Title	Digital Traffic Regulation Orders: D-TRO Publication API Interface Control Document for Publishers (Traffic Regulation Authority and/or Digital Solution Provider)
Author(s)	D-TRO Technical Team
Date	07/10/2024
Version	2.1
Status	Draft
Protective Marking	OFFICIAL

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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
2.1	PA Consulting	Changes in the API endpoints	03/10/2024

1.2 Document Review

Version	Reviewer(s)	Date
2.0	John Cooper (Department for Transport, Product Owner)	01/07/2024
2.1	John Cooper (Department for Transport, Product Owner)	10/10/2024

1.3 Approved Versions

Version	Approver(s)	Date
2.0	Department for Transport	01/07/2024
2.1	Department for Transport	10/10/2024

2 Terms and Abbreviation

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

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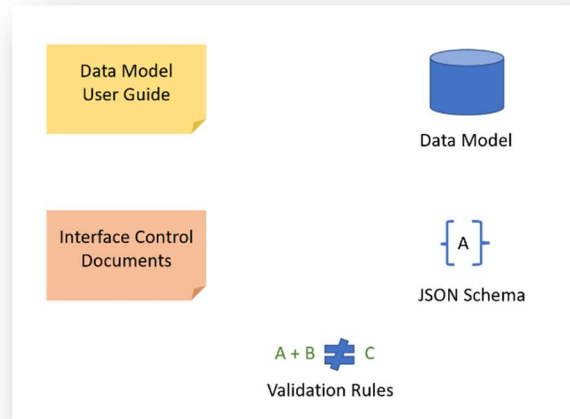
The new regulatory framework will, subject to necessary secondary legislation coming into force, mandate that Traffic Regulation Authorities (TRAs) in England and Wales publish TROs as open data in a standardised and digital format that anyone can access, use and share.

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.

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4   Other Documents and Artefacts

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 ICD forms part of the 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].

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5 Scope of this document

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

- Publish their D-TROs to the D-TRO Service.
- Update and amend D-TROs that have been previously submitted to the D-TRO Service.
- Retrieve a 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 existing rules and schemas within the D-TRO Service.

6 Target Audience

The target audience of this document includes:
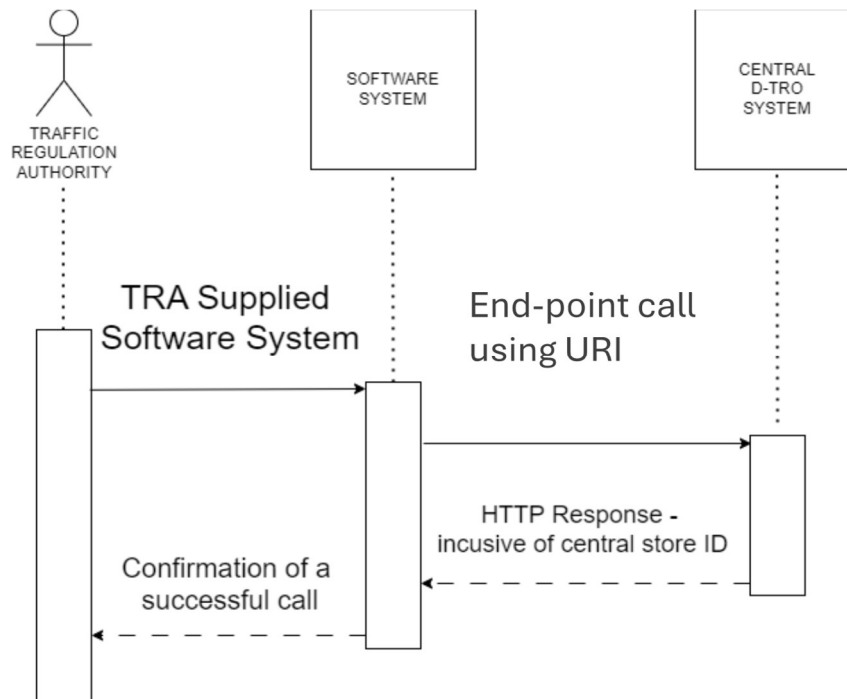
- Traffic Regulation Authorities (TRAs) and or their Digital Solution Providers (DSPs) that currently manage the IT contracts within the authority.

Throughout this document where reference is made to TRA systems, this also refers to DSP systems.

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7 Integration Architecture

7.1 Overview (API v1 methods)

The figure below depicts the 'happy path' sequence of interactions between TRA systems 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 TRA systems and the D-TRO Service are effectively implemented:

ID	Pattern / Principle	Description
DP01	Guaranteed delivery	TRA systems must adopt an architecture that ensures guaranteed delivery of requests/responses to and from the D-TRO Service.
DP02	Loose coupling	TRA systems must adopt an architecture that is loosely coupled with 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 technical and data standards.

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8 Assumptions, Constraints, Risks and Dependencies

8.1 Assumptions

ID	Assumption	Impact if not true
A01	TRAs will adopt an 'API-first' approach to integrating with the D-TRO interface.	No web-based user interface is proposed to allow the registration of D-TROs. If API integration is not possible, the TRA will need a DSP to help with service integration.

