RUBIX Application Spotlight

Automating a Workflow Process for a Multipurpose Class 1 Profiler

Project Overview

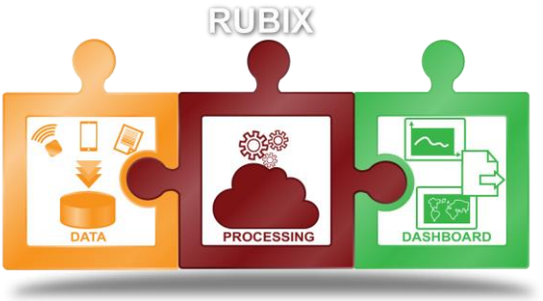
Many of the RUBIX Application Spotlights have focused around the use of Rival's data collection apps (rRuf, rRate). However this project extended this implementation to allow for 3rd party roughness and distress data collected by a multipurpose vehicle utilize the backend processing automation of the RUBIX technology platform.

DCL Siemen's multipurpose data collection vehicle

DCL Siemens contacted Rival Solutions in 2013 with two major objectives as it relates to the pavement management services they provide:

- Increase productivity during their surveys
- Reduce costs in the field operations.

Rival proceeded to develop a 'plug-in' allowing all data collected from their multipurpose pavement management vehicle to process seamlessly through Rival's RUBIX workflow.



Automating the workflow

The primary data elements that DCL Siemens collects during field surveys are roughness, surface distress, and images. Delivery requires this data to be aggregated and assigned to appropriate GIS map sections. Thus, Rival implemented a robust workflow to:

- **Automate** the transfer of data from the vehicle to Rival's processing servers in near real time
- **Aid and improve** GPS through dead reckoning and map matching
- **Automate** the segment selection from base GIS map
- Aggregate **distress** entries to condition quantities and scores
- Aggregate **roughness** from class 1 profile bar

Project Highlights

- Savings of 33% in labor costs during field surveys
- 20% increase in production rates
- 75% savings in setup effort if GIS map is provided, compared to 25% savings if GIS is not available
- Data turnaround in **days**, not weeks and months

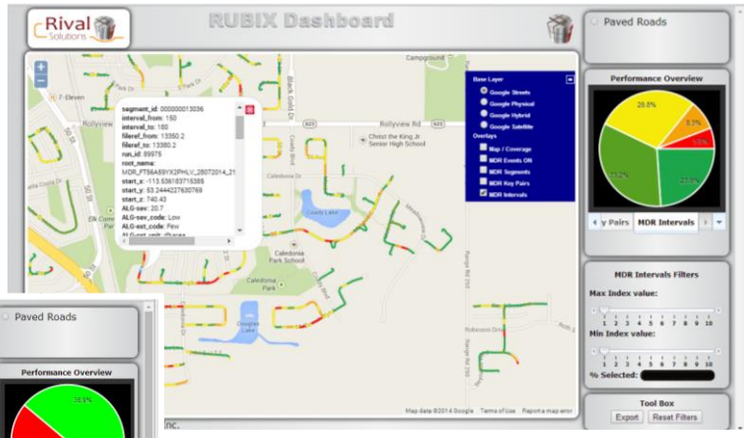
Next Project Please…

The workflow that has been implemented removes many unneeded and unwanted non-value steps. This includes data transfer, file copying and management, desktop software processes, format changes, etc. With minimal QC/QA, data is able to be delivered to the customers within days of the survey. Data is reported and mapped up on Rival's dashboard serving 2 main purposes:

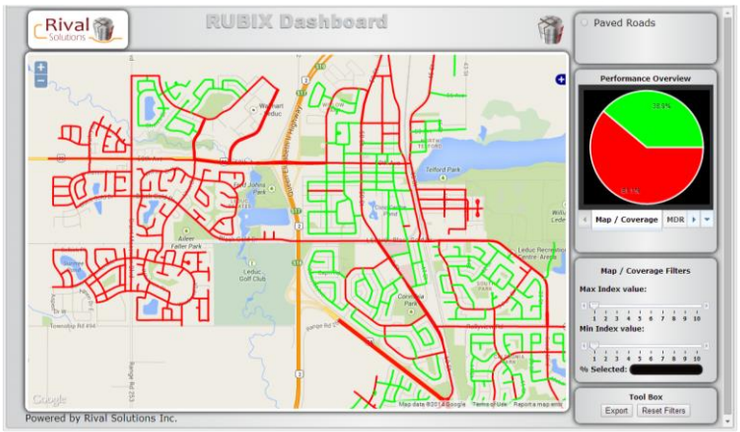
1) Allows for data to be viewed by both DCL and the end Client as it is collected and processed
2) Serves as an access point to download the end deliverables and converts to various formats (XLS, KML, SHP, etc.) and coordinate systems

Ultimately, projects are delivered faster, with less effort, allowing DCL to focus on their next customer and project. Finally, DCL has also been equipped with the iPad rating application and iPhone roughness application to complement their existing portfolio of tools. Data from these apps are processed, aggregated, and reported in the same manner providing a standard approach to field activities. Distress models and roughness calibrations are applied to the light weight app system to correlate data collected from the multi purposed vehicle.

Rival's rRate Data Collection Kit



A condition indicator layer, at 30 meter intervals is presented above. Distress and IRI data is reported for each interval on each automatically detected segment.



The DCL dashboard, showing coverage of a customer's network during field collection. Red shows incomplete sections and green shows sections that have been surveyed. The map is updated daily when data is received on Rival's processing servers.

DCL SIEMENS
Engineering Excellence

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