



## Enhanced Market Simulator

### Release Note

Milanamos is pleased to inform you that from the 9<sup>th</sup> of December 2016, we are releasing our enhanced Market Simulator module in PlanetOptim.Future. It represents a major development of the current functionality, but also provides you with the ultimate features to perform a detailed route analysis. We have heavily invested in sophisticated algorithms to further enhance the quality of our forecasts, make available a Quality of Service Index (QSI) model working for both the local and flow traffics, and also provide you with the option to schedule a full rotation with the aircraft of your choice. Finally, we offer detailed revenue breakdown, costs parameters and values – yours or our default industry per airline type – and a full blend P&L analysis for the first 36 months, including all key industry standard metrics for airlines which are required to build your case.

This is our initial release, as always on schedule, with many unique features against other similar tools, and with a clear focus on the system usability as you expect from us. We will be scheduling a training session for you all, in addition to the updated system documentation available on the bottom right of the system interface. This is also the initial release of the module, and we have planned further enhancements next year that will be discussed with you along with our development plan.

In between, please enjoy our enhanced Market Simulator, and find further information in the enclosed release note. Thank you very much again for your trust and support!

The Milanamos team

### *Key Benefits for you*

In comparison to the current version of the Market Simulator, we have addressed all of its short falls and ensured that the module stands on its own to ensure you can perform a full end to end new route analysis – from drafting ideas of potential market to measuring its profitability.

1. You have control of it steps. This is particularly important since you build your route study and will have to present it and justify it to your management. You have **full control of every assumptions in the process, and can adjust the system recommendations.**
2. The process followed to build a market analysis is not our recipe, but follows the **airline industry best practices**, further enhanced with our experience as airline consultant with major international carriers prior to starting up Milanamos.
3. You can **set up your QSI parameters on a route by route basis rather than system wide.** This is a major differentiator since we all know that the competitiveness of an airline is relative to a specific market environment, and not applicable to all markets.
4. You have now access to the only solutions on the market providing **data + forecast + scheduling + QSI modelling + like markets + detailed revenue and costs analysis + KPIs +++.** Without any extra-fees or hidden costs.

### *Comprehensive Eight-Step Process*

The enhanced Market Simulator allows you to estimate the potential traffic, the demand simulation with the new capacity offered, schedule the specific departure and arrival time for the rotation, adjust the various QSI parameters, estimate the revenue, the costs of operations and determine the profitability of a flight rotation for the next 36 months following the launch of the new route. Below is a brief descriptive of our 8-step methodology, based on our experience as airline network planning experts, and following the industry best practices and standards:

1. Search similar airports for comparative analysis purposes using a multi-criteria analysis;
2. Gather historical data and similar routes recently launched to evaluate the potential market demand stimulation rate;
3. Forecast the market potential for the new route;
4. Schedule your new flight rotation in local time, and visualize the best possible connections;
5. Set up your route specific Quality of Service Index;
6. Estimate the various revenue streams for your flights rotation (passenger, ancillaries, cargo and postal, etc.);
7. Adjust and estimate your direct and indirect costs;
8. Determine the route profitability value and build key route performance indicators.

