

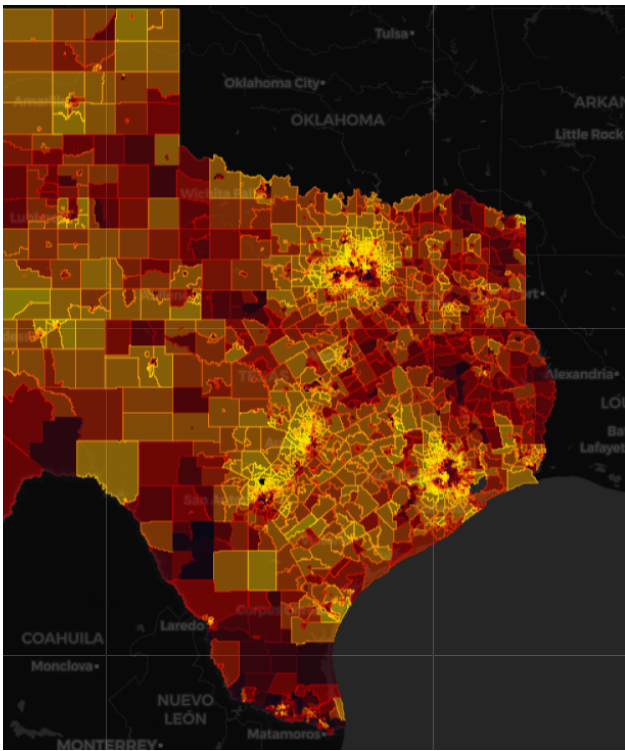
Alcifo
2370 York Rd Ste G1, Jamison,
PA 18929, United States
info@alcifo.com



Alcifo
Integrating
Design | Infrastructure | Operations

About us

As the world scales towards smart cities, advanced mobility solutions and the next generation of complex engineering products, there is need for a holistic approach to design and optimize these interconnected systems. Alcifo is building an AI based simulation and optimization platform that captures the intricate relationship between these systems and provides a holistic solution. We will help manufacturers, operators and infrastructure companies build an interwoven ecosystem that will shape the future.



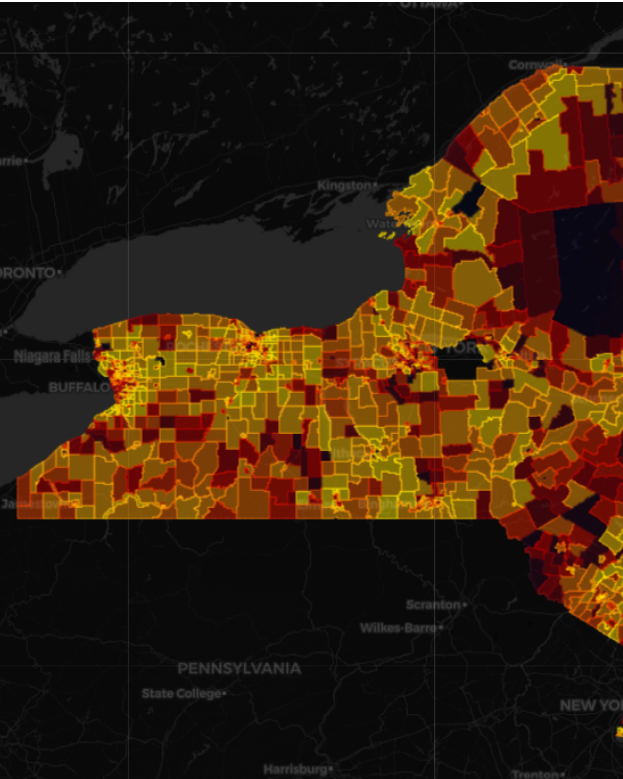
Our Focus

We bring a focus on integrating design and operations, capturing the intricate relationships that exist across the entire ecosystem. This is critical for the development of smart infrastructure

Our strength is in simultaneous optimization of engineering products (such as cars, aircraft and drones), infrastructure and the operational landscape

Our immediate focus is Advanced Air Mobility (AAM), inclusive of urban and regional markets for both passenger, surveillance and cargo operations

Creating a digital twin for city scale operations with advanced mobility options is our forte. We bring in the operational insights that are critical for planning needs



