

Market Design Concept for DSASP Aggregations

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Agenda

- ◆ **Background**
- ◆ **Review**
- ◆ **Communication Paths for DSASP**
- ◆ **Direct Communications for DSASP Concept**
- ◆ **Dependency between DSASP Aggregations and Direct Communications for DSASP**
- ◆ **Market Concepts for DSASP Aggregations**
 - *Communications and Measurement*
 - *Resource Registration*
 - *Other*
- ◆ **Next Steps**

Background

- ♦ **April 2009: FERC Order 719 - Paragraph 97:**
 - *Assessment of technical feasibility and value of smaller DR Resources providing ancillary services within one year*
 - Report findings on whether (and how) smaller DR Resources can reliably and economically provide operating reserves
- ♦ **September 2009: During assessment of communication for DSASP Aggregations, NYISO identified potential communication timing issues to aggregations that warranted recommendation to limit initial implementation of DSASP Aggregations to Operating Reserves**
 - *Sept. 25 Presentation to NPCC for DSASP Aggregations to provide Operating Reserves*
 - No issues raised by NPCC
- ♦ **October 1, 2009: PRLWG presentation laying out potential communication timing issues to aggregations that warranted recommendation to limit initial implementation of DSASP Aggregations to Operating Reserves**
 - *No objections from stakeholders*
- ♦ **November 9, 2009: Presentation to NYSRC for DSASP Aggregations to provide Operating Reserves**
 - *Agreement with provision to provide updates on DSASP enrollment*

Review

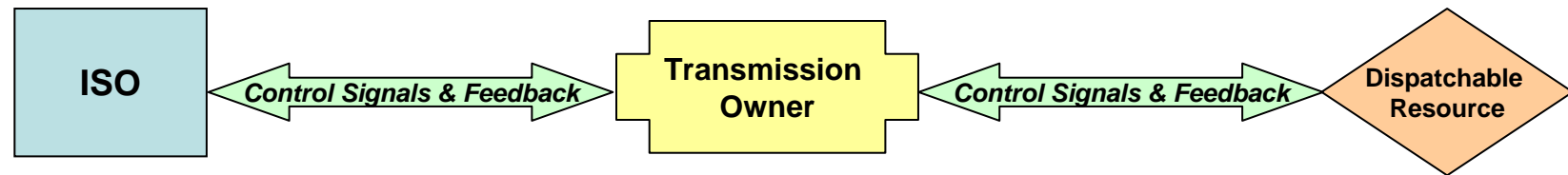
- ♦ **January 27, 2010: Presentation to PRLWG identifying the need to prioritize stakeholder initiatives in light of new regulatory requirements issued late in 2009**
 - *Stakeholders requested DSASP aggregations to be delayed until second half of 2010 in favor of completing the SCR Baseline analysis and SCR aggregation initiatives*
- ♦ **February 25, 2010: Compliance filing reported on stakeholder initiatives and commitment to provide updates on progress on DSASP Aggregation in its semi-annual filings on demand response**
- ♦ **May 12, 2010: DSASP Workshop discussed direct communication for DSASP and DSASP Aggregations**
- ♦ **June 1, 2010: In semi-annual compliance filing, NYISO committed to provide a separate report on activities associated with incorporating aggregations into the ancillary services market**

