



# Department for Transport

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Author(s)	D-TRO Technical Team
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# 1 Document Control

## 1.1 Version History

Version	Author	Summary of changes	Date
2.0	PA Consulting	Record Management enhancement for D-TRO submission	01/07/2024

Version	Author	Summary of changes	Date
2.1	PA Consulting	Changes in the API endpoints	03/10/2024
2.2	PA Consulting	Adjust the Date Time format to match ISO 8601	28/10/2024
2.3	PA Consulting	Adjust the 200 OK Response payload for the EVENTS endpoint	21/11/2024
2.4	PA Consulting	Changes in the API endpoints	26/03/2025

## 1.2 Document Review

Version	Reviewer(s)	Date
2.4	John Cooper (Department for Transport, Product Owner)	26/03/2025

## 1.3 Approved Versions

Version	Approver(s)	Date
2.4	Department for Transport	26/03/2025

## 2 Terms and Abbreviations

Term / Abbreviation	Definition
API	Application Programming Interface
CRUD	Create, Read, Update and Delete
CSO	Central Service Operator
DC	Data Consumer
DfT	Department for Transport
DSP	Digital Solution Provider
D-TRO	Digital Traffic Regulation Order
ICD	Interface Control Document
JSON	JavaScript Object Notation
TRA	Traffic Regulation Authority
TRO	Traffic Regulation Order
URI	Uniform Resource Identifier

### 3 Introduction

As part of its ‘Future of Mobility: Urban Strategy’, the Department for Transport (DfT) is modernising the regulatory framework for Traffic Regulation Orders (TROs) (Traffic Management Orders in London) made under the Road Traffic Regulation Act 1984.

The Automated Vehicles Act 2024 (section 93) provides statutory instruction for TRAs to provide information on a defined set of TROs, in a specified manner and form, to be provided in accordance with a specified model, standard or set of specifications. These will be the D-TRO Data Specification including the D-TRO Data Model, which are expected to be specified under secondary legislation.

The new regulatory framework will, subject to necessary secondary legislation coming into force, mandate that Traffic Regulation Authorities (TRAs) in England and Wales publish TROs as open data in a standardised and digital format that anyone can access, use and share.

The standardised digital format will be based on the Digital TRO (D-TRO) Data Specification that is described in this and other associated documents. This Data Specification is intended to be a free resource for all. The Data Specification is candidate in nature and may be subject to change without notification.

Taking into account the needs arising from the UK Industrial Strategy and recognising the requirements that will emerge from the deployment of Connected and Automated Vehicles (CAVs), this Data Specification provides a framework for how the data and information relating to TROs can be formed in the future. Availability of such a draft Data Specification, when suitably tested, will support the move towards TROs being easily accessible to the public whether using apps or driving connected vehicles.

## 4 Overview of Data Specification

This Interface Control Document (ICD) is part of the documents and artefacts that are available in connection to the D-TRO Service:



Documents and artefacts supporting the D-TRO Service

This is in conjunction with the initial Data Specification that has been released for Beta, including the technical user guide which outlines the data modelling concepts defined to help support the definition and exchange of information relating traffic regulations.

All the latest versions of documents and other artefacts of this release are listed in GitHub [<https://github.com/department-for-transport-public/D-TRO/issues/1>].

## 5 Scope of this document

This ICD specifies the design of the interface for the D-TRO Consume API. This API enables integration between TRA systems and central D-TRO Service for the purposes of allowing Data Consumers to:

- Retrieve D-TROs held by the D-TRO Service.
- Retrieve history of the D-TROs issued by the TRAs held by the D-TRO Service.
- Search events and record of the existing D-TROs held by the D-TRO Service.
- Retrieve schemas within the D-TRO Service.

