PISTIS

Promoting and Incentivising Federated, Trusted, and Fair Sharing and Trading of Interoperable Data ASsets

PISTIS Living Lab: Exploring Data Connectivity for Data-Driven Companies

European DIGITAL SME Alliance – PISTIS Consortium

14th December 2023

Funded by the European Union under Grant Agreement 101093016. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting authority can be held responsible for them.

AGENDA

- Welcome and Introduction
- **Presentation of PISTIS Project: Mission & Challenges -** Sotiris Koussouris, *Managing Director*, Suite5
- **Exploring Urban Innovation: PISTIS Mobility and Urban Planning Hub** - Nikolaos Papagiannopoulos, *Senior Project Manager*, Athens International Airport
- **Powering the Future: PISTIS Energy Sector Demonstrator Hub -** Pablo Blázquez Martín, *Smart Grid Engineer*, Cuerva Energia
- **Innovation and Transportation: PISTIS Automotive Sector Demonstrator Hub** - Alexander Stocker, *Project Manager*, Virtual Vehicle
- **Closing Remarks**

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Welcome and Introduction

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PISTIS Overview

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PISTIS Living Lab Event

2023.12.14

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Data Technologies in Today's World

- Over the last decade Data has been in the focus of every organisation operation!

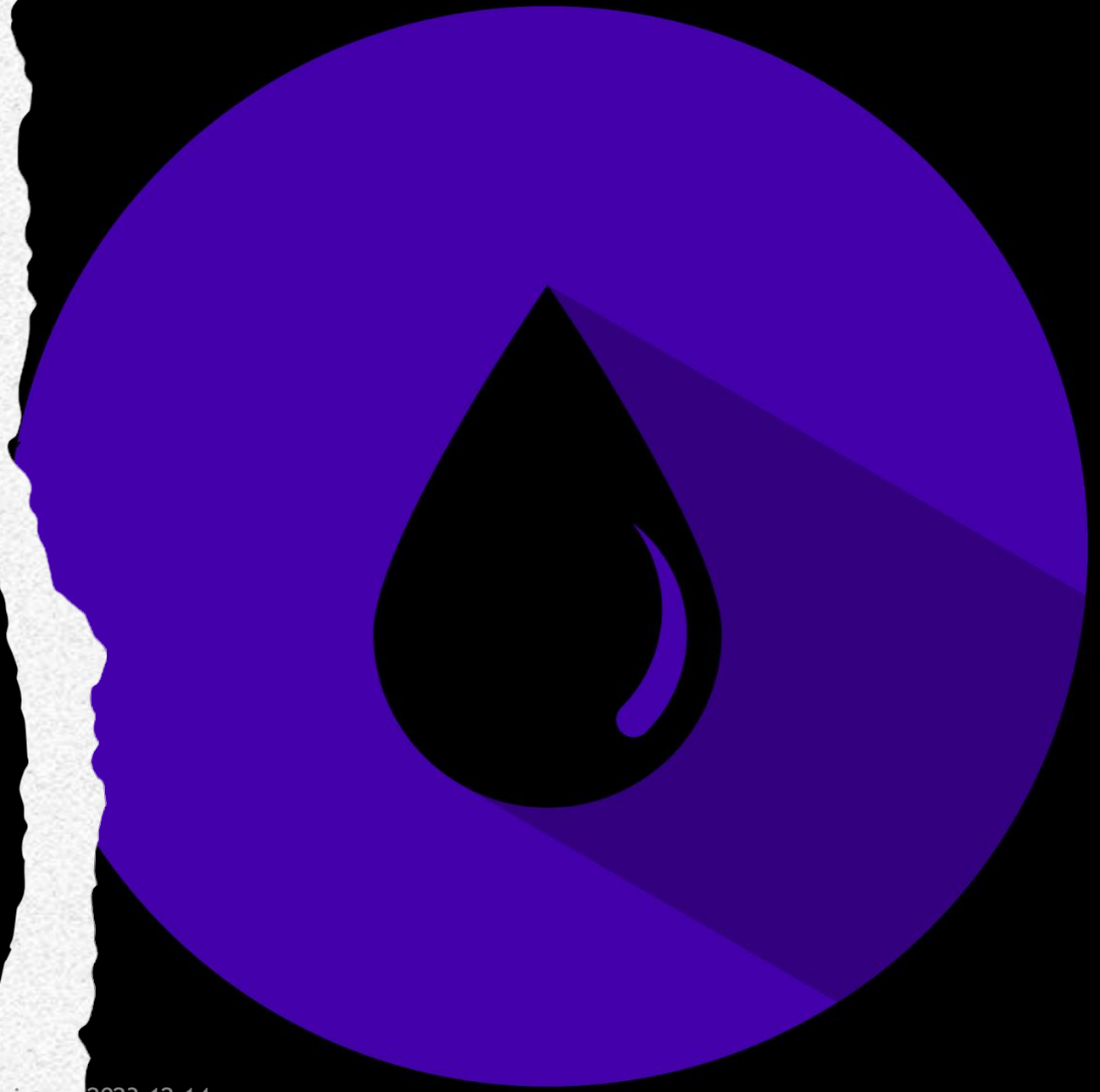
- The data journey has been, and is long….

- And it includes many different aspects that continuously drive innovation in SMEs and Industry:

  - Data LifeCycle and Data Management
  - Open / Linked / Proprietary
  - Big Data / Small Data
  - Manufacturing, Aviation, Energy, Logistics, IoT, Social, …
  - Statistics / Analytics / AI / XAI

