In|Sync

REAL-TIME
TRAFFIC SIGNAL AUTOMATION TECHNOLOGY

www.rhythmtraffic.com
In|Sync is more than an Adaptive Traffic Signal System. In|Sync is a traffic bot that uses Hawkeye 3D-UHD Radar technology, with near-100% accuracy to detect and classify vehicles a 1000' away from the traffic signal.

Every day, In|Sync impacts about 54,000,000 motorists throughout North America in a positive way. These improvements can be attributed to the three distinct modules that seamlessly work together inside the In|Sync model.

**Module #1: Digitize Traffic Signal Operations**

All other existing traffic signal synchronization methodologies work off of the concept of common cycle lengths. In|Sync does not use common cycles. It uses the concept of digital states. In|Sync differs from the sequential and set nature of phases in a cycle, because it can invoke any state as and when needed.

Similar to a modern remote control, instead of clicking your way sequentially through each channel, you can directly select the channel you want by typing its number.

**The benefit of having a digital architecture is that green time is not wasted serving empty phases and there is no transition between timing plans.**

**Module #2: Local Optimization**

In|Sync uses a rule-based Artificial Intelligence to compute real-time green durations to vehicle demand at each intersection. In|Sync knows the duration of wait times for every vehicle near the stop bar and the queue length per lane. This information is collected every second in real-time. In|Sync allocates a token every 5 seconds to every unique car that joins the queue. The Greedy Algorithm changes the traffic signal light status to minimize the number of tokens issued.

**Module #3: Global Optimization**

In|Sync guarantees coordination between traffic signals (even unevenly spaced ones) without increasing side street delay using a concept called “Time Tunnels.”

Time tunnels are created throughout the corridor (or grid network) with the slope of the tunnel indicating the speed of travel between traffic signals.

The tunnels can have variable duration based on demand or can be programmed to have a minimum green time.
1. Proven to offer 40% better results than any other solution
Independent studies prove that In|Sync improves travel time, number of stops, delay better than any other solution in the market.

2. No hardware or software to upgrade or replace
In|Sync is compatible with all your existing hardware. It is a plug-and-play system and does not require any upgrades or replacements, thus no additional investment needed.

3. Vehicle detection integrated with In|Sync
In|Sync is the only adaptive system in the market to provide an integrated solution with superior detection and data collection. The detection includes cameras and radar technology.

4. Nearly 100% accurate vehicle detection and data collection
In|Sync uses Hawkeye enforcement-rated radar technology, providing both stop-bar and advance zone detection. Hawkeye offers lane-by-lane data collection for a range of 1000 feet from the stop bar.

5. Transition between timing plan changes and after preemptions is eliminated
This is one of the benefits of the digital architecture. With In|Sync wasted green times are a thing of the past.

6. In|Sync collects high resolution data and provides Automated Signal Performance Measures (ASPM) at no additional cost
In|Sync with Hawkeye radar detection includes an ASPM module. No additional detectors to install. Over 30+ available metrics: Purdue coordination diagram, vehicle counts, speed, etc. elegantly displayed in visually-pleasing charts.

7. Pedestrian optimisation
In|Sync provides efficient pedestrian service with minimal impact on coordination.

8. Provides powerful before and after data
Traffic engineers can easily prove the effectiveness of the newly deployed technology through the pre- and post results - decreased number of stops, increase in speed, reduced travel time etc.

9. No requirements of a central server and workstation, thus no extra cost for the agency
In|Sync is installed locally, at each intersection, and status can be monitored on a portable device.

10. Never time your signals again
In|Sync completely automates your traffic signal timing. You never have the headache of collecting field data or timing your traffic signal over and over.

11. In|Sync does not require fiber connectivity
In|Sync can work with any network infrastructure, including Ethernet cabling, twisted-pair cabling or wireless radio technologies.

12. Transit Signal Priority
A key differentiator of In|Sync Transit Signal Priority (TSP) is that it does not step out of its plan to serve a transit call, as other systems often do. Instead, In|Sync gives priority to the TSP movement as part of its demand green time allocation.

13. Built-in capabilities for smart cities and CV/AV environment
In|Sync integrates with In|Connect - a robust, future-proof connected vehicle and signal preemption system, based on Dedicated Short-Range Communication (DSRC) technology.

14. No hold on the main street
These phone calls disappear: “Why am I waiting on the side street when there aren’t any cars on the Main Street?”

Traffic Engineers Trust Us

“’It's real time! When you have an influx of traffic, it takes care of that traffic immediately.”
Jim Dickinson, PE
Principal Traffic Engineer | West Des Moines, IA

“’It's like having several traffic engineers on staff.”
Glen Bollinger, IMSA3
Program Manager | Augusta, GA
In|Sync Performance

3,000+ INTERSECTIONS NATIONWIDE
More Deployments Than All Other Similar Systems Combined

-60% Stops Reduction
-57% Delay Reduction
-24% Travel Time Reduction
-23% Emissions Reduction
-17% Fuel Consumption Reduction
-23% Crash Reduction

Note: Results are an average number from all independent studies conducted on In|Sync adaptive system. For more information, visit www.rhythmtraffic.com/resources.