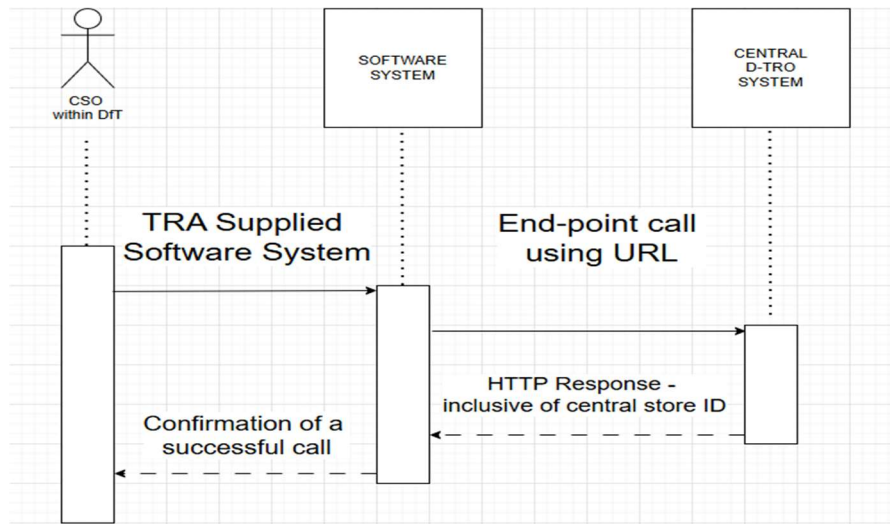
## 6 Target Audience

The target audience of this document is Data Consumers who have a specific interest and need for D-TRO data. This may include, for example, SatNav and routing data suppliers or mapping applications.

## 7 Integration Architecture

### 7.1 Overview (API v1 methods)

The figure below depicts the ‘happy path’ sequence of interactions between Data Consumers and the D-TRO Service.



Expected API interactions

### 7.2 Design Principles

When integrating with this interface, the following design patterns and principles should be adopted to ensure that the non-functional characteristics of Data Consumer systems and the D-TRO Service are effectively implemented:

ID	Pattern / Principle	Description
DP01	Guaranteed delivery	Data Consumer systems must adopt an architecture that ensures guaranteed delivery of requests/responses to and from the D-TRO Service.
DP02	Loose coupling	Data Consumer systems must adopt an architecture that is loosely coupled from the D-TRO Service and can detect, respond to, and recover from exceptions where the D-TRO Service is unavailable.
DP03	GOV.UK API technical and data standards	The interface will comply with published GOV.UK API <a href="#">technical and data standards</a> .



## 8 Assumptions, Constraints, Risks and Dependencies

### 8.1 Assumptions

ID	Assumption	Impact if not true
A01	Data Consumers will adopt an 'API-first' approach to integrate with the D-TRO API.	No web-based user interface is proposed to allow the retrieving and searching of DTROs and schemas.

### 8.2 Constraints

ID	Constraint
C01	Calls to the D-TRO Consume API will be subject to a quota constraining the number of requests that can be issued per second. Rate limiting values will be captured in future versions of this document.

### 8.3 Risks

ID	Risk	Impact	Mitigation
R01	There is a risk that the DTRO Service is unavailable due to a technical fault or unplanned maintenance.  (e.g., to address a critical security vulnerability identified in the underlying technology platform)	The operation of Data Consumer systems that integrates with the D-TRO Service will be correspondingly impacted.	Data Consumers will adopt the design patterns and policies specified in section 7 (see assumptions A01).

### 8.4 Dependencies

ID	Dependency
D01	Data Consumers will use credentials provided by the CSO to interact with the API.
D02	Data Consumer systems must be securely configured to manage API credentials.
D03	Data Consumer systems must adhere to the design patterns and policies specified in section 7.

## 9 Endpoints available for Data Consumers

The table below lists the endpoints relevant for this ICD. Additional endpoints for the TRAs/DSPs are documented in Beta-01-DfT-D-TRO-Publishers-TRA-DSP.