### How to Start?

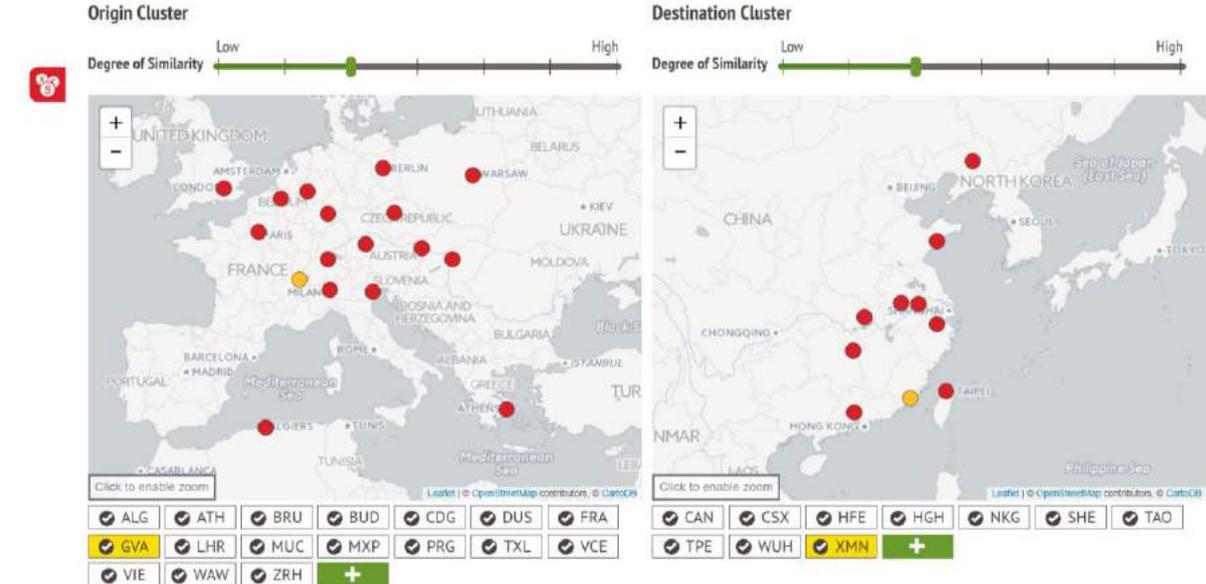
The user shall enter a unique airport code for both fields "FROM" and "TO" then press the "START" button to launch the simulator. This will trigger the Airport Clusters window to be displayed.

### Airport Clusters

This initial step is aiming to select comparable airports, selected after a multi-criteria analysis, having launched a similar route in the past. In any specific region (North America and Caribbean, Central and South America, Europe and North Africa, Africa and Middle-East, Asia Pacific, Oceania), all airports are classified based on both their volume of traffic (defined as total passengers over the last available calendar year of historical data) and average yield. A relative segmentation of each airport based on their couple (traffic and yield) in comparison with other airports of the same region is created. The segmentation allows the system to build an airport matrix with clusters grouping airports of similar volume of traffic and yield. To select the proper airport, 4 criteria are used:

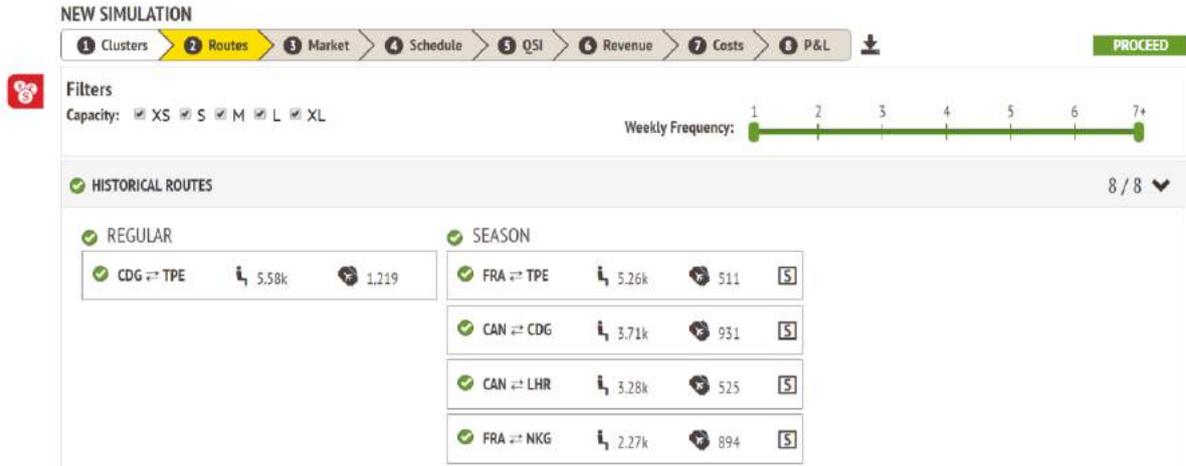
- Volume of traffic at the airport;
- Volume of traffic for the distance considered;
- Yield for the distance considered; and
- Distance.