We all agree that

Data is the new Oil

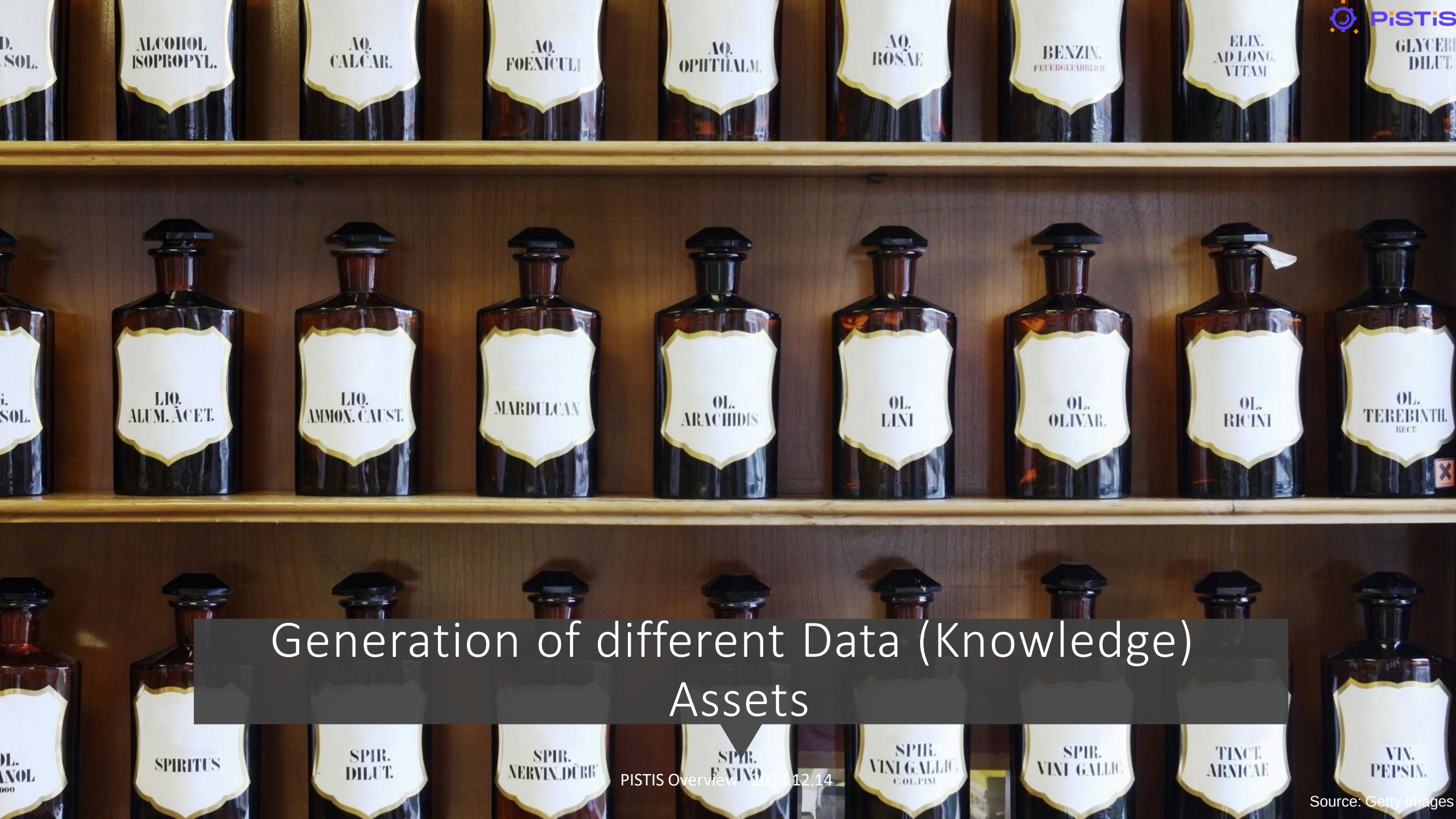


Data Extraction

Source: *namning / Adobe Stock*

Data Refinement

Source: Worley



Generation of different Data (Knowledge) Assets

Source: Getty Images

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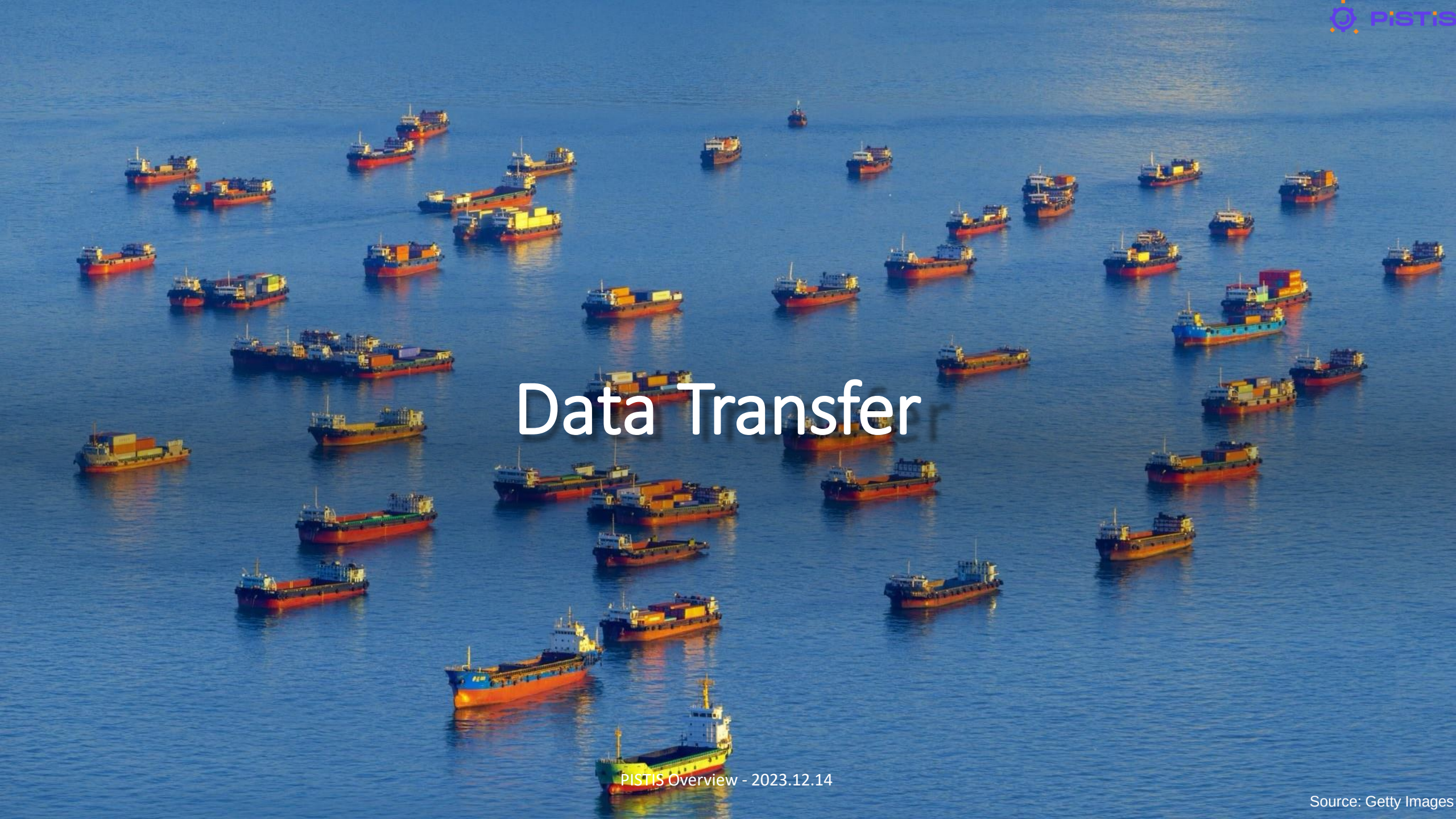
Data Trading



Data Transfer

Source: Getty Images

Data Spaces and the Business world

Today, **DATA SPACES** are the core focus of interest

*DSSC Definition: "A distributed system defined by a **governance framework** that enables secure and trustworthy **data transactions between participants** while supporting **trust and data sovereignty**. A data space is implemented by **one or more infrastructures** and enables **one or more use cases**."*

Data Spaces aspire to address a big part of the technical/integration problems, using various methods

Many BUSINESS relevant problems for Organisations' data still persist:

- How much is (my) **data worth** (including enriched data, aggregated data, derivative data, data insights)?
- How is this **value changing/affected**?
- **Who/how/for how long** can someone use the data?
- How can I safeguard my data and have them **discoverable**, but not leaving my territory?
- How can I protect (my) data against **out of contract usage**?
- How can I **capitalise** on the data/knowledge I produce/co-create?

PISTIS Aims

PISTIS vision is to:

- enable Organisations to generate more value from the data.
- provide the tools to allow organisations break their silos, in a trusted, mutual benefiting manner, opening up new business opportunities

PISTIS brings forward a reference federated data sharing/trading and monetisation platform for secure, trusted and controlled exchange and usage of proprietary data assets and data-driven intelligence (derivative data assets)

PISTIS in a Nutshell – 4 Axes of Innovation

Federated Data Management, Interoperability & Governance

- Data Collection, Curation, Improvement and Control
- Syntactic, Semantic, Metadata Interoperability
- Data Quality Assessment
- GDPR Compliance and Data Security
- Data source certification mechanisms

Data Valuation and Monetisation

- Articulate and recommend data value
- Identifying data generation cost, income and market dimensions
- Offer multi ways for monetising on data assets (one-off purchases, subscriptions, invest & gain equity, NFT)
- PISTIS conceptual coin

Secure Data Trading and Transfer

- Multi-party contracts
- Contract Compliance/Enforcement
- Secure peer-to-peer (encrypted/unencrypted) data transfer
- Data usage monitoring/tracking

Data Sharing Skills Cultivation

-Training material to educate stakeholders on data sharing

- Empower organisations to understand their needs and gaps
- Massive Online Open Courses (MOOC) to educate different stakeholders

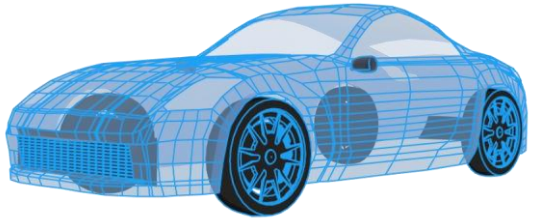
PISTIS Demonstrators

Building Data Economy Hubs

- **Demonstrator Hub #1: Mobility and Urban Planning Demonstrator Hub**
  - **Actors:** AIA, OAG, GOLDAIR, DAEM, OASA, UBIMET
  - **Location:** Greece

- **Demonstrator Hub #2: Energy Sector Demonstrator Hub**
  - **Actors:** CUERVA, BAMBOO, OMIE, CARTIF, UBIMET
  - **Location:** Spain

- **Demonstrator Hub #3: Automotive Sector Demonstrator Hub**
  - **Actors:** VIF, CARUSO, TRAF, UBIMET
  - **Location:** Austria & Germany



Basic Facts

www.pistis-project.eu

Start Date
01/01/2023

31 Partners

Innovation Action

42 Months

11 Countries

3+1 Demonstrators

Research Practitioners
IMPERIAL, POLIMI, FHG, ATHENA, UMALTA, EURECAT, ICCS

Technology Providers
ATOS IT, ATOS ES, IDC, SUITE5, UBITECH, SPH, FHG, ASSEN, EURECAT

End users
UBIMET, UBIMET DE, OAG, AIA, GOLDAIR, DAEM, OASA, CUERVA, BAMBOO, OMIE, CARTIF, VIF, CARUSO, TRAF

Innovation accelerators
ASSENT, IMPERIAL, UMALTA, DSME, ALEGAL, DBL,

Topic: HORIZON-CL4-2022-DATA-01

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Demonstrator Hub #1 Mobility and Urban Planning Ecosystem Experimentation

Nikos Papagiannopoulos

T5.3 Leader, Senior Research Project Manager

Athens International Airport

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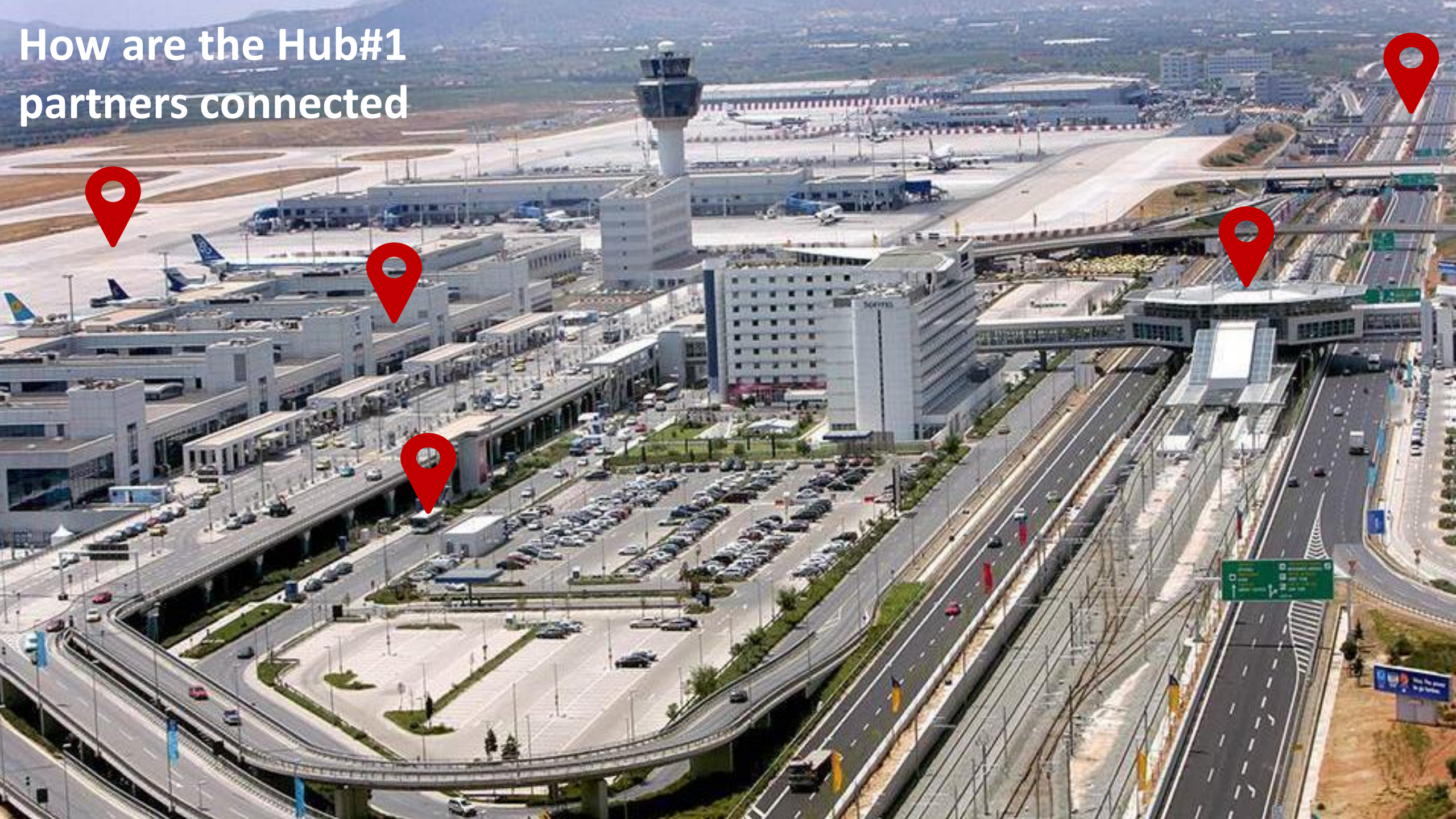
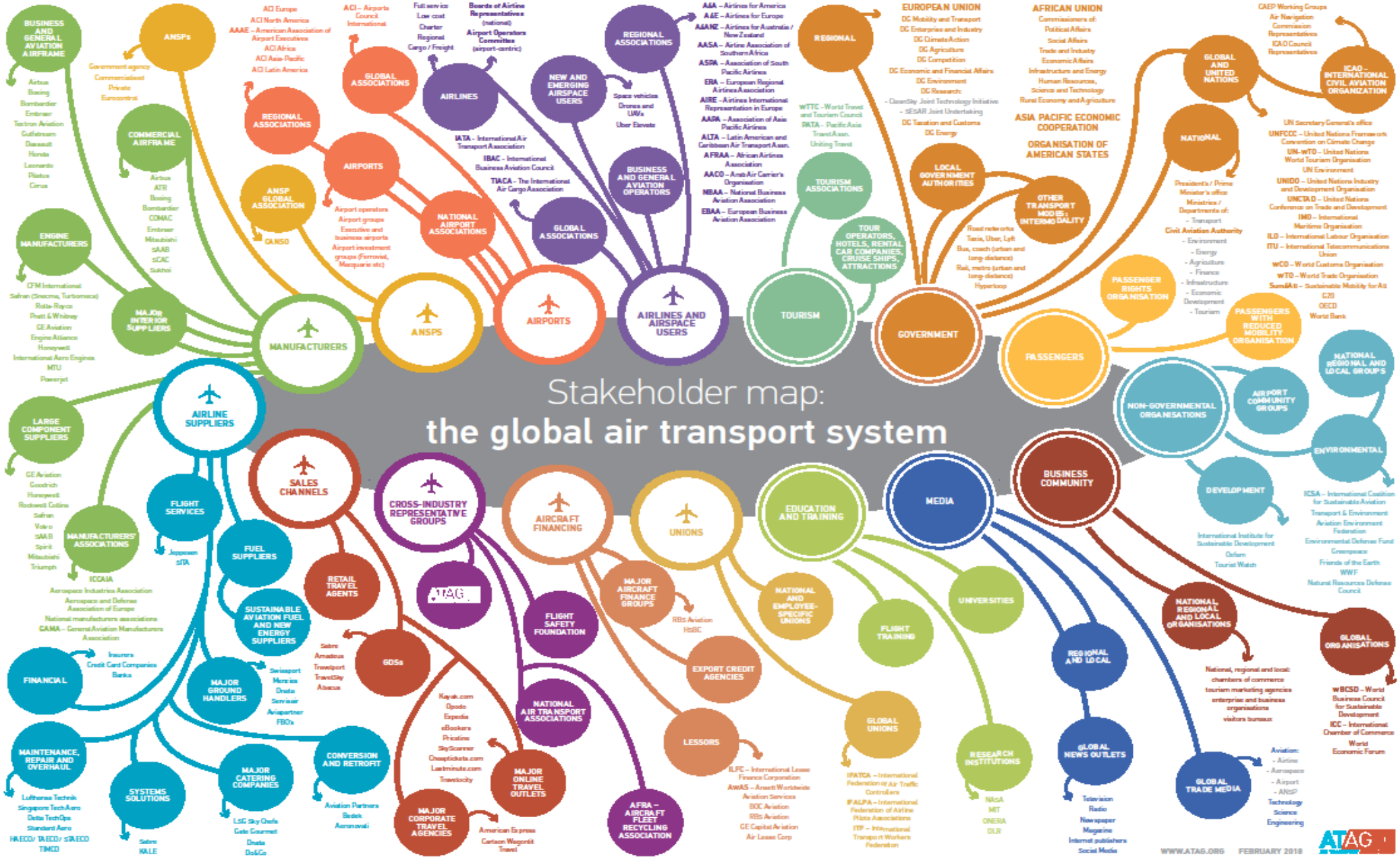
Participating organisations:

