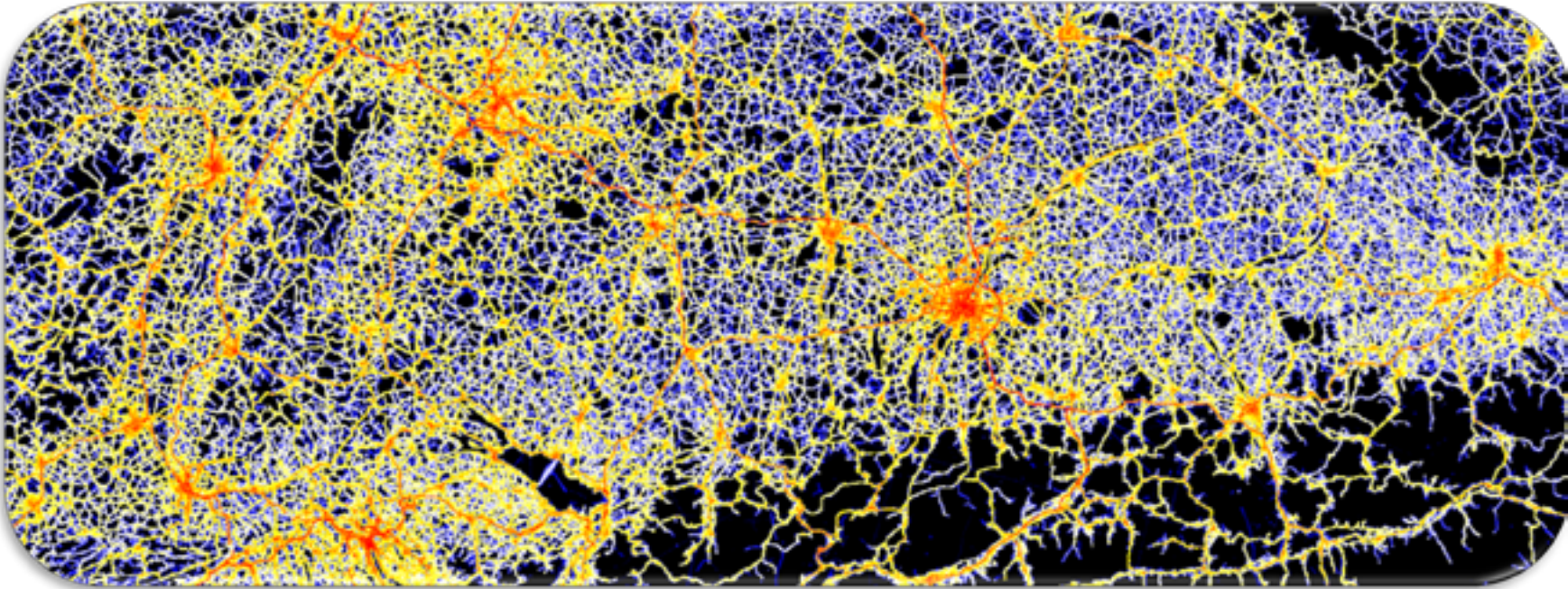




**TomTom**

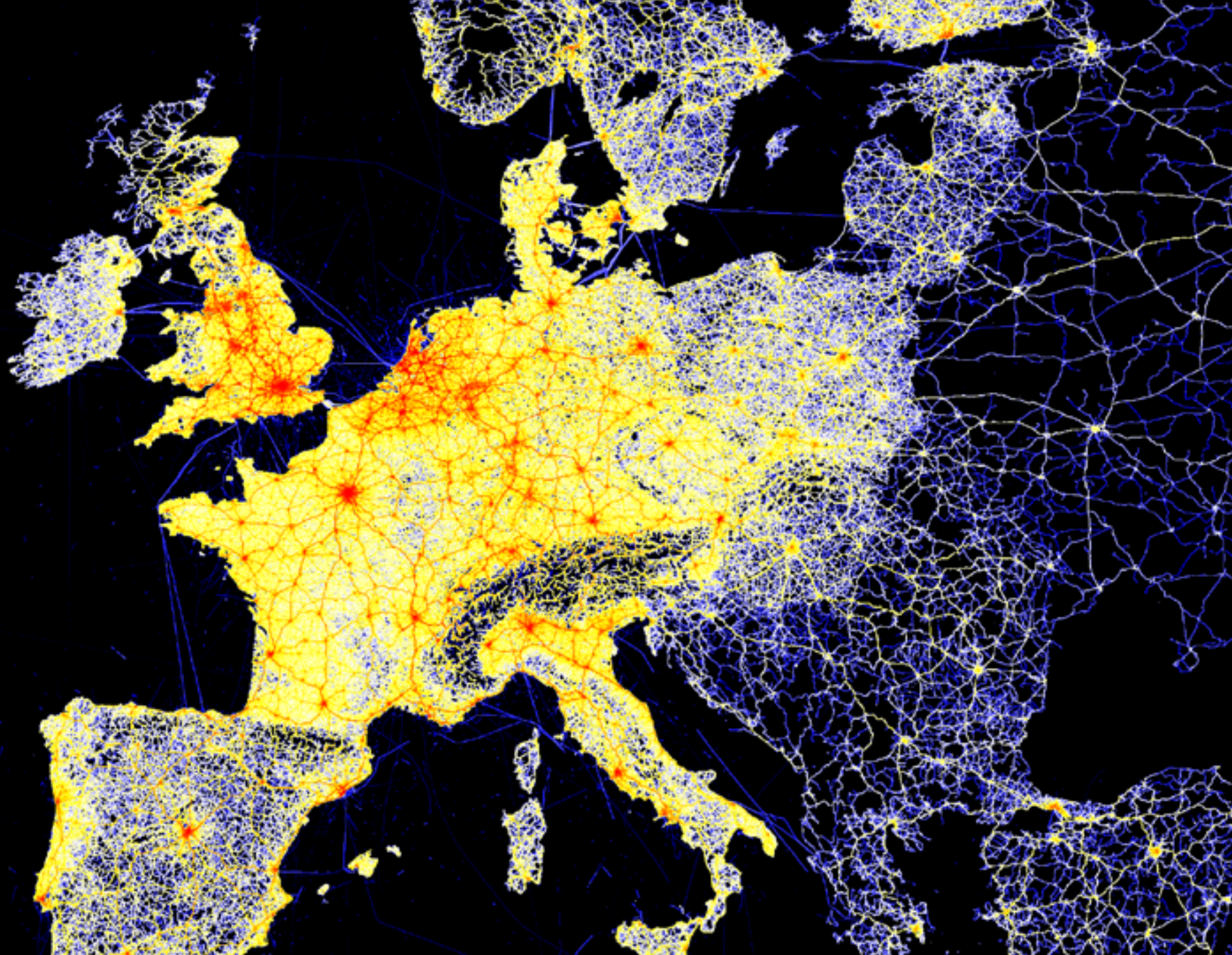


# TomTom Traffic Information Makes GIS Analysis Smart

Jeroen Brouwer

**2013 Esri Europe, Middle East and  
Africa User Conference**

October 23-25, 2013 | Munich, Germany



# AGENDA

- ▶ INTRODUCTION
- ▶ HISTORICAL TRAFFIC PATTERNS
- ▶ REAL-TIME TRAFFIC SITUATIONS
- ▶ GIS ANALYSIS THAT BENEFIT
- ▶ Q&A

# INTRODUCTION

Intro

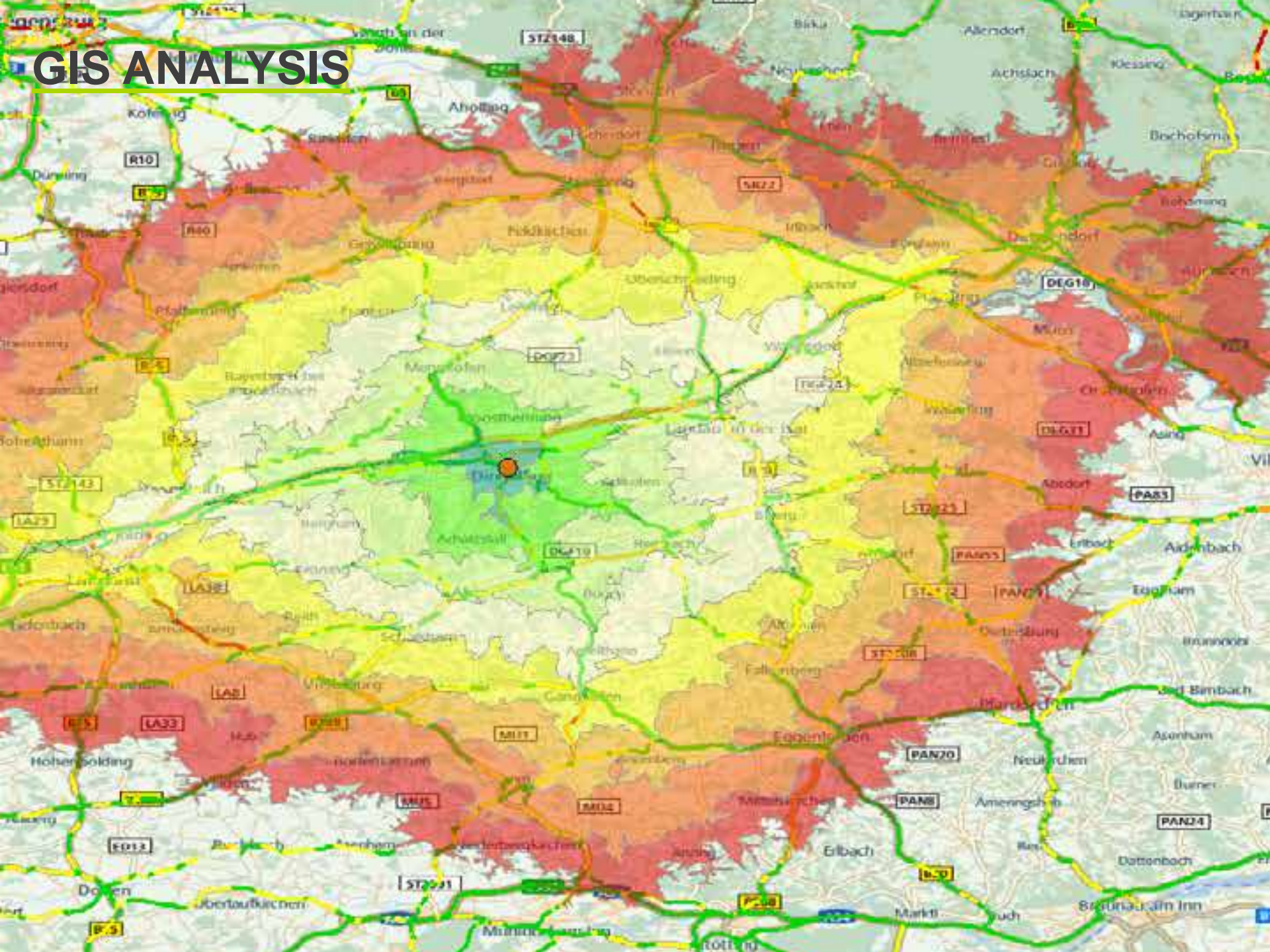
Historical  
Traffic

Real-Time  
Traffic

Smart GIS  
Analysis

Q&A

# GIS ANALYSIS



# BENEFITS FOR DIFFERENT SECTORS

Government