The user can modify the degree of similarity recommended by the system to adjust the number of airports to be considered, as well as deselect the airport(s) listed or add new airport(s).



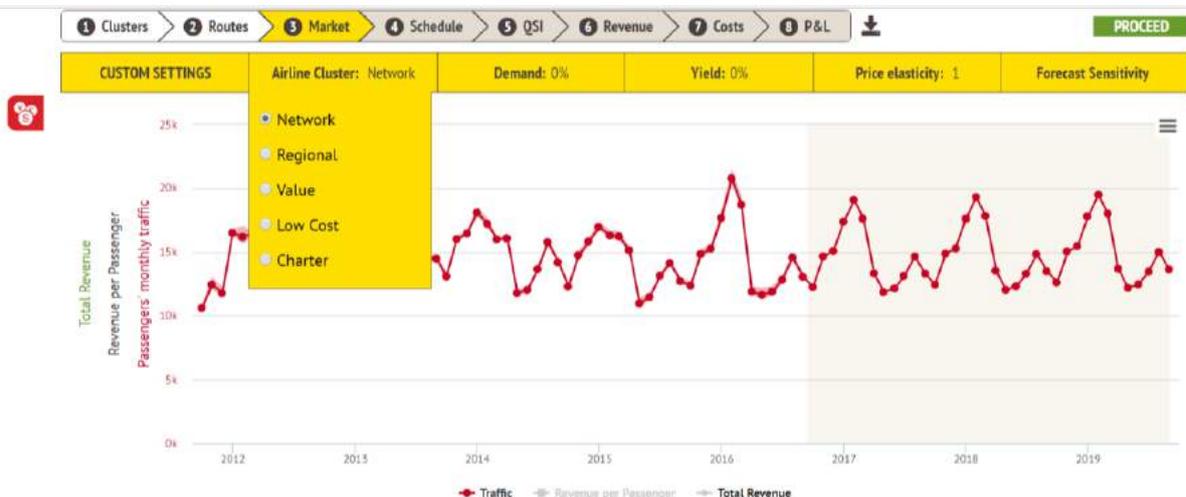
### Routes Benchmarking

Based on the comparable airports selected by the user, the system will list and group similar route markets that were launched over the last five years. In addition to this initial grouping, each market is identified as "Regular" as there is little to no seasonality of the demand, "Season" either summer or Winter in case of large differences between the two seasons, and "Periodic" if the market is only operating for a certain period of the year. The user can visualize each proposed market for benchmarking to keep it or deselect, or add a potential new market, if necessary.



### Market Demand Potential

Based on the historical data from both the requested Origin and Destination market but also the markets selected by the user during the previous step, an overall market demand potential is computed. As shown below, the chart displays traffic and/or average revenue and/or total revenue, as well as the forecasted corresponding values for the next 36 months.



The user may change several settings for the route:

- Airline Cluster: the default computation is for a network carrier, however the user can select regional, value, low cost and charter carrier based on the type of airline envisioned to operate the route;
- Demand and Yield can be adjusted independently (from -50% up to +50%);
- Cross Pricing Elasticity is computed and can as well be modified;
- Forecast sensitivity can be modified by the user.

### **Note on Airline Cluster**

Users can change the type of carrier that will operate the route. The default level is Network Carrier, meaning carriers having a large network with connection opportunities and a more conservative pricing approach. Value Based are regional carriers or carriers with less opportunities for connection through their network. Low Cost represents the typical low cost and low fare carrier operations with a more aggressive pricing approach, and additional stimulation of demand. The user can select the corresponding radio button. Results are immediately displayed on the screen. The differences between the different carriers correspond to different price / demand elasticity band, as well as the pure traffic stimulation generated by each type of air carrier. By changing this parameter, the passengers' traffic, total revenue and average revenue per passenger will vary on the screen.

