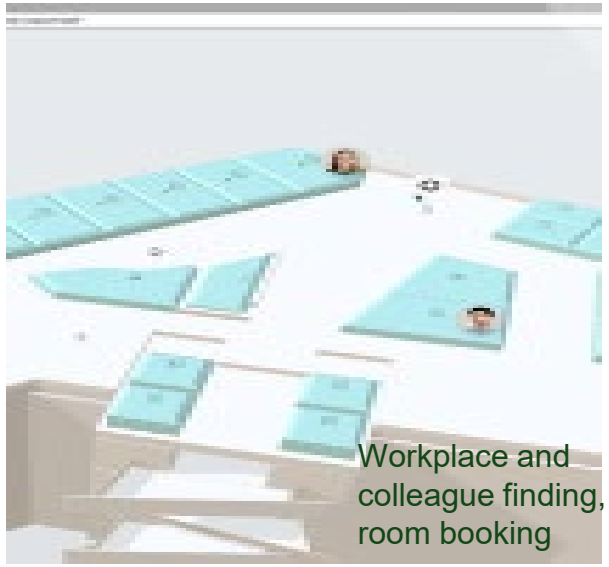
Amsterdam Airport Schiphol

Using SMART technology in commercial and terminal buildings

- When an area or building “knows” where the people are, all processes that waste space, time or energy can be optimized
- Creating a SMART AREA by using smart building (and area) technology
- Co creation with TECH companies (Microsoft and bGrid)



Heat maps, use of building and area



Workplace and colleague finding, room booking

CASE STUDY

Amsterdam Airport Schiphol

Last mile

SAAIS 2019

THANK YOU

THE ROLE OF BIG DATA

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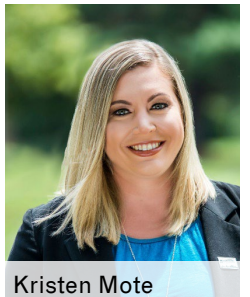

Kristen Mote
Aerotropolis Atlanta Transit Plan & Greenway Plan

Olivier Guichard
ADP Ingenierie

Helsinki Airport and Airport City Aviapolis

Vantaa, Finland

TRANSFER HUB BETWEEN EUROPE AND ASIA

One of the most growing airports in Europe

TEMPTING AND SUSTAINABLE CITY OF OPPORTUNITIES

For business owners, workers, residents and tourists – 24/7 for all

KEY FIGURES

Helsinki Airport, Finland

21M passengers

10,7% growth in international traffic

162 flight connexions

22 direct flight connections to Asia

150 920 tons airfreight

15% growth

20K jobs

260 MEUR turnover

+9,5% growth

Airport City Aviapolis

19K inhabitants

37K jobs

3550 ha

mains sectors :

diverse ecosystem of businesses

2000+ companies

Main current project

-Airport expansion, 1 000 MEUR

-Real estate projects (offices, hotels, housing, school and kidergartens, shopping mall)

-Light trail / tram, 300 MEUR

THREE PROPELLING FACTORS

The fastest growing business hub in Finland

Our **Airport area** is a great place to do business. Here are some **reasons** why:

-Direct connections from Helsinki alone reach over 320 million people in the world

-Diverse and stable ecosystem of businesses with easy access to world-class tech talent, the most dynamic startup scenes, and a vibrant R&D environment

-A unique combination of workplaces, housing, services and recreation is taking shape right next to the airport. New residents are moving into the area.

View of road Rälssitie

AVIAPOLIS
TRAFFIC LAB

MARKET TESTING AREA FOR SOLUTIONS
FOR TRAFFIC, COMMUTING AND LOGISTICS

MOBILITY SOLUTIONS OF RESIDENTS AND COMMUTERS

Reducing car-dependency and increasing the servitization-level of mobility in the area

URBAN LOGISTIC SOLUTIONS

Combining developing urban infrastructure with logistics business

UTILIZING MOBILITY DATA

Broader utilization of mobility data in finding sustainable, low emission solutions

DRONE LOGISTICS

Faster delivery times, reduced delivery costs and lower emissions through utilizing drone logistics

JOINT PROJECTS WITH CITIES OF HELSINKI AND ESPOO

Create a collaborative development model for intelligent and low emission traffic

COLLABORATION BETWEEN THE WORK PACKAGES

Arja Lukin, steering group, chairperson

WSP project director, Korkia coordinator

OFFICIAL PARTNERS OF THE PROJECT

FUNDING

+30 PARTIES, COMPANIES, RESEARCH AGENCIES, CITIES AND THE ENTIRE PUBLIC SECTOR

Drone logistics

Mobility solutions for residents and commuters

E-logistics chain from main harbour to airport

Mobility data (Company)

SAAIS 2019

THANK YOU

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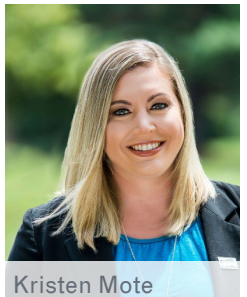

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Case: Ulaanbaatar, Mongolia

Old CITY + Old AIRPORT = Old Problems

VS

New AIRPORT + New CITY = ? New Solutions ?

Mongolia and Ulaanbaatar

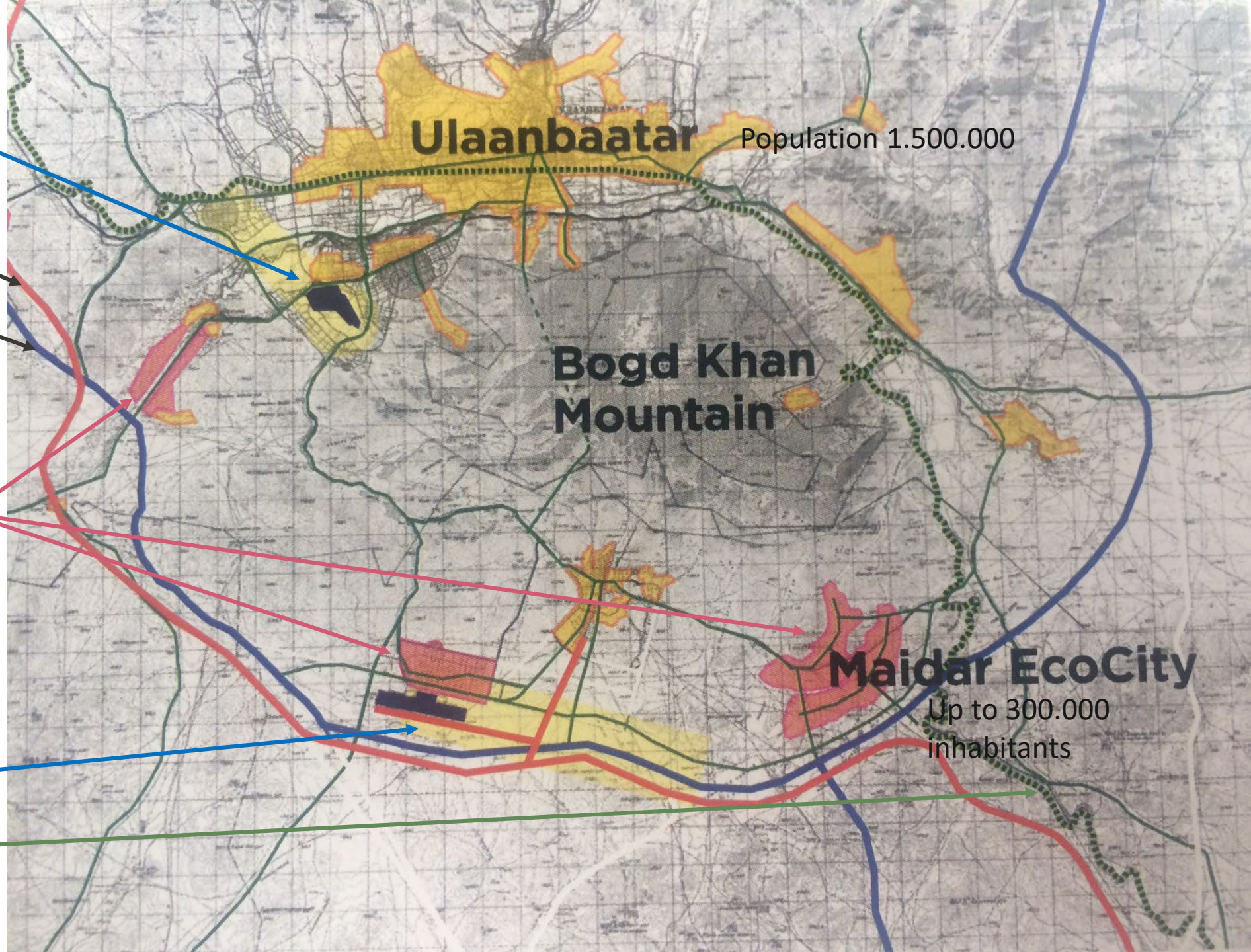
- Area 1,5 mio sq km (=FR+GER+SP+UK)
- Population 3.1 mio (< Puerto Rico)
- 1.5 mio lives in the capital,
  - Of which 60% in Yurts!
- Extremely high level of air pollution
- Ulaanbaator is the coldest capital city in the world
- GDP Growth 7% p.a. (2018 & projected for 2019-22)