Infrastructure  
planning and  
traffic  
management

Insurance



Risk assessment

Transportation  
and Logistics



Supply chain  
planning  
Analysis

GeoAnalytics



Site selection

Portable &  
Wireless



Real-time  
navigation

Internet &  
media



Relevant  
information

# Historical Traffic

Intro

Historical Traffic

Real-Time Traffic

Smart GIS  
Analysis

Q&A

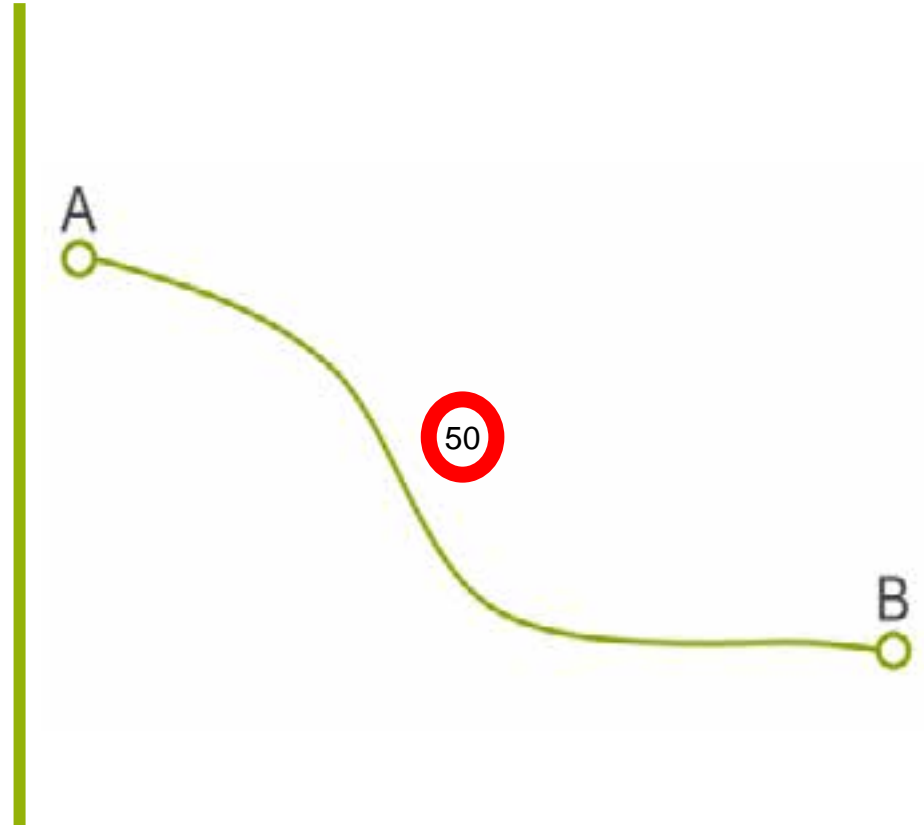
# ROUTING PROBLEM

## Routing algorithms

- Take the navigable network and the cost per segment as input
- The cost per segment is primarily defined by travel time