8.2 Constraints

ID	Constraint
C01	Calls to the D-TRO Publication 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 D-TRO 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 TRA systems that integrate with the D-TRO Service will be correspondingly impacted.	TRA systems will adopt the design patterns and policies specified in section 5 (see assumption A01).

8.4 Dependencies

ID	Dependency
D01	TRA systems must authenticate with the D-TRO Service using Google Apigee. API credentials will be supplied as part of activities to on-board and integrate with the D-TRO Service.
D02	TRA systems must securely manage API credentials.
D03	TRA systems must adhere to the design patterns and policies specified in section 7.

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9 Endpoints available for TRAs and/or DSPs

The table below lists the endpoints relevant for this ICD. Additional endpoints for consumers are documented in Beta-01-DfT-D-TRO-ICD for Consumers.

Ref.	HTTP verb	Endpoints	Name
D-TROs			
D1	POST	/v1/dtros/createFromFile	Create a new D-TRO
D2	PUT	/v1/dtros/updateFromFile/{id}	Update an existing D-TRO
D3	POST	/v1/dtros/createFromBody	Create a new D-TRO
D4	PUT	/v1/dtros/updateFromBody/{id}	Update an existing D-TRO
D5	GET	/v1/dtros/{id}	Get D-TRO by ID
D6	DELETE	/v1/dtros/{id}	Delete D-TRO by ID
D7	GET	/v1/dtros/sourceHistory/{dtroId}	Get D-TRO source history by ID
D8	GET	/v1/dtros/provisionHistory/{dtroId}	Get D-TRO provisions history by ID
D9	POST	/v1/dtros/Ownership/{id}/{assignToTraId}	Assign D-TRO ownership by TRA ID
Events and Search			
ES1	POST	/v1/events	Retrieve all data store events
ES2	POST	/v1/search	Find existing D-TROs that matches the requested criteria
Rules			
R1	GET	/v1/rules/versions	Get rule versions
R2	GET	/v1/rules	Get rule
R3	GET	/v1/rules/{versions}	Get rule by its version
R4	GET	/v1/rules/{id}	Get rule by its ID
Schemas			
S1	GET	/v1/schemas/versions	Get schema versions
S2	GET	/v1/schemas	Get schemas
S3	GET	/v1/schemas/{version}	Get schema by its version
S4	GET	/v1/schemas/{id}	Get schema by its ID

Summary of Publisher API endpoints

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10 Interface Specification

This interface enables integration, via a RESTful API, between TRAs business processes and systems and the D-TRO Service for the recording of Digital Traffic Regulation Orders.

Overview	
Item	**Value**
Name	D-TRO Publication (API)
Publisher	Department for Transport
Consumer	TRA / DSP
Interface type	☒ RESTful API ☐ SOAP API ☐ File transfer ☐ Other (please specify)
Protocol	☐ HTTP ☒ HTTPS – must be HTTPS 1.1 or higher. ☐ Other (please specify)
Test URL	To publish shortly
Pre-Production URL	To published in a future revision of this document
Production URL	To published in a future revision of this document
Security Classification	☐ UNMARKED ☒ OFFICIAL ☐ OFFICIAL-SENSITIVE ☐ SECRET ☐ TOP SECRET
Authentication	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 keeping with GOV.UK API technical and data standards). In order to obtain the necessary token, the user must be onboarded as a TRA, be a DSP working for a TRA, or cleared by the CSO before being allowed to self-register to use D-TRO via a portal and obtain the authentication token. 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.
Content type	application/json
Content encoding	UTF-8
Non-Repudiation	The use of OAuth 2.0 credentials paired with X-Correlation-ID headers will be used to uniquely identify an API invocation for non-repudiation purposes.

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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).
2. Correlation identifier – all identifiers shall be expressed using UUID ISO/IEC 11578:1996 specification. The format consists of 32 hexadecimal digits plus 4 hyphens (8-4-4-4-12).
3. The size of a D-TRO submission must not exceed 10MB.

10.1 Endpoints D-TROs

The below methods are provisioned for creation, modification, and retrieval of D-TRO records.

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

Ref.	Endpoints	Name
D1	/v1/dtros/createFromFile	Create a new D-TRO
D2	/v1/dtros/updateFromFile/{id}	Update an existing D-TRO
D3	/v1/dtros/createFromBody	Create a new D-TRO
D4	/v1/dtros/updateFromBody/{id}	Update an existing D-TRO
D5	/v1/dtros/{id}	Get D-TRO by ID
D6	/v1/dtros/{id}	Delete D-TRO by ID
D7	/v1/dtros/sourceHistory/{dtroId}	Get D-TRO source history by ID
D8	/v1/dtros/provisionHistory/{dtroId}	Get D-TRO provisions history by ID
D9	/v1/dtros/Ownership/{id}/{assignToTraId}	Assign D-TRO ownership by TRA ID

Reference	D1					
Item	Value					
POST	/v1/dtros/createFromFile					
Name	Create a new D-TRO					
Description	This POST method allows data publishers to record a new D-TRO to the D-TRO Service by providing the D-TRO as a file					
Input data type(s)	☒ JSON ☒ XML ☑ File ☒ Other (please specify)					
Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.