Existing Chinggis Khaan International Airport

- short runway, accessible from one direction due to the surrounding mountains
- terminal inadequate to meet anticipated passenger growth
- adverse conditions during the winter season often lead to flight delays and cancellations
- Limited number of destinations and airlines
- 1.1M PAX currently

Newly build Khöshig Valley Airport

- 30 buildings, including
- three-storey 37,000m^2 passenger terminal
- 38m air traffic control (ATC) tower
- operations building
- 3,600m-long and 45m-wide concrete runway
- 2ND runway land reserved
- 38 km roadway system connected to the Ulaanbaatar city
- Cargo capacity is set to increase 10-fold (cargo hub potential)
- PAX capacity 3M, extendable to 12M


Site of OLD airport
Planned Highway
Planned Railway
Planned Urban Developments (Cities)
Site of NEW airport
Existing Railway
Ulaanbaatar
Population 1.500.000
Bogd Khan Mountain
Maidar EcoCity
Up to 300.000 inhabitants

Old City Ulaanbaatar vs New Maidar EcoCity

Authentic Mongol culture thrives in an urban setting

Objectives for urban design: sustainability, low carbon emissions, environmental protection, social harmony

Old Urban Problems vs New Urban Solutions

How the New Airport will help to solve this?

Sergiy Ivannikov *s.ivannikov@arotropolis.kiev.ua*
Teichmann & Compagnons Property Networks,
Vienna, Austria / Kyiv, Ukraine *teichmanncpn.eu*

SAAIS 2019

THANK YOU

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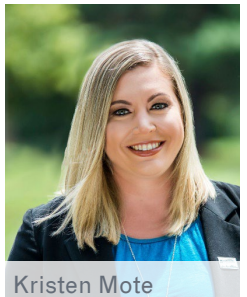

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Aerotropolis Atlanta Transit Plan & Greenway Plan

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ADP Ingenierie

Sustainable Airport Areas International Seminar

Where Innovation Lands in Airport Areas

Wednesday October 16th, 2019
Aerotropolis Atlanta, Georgia

Chris LeTourneur
President & CEO
MXD Development Strategists

Connecting a World of Opportunities™

MXD
DEVELOPMENT STRATEGISTS
Innovation + Connectivity
=
Opportunity
How does Innovation Land in Airport Areas ?

Strategic Partnerships
Leveraging Economic Sectors
Multi-Modal Connectivity & Future Mobility
Cool Factor F & B
ECOSYSTEM of INNOVATION
Education & Skills
"Airport Areas as Living Labs"
Next Generation Work Space
Incubators & Accelerators
REAL ESTATE REALM
VIRTUAL REALM

Rise of Technology Innovation Incubators

MXD DEVELOPMENT STRATEGISTS

Atlanta is leading **Incubating Innovation** at **Georgia Technology Square**

487,000 SF Centergy One Building:

- **Delta**
- **Honeywell**
- **Georgia Power**

$12 billion from **ATDC** **Incubator** companies in GA

Rise of Technology Innovation Incubators

MXD DEVELOPMENT STRATEGISTS

Edmonton International Airport
Alberta Aerospace & Technology Centre (AATC)

Level D Boeing 737-Classic Flight Simulator

5 Acre AV/AI/Big Data/IOT Testing

20,000 SF Educational Facility

Pittsburgh Airport Innovation Campus (PAIC)