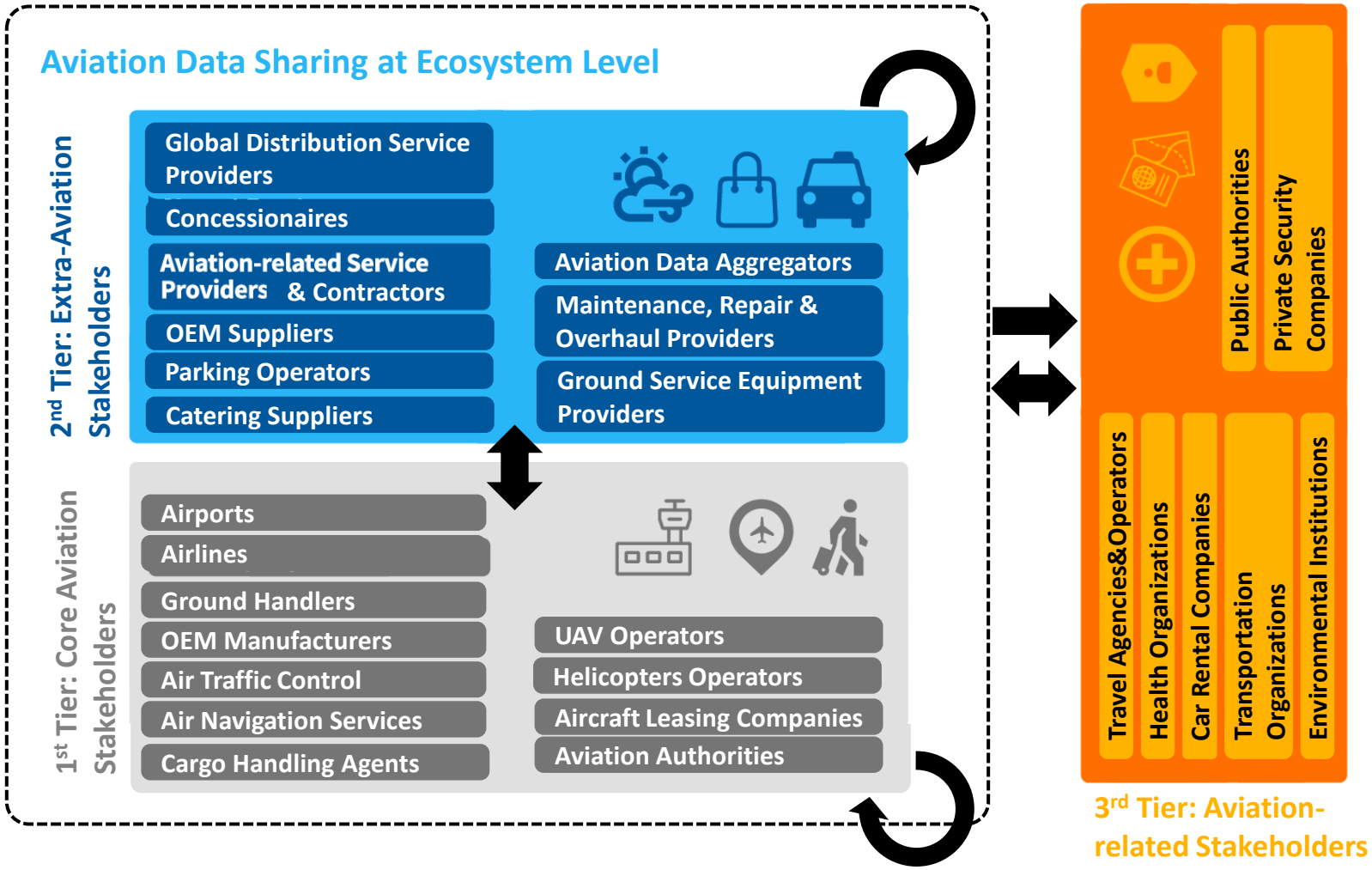
- AIA (Athens International Airport)
- GOLDAIR (Ground Handling Service Provider)
- OASA (Athens Public Transportation System, including bus and metro lines) and
- DAEM (City of Athens IT company), that act as data consumers and/or providers depending on the use case.
- Data coming from OAG (aviation data marketplace), as well as weather data from UBIMET, that act as data brokers, will be also leveraged.
- Tech Support & Development: ICCS, ATHENA, SPACE, UBITECH