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Reference	D1
Item	Value
POST	/v1/dtros/createFromFile
Name	Create a new D-TRO
Description	This POST method allows data publishers to record a new D-TRO to the D-TRO Service by providing the D-TRO as a file

	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	file	file	1KB	10MB	Mandatory	A file containing JSON payload describing a D-TRO. File should be provided through a multipart/form-data request having UTF8 encoding.
Input data scope	When invoking this endpoint, the supplied file must contain a full D-TRO representation. Payloads will be assessed against the schema (created and activated in schemas endpoints), semantic JSON rules and custom rules (created in rules endpoints) for validity against the D-TRO data model. For an example of a D-TRO file, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)					
Output data type	☑ JSON ☒ XML ☒ File ☒ Other (please specify)					
Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	Id	string	36	36	Mandatory	UUID formatted string containing a D-TRO Service identifier for the newly created D-TRO record.
Responses						

201 Created	{
	  "id": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
	}					

404 Not Found	{
	  "message": "Not found",
	  "errors": [
	    "Schema version not found."
	  ]
	}					

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Reference	D1
Item	Value
POST	/v1/dtros/createFromFile
Name	Create a new D-TRO
Description	This POST method allows data publishers to record a new D-TRO to the D-TRO Service by providing the D-TRO as a file

400 Bad Request	{
	  "errors": {
	    property: [
	      "Unexpected end when deserializing object. Path *property*."
	    ]
	  },
	  "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
	  "title": "One or more validation errors occurred.",
	  "status": 400,
	  "traceId": "00-9f4aa677608b15827106b63502eb806f-ca691cf133c8871d-00"
	}

Error codes	HTTP Code	Error Type
	400	Bad request
	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	D2
Item	Value
PUT	/v1/dtros/updateFromFile{id}
Name	Updates an existing D-TRO
Description	This PUT method allows data publishers to update an existing D-TRO to the D-TRO Service.
Input data type(s)	⊠ JSON ⊠ XML ☑ File ⊠ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	file	file	1KB	10MB	Mandatory	A file containing JSON payload describing a D-TRO. File should be provided through a multipart/form-data request having UTF8 encoding.
	Id	string	36	36	Mandatory	UUID formatted string representing the D-TRO to be updated.

Input data scope	When invoking this endpoint, the supplied file must contain a full D-TRO representation. Payloads will be assessed against the schema (created and activated in schemas endpoints), semantic JSON rules and custom rules (created in rules endpoints) for validity against the D-TRO data model. For an example of a D-TRO file, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
Output data type	☑ JSON ⊠ XML ⊠ File ⊠ Other (please specify)
Responses	

200 OK	{
	  "id": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
	}

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Reference	D2
Item	Value
PUT	/v1/dtros/updateFromFile{id}
Name	Updates an existing D-TRO
Description	This PUT method allows data publishers to update an existing D-TRO to the D-TRO Service.

404 Not Found	{
	  "message": "Not found",
	  "errors": [
	    "Schema version not found."
	  ]
	}

400 Bad Request	{
	  "errors": {
	    property: [
	      "Unexpected end when deserializing object. Path property."
	    ]
	  },
	  "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
	  "title": "One or more validation errors occurred.",
	  "status": 400,
	  "traceId": "00-9f4aa677608b15827106b63502eb806f-ca691cf133c8871d-00"
	}

Error Codes	HTTP Code	Error Type
	400	Bad request
	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					
POST	/v1/dtros/createFromBody					
Name	Create a new D-TRO					
Description	This POST method allows data publishers to record a new D-TRO to the D-TRO Service.					
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)					
Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	data	object	1KB	10MB	Mandatory	A JSON payload describing a D-TRO. Payload should be UTF8 encoded.
Input data scope	For example of D-TRO payload please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx					
Output data type	☑ JSON ☒ XML ☒ File ☒ Other (please specify)					
Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	id	string	36	36	Mandatory	UUID formatted string containing a D-TRO Service identifier for the newly created D-TRO record.
Responses						

201 Created	{
	  "id": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
	}					

404 Not Found	{
	  "message": "Not found",
	  "errors": [
	    "Schema version not found."
	  ]
	}					

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Reference	D3
Item	Value
POST	/v1/dtros/createFromBody
Name	Create a new D-TRO
Description	This POST method allows data publishers to record a new D-TRO to the D-TRO Service.

400 Bad Request	{
	  "errors": {
	    property: [
	      "Unexpected end when deserializing object. Path property."
	    ]
	  },
	  "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
	  "title": "One or more validation errors occurred.",
	  "status": 400,
	  "traceId": "00-9f4aa677608b15827106b63502eb806f-ca691cf133c8871d-00"
	}

Error Codes	HTTP Code	Error Type
	400	Bad request
	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	D4
Item	Value
PUT	/v1/dtros/updateFromBody{id}
Name	Updates an existing D-TRO
Description	This PUT method allows data publishers to update an existing D-TRO to the D-TRO Service.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	data	object	1KB	10MB	Mandatory	A JSON payload describing a D-TRO. Payload should be UTF8 encoded.
	id	string	36	36	Mandatory	UUID formatted string representing the D-TRO to be updated.

