Rural Applications of Adaptive Traffic Control

Dr. Reggie Chandra, PE, PTOE

InSync is protected by U.S. Patent Nos. 8,050,854 and 8,103,436, and other patents-pending.
REAL-WORLD RESULTS

HOW AND WHY IT WORKS

AFFORDABILITY and ROI

InSync is protected by U.S. Patent Nos. 8,050,854 and 8,103,436, and other patents-pending.
Nationwide travel time reductions
Rural deployments and applications

Salinas 150,000
Raymore 19,000
Texarkana 31,000
Springdale 69,000
Evansdale 5,000
Carlisle 19,000
St. Albans 11,000
Teays Valley 13,000
Elkins 7,000
Challenges: Pedestrians, traffic variability

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<table>
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<tbody>
<tr>
<td>Stop reduction:</td>
<td>63.9%</td>
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<tr>
<td>Delay reduction:</td>
<td>68.6%</td>
</tr>
<tr>
<td>Travel time reduction:</td>
<td>39.21%</td>
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Challenges: School traffic safety and variability

Raymore
19,000
Challenges: Traffic variability and volume

<table>
<thead>
<tr>
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<th>Traffic variability and volume</th>
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<tbody>
<tr>
<td>Stop reduction:</td>
<td>95%</td>
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<tr>
<td>Delay reduction:</td>
<td>86%</td>
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<tr>
<td>Travel time reduction</td>
<td>42%</td>
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Springdale 69,000
Crash reduction

30%  

Source: Springdale Police Department

Springdale 69,000
Challenges: Limited capacity, restricted phasing

Texarkana
31,000
Challenges: Managing freight traffic and safety

Evansdale
5,000
Challenges: Pedestrians and desire to calm traffic
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• InSync = Provided cameras

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• InSync = Provided cameras
• **InSync: Tesla** = Your detection
  • Loops
  • Cameras
  • Radar
  • Magnetometers
  • Microwave

_InSync is protected by U.S. Patent Nos. 8,050,854 and 8,103,436, and other patents-pending._
• InSync = Provided cameras
• InSync:Tesla = Your detection
• **InSync:Fusion** = Both provided cameras plus your existing detection

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Analog vs. Digital
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Local Optimizer

A       B       C       D
Leading Lefts  Lead-Lag  Leading Left with Overlap  Lagging Left with Overlap

E       F       G       H
Lead-Lag  Lagging Lefts  Leading Left with Overlap  Lagging Left with Overlap
Global Optimizer

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Intelligently fully-actuated intersections to optimize all approaches

*and*

Coordinated progression

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<table>
<thead>
<tr>
<th>Product and Options</th>
<th>Price per Intersection</th>
<th>Detection</th>
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<tbody>
<tr>
<td><strong>InSync</strong></td>
<td>$25,000</td>
<td>Up to four cameras included</td>
</tr>
<tr>
<td><strong>InSync:Tesla</strong></td>
<td>$25,000</td>
<td>Uses your preferred detectors</td>
</tr>
<tr>
<td><strong>InSync:Fusion</strong></td>
<td>$30,000</td>
<td>Up to four cameras included &amp; integrates existing detectors</td>
</tr>
<tr>
<td>Pedestrian Module</td>
<td>+$5,000</td>
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<tr>
<td>Project Management</td>
<td>+$1,000</td>
<td>or less</td>
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Prices do not include communications, installation, mounting hardware, 14-3 and Cat5e wires, shipping, taxes, spare systems, and peripherals such as in-cabinet monitors and keyboards.
Save time
Save fuel
Save money
Save the environment
Save lives
COLUMBIA COUNTY, GA
WASHINGTON ROAD
JANUARY, 2010
Empower communities with innovative and affordable traffic solutions to save time and money, save the environment and save lives.
Promise

“If after three months of adaptive operation you do not feel our partnership has had a positive impact in terms of reduced travel times, emissions, fuel consumption and improved safety, we will issue you a full refund”
InSync: Tesla

1 DAY

DEPLOY ADAPTIVE TRAFFIC CONTROL IN
InSync: Tesla

How does InSync: Tesla determine demand and optimize service?
Demand determination and local optimization

1) Stop bar detection for each phase
2) Intelligence learns volumes for each phase, re-learns as necessary
3) Schedules green times, phases, sequences and coordination
4) Adjusts immediately during the phase and sequence to real-time demand
Demand determination and local optimization

27 23 19 15

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Demand determination and local optimization

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Demand determination and local optimization

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