Current offerings

High fidelity network simulation for Advanced Air Mobility

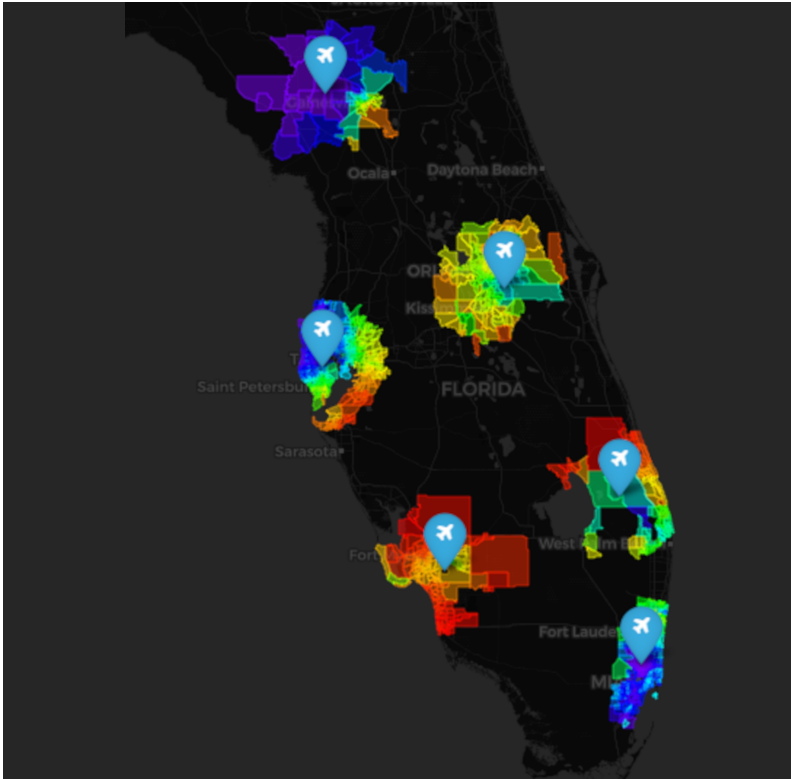
- Cloud based SaaS product with an easy to use interface.
- Evaluates the business potential of the vehicle on the selected network.
- Allows near real-time tracking of movement of vehicles and people across the network and energy/battery state -of-charge during the day.
- Calculates energy requirements at the landing sites ability to perform trade studies among payload, range, and cruise speed.
- Key insights on required fleet sizing and number of vehicles needed over a time horizon.
- Any other customized simulation requests depending on clients needs.

Landing site (airport/vertiport)

selection model Recommends an optimal network of the landing sites/ airports taking into consideration the existing trip data, the performance characteristics of the vehicle, and the price point set by the operator.

Mode choice model between various mobility options

Forecasts air travel demand considering the individual's value of time and comparing the door-to-door trip time and cost among the competing modes of travel.



Trip generation model

Provides key insights on the intra-city commute (UAM) using eTOLS, inter-city longdistance trips (RAM) using hybrid/ eTOLS, and surveillance and cargo operations using drones.

Flight dispatch model

satisfies the air travel demand drones Mimics the real-world operations (both scheduled and on-demand). The model solves a complex mathematical programming formulation to dispatch the fleet of vehicles and satisfies the air travel demand.

Vehicle sizing and cost model

Sizes the vehicle based on the top-level requirements provided by the clients

Publication and Research



We are a team with a background in research collaborating with NASA and logistics operations experience with Amazon. Some of the prior publications where we co-authored are listed below.

Flight scheduling and fleet sizing for an airport shuttle air taxi service (2022), In Journal of Air Transportation, <https://doi.org/10.2514/1.D0265> (With Georgia Institute of Technology)

Regional Air Mobility: Leveraging Our National Investments to Energize the American Travel Experience (2021), NASA, <https://sacd.larc.nasa.gov/ram>, (With NASA and several other industry leaders)

Are Commuter Air Taxis Coming to Your City? A Ranking of 40 Cities in the United States. (2021), In Journal of Transportation Research Part C: Emerging Technologies, <https://doi.org/10.1016/j.trc.2021.103392>, (With Georgia Institute of Technology and Ecole Polytechnique Fédérale de Lausanne)

Future Regional Air Mobility Analysis Using Conventional, Electric, and Autonomous vehicles. (2021), In Journal of Air Transportation, <https://doi.org/10.2514/1.D0235> (With Purdue University)

User Base Estimation Methodology for a Business Airport Shuttle Air Taxi Service. (2021), In Journal of Air Transportation, <https://doi.org/10.2514/1.D0216>, (With Georgia Institute of Technology)

Monolithic Approach for Next-Generation Aircraft Design Considering Airline Operations and Economics. (2019), In Journal of Aircraft, <https://doi.org/10.2514/1.C035312>, (With Purdue University, NASA, and University of Michigan)

Assessing Effects of Aircraft and Fuel Technology Advancement on Select Aviation Environment Impacts. (2016), In Journal of Aircraft, <https://doi.org/10.2514/1.C033861>, (With Purdue University)