Input data scope	For example of D-TRO payload please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx
Output data type	☑ JSON ☒ XML ☒ File ☒ Other (please specify)
Responses	

200 OK	{
	  "id": "3fa85f64-5717-4562-b3fc-2c963f66afa6"
	}

404 Not Found	{
	  "message": "Not found",
	  "errors": [
	    "Schema version not found."
	  ]
	}

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Reference	D4
Item	Value
PUT	/v1/dtros/updateFromBody{id}
Name	Updates an existing D-TRO
Description	This PUT method allows data publishers to update an existing D-TRO to the D-TRO Service.

400 Bad Request	{
	  "errors": {
	    property: [
	      "Unexpected end when deserializing object. Path property."
	    ]
	  },
	  "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
	  "title": "One or more validation errors occurred.",
	  "status": 400,
	  "traceId": "00-9f4aa677608b15827106b63502eb806f-ca691cf133c8871d-00"
	}

Error Codes	HTTP Code	Error Type
	400	Bad request
	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	D5
Item	Value
GET	/v1/dtros/{id}
Name	Get a D-TRO by id
Description	This GET method allows data publishers retrieve an existing D-TRO from the D-TRO Service, based on its unique identification.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	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 request 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	☑ JSON ☒ XML ☒ File ☒ 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	

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Reference	D5
Item	Value
GET	/v1/dtros/{id}
Name	Get a D-TRO by id
Description	This GET method allows data publishers retrieve an existing D-TRO from the D-TRO Service, based on its unique identification.
| 200 OK | ```
{
    "schemaVersion": "3.2.3",
    "data": {
        "Source": {
            "actionType": "new",
            "currentTraOwner": 1000,
            "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": "B2787FE2-AD74-432A-BB32-76FDB065F3E8",
            "section": "All sections",
            "traAffected": [
                1000
            ],
            "traCreator": 1000,
            "troName": "The Sample County Council (Prohibition of Waiting, Loading and Stopping) and (on-Street Parking Places) (Civil Enforcement Area) Consolidation Order 2019."
        }
    }
}
``` |
| 404 Not Found | ```
{
  "message": "Not found",
  "errors": [
    "D-TRO with id 3fa85f64-5717-4562-b3fc-2c963f66afa6 not found."
  ]
}
``` |
| Error codes | |

HTTP Code	Error Type
400	Bad request
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	D6
Item	Value
DELETE	/v1/dtros/{id}
Name	Delete a D-TRO by id
Description	This DELETE method allows data publishers soft delete an existing D-TRO from the D-TRO Service, based on its unique identification.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	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	"a30b3a58-443c-485e-ab81-4d12e74076f1"
Output data type	☒ JSON ☒ XML ☒ File ☑ Other (please specify)
Responses	
204 No Content	

404 Not Found	{
	  "message": "Not found",
	  "errors": [
	    "D-TRO with id 3fa85f64-5717-4562-b3fc-2c963f66afa6 not found."
	  ]
	}

Error codes	HTTP Code	Error Type
	400	Bad request
	403	Access denied/forbidden
	404	Not found
	405	Method not allowed
	500	Internal server error
	502	Bad gateway
	503	Service unavailable
	504	Gateway timeout

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OFFICIAL

Reference	D7
Item	Value
GET	/v1/dtros/sourceHistory/{dtroId}
Name	Get the source history of a D-TRO by id
Description	This GET method allows data publishers retrieve the source history of an existing D-TRO from the D-TRO Service, based on its unique identification.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	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 request 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	☑ JSON ☒ XML ☒ File ☒ Other (please specify)
Responses	

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OFFICIAL

Reference	D7
Item	Value
GET	/v1/dtros/sourceHistory/{dtroId}
Name	Get the source history of a D-TRO by id
Description	This GET method allows data publishers retrieve the source history of an existing D-TRO from the D-TRO Service, based on its unique identification.

200 OK	A textual description of the response containing all versions of the referenced D-TRO currently held in the D-TRO Central Service are returned.
	[
	  {
	      "Source": {
	        "actionType": "amendment",
	        "currentTraOwner": 1000,
	        "provision": [{
	        …omitted for brevity (For full example of D-TRO source history response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
	           }],
	        "reference": "B2787FE2-AD74-432A-BB32-76FDB065F3E8",
	        "section": "All sections",
	        "traAffected": [
	          1001
	        ],
	        "traCreator": 1000,
	        "troName": "The Sample County Council (Prohibition of Waiting, Loading and Stopping) and (on-Street Parking Places) (Civil Enforcement Area) Consolidation Order 2019."
	      }
	  },
	  {
	      "Source": {
	        "actionType": "new",
	        "currentTraOwner": 1000,
	        "provision": [{
	        …omitted for brevity (For full example of D-TRO source history response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
	           }],
	        "reference": "B2787FE2-AD74-432A-BB32-76FDB065F3E8",
	        "section": "All sections",
	        "traAffected": [
	          1000
	        ],
	        "traCreator": 1000,
	        "troName": "The Sample County Council (Prohibition of Waiting, Loading and Stopping) and (on-Street Parking Places) (Civil Enforcement Area) Consolidation Order 2019."
	      }
	  }
	]

	Response Parameters

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OFFICIAL

Reference	D7
Item	Value
GET	/v1/dtros/sourceHistory/{dtroId}
Name	Get the source history of a D-TRO by id
Description	This GET method allows data publishers retrieve the source history of an existing D-TRO from the D-TRO Service, based on its unique identification.