Ref.	HTTP verb	Endpoints	Name
DTROs			
D1	GET	/v1/dtros/{id}	Retrieve a D-TRO by D-TRO ID
D2	GET	/v1/dtros/sourceHistory/{id}	Retrieve source history based by D-TRO ID
D3	GET	/v1/dtros/provisionHistory/{id}	Retrieve provisions history by D-TRO ID
EVENTS AND SEARCH			
ES1	POST	/v1/events	Query central data store events (e.g., D-TRO being created, updated, or deleted)
ES2	POST	/v1/search	Find existing D-TROs that matches the specified criteria
SCHEMAS			
S1	GET	/v1/schemas/versions	Retrieve available schema versions
S2	GET	/v1/schemas	Retrieve available schema
S3	GET	/v1/schemas/{version}	Retrieve schema by version

## Summary of Data Consumer API endpoints

# 10 Interface Specification

This interface enables integration, via a RESTful API, for Data Consumers for the searching and retrieving of Digital Traffic Regulation Orders.

Overview	
Item	Value
Name	D-TRO Publication (API)
Publisher	Department for Transport
Consumer	Data Consumer
Interface type	<input checked="" type="checkbox"/> RESTful API <input type="checkbox"/> SOAP API <input type="checkbox"/> File transfer. <input type="checkbox"/> Other (please specify)
Protocol	<input type="checkbox"/> HTTP <input checked="" type="checkbox"/> HTTPS – must be HTTPS 1.1 or higher. <input type="checkbox"/> Other (please specify)
Test URL	<a href="https://dtro-test.dft.gov.uk/">https://dtro-test.dft.gov.uk/</a>
Pre-Production URL	<a href="https://dtro-integration.dft.gov.uk/">https://dtro-integration.dft.gov.uk/</a>
Production URL	<a href="https://dtro.dft.gov.uk/">https://dtro.dft.gov.uk/</a>
Security Classification	<input type="checkbox"/> UNMARKED <input checked="" type="checkbox"/> OFFICIAL <input type="checkbox"/> OFFICIAL-SENSITIVE <input type="checkbox"/> SECRET <input type="checkbox"/> TOP SECRET
Authentication	<p>Authentication to the application via the API endpoints for all public-facing environments (Third-party test and Production) will be controlled using the OAuth 2.0 framework (in keep with GOV.UK API technical and data standards). In order to obtain the necessary token, the user must either be onboarded as a DSP or cleared by the CSO before being allowed to self-register to use D-TRO via a portal and obtain the authentication token.</p> <p>It should be noted that for Private-Beta, IP restrictions will be in place, only allowing a select few addresses to call D-TRO API endpoints.</p>
Content type	application/json
Content encoding	UTF-8
Non-Repudiation	The use of OAuth 2.0 credentials will be used to uniquely identify an API invocation for non-repudiation purposes.

Notes applicable to all methods:

1. Dates and times – all date and time records shall be expressed in local time using the ISO 8601-1:2019 format (e.g. YYYY-MM-DDTHH:MM:SS). Some specific exceptions to this rule do exist – eventTime and publicationTime, which are both metadata attributes are specified using the ISO 8601-1:2019 extended format for UTC datetimes (e.g., YYYY-MMDDTHH:MI:SSZ).

## 10.1 Endpoints D-TROs

The below methods are provisioned for retrieval of D-TRO records.

The tables below cover the following endpoints specific for D-TROs.

Ref.	Endpoints	Name
D1	/v1/dtros/{id}	Retrieve a D-TRO by D-TRO ID
D2	/v1/dtros/sourceHistory/{id}	Retrieve source history based by D-TRO ID
D3	/v1/dtros/provisionHistory/{id}	Retrieve provisions history by D-TRO ID

Reference	D1					
Item	Value					
GET	/v1/dtros/{id}					
Name	Get a D-TRO by id					
Description	This GET method allows Data Consumers to retrieve an existing D-TRO from the D-TRO Service, based on its unique identification.					
Input data type(s)	<input type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input checked="" type="checkbox"/> Other (please specify)					
Input Structure	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	id	string	36	36	Mandatory	UUID formatted string containing the unique identification of a D-TRO.
Input data scope	When invoking this endpoint, the id parameter must contain a full UUID representation. If the unique identifier matches with one of the existing D-TROs within the D-TRO Service, that D-TRO will be retrieved.					
Output data type	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)					
Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	Data	JSON	-	-	Mandatory	D-TRO retrieved from the D-TRO Service.
Responses						