Travel time is traditionally derived from map features

- road class
- legal speed
- segment length





# ROUTING PROBLEM



However, travel time strongly depends on:

- The **density of cars** on the road, curvature, slopes, priority rules, traffic lights, pedestrian crossings

Usually, travel time is not static but

- will vary over the **time of the day**

# GPS PROBE DATA



All types of GPS devices



Community feedback



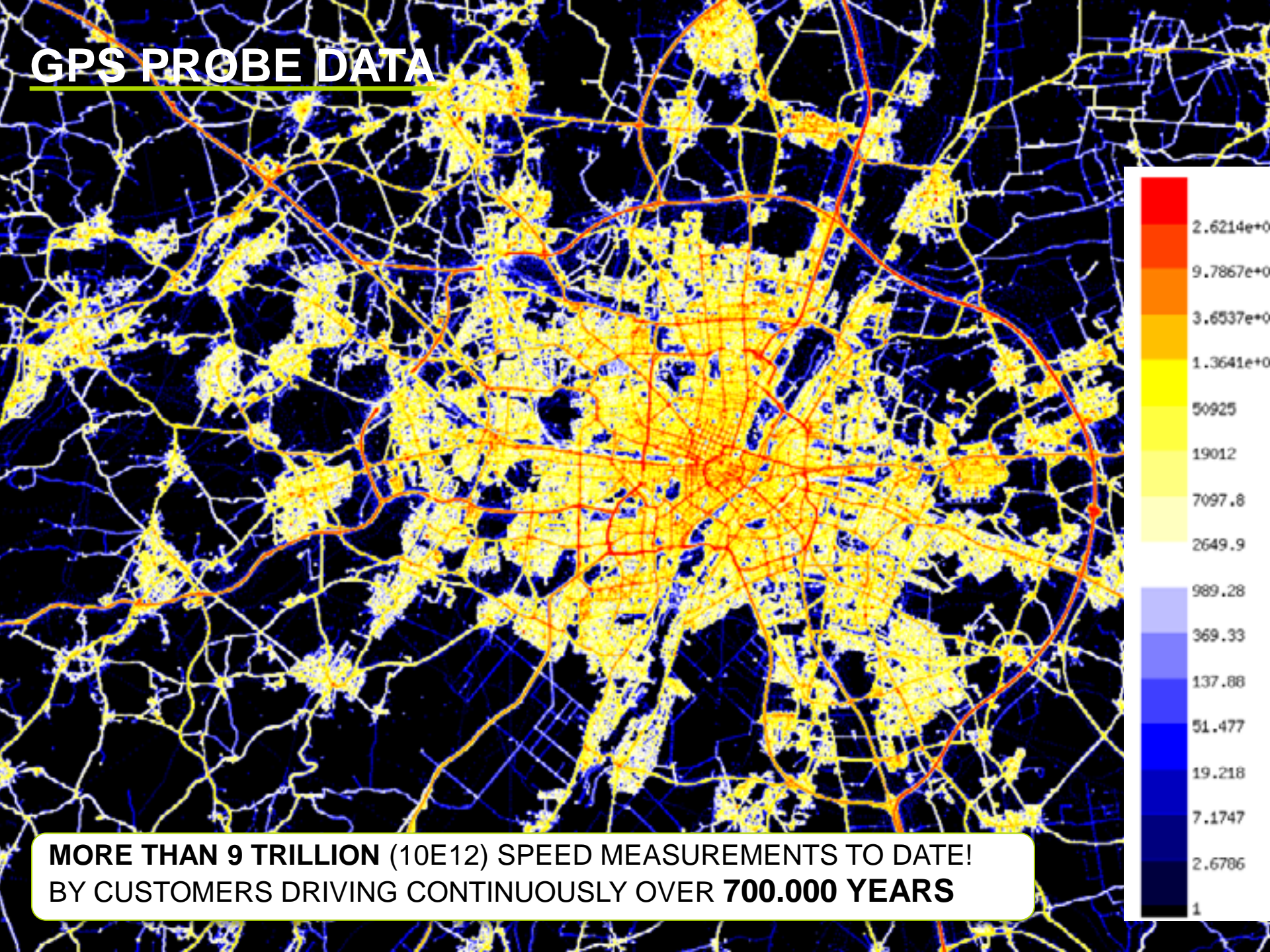
Worldwide program since 2007