MXD DEVELOPMENT STRATEGISTS

Public & Private Sector Partnership
to spur economic growth

Illustration Courtesy of CEC

1.4M SF of Office, R&D, Advanced Manufacturing, Retail/F & B Town Center

16 pad ready sites by 2023

10 years Anticipated Buildout

PAIC Strategic Partners

ALLEGHENY COUNTY AIRPORT AUTHORITY

ALLEGHENY COUNTY ECONOMIC DEVELOPMENT

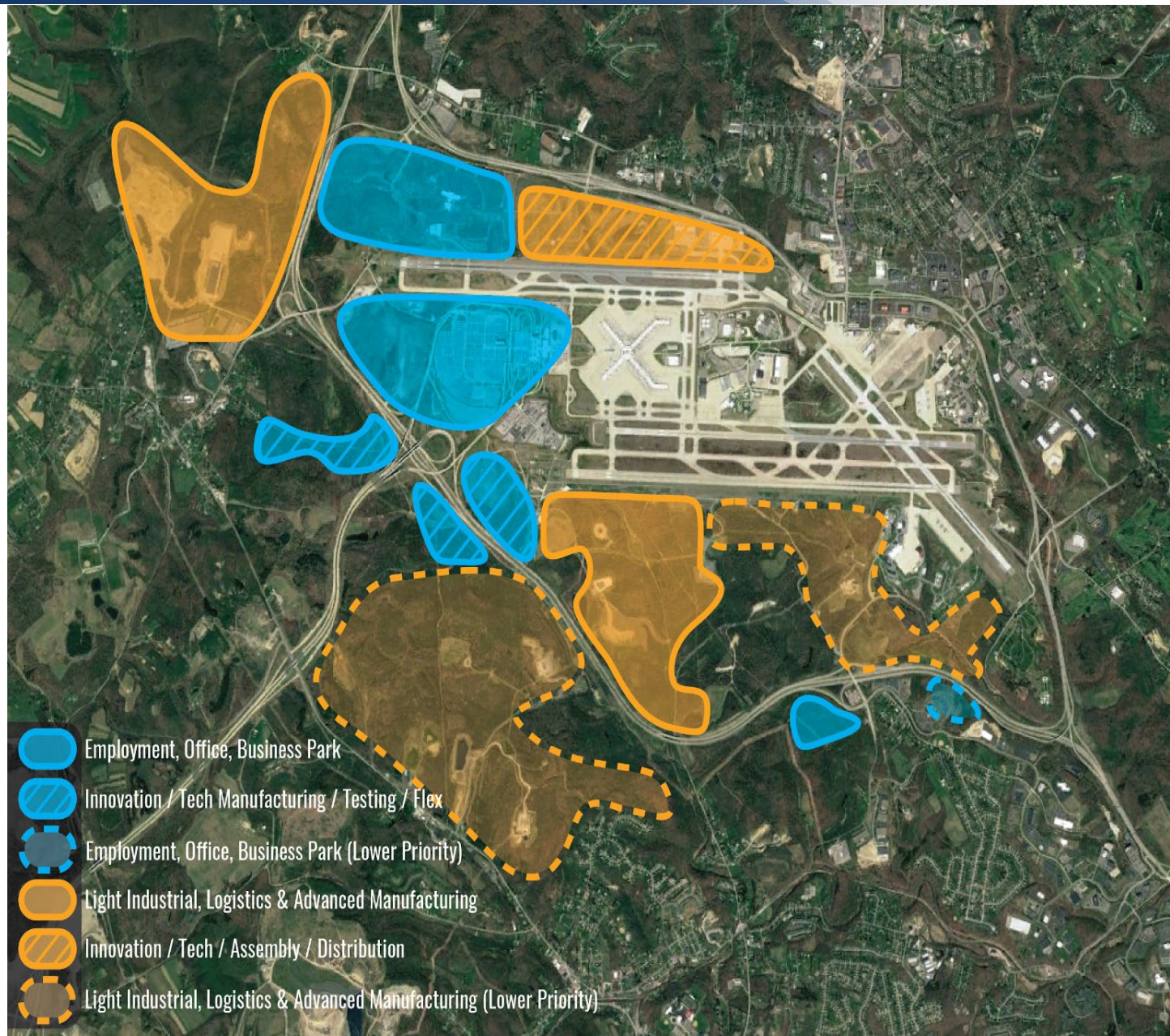
Pittsburgh Regional Alliance

Shell

Port Authority
connecting people to life

UPMC
University of Pittsburgh Medical Center

Carnegie Mellon University



LABCAMPUS @ Munich Airport

500,000 sqm

Connected by Air, Rail and Road

Inspiring Urban Campus

Exposure to 44+ Million Passengers

Focal Point for Bavarian Innovation

MXD
DEVELOPMENT STRATEGISTS
Innovation
=
Connecting:
Ideas
People
Information
Education
Companies
Airport Areas are a Nexus for Innovation !

THANK YOU!

chris@MXDdevelopment.com

MXD
DEVELOPMENT STRATEGISTS

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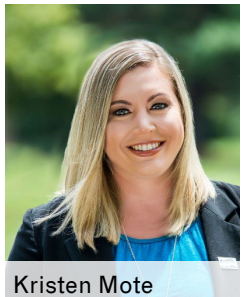

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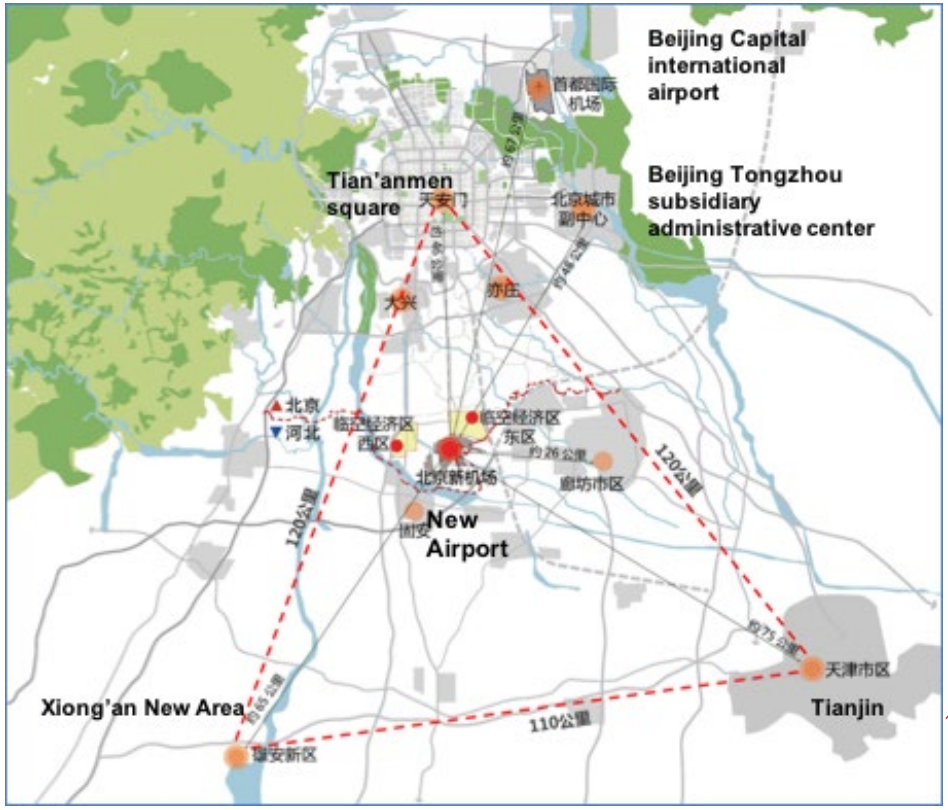
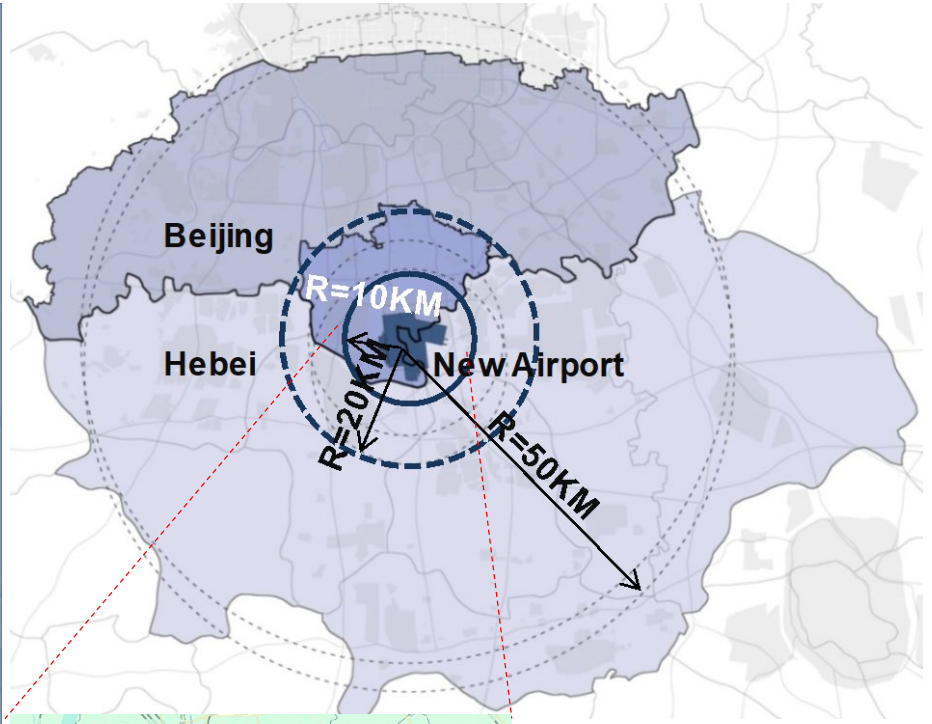
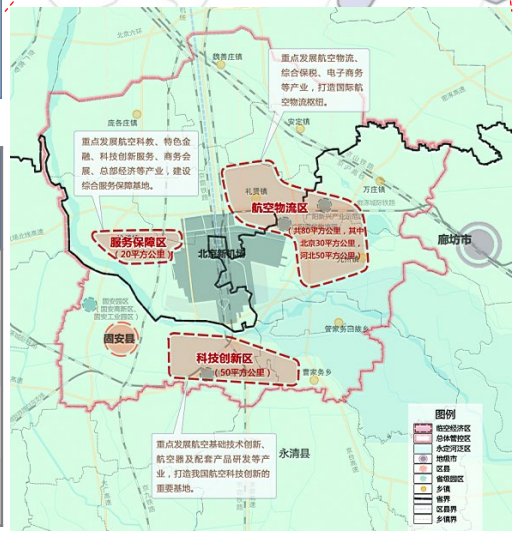
Application of Digital Twin-city in Construction and Management of Airport Economic Zone

