



IEEE P1159.3 PQDIF Task Force Meeting

Dan Sabin

Electrotek Concepts, Inc.

d.sabin@ieee.org

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Meeting Agenda

- Introductions
- Overview
- Current Task Force Status
- Recent Task Force Activities
- Breakout Discussion of Existing and Proposed PQDIF ID Values
- Group Discussion of PQDIF ID Values
- Next Steps

IEEE Std 1159.3 Task Force

IEEE Power & Energy Society

- Transmission and Distribution Committee
 - Power Quality Subcommittee
 - P1159 Working Group on Power Quality Monitoring
 - P1159.3 Task Force on Power Quality Data Interchange

Web Site: <http://grouper.ieee.org/groups/1159/3/>

What is IEEE PQDIF?

- PQDIF is an IEEE recommend practice for power quality data interchange format.
- PQDIF allows exchange of measurements and simulation results between computer hardware and software systems.
- PQDIF is a binary file format that consists of three main records
 - A single container record
 - One or more data source records
 - One or more optional monitor settings records
 - One or more observation records

IEEE Std 1159.3 PQDIF Milestones

- The IEEE P1159.3 Task Force was formed in 1996 by the IEEE P1159 Working Group to make a power quality data interchange format (PQDIF).
- The first version of the standard was completed in 2002 and affirmed by vote in 2003.
- A reaffirmation was completed in March 2009.
- A reaffirmation needs to be completed in 2014.

Current Task Force Status

Task Force Focus during 2011-2012

- Complete editorial corrections to 2003 document
- Add new IDs to as possible values for existing tags
 - New IDs for vendor, equipment, phase, quantity measured, quantity characteristic
- Add new annex on storing PQDIF records in XML

Recent Task Force Activities

- The PQDiffactor® software application was updated several times and an update was posted to the task force web site.
 - PQDiffactor is a free software application for viewing measurements within PQDIF files using interactive charts and tables.
 - It also provides a diagnostic mode for assessing noncompliance with IEEE Std 1159.3-2003.
- Updates in Version 2.0.5
 - Many more IEEE PQDIF compliance checks
 - New MDI user interface featuring antialiased graphics, antialiased text, multi-language support, user options window

Recent Task Force Activities

- PQDCOM4.DLL was updated and posted to the task force web site.
 - Provides high-level functions for reading and writing PQDIF files
 - Includes more than twenty bug fixes in both the high-level C++ and the low-level C libraries
- The source code to PQDCOM4.DLL was posted to the web site. This update incorporates nearly nine years of fixes and updates since the last posting of its source code was in 2002.

Updates to PQDCOM4.DLL

- Updated to fix a problem where exported IDs represented as GUIDs could be mishandled. This problem was preventing the export of values logs containing samples of Pst, Plt, and TDD.
- Includes zLib 1.2.5 compression library
 - bug fixes, speed enhancements
- Better handling when reading PQDIF files where nominal values, precision, and resolution are not defined in the PQDIF file
- Allow read of series with up to one million samples. In previous versions, the number of samples that could be imported was limited to one megabyte

Example 4-Byte Integer ID Values

- tagPhaseID
 - ID_PHASE_AN=1
 - ID_PHASE_BN=2
 - ID_PHASE_CN=3
- tagQuantityMeasuredID
 - ID_QM_VOLTAGE=1
 - ID_QM_CURRENT=2
- tagQuantityUnitsID
 - ID_QU_AMPS=7
 - ID_QU_PERUNIT=20
 - ID_QU_TESLAS=35

Example 32-Byte GUID Values

- tagVendorID, tagEquipmentID
- tagQuantityCharacteristicID
 - ID_QC_RMS
 - { 0xa6b31ae5, 0xb451, 0x11d1, { 0xae, 0x17, 0x0, 0x60, 0x8, 0x3a, 0x26, 0x28 } }
 - {A6B31AE5-B451-11D1-AE17-0060083A2628}
 - ID_QC_THD, ID_QC_FLKR_PST
- tagDisturbanceCategoryID
- tagQuantityTypeID
 - ID_QT_WAVEFORM, ID_QT_PHASOR, ID_QT_MAGDUR

Breakout Discussion

- Break into small groups and spend about 20 minutes discussing tag revision
- Review the IDs for these tags in IEEE 1159.3-2003
- Identify any IDs that you note are missing.
- For this meeting, focus on these tags:
 - tagVendorID
 - tagDisturbanceCategoryID
 - tagQuantityMeasuredID
 - tagQuantityUnitsID
 - tagQuantityCharacteristicID
 - tagPhaseID

Breakout Discussion

- tagVendorID
 - ID_VENDOR_IEEE, ID_VENDOR_EPRI
- tagDisturbanceCategoryID
 - ID_DISTURB_1159_SHORTDUR_INSTANT_SAG
 - ID_DISTURB_1159_TRANSIENT_OSCILLATORY_MEDFREQ
- tagQuantityMeasuredID
 - ID_QM_VOLTAGE, ID_QM_CURRENT
- tagQuantityUnitsID
 - ID_QU_VOLTS, ID_QU_AMPS, ID_QU_PERCENT
- tagQuantityCharacteristicID
 - ID_QC_FLKR_PST, ID_QC_PF
- tagPhaseID
 - ID_PHASE_AN, ID_PHASE_CA, ID_PHASE_TOTAL

Group Discussion

Next Steps

- The task force chair will update a Microsoft Access database that contains all of the tags and IDs defined from IEEE 1159.3-2003 using today's discussion and previous submissions from parties interested in PQDIF.
- The Access database application can create C include files and VB6 modules that can be used in other applications.
- The new IDs will be incorporated into a new PQDCOM4.DLL library and PQDiffractor.
- Known third parties will be notified that there is a new draft of the standard and source code available for review.
- Apply for a PAR to revise IEEE 1159.3

Next Meeting

- IEEE/PES 2012 Joint Technical Committee Meeting
 - Monday, January 9, 2012
 - Hyatt Regency Orange County in Garden Grove, California
- Web Meeting
 - A web meeting could be explored in October 2011
 - Request a volunteer to assist with the conference call