

SPECIFICATION



Dispatch Notification

Web Service Design Specification

Issue 4.0

This document provides the design specification for
the Dispatch Service (DS) web service.

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| 0.4 | Added section 5 – Dispatch Notification System Setup Considerations, to provide recommendations regarding system setup. | Oct. 25, 2017 |
| 0.5 | Added assumptions for setting up the Dispatch Notification System | November 29, 2017 |
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| 2.0 | Updated to meet accessibility requirements pursuant to the <i>Accessibility for Ontarians with Disabilities Act</i> . | October 27, 2020 |
| 3.0 | Changes made for the Market Renewal Program | March 31, 2023 |
| 4.0 | Revised document to indicate that the functionality for Operating Reserve Deactivations (ORDs) is not being used | February 26, 2025 |

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1 Introduction

1.1 Purpose

- 1 The purpose of this document is to provide design specification for the Dispatch Notification web service.
- 2 The purpose of the Dispatch Notification system is to allow the Market Participant to receive Dispatch Instructions from the IESO in real-time.
- 3 These specifications and requirements are reviewed by relevant information solution stewards and infrastructure solutions SMEs and approved by relevant infrastructure solution steward.

1.2 Assumptions and Limitations

- 4 The design specification document only describes the Dispatch Notification Web Service module designed by the IESO.
- 5 The Dispatch Notification System is hosted by the Market Participant and must follow the design specified in this document.
- 6 The Dispatch Notification does not replace the Dispatch Service System as the Market Participant will still need to send response to Dispatch Instructions via the Dispatch Service Web Service.
- 7 The Market Participant will provide IESO with the following information if they wish to set up the Dispatch Notification System:
 - IP Whitelisting requirements
 - Username/Password to be used by the IESO for calling the Dispatch Notification System
 - Web Service Endpoint for the Dev and Production environment
- 8 The design specification document is a living document.

1.3 Conventions

- 9 The standard conventions followed for this document are as follows:
 - Quotation marks are used to highlight process or component names;
 - Italics are used to highlight publication, titles of procedures, letters and forms; and
 - All time mentioned in this document is in East Standard Time (EST).

1.4 Glossary

This glossary does not repeat terms or roles defined in guide IESO_GDE_0308 *Alter IESO* Glossary.

Standard Infrastructure Solution Requirements Glossary

- 10 **Load Testing** is the process of putting demand on a system or device and measuring its response. Load testing is performed to determine a system's behaviour under both normal and anticipated peak load conditions. It helps to identify the maximum operating capacity of an application as well as any bottlenecks and determine which element is causing degradation. When the load placed on the system is raised beyond normal usage patterns, in order to test the system's response at unusually high or peak loads, it is known as stress testing. The load is usually so great that error conditions are the expected result, although no clear boundary exists when an activity ceases to be a load test and becomes a stress test.
- 11 **Non-functional requirements** are requirements which specify criteria that can be used to judge the operation of a system, rather than specific behaviours. This should be contrasted with functional requirements that specify set behaviour or functions. In general, functional requirements define what a system is supposed to do whereas non-functional requirements define how a system is supposed to be. Non-functional requirements are often called qualities of a system.
- 12 **Non-functional requirements categories** provide a framework for identifying, and structure in documenting non-functional requirements.
- 13 **Reliability** includes aspects such as availability, mean time before failure, and recoverability.
- 14 **Performance** involves things such as throughput of information through the system, system response time (for GUI or API), batch cycle time, and start-up time. For convenience, the performance category is defined to include capacity.
- 15 **Security** protects information as well as functions and specifies who has access under identified scenarios. Security includes privacy issues.
- 16 **Supportability** specifies a number of other requirements. For information solution requirements this includes adaptability and configurability.
- 17 **Performance Test** is used to determine the speed or effectiveness of a computer, network, software program, or device. This process can involve quantitative tests done in a lab, such as measuring the response time or the number of MIPS (millions of instructions per second) at which a system functions. Qualitative attributes such as reliability, scalability and Interoperability may also be evaluated. Performance testing is often done in conjunction with stress testing.
- 18 **Stress Testing** - see Load Testing.
- 19 **System specifications** detail the attributes, design and Interfaces for a solution designed to meet one or multiple information solution requirement documents. A system specification may address portions of multiple information solution requirement documents.

1.5 How This Document Is Organized

- 20 Section 2 describes the web service operations provided by the module
- 21 Section 3 describes the simple and complex types used in the web service operations

– End of Section –

2 Web Service Operations

2.1 Operation: newDispatches

Description

The newDispatch operation allows for the IESO to send new dispatch instructions to the Market Participant.