200 OK	<pre>{   "id": "ab4f27ef-d894-4a7f-b2c9-d3d76eff5d45",   "schemaVersion": "3.4.0",   "data": {     "source": {       "section": "All sections",       "troName": "DfT Example - TTRO height restriction with multiple conditions v2, Nov. 2024",       "provision": [         ...omitted for brevity (For a full example of D-TRO response please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)       ],       "reference": "c962b51f-e1aa-416e-8f0b-aefe39a4c099",       "actionType": "new",       "traCreator": 972312556,       "traAffected": [         972312556       ],       "currentTraOwner": 972312556,       "statementDescription": "Some description"     }   } }</pre>	
404 Not Found	<pre>{   "message": "TRO 'ab4f27ef-d894-4a7f-b2c9-d3d76eff5d44' not found",   "error": "Dtro 'ab4f27ef-d894-4a7f-b2c9-d3d76eff5d44' has either been deleted or cannot be found." }</pre>	
Error Codes	HTTP Code	Error Type
	400	Bad request
	401	Unauthorized
	403	Access denied/forbidden
	404	Not found
	405	Method not allowed
	429	Too many requests
	500	Internal Server Error
	502	Bad gateway
	503	Service unavailable
	504	Gateway timeout

Reference	D2					
Item	Value					
GET	/v1/dtros/sourceHistory/{id}					
Name	Get the source history of a D-TRO by id					
Description	This GET method allows Data Consumers to retrieve source history of an existing D-TRO from the D-TRO Service, based on its unique identification.					
Input data type(s)	<input type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input checked="" type="checkbox"/> Other (please specify)					
Input Structure	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	id	string	36	36	Mandatory	UUID formatted string containing the unique identification of a D-TRO.
Input data scope	When invoking this endpoint, the dtroId parameter must contain a full UUID representation. If the unique identifier matches with one of the existing D-TROs within the D-TRO Service, that D-TRO will be retrieved.					
Output data type	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)					
Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	Data	JSON	-	-	Mandatory	D-TRO retrieved from the D-TRO Service.
Responses						

200 OK	<pre>[   {     "actionType": "amendment",     "created": "2025-03-27T11:50:45Z",     "lastUpdated": "2025-03-27T11:57:01.0680277Z",     "reference": "c962b51f-e1aa-416e-8f0b-aefe39a4c099",     "schemaVersion": "3.3.0",     "section": "All sections",     "trafficAuthorityCreatorId": 942067991,     "trafficAuthorityOwnerId": 942067991,     "troName": "DfT Example - TTRO height restriction and length with multiple conditions v2, Nov. 2024 UPDATED"   },   {     "actionType": "new",     "created": "2025-03-27T11:50:45Z",     "lastUpdated": "2025-03-27T11:50:47.795763Z",     "reference": "c962b51f-e1aa-416e-8f0b-aefe39a4c099",     "schemaVersion": "3.3.0",     "section": "All sections",     "trafficAuthorityCreatorId": 942067991,     "trafficAuthorityOwnerId": 942067991,     "troName": "DfT Example - TTRO height restriction and length with multiple conditions v2, Nov. 2024"   } ]</pre>	
404 Not Found	<pre>{   "message": "History for DTRO not found.",   "error": "History for Dtro '52947d3e-976b-4651-a73e-a0d591379a73' cannot be found." }</pre>	
500 Internal Server Error	<pre>{   "message": "Internal Server Error",   "errors": [     "An unexpected error occurred."   ] }</pre>	
Error Codes	HTTP Code	Error Type
	400	Bad request
	401	Unauthorized
	403	Access denied/forbidden
	404	Not found
	405	Method not allowed
	429	Too many requests
	500	Internal Server Error
	502	Bad gateway
	503	Service unavailable
	504	Gateway timeout



