Emissions Visualization Demonstration
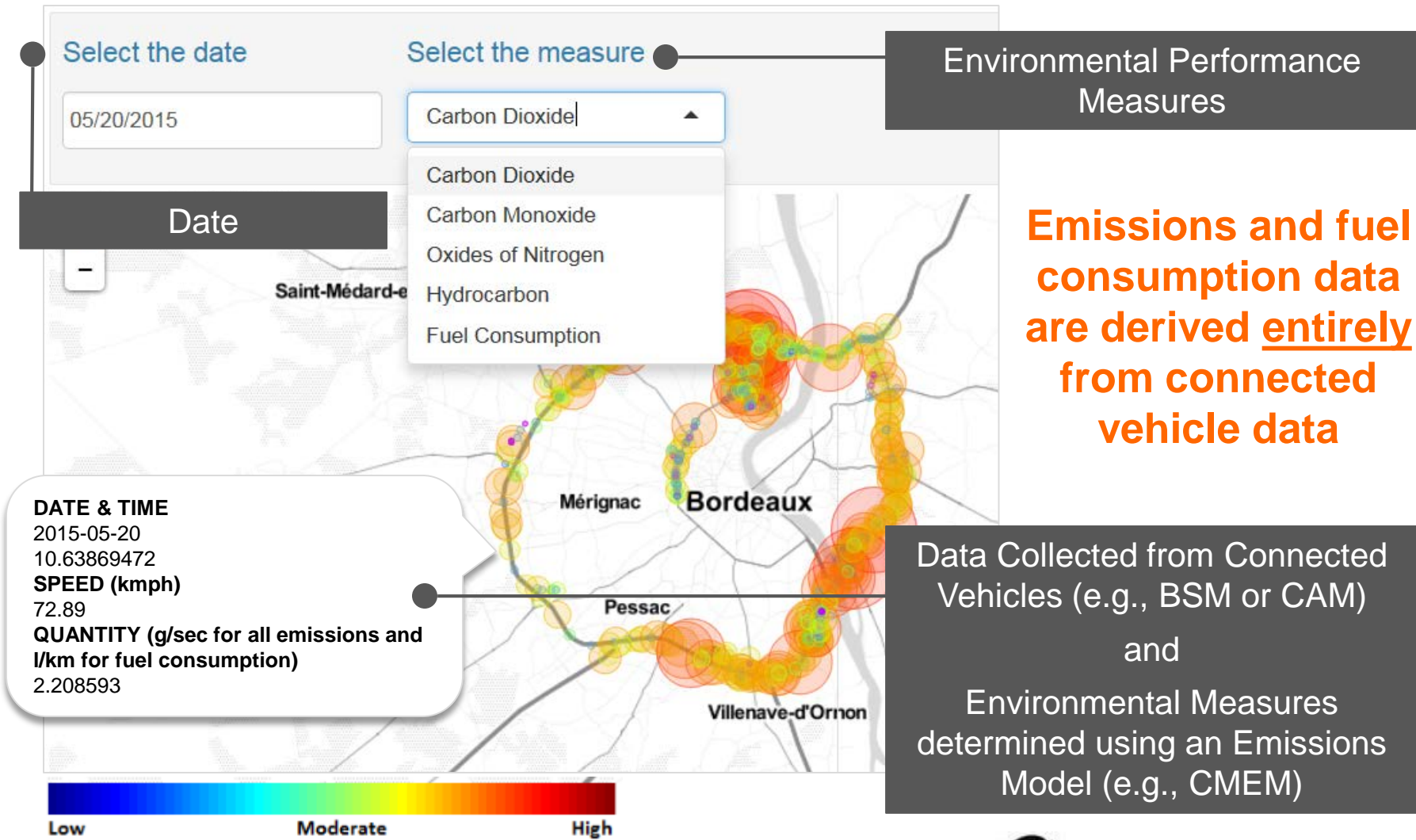
US-EU Sustainability Working Group (SWG)

Background and Overview

- The **US-EU Sustainability Working Group (SWG)** was formed to identify, research, quantify, and evaluate the environmental benefits of ITS and connected vehicle applications.

- Working together, the US and EU developed an **Emissions Visualization Demo** for the 2015 ITS World Congress in Bordeaux, France. The demo:
  - Leveraged **EU Compass 4D connected vehicle data** (e.g., archived CAM-like data in a geo-fenced area) and infrastructure;
  - Used **US algorithms** to calculate environmental performance measures based on vehicle trajectory data; and
  - Produced vehicle emissions and fuel consumption **heat maps** derived entirely from connected vehicle data.

  Note: Visualizations show transportation-only contributions to emissions

Emissions Visualization Tool

U.S. Department of Transportation
ITS Joint Program Office

3

Fuel Consumption Hotspots

Select the date
05/20/2015

Select the measure
Fuel Consumption

Freight Area – North

Freight Area – Southeast

Water Treatment Plant &
Bordeaux Technical Services

Low   Moderate   High

Opportunities

- **Transportation Planners may use the tool to:**
  - Visualize and monitor transportation-related vehicle emissions over time by observing hotspots and trends
  - Assist in prioritizing transportation solutions – both conventional and ITS solutions – that have the potential to reduce vehicle emissions
  - Conduct before and after impacts assessments to determine and track the effectiveness of newly deployed transportation solutions

- **System Operators may use the tool to:**
  - Identify anomalies in environmental performance of the transportation system
  - Make real-time operational decisions to help reduce emissions, including:
    - Updating traffic signal timings (at hotspots) in real-time on arterials
    - Implementing speed harmonization strategies – optimized for the environment – on freeways

For More Information

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