### **Note on Price Elasticity**

For each evaluated route, a cross price elasticity demand (PAER) is computed and will vary based on the capacity parameters selected by the user. When the user is selecting the Price Elasticity setting, the calculated PAER value is displayed. The user can use the slider representing the change in pricing to either increase or decrease the price. Total revenue, average revenue and passengers' traffic results will automatically be modified accordingly. Both the historical baseline and the forecasted results are adjusted all together.

## ***Schedule your Flight***

After estimating the market demand, the users can determine their optimal schedule – capacity, frequency, departure time. The users just need to input the departure time of the first leg, and the system will automatically compute the timing for the rotation, in local time and UTC – including daylight savings when applicable.

After the flight is scheduled by selecting "Apply", the inbound and outbound connections are displayed (see below). Various selection parameters are available from the timing of the connection to its distance from the point of origin or destination, etc., in order to help the user to select the potential pre- and post-segment markets.

The screenshot displays a flight simulation software interface. At the top, there is a navigation menu with tabs: Clusters, Routes, Market, Schedule (highlighted), QSI, Revenue, Costs, and P&L. Below the menu, there are two flight configuration sections: "OUTBOUND FLIGHT" and "INBOUND FLIGHT". Each section includes a "Departure time" field and a "Duration" slider. To the right, there is an "OTHER SETTINGS" panel with fields for "Week" (2016, 48), "Capacity" (XS, S, M, L, XL), "Frequency" (MTWTFSS), and "Airlines (filter)". A green "APPLY" button is located at the bottom right of this panel. Below the flight settings, a map shows a route from BKK (Bangkok) to NCE (Nancy). The map includes a search bar with "BKK" and "NCE" entered, and a "PROCEED" button in the top right corner.

### Quality of Service Index

Quality of Service Index ("QSI") methodologies quantify Market Share, predicted passenger traffic and ultimately will serve to demonstrate the route profitability. They serve as a model to predict the passenger behaviour and traffic, and mix quantitative and qualitative parameters all together. Initially our QSI module contains two quantitative indicators and two qualitative indicators. For each of them, the user can modify the computed value and the weight of the parameter for the computation of the QSI coefficient. The QSI parameter is computed for both the point to point and the connecting passengers before and beyond the flight segment.

The screenshot shows the "NEW SIMULATION" interface with the "QSI" tab selected. The "Market Share" is displayed as 75%. Below this, there are four configuration panels, each with a "QSI Value" slider and a "Weight" slider. The panels are:
 

- DIRECT FREQUENCY**: QSI Value 100, planned:3 // existing:0, Weight 1.
- INDIRECT FREQUENCY**: QSI Value 100, planned:3 // existing:72, Weight 1.
- TIME OF THE DAY**: QSI Value 50, Weight 1.
- BRAND PERCEPTION**: QSI Value 50, Weight 1.

 Each slider has a scale from 0 to 10 or 120. A green "PROCEED" button is visible in the top right corner.