Profile of the Beijing Daxing International Airport Economic Zone







	Short-term Plan 2025	Long-term Plan 2040
Runway	4	6
Area	27km²	68km²
Passengers	72 million/year	100 million/year
Cargo	2 million tons/year	4 million tons/year

BDIAEZ
150km²
Beijing Part:
50km²
West Area 26km²
East Area 24km²

The planning and construction information platform: a new integrated mode of planning, construction and management

Planning Exhibition

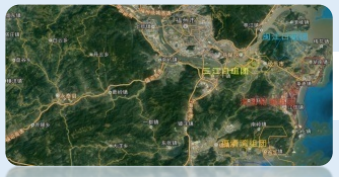
- General Plan
- Master Plan
- Special Plan
- Comprehensive Indicator System

Construction Projects

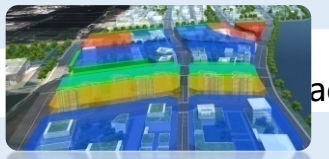
- Overall Control
- Achievement Exhibition
- Complete Model

Industrial Service

- Industrial Distribution
- Project Display
- Auxiliary Location



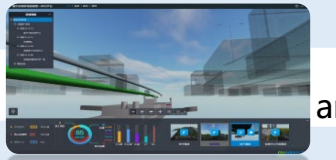
Data directory



Data administration

Data Collation

Data statistics

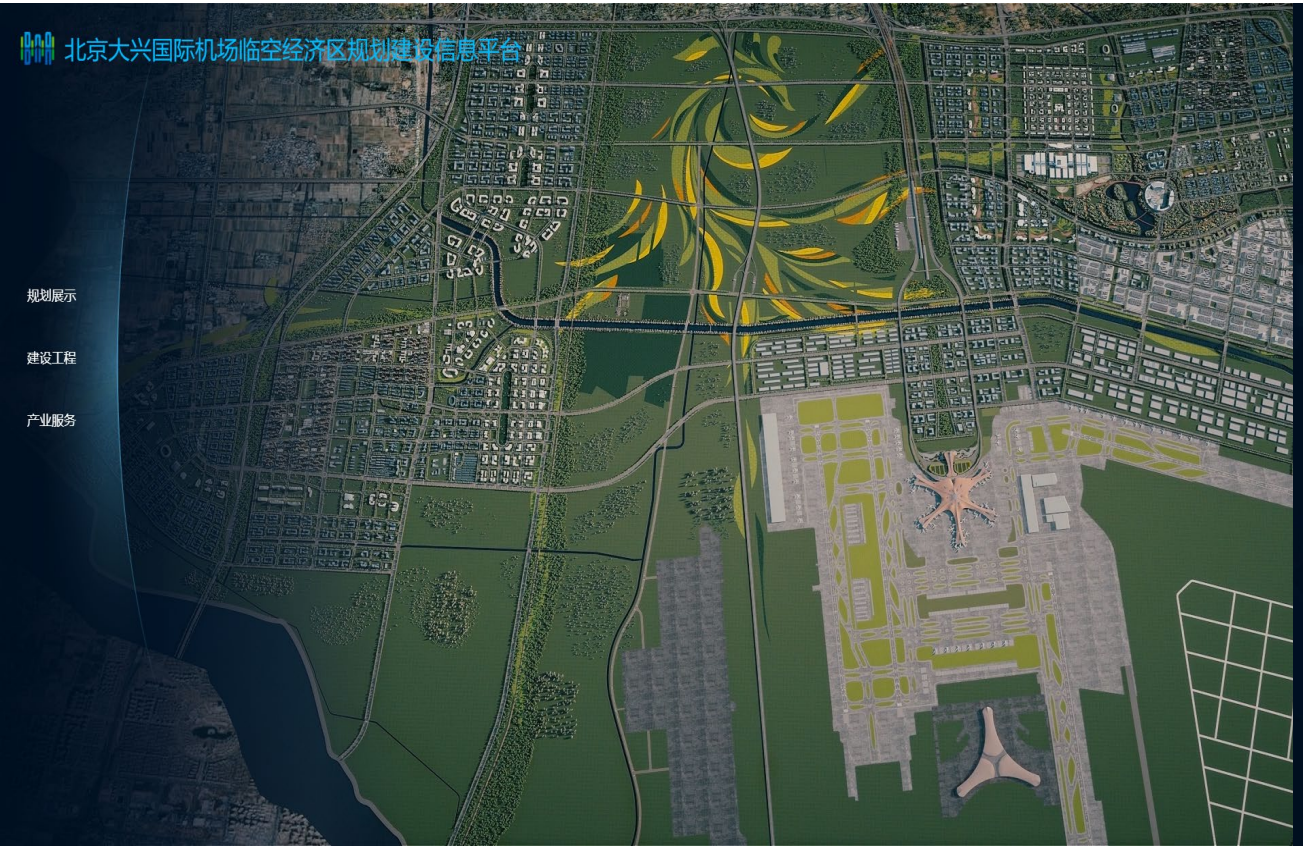


Data analysis

Accumulate and form the digital assets of airport economic zone, and drive the innovation and development of airport zone with data

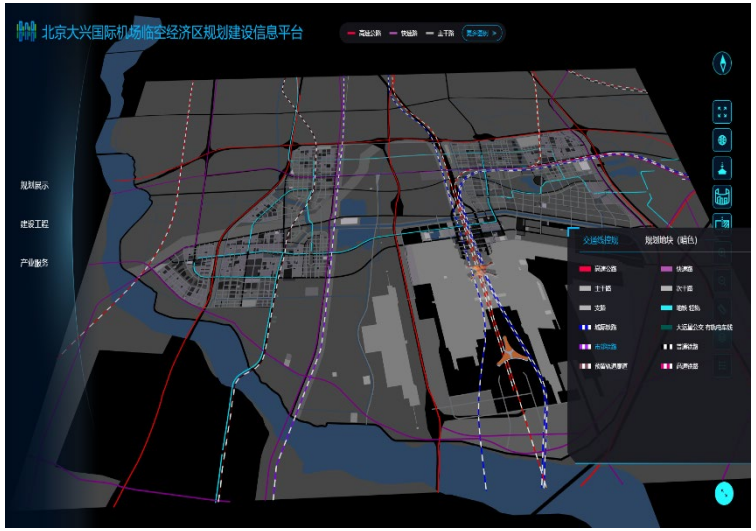
北京新航城
BEIJING NEW AEROTROPOLIS

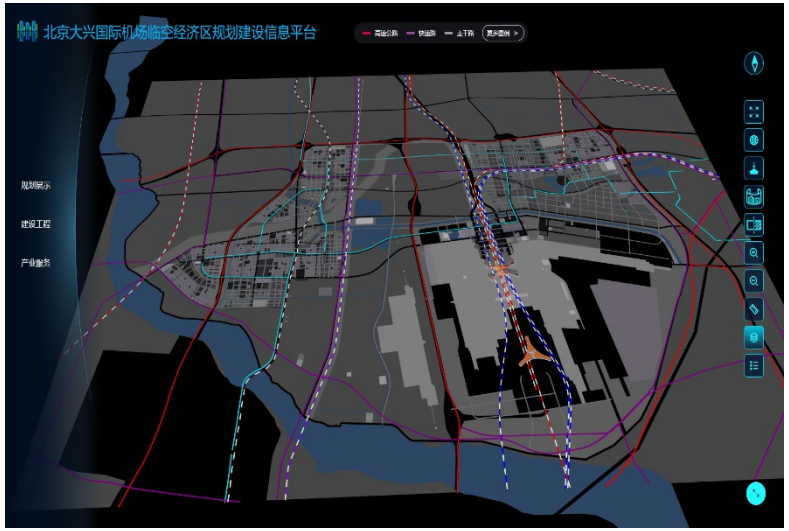
Based on BIM+GIS technology, the 50 square kilometers of Daxing International Airport Economic Zone was modeled with high-precision

