Rail Delivery Group

National Rail

Disruptions Interface

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Version History

Version	Comments
P-02-00	Rewording in some sections New BR-02 Business Requirement Edit section 2.1.1 as the Disruptions SOAP Experience API has now been withdrawn State that the Disruptions API is utilised via RDM (in section 2.2.5)

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Table of contents

1. Introduction 6
1.1. Overview 6
1.2. Scope 6
2. The RDG Disruptions Interface 7
2.1. Overview 7
2.2. RDG Developer Portal 7
3. Functional Structure 8
3.1. Overview of available APIs 8
3.2. Disruptions Information Description 9
4. RDG Disruptions Interface Business Rules 10
4.1. Overview 10
4.2. Detailed Business Rules 11

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Terms and Definitions

Term	Definition
API	Application Programming Interface.
Darwin	RDG Service providing real-time train running information.
GWR	Great Western Railway
JSON	JavaScript Object Notation.
KB	National Rail Enquiries Knowledgebase.
OJP	RDG's Online Journey Planner service
RDG	Rail Delivery Group.
RDG Developer Portal	RDG's online portal which provides APIs, API specification and technical guidance.
RDM	Rail Data Marketplace.
REST	Representational state transfer.
TIS	Ticket Issuing System
TOC	Train Operating Company.
XML	eXtensible Markup Language

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1. Introduction

1.1. Overview

1.1.1. RDG, on behalf of the GB rail industry, collates and distributes passenger train service disruption information through various systems. This disruption information can be accessed by any interested party authorised by RDG, such as a TIS supplier or retailer, and is ultimately exposed to customers of TOC services.

1.1.2. The Disruptions Interface has been designed and implemented in order to provide a RESTful JSON API, which is a standards-based API usage pattern and RDG's standard for APIs.

1.1.3. This document describes the purpose and function of the Disruptions Interface and contains business rules and additional guidance needed for consumers to make use of it.

1.1.4. This document is one of three core components designed to assist with and manage the utilisation of the Disruptions Interface.

1.1.5. All three components alongside any other referenced documents, must be considered by all Disruptions Interface users.

1.1.6. All Disruptions Interface users integrating with the Disruptions Interface must comply with the rules and functionality contained within these three components.

1.2. Scope

1.2.1. This document:

- explains the purpose and functional structure of the RDG Disruptions Interface.
- gives some background to RDG’s Developer Portal.
- articulates any specific business rules to be adhered to.
- describes any associated RDG accreditation requirements (where appropriate).

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2. The RDG Disruptions Interface

2.1. Overview

2.1.1. The Disruptions Interface replaced the RDG Disruptions XML API service, providing mainly the same endpoints and capabilities.

2.1.2. The Disruptions Interface is made available via RDG's Developer Portal and provides access to underlying RDG Darwin data, RDG bulletin data and RDG Knowledgebase data.

2.1.3. The RDG Developer Portal provides approved and accredited partners with information about and access to RDG data and systems via a set of RESTful APIs.

2.1.4. The Disruptions Interface affords secure, fast and reliable access to the disruptions information and provides the ability for approved Disruptions Interface consumers to access RDG sources of disruptions information in one place, including:

- Station alerts and messages
- Service disruption and engineering work incidents
- Service bulletins
- TOC service indicators.

2.2. RDG Developer Portal

2.2.1. The RDG Developer Portal is the primary source for RDG APIs.

2.2.2. The RDG Developer Portal is used by RDG as an API access point, exposing data from multiple RDG services in order to support rail services.

2.2.3. Full details of the RDG Developer Portal are documented in **RSPS5200: 'RDG Developer Portal'** which is compulsory reading alongside this document.

2.2.4. The RDG Developer Portal website is accessible online without the need for login credentials. Each API within the RDG Developer Portal requires appropriate credentials to access. To request access to the Disruptions Interface, please log a service ticket with the Service Desk via its portal or email:

- Web Portal – Disruptions API
  - Onboarding & Contact
- Email
  - nationraildatafeeds@raildeliverygroup.com

2.2.5. The Disruptions API is utilised via the Rail Data Marketplace (RDM).

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3. Functional Structure

3.1. Overview of available APIs

3.1.1. The Disruptions Interface is exposed using the following API resources and methods (See the RDG Developer Portal for detailed technical information on each resource and method):

API Suite Location in the Developer Portal	*API Type*	Method and resource	Overview Description of API
Disruptions Experience API	REST	GET /stations/disruptions/stationMessages	Retrieves station messages for a specified station (using CRS code).
Disruptions Experience API	REST	GET /tocs/serviceIndicators	Retrieves service indicators for all the TOCs.
Disruptions Experience API	REST	GET /tocs/{tocCode}/serviceIndicators	Retrieves service indicators for a specified TOC (using 2-char TOC code).
Disruptions Experience API	REST	GET /disruptions/incidents/{incidentNumber}	Retrieves a KB incident using a specified disruption incident ID.
Disruptions Experience API	REST	POST /disruptions/incidents/search	Retrieves a list of KB incidents for a given set of filter criteria (e.g. date, TOC).
Disruptions Experience API	REST	GET /stations/disruptions/incidents	Retrieves the KB incident data for a specified station (using CRS code).
Disruptions Experience API	REST	POST /bulletins/search	Retrieves a list of service bulletins for a given set of filter criteria (e.g. date, TOC).
Disruptions Experience API	REST	GET /stations/disruptions	Retrieves station messages, Kb disruptions and bulletins all in one go, for a specified station (using CRS code).
Disruptions Experience API	REST	GET /bulletins/getLatest	Retrieves the preSignedUrl for a list of all the service bulletins.
Disruptions Experience API	REST	GET /health	Retrieves the health of the end checkpoint.