Request

| Field | Type | Cardinality | Examples/Explanations |
|-----------------------|---|-------------|--|
| Dispatch Instructions | <u>DispatchInstructions</u> | 0..* | |
| Dispatch Instruction | <u>DispatchInstruction</u> | 0..* | |
| MESSAGE_ID | String | 0..1 | Unique identifier assigned to the dispatch instruction |
| PARTICIPANT_NAME | String | 0..1 | Market Participant Short Name |
| DATE_SENT | DateTime | 0..1 | Date/time the dispatch was issued by the IESO |
| DISPATCH_TYPE | <u>DispatchType</u> | 0..1 | Type of dispatch. See <u>DispatchType</u> for list of Dispatch Types. |
| STATE | <u>DispatchState</u> | 0..1 | Dispatch status. See <u>DispatchState</u> for list of Dispatch States. |
| ACTIVE | Boolean | 0..1 | Whether or not the dispatch is the last confirmed dispatch for the resource per dispatch type. |
| RESOURCE_ID | String | 0..1 | Name of the resource being dispatched |
| DELIVERY_DATE | DateTime | 0..1 | Date the dispatch instruction applies to YYYY-MM-DD |
| DELIVERY_HOUR | Integer | 0..1 | Hour the dispatch instruction applies to Min Inclusive: 1 Max Inclusive: 24 |

| | | | |
|---------------------|------------------|------|--|
| DELIVERY_INTERVAL | Integer | 0..1 | The five-minute interval the dispatch applies to. Min Inclusive: 1 Max Inclusive: 12 |
| DELIVERY_START_TIME | DateTime | 0..1 | Start time of the dispatch request. Start time requests are associated with dispatches for contract activation. YYYY-MM-DDTHH:MM:SS |
| DELIVERY_STOP_TIME | DateTime | 0..1 | Stop time of the dispatch request. Stop time requests are associated with dispatches for contract activation YYYY-MM-DDTHH:MM:SS |
| AMOUNT | Double | 0..1 | Value assigned to the dispatch (content is dependent on dispatch type) (floating point number) |
| LIMIT_TYPE | <u>LimitType</u> | 0..1 | Type of manual limit applied to the resource. See <u>LimitType</u> for list of limit types. <ul style="list-style-type: none"> • FIX – Resource is manually set • MAX – Resource limited to maximum energy output • MIN – Resource limited to minimum energy output • OTD – Manual, on-demand, one time dispatch |
| VG_OI | String | 0..1 | Variable Generation Obligation Indicator for the dispatch instruction. <ul style="list-style-type: none"> • Mandatory • Release • <i>null</i> for non-Variable Generators. |
| RESERVE_CLASS | String | 0..1 | Class of reserve being requested in the in a RESV type dispatch request. <ul style="list-style-type: none"> • 10S – 10 minute spinning • 10N – 10 minute non-spinning • 30R – 30 minute reserve |
| REGULATION_RANGE | Double | 0..1 | Regulation range dispatch specified for regulation dispatches |
| RESPONDER | String | 0..1 | Not used, will be left blank. |

| | | | |
|----------------|----------|------|--|
| EXPIRES_AT | DateTime | 0..1 | End of the active window/when the dispatch instruction expires. |
| EFFECTIVE_TIME | DateTime | 0..1 | Time associated with the Product (START, EXTEND, and DECOM) |
| MLP_TIME | DateTime | 0..1 | First date and time at which a Resource is scheduled for a Commitment at or above the Minimum Load Point (MLP) |
| SYNC_TIME | DateTime | 0..1 | Resource scheduled to synchronize |
| ALT_SYNC_TIME | DateTime | 0..1 | Alternate synchronization time to Commitment Dispatch |
| LAST_UPDATED | DateTime | 0..1 | Datetime the dispatch instruction was last altered. |

Response

| Field | Type | Cardinality | Examples/Explanations |
|-----------|---------|-------------|-----------------------|
| Confirmed | Boolean | 1 | |

Fault

None

Business/Validation Rules

1. IESO will consider any non “confirmed” responses as delivery failures.
2. IESO will not process any SOAP faults returned from the web service.

