DATA DRIVEN
Optimized for travel-time data and dashboard-based visualization, BlueARGUS is the most comprehensive database manipulation software available in the industry.

WEB-BASED DESIGN
Monitor traffic congestion right from your browser. BlueARGUS provides data analysis using intuitive data selection menus - No programming needed!

REPORT GENERATION
From spreadsheets and graphs to standalone databases and cloud services, use BlueARGUS to uncover any travel-time data using TrafficCast’s BlueTOAD travel-time-based performance software!

TRAVEL-TIME RELIABILITY
Aggregate dozens of unique data calculations to combine multiple views of travel-time data. Get richer insight to changing traffic patterns and trends.

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BlueARGUS
by TrafficCast International

BlueTOAD™ Travel-Time System

Real-Time & Historical Features of the BlueARGUS Software Suite

The ability to see accurately what is occurring on your road network in real-time is an essential ITS operations management utility. In addition, having the ability to report on travel-times and speeds using a host of reporting options is an important performance based tool for the Traffic Engineer and Planner. The BlueARGUS software suite combines both real-time features, along with reporting features to deliver the most comprehensive travel-time system in the market.

This document will show some of the highlights of each component for the ITS Engineer, Traffic Engineer and Planners.

www.trafficcast.com/bluetoad.html

BlueARGUS

The BlueTOAD system consists of 2 main components in the BlueARGUS software:

- Real-Time Information: all pertinent are outlined GREEN (See Main Menu Bar below).
- Historical/Archived Data: all pertinent pages are outlined BLUE (See Main Menu Bar below).

BlueTOAD Website: http://www.trafficcast.com/bluetoad.html
BlueARGUS Customer Login: https://bluetoad.trafficcast.com/
The BlueARGUS Speed Map

**Speed Map**

The BlueTOAD system provides a real-time speed map that allows the user to see every link and all the corresponding information, such as the travel-time and average speed. In addition, the BlueTOAD speed map allows the user to view the color indication based on either the speed limit or historical average. These scenarios are ideal for monitoring reoccurring congestion in real-time for the roadway network.

**Example:**

If the index is set for “speed limit” and the BlueTOAD speed is 15 mph in the morning hours and the speed limit is 50 mph, the color designation will most likely be RED based on the user defined threshold against the chosen index.

If the index is set for “average of last 12 weeks”, the color designation will be based on the average speed of the previous 12 weeks. If the average speed is reoccurring at 15 mph in the morning hours, then the color designation the map would be GREEN, not RED.

The BlueARGUS software also allows the user to create an encrypted link to view the speed map in real-time outside of the website. The user has the option of viewing the data in either speed limit or historical average index as indicated above. This is an essential tool to view the travel-time in real-time on a TMC video wall or second monitor without needing to login. This URL can be shared over and over again.
When a link is selected on the speed map, you will see the real-time information on the right side. This will include the Historical Speed of the index you selected (in this case, avg last 12 Tuesdays), along with a graph that shows the last 48 hours as well. If the index you select is “avg of last 12 weeks”, a 48 hour graph of that historical data will be included as well (shown on the right).

In addition, the user has the ability to toggle between Speed and Travel Time on the graph and zoom in on the graph as well.

Labor Day (9/7/15) which has much higher speeds than a typical Monday as displayed in the chart on the right.

Real-Time information of selected link (highlighted purple), along with speed limit and the average Historical Speed based on the selected Index.

Chart Options

Speed display mode

- Speed
- Travel Time
The BlueARGUS devices tab not only displays all the BlueTOAD hardware devices and information of each device but also displays the real-time status of each device. The Heartbeat (HB), Mac address inputs, Lag and Voltage are all monitored and if any of these indications fall below the acceptable threshold, the indication displays a RED dot, otherwise it is real-time displayed as GREEN.

You are also able to quickly see how many devices are up and running by the “x of y devices reporting” message.
The BlueARGUS alarms allow you to be alerted via a text message and/or email when a pair or route’s speed drops below a user defined level based on a % of the historical speed or absolute number. For example, if the speed drops more than 50% of its normal speeds at a user defined time or the speeds drops below 8 mph, you will receive a text message and email telling you that. All alarms are saved and reports can be generated to view when and where the alarms were triggered. In addition, all BlueTOAD devices can have an alarm based on No Heartbeat, No MAC addresses discovered, Low Voltage (if applicable) and Latency issue.