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3.2. Disruptions Information Description

3.2.1. The Disruptions Interface exposes information about disruptions from a number of industry sources. The interface consolidates this information into a single access point, negating the need for consumers to connect to multiple RDG services to retrieve disruption related information.

3.2.2. Because of the consolidation of multiple sources, it is likely the same incident will be returned within Disruptions Interface responses from different RDG services.

3.2.3. Below is a short description of each of the RDG services and the data they can provide through the Disruptions Interface:

- Knowledgebase (KB) incident data.
    - Used to provide detailed, customer focussed, information about service disruptions or engineering works, including useful information such as estimated time to resolve, alternative routes, fare acceptance rules, etc.
- Station messages from Darwin and Knowledgebase.
    - Provides a short description of a disruption which is affecting a station.
    - Messages may relate to short- or long-term disruptions.
        - For example,
            - “Lifts out of service at Birmingham New Street until 1st March” or
            - "Disruption to services for the next hour due to severe weather".
    - Often includes a hyperlink to a relevant Knowledgebase incident (see above) for more detailed information.
- Bulletins which communicate issues affecting the running of individual services.
    - Used to provide service-specific impacts of a disruption, such as the use of a rail replacement bus service, or delays anticipated to services due to an earlier operational issue.
    - Also used for notification of known issues with published timetable data, often caused by engineering work.
    - Provides a short description of a disruption and often includes a hyperlink to a relevant Knowledgebase incident (see above) for more detailed information.
- National Rail Enquiries Knowledgebase (KB) service indicator.
    - Provides a high-level indication of how services are running at a TOC-level, such as “GWR TOC: minor delays to mainline services”. These are by their nature less granular than station or service-level disruption information.
    - Provides a short description of a disruption and often includes a hyperlink to a relevant Knowledgebase incident (see above) for more detailed information.
- Engineering Sales Suppression (ESS) Bulletins
    - Contains the current Bulletin data in the same format as is presented in the Disruption API Bulletin Search service, i.e. JSON format. This includes all previous Service Bulletins and the new ESS Bulletins.
    - Is a RESTful API, receiving a single HTTP GET Request.
    - Requests and Responses utilise the JSON data format.
    - Returns a pre-signed URL for the location of an AWS S3 bucket and file containing the latest set of all current Bulletins.

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4. RDG Disruptions Interface Business Rules

4.1. Overview

4.1.1. The Disruptions Interface has various business rules that must be complied with by users of the interface.

4.1.2. These business rules describe how the Disruptions Interface must be utilised to complete certain operations and/or what limits or constraints must be applied.

4.1.3. These business rules have been compiled with reference to previous related business rules as well as the underlying logic of the technology platform upon which the Disruptions Interface has been built.

4.1.4. Failure to comply with these business rules could result in access to the Disruptions Interface being revoked.

4.1.5. As an overarching rule, any call within the Disruptions Interface can be made at any time. However, the Disruptions Interface will be held to certain rate limiting and throttling measures to ensure both fair usage and optimum performance of the Interface itself.

4.1.6. In the event of excessive usage or usage that is not in accordance with the fair usage guidelines described in this document, RDG may withdraw permission to use the service. RDG also reserves the right to apply processes and techniques as may be necessary to protect the service's stability and availability, for example to thwart denial of service attacks.

4.1.7. The Disruptions Interface will implement throttling to slow and ultimately reject responses should the following limit be reached across all users of the interface:

- 20 requests per second, with a queue of up to 5 additional requests.
- If this limit is breached, and the queue is full, requests will be rejected.

4.1.8. In addition to throttling, rate limiting per client will also be implemented. Once the limits outlined below are exceeded by a client, their responses will be rejected:

- 10 requests per second per client before API calls are rejected.

4.1.9. The above limits apply across all endpoints of the Disruption Interface. This means that a client can only do a maximum of 10 requests per second regardless of what endpoint, or combination of endpoints, they use.

4.1.10. API calls may have mandatory fields which must be provided and valid for a successful outcome. These mandatory fields are explained fully in the RDG Developer Portal.

4.1.11. Invalid API requests will return differing error messages. Error messages are detailed in the RDG Developer Portal.

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4.2. Detailed Business Rules

4.2.1. The following Business Rules apply to consumers of the Disruptions Interface:

Business Rule ID	Description
	Authentication
AU-01	Only authorised users will be able to access and utilise the Disruptions Interface.
	Business Rules
BR-01	Disruption information can change at any time but is often static for hours, days or even weeks. Therefore, Users may cache responses locally from the Disruptions Interface to improve local performance and to reduce the volume of calls. Disruption Interface content may be cached for no more than 1 hour. Any content which is more than 1 hour old must be either refreshed or deleted. ***Note**: For consumers using bulletin data, it is strongly recommended, although not mandated, that they regularly (e.g. once every 5 mins) download all bulletin data and cache locally. Caching bulletin data locally enables this information to be returned in journey plan results where appropriate, without adding any additional latency*
BR-02	For ESS Bulletins (Category=”Fares”) where the Severity is “P0” the requirement is that for the matching service sale of tickets should be suppressed and a bulletin message applied to affected service(s). Severity of “P1” or “P2” in some cases are to be used for information purposes only bulletins.

End.

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