How are the Hub#1 partners connected




Stakeholder map:
the global air transport system
MANUFACTURERS
ANSPS
AIRPORTS
AIRLINES AND AIRSPACE USERS
TOURISM
GOVERNMENT
PASSENGERS
BUSINESS AND GENERAL AVIATION AIRFRAME
ANSPs
Government agency
Commercialised
Private
Eurocontrol
ACI Europe
ACI North America
AAAE – American Association of Airport Executives
ACI Africa
ACI Asia-Pacific
ACI Latin America
ACI – Airports Council International
GLOBAL ASSOCIATIONS
REGIONAL ASSOCIATIONS
ANSP GLOBAL ASSOCIATION
CANSO
AIRPORTS
Airport operators
Airport groups
Executive and business airports
Airport investment groups (Ferrovial, Macquarie etc)
NATIONAL AIRPORT ASSOCIATIONS
Full service
Low cost
Charter
Regional
Cargo / Freight
AIRLINES
Boards of Airline Representatives (national)
Airport Operators Committee (airport-centric)
IATA – International Air Transport Association
IBAC – International Business Aviation Council
TIACA – The International Air Cargo Association
GLOBAL ASSOCIATIONS
NEW AND EMERGING AIRSPACE USERS
Space vehicles
Drones and UAVs
Uber Elevate
BUSINESS AND GENERAL AVIATION OPERATORS
REGIONAL ASSOCIATIONS
A4A – Airlines for America
A4E – Airlines for Europe
A4ANZ – Airlines for Australia / New Zealand
AASA – Airline Association of Southern Africa
ASPA – Association of South Pacific Airlines
ERA – European Regional Airlines Association
AIRE – Airlines International Representation in Europe
AAPA – Association of Asia Pacific Airlines
ALTA – Latin American and Caribbean Air Transport Assn.
AFRAA – African Airlines Association
AACO – Arab Air Carrier's Organisation
NBAA – National Business Aviation Association
EBAA – European Business Aviation Association
REGIONAL
EUROPEAN UNION
DG Mobility and Transport
DG Enterprise and Industry
DG Climate Action
DG Agriculture
DG Competition
DG Economic and Financial Affairs
DG Environment
DG Research:
- CleanSky Joint Technology Initiative
- SESAR Joint Undertaking
DG Taxation and Customs
DG Energy
AFRICAN UNION
Commissioners of:
Political Affairs
Social Affairs
Trade and Industry
Economic Affairs
Infrastructure and Energy
Human Resources, Science and Technology
Rural Economy and Agriculture
ASIA PACIFIC ECONOMIC COOPERATION
ORGANISATION OF AMERICAN STATES
LOCAL GOVERNMENT AUTHORITIES
OTHER TRANSPORT MODES: INTERMODALITY
Road networks
Taxis, Uber, Lyft
Bus, coach (urban and long-distance)
Rail, metro (urban and long-distance)
Hyperloop
TOURISM ASSOCIATIONS
WTTC - World Travel and Tourism Council
PATA - Pacific Asia Travel Assn.
Uniting Travel
TOUR OPERATORS, HOTELS, RENTAL CAR COMPANIES, CRUISE SHIPS, ATTRACTIONS
GLOBAL AND UNITED NATIONS
CAEP Working Groups
Air Navigation Commission Representatives
ICAO Council Representatives
ICAO – INTERNATIONAL CIVIL AVIATION ORGANIZATION
NATIONAL
President's / Prime Minister's office
Ministries / Departments of:
- Transport
Civil Aviation Authority
- Environment
- Energy
- Agriculture
- Finance
- Infrastructure
- Economic Development
- Tourism
UN Secretary General's office
UNFCCC – United Nations Framework Convention on Climate Change
UN-WTO – United Nations World Tourism Organisation
UN Environment
UNIDO – United Nations Industry and Development Organisation
UNCTAD – United Nations Conference on Trade and Development
IMO – International Maritime Organisation
ILO – International Labour Organisation
ITU – International Telecommunications Union
WCO – World Customs Organisation
WTO – World Trade Organisation
SumAsi – Sustainable Mobility for All
G20
OECD
World Bank
PASSENGER RIGHTS ORGANISATION
PASSENGERS WITH REDUCED MOBILITY ORGANISATION
NON-GOVERNMENTAL ORGANISATIONS
NATIONAL REGIONAL AND LOCAL GROUPS
AIRPORT COMMUNITY GROUPS
ENVIRONMENTAL
ICSA – International Coalition for Sustainable Aviation
Transport & Environment
Aviation Environment Federation
Environmental Defense Fund
Greenpeace
Friends of the Earth
WWF
Natural Resources Defense Council
DEVELOPMENT
International Institute for Sustainable Development
Oxfam
Tourist Watch
BUSINESS COMMUNITY
NATIONAL REGIONAL AND LOCAL ORGANISATIONS
National, regional and local: chambers of commerce tourism marketing agencies enterprise and business organisations visitors bureaux
GLOBAL ORGANISATIONS
WBCSD – World Business Council for Sustainable Development
ICC – International Chamber of Commerce
World Economic Forum
REGIONAL AND LOCAL
GLOBAL NEWS OUTLETS
Television
Radio
Newspaper
Magazine
Internet publishers
Social Media
GLOBAL TRADE MEDIA
Aviation:
- Airline
- Aerospace
- Airport
- ANSP
Technology
Science
Engineering
MEDIA
UNIVERSITIES
FLIGHT TRAINING
RESEARCH INSTITUTIONS
NASA
MIT
ONERA
DLR
EDUCATION AND TRAINING
NATIONAL AND EMPLOYEE-SPECIFIC UNIONS
GLOBAL UNIONS
IFATCA – International Federation of Air Traffic Controllers
IFALPA – International Federation of Airline Pilots Associations
ITF – International Transport Workers Federation
UNIONS
MAJOR AIRCRAFT FINANCE GROUPS
RBS Aviation
HSBC
EXPORT CREDIT AGENCIES
LESSORS
ILFC – International Lease Finance Corporation
AWAS – Aravett Worldwide Aviation Services
BOC Aviation
RBS Aviation
GE Capital Aviation
Air Lease Corp
AIRCRAFT FINANCING
CROSS-INDUSTRY REPRESENTATIVE GROUPS
ATAG
FLIGHT SAFETY FOUNDATION
NATIONAL AIR TRANSPORT ASSOCIATIONS
MAJOR ONLINE TRAVEL OUTLETS
Kayak.com
Opodo
Expedia
eBookers
Priceline
SkyScanner
Cheaptickets.com
Lastminute.com
Travelocity
MAJOR CORPORATE TRAVEL AGENCIES
American Express
Carlson Wagonlit Travel
AFRA – AIRCRAFT FLEET RECYCLING ASSOCIATION
SALES CHANNELS
RETAIL TRAVEL AGENTS
GDSs
Sabre
Amadeus
Travelport
TravelSky
Abacus
SUSTAINABLE AVIATION FUEL AND NEW ENERGY SUPPLIERS
Swissport
Menzies
Dnata
Servisair
Aviapartner
FBOs
MAJOR GROUND HANDLERS
CONVERSION AND RETROFIT
Aviation Partners
Bedek
Aeronovo
MAJOR CATERING COMPANIES
LSG Sky Chefs
Gate Gourmet
Dnata
Do&Co
SYSTEMS SOLUTIONS
Sabre
KALE
MAINTENANCE, REPAIR AND OVERHAUL
Lufthansa Technik
Singapore TechAero
Delta TechOps
Standard Aero
HAECO/ TAECO/ STAECO
TIMCO
FINANCIAL
Insurers
Credit Card Companies
Banks
FLIGHT SERVICES
Jeppesen
SITA
FUEL SUPPLIERS
MANUFACTURERS' ASSOCIATIONS
ICCAIA
Aerospace Industries Association
Aerospace and Defense Association of Europe
National manufacturers associations
GAMA – General Aviation Manufacturers Association
LARGE COMPONENT SUPPLIERS
GE Aviation
Goodrich
Honeywell
Rockwell Collins
Safran
Volvo
SAAB
Spirit
Mitsubishi
Triumph
AIRLINE SUPPLIERS
MAJOR INTERIOR SUPPLIERS
ENGINE MANUFACTURERS
CFM International
Safran (Snecma, Turbomeca)
Rolls-Royce
Pratt & Whitney
GE Aviation
Engine Alliance
Honeywell
International Aero Engines
MTU
Powerjet
COMMERCIAL AIRFRAME
Airbus
ATR
Boeing
Bombardier
COMAC
Embraer
Mitsubishi
SAAB
SCAC
Sukhoi
Airbus
Boeing
Bombardier
Embraer
Textron Aviation
Gulfstream
Dassault
Honda
Leonardo
Pilatus
Cirrus
WWW.ATAG.ORG FEBRUARY 2018
NOTE: THIS IS NOT AN EXHAUSTIVE LIST, PRODUCED FOR ILLUSTRATIVE PURPOSES ONLY
ATAG

Aviation Data Value Chain – Stakeholders



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UC.1 Baggage Handling Management

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Ground Operations Optimization Manager / MEng MSc

Goldair Handling

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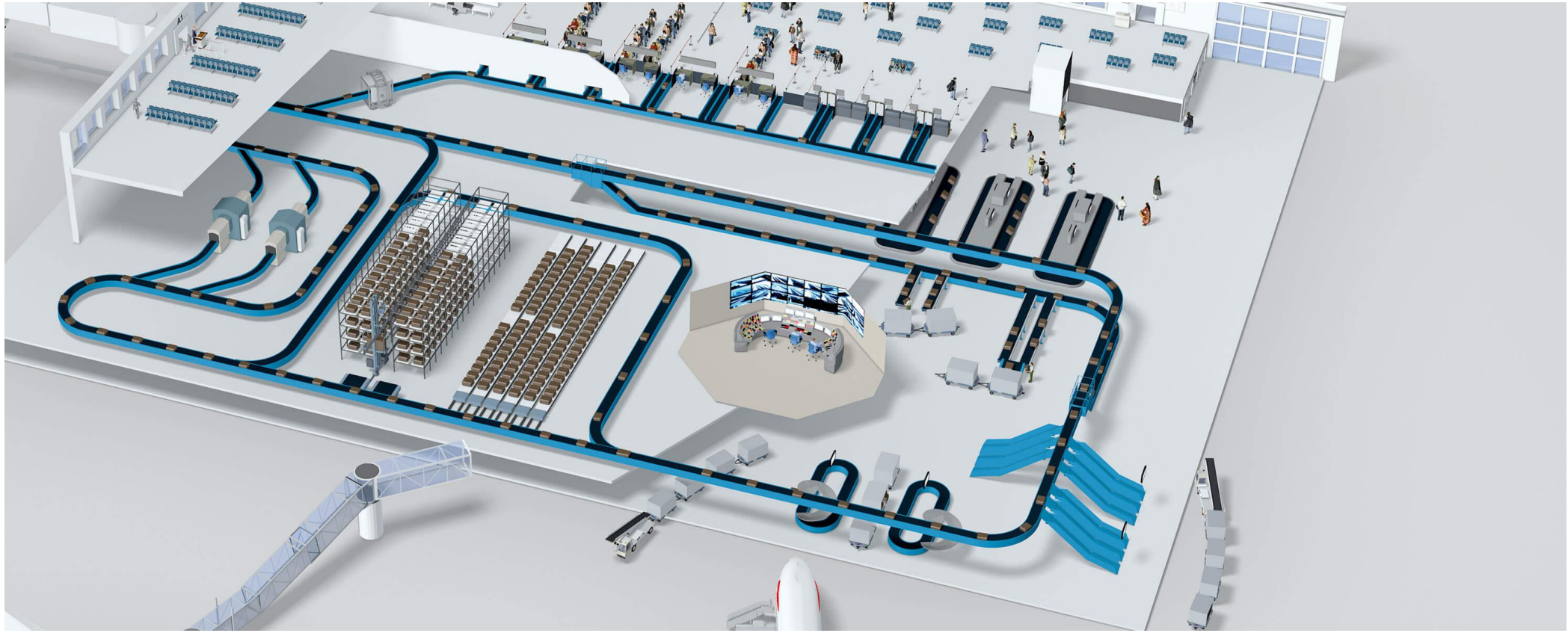
UC.1 Baggage Handling Management



UC.1 Baggage Handling Management

Short Use Case presentation

- Sharing of information regarding Arriving, Transfer and Departing bags. Main datasets should include **dynamic bag counts**, bag **timestamps**, **aircraft locations**, **flight timings** and **baggage handling resource allocation**. These will allow **optimal allocation** of aircraft stands, optimal allocation of staff, retroactive (historic) analysis of problematic AtoB bag transfers. It will also allow to **reduce misconnecting bags,** therefore providing a better passenger experience. Finally, it will allow airport operators to work hand-in-hand with ground handlers to make **informed decisions**.

UC.1 Baggage Handling Management
Which data is needed for the Use Case?

- Arriving/Transfer/Departing bag numbers and destinations
- Arriving/Transfer/Departing timestamps
  - Check-in
  - BHS
  - Ramp
  - Lost and Found
- T2T Bags
  - Volumes
  - Destinations
- Baggage Irregularities e.g. fragile, unclaimed, owner unknown, rush, etc.
- Minimum Connecting Times for Transfer Bags
- Flight Schedule and day off operation updates (Delays, Scheduled/Estimated/Actual Flight Timings)
- Force majeure and operational irregularities
- Weather data (adverse weather conditions)
- Public Transport Availability data (staff arrival issues)

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UC.2 Transfer Passenger Management