### Alarms based on Speed Conditions

<table>
<thead>
<tr>
<th>Change Alarm Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active From 00 00 Until 23 59</td>
</tr>
<tr>
<td>On the following days of the week</td>
</tr>
<tr>
<td>Sun Mon Tue Wed Thu Fri Sat</td>
</tr>
<tr>
<td>Notification Method</td>
</tr>
<tr>
<td>Send Email Send SMS</td>
</tr>
<tr>
<td>Send Alarm when speed drops below 50% historical OR 8 mph</td>
</tr>
<tr>
<td>Recipients</td>
</tr>
<tr>
<td>Default Custom</td>
</tr>
<tr>
<td>Minutes to wait before sending initial alarm 10</td>
</tr>
<tr>
<td>Minutes between repeating unacknowledged alarm 60</td>
</tr>
</tbody>
</table>

Apply these changes to:
- Pair 4896: Washington @ US 45 (x1986) to Washington @ IL 83 (x1067) - WEST
- Pair 4896: Washington @ IL 83 (x1067) to Washington @ US 45 (x1086) - EAST
- Pair 5001: Washington @ US 45 (x1986) to Washington @ Hunt Club (x1085) - EAST

### Alarms based on Device Conditions

<table>
<thead>
<tr>
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<td>Send Email Send SMS</td>
</tr>
<tr>
<td>Alarm Triggers</td>
</tr>
<tr>
<td>Heartbeat MACs Voltage Latency</td>
</tr>
<tr>
<td>Recipients</td>
</tr>
<tr>
<td>Default Custom</td>
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<tr>
<td>Minutes to wait before sending initial alarm 10</td>
</tr>
<tr>
<td>Minutes between repeating unacknowledged alarm 60</td>
</tr>
</tbody>
</table>

Apply these changes to:
- Device 4891-33 NB before Cambridge St. in Somerville (x487) <GA>
- Device 4891-33 NB before Rte. 16 in Needham (x488) <ID>
- Device 4891-33 NB after Columbia Rd. in Boston (x489) <DC>
- Device 4921-33 SB before Mass Ave. Connector in Boston (x490) <ID>
BlueTOAD
Historical/Archived Reporting Tools

The BlueARGUS reporting tool allows you to access the historical, archived data in multiple usable format. All graphs can be saved as a JPG, PNG or PDF and all data can be downloaded to a CSV format. The BlueARGUS reports consist of the following options:

**Reports**

|-------------------|-------------------|-------------------|---------------|-------------|

**Pair/Route Report**

Customers can create a pair/route report in 5 or 15-minute increments based on travel-time or speed, with the option of individual speeds and number of matches. These reports can be exported as HTML, CSV or graph formats.

The pair/route report has the additional feature of allowing the user to overlay a comparison index to the data you are reporting.

For example, Cobb County, GA was able to measure the impact of a freeway incident that impacted their corridor by overlaying the previous 12 week average speed in order to quickly gauge the impact of the incident as shown in the graph above.

**Comparison Report**

The user can compare any pair/route to another pair/route (or the same one) with different dates. For example, the user has the ability to compare travel-times before and after a signal upgrade project to gauge the impact it has on travel times. Also, the user can add multiple pairs and routes while not being limited to just two comparisons.

Another example of the use of the Comparison Report was when an agency wanted to see the impact on traffic signal timing plans for Black Friday in 2012 to Black Friday in 2013. The results can be viewed via a graph (as shown below) or data downloaded via a CSV file.
Historical Report

With the use of historical reports, the user can aggregate and compare data in virtually any combination of days, weeks, months or years. Once the information has been generated into graphical format, the user can simply include the legend data and it will appear in the reports.

For example, the user can compare the travel-times or speeds from June, July, and August, as shown in the graph below:

Or, a user might want to compare three different traffic signal timing plans and see which one produced the best results:
**Origin-Destination (OD) Report:**

In addition, the BlueARGUS software has an Origin/Destination module, which allows the user to create OD reports based on their requirements. With the OD report, a user can create as many routes as they wish and compare the percentage of matches to each other.

In this example, the customer created three routes, each with the same common origin but different destinations:

As an example, a user can select different output options such as Pie Chart, Bar Chart, HTML Table, CSV file or Map with Totals as shown in the images below:

<table>
<thead>
<tr>
<th>Match counts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Origin</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Cobb Pkwy &amp; Duncan/McCallum Pkwy (1263)</td>
</tr>
<tr>
<td>Cobb Pkwy &amp; Duncan/McCallum Pkwy (1263)</td>
</tr>
<tr>
<td>Cobb Pkwy &amp; Duncan/McCallum Pkwy (1263)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

![Map Image]
Travel-Time Reliability Report

Travel Time Reliability is a new approach to measure a driver’s experience by quantifying variability from a driver’s prospective, in addition to providing an average travel-time.

Utilizing the Travel Time Reliability report, the users now have the ability to analyze their roadway networks performance based on reoccurring congestion, non-reoccurring congestion and volatility. Travel Time Reliability (TTR) is an index based on three factors:

- Travel Time Index (TTI)
- Buffer Time Index (BTI)
- Planning Time Index (PTI)

The TTR outputs allow you to view the data in multiple formats and increments.

In the example below, the TTI, BTI and PIT are displayed by the average weekdays monthly from 06:00 – 12:00 in multiple formats: