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PRESS Mechanical Working Group

ECP Passenger Brake System—Configuration Management

Abstract: This standard contains the procedures for managing the configuration of ECP car equipment software and hardware for ECP brake systems.

Keywords: brake, ECP, emulation, rail car, train, configuration management

Summary: This standard defines the procedures for managing the configuration of ECP car equipment software and hardware for ECP brake systems.

Scope and purpose: This standard covers all ECP-relevant car braking system devices and components covered in the following APTA standards:

- APTA PR-M_S-020-17, Rev. 1, "Passenger Electronic 26C Emulation Braking System – Performance Requirements
- APTA PR-M-S-021-17, Rev. 1, "ECP Passenger Cable-Based Braking System—Performance Requirements"
- APTA PR-M-S-024-18, "Intratrain Communication Specification for Cable-Based Passenger Train Control Systems"

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Participants

The American Public Transportation Association greatly appreciates the contributions of the members of the **ECP Sub-Working Group of the PRESS Mechanical Working Group**, who provided the primary effort in the drafting of this document.

At the time this standard was completed, the sub-working group included the following members:

Paul Jamieson, SNC-Lavalin Rail & Transit Inc., *Sub-Working Group Lead*

Paul Bender, *Wabtec Corp.*
Jonathan Bernat, *New York Air Brake LLC*
John Condrasky, *Wabtec Corp.*
Adam Eby, *AMTRAK*
Jay Gilfillan, *AMTRAK*
Jeffrey Gordon, *Federal Railroad Administration*
Mark Hartong, *Federal Railroad Administration*
Harald Keuerleber, *AMTRAK*
Bryan McLaughlin, *New York Air Brake LLC*
Andrew Pressley, *Wabtec Corp.*
Danial Rice, *Wabtec Corp.*
Gary Rogers Jr., *New York Air Brake LLC*
William Slater, *Wabtec Corp.*
Ron Truitt, *AMTRAK*
Matthew Ward, *Wabtec Corp.*
Steven Zuiderveen, *Federal Railroad Administration*

At the time this standard was updated, the **PRESS Mechanical Working Group** included the following members:

David Warner, SEPTA, *Chair*
Rudy Vazquez, AMTRAK, *Vice Chair*
Paul Jamieson, SNC-Lavalin Rail & Transit Inc., *Secretary*

Mohamed Alimirah, *Metra*
Carl Atencio, *Denver Transit Operators*
Frank Banko, *WSP USA*
Michael Barnes, *Jacobs*
David Bennett, *Capital Metro. Trans. Authority*
Jonathan Bernat, *New York Air Brake LLC*

Allen Bieber, *ACB RailTech Services, Inc.*
Brad Black, *Virginkar & Associates, Inc.*
Stephen Bonina, *WSP USA*
Glenn Brandimarte, *ORX Rail*
Tony Brown, *MTA of Harris County*
Richard Bruss, *Retired*
Michael Burshtin, *AMTRAK*
Gordon Campbell, *Crosslinx Transit Solutions*
Kevin Carmody, *STV Inc.*
Steve Cavanaugh, *Metrolinx (GO Transit)*
Steve Chrismer, *ENSCO, Inc.*
Dion Church, *SNC Lavalin Rail & Transit Inc.*
John Condrasky, *Wabtec Corp.*
Joshua Coran, *Talgo Inc.*
Michael Craft, *AMTRAK*
Ryan Crowley, *SNC-Lavalin Rail & Transit Inc.*
Richard Curtis, *Curtis Engrg. Consulting Svc, Inc.*
Steven Dedmon, *Standard Steel, LLC*
Joe Di Liello, *VIA Rail Canada, Inc.*
David Diaz, *LTK Engineering Services*
Matthew Dick, *ENSCO, Inc.*
Adam Eby, *AMTRAK*
Gary Fairbanks, *Federal Railroad Administration*
Robert Festa, *MTA Long Island Rail Road*
Steve Finegan, *SNC-Lavalin Rail & Transit Inc.*
Gavin Fraser, *Jacobs*
Francesco Fumarola, *ALSTOM Transport*
Sebastien Geraud, *ALSTOM Transport*
Jeffrey Gordon, *Federal Railroad Administration*
Guillaume Ham-Livet, *ALSTOM Transport*
Nick Harris, *LTK Engineering Services*
Mark Hartong, *Federal Railroad Administration*
Jasen Haskins, *SNC-Lavalin Rail & Transit Inc.*
Elizabeth Hensley, *Wabtec Corp.*
James Herzog, *LTK Engineering Services*