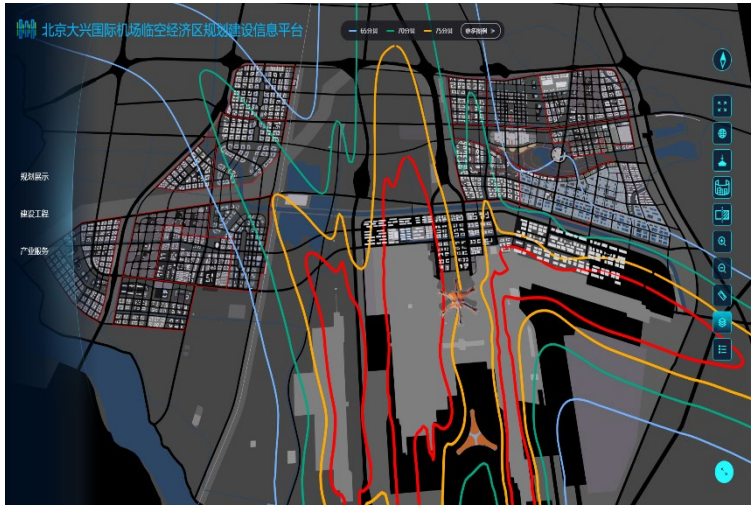


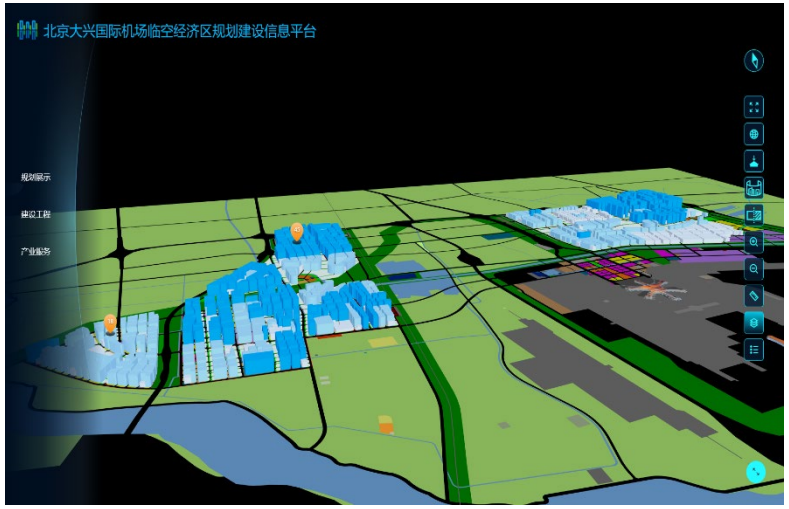
北京新航城
BEIJING NEW AEROTROPOLIS

Application based on multi-layer overlay in planning and design optimization









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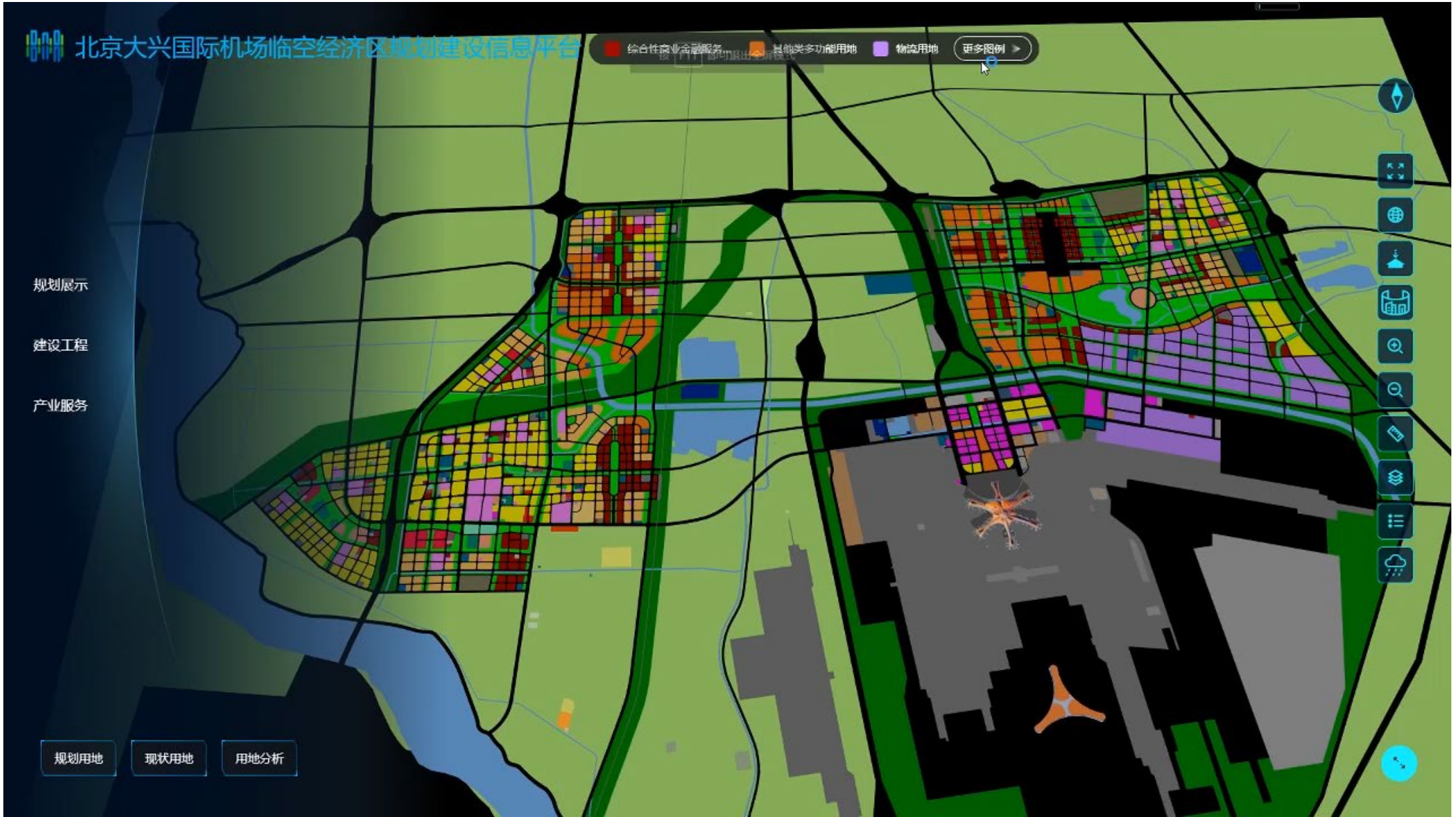
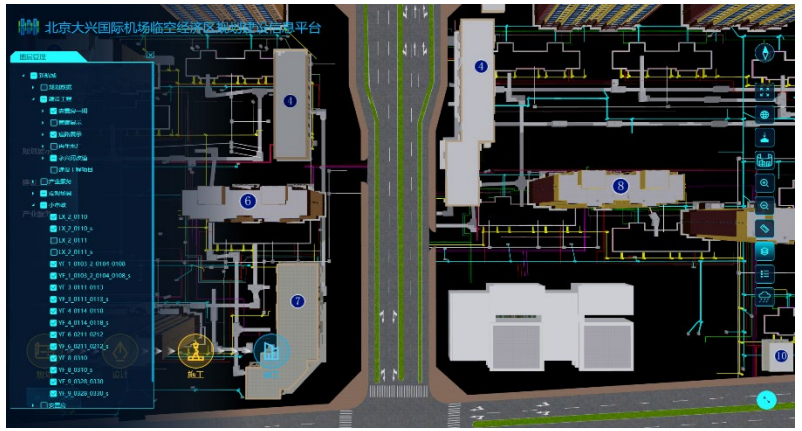
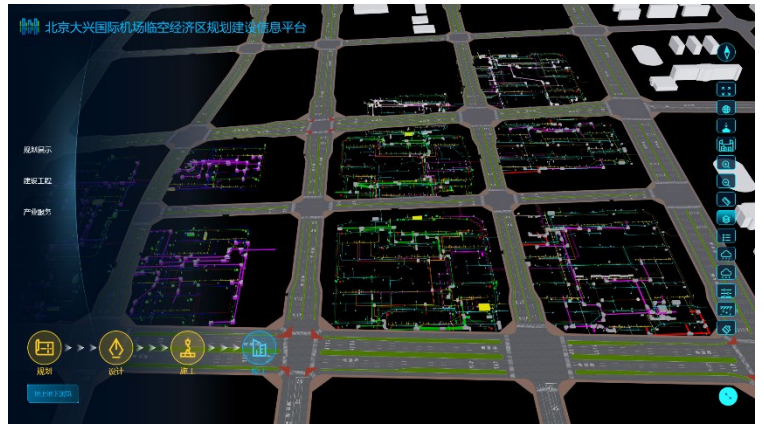
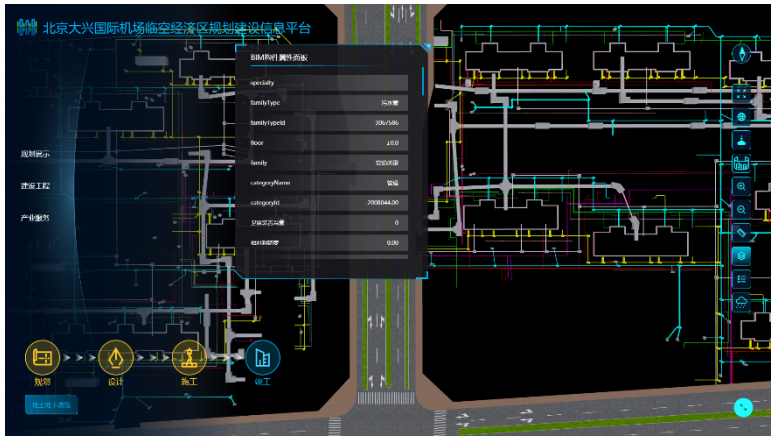