Via desktop at home and over the air

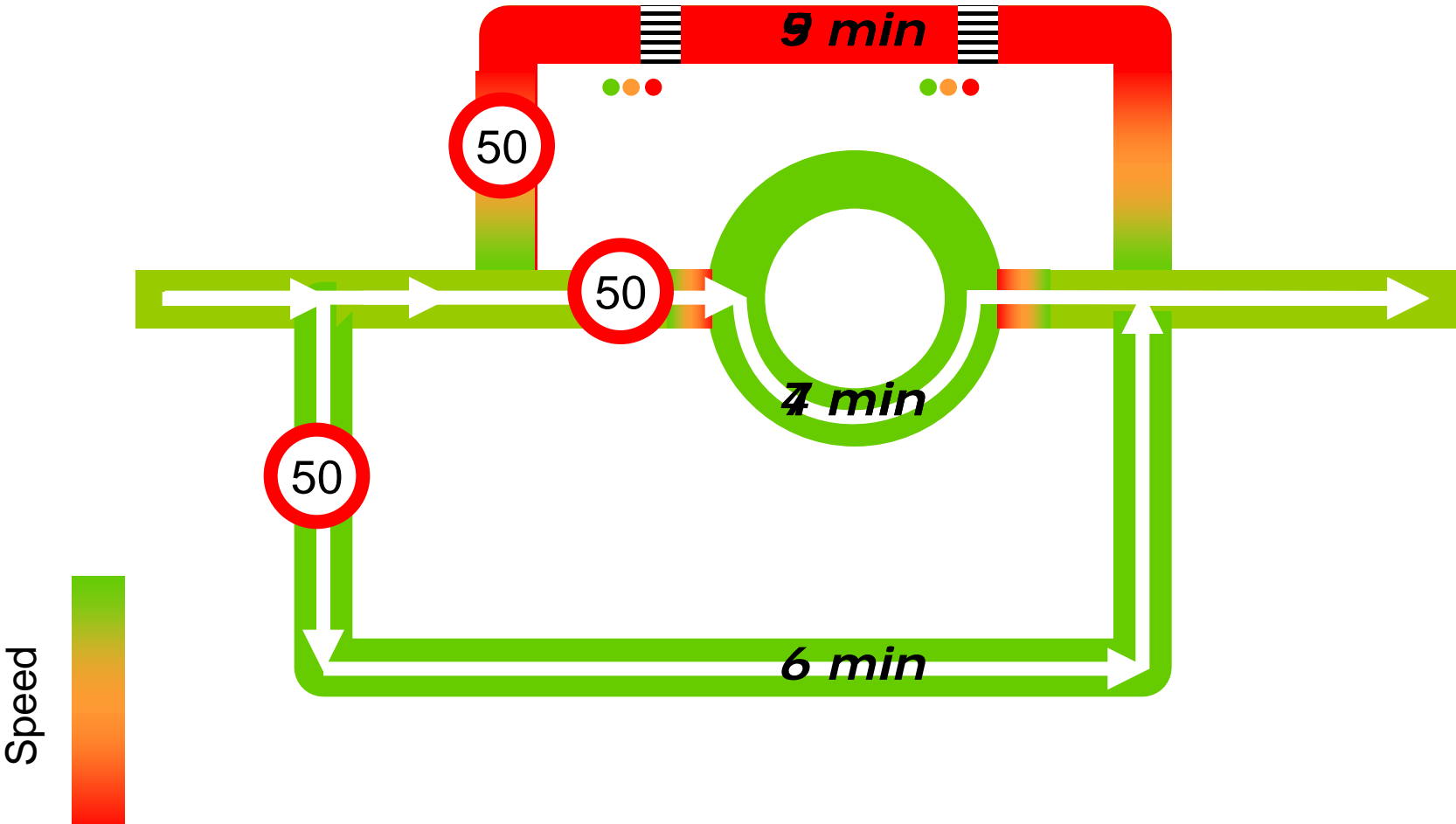


# GPS PROBE DATA

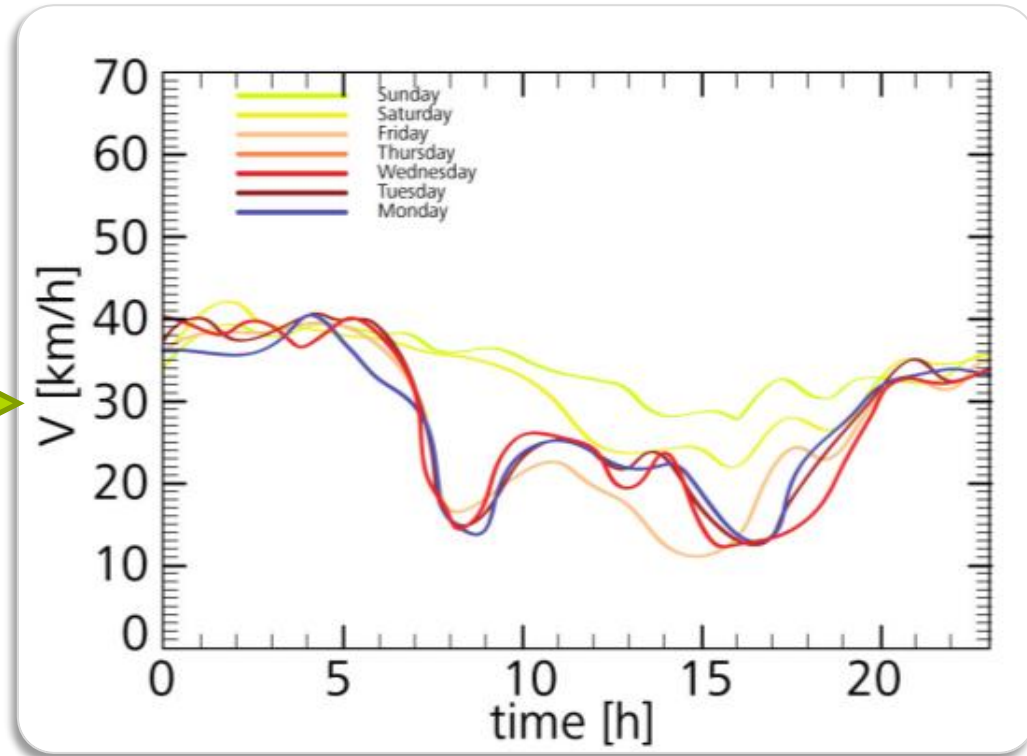
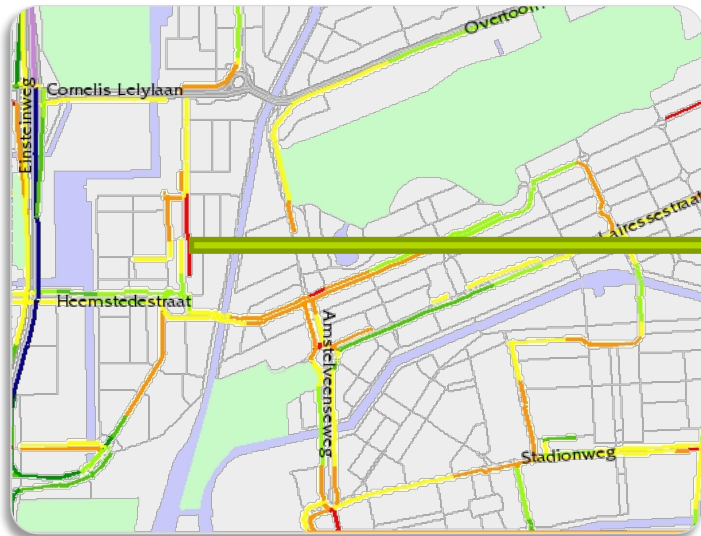


**MORE THAN 9 TRILLION (10E12) SPEED MEASUREMENTS TO DATE!**  
**BY CUSTOMERS DRIVING CONTINUOUSLY OVER 700.000 YEARS**

# HOW IT WORKS



# HOW IT WORKS



- for each map segment, every 5-minutes, every day of the week
- Uses 2 years average travel times data
- Refresh with every map update