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Reference	D3					
Item	Value					
GET	/v1/dtros/provisionHistory/{id}					
Name	Get the provisions history of a D-TRO					
Description	This GET method allows Data Consumers retrieve provisions history of an existing D-TRO from the D-TRO Service, based on its unique identification.					
Input data type(s)	<input type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input checked="" type="checkbox"/> Other (please specify)					
Input Structure	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	dtroId	string	36	36	Mandatory	UUID formatted string containing the unique identification of a D-TRO.
Input data scope	When invoking this endpoint, the dtroId parameter must contain a full UUID representation. If the unique identifier matches with one of the existing D-TROs within the D-TRO Service, that D-TRO will be retrieved.					
Output data type	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)					
Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	Data	JSON	-	-	Mandatory	D-TRO retrieved from the D-TRO Service.
Responses						
200 OK	<pre>[   {     "actionType": "new",     "created": "2025-03-27T11:50:45Z",     "data": {       ...omitted for brevity (For a full example of D-TRO response       please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File       Index.docx)     },     "lastUpdated": "2025-03-27T13:26:17.2958574Z",     "reference": "b1618e6f-f65c-48c7-9cc7-45da9f45fbda",     "schemaVersion": "3.3.0"   },   {     "actionType": "new",     "created": "2025-03-27T11:50:45Z",</pre>					

	<pre>       "data": {         ...omitted for brevity (For a full example of D-TRO response         please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File         Index.docx)       },       "lastUpdated": "2025-03-27T11:50:47.795763Z",       "reference": "b1618e6f-f65c-48c7-9cc7-45da9f45fbda",       "schemaVersion": "3.3.0"     }   ] </pre>	
404 Not Found	<pre> {   "message": "History for DTRO not found.",   "error": "Dtro '52947d3e-976b-4651-a73e-a0d591379a73' has either been deleted or   cannot be found." } </pre>	
500 Internal Server Error	<pre> {   "message": "Internal Server Error",   "errors": [     "An unexpected error occurred."   ] } </pre>	
Error Codes	HTTP Code	Error Type
	400	Bad request
	401	Unauthorized
	403	Access denied/forbidden
	404	Not found
	405	Method not allowed
	429	Too many requests
	500	Internal Server Error
	502	Bad gateway
	503	Service unavailable
	504	Gateway timeout

## 10.2 Events and Search

Ref.	Endpoints	Name
ES1	/v1/events	Query central data for stored events
ES2	/v1/search	Find existing D-TROs that matches requested criteria.

Reference	ES1					
Item	Value					
POST	/v1/events					
Name	Query central data for stored events (e.g., D-TROs being created, updated, or deleted).					
Description	This POST method allows Data Consumers to query events (created, updated, or deleted) on existing D-TROs within the D-TRO Service.					
Input data type(s)	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)					
Input Structure	Request Parameters					
	Field Name	Data Type	Min Size	Max Size	Opportunity	Notes
	data	object	1KB	10MB	Mandatory	A JSON payload describing a D-TRO. Payload should be UTF-8 encoded.
Input data scope	<p>When invoking this endpoint, the request payload must contain a search query object 'page', 'pageSize', 'since' and 'to' as mandatory fields and at least one other property of your choice within the query as shown below (e.g. traCreator)</p> <pre>{   "page": 1,   "pageSize": 50,   "since": "2020-01-01T00:00:00",   "to": "2025-03-27T14:00:00",   "traCreator": 99999,   "currentTraOwner": 99999,   "troName": "County Council",   "regulationType": "kerbsideNoLoading",   "regulatedPlaceType": "regulationLocation",   "vehicleType": "taxi",   "orderReportingPoint": "variationByNotice",   "regulationStart": {     "operator": "&lt;=",     "value": "2020-01-01T00:00:00"   },   "regulationEnd": {     "operator": "&gt;=",     "value": "2025-03-27T14:00:00"   }, }</pre>					

