



**apis**<sup>TM</sup>

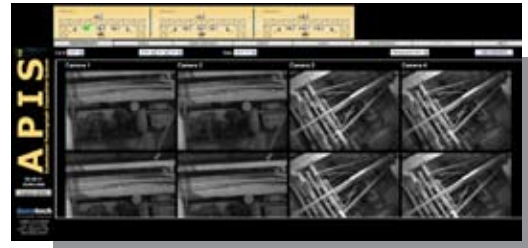
Automated Pantograph Inspection System (**apis**)<sup>TM</sup>



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## Automated Pantograph Inspection System (**apis**)<sup>TM</sup>



Duos Technologies' Automated Pantograph Inspection System (**apis**<sup>TM</sup>) - monitors and inspects the condition of electric train pantographs and carbon strips without interrupting train operations, alerting users when it detects anomalies that require manual inspection. The **apis**<sup>TM</sup> system improves inspections, rail operations, and safety while minimizing railcar downtime.

Deployed at a trackside inspection station, **apis**<sup>TM</sup> incorporates high-resolution cameras that capture detailed images of pantographs and carbon strips from passing railcars. Using a database of "good" pantograph images for comparison, **apis**<sup>TM</sup> uses video analytics to search the images for defects or signs of wear (bends, chips, cracks) that exceed preset limits and flags the record when follow-up is required. A customized user interface presents **apis**<sup>TM</sup> images, alerts, and information to users in a network browser window on any authorized workstation.

The **apis**<sup>TM</sup> inspection station also incorporates structured lighting (outside the visible spectrum) for quality image capture in all lighting conditions. Speed and proximity sensors provide vital information about train movement that activates the system and controls the image capture rate. Radio Frequency identification (RFID) technology is used to identify each pantograph-equipped railcar.

### Why **apis**<sup>TM</sup> system:

- Eliminates the need for routine manual pantograph inspection
- Detects anomalies early to minimize unscheduled downtime
- Ensures the accurate identification of railcars that require maintenance
- Provides a robust, fully-scalable IP-based architecture with real-time intelligent video capability
- Recognizes and passes "good" pantographs and carbon strips
- Detects and flags pantograph records showing defects or excessive wear
- Permits inspection of flagged records from any authorized workstation on the user's network
- Stores flagged records for a minimum of 30 days



### With **centraco**<sup>TM</sup> Command and Control

Like all of Duos' intelligent solutions, **apis**<sup>TM</sup> is command and control ready. Duos' state-of-the-art intelligent command and control platform, **centraco**<sup>TM</sup> provides a scalable information delivery and response solution that is designed to address operational and management challenges. Designed with years of "real life" situational input, the **centraco**<sup>TM</sup> platform is designed to perform in the most challenging and dynamic environments.

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