Direct Communications for DSASP Concept

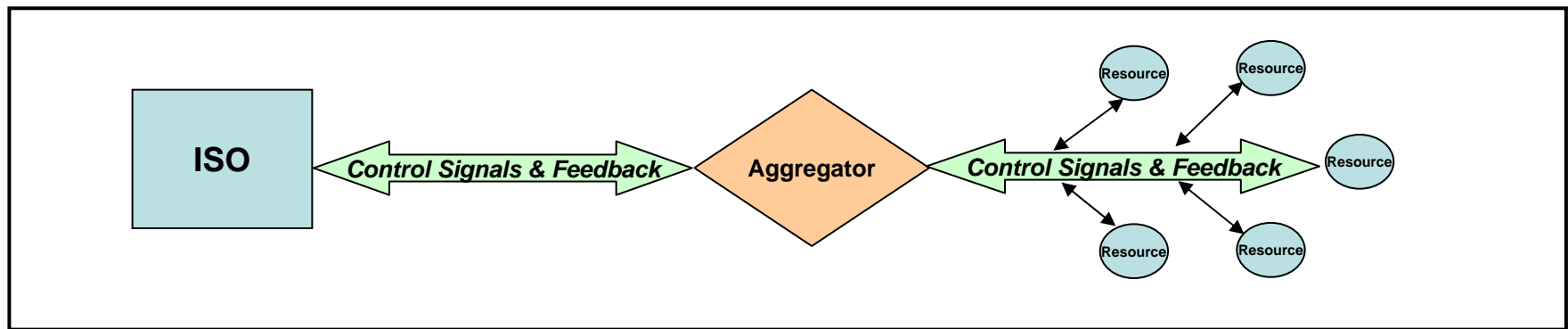
- ◆ **NYISO sends dispatch instructions via ICCP to the DSASP aggregator**
 - *Single DSASP resources may also use Direct Communications for DSASP*
- ◆ **The DSASP aggregator sends response directly to the NYISO**
- ◆ **NYISO updates the Transmission Owner on each update/scan cycle**
- ◆ **NYISO will work with Transmission Owners to develop consistent approach for receipt of signal from NYISO to Transmission Owners for demand response resources using Direct Communication for DSASP**
- ◆ **Direct communication for DSASP will facilitate the participation of aggregations**
 - *Simplifies implementation*
 - Standardized requirements
 - Composite signal to/from aggregator
 - Aggregator coordinates and measures response of resources
 - *Practical approach for aggregators with resources in multiple zones*
 - Current approach for DSASP would require aggregators to integrate with multiple Transmission Owners

Communication Paths for DSASP

Current DSASP implementation



- Current communication path from NYISO to Transmission Owner to DSASP resource
- Direct communication path from NYISO to Aggregator
 - Aggregator manages communication with resources, collects response of the aggregation



DSASP Aggregations and Direct Communication for DSASP

- ◆ **Participation of DSASP Aggregations is linked to implementation of direct communication for DSASP**
 - *Approach: Parallel paths for implementing DSASP Aggregations and specifying functional requirements for Direct Communication for DSASP*
- ◆ **Direct Communication requirements to address:**
 - *Requirements for level of communication redundancy*
 - *Requirements for measurement and verification (M&V)*
 - *NYISO real-time communication with Transmission Owners regarding level of demand response providing reserves*
 - *Procedures for Interim Control Operations*
- ◆ **Tariff, manual and other documentation changes to include aggregations**