Kenneth Hesser, *LTK Engineering Services*
Lew Hoens, *MTA Metro-North Railroad*
Christopher Holliday, *STV Inc.*
George Hud, *LTK Engineering Services*
John Janiszewski, *LTK Engineering Services*
Lucas Johnson, *TriMet*
MaryClara Jones, *Trans. Tech. Center, Inc.*
Robert Jones, *Stadler Rail Group*
Larry Kelterborn, *LDK Advisory, Inc.*
Joseph Kenas, *Bombardier Transportation*
Peter Klauser, *Vehicle Dynamics*
Heinz-Peter Kotz, *Siemens AG Industry Sector*
Scott Kramer, *McConway & Torley LLC*
Tammy Krause, *Retired*
Pallavi Lal, *LTK Engineering Services*
Peter Lapre, *Federal Railroad Administration*
Nicolas Lessard, *Bombardier Transportation*
Cameron Lonsdale, *Standard Steel, LLC*
Danial Luskin, *AMTRAK*
Chris Madden, *AMTRAK*
Francesco Maldari, *MTA Long Island Rail Road*
Brian Marquis, *Volpe Natl. Trans. Systs. Center*
Eloy Martinez, *LTK Engineering Services*
Raynald Masse, *Reseau de Transport Metropolitain*
Robert May, *LTK Engineering Services*
Ronald Mayville, *Simpson Gumpertz & Heger, Inc.*
Richard Mazur, *Wabtec Corp.*
Gerard McIntyre, *Knorr Brake Corp.*
Bryan McLaughlin, *New York Air Brake LLC*
William Minnick, *Omni Strategy, LLC*
Luke Morscheck, *LTK Engineering Services*
Karl Mullinix, *Knorr Brake Corp.*
Paul O'Brien, *Transit District of Utah*
Joe Patterson, *Amsted Rail*
John Pearson, *LTK Engineering Services*
Martin Petzoldt, *Railroad Friction Products Corp.*
Ian Pirie, *STV Inc.*
Wolfgang Reimann, *Bradken*
Peter Reumueller, *Siemens AG Industry Sector*
Danial Rice, *Wabtec Corp.*
Steven Roman, *LTK Engineering Services*
Carol Rose, *STV Inc.*
Thomas Rusin, *Rusin Consulting Corp.*
Mehrdad Samani, *Jacobs*
Gerhard Schmidt, *Siemens Mobility, Inc.*
Martin Schroeder, *Jacobs*
Richard Seaton, *TDG Transit Design Grp. Intl. Inc.*
Frederic Setan, *ALSTOM Transport*
Patrick Sheeran, *LTK Engineering Services*
Melissa Shurland, *Federal Railroad Administration*
Rick Spencer, *Knorr Brake Corp.*
Rex Springston, *AECOM*
Mark Stewart, *SNC-Lavalin Rail & Transit Inc.*
Jonathan Sunde, *Strato, Inc.*
Lukasz Szymsiak, *VIA Rail Canada, Inc.*
Ali Tajaddini, *Federal Railroad Administration*
Jason Taylor, *Amsted Rail*
Jeff Thompson, *SEPTA*
Matthew Todt, *Amsted Rail*
Anthony Ursone, *UTC/Rail & Airsources, Inc.*
Frank Ursone, *UTC/Rail & Airsources, Inc.*
Michael Von Lange, *UTC/Rail & Airsources, Inc.*
Michael Wetherell, *McKissack & McKissack*
Brian Whitten, *SNC-Lavalin Rail & Transit Inc.*
Todd Williams, *Penn Machine Co.*
Reggie Wingate, *Knorr Brake Corp.*
Aleksey Yelesin, *AMTRAK*
Galiane Yergeau, *VIA Rail Canada, Inc.*
Gregory Yovich, *NICTD*
Steve Zuiderveen, *Federal Railroad Administration*

Project team
Narayana Sundaram, *American Public Transportation Association*
Nathan Leventon, *American Public Transportation Association*

Introduction

This introduction is not part of APTA PR-M-S-027-18, "ECP Passenger Brake System—Configuration Management".

This standard applies to all:

1. Railroads that operate intercity or commuter passenger train service on the general railroad system of transportation; and
2. Railroads that provide commuter or other short-haul rail passenger train service in a metropolitan or suburban area, including public authorities operating passenger train service.

