

EMS and eDART Implementation

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OC Special Session: DLR Education
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- DLR functionality already exists in PJM's current SCADA system
 - Not currently used for any equipment in the PJM model
- DLRs are received via the existing ICCP link.
 - SCADA does data validation checks on all DLRs.
 - DLRs are rejected or approved depending on the results of validation checks and DLR mode.
- Active limits are sent to downstream systems from SCADA via the existing data streams.
 - TNA (Network Apps – SE, CA, Study package)
 - eDART TERM Applications

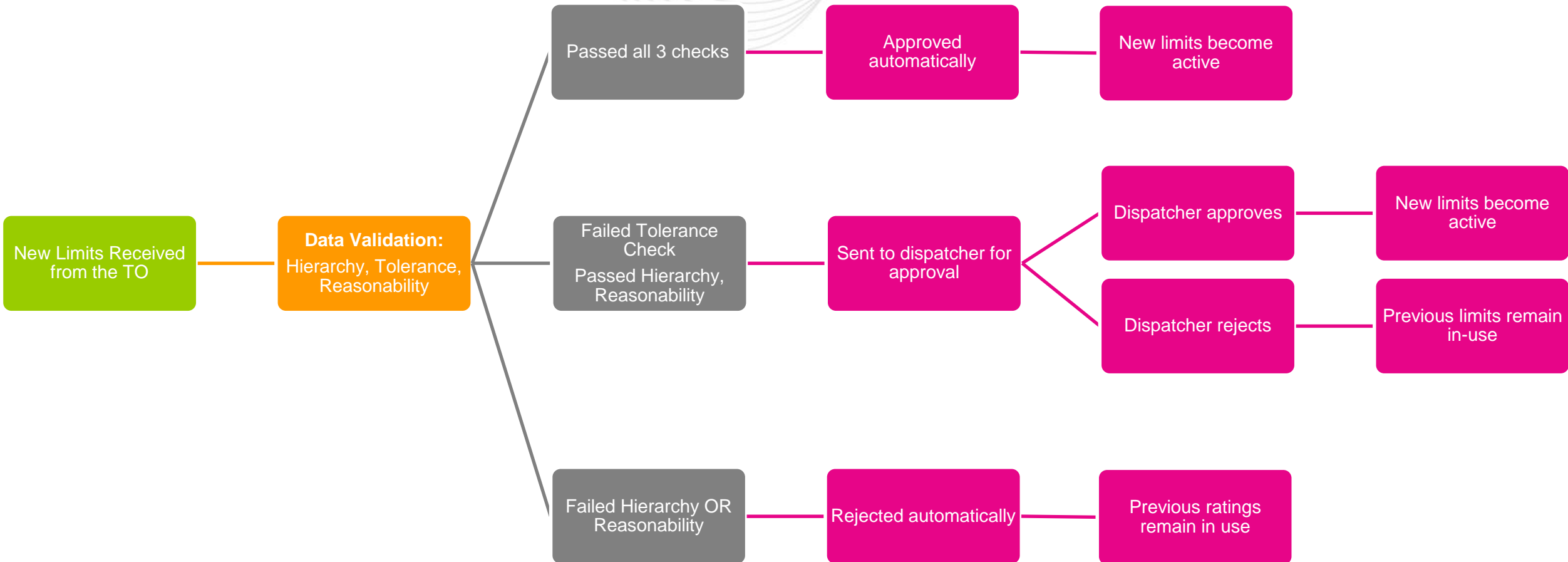
- When new limits are received, the following checks are performed by SCADA data processing:
 - Hierarchy
 - Tolerance
 - Reasonability
- **Hierarchy**
 - Every new set of limits are checked for the following:
 - $Normal \leq LTE \leq STE \leq Load Dump$
 - If the hierarchy check fails, the limits are considered invalid and are rejected.