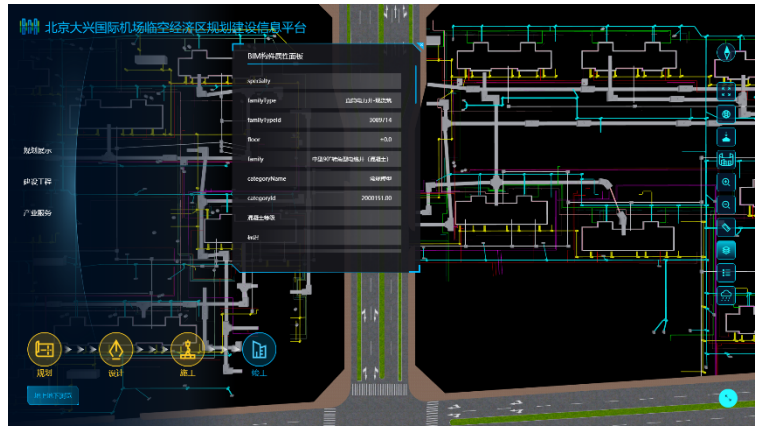
北京新航城
BEIJING NEW AEROTROPOLIS

The whole area underground municipal pipeline management function based on BIM+GIS technology (1)



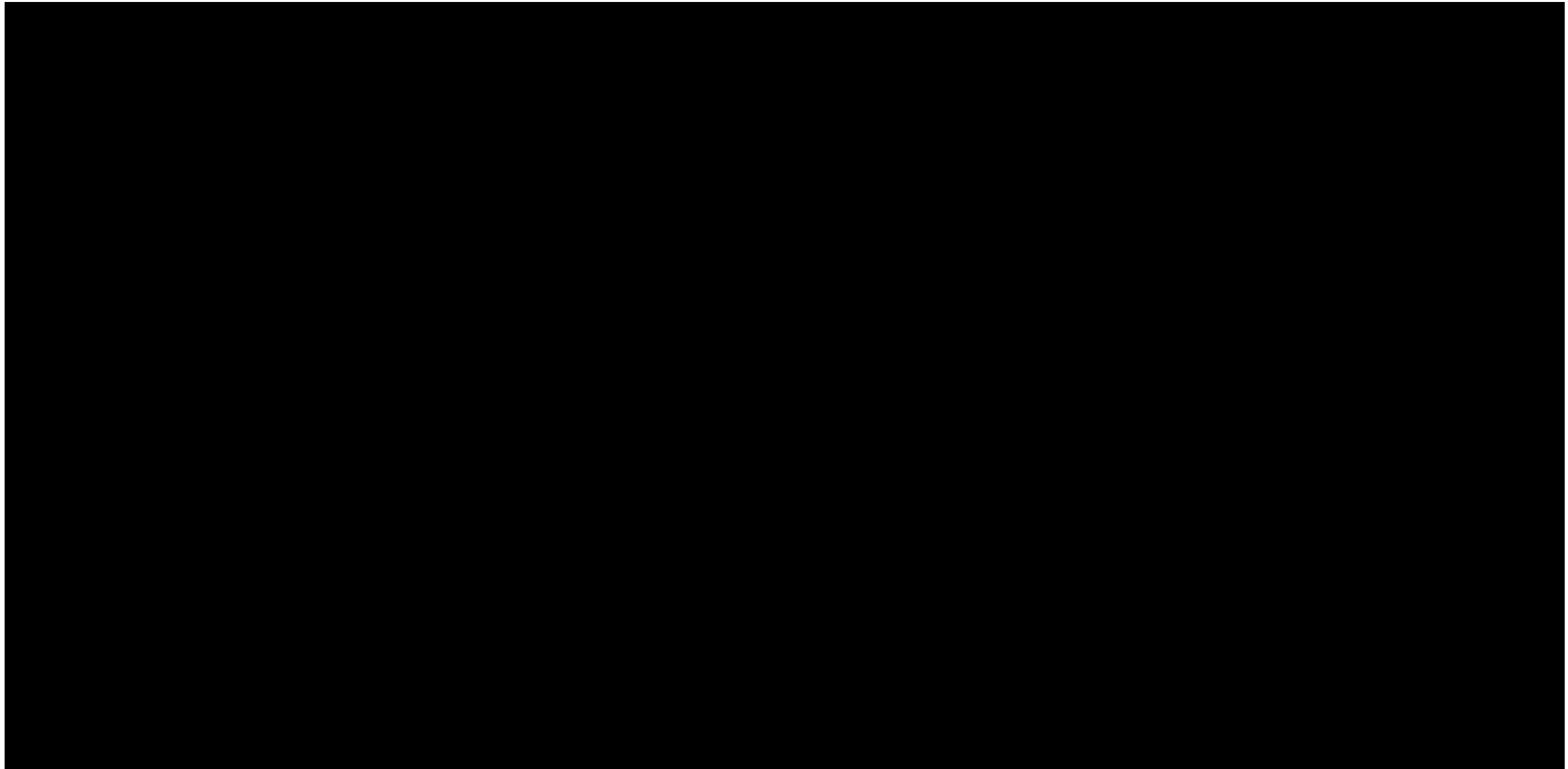






北京新航城
BEIJING NEW AEROTROPOLIS

The whole area underground municipal pipeline management function based on BIM+GIS technology (2)



北京新航城
BEIJING NEW AEROTROPOLIS

Planning, construction verification and monitoring based on two-dimensional and three-dimensional linkage

Comprehensive intervention in ecological monitoring system based on digital twin-city model

pollution source monitoring

Air quality monitoring

Noise Monitoring

Water quality monitoring

Site environmental monitoring

Intelligent ecosystem

Intelligent operation center

THANK YOU FOR LISTENING

PANEL 3

How big data and new technologies will help in transforming airport areas into smart, resilient and attractive communities

MODERATOR

Max Hirsh
Hong-Kong & Airport Urbanism

SPEAKERS

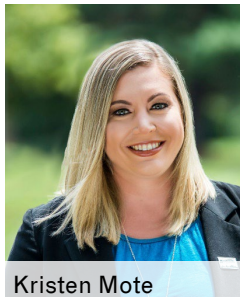
Pieter Van der Horst
Airport City Academy

Arja Lukin
City of Vantaa

Sergyi Ivannikov
Teichmann & Compagnons

Chis LeTourneur