	<pre>"eventType": "created" }</pre>
Output data type	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)
Responses	
200 OK	<pre>{   "events": [     {       "id": "d93ee49b-79b2-488e-83ce-afb65eb8d633",       "publicationTime": "2025-03-27T11:51:40Z",       "traCreator": 995874603,       "currentTraOwner": 995874603,       "troName": "DfT Example - Oct. 2024 - partial extract of THE DERBYSHIRE COUNTY COUNCIL (MARKET STREET AND TOWN END ROAD, DRAYCOTT) (RESTRICTION AND LIMITED WAITING) TRAFFIC REGULATION ORDER 2024 (DfT mockup, v2) UPDATED",       "regulationType": [         "kerbsideLimitedWaiting"       ],       "vehicleType": [       ],       "orderReportingPoint": [         "permanentNoticeOfMaking"       ],       "regulationStart": [         "2024-08-01T09:00:00+01:00"       ],       "regulationEnd": [       ],       "eventType": "update",       "eventTime": "2025-03-27T11:51:40Z",       "_links": {         "self": "/dtros/d93ee49b-79b2-488e-83ce-afb65eb8d633"       }     },     {       ...omitted for brevity (For a full example of D-TRO response please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)     },     {       "id": "502b06df-1e90-4867-8dec-4391e69b213e",       "publicationTime": "2025-03-27T11:51:31Z",       "traCreator": 909055005,       "currentTraOwner": 909055005,       "troName": "DfT Example - Oct. 2024 - partial extract of THE DERBYSHIRE COUNTY COUNCIL (MARKET STREET AND TOWN END ROAD, DRAYCOTT) (RESTRICTION AND LIMITED WAITING) TRAFFIC REGULATION ORDER 2024 (DfT mockup, v2)",       "regulationType": [         "kerbsideLimitedWaiting"       ]     }   ] }</pre>

	<pre>       ],       "vehicleType": [       ],       "orderReportingPoint": [         "permanentNoticeOfMaking"       ],       "regulationStart": [         "2024-08-01T09:00:00+01:00"       ],       "regulationEnd": [       ],       "eventType": "create",       "eventTime": "2025-03-27T11:51:31Z",       "_links": {         "self": "/dtros/502b06df-1e90-4867-8dec-4391e69b213e"       }     }   ],   "page": 1,   "pageSize": 50,   "totalCount": 283 } </pre>	
404 Not Found	<pre> {   "message": "Not Found",   "error": "No event found matching the criteria." } </pre>	
500 Internal Server Error	<pre> {   "message": "Internal Server Error",   "errors": [     "An unexpected error occurred."   ] } </pre>	
Error Codes	HTTP Code	Error Type
	400	Bad request
	401	Unauthorized
	403	Access denied/forbidden
	404	Not found
	405	Method not allowed
	429	Too many requests
	500	Internal Server Error
	502	Bad gateway
	503	Service unavailable
	504	Gateway timeout

Reference	ES2					
Item	Value					
POST	/v1/search					
Name	Find existing D-TROs that matches requested criteria.					
Description	This POST method allows Data Consumers to query D-TROs that matches certain criteria within the D-TRO Service.					
Input data type(s)	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)					
	Request Parameters					
	Field Name	Data Type	Min Size	Max Size	Opportunity	Notes
	data	object	1KB	10MB	Mandatory	An object containing an array of queries to search. Payload should be UTF-8 encoded.
Input data scope	<p>When invoking this endpoint, the request payload must contain a search query object 'page' and 'pageSize' as mandatory fields and at least one other property of your choice within the queries array as shown below (e.g. orderReportingPoint)</p> <pre>{   "page": 1,   "pageSize": 50,   "queries": [     {       "publicationTime": "&lt;dateTime&gt;2020-01-01T00:00:00",       "modificationTime": "&lt;dateTime&gt;2020-01-02T00:00:00",       "deletionTime": "2020-01-03T00:00:00",       "traCreator": 99999,       "currentTraOwner": 99999,       "troName": "County Council",       "regulationType": "kerbsideSingleRedLines",       "vehicleType": "taxi",       "orderReportingPoint": "permanentNoticeOfMaking",       "regulatedPlaceType": "diversionRoute",       "regulationStart": {         "operator": "&gt;",         "value": "2020-01-01T00:00:00"       },       "regulationEnd": {         "operator": "&gt;",         "value": "2020-01-03T00:00:00"       }     }   ] }</pre>					