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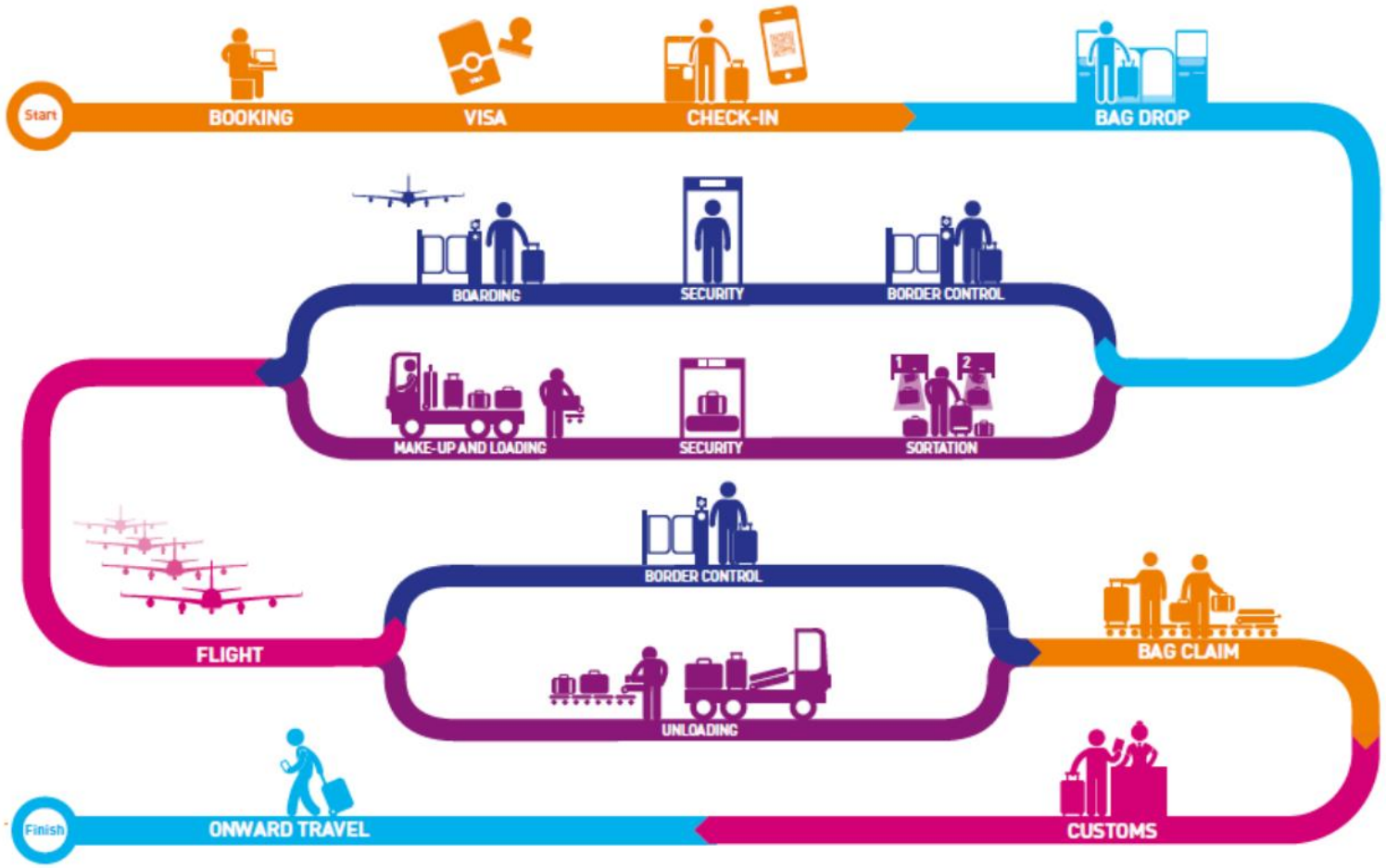
UC.2 Transfer Passenger Management Short Use Case presentation

- Sharing of information regarding scheduled passengers from OAG and actual transfer passengers from airlines and ground handlers with the airport could help for the **optimal allocation of aircraft stands** to specific flights in order to **minimize passengers' connection times** between arriving and departing aircrafts and **assist airlines to make informed decisions**.

Airport Passenger Flow



UC. 2 Transfer Passenger Management
Which data is needed for the Use Case?

- Transfer passenger numbers and destinations
- PTM Messages
- Transfer Baggage information
- Type of connections
  - Passenger transfer tail2tail
  - Passenger transfer from/to remote parking stand
  - Passenger transfer from remote parking stands to bus gates
  - Passenger transfer from PBB and vice versa
- Baggage Irregularities e.g. fragile, unclaimed, owner unknown, rush, etc.
- PRM Passengers
- Immigration – Customs Clearance
- Minimum Connecting Times
- Flight Schedule and day off operation updates
- Force majeure and operational irregularities
- Weather data

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Promoting and Incentivising Federated, Trusted, and Fair Sharing and Trading of Interoperable Data ASsets

UC.3 Aircraft Turnaround process

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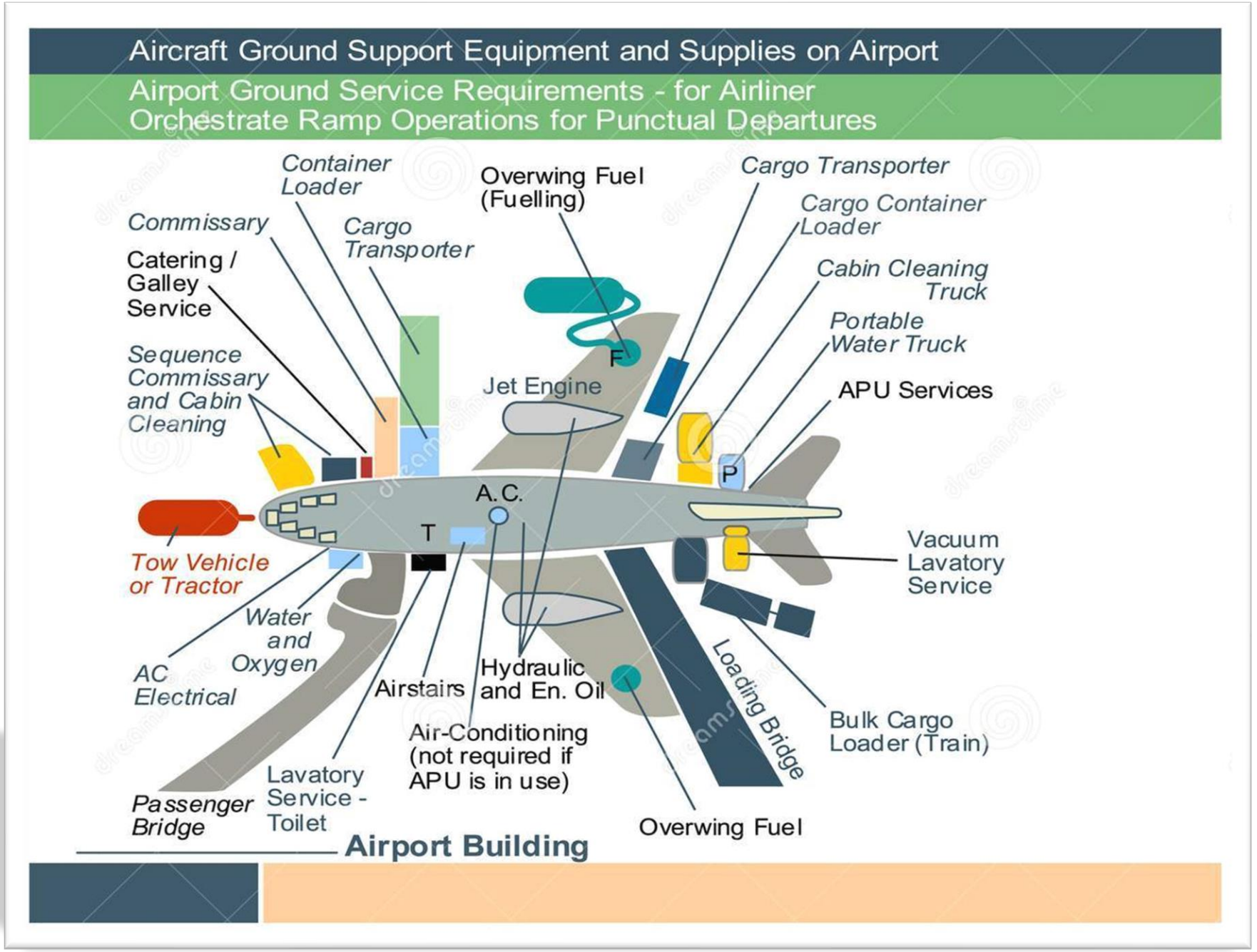
UC.3 Aircraft Turnaround process

- Short Use Case presentation
  - Orchestrate all turnaround stakeholders and optimize relevant processes to achieve an efficient turnaround process.
  - TOBT (Target Off Block Time) information and turnaround times of the aircraft's servicing underlying process such as catering, fueling, cleaning etc.
  - It is very important for the airport to know as soon as possible any issues regarding the turnaround of the aircraft and exchange real-time information with the handlers and airlines regarding issues or incidents in a secure manner.

UC.3 Aircraft Turnaround process



UC.3 Aircraft Turnaround process
Which data is needed for the Use Case?

- Aircraft registration,
- Aircraft type,
- Flight Type
- Aircraft parking stand,
- Boarding gate,
- Landing time,
- Taxi-in time,
- In-block time,
- Off-block time,
- Taxi-out time,
- Take off time
- Turn-round times,
- Deicing information
- Aircraft movement data,
- aircraft registration and type changes,
- TOBT updates,
- Movement TypeB messages,
- Operation planning information,
- Status messages,
- Passenger numbers - provisional loads
- Flight Schedule and day off operation updates
- Force majeure and operational irregularities
- Weather data (**forecast and actual meteorological information in order to predict adverse weather conditions**)

UC.3 Aircraft Turnaround process

- Which data is needed for the Use Case?
  - Transfer passenger numbers
  - Passenger numbers - provisional loads
  - Flight Schedule and day off operation updates
  - Force majeure and operational irregularities
  - Weather data
- Which needed data is available?
  - Passenger numbers - provisional loads
  - Flight Schedule and day off operation updates
  - Force majeure and operational irregularities
  - Weather data

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UC.4 Public Transportation Planning Support

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AIA/OASA

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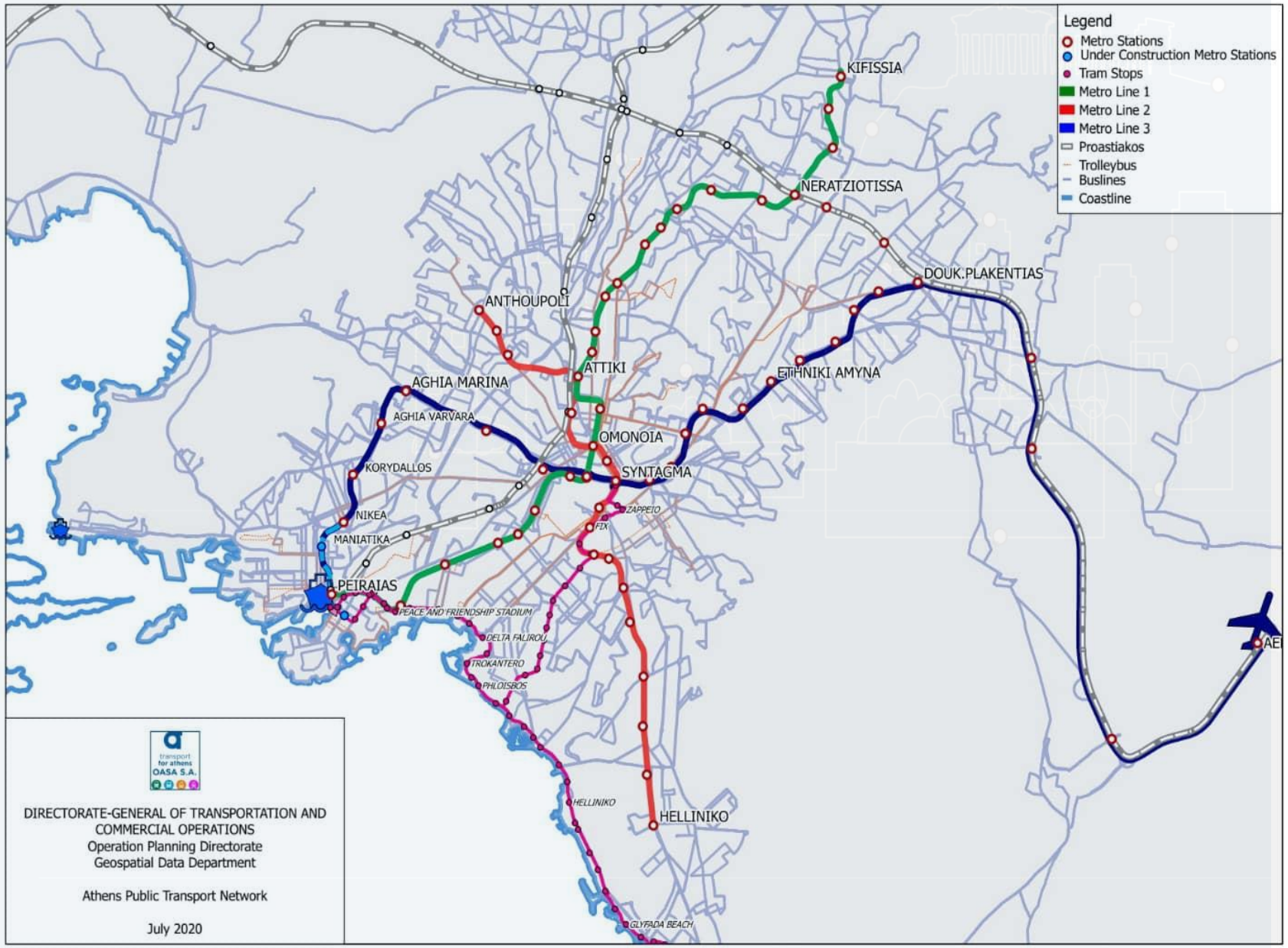
The Service Area currently served by OASA Group is the Prefecture of Attica



OASA is the largest public transport provider in Greece

OASA's Urban Network:

- Metro Line 1: 24 stations
- Metro Line 2: 20 stations
- Metro Line 3: 30 stations
- Tram Line: 43 stations
- Bus & Trolley Network: 258 Bus & 20 Trolley Lines

Key Figures (2021):

- 287,23 million Boardings
- 139,47 million vehicle kilometers
- 7.418 employees

transport for athens OASA S.A.