MXD Development Strategists

Ying Ma
BNA Institute of Smart & Ecological Tech. Company LTD



Kristen Mote
Aerotropolis Atlanta Transit Plan & Greenway Plan

Olivier Guichard
ADP Ingenierie

AEROTROPOLIS ATLANTA

Atlanta, GA

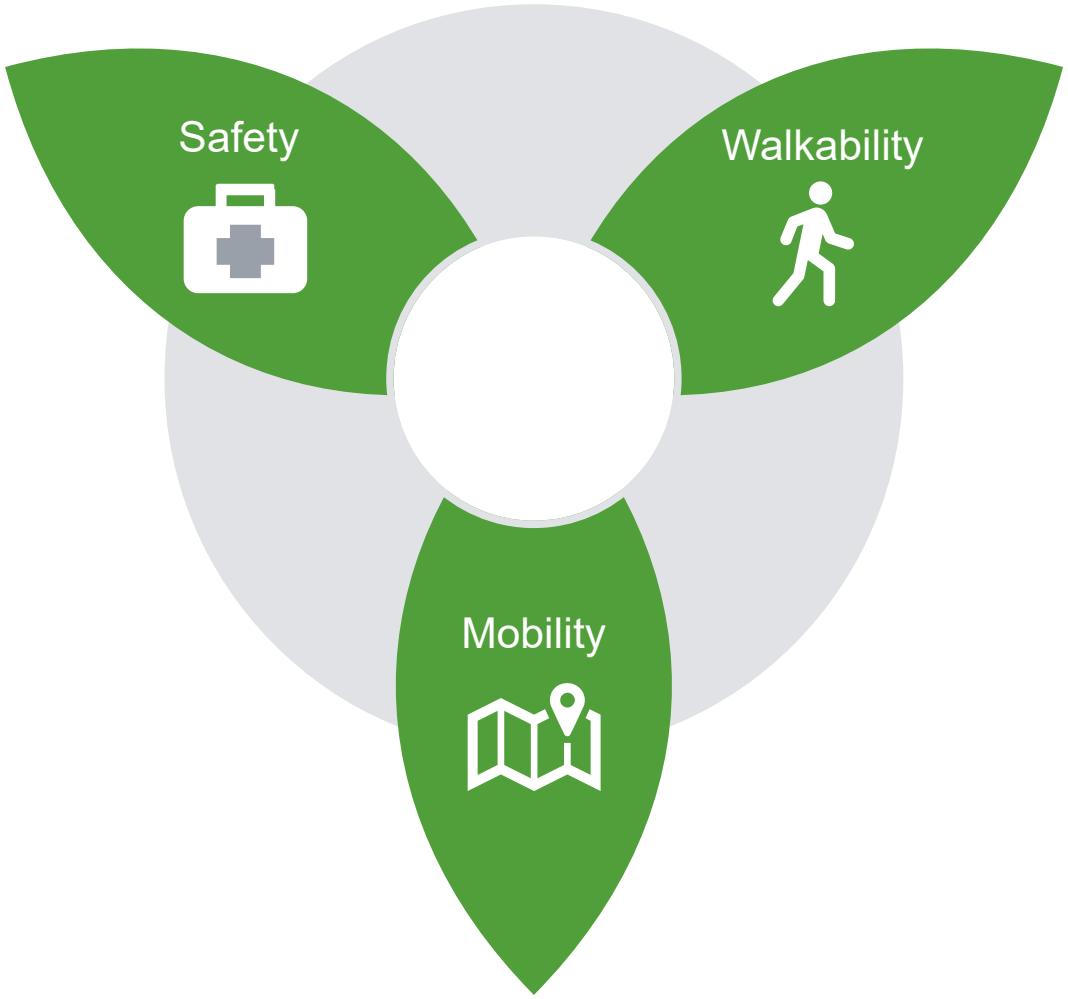
Focusing on 21st Century

Infrastructure

- Auto
- Transit
- Bicycle/Pedestrian

CREATING A SMART, RESILIANT, ATTRACTIVE COMMUNITY

What should we improve with technology?



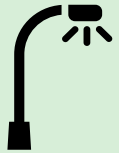
KEY SOLUTIONS

Aerotropolis Atlanta

Signals

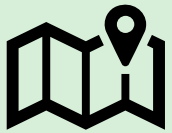
Bikes/
Pedestrians

Transit



Street
Lights

Pavement/
Sidewalks



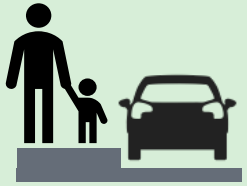
Wayfinding

Parking

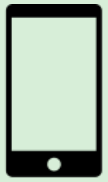
EV Charging

Video
Surveillance

Wi-Fi



Curbside



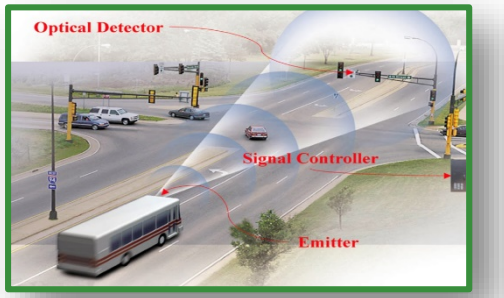
Apps

Data
Exchange

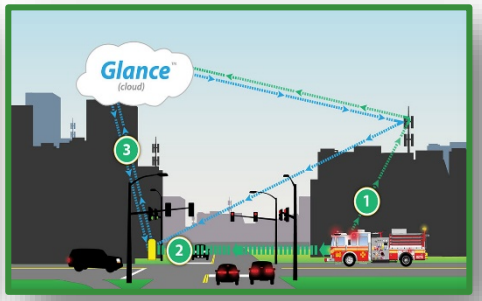
CASE STUDY

Virginia Avenue Smart Corridor

RECOMMENDED TECHNOLOGIES



Transit Signal Priority



Emergency Vehicle Signal Pre-emption

Bike Signal Detection

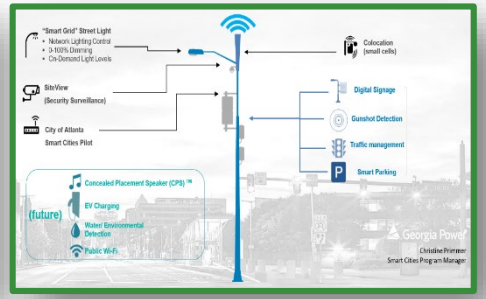
Connected Vehicle Adaptive Signal Control