# Real-Time Traffic



Real-Time Traffic

Intro

Historical Traffic

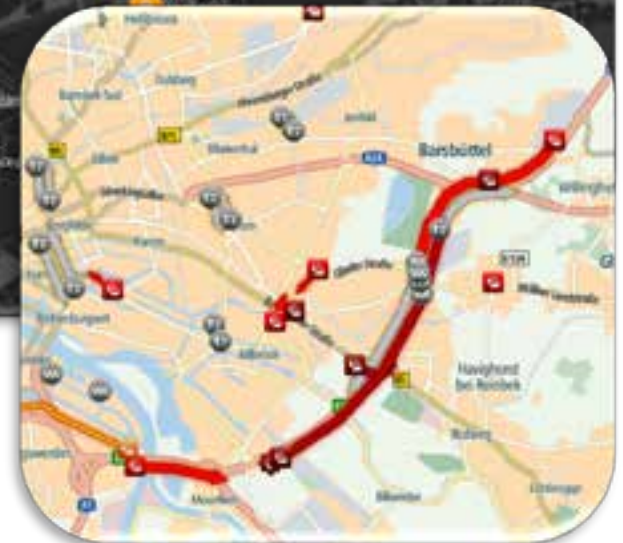
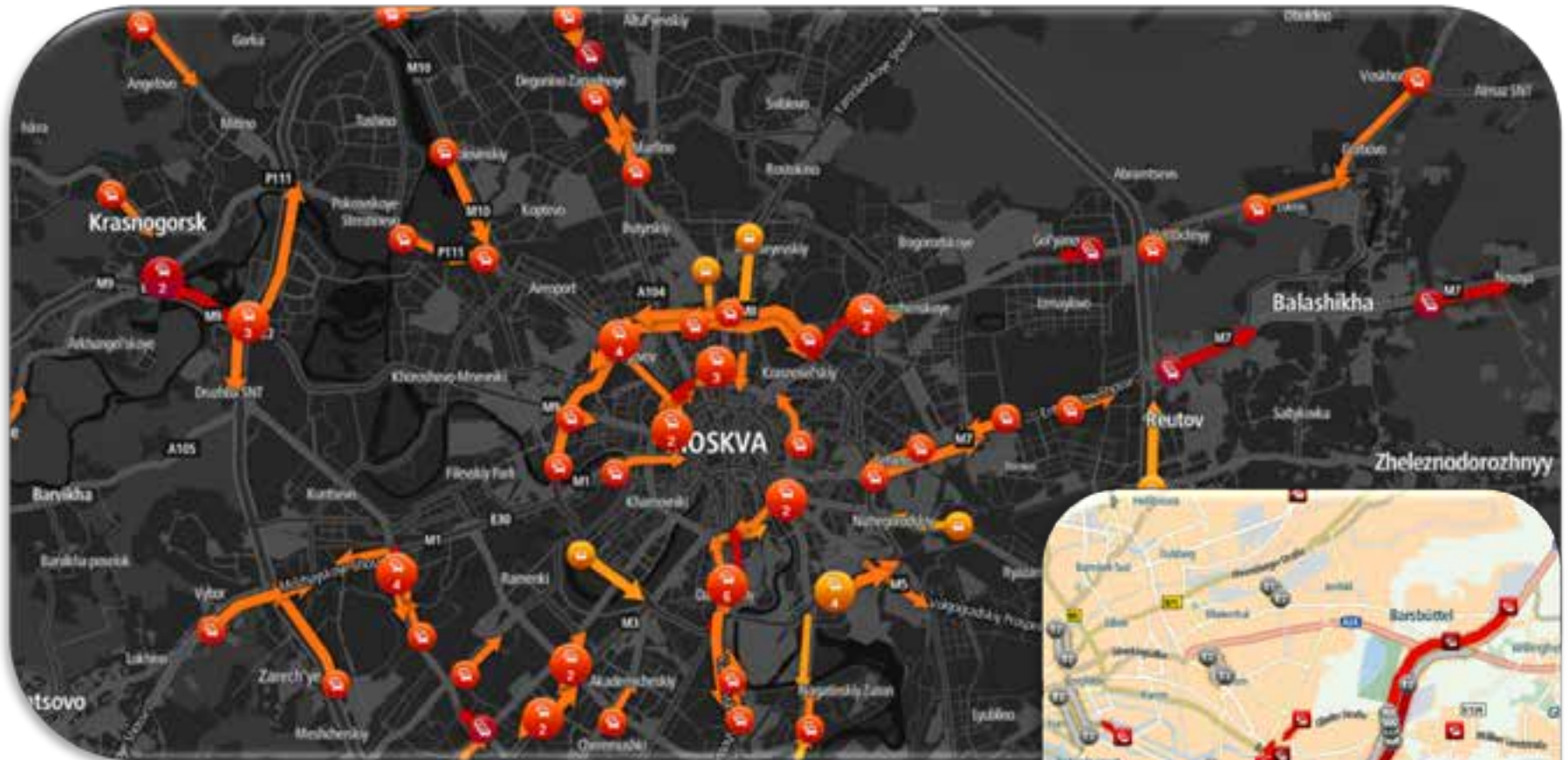
Smart GIS Analysis

Q&A

# REAL-TIME GPS PROBE DATA



# TRAFFIC JAM AND INCIDENT INFORMATION



- File contains information ONLY for the road stretches affected by incident/congestion



