

FREQUENTLY ASKED QUESTIONS

Who and What is FreshStart Logistics?

FreshStart Logistics is provider of patented expert heuristic scheduling technology for transportation optimization applications. FreshStart has its roots in the Paratransit industry where our engine served as a brain leveraging **Intelligent Transportation Systems** to deliver expert **real-time optimization** of routes and schedules based on real-time consideration of dynamically changing real-world variables.

What is an Intelligent Transportation System?

Intelligent Transportation Systems (ITS) improve transportation safety, responsiveness and productivity through the integration of advanced communications technologies into the transportation infrastructure and in vehicles. ITS encompasses a range of wireless and wire line communications-based information and electronics technologies. Examples of these technologies include private in-vehicle GPS units and mobile data management systems (MDM) as well as public fixed infrastructure such as traffic sensors and weather information.

These systems provide **real-time data** on vehicle location and status in addition to real-time environmental data on traffic flow, weather, and road conditions. Intelligent Transportation Systems are able to leverage this data to anticipate and resolve issues before they adversely impact operations. Imagine these data collection systems as a nervous system and the FreshStart Engine as a brain that continuously processes this data in real-time and suggests route plans and schedules that will best achieve your operational objectives subject to the dynamically changing facts on the ground.

The ITS concept has substantial traction in people transportation applications and public sector transportation engineering but is relatively new to the freight transportation, courier, field service, and local delivery arenas. FreshStart feels that the time is right to deliver the power of ITS to these private sector markets.

What is real-time data?

Real-time data is data about the real world that becomes available to the optimization engine as events unfold. This data is collected through weather services, traffic monitors, mobile GPS systems, and human interfaces, mobile and fixed that capture the status of orders (e.g. shipment, pickup, delivery, or service request). This data can be leveraged through the process of **real-time optimization** of routes and schedules to predict and avoid service issues and other operational entanglements before they occur.

What is real-time optimization?

Real-time optimization is the complex act of accomplishing specific transportation objectives (on time delivery of goods and services at lowest cost or with fewest miles) subject to the constraints of your facilities, consignees, carrier base and/or fleet and with constant adjustment to routes and schedules based on constant consideration of the real-time data provided by the ITS. FreshStart Logistics' technology had great success delivering on the promise of real-time optimization in the **paratransit industry**.

The process of dispatching in any industry is largely one of responding to the divergence between plan and execution on the day of service. The dispatcher fights fires throughout the day to bring the schedule back on track. The FreshStart engine, through its real-time speed, ability to account for real-world variables and highly customized business rules enables automated real-time route & schedule re-optimization. This frees the dispatchers to focus on tasks where human interaction is absolutely necessary. The result is greater dispatcher & operating efficiency and improved execution of routing and scheduling at a reduced cost.

What is Paratransit?

Paratransit service was mandated by the Americans with Disabilities Act, which requires cities to provide flexible transportation services to elderly and handicapped populations. This is a very demanding environment where highly variable service times and complex passenger requirements meet traffic congestion and road maintenance issues in dense urban areas. Paratransit is the arena in which FreshStart Logistics first proved its real-time optimization

concept delivering exceptional service and productivity gains by enabling cities such as New York City to leverage the power of ITS for real-time route & schedule decision making and complex problem resolution.

Can you provide examples of real-time optimization that the FreshStart engine has delivered?

The beneficial users of paratransit service are the elderly and the handicapped. It is critical in this environment that these people not be left waiting on the street for their shuttle. Paratransit systems that use the same technology as FreshStart Logistics are able to sense when a vehicle is going to be late for a pickup and re-optimize in real-time to see that another shuttle is rerouted to perform the service in a timely manner without disruption to any other scheduled service.

Other examples include the incorporation of real-time weather and road construction/maintenance data into the optimization to minimize the need for such rerouting in the first place.

How is the FreshStart engine different?

FreshStart's engine is built on patented, heuristic scheduling technology developed by William Ho as an industrial application of his artificial intelligence research. As such it is a departure from the industry standard operations research (OR) based methodology used by other engines. This industry standard OR technology can be characterized as greedy and iterative. Such OR engines approach problems in a near sighted (greedy) manner which may miss rich areas of the solution space by eliminating alternative routing possibilities containing an order (e.g. shipment, pickup, delivery or service order) once the order has been assigned to a route determined to be good by the greedy algorithm. These engines churn through huge numbers of infeasible routes in their process thus substantially impairing run-time performance. The FreshStart engine, by contrast, is rules driven, heuristics based and constructive. It is able to identify many components of route infeasibility very early in the process enabling the engine to search for feasible routes in a very intelligent and focused manner. Within these targeted

feasible sub-sets of the solution set the engine maintains knowledge of all possible routings of a given order and assigns the optimal routing based on user defined heuristics and a more global view. This offers a much faster, more flexible, and more global solution to the problem. Benchmarking has shown the engine to have 10x-100x faster runtime and averages 50% better results than other leading transportation optimization engines available on today's market.

The differentiating speed and flexibility of the rules driven approach is what enables FreshStart to deliver in highly dynamic real-time environments where others have failed.

Can FreshStart help my Business Run Greener?

Absolutely, the FreshStart engine enables organizations to run a transportation operation as efficiently as possible given the current set of assets and locations. Our technology will help your organization control emissions by reducing road miles and fuel consumption but that is not all. We deliver addition efficiency and cost savings by increasing your capacity and improving customer service with your existing set drivers and vehicles. FreshStart Logistics enables your business to do more with less.

What does FreshStart Logistics do? What is your core business?

FreshStart Logistics' mission is to deliver ground-breaking logistics applications of our patented heuristic scheduling technology. We provide the optimization engine, a brain to leverage the power of Intelligent Transportation Systems, along with expertise and services to see it effectively deployed for our clients. We do not provide dispatch systems or other data collection devices ourselves but instead plug into the infrastructure already in place at an enterprise or work with GPS, dispatch, MDM, and telemetry partners to deliver the full power of ITS.

For more information, please download the white paper "[Intelligent Scheduling and Dispatching in an ITS Enabled World](#)" by William Ho or contact FreshStart Logistics at 641 7194 or info@freshstartlogistics.com.