

# P1159.3

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**Submitter Email:** [d.sabin@ieee.org](mailto:d.sabin@ieee.org)

**Type of Project:** Revision to IEEE Standard 1159.3-2003

**PAR Request Date:** 23-May-2014

**PAR Approval Date:** 21-Aug-2014

**PAR Expiration Date:** 31-Dec-2018

**Status:** PAR for a Revision to an existing IEEE Standard

**Root Project:** 1159.3-2003

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**1.1 Project Number:** P1159.3

**1.2 Type of Document:** Recommended Practice

**1.3 Life Cycle:** Full Use

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**2.1 Title:** Recommended Practice for Power Quality Data Interchange Format (PQDIF)

**Changes in title:** ~~IEEE Recommended Practice for the Transfer of~~ Power Quality Data **Interchange Format (PQDIF)**

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**3.1 Working Group:** WG for Transfer of Power Quality Data (PE/T&D/1159.3\_WG)

**Contact Information for Working Group Chair**

**Name:** Daniel Sabin

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**Contact Information for Working Group Vice-Chair**

None

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**3.2 Sponsoring Society and Committee:** IEEE Power and Energy Society/Transmission and Distribution (PE/T&D)

**Contact Information for Sponsor Chair**

**Name:** William Chisholm

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**4.1 Type of Ballot:** Individual

**4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot:** 10/2017

**4.3 Projected Completion Date for Submittal to RevCom:** 10/2018

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**5.1 Approximate number of people expected to be actively involved in the development of this project:** 24

**5.2 Scope:** This recommended practice specifies the PQDIF file format for the transfer of power quality data between instruments and computers. This includes raw, processed, simulated, proposed, specified, and calculated data. The transfer file format includes the power quality measurements as well as appropriate characterization parameters, such as sampling rate, resolution, calibration status, instrument identification, location, and other related data or characteristics. The recommended practice also provides guidelines for transferring power quality data.

**Changes in scope:** This recommended practice ~~will specify~~ **specifies** ~~develop the a PQDIF criteria file format~~ **the a PQDIF criteria file format** for the transfer of power quality data between instruments and computers. This ~~data~~ **data** includes raw, processed, simulated, proposed, specified, and calculated data. The transfer ~~criteria file will format include~~ **includes** the ~~data~~ **power quality measurements** as well as appropriate ~~data~~ **characterization** parameters, such as sampling rate, resolution, calibration status, instrument identification, **location**, and other ~~pertinent related or data desired characteristics or data characteristics~~ **pertinent related or data desired characteristics**. The recommended practice ~~will also provide criteria~~ **provides** guidelines for transferring power quality data.

**5.3 Is the completion of this standard dependent upon the completion of another standard:** No

**5.4 Purpose:** IEEE 1159.3 provides the power quality industry with the specification for PQDIF, which is an open and accepted data format standard for the transfer of power quality data between instruments and computers. This transfer standard allows the processing and analysis of power quality measurements using multi-vendor and multi-device data. Wider acceptance of PQDIF as a

**Changes in purpose:** ~~The IEEE 1159.3 provides the power quality industry with an adequate specification for PQDIF, which is an open and accepted data format standard for the transfer of power quality data between instruments and computers. This lack of a transfer standard significantly allows inhibits the analysis processing process and analysis of power quality assessments measurements using~~ **The IEEE 1159.3 provides the power quality industry with an adequate specification for PQDIF, which is an open and accepted data format standard for the transfer of power quality data between instruments and computers. This lack of a transfer standard significantly allows inhibits the analysis processing process and analysis of power quality assessments measurements using**

power quality data transfer format will significantly add to the value of power quality monitoring and open new opportunities for the resolution, planning, and understanding of power quality activities. Being able to exchange data between software systems will allow other functions needed in a power quality monitoring campaign, including validation, trending, comparison, overlay, and more.

multi-vendor and multi-device data. The wider analysis acceptance functions of signature PQDIF patterns, as history, and multiple measurement points are almost non-existent because of the lack of the ability to transfer data from multiple sources to a common analysis computer. Acceptance of an industry-standard power quality data transfer format will significantly add to the value of all power quality data monitoring and open new opportunities for the resolution, planning, and understanding of power quality activities. This being able to exchange data between software systems will serve allow to other satisfy functions the needed in a power quality monitoring campaign, including validation, trending, overlay comparison, spectrum analysis overlay, and other needs of client activities more.

**5.5 Need for the Project:** IEEE Std 1159.3 is in much wider use today than when it was first published in 2003. Although it was reaffirmed in 2008, the field of power quality monitoring has evolved in the past decade, and the changes in this domain are not reflected in the 1159.3 standard itself. This project will update the existing document using the experience gained in eleven years of PQDIF applications, correcting errors, clarifying known points of confusion, and augmenting its list of IDs and values used in the modeling of power quality monitoring instruments and data.

**5.6 Stakeholders for the Standard:** The stakeholders for this project include the manufacturers of power quality monitoring instruments, and the users of power quality monitoring instruments. Users include electric power providers or large-scale electric power consumers. Additional stakeholders are commercial companies and universities that produce computer software that integrates measurements recorded by power quality monitors or simulations. The final class of stakeholder are the users of these computer software programs.

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## Intellectual Property

**6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?:** No

**6.1.b. Is the Sponsor aware of possible registration activity related to this project?:** No

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**7.1 Are there other standards or projects with a similar scope?:** No

## 7.2 Joint Development

**Is it the intent to develop this document jointly with another organization?:** No

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**8.1 Additional Explanatory Notes (Item Number and Explanation):** Our plans for the revision of IEEE 1159.3 are (1) to complete editorial changes and corrections to the 2003 edition of IEEE Std. 1159.3, (2) to add new identification values for existing PQDIF tags, (3) to add new tags and identification values, (4) to add new quantity types, (5) to add an annex on the representation of PQDIF in Extensible Markup Language (6), to add an annex on PQDIF and its relationship to IEC 61850, and (7) to add an annex on PQDIF and its relationship to IEEE C37.111 COMTRADE.

#2.1 The title for this PAR is revised from the one used by IEEE Std 1159.3-2003 in order to clarify that the standard is related to PQDIF, which is widely known in the industry as the name for the IEEE 1159.3 file format.

#5.2 The scope for this PAR is revised from the one used by IEEE Std 1159.3-2003 to change tense from the future to the present. That is, the initial PAR included language stating what the proposed standard aimed to accomplish. The proposed PAR has language focused on what the current standard is doing now. Also, the scope was edited to improve readability from its version in IEEE Std 1159.3-2003.

#5.4 The purpose for this PAR is revised from the one used by IEEE Std 1159.3-2003 to change tense from the future to the present. That is, the initial PAR included language stating what the proposed standard aimed to accomplish. The proposed PAR has language focused on what the current standard is doing now. Also, the purpose was edited to improve readability from its version in IEEE Std 1159.3-2003.

IEC 61850: Communication networks and systems in substations

C37.111-2013 - IEEE/IEC Measuring relays and protection equipment - Part 24: Common format for transient data exchange (COMTRADE) for power systems