Transportation Safety Management Solution

End-to-end data-driven solution uses the analysis of crash data to identify at-risk locations on the network and prioritize them for projects and state highway safety reporting

Overview

Across North America, government guidelines require Departments of Transportation and other transportation agencies to make data-driven decisions for road safety projects that reduce accidents, fatalities, and serious injuries.

Hexagon's Geospatial division provides transportation safety engineers and analysts with an end-to-end solution for data ingestion, analysis, and reporting to help reduce traffic fatalities and improve road safety. The solution enables data-driven decision making for targeting and ranking safety improvements and reporting on project priorities.

Capabilities

Fuse Crash and Roadway Data

Seamlessly incorporate crash data directly from the Department of Public Safety into a smart enterprise-wide database that is fused with up-to-date road network and inventory data to generate accurate crash records, which is critical for analysis.

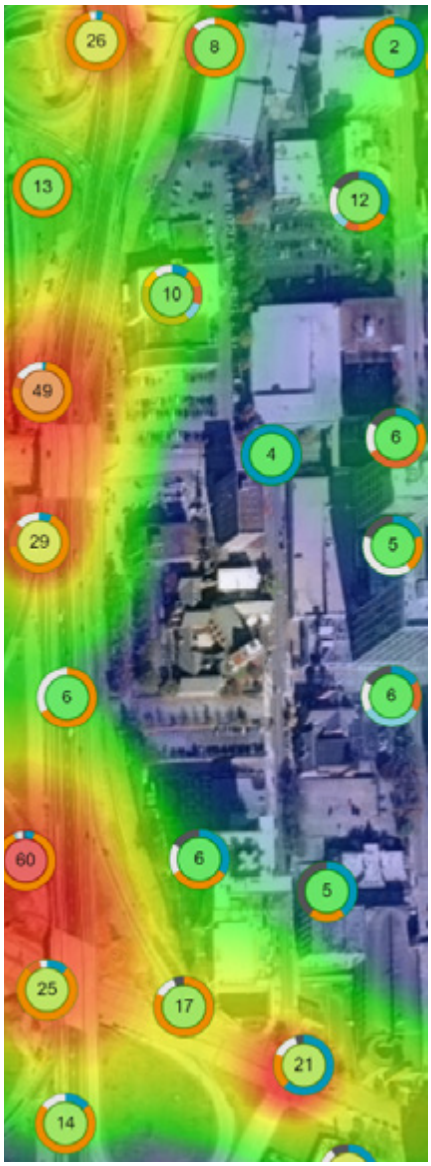
This flexible data model uses an automated process with change management logic to import, validate, and fuse crash, traffic, road network, and inventory data and updates. The database structure accommodates Model Inventory of Roadway Elements (MIRE) and Model Minimum Uniform Crash Criteria (MMUCC) requirements which ensures compliance with industry and federal mandates.

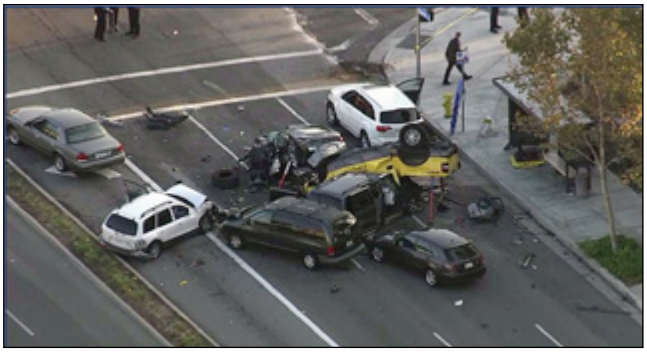
Automated Crash Record Cleansing

Easily update crash records' locations or attributes by using the Crash Data Cleansing tool. This tool includes user-defined dashboards that automatically track statistics such as crashes by county, editing history, and new or unresolved crashes. In addition, the Image Viewer application can be configured with different base maps to provide more accurate spatial context for the crash locations.

Faster Crash Data Searching

Most editing or analysis tasks start with locating the needed data. The Crash Query tool lets you query all the crashes in the database and filter them by specific criteria such as crash type, time of day, road condition, date/time or any other filter criteria. The analyst then specifies road or intersection criteria. This will be the input for network screening and analysis. These queries can be saved and subsequently edited. Frequently used criteria can therefore be used on a recurring basis in later analysis.





Network Screening for At-Risk Locations

Several network screening tools are available to help you determine where the at-risk locations are within the network. Select the query that contains the specific crash and highway criteria as input to the selected method of analysis. The screening methods are:

- Sliding Scale – Analysis based on cluster (of crashes) length, cluster tolerance, and minimum number of crashes
- Homogeneous Section or Intersection – Select criteria such as Average Daily Traffic (ADT), speed limit, and so forth. Results can include calculated attributes that can be configured by your administrator, such as Crash Cost.

Analysis, Countermeasure Testing and Priority Ranking

The solution supports predictive modeling of future crash rates based on state-specific Safety Performance Functions (SPFs). In addition, the SPFs can be further calibrated by using Crash Modification Factors (CMFs). Cost-benefit calculations of potential countermeasures help the analyst determine the proper and most cost-effective treatments.

Collision diagrams can be generated to help you further diagnose what the contributing factors are for the locations identified by the network screening.

Additional tools can be configured with the system to supplement the diagnosis of hot spots. The solution can be configured to utilize data such as digital elevation models, imagery and LiDAR for true 3D digital reality diagnosis. Optional tools such as Straight-Line Diagrams and Image Viewer can be configured to provide the analyst with a birds-eye view of each location.

Standard and Ad-hoc Reports

You can generate basic reports such as crash summary and statistics; in addition, you can create ad-hoc reports. The report engine also lets you create templates that are specific to your agency, for example to help communicate with stakeholders. In addition, the HSIP report can be prepared for submittal to FHWA to request funding for the highest-priority projects. Administrators can also configure presentation dashboards to visualize analysis results. These dashboards contain configurable Business Intelligence (BI) charts and graphs for enterprise dissemination. This ensures transparency with stakeholders and the public for how the safety projects will be funded.

Benefits

- Improves overall reliability of crash data by enabling editing and validation checks
- Supports faster and more accurate preparation of HSIP through robust analysis
- Lowers deployment cost for safety analysis by using a web-based interface
- Provides easier access to safety-related data throughout the enterprise
- Helps DOTs in achieving FHWA Zero fatalities/serious injury goals by data-driven planning

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About Hexagon

Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications. Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's Geospatial division creates leading platforms, applications and solutions for visualizing, analyzing, and deriving insight from location data. By interconnecting the geospatial and operational worlds, we help customers of all sizes – from sites to cities to nations – use 5D location intelligence to solve real-world, mission-critical challenges.

From snapshots in time to real-time streams, our technology enables autonomous connected ecosystems that deliver reliable, repeatable location information. We shorten the loop from data acquisition to action, helping clarify what was, what is, what could be, what should be, and ultimately, what will be, so we can build a thriving, sustainable world.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 4.3bn USD. Learn more at hexagon.com and follow us @HexagonAB.