Output data structure	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	Data	JSON	-	-	Mandatory	D-TRO retrieved from the D-TRO Service

Responses	

500 Internal Server Error	{
	  "message": "Internal Server Error",
	  "errors": [
	    "An unexpected error occurred."
	  ]
	}

Error codes	HTTP Code	Error Type
	400	Bad request
	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	D8
Item	Value
GET	/v1/dtros/provisionHistory/{dtroId}
Name	Get the provisions history of a D-TRO by id
Description	This GET method allows data publishers retrieve the provisions history of an existing D-TRO from the D-TRO Service, based on its unique identification.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	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 requested 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	☑ JSON ☒ XML ☒ File ☒ 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	

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| 200 OK | [
{
   "actionType": "partialRevoke",
   "orderReportingPoint": "ttroTtmoByNotice",
   "provisionDescription": "Prohibition of Waiting",
   "reference": "A3448229-1DFA-48CD-A785-376ACB9F7C56",
   "regulation": [
     …omitted for brevity (For full example of D-TRO provision history response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
    }
    "regulatedPlace": [
     …omitted for brevity (For full example of D-TRO provision history response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
    }
   ],
},
{
   "actionType": "fullRevoke",
   "orderReportingPoint": "ttroTtmoByNotice",
   "provisionDescription": "Prohibition of Waiting",
   "reference": "A3448229-1DFA-48CD-A785-376ACB9F7C56",
   "regulation": [
     …omitted for brevity (For full example of D-TRO provision history response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
    }
    "regulatedPlace": [
     …omitted for brevity (For full example of D-TRO provision history response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
    }
   ],
},
{
   "actionType": "new",
   "orderReportingPoint": "ttroTtmoByNotice",
   "provisionDescription": "Prohibition of Waiting",
   "reference": "A3448229-1DFA-48CD-A785-376ACB9F7C56",
   "regulation": [
     …omitted for brevity (For full example of D-TRO provision history response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
    }
    "regulatedPlace": [
     …omitted for brevity (For full example of D-TRO provision history response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
    }
   ],
}
] |

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Reference	D8	
Item	Value	
GET	/v1/dtros/provisionHistory/{dtroId}	
Name	Get the provisions history of a D-TRO by id	
Description	This GET method allows data publishers retrieve the provisions history of an existing D-TRO from the D-TRO Service, based on its unique identification.	

500 Internal Server Error	{
	  "message": "Internal Server Error",
	  "errors": [
	    "An unexpected error occurred."
	  ]
	}	

Error codes	**HTTP Code**	**Error Type**
	400	Bad request
	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	D9
Item	Value
POST	/v1/dtros/Ownership/{id}/{assignToTraId}
Name	Assign an existing D-TRO to a different TRA by its unique identifier
Description	This POST method allows data publishers to reassign an existing D-TRO from the current owner TRA to another one within the D-TRO Service, based on its unique identification.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	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.
	assignToTraId	string	36	36	Mandatory	UUID formatted string containing the unique identification that will take ownership to the current D-TRO.

Input data scope	When invoking this endpoint, the requested id parameter must contain a full UUID representation of the D-TRO and the assignToTraId must contain a full UUID representation of the new TRA authority. "/9829ff03-56f3-429d-9fff-a4819861515c/4f568e66-0ced-4f58-9c8e-5fce21773bb4"
Output data type	☑ JSON ☒ XML ☒ File ☒ 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	Successfully assigned the D-TRO.

404 Not Found	{
	  "message": "Not found",
	  "errors": [
	    "D-TRO not found."
	  ]
	}

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OFFICIAL

Reference	D9
Item	Value
POST	/v1/dtros/Ownership/{id}/{assignToTraId}
Name	Assign an existing D-TRO to a different TRA by its unique identifier
Description	This POST method allows data publishers to reassign an existing D-TRO from the current owner TRA to another one within the D-TRO Service, based on its unique identification.

Error codes	HTTP Code	Error Type
	400	Bad request
	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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10.2 Events and Search

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

Reference	ES1					
Item	Value					
POST	/v1/events					
Name	Query D-TRO Service data for stored events (e.g., D-TROs being created, updated, or deleted).					
Description	This POST method allows data publishers to query events (created, updated or deleted) on existing D-TROs within the D-TRO Service.					
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)					
Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	data	object	1KB	10MB	Mandatory	A JSON payload containing a D-TRO events to search. Payload should be UTF8 encoded.

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Reference	ES1
Item	Value
POST	/v1/events
Name	Query D-TRO Service data for stored events (e.g., D-TROs being created, updated, or deleted).
Description	This POST method allows data publishers to query events (created, updated or deleted) on existing D-TROs within the D-TRO Service.