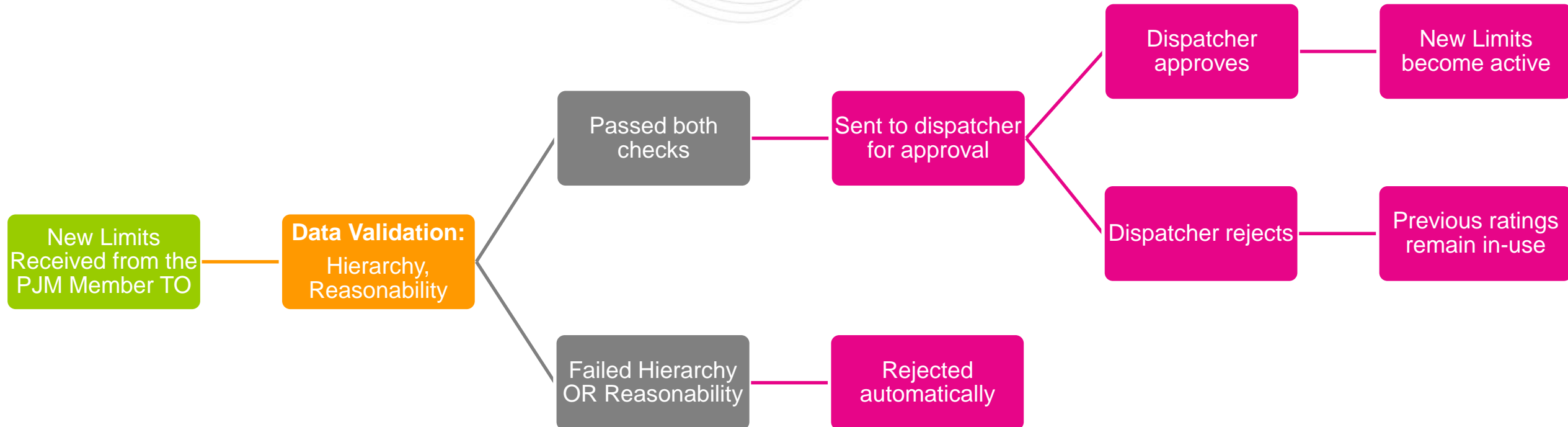
- **Reasonability**

- Set as a global % threshold applicable to all DLRs.
- Reasonability checks use the following rules:
 - *Upper Reasonability Limit = default_rating * (1 + reasonability_percentage)*
 - *Lower Reasonability Limit = default_rating * (1 - reasonability_percentage)*
 - *Lower Reasonability Limit ≤ **New limit** ≤ Upper Reasonability Limit*
- If the reasonability check fails, the limits are considered invalid and are not placed in effect.

- **Tolerance**

- Set as a global % threshold applicable to all DLRs.
- Tolerance checks use the following rules:
 - *Upper Tolerance Limit = default_rating * (1 + tolerance_percentage)*
 - *Lower Tolerance Limit = default_rating * (1 - tolerance_percentage)*
 - *Lower Tolerance Limit ≤ **New limit** ≤ Upper Tolerance Limit*
- Tolerance check is applicable to Automatic DLR mode.





Real-time

Approach for DLR (in-service) Real-time ratings

- Dynamically updated/telemetered DLR ratings will auto-implement.
 - Auto-generation of Temporary eDART TERM ticket for any DLR ratings from PJM EMS in-effect.
 - Auto-closure of previous Temporary eDART TERM ticket in-effect ratings.
- PJM OASIS postings will update at an increased frequency from today (2x/day).