In-Pavement Illuminated Crosswalks

Solar Bus Shelters

Rapid Flashing Beacons for Mid-block Crossings

Transit-Pedestrian Warning System



Smart Streetlighting

Digital Wayfinding Kiosk(s)

SAAIS 2019

THANK YOU

THE ROLE OF BIG DATA

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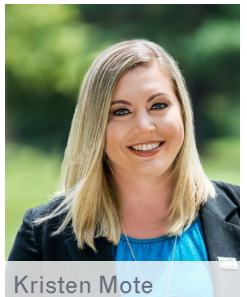

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ADP Ingenierie

GROUPE ADP

INNOVATIONHUB

9th Annual SAAIS

A PHYSICAL PLACE OF INNOVATION …

400 m²

50 pitch sessions

12 000 visitors

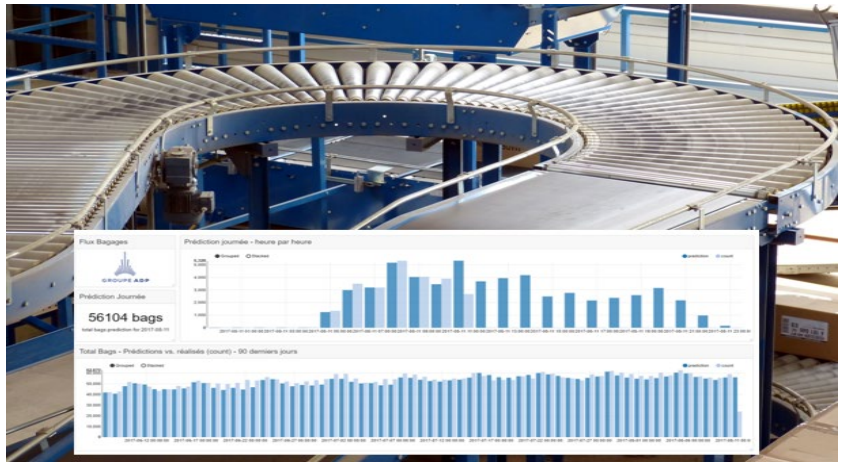
20 technologies

GROUPE ADP

ACHIEVING **OPERATIONAL EXCELLENCE**

Fieldbox

AI for baggage handling system



Innov'ATM

Airport protected against drones

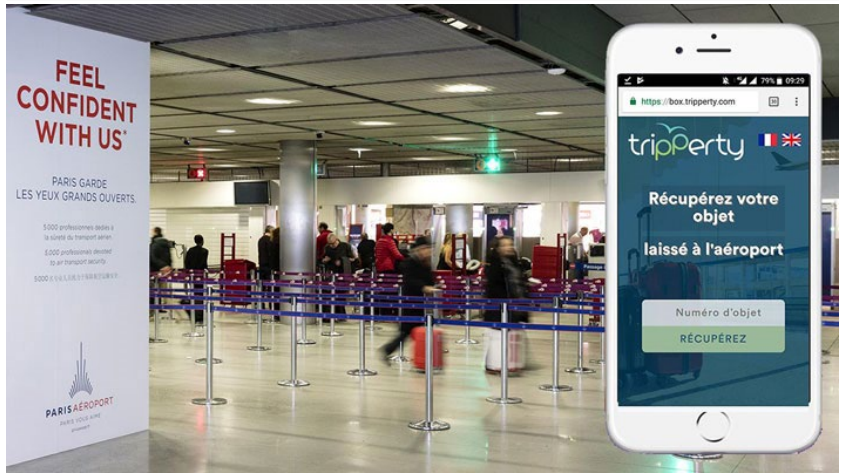
Safety Line

Less CO2 with optimized track

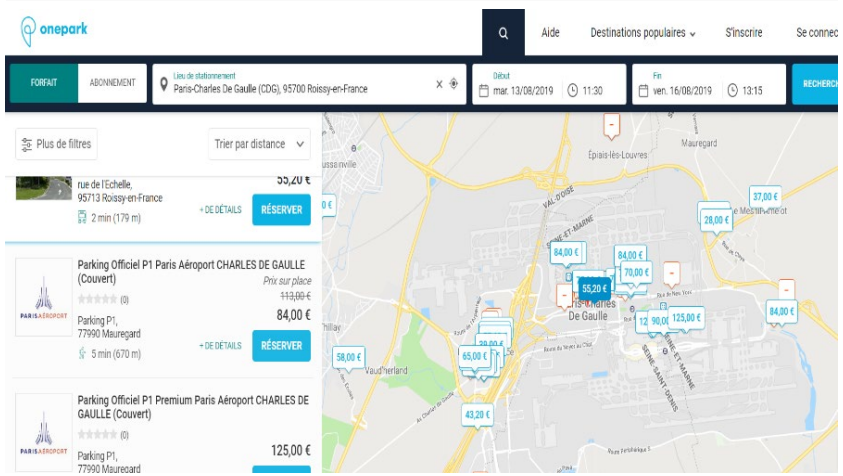
GROUPE ADP

IMPROVING **PASSENGER EXPERIENCE**

Tripperty
Less stress to control



OnePark
Larger choice of car park



Mindsay
Chat with the airport

GROUPE ADP

IMPROVING **ACCES** AND **MOBILITY** ON OUR PLATFORMS

Develop **autonomous** mobility

VTOL: A new expression of airport activity

A HYBRID INVESTMENT APPROACH

INTERNAL FUND

8 **strategic** investments

INNOVATIONHUB

+

EXTERNALS FUNDS

Qualified expertise and **sourcing**

A **geographical** complementarity

A capacity of co-investment

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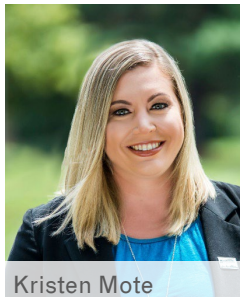

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SAAIS 2019

NETWORKING COFFEE BREAK

Meet the Start-ups

15 min

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Aerotropolis ATLANTA Community Improvement Districts

GIP EMPLOI Roissy CDG

ARC ATLANTA REGIONAL COMMISSION

PORSCHE

CHOOSE PARIS REGION

INVEST ATLANTA Atlanta's Development Authority

GROUPE ADP

Hartsfield-Jackson Atlanta International Airport

DAFC DEVELOPMENT AUTHORITY of FULTON COUNTY

HubstartParisRegion GATEWAY TO A SUSTAINABLE AIRPORT AREA

AEROTROPOLIS® ATLANTA LAND HERE. TAKE OFF.