3 Web Service Types

3.1 Simple Types

DispatchState

| Field | Type | Enumeration |
|---------------|----------------------|---|
| DispatchState | Enumeration (String) | <ul style="list-style-type: none">• New• Timed Out• Accepted• Rejected |

DispatchType

| Field | Type | Enumeration |
|--------------|----------------------|--|
| DispatchType | Enumeration (String) | <ul style="list-style-type: none">• ENG• ORA• ORD (not being used)• RESV• RGR• RGS• START• EXTEND• DECOM |

LimitType

| Field | Type | Enumeration |
|-----------|----------------------|---|
| LimitType | Enumeration (String) | <ul style="list-style-type: none">• FIX• MAX• MIN• OTD |

3.2 Complex Types

DispatchInstruction

| Field | Type | Cardinality | Examples/Explanations |
|------------------|--------------------------------------|-------------|--|
| MESSAGE_ID | String | 0..1 | Unique identifier assigned to the dispatch instruction |
| PARTICIPANT_NAME | String | 0..1 | Market Participant Short Name |
| DATE_SENT | DateTime | 0..1 | Date/time the dispatch was issued by the IESO |
| DISPATCH_TYPE | <u>DispatchType</u> | 0..1 | Type of dispatch. See <u>DispatchType</u> for list of Dispatch Types. |
| STATE | <u>DispatchState</u> | 0..1 | Dispatch status. See <u>DispatchState</u> for list of Dispatch States. |
| ACTIVE | Boolean | 0..1 | Whether or not the dispatch is the last confirmed dispatch for the resource per dispatch type. |
| RESOURCE_ID | String | 0..1 | Name of the resource being dispatched |
| DELIVERY_DATE | DateTime | 0..1 | Date the dispatch instruction applies to YYYY-MM-DD |
| DELIVERY_HOUR | Integer | 0..1 | Hour the dispatch instruction applies to Min Inclusive: 1 Max Inclusive: 24 |

| Field | Type | Cardinality | Examples/Explanations |
|---------------------|------------------|-------------|--|
| DELIVERY_INTERVAL | Integer | 0..1 | The five-minute interval the dispatch applies to. Min Inclusive: 1 Max Inclusive: 12 |
| DELIVERY_START_TIME | DateTime | 0..1 | Start time of the dispatch request. Start time requests are associated with dispatches for contract activation. YYYY-MM-DDTHH:MM:SS |
| DELIVERY_STOP_TIME | DateTime | 0..1 | Stop time of the dispatch request. Stop time requests are associated with dispatches for contract activation YYYY-MM-DDTHH:MM:SS |
| AMOUNT | Double | 0..1 | Value assigned to the dispatch (content is dependent on dispatch type) (floating point number) |
| LIMIT_TYPE | <u>LimitType</u> | 0..1 | Type of manual limit applied to the resource. See <u>LimitType</u> for list of limit types. |
| VG_OI | String | 0..1 | Variable Generation Obligation Indicator for the dispatch instruction. <ul style="list-style-type: none"> • Mandatory • Release • <i>null</i> for non-Variable Generators. |
| RESERVE_CLASS | String | 0..1 | Class of reserve being requested in the in a RESV type dispatch request. <ul style="list-style-type: none"> • 10S – 10 minute spinning • 10N – 10 minute non-spinning • 30R – 30 minute reserve |
| REGULATION_RANGE | Double | 0..1 | Regulation range dispatch specified for regulation dispatches |
| RESPONDER | String | 0..1 | Username of the user that responded to the dispatch instruction |

| Field | Type | Cardinality | Examples/Explanations |
|----------------|----------|-------------|--|
| EXPIRES_AT | DateTime | 0..1 | End of the active window/when the dispatch instruction expires. |
| EFFECTIVE_TIME | DateTime | 0..1 | Time associated with the Product (START, EXTEND, and DECOM) |
| MLP_TIME | DateTime | 0..1 | First date and time at which a Resource is scheduled for a Commitment at or above the Minimum Load Point (MLP) |
| SYNC_TIME | DateTime | 0..1 | Resource scheduled to synchronize |
| ALT_SYNC_TIME | DateTime | 0..1 | Alternate synchronization time to Commitment Dispatch |
| LAST_UPDATED | DateTime | 0..1 | Datetime the dispatch instruction was last altered. |

DispatchInstructions

| Field | Type | Cardinality | Examples/Explanations |
|---------------------|----------------------------|-------------|---------------------------------|
| DispatchInstruction | <u>DispatchInstruction</u> | 0..* | A list of Dispatch Instructions |

4 Dispatch Notification System Setup Considerations

HTTPS Request Limit

Dispatch instructions can become large in size, if the Dispatch Notification Service is not configured properly error may occur when a set of new dispatches is received. It is recommended to properly set the HTTPS request limit on the server which is hosting Dispatch Notification Service to avoid potential errors.

– End of Section –

References

| Document Name | Document ID |
|---|-------------|
| Dispatch Service Web Service Design Specification | SPEC-154 |
| | |

– End of Document –