UC. 4 Public Transportation Planning Support – Overview

- Utilising data traded between various sources such as the airport (AIA) and the city (DAEM) to improve the overall transportation planning of OASA
- Allowing the development of services that are able to predict the accuracy of passenger volume within the day in order to improve route scheduling, deploy vehicles and maximise fleet utilisation, offering to commuters better services and lowering operational costs
- Combining data for incoming passenger traffic to the airport through information from public transport buses (i.e. X93, X95, X96 & X97 bus lines) and service-related data from the airport service handler (GOLDAIR) (e.g. expected queuing, check-in counters availability, security checkpoint staffing), as well as information such as airport routing, flight and weather information, etc.
- Trading back the outputs of the analysis to parties such as the airport and the city, for the latter to be able to improve their own offerings and services towards the commuters, or to third parties that they collaborate with (such as duty-free shops, local city businesses, etc.)
- Extracting valuable insights and "monetized" information by processing the available data. To this aim, OASA and overall demo hub #1 will be technically supported by ICCS.

UC. 4 Public Transportation Planning Support

- Which data is needed for the Use Case?
  - Transport Modal Split
  - No. of Busses dedicated to the Airport routes
  - Passenger numbers - provisional loads
  - Flight Schedule and day off operation updates
  - Force majeure and operational irregularities
  - Weather data
  - Regional Traffic data or Traffic Conditions (Upon availability e.g. Google, Police, Prefecture)

- Which needed data is available?
  - Modal Split
  - Passenger numbers - provisional loads
  - Flight Schedule and day off operation updates
  - Force majeure and operational irregularities
  - Weather data

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UC.5 Insights for city commercial businesses

Dimitra Tsakanika

Head of Projects' Management Sector

DAEM

11 May 2023, Limassol, Cyprus

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UC.5 Insights for city commercial businesses

Objectives

- Offer added value services across specific areas of interest in the city of Athens
- Analysis and prediction of the load expected within the city
- Inform local businesses on visitors' mobility within the commercial zones of Athens
- Improve local entrepreneurship and boost businesses turnover
- Improve the mobility experience of the citizens and visitors
- Optimization of mobility services in specific areas
- Data exchange with stakeholders and other open sources

PiSTiS

Promoting and Incentivising Federated, Trusted, and Fair Sharing and Trading of Interoperable Data ASsets

Energy Hub

Pablo Blázquez Martín

Smart Grid Engineer

Cuerva

14 Dec. 2023

Funded by the European Union under Grant Agreement 101093016. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting authority can be held responsible for them.

Energy HuB ecosystem

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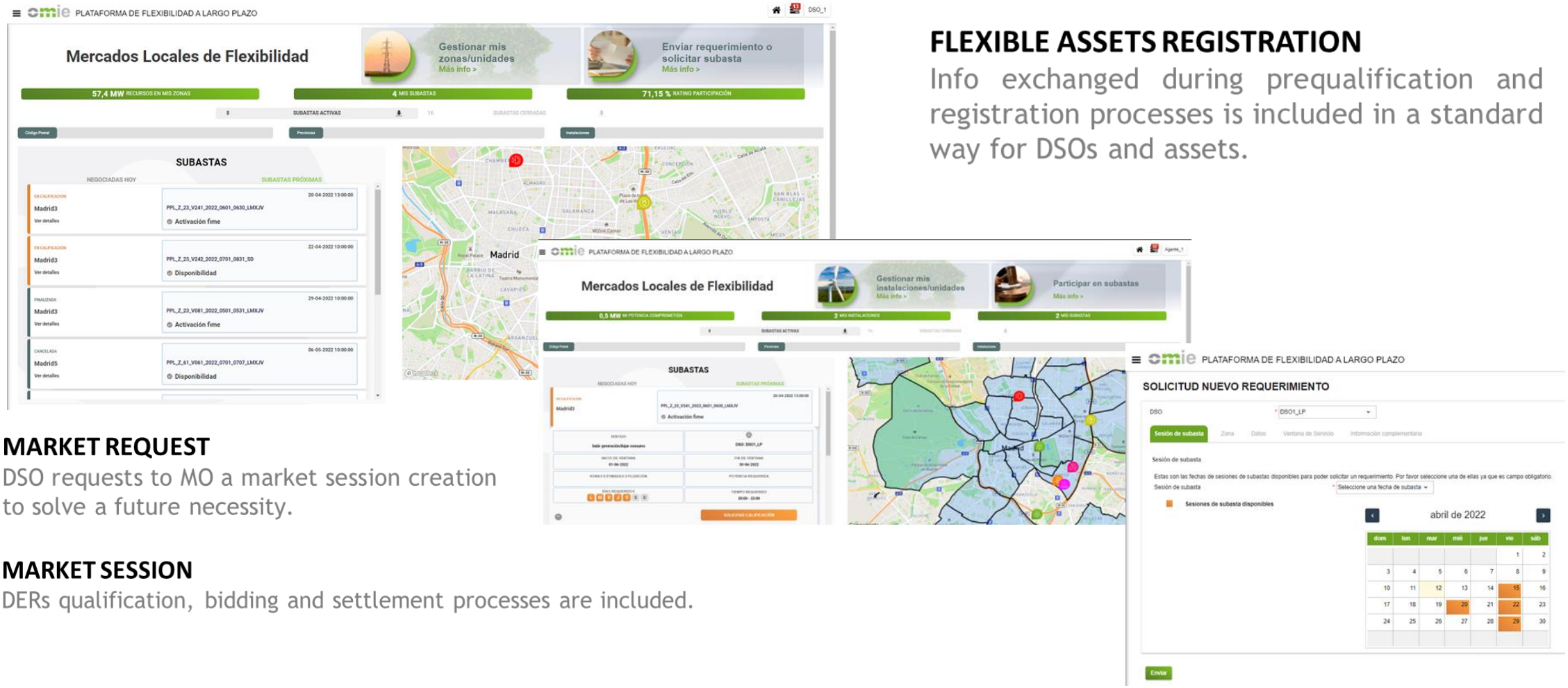
OMIE's Local Market Platforms: Short and long term



FLEXIBLE ASSETS REGISTRATION

Info exchanged during prequalification and registration processes is included in a standard way for DSOs and assets.

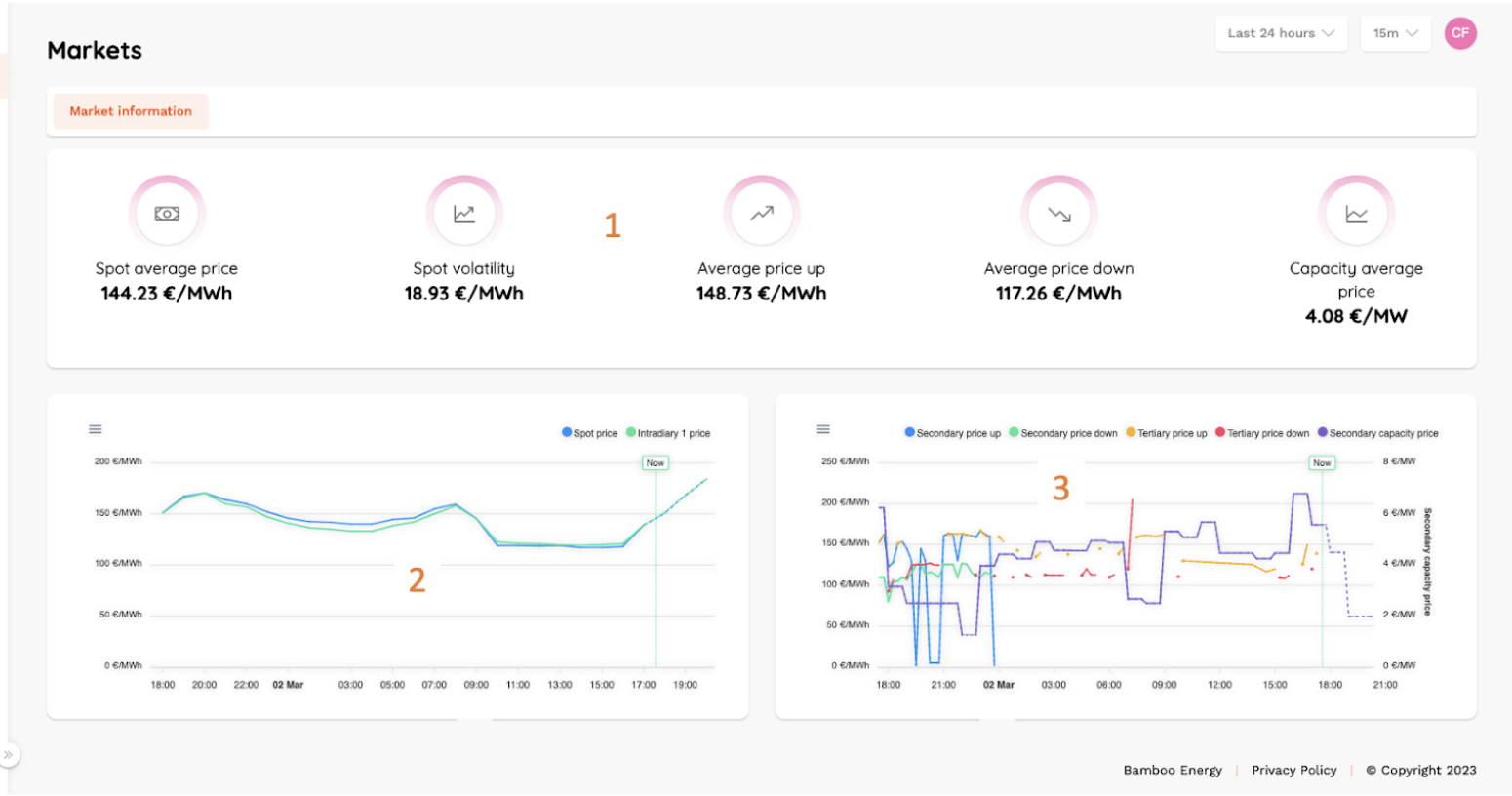
MARKET REQUEST

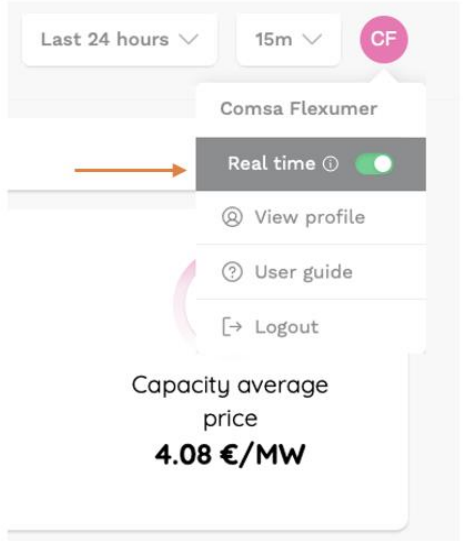
DSO requests to MO a market session creation to solve a future necessity.