Input data scope	When invoking this endpoint, the request payload must contain a search query object '**page**', '**pageSize'** and **'since'** as mandatory fields and at least one other property of your choice (i.e. traCreator)
	
	{
	  "page": 1,
	  "pageSize": 50,
	  "since": "2020-10-07T08:14:41",
	  "traCreator": 0,
	  "currentTraOwner": 0,
	  "troName": "string",
	  "regulationType": "string",
	  "vehicleType": "string",
	  "orderReportingPoint": "string",
	  "regulationStart": {
	    "operator": "=",
	    "value": "2024-10-07T08:14:41"
	  },
	  "regulationEnd": {
	    "operator": "=",
	    "value": "2024-10-07T08:14:41"
	  }
	}

Output data type	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Output data structure	Response Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	id	string	36	36	Mandatory	UUID formatted string containing a D-TRO Service identifier for the newly created D-TRO record.

Responses	

200 OK	{
	  "events": [],
	  "page": 1,
	  "pageSize": 0,
	  "totalCount": 0
	}

404 Not Found	{
	  "message": "Not found",
	  "errors": [
	    "Schema version not found."
	  ]
	}

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OFFICIAL

Reference	ES1
Item	Value
POST	/v1/events
Name	Query D-TRO Service data for stored events (e.g., D-TROs being created, updated, or deleted).
Description	This POST method allows data publishers to query events (created, updated or deleted) on existing D-TROs within the D-TRO Service.

400 Bad Request	<pre>{
	  "errors": {
	    property: [
	      "Unexpected end when deserializing object. Path property."
	    ]
	  },
	  "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
	  "title": "One or more validation errors occurred.",
	  "status": 400,
	  "traceId": "00-9f4aa677608b15827106b63502eb806f-ca691cf133c8871d-00"
	}</pre>

Error codes	HTTP Code	Error Type
	400	Bad request
	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	ES2
Item	Value
POST	/v1/search
Name	Find existing D-TROs that matches requested criteria.
Description	This POST method allows data publishers to query D-TROs that matches certain criteria within the D-TRO Service.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	data	object	1KB	10MB	Mandatory	A JSON payload containing query search. Payload should be UTF8 encoded.

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OFFICIAL

Reference	ES2
Item	Value
POST	/v1/search
Name	Find existing D-TROs that matches requested criteria.
Description	This POST method allows data publishers to query D-TROs that matches certain criteria within the D-TRO Service.

Input data scope	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 withing the queries array (i.e. troName)
	{
	  "queries": [
	    {
	      "publicationTime": "2024-10-07T12:22:01",
	      "modificationTime": "2024-10-07T12:22:01",
	      "deletionTime": "2024-10-07T12:22:01",
	      "traCreator": 0,
	      "currentTraOwner": 0,
	      "troName": "The Sample County Council (Prohibition of Waiting, Loading and Stopping) and (on-Street Parking Places) (Civil Enforcement Area) Consolidation Order 2019.",
	      "regulationType": "string",
	      "vehicleType": "string",
	      "orderReportingPoint": "string",
	      "regulationStart": {
	       "operator": ">=",
	       "value": "2024-10-07T12:22:01"
	      },
	      "regulationEnd": {
	       "operator": "<=",
	       "value": "2024-10-07T12:22:01"
	      }
	    }
	  ],
	  "page": 1,
	  "pageSize": 50
	}

Output data type	☑ JSON ☒ XML ☒ File ☒ 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						

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OFFICIAL

Reference	ES2
Item	Value
POST	/v1/search
Name	Find existing D-TROs that matches requested criteria.
Description	This POST method allows data publishers to query D-TROs that matches certain criteria within the D-TRO Service.

200 OK (with content)	{
	  "results": [
	    {
	For an example of a D-TRO search, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
	      "vehicleType": [
	       "taxi"
	      ],
	For an example of a D-TRO search, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
	   "page": 1,
	   "pageSize": 1,
	   "totalCount": 1
	}

200 OK (with null result)	{
	  "results": [],
	  "page": 1,
	  "pageSize": 0,
	  "totalCount": 0
	}

400 Bad Request	{
	  "message": "Bad request",
	  "errors": [
	    "An exception has been raised that is likely due to a transient failure."
	  ]
	}

Error Codes	<table><tr><th>HTTP Code</th><th>Error Type</th></tr><tr><td>400</td><td>Bad request</td></tr><tr><td>403</td><td>Access denied/forbidden</td></tr><tr><td>404</td><td>Not found</td></tr><tr><td>405</td><td>Method not allowed</td></tr><tr><td>429</td><td>Too many requests</td></tr><tr><td>500</td><td>Internal server error</td></tr><tr><td>502</td><td>Bad gateway</td></tr><tr><td>503</td><td>Service unavailable</td></tr><tr><td>504</td><td>Gateway timeout</td></tr></table>

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OFFICIAL

10.3Rules

Ref.	Endpoints	Name
R1	/v1/rules/versions	Retrieve available rule versions
R2	/v1/rules	Retrieve available rules
R3	/v1/rules/{versions}	Retrieve rule by version
R4	/v1/rules/{id}	Retrieve rule by id

Reference	R1					
Item	Value					
GET	/v1/rules/versions					
Name	Get available rule versions[1]					
Description	This GET method allows data publishers to retrieve rule versions from the D-TRO Service.					
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)					
Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	-	-	-	-	-	-
Input data scope	-					
Output data type	☑ JSON ☒ XML ☒ File ☒ 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						

---

[1] **Rules**: Defines logical conditions (rule) that data must satisfy within specific paths (path) of the DTRO. It is used to enforce business rules, validation criteria, or complex data relationships.