Market Concepts for DSASP Aggregations

Communications and Measurement

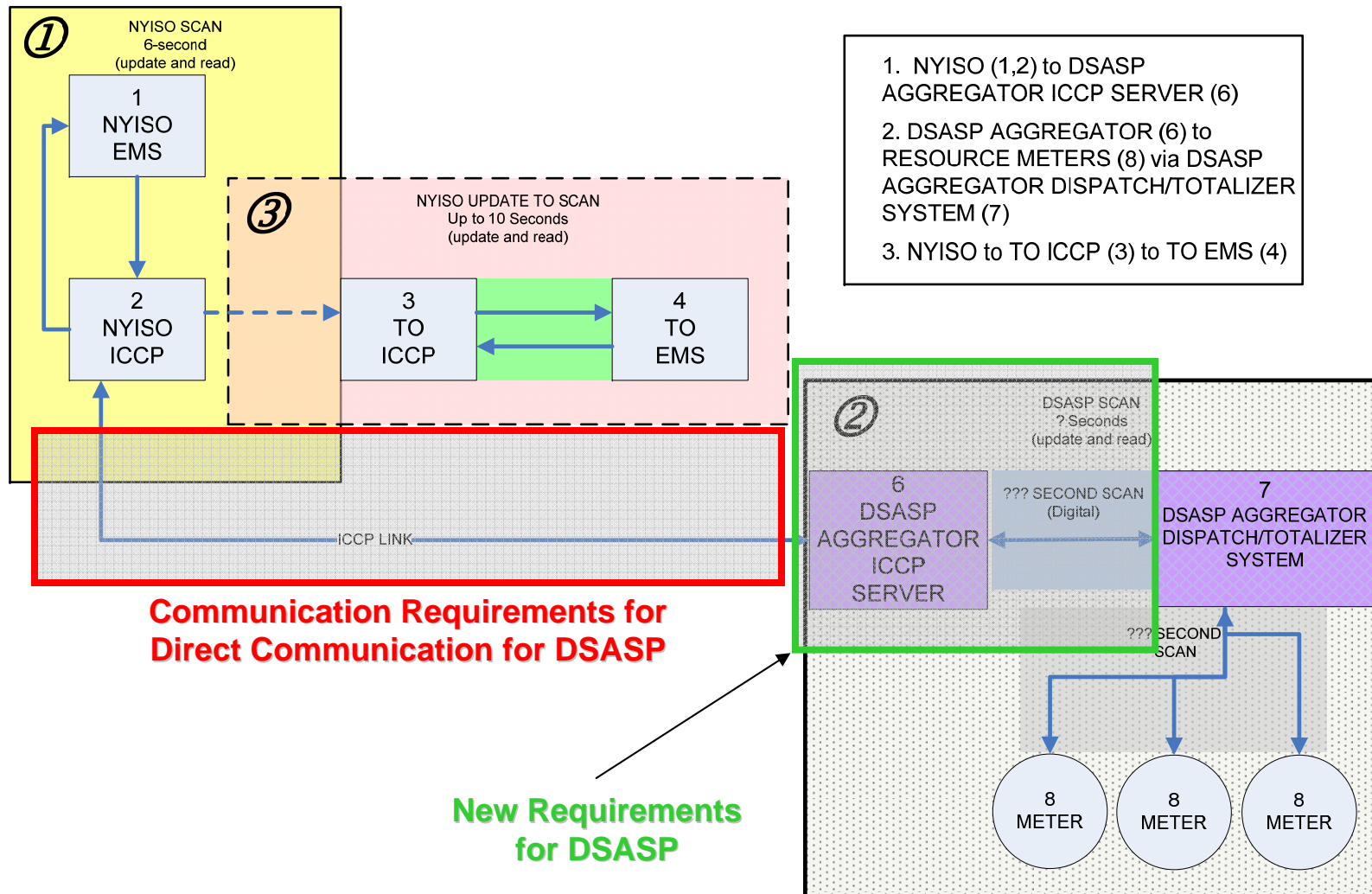
◆ **Communications:**

- *Direct two-way real-time communication between the NYISO and the aggregator via ICCP*
- *Requirements for level of communication redundancy*