	<pre>] }</pre>					
Output data type	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)					
Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	data	JSON array	-	-	Mandatory	Result array
Responses						
200 OK (with content result)	<pre>{   "results": [     {       "troName": "DfT Example - Oct. 2024 - partial extract of THE DERBYSHIRE COUNTY COUNCIL (MARKET STREET AND TOWN END ROAD, DRAYCOTT) (RESTRICTION AND LIMITED WAITING) TRAFFIC REGULATION ORDER 2024 (DfT mockup, v2)",       "publicationTime": "2025-03-27T11:50:45Z",       "trafficAuthorityCreatorId": 942059428,       "trafficAuthorityOwnerId": 942059428,       "regulationType": [         "kerbsideLimitedWaiting"       ],       "vehicleType": [       ],       "orderReportingPoint": [         "permanentNoticeOfMaking"       ],       "regulatedPlaceTypes": [         "regulationLocation"       ],       "regulationStart": [       ],       "regulationEnd": [       ],       "id": "b2acfada-83ae-4b2c-90bf-71412c4c5f52"     },     {       ...omitted for brevity (For a full example of D-TRO response please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)     },     {       "troName": "DfT Example - More complex v2, Jan. 2025 UPDATED",       "publicationTime": "2025-03-27T11:51:07Z",       "trafficAuthorityCreatorId": 965424813,       "trafficAuthorityOwnerId": 965424813,       "regulationType": [ </pre>					



	<pre>       "miscRoadClosure",       "kerbsidePaymentParkingPlace",       "miscBusGate"     ],     "vehicleType": [     ],     "orderReportingPoint": [       "ttrToTmoNoticeOfIntention",       "permanentNoticeOfMaking"     ],     "regulatedPlaceTypes": [       "regulationLocation",       "diversionRoute",       "regulationLocation",       "regulationLocation",       "regulationLocation",       "regulationLocation"     ],     "regulationStart": [     ],     "regulationEnd": [     ],     "id": "072508c0-494a-4512-b556-3ee624a40d77"   } ], "page": 1, "pageSize": 50, "totalCount": 138 } </pre> <p>Note: Dates and times – all date and time records shall be expressed in local time, except publicationTime – see earlier notes.</p>	
200 OK (with null result)	<pre> {   "results": [],   "page": 1,   "pageSize": 0,   "totalCount": 0 } </pre>	
500 Internal Server Error	<pre> {   "message": "Internal Server Error",   "errors": [     "An unexpected error occurred."   ] } </pre>	
Error Codes	HTTP Code	Error Type
	400	Bad request
	401	Unauthorized
	403	Access denied/forbidden
	404	Not found

	405	Method not allowed
	429	Too many requests
	500	Internal Server Error
	502	Bad gateway
	503	Service unavailable
	504	Gateway timeout

## 10.3 Schemas

Ref.	Endpoints	Name
S1	/v1/schemas/versions	Retrieve available schema versions
S2	/v1/schemas	Retrieve available schemas
S3	/v1/schemas/{versions}	Retrieve schema by version

Reference	S1					
Item	Value					
GET	/v1/schemas/versions					
Name	Get available schema versions <sup>1</sup>					
Description	This GET method allows Data Consumers to retrieve schema versions from the D-TRO Service.					
Output data type	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)					
Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	Data	JSON	-	-	Mandatory	Array containing JSON objects
Responses						
200 OK	<pre>[   {     "schemaVersion": "3.3.0",     "isActive": true,</pre>					

<sup>1</sup> Schema Template: Specifies the expected structure, data types, and constraints (type, minimum, maximum, etc.) for each field within the D-TRO. It ensures consistency, integrity, and compatibility of data across systems or processes.