This standard does not apply to:

1. Rapid transit operations in an urban area that are not connected to the general railroad system of transportation;
2. Tourist, scenic, historic, or excursion operations, whether on or off the general railroad system of transportation;
3. Operation of private cars, including business/office cars and circus trains; or
4. Railroads that operate only on track inside an installation that is not part of the general railroad system of transportation.

ECP Passenger Brake System—Configuration Management

1. Management procedure

1.1 Responsible parties

The ECP manufacturers are responsible for software configuration management of all hardware and software standards and specifications.

1.2 Obligations

It is the manufacturer's obligation to establish that the ECP brake equipment will comply with, and satisfactorily function in accordance with, the standards listed in "Related APTA standards" at the end of this document.

1.3 Change requirements

If the manufacturer desires to make changes to software and/or hardware that result in performance or functional changes at the interfaces or messages between interoperable ECP car brake system components, then the manufacturer shall advise the APTA PRESS Mechanical Working Group furnishing full information as to the nature of the proposed change and the objects expected to be accomplished thereby. If test results have not been provided, then the APTA PRESS Mechanical Working Group may then require testing to verify that the change will have no adverse effects on railroad safety.

1.3.1 Records

Even if the manufacturer determines that the change will not result in performance or functional changes at the interfaces or messages between interoperable ECP brake system components, the manufacturer shall maintain a readily retrievable record of all software and hardware changes and make that record available to the APTA PRESS Mechanical Working Group and the Federal Railroad Administration (FRA) at any time.

1.3.2 Configuration management plan

The manufacturers must have and maintain a configuration management plan that defines the purpose, procedures, organizational responsibilities and tools to be used for ECP brake system hardware and software configuration management. The configuration management plan shall be in the possession of the manufacturer and be available for audit by the APTA PRESS Mechanical Working Group and FRA at any time.

1.4 Approval authority

The APTA PRESS Mechanical Working Group shall then allow or disallow the proposed change(s) based on the testing or other documentation supplied to the committee by the manufacturer.

1.5 Approval notification

Once a software change is approved by the APTA PRESS Mechanical Working Group, the committee shall inform the manufacturer and the FRA that the change was approved.

1.6 Implementation urgency

The APTA PRESS Mechanical Working Group and the manufacturer shall then determine the urgency of change implementation. The urgency shall be assigned one of the following three levels:

- **Level 1:** Stop all ECP-equipped trains and implement the change immediately.
- **Level 2:** Implement the change the next time the car is on a repair track or expedite track.
- **Level 3:** Implement the change at the next car owner–scheduled maintenance.

1.7 Change notification

The APTA PRESS Mechanical Working Group shall then issue a circular letter to notify the industry of the change and to establish the implementation requirements and schedule. The APTA PRESS Mechanical ECP Sub-Working Group shall be requested to promulgate any requisite revisions to the passenger railroads.

Related APTA standards

The following standards are the complete set of Passenger ECP standards:

APTA PR-M-S-020-17, "Passenger Electronic 26C Emulation Braking System—Performance Requirements"
APTA PR-M-S-021-17, "ECP Passenger Cable-Based Braking System – Performance Requirements"
APTA PR-M-S-022-19, "ECP Passenger Cable-Based Brake System Cable, Connectors and Junction Boxes—Performance Requirements"
APTA PR-M-S-023-19, "ECP Passenger Cable-Based Brake DC Power Supply—Performance Requirements"
APTA PR-M-S-024-19, "Intratrain Communication Requirements for ECP Cable-Based Passenger Train Control Systems"
APTA PR-M-S-025-19, "ECP Passenger Cable-Based and Passenger Emulation Braking System—Approval Procedure"
APTA PR-M-S-026-19, "ECP Passenger Cable-Based Braking System—Interoperability Procedure"
APTA PR-M-S-027-19, "ECP Passenger Cable-Based Braking System—Configuration Management"

Abbreviations and acronyms

AAR Association of American Railroads
FRA Federal Railroad Administration
ECP electronically controlled pneumatic
NATSA North American Transportation Services Association
PRESS Passenger Rail Equipment Safety Standards

Summary of document changes

- This is the first publication of this standard.

Document history

Document Version	Working Group Vote	Public Comment/ Technical Oversight	Rail CEO Approval	Policy & Planning Approval	Publish Date
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