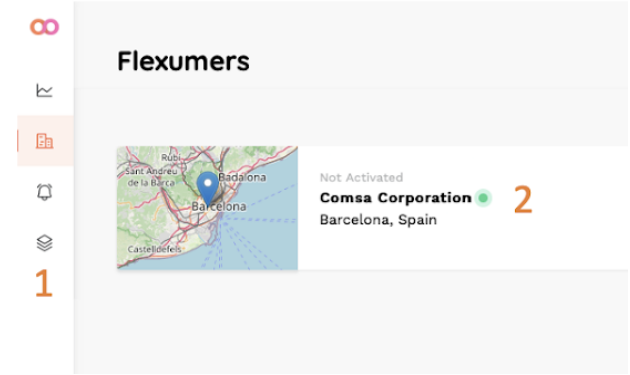
MARKET SESSION

DERs qualification, bidding and settlement processes are included.

Bamboo Energy Platform







Cuerva´s Living Lab

Cuerva's **living lab** set in a **real infrastructure**, with real population and with high resolution data in real time. Basically, an ecosystem that offers a mix between an experimental laboratory, with real field test and UX validation

Living lab general info:

- Set on top of a real utility infrastructure
- +5000 clients (residential, commercial and industry)
- 16MW Peak load
- 2 substations
  - 220/132 kV connected to Spanish TSO
  - 132/66/20 kV
- 292 km of MV Lines
- 100% Smart meters penetration at residential, commercial and industrial
- High resolution metering at MV
- High resolution metering at LV
- RES equipment
- Flexibility agents like batteries, PV, EV.

Data infrastructure:

- Data sets on the grid side (smart meters, transformers, lines, etc.) and BTM (solar, storage, submetering, etc.) Data granularly from seconds to 1 hour.
- Data platform in SnowFlake **(ADAION)** that collects the variety of data sources and industrial protocols.
- Own developed tools (APIs, Notebooks, IoT platform, planning and simulation tools)

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Energy Hub

#1 Increase the hosting capacity of the grid

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#1 Increase the hosting capacity of the grid

- The increase in DERs is essential to meet **emission reduction goals**, but small installations without a license can cause **grid events**. Coordination between DSO, MO, and aggregators can **anticipate and manage** issues, including participating in global markets and introducing DERs in short-term flexibility markets. New data interchange methods are needed to negotiate these products, but automation is a major advantage.

- In Spain there is currently **no flexibility market**, although progress is being made in defining it.

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#2 Investment Deferral

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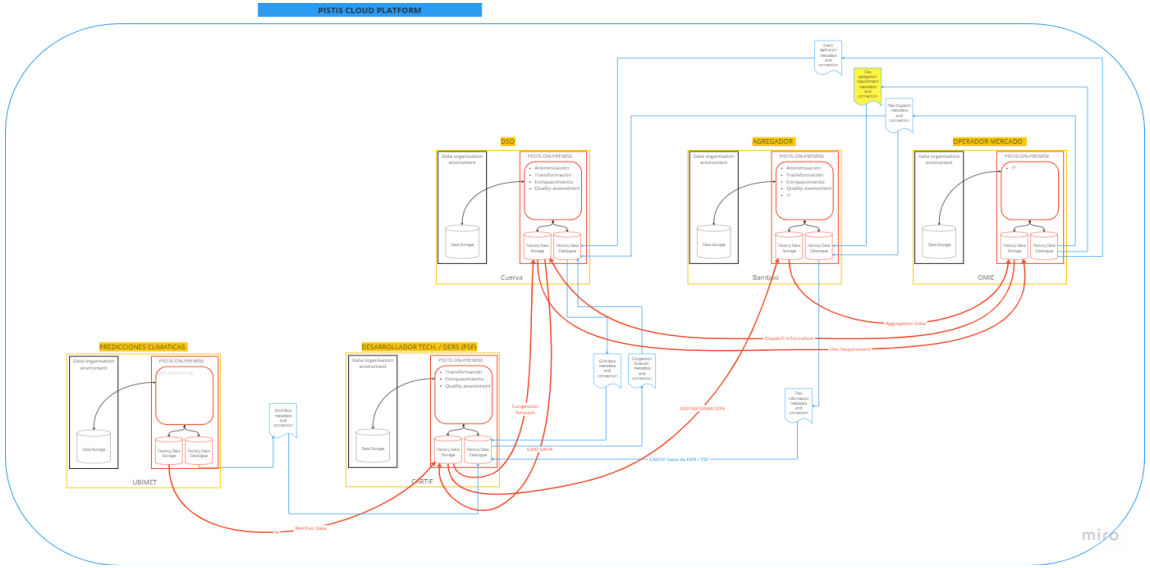
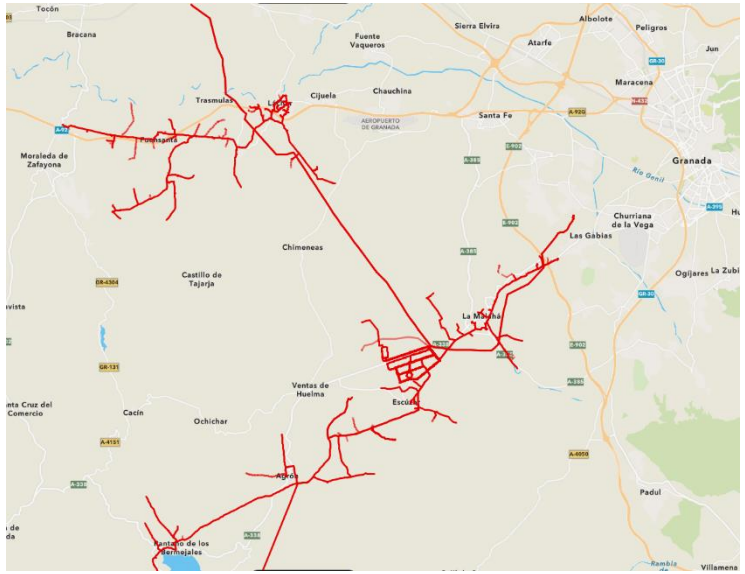
#2 Investment Deferral

- Reducing investment by **using data and system flexibility**. The DSO benefits the most by being able to **plan grid operations**, create a **long-term local flexibility market** and make **commitments with flexibility agents**. The platform helps in exchanging data, which is registered and tradable with penalties applied if necessary.



Data comunication schema using PISTIS



DSO distribution network use as demo in PISTIS

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Energy Hub

#3 P2P Trading between users or Energy communities

#4 Monetisation of data

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#3 P2P Trading between users or Energy communities

- The promotion of self-consumption and emerging energy communities has made users more aware of the origin and destination of energy purchased from or fed into the grid. P2P trading is proposed to **enable users to choose whom to buy or sell energy from**, creating peer-to-peer exchanges and allowing them to know what they are consuming and where it comes from. **New platforms operated by the MO** will facilitate this trading without needing to adjust to grid requirements.

#4 Monetisation of data

- Potential **consumers of energy assets** who may use them for Energy as a Service (**EaaS**) including aggregators, installers, energy service companies, retailers, consultancy firms, research groups, universities, EV charging companies, and software companies.

Energy HuB main idea

Try to get as close as possible to a **flexible market** that would be deployed in a real environment.

We are working to make PISTIS the support needed to not only define the flexibility market, but to make it an easy **way to participate** in it for all stakeholders.

To study the advantages of PISTIS for the deployment of P2P technology focused on energy, as well as in the previous case to facilitate the entry of new actors.

Taking a first step in the economic valorisation of energy data.

PISTIS

Promoting and Incentivising Federated, Trusted, and Fair Sharing and Trading of Interoperable Data ASsets

PISTIS Auto PISTIS Automotive Sector Demonstrator Hub

Alexander Stocker

Virtual Vehicle Research GmbH

PISTIS LL

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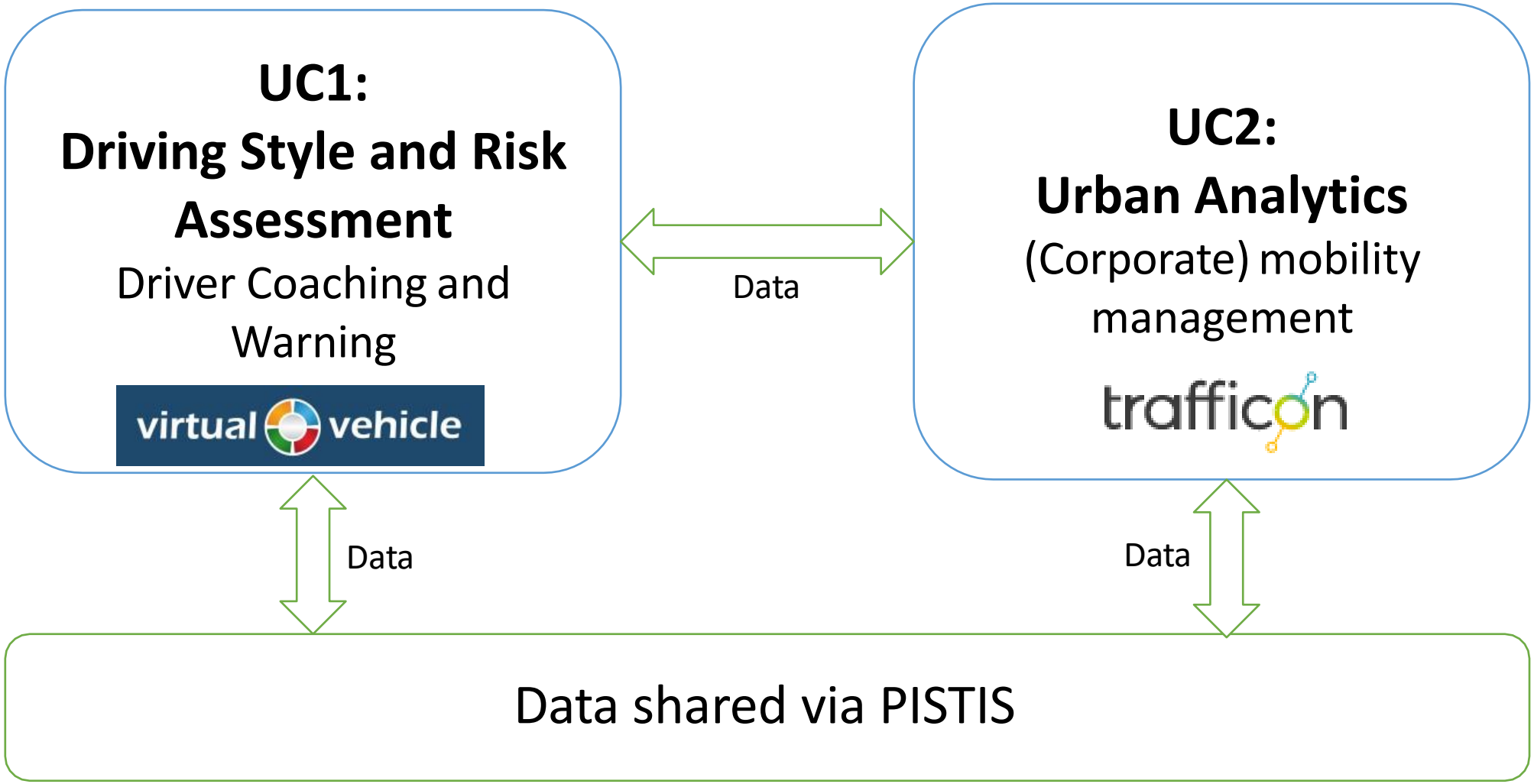
Automotive demonstrator hub

