eDART (electronic Dispatcher Application and Reporting Tool) is a suite of electronic applications used to facilitate dispatcher-todispatcher communications, along with other engineering communication and coordination functions.

- eDART Product Page
- eDART Training Presentations
- eDART User Group
- eDART XML User Group
Background – eDART Applications

- Used to verify if enough reserve MW available.
- Used to verify generation will not over-exceed light load margins.
- Used to schedule the output of Susquehanna River Hydroelectric Assets.
- Used to capture unit data and determine critical load in system restoration plans.
- Used to record and schedule:
  - Generator MW Outages
  - Voltage Regulator Outages
  - Governor Outages
  - D-Curve Adjustments
  - Reactive Tests
  - Reactive Test Results Tickets
  (IRC)
  Used to verify if enough reserve MW available.
Background – eDART Applications

- **Used by companies to submit changes to the transmission grid.**
- **Used to view updates made to Object IDs.**
- **Used to practice and coordinate restoration of service in PJM area after a blackout.**
- **Used to record and schedule non-generator transmission facility outages.**
- **Used to coordinate the update of system restoration plans.**
- **Used to record and schedule line, transformer, phase shifters, series and flow devices temperature apparent power ratings.**
- **Used to update facility clearing times data used in dynamic studies.**

- **Feedback**
- **My eDART**
- **Upload**
- **Download**
- **Trans. Tickets**
- **Network Model**
- **Back Start**
- **Telemetry Coordination**
- **TERM**
- **Reactive Reserve**
- **Instantaneous Reserve Check**
- **Minimum Gen. Report**
- **PJM Status Report**
- **NFR: Data**
- **Restoration Data**
- **Facility Data**
- **Online Help**
- **Logout**
Background – eDART Applications

Current Status Report
15 minute snapshot of current status

Peak Status Report
Forecast of system condition for the peak of the day

Supplemental Status Report (SSR)
72 hour forecast of system condition; typically for extreme hot/cold weather conditions

Gen Checkout
Used to compare and highlight discrepancies between Market Gateway bids and Available Capacity. Brings Markets and Operations together in real-time

Used to record and coordinate
- Reactive Reserve Check (RRC)
- D-Curve Review (on Gen. Tickets menu for Gen users)

Used to manage PSSE mapping information for the purpose of sending and receiving info to/from NERC SDX
## 2016 Roadmap (Ongoing Feedback)

<table>
<thead>
<tr>
<th></th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactive Reserve Check (RRC) Rewrite Phase 1</td>
<td>RRC Self Check Report in Prod: Sep. 28</td>
<td></td>
<td></td>
<td>RRC Self Check Data: Dec. 21</td>
<td>Ongoing Feedback</td>
</tr>
<tr>
<td>Reactive Test Results Tickets</td>
<td></td>
<td>eDUG-G Meeting: Oct. 7</td>
<td></td>
<td>Train: Nov. 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Prod: Dec. 14</td>
</tr>
</tbody>
</table>
RRC Rewrite Phase 1:
• Self Check data made available on February 2.
• Send feedback to RRCHelp@pjm.com.

Reactive Test Results Tickets:
• Replacement of current MS Excel and email method of communicating reactive test data and analysis results.
• Send feedback to ReactiveTesting@pjm.com
• Current method to be retired June 1, 2017.
# 2017 Roadmap

<table>
<thead>
<tr>
<th>Project</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>eDART Refresh</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Periodic Survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prod: March 29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RRC Rewrite Phase 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parallel Operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GO Survey Enhancements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eDUG-G Meeting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addition of Voltage Limits Deferred</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transformer Tap Changer Deferred</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackstart Enhancements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

www.pjm.com
eDART will be unavailable from 19:00 on 3/29 to 02:00 on 3/30.

Enhancements discussed during 3/2 user group meetings:
  – eDART User Group presentation
  – eDART XML User Group presentation

Enhancements include:
  – Periodic GO Survey issued on a monthly or more frequent basic per Manual 14-D, Section 7.3.5.
  – MW Outage Switch Start Business Rule implemented 12/14 extended to include Unplanned Tickets.
    • Switch Start restricted to 1 hour or less before Est. Start.
• Enhancements include:
  – New flag added to MVAR Test tickets to indicate that ticket is for reactive testing with operational data instead of staged data.
  – Changes Reactive Results Tickets following member feedback:
    • Generator Voltage Schedule PT Ratio & System Voltage PT Ratio data field types changed from number to text.
    • ‘Generator Voltage Scheduled’ changed to ‘Generator Voltage/MVAR/PF Schedule’ and will include unit of measure.
  – Warning message to be displayed when Transmission outage tickets submitted with Start Date in the past.
• Enhancements include:
  
  – New business rules for use of Unknown cause type:
    • Only applicable for EMS Tripped Tickets.
    • Modification of EMS Tripped Tickets will require Cause Type to be changed from Unknown.
Current timeline for JAVA Browserless Interface Migration

- Q2 2017
  - Command Line Interface (CLI) design.
  - Stakeholders presentations and feedback.

- Q3 2017
  - Available in Sandbox for testing, training and feedback.

- Q4 2017
  - Parallel Production.
  - Shutdown of JAVA browserless interface; CLI is official browserless interface.
Current timeline for Web UI refresh

– 2017
  • User Experience Analysis and Design
  • Requirements gathering
  • User accounts mapping to Account Manager
  • Work planning (overall project schedule & web UI page sequencing)

– 2018
  • Web UI refresh
  • Progress review
# Q1 2017 Roadmap

<table>
<thead>
<tr>
<th>Event</th>
<th>Timing (approximate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen Users Feedback Meeting</td>
<td>January 30</td>
</tr>
<tr>
<td>User Group Meetings</td>
<td>March 02</td>
</tr>
<tr>
<td>XML/Browserless Documentation Available</td>
<td>Week of February 27</td>
</tr>
<tr>
<td>Sandbox Release – XML/Browserless</td>
<td>Week of February 27</td>
</tr>
<tr>
<td>Sandbox Release - UI</td>
<td>Week of March 13</td>
</tr>
<tr>
<td>Coordinated Testing</td>
<td>March 17</td>
</tr>
<tr>
<td>Production Release</td>
<td>March 29</td>
</tr>
</tbody>
</table>
• Reactive Reserve Check (RRC) Rewrite Phase 2
  – Ability for PJM to initiate New RRC.
  – Ability for Transmission Owners to respond to New RRC; submit reserve values and/or acknowledge reserve values.

• GO Survey Enhancements
  – .csv download and upload for responding to GO Survey.
  – Ability to save partially completed GO Survey.
  – Meeting to be scheduled to discuss enhancements.