Forecasted

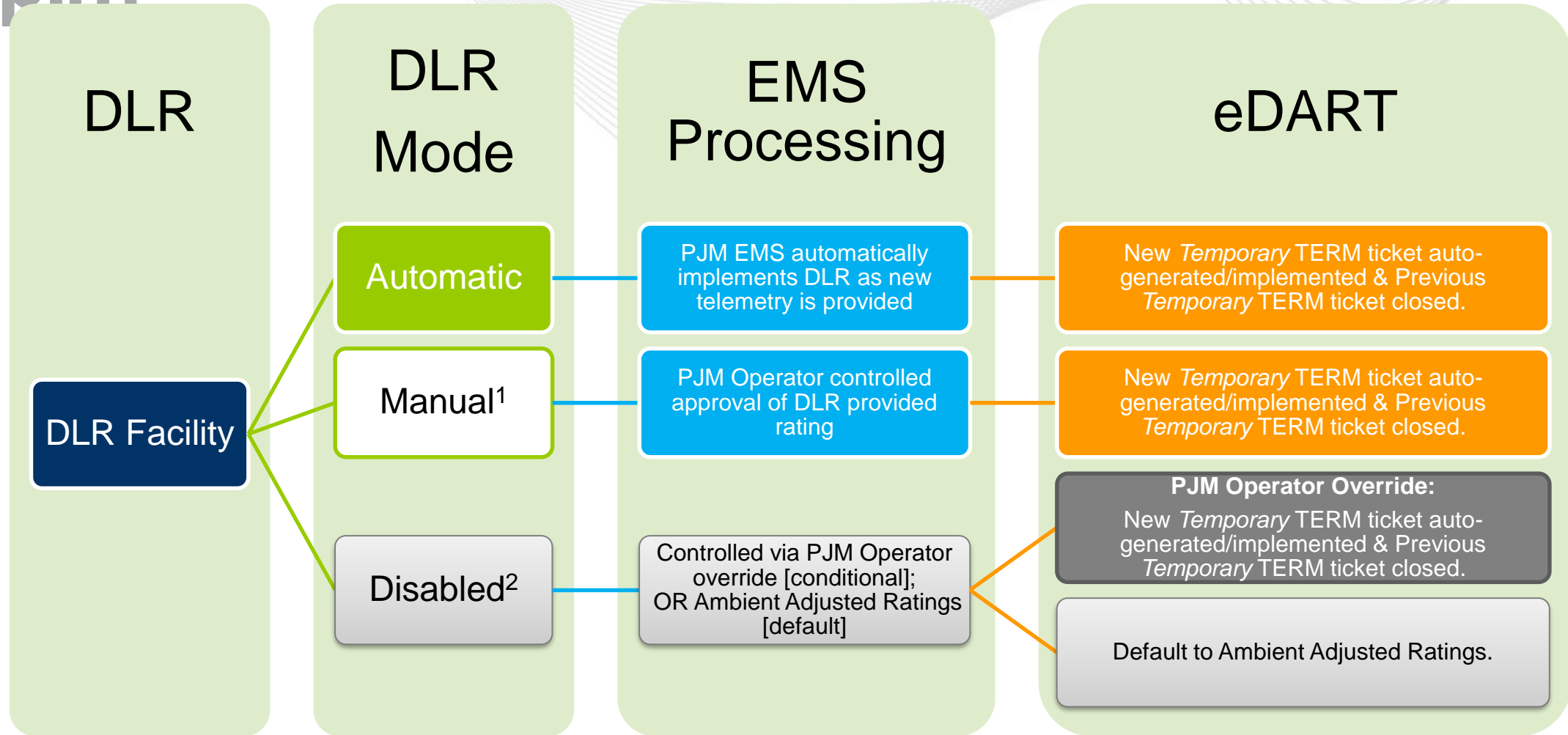
Approach for DLR Forecasted ratings

- **Initial Implementation:** Not available within eDART UI or XML. (To be determined timeframe which will be communicated via eDART and Tech Change Forums.)
- DLR Forecasted ratings (38-48 hr projected) will be available in standalone file hosted at pjm.com >> Markets & Operations >> PJM Tools >> OASIS >> System Information >> [Ratings Information](#).

DLR Out-of-Service

DLR unavailable (telemetry failure, processing failure, etc.)

- PJM and equipment owner will agree either to revert to traditional Ambient Adjusted Rating or manual approach for ratings adjustment as conditions warrant.



¹ Potential use case could include setup for projected rating increase / decrease.

² Identical to control options in place today for existing facility ratings.

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