Reference	R1
Item	Value
GET	/v1/rules/versions
Name	Get available rule versions[1]
Description	This GET method allows data publishers to retrieve rule versions from the D-TRO Service.

200 OK	<pre>[
	  {
	    "schemaVersion": "3.2.3"
	  }
	]</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
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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OFFICIAL

Reference	R2
Item	Value
GET	/v1/rules
Name	Get available rules
Description	This GET method allows data publishers to retrieve rules from the D-TRO Service.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	-	-	-	-	-	-

Input data scope	-
Output data type	☑ JSON ☒ XML ☒ File ☒ 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	

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Reference	R2
Item	Value
GET	/v1/rules
Name	Get available rules
Description	This GET method allows data publishers to retrieve rules from the D-TRO Service.

200 OK	[
	   {
	      "schemaVersion": "3.2.1",
	      …omitted for brevity (For an example of Rule response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
	   },
	   {
	      "schemaVersion": "3.2.3",
	      "template": [
	        {
	          "id": 1,
	          "message": "weekInMonth instances must be unique.",
	          "name": "ExceptionPeriodApplicableInstanceDayWithinMonthInstancesUnique"
	          "path": "Source.provision.regulation.timeValidity.exceptionPeriod.recurringDayWeekMonthPeriod.applicableInstanceOfDayWithinMonth"
	          "rule": {
	        …omitted for brevity (For an example of Rule response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
	        },
	        …omitted for brevity (For an example of Rule response, please refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
	      }
	      ]
	   }
	]

500 Internal Server Error	{
	  "message": "Internal Server Error",
	  "errors": [
	    "An unexpected error occurred."
	  ]
	}

Error Codes	HTTP Code	Error Type
	400	Bad request
	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	R3
Item	Value
GET	/v1/rules/{version}
Name	Get available rule by version
Description	This GET method allows data publishers to retrieve a rule by version from the D-TRO Service.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Corre lation -ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	versio n	string	5	5	Mandatory	String representation of rule version

Input data scope	When invoking this endpoint, the request parameter must be string in this format: {Major}.{Minor}.{Patch}.
Output data type	☑ JSON ☒ XML ☒ File ☒ 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						

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Reference	R3
Item	Value
GET	/v1/rules/{version}
Name	Get available rule by version
Description	This GET method allows data publishers to retrieve a rule by version from the D-TRO Service.

200 OK	<pre>{
	    "schemaVersion": "3.2.3",
	    "template": [
	      {
	        "id": 1,
	        "message": "weekInMonth instances must be unique.",
	        "name":
	"ExceptionPeriodApplicableInstanceDayWithinMonthInstancesUnique"
	        "path":
	"Source.provision.regulation.timeValidity.exceptionPeriod.recurringDayWeekMo
	nthPeriod.applicableInstanceOfDayWithinMonth"
	        "rule": {
	         …omitted for brevity (For an example of Rule response, please refer to
	GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File
	Index.docx)
	        },
	         …omitted for brevity (For an example of Rule response, please refer to
	GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File
	Index.docx)
	      }
	    ]
	}</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
	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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OFFICIAL

Reference	R4
Item	Value
GET	/v1/rules/{id}
Name	Get available rule by unique identifier
Description	This GET method allows data publishers retrieve a rule from the D-TRO Service.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	id	string	36	36	Mandatory	UUID formatted string representing the rule to be retrieved.

Input data scope	When invoking this endpoint, the id parameter must be string in UUID format.
Output data type	☑ JSON ☒ XML ☒ File ☒ 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	

Reference	R4
Item	Value
GET	/v1/rules/{id}
Name	Get available rule by unique identifier
Description	This GET method allows data publishers retrieve a rule from the D-TRO Service.

200 OK	{
	    "schemaVersion": "3.2.3",
	    "template": [
	      {
	        "id": 1,
	        "message": "weekInMonth instances must be unique.",
	        "name":
	"ExceptionPeriodApplicableInstanceDayWithinMonthInstancesUnique"
	        "path":
	"Source.provision.regulation.timeValidity.exceptionPeriod.recurringDayWeekMonthPeriod.applicableInstanceOfDayWithinMonth"
	        "rule": {
	      …omitted for brevity (For an example of Rule response, please refer to GitHub File Index document at: <u>Beta-01-DfT-D-TRO-001-GitHub File Index.docx</u>)
	        },
	      …omitted for brevity (For an example of Rule response, please refer to GitHub File Index document at: <u>Beta-01-DfT-D-TRO-001-GitHub File Index.docx</u>)
	      }
	    ]
	}

500 Internal Server Error	{
	  "message": "Internal Server Error",
	  "errors": [
	    "An unexpected error occurred."
	  ]
	}

Error Codes	HTTP Code	Error Type
	400	Bad request
	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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OFFICIAL

10.4 Schemas

Ref.	Endpoints	Name
S1	/v1/schemas/versions	Retrieve available schema versions
S2	/v1/schemas	Retrieve available schema
S3	/v1/schemas/{versions}	Retrieve schema by version
S4	/v1/schemas/{id}	Retrieve schema by id

Reference	S1					
Item	Value					
GET	/v1/schemas/versions					
Name	Get available schema versions[2]					
Description	This GET method allows data publishers to retrieve schema versions from the D-TRO Service.					
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)					
Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	-	-	-	-	-	-
Input data scope	-					
Output data type	☑ JSON ☒ XML ☒ File ☒ 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						

---

[2] **Schema**: Specifies the expected structure, data types, and constraints (type, minimum, maximum, etc.) for each field within the DTRO. It ensures consistency, integrity, and compatibility of data across systems or processes.