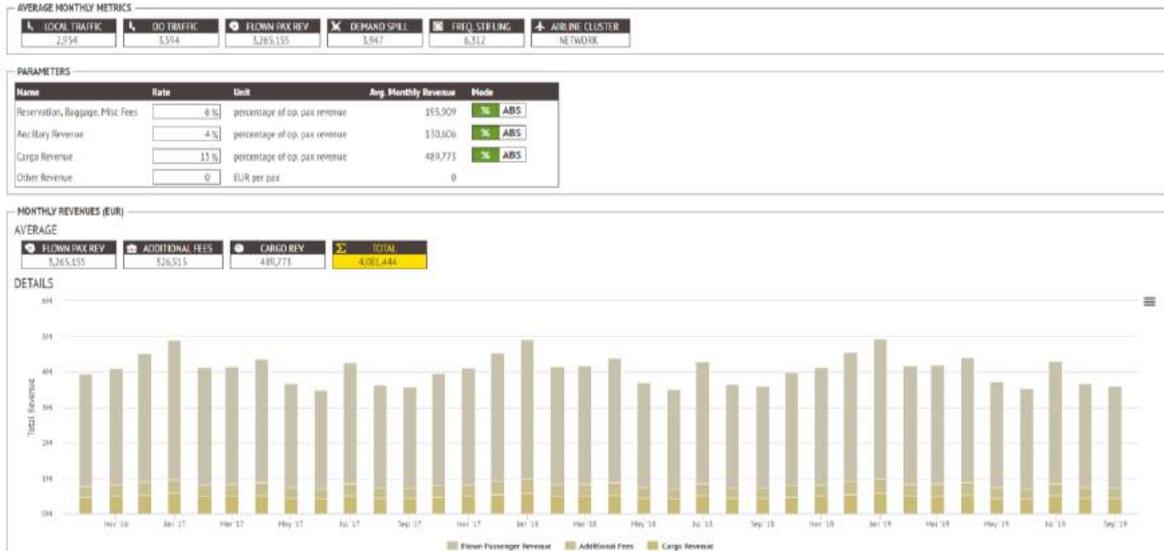
### Revenue Breakdown

Based on the type of airline, a detailed revenue breakdown is provided:

- Air fare revenue;

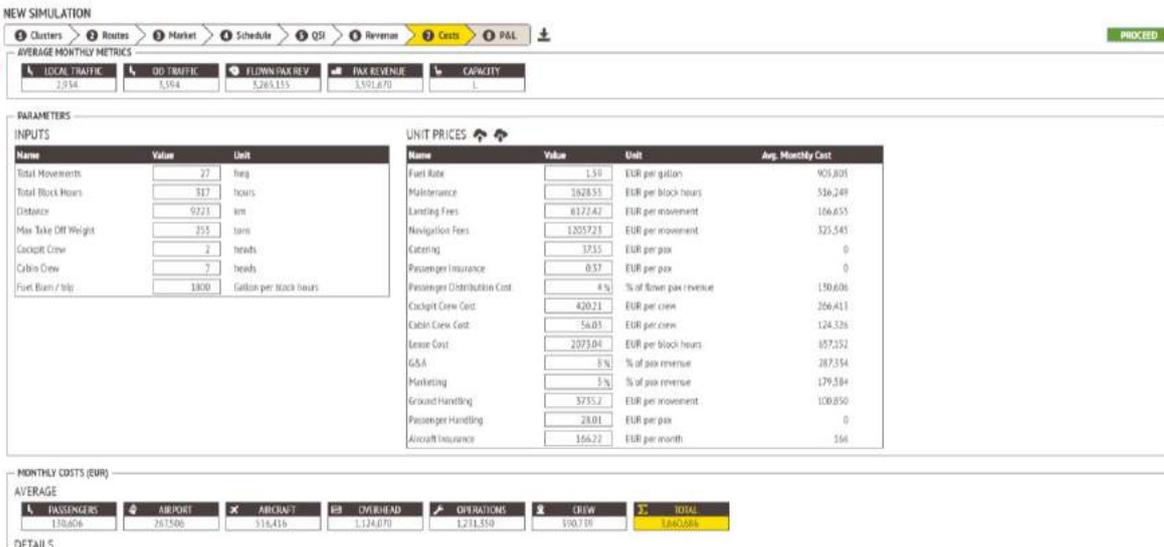
- Ticketing fees;
- Ancillary revenue;
- Cargo revenue; and
- Other revenue.

The value and percentage can be modified by the user as required, either in percentage or in absolute value.



### Cost Breakdown

The user can estimate the detailed costs of the scheduled flight, either using the default values provided or by uploading their own customized cost file or data entry.



### Profit and Loss for the first three years

After set up of the costs the user can profit to the final step to compute month by month the Profit and Loss analysis for the route. In addition, several indicators are computed: Load Factor, RASK, RPK, Yield, Break Even Load Factor and Break Even Revenue, CASK, Spill, Stifling, Spoilage, etc.

The following provides an overview of the route analysis output, including charts, KPIs and table with monthly traffic, revenue, and cost data.

