



2019 Call for Papers “Hot Topics”

Passenger & Transit - GIS/LiDAR/Asset Management – Best Use/Education, GPR/Track/Structure Conditions Assessment Tools, Pedestrian Safety at Stations, (Passenger/Freight Corridor) – accessibility issues to be included (high priority), Project Specific Presentation – Significant infrastructure projects provide improved passenger service/lessons learned (how projects were developed/advanced), New technology/infrastructure components, Platform heights, Edge locations, Clearances – definition of level boarding still developing (high priority), Passenger Corridor Safety/Security Requirements and Trends, Corrosion Control/Stray Current Mitigation in Various Track Structures, Direct Fixation/Embedded Track Design, Use of Big Data for Maintenance and Capital Planning.

Engineering Services - Terminal Capacity, Leveraging the economic benefits of PTC, Use of UA data for railroad application, Big data analytics, Terminal capacity and its integration with line capacity, Shortlines and FRA 243, Environmental regulatory permitting trends.

Communications & Signals - Opportunities for sensors in remote monitoring (IoT – Internet of Things), Implementation of Proactive Maintenance/Testing Programs, Equipment providing automated testing for periodic testing regulations, Thermal and Machine Vision Systems for Mechanical Inspections, Applying Ultra-high wideband radio technology for positioning/tracking Considerations for LED Usage in Wayside Signaling.

Structures - Process for moving High Wide Heavy loads, Unmanned Aerial Vehicles for inspection, construction monitoring, post event analysis - focus on sensor capabilities, Materials technology and innovation, Bridge strike detection prevention/protection and response, Post event foundation analysis, Remote operation of moveable bridges, Corrosion on steel bridges, New coating technologies, Training for delivering consistent inspections, Training for making repairs that solve the root cause, Onboard detection for bridge assessment, Hard core lessons learned.

Track - Improving the performance of track systems and components to enhance track safety and reduce life-cycle costs, Addressing the design, construction and maintenance challenges of special trackwork, Research results, designs and methodologies to improve rail integrity (Topics could include research related to rolling contact fatigue (RCF), rail grinding, rail corrosion, or rail material and manufacturing improvements), Effective methods to improve track support in transition areas, Track designs that mitigate noise and vibration in urban environments, Focused reports of Track Functional Group committee activities (e.g. important changes to the MRE, student involvement and outreach, etc.), TTCl update on specific track related research projects, Experiences from Class 1 freight, passenger and transit systems on the construction

and maintenance of track, such as innovative work methodologies, the successful application of new technologies or the use of new materials, Track related innovations from the international railway community with potential for use in North American railways.

Maintenance-of-Way - Drainage System Design, OSHA vs. FRA safety considerations, Autonomous Inspection – Drone based, vision based etc., CFR 219 – Changes and what it means for the industry, 213 Track Inspection changes – RSAC, FRA etc. Change to sub-part F, Training Track Inspectors – Latest technology, best practices - virtual training, Efficient use of storage and material – Safety and productivity, Machine/Equipment automation – Testing and what the future looks like from a Class I perspective, Vegetation Control – New Technologies, Tamping equipment guidelines and new technologies, Ballast quality control, and delivery, Hy-Rail based geometry systems.