- Lead:

- Partners:

Automotive demonstrator hub



UC – Driving Style & Risk Assessment

UC – Driving Style & Risk Assessment

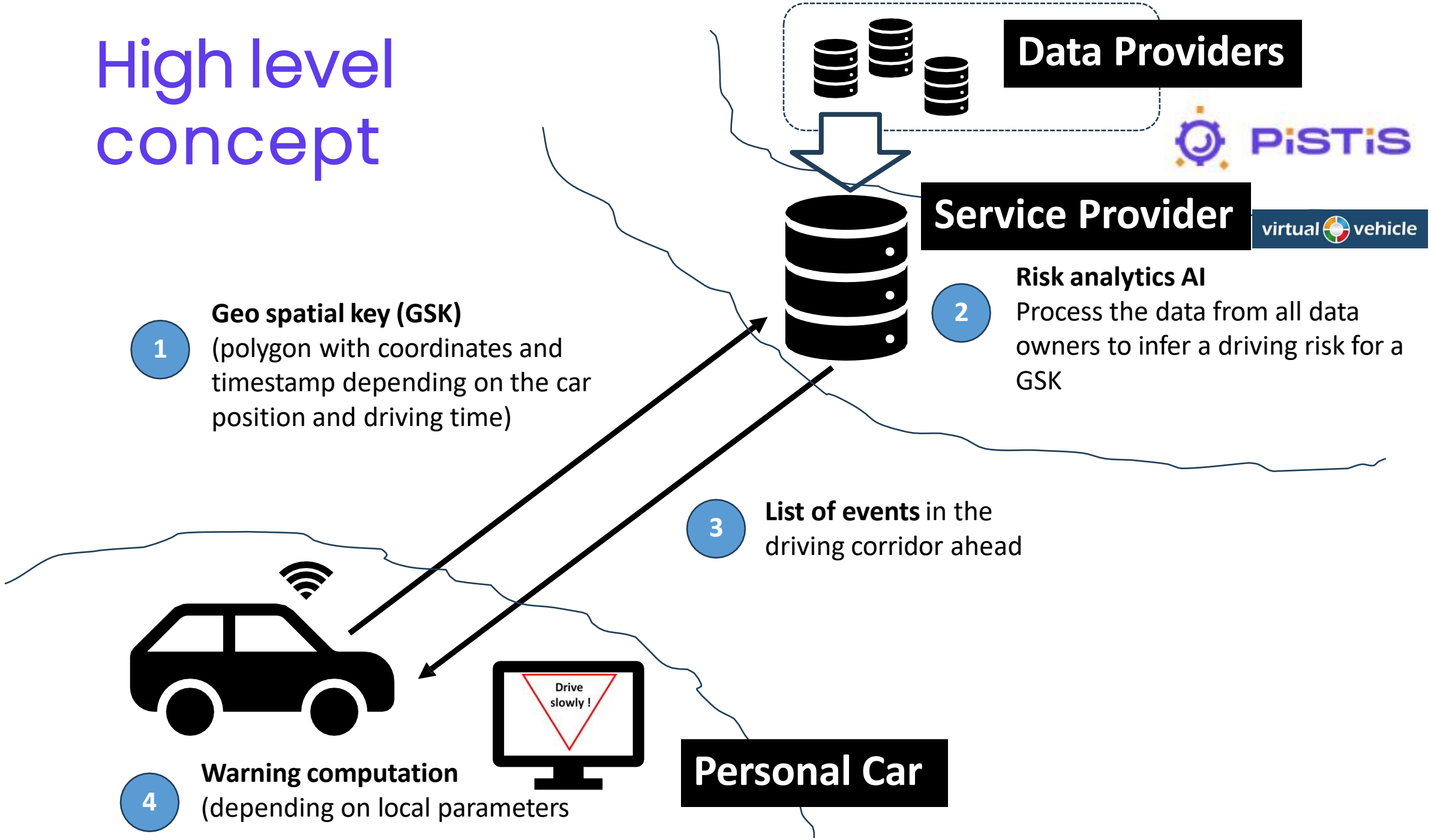
Data

- **Data from own car**
- **Data from other cars**
- **Data on weather**
- **Data on hazards**
- **Data on accident locations**
- **…**

Infer Warning

Drive slowly !

High level concept



Risk Manager Dashboard

Trip Simulator: Visualises risk hotspots and provides information based on car position and driving direction

Weather Selector

Select Weather

Rain

Warnings

RM1 - Warning! More than 5 events in corridor

RM2 - Warning! 2 or more events in driving direction

RM4 - Warning! Bad weather & accident & brake hotspot(s) in corridor

Trip Slider

Relative trip time

0 195.3 1,300.7

0 130.1 260.3 520.4 650.5 780.6 910.7 1,040.8 1,170.9 1,300.7

Show entries Search:

event_type	distance	heading	lng	lat
Accident hotspot	43.74	90	15.366	46.971
Curve hotspot	75.34	242.761718520498	15.366	46.972
Brake hotspot	132.98	77	15.367	46.972
Accident hotspot	194.70	270	15.368	46.972
Acceleration hotspot	227.04	233	15.368	46.972

event_type | distance | heading | lng | lat

Showing 1 to 5 of 5 entries Previous 1 Next

Trip risk models

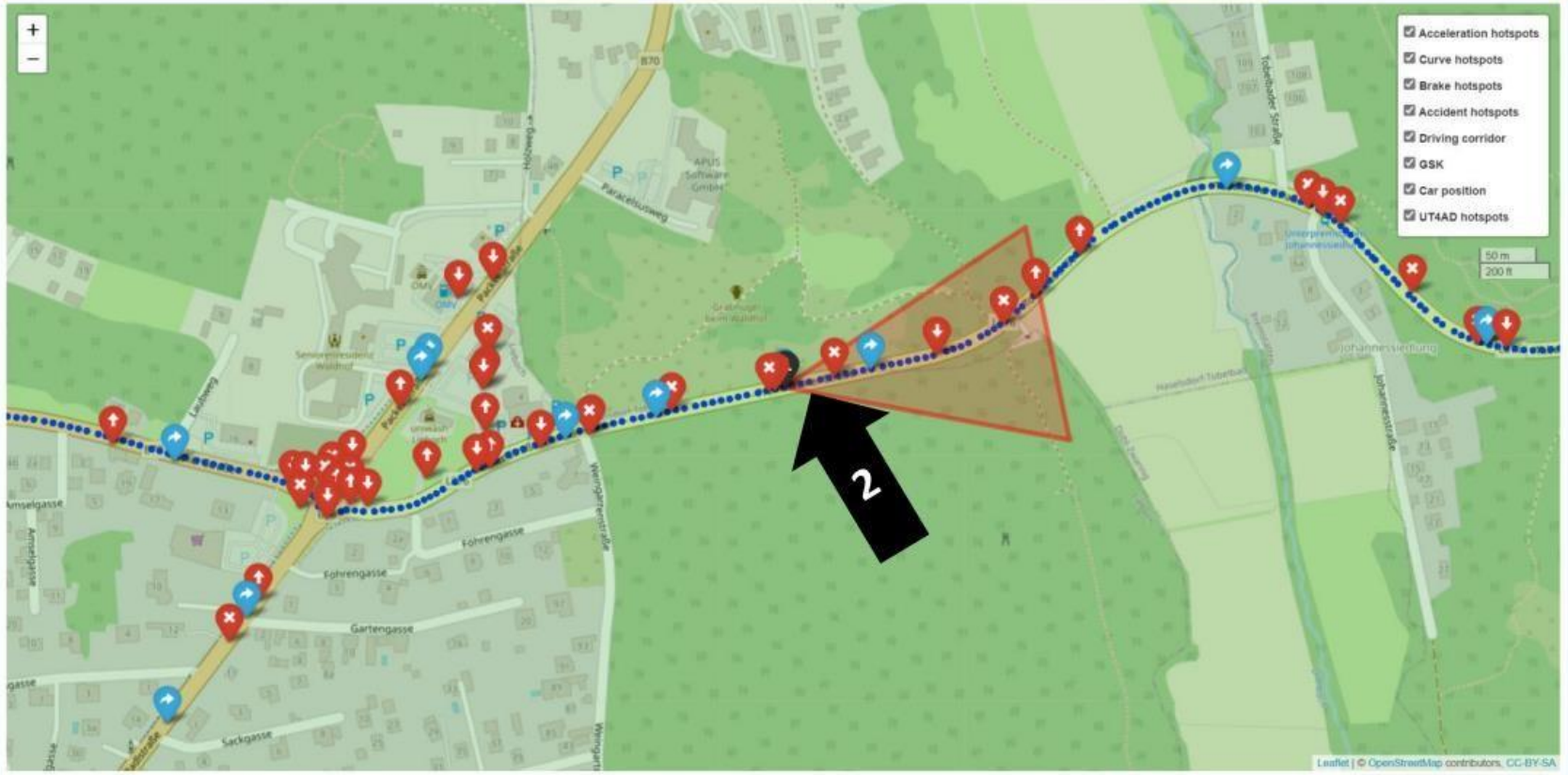
Risk model 1 - the event counter: 5 event(s) in driving corridor

Risk model 2 - the event in driving direction counter Driving speed: 68 Heading: 78 , 2 event(s) in driving corridor in driving direction! 1 Accident hotspots, 1 Brake hotspots, 0 Acceleration hotspots.

Risk model 3 - the driving vs. brake mean speed differentiator 0 -> 1 is too fast, 0 is ok

Risk model 4 - Weather is bad & Brake & Accident hotspot in driving direction 1 -> 1 is risk, 0 is ok

Event visualisation: Move the slider as you would drive the car



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2

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