

## TOA4 RPC Automated Data Exchange Interface

### 1 Description

The TOA4 remote procedure call (RPC) application programming interface (API) allows external software applications such as Digital Inspections Cascade and analytical laboratory LIMS databases to perform automatic data exchanges with the Delta-X Research TOA4 software. Laboratory data uploads can be automated, and enterprise asset management or condition assessment systems can retrieve current TOA4 results from dissolved-gas analysis and other insulating fluid tests. TOA4 RPC is also the main interface for feeding online monitor data to TOA4 Monitor Watch™.

### 2 Features

- HTTP-based protocol
  - Each RPC command is represented by a distinct URL
  - A command is activated by sending an HTTP request to the command's URL.
  - Upload and download data in ordinary comma-separated value (csv) format.
  - This protocol is completely platform independent and non-proprietary.
  - RPC HTTP transactions are easy to script and test.
- Secure transactions
  - Use https (HTTP over SSL/TLS) for automatic strong two-way encryption of all transactions.
  - Each RPC command request has an encrypted authentication header to identify the source.
  - All RPC transactions are logged for security and troubleshooting.
  - Ordinary user login IDs do not have RPC access.
- RPC commands
  - Append, update, export, delete equipment items and test data.
  - Run data analysis with or without a data upload.
  - Retrieve latest data analysis results as csv data or PDF reports.

### 3 Advantages

- Integration with TOA4
  - All DGA, fluid quality, and moisture assessment data remain in TOA4
  - Familiar user interface
  - Feed from or share data with corporate data repository
  - Continuous availability with high data security
  - No proprietary file formats or "lock-in" on data access
- Elimination of manual procedures
  - Preservation of data quality
  - Free up technical staff for more productive work



## 4 Benefits

- Awareness of equipment status
  - Improved asset utilization
  - Safety and reliability assurance
  - Reliability standards compliance



## Document Revision Notes

Date	Version	Changes	Author
2017-05-30	1.2	Updated Initial Draft	Neil Schemenauer
2017-07-13	2.0	Updated format	Steven Herchak