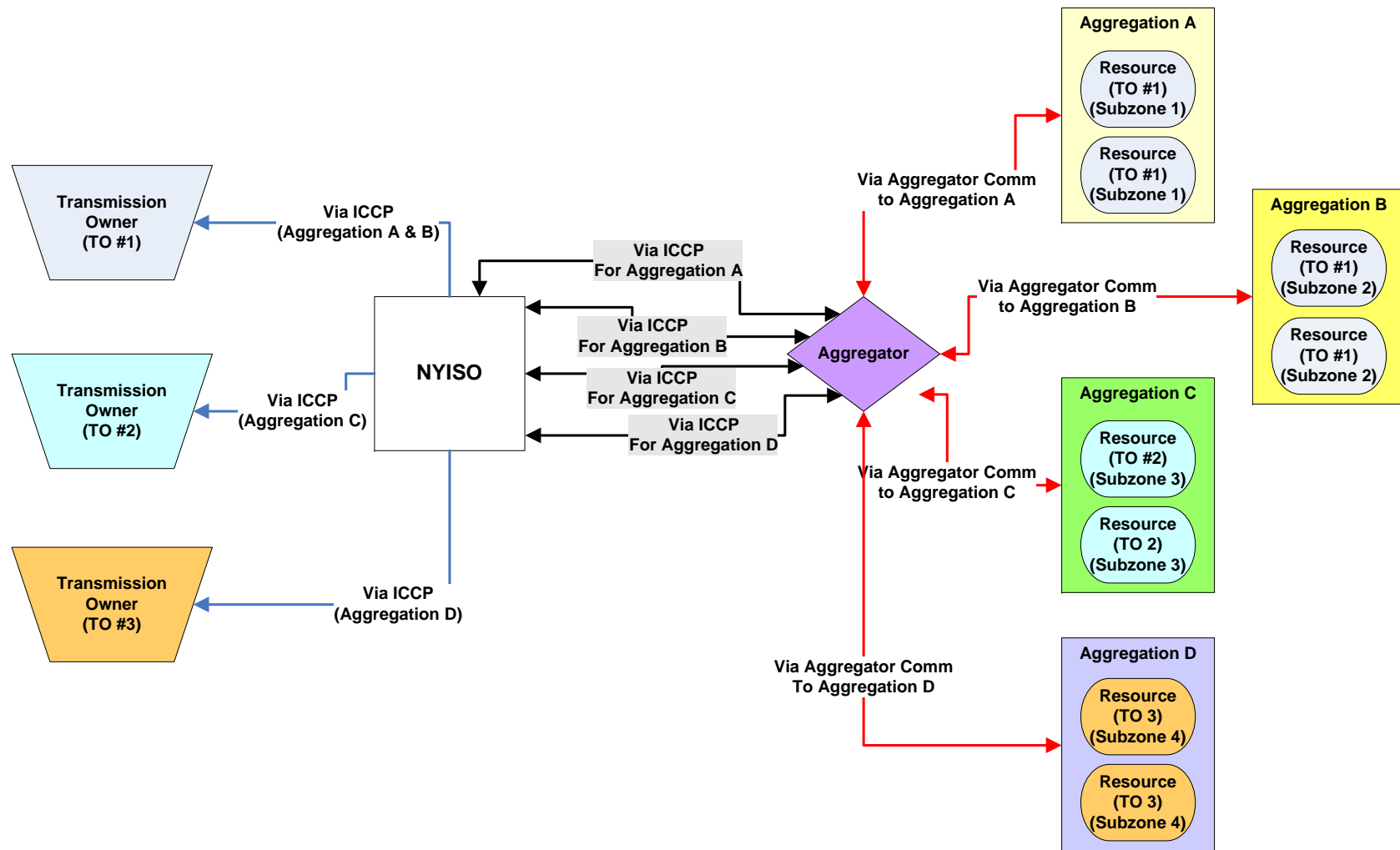
◆ **Measurement:**

- *Measurement requirements between aggregator and resources in an aggregation for two-way signals to the NYISO*
 - **Such as sampling rate (synchronous or asynchronous polling) and totalization**
- *Latency and other measurement and response requirements to be specified*

Sample Direct Communication Path for DSASP Aggregation



Proposed Direct Communication Flow for DSASP Aggregations



Market Concepts for DSASP Aggregations

Resource Registration

- ◆ **Aggregations must contain resources within the same sub-zone**
 - *Grouped by Transmission Owner within a load zone*
 - Feedback loop from NYISO to Transmission Owner must identify amount of reserves from demand response
- ◆ **Changes to DSASP aggregations must be reported to Customer Relations Department via updated DSASP registration packet**
 - *To identify whether a change is required to the operating limits of the DSASP resource*
 - *To identify the resources in the aggregation to prevent duplicate enrollments in DSASP aggregations*

