NEMA TS 40009-2023

Advanced Traffic Performance Measures for Intelligent Transportation Systems (ITS)

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Foreword

This NEMA technical publication, TS 40009-2023 *Advanced Traffic Performance Measures for Intelligent Transportation Systems (ITS),* has been developed to standardize the performance measurement reporting requirements.

This document is intended to be used by federal, local, and regional agencies to facilitate in the traffic management specifications for selection of Performance Measures solutions, and to satisfy Performance Measures reporting requirements.

In the preparation of NEMA TS 40009-2023, input of users and other interested parties has been sought and evaluated. Inquiries, comments, and proposed or recommended revisions should be submitted to:

NEMA Technical Operations Department
National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, Virginia 22209

The NEMA 3TS Performance Measures Technical Committee developed NEMA TS 40009-2023 under the auspices of the NEMA Transportation Management Systems and Associated Control Devices Section (3TS), of which it is a part. The following individuals were members of the Technical Committee:

Applied Information, Inc.	Bryan Mulligan, Alan Clelland, Alan Lubchuk, Walt Townsend
Eberle Design, Inc.	Ethan Coxsey (Chair), Ben McCauley
Yunex Traffic	Andrew Valdez, Tony Pallissery
Ver-Mac Inc.	Todd Foster, Serge Beaudry, Stephane Lapierre

3TS Section approval of NEMA TS 40009-2023 does not necessarily imply that all 3TS Section members voted for its approval or participated in its development. When NEMA TS 40009-2023 was approved, the Transportation Management Systems and Associated Control Devices Section was composed of the following members:

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Section 1
General [Informative]

1.1 Scope

NEMA TS 40009-2023 defines aspects of “Performance Measures” such as:

a) Data collection from signalized intersections and roadways, freeways, and toll roads; and
b) Data packaging, formatting, and transmission.

NEMA TS 40009-2023 is intended to facilitate traffic management agencies’ specification and selection of Performance Measures solutions, and enable agencies to satisfy Performance Measures reporting requirements.

1.2 References

Normative references contain provisions that, through reference in this text, constitute provisions of NEMA TS 40009-2023. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on NEMA TS 40009-2023 are encouraged to investigate the possibility of applying the most recent editions of the standards listed.

U.S. Department of Transportation
Federal Highway Administration (FHWA)
Obtain the *FHWA Systems Engineering Guidebook for ITS, Version 3.0*, at:
https://www.fhwa.dot.gov/cadiv/segb

FHWA Systems Engineering Guidebook for ITS, Version 3.0

NTCIP Standards
Copies of NTCIP standards may be obtained from:
NTCIP Coordinator
National Electrical Manufacturers Association
1300 N. 17th Street, Suite 900
Rosslyn, Virginia 22209-3801
www.ntcip.org
email: ntcip@nema.org

NTCIP 1211 v02 *Object Definitions for Signal Control and Prioritization (SCP)*
https://www.ntcip.org/signal-control-and-prioritization.

Day, C. M., T. M. Brennan, J. M. Ernst, J. Sturdevant, and D. M. Bullock. *Procurement Procedures and Specifications for Performance Measure Capable Traffic Infrastructure Data Collection Systems*. Publication FHWA/IN/JTRP-2011/18. Joint Transportation Research Program, Indiana Department of Transportation and Purdue University, West Lafayette, Indiana, 2011. https://doi.org/10.5703/1288284314642.

Day, C. M., D. M. Bullock, H. Li, S. M. Remias, A. M. Hainen, R. S. Freije, A. L. Stevens, J. R. Sturdevant, and T. M. Brennan. *Performance Measures for Traffic Signal Systems: An Outcome-Oriented Approach*. Purdue University, West Lafayette, Indiana, 2014. https://doi.org/10.5703/1288284315333.

Freije, R., Hainen, A. M., Stevens, A., Li, H., Smith, W.B., Day, C. M., Sturdevant, J. R., & Bullock, D. M. (2014). *Graphical performance measures for practitioners to triage split failure trouble calls*. Transportation Research Record, 2439, 27–40. http://dx.doi.org/10.3141/2439-03.