# TRAFFIC FLOW INFORMATION



- Current speed information on TMC roads – both congested and freeflow

# Smart GIS Analysis

Intro

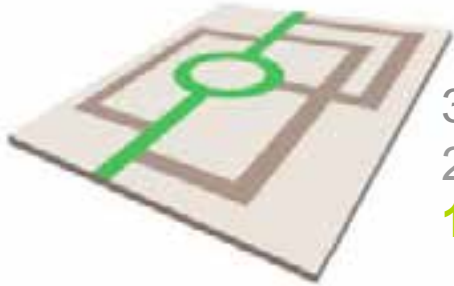
Historical  
Traffic

Real-Time  
Traffic

Smart GIS  
Analysis

Q&A

# INTEGRATION IN CONTENT PORTOFOLIO



3. TomTom Traffic
2. Speed Profiles
1. **Base maps**

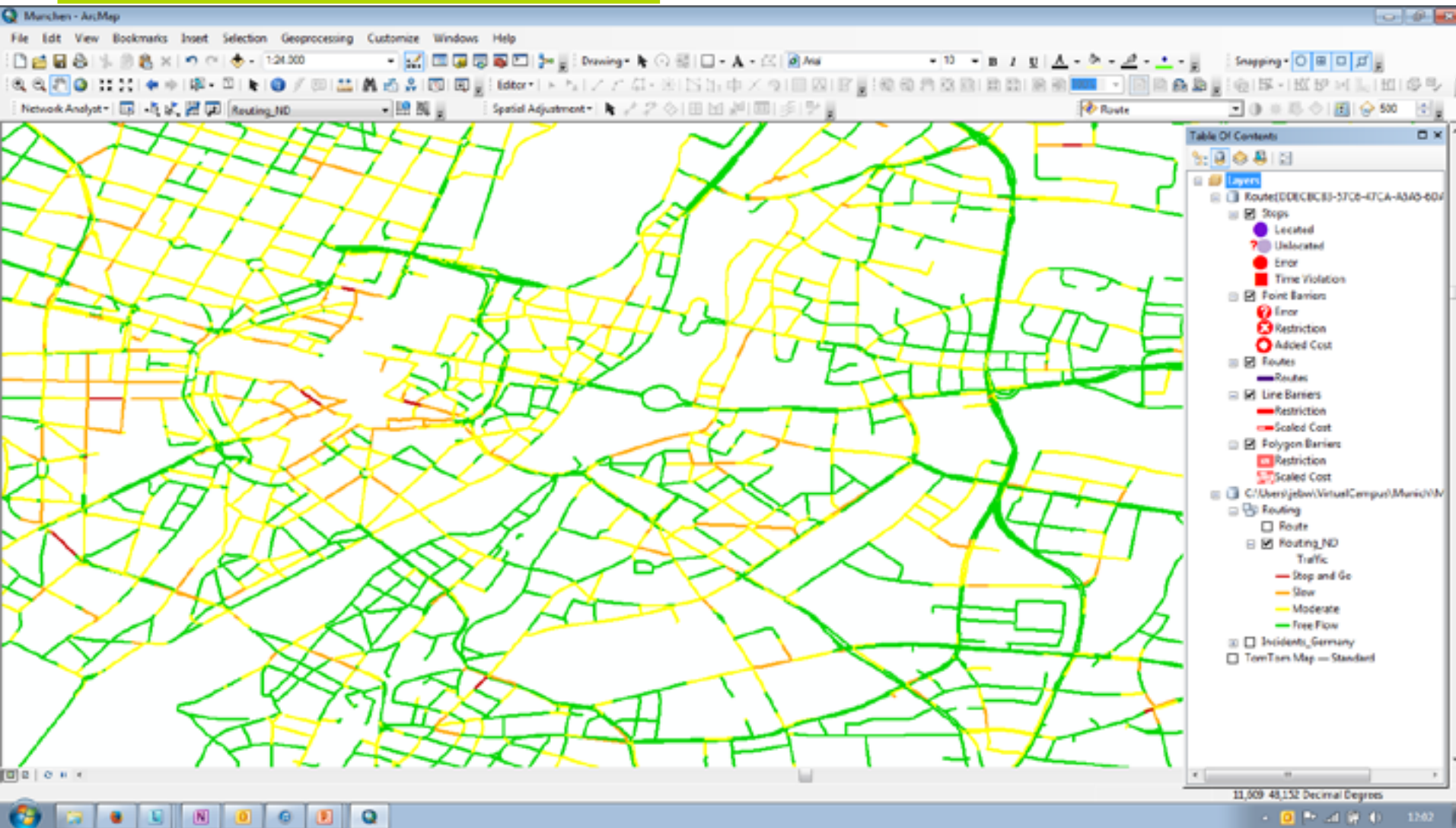


3. TomTom Traffic
2. **Speed Profiles**
1. Base maps

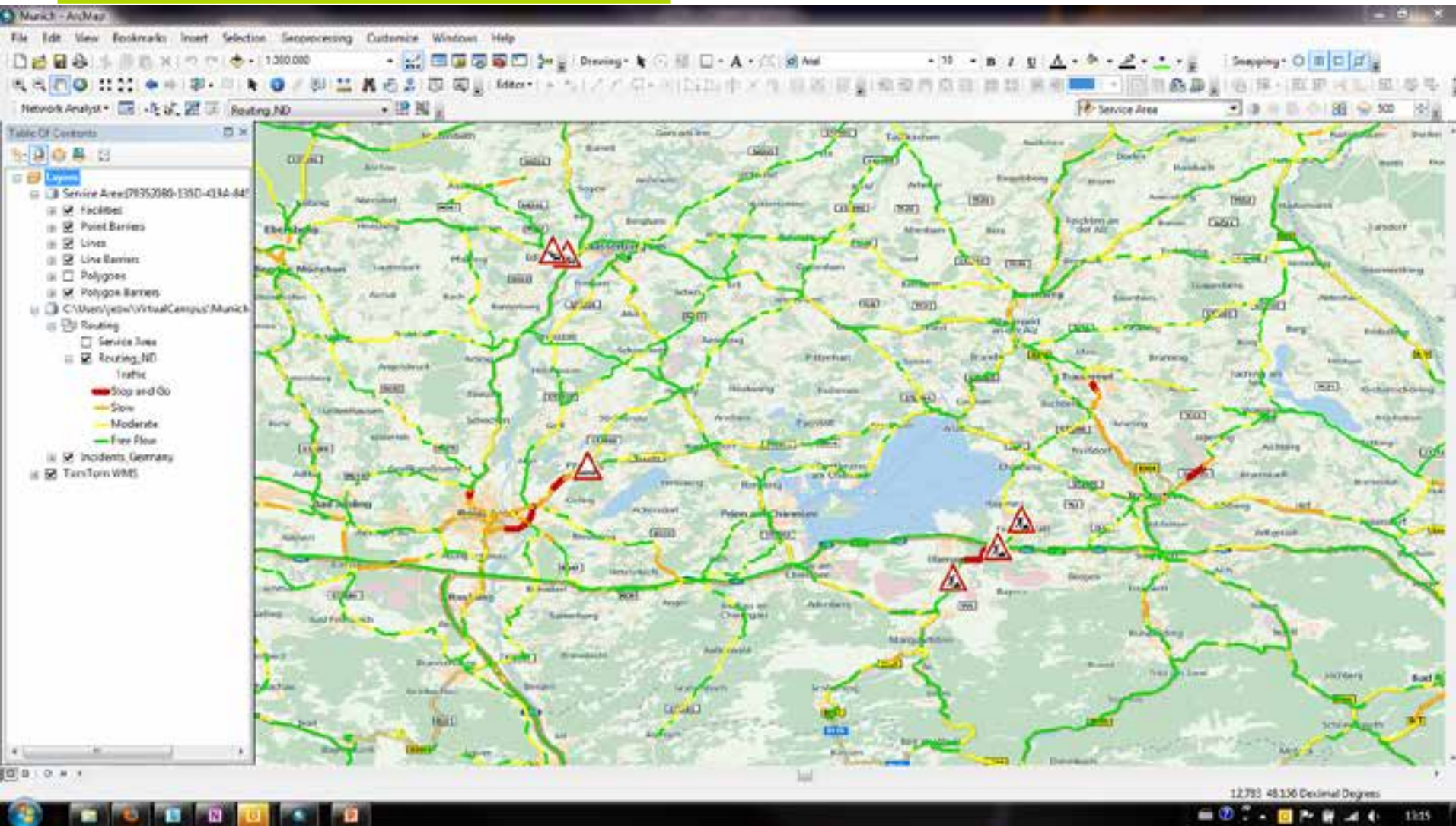


3. **TomTom Traffic**
2. Speed Profiles
1. Base maps

# Visualize Historical Traffic



# Visualize Real-Time Traffic



# SMART PLANNING



Travel Time: 62 minutes  
Distance: 50.0 km

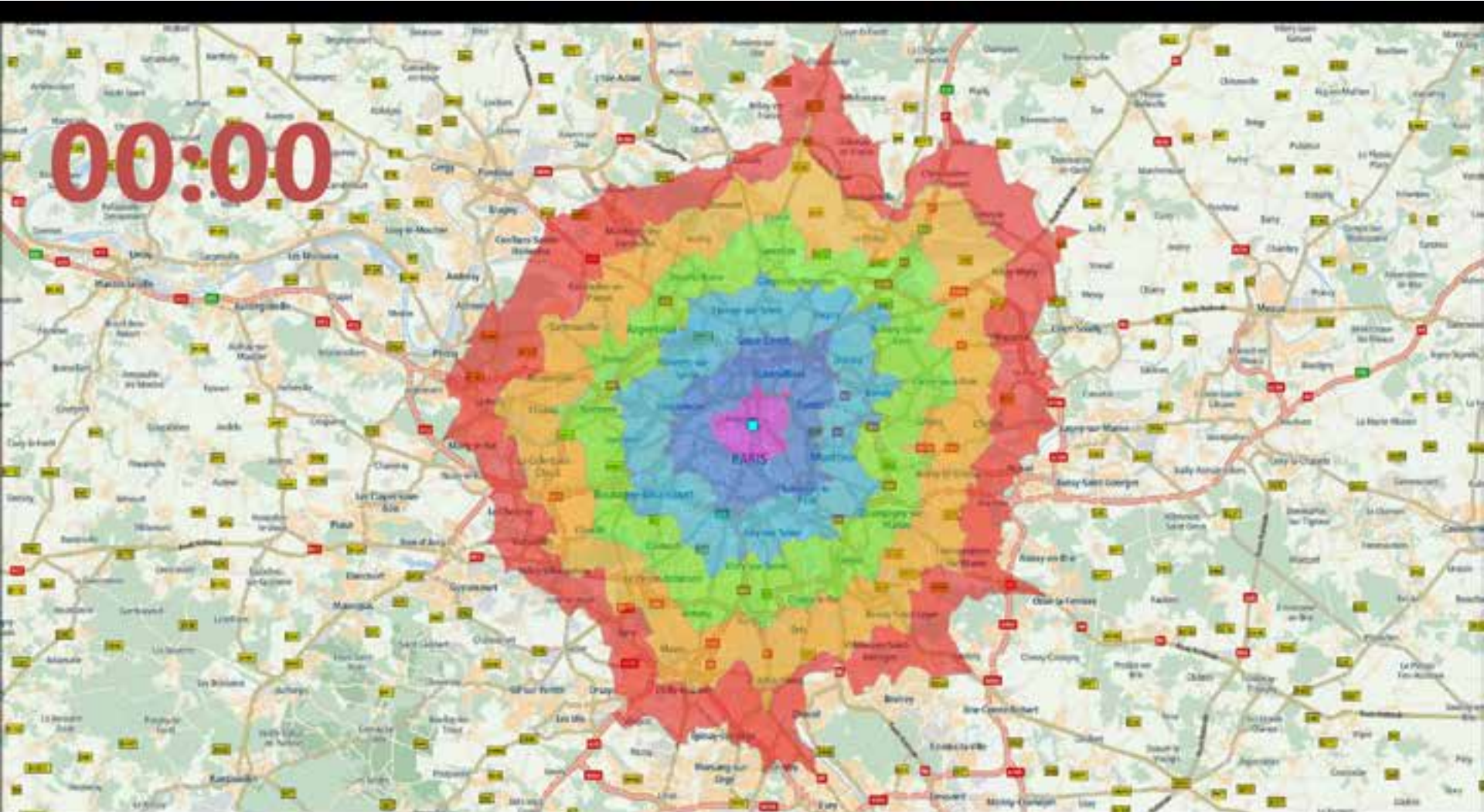