Market Concepts for DSASP Aggregations - Implementation *Tariff, Manuals, Procedures, and Software*

- ◆ **Review Tariff**

- *Specific DSASP references related to types of resources and communication with DSASP resources*

- ◆ **Manual changes**

- *Ancillary Services Manual*
 - Requirements for prequalification and ability for NYISO Operations to audit that apply to single DSASP resources would also apply to aggregations

- ◆ **Procedures**

- *Direct Communication Procedures*
- *Any procedures involving DSASP resource registration, including requirements for DRIS*

- ◆ **Software**

- *Assessment of potential changes to NYISO systems to support DSASP aggregations*

Market Concepts for DSASP

Aggregations

Other

- ◆ **DSASP resources (single or aggregations) still have the option to connect through the Transmission Owner**
 - *Transmission Owner requirements would apply for communication and measurement*
- ◆ **NYISO to evaluate the need for locational limits on the amount of Operating Reserves from aggregations**

Next Steps – DSASP Aggregations

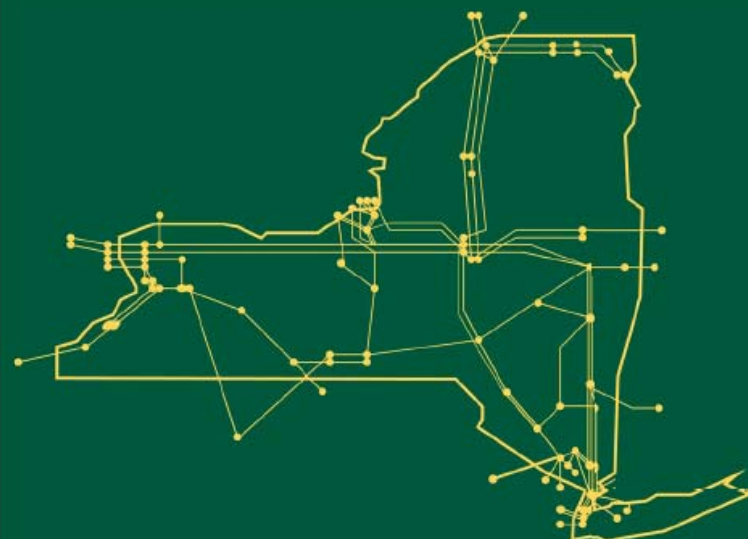
- ◆ **Presentation to Price Responsive Load Working Group (Nov. 30)**
- ◆ **Market Concept presentations to MIWG (Dec. 6) and BIC (Dec. 8)**
- ◆ **Engage other working groups: OC, SOAS, CDAS**
- ◆ **First Quarter 2011: Develop market rules and procedures for DSASP Aggregations**
 - *Evaluate the need for locational limits on Operating Reserves from aggregations*
 - *Develop procedures for registration of DSASP aggregations*
 - *Prepare and review any revisions to tariff language, manuals, and procedures*
 - *Identify any software implementation requirements*
- ◆ **Second Quarter 2011:**
 - *Development*
- ◆ **Third Quarter 2011**
 - *DSASP Aggregations: Deployment*

Next Steps

Direct Communications for DSASP

- ◆ **Engage other working groups: OC, SOAS, CDAS**
- ◆ **Second Quarter 2011: Develop requirements for Direct Communications for DSASP**
 - *Work with SOAS to specify requirements for Interim Control Operations for DSASP resources*
 - *Aggregator's communication to resources in a DSASP aggregation:*
 - Develop requirements for performance characteristics of measurement equipment
 - Develop procedures for evaluation and approval of measurement
 - *Prepare and review any revisions to manuals, and procedures*
- ◆ **Third Quarter 2011**
 - *DSASP Communication: Functional Requirements*

The New York Independent System Operator (NYISO) is a not-for-profit corporation that began operations in 1999. The NYISO operates New York's bulk electricity grid, administers the state's wholesale electricity markets, and conducts reliability and resource planning for the state's bulk electricity system.



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