	<pre> "rulesExist": true }, {   "schemaVersion": "3.3.1",   "isActive": true,   "rulesExist": true }, {   "schemaVersion": "3.4.0",   "isActive": true,   "rulesExist": true } ] </pre>	
500 Internal Server Error	<pre> {   "message": "Internal Server Error",   "errors": [     "An unexpected error occurred."   ] } </pre>	
Error Codes	HTTP Code	Error Type
	400	Bad request
	401	Unauthorized
	403	Access denied/forbidden
	404	Not found
	405	Method not allowed
	429	Too many requests
	500	Internal Server Error
	502	Bad gateway
	503	Service unavailable
	504	Gateway timeout

Reference	S2					
Item	Value					
GET	/v1/schemas					
Name	Get available schemas					
Description	This GET method allows Data Consumers to retrieve schemas from the D-TRO Service.					
Output data type	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)					
Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	Data	JSON	-	-	Mandatory	Array containing JSON objects
Responses						
200 OK	<pre>[     ...omitted for brevity (For a full example of D-TRO response please refer to     GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)     {         "schemaVersion": "3.3.1",         "template": {...omitted for brevity (For a full example of D-TRO response please refer         to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)         },         "isActive": true     },     {         "schemaVersion": "3.4.0",         "template": {...omitted for brevity (For a full example of D-TRO response please         refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File         Index.docx)         },         "isActive": true     } ]</pre>					
500 Internal Server Error	<pre>{   "message": "Internal Server Error",   "errors": [     "An unexpected error occurred."   ] }</pre>					
Error Codes	HTTP Code	Error Type				
	400	Bad request				
	401	Unauthorized				
	403	Access denied/forbidden				
	404	Not found				

	405	Method not allowed
	429	Too many requests
	500	Internal Server Error
	502	Bad gateway
	503	Service unavailable
	504	Gateway timeout

Reference	S3					
Item	Value					
GET	/v1/schemas/{version}					
Name	Get available schema by version					
Description	This GET method allows Data Consumers to retrieve schema from the D-TRO Service.					
Input data type(s)	<input type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input checked="" type="checkbox"/> Other (please specify)					
Input Structure	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	version	string	5	5	Mandatory	String representation of schema version
Input data scope	When invoking this endpoint, the request parameter must be string in this format: {Major}.{Minor}.{Patch}.					
Output data type	<input checked="" type="checkbox"/> JSON <input type="checkbox"/> XML <input type="checkbox"/> File <input type="checkbox"/> Other (please specify)					
Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	Data	JSON	-	-	Mandatory	Array containing JSON objects
Responses						
200 OK	<pre>{   "schemaVersion": "3.4.0",   "template": {     "type": "object",     "\$defs": {       ...omitted for brevity (For a full example of D-TRO response please refer       to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)     },     "oneOf": [       {         ...omitted for brevity (For a full example of D-TRO response please refer         to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)       }     ],     "properties": {       ...omitted for brevity (For a full example of D-TRO response please refer       to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)     }   }, }</pre>					

	<pre>       "description": "DTRO v3.4.0 Data Specification JSON schema",       "additionalProperties": false     },     "isActive": true   } </pre>	
500 Internal Server Error	<pre> {   "message": "Internal Server Error",   "errors": [     "An unexpected error occurred."   ] } </pre>	
Error Codes	HTTP Code	Error Type
	400	Bad request
	401	Unauthorized
	403	Access denied/forbidden
	404	Not found
	405	Method not allowed
	429	Too many requests
	500	Internal Server Error
	502	Bad gateway
	503	Service unavailable
	504	Gateway timeout