# SMART PLANNING



Travel Time: 58 minutes  
Distance: 51.1 km

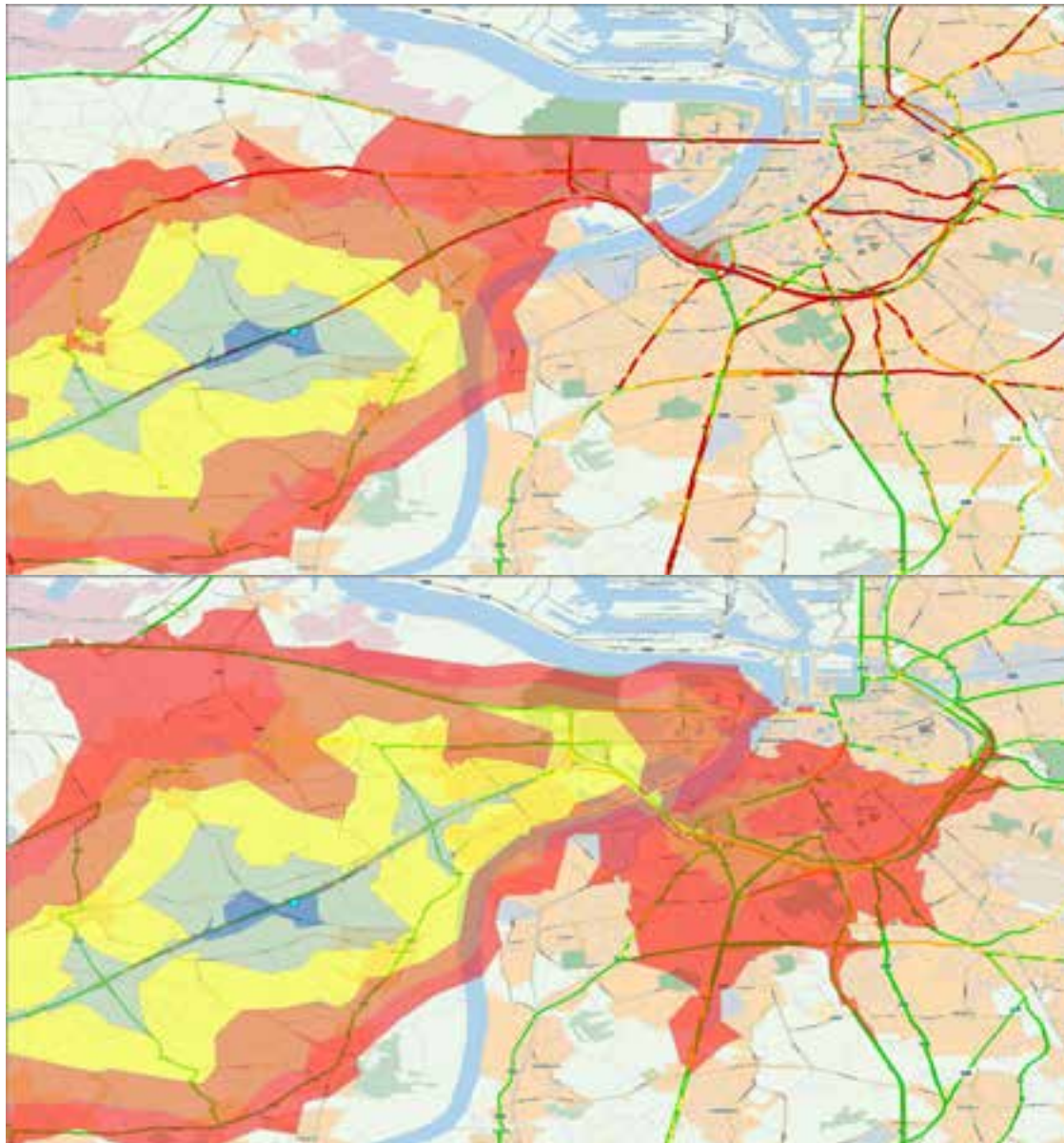
# Travel Time Isochrones

# Gare du Nord

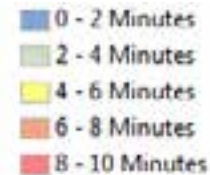




# Use Case Example – Congestion impact

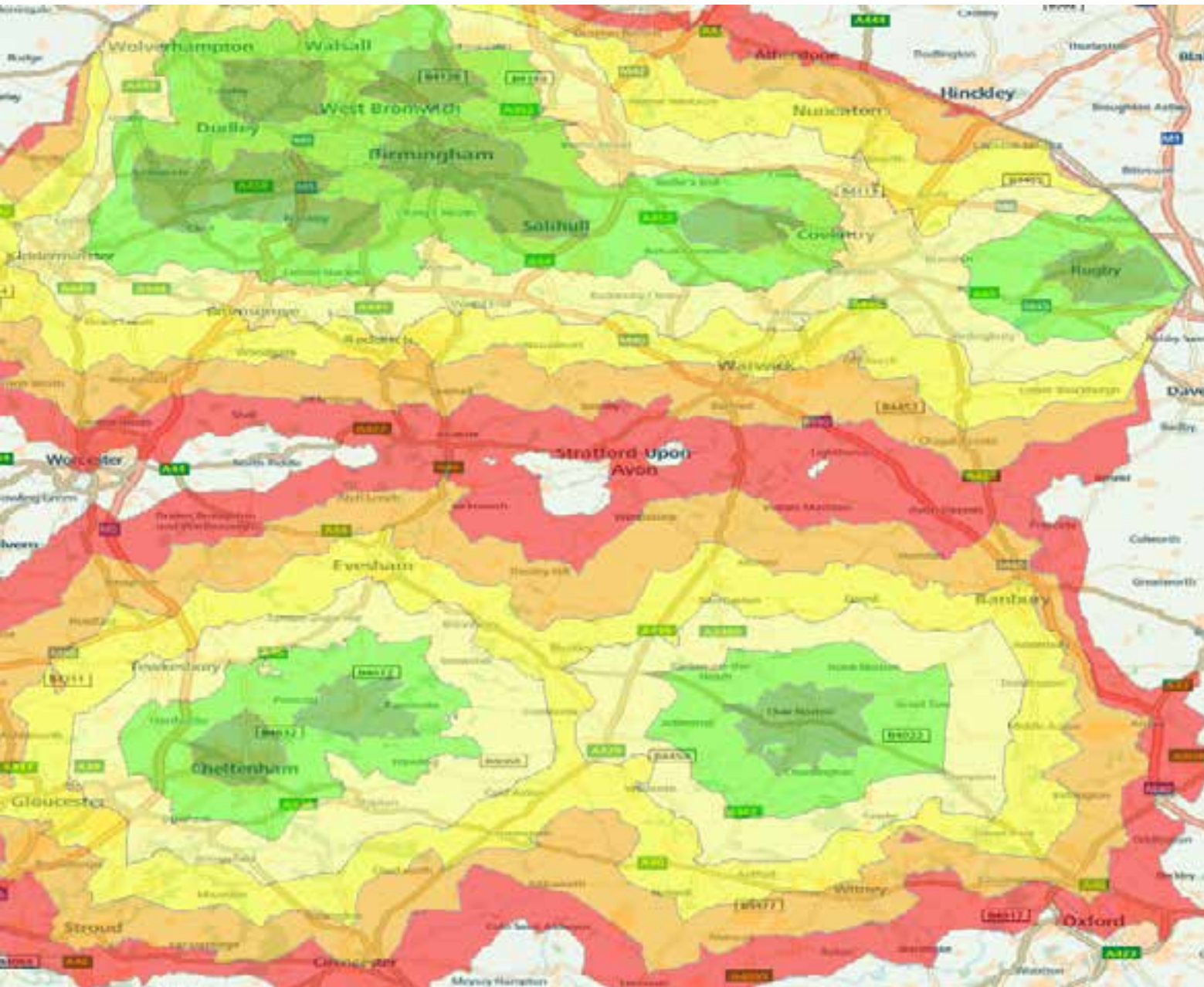


17:00 on a Friday  
Area Accessible within 10  
minutes of Origin Point



12:00 on a Friday  
Area Accessible within 10  
minutes of Origin Point

# Use Case Example – Coverage of emergency services



- 0 - 5 Minutes
- 5 - 10 Minutes
- 10 - 15 Minutes
- 15 - 20 Minutes
- 20 - 25 Minutes
- 25 - 30 Minutes

# Use Case Example – Site Selection



# BENEFITS



## ROUTE & ETA

- Optimal and **time dependent** quickest route calculation
- Can be used pre-trip / planning when no real-time info is available

## REAL-TIME

- **Accurate** Estimated time of Arrival. Known delays as signals and slow curves are incorporated in travel time

## NETWORKWIDE

- Coverage on all roads– high detail is not limited to highway network – **all roads** can be accurately evaluated within the routing

# Questions & Answers

Intro

Historica  
I Traffic

Real-Time Traffic

Smart GIS  
Analysis

Q&A



**tomtom**



## For More Information

You can learn more at...

- [tomtom.com/licensing/products/traffic](https://tomtom.com/licensing/products/traffic)
- [emea.licensingrequest@tomtom.com](mailto:emea.licensingrequest@tomtom.com)