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OFFICIAL

Reference	S1
Item	Value
GET	/v1/schemas/versions
Name	Get available schema versions[2]
Description	This GET method allows data publishers to retrieve schema versions from the D-TRO Service.

200 OK	[
	  {
	   "schemaVersion": "3.2.3",
	   "isActive": true,
	   "rulesExist": true
	  }
	]

500 Internal Server Error	{
	  "message": "Internal Server Error",
	  "errors": [
	   "An unexpected error occurred."
	  ]
	}

Error Codes	HTTP Code	Error Type
	400	Bad request
	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	S2
Item	Value
GET	/v1/schemas
Name	Get available schemas
Description	This GET method allows data publishers to retrieve schemas from the D-TRO Service.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	-	-	-	-	-	-

Input data scope	-
Output data type	☑ JSON ☒ XML ☒ File ☒ 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	(see code below)

```
[
    {
        "schemaVersion": "3.2.3",
        "template": {
            …omitted for brevity (For an example of Schema response, please
refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File
Index.docx)
        },
        "isActive": true
    },
    {
        "schemaVersion": "3.2.0",
        "template": {
            …omitted for brevity (For an example of Schema response, please
refer to GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File
Index.docx)
        },
        "isActive": false
    }
]
```

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OFFICIAL

Reference	S2
Item	Value
GET	/v1/schemas
Name	Get available schemas
Description	This GET method allows data publishers to retrieve schemas from the D-TRO Service.

500 Internal Server Error	{
	  "message": "Internal Server Error",
	  "errors": [
	    "An unexpected error occurred."
	  ]
	}

Error Codes	HTTP Code	Error Type
	400	Bad request
	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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OFFICIAL

Reference	S3
Item	Value
GET	/v1/schemas/{version}
Name	Get available schema by version
Description	This GET method allows data publishers retrieve a schema by version from the D-TRO Service.

Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)					
Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	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	☑ JSON ☒ XML ☒ File ☒ 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

| 200 OK | ```
{
    "schemaVersion": "3.2.3",
    "template": {
        "type": "object",
        "$defs": {
            …omitted for brevity (For an example of Schema response, please refer to
GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
        },
        "oneOf": [
            …omitted for brevity (For an example of Schema response, please refer to
GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
        ],
        "$schema": "https://json-schema.org/draft/2020-12/schema",
        "description": "DTRO v3.2.3 data model JSON schema",
        "additionalProperties": true
    },
    "isActive": true
}
``` |
|---|---|
| Responses | |

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OFFICIAL

Reference	S3
Item	Value
GET	/v1/schemas/{version}
Name	Get available schema by version
Description	This GET method allows data publishers retrieve a schema by version from the D-TRO Service.

500 Internal Server Error	{
	  "message": "Internal Server Error",
	  "errors": [
	   "An unexpected error occurred."
	  ]
	 }

Error Codes	HTTP Code	Error Type
	400	Bad request
	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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OFFICIAL

Reference	S4
Item	Value
GET	/v1/schemas/{id}
Name	Get available schema by unique identifier.
Description	This GET method allows data publishers retrieve a schema from the D-TRO Service.
Input data type(s)	☑ JSON ☒ XML ☒ File ☒ Other (please specify)

Input Structure	Header Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	X-Correlation-ID	string	36	36	Mandatory	UUID formatted string to track the request through the enquiries stack.
	Request Parameters					
	Field Name	Data Type	Min Length	Max Length	Opportunity	Notes
	id	string	36	36	Mandatory	UUID formatted string representation of schema unique identifier.

Input data scope	When invoking this endpoint, the id parameter must be string in UUID format.
Output data type	☑ JSON ☒ XML ☒ File ☒ 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

200 OK	

```
{
    "schemaVersion": "3.2.3",
    "template": {
        "type": "object",
        "$defs": {
            …omitted for brevity (For an example of Schema response, please refer to
GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
        },
        "oneOf": [
            …omitted for brevity (For an example of Schema response, please refer to
GitHub File Index document at: Beta-01-DfT-D-TRO-001-GitHub File Index.docx)
        ],
        "$schema": "https://json-schema.org/draft/2020-12/schema",
        "description": "DTRO v3.2.3 data model JSON schema",
        "additionalProperties": true
    },
    "isActive": true
}
```

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OFFICIAL

Reference	S4
Item	Value
GET	/v1/schemas/{id}
Name	Get available schema by unique identifier.
Description	This GET method allows data publishers retrieve a schema from the D-TRO Service.
Responses	

500 Internal Server Error	{
	  "message": "Internal Server Error",
	  "errors": [
	   "An unexpected error occurred."
	  ]
	 }

Error Codes	HTTP Code	Error Type
	400	Bad request
	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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