WELCOME TO
PTV USER GROUP MEETING INDIA 2017
WE PLAN AND OPTIMISE EVERYTHING THAT MOVES PEOPLE AND GOODS WORLDWIDE.
ABOUT PTV GROUP

805
EMPLOYEES ACROSS THE WORLD

17
SUBSIDIARIES

104
MILLION EUROS TURNOVER

Fiscal year 15-16

PTV GROUP
the mind of movement

OVER 5,500 CUSTOMERS LOCATED IN 180 COUNTRIES SERVED FROM 17 SUBSIDIARIES

ORGANIC GROWTH > 10% P.A.

GLOBAL MARKET LEADER

FOUNDED IN 1979

WE DELIVER SOFTWARE, DATA AND METHODOLOGIES

ON 5 CONTINENTS

EUROPE ASIA AUSTRALIA NORTH/ LATIN AMERICA

www.ptvgroup.com
WE PLAN AND OPTIMISE EVERYTHING WORLDWIDE WHICH MOVES PEOPLE AND GOODS.
VEHICLE ACTUATED SIGNAL CONTROL
INTRODUCING PTV BALANCE AND PTV EPICS

Entire Priority Intersection Control System - PTV Epics

- local optimization of green time splits, stage sequence
- considering coordination
- full transit signal priority
- optimizes every second
VEHICLE ACTUATED SIGNAL CONTROL
INTRODUCING PTV BALANCE AND PTV EPICS

Balancing Adaptive Network Control Method - PTV Balance

- network wide optimization of green time splits and offsets
- optimizing coordination
- optimizes every 5 minutes
THE FUSION of transport models capable of PREDICTION WITH THE ONLINE REAL-TIME DATA will provide INFORMATION ON EXISTING CONDITIONS would create a REAL-TIME PREDICTION PLATFORM.

TRANSPORT MODEL + REAL TIME DATA

DATA INPUT
- DETECTORS
- ANPR
- FCD
- MOBILE PHONE

DECISION SUPPORT TOOL – LIVE MODEL
- DATA FUSION
- MODEL UPDATE
- REAL-TIME
- ROLLING HORIZON
ACTIVITIES IN INDIA FOR SMART SIGNALLING WITH PTV BALANCE AND PTV EPICS

WHO KEEPS CITY’S RHYTHM FLOWING?
CHANDIGARH STUDY SECTION
**NETWORK LEVEL SUMMARY PEAK HOUR TRAFFIC BEFORE & AFTER**

- Traffic increase by 6% in Network level.

<table>
<thead>
<tr>
<th>Duration</th>
<th>Network Peak Volume - Before</th>
<th>Network Peak Volume - After</th>
<th>Network Peak Hour</th>
<th>Increase in Traffic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morning</td>
<td>18788</td>
<td>22173</td>
<td>9.15-10.15</td>
<td>18.0%</td>
</tr>
<tr>
<td>Afternoon</td>
<td>18021</td>
<td>18682</td>
<td>13.45-14.45</td>
<td>3.6%</td>
</tr>
<tr>
<td>Evening</td>
<td>19143</td>
<td>20885</td>
<td>17.15-18.15</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

**Total Network Volume**

<table>
<thead>
<tr>
<th>Duration</th>
<th>Before</th>
<th>After</th>
<th>Increase in Traffic (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2,06,720</td>
<td>2,19,731</td>
<td>6.3%</td>
</tr>
</tbody>
</table>
RESULT COMPARISON - CHANDIGARH

- Travel Time from all the observed journey routes are decreased by 20% compared to Fixed Time Controller.
RESULT COMPARISON - CHANDIGARH

- An average queue length is decreased by 50% compared to fixed time signal.
- From 96 seconds to 57 sec average network delay is observed from balance model.

- Overall network speed has been increased from 28 kmph to 34 kmph. Improvement of 20%.
PUNE – STUDY AREA
RESULT COMPARISON - PUNE

- Travel Time from all the observed journey routes are decreased by 32% compared to Fixed Time Controller.

The average journey delay is 32% decreased.
RESULT COMPARISON – PUNE

- An average queue length is decreased by 24% compared to base model.

**Average Queue Length - Pune**

- **Khandujibaba Square**: Base Model - 80 Meters, Balance - 30 Meters.
- **Prabhat Road**: Base Model - 20 Meters, Balance - 10 Meters.
- **Savarkar Statue**: Base Model - 40 Meters, Balance - 20 Meters.
- **Ras Shala**: Base Model - 60 Meters, Balance - 30 Meters.
- **Swatantra Chowk**: Base Model - 80 Meters, Balance - 40 Meters.
- **Nal Stop**: Base Model - 120 Meters, Balance - 60 Meters.
- **Flyover Bridge**: Base Model - 20 Meters, Balance - 10 Meters.
- **Karishma Society**: Base Model - 40 Meters, Balance - 20 Meters.
- **Mrityunjay Temple**: Base Model - 60 Meters, Balance - 30 Meters.
- **Karve Statue**: Base Model - 80 Meters, Balance - 40 Meters.

**Average Network Delay/Vehicle - Pune**

- **Base Model**: Average delay per vehicle - 150 seconds.
- **Balance**: Average delay per vehicle - 75 seconds.

**Average Network Speed - Pune**

- **Base Model**: Average network speed - 20 kmph.
- **Balance**: Average network speed - 25 kmph.
RESULT COMPARISON – DELHI

- Travel Time from all the observed journey routes are decreased by 26% compared to Fixed Time Controller.

![Travel Time Comparison-Delhi](chart)

- The average journey is 45% decreased.

![Average Delay-Delhi](chart)
RESULT COMPARISON – AVERAGE QUEUE LENGTH-DELHI

An average queue length is decreased by 37% compared to base model.

Average Queue Length-Delhi

Average Network Delay/Vehicle-Delhi

Average Network Speed-Delhi
# RESULT COMPARISON – FIXED TIME VS BALANCE / EPICS

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Delhi</th>
<th>Pune</th>
<th>Chandigarh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel Time (Sec)</td>
<td>▼ 26%</td>
<td>▼ 32%</td>
<td>▼ 20%</td>
</tr>
<tr>
<td>Queue Length (Meters)</td>
<td>▼ 37%</td>
<td>▼ 24%</td>
<td>▼ 50%</td>
</tr>
<tr>
<td>Journey Delay (Seconds)</td>
<td>▼ 45%</td>
<td>▼ 32%</td>
<td>▼ 39%</td>
</tr>
<tr>
<td>Average Network Speed (Kmph)</td>
<td>▲ 27%</td>
<td>▲ 51%</td>
<td>▲ 20%</td>
</tr>
<tr>
<td>Average Network Delay (Seconds)</td>
<td>▼ 30%</td>
<td>▼ 43%</td>
<td>▼ 41%</td>
</tr>
</tbody>
</table>
PTV SOFTWARE
SMART TRAFFIC SOLUTIONS FOR SMART CITIES

THANK YOU!