

# DATEX II 3.0 Specification

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## DATEX II ver. 3.0 Short Information

### Content

<b>DATEX II .....</b>	<b>4</b>
<b>SERVICES.....</b>	<b>4</b>
<i>Transport / communication.....</i>	<i>4</i>
<i>Delivery modes .....</i>	<i>4</i>
<i>Delivery format.....</i>	<i>4</i>
<i>Publication types .....</i>	<i>4</i>
<i>Base URL for the DATEX II 3.0 environments.....</i>	<i>4</i>
Production .....	4
Test .....	4
HTTP GET.....	4
PULL.....	5
<i>Accidents: .....</i>	<i>5</i>
SOAP URL.....	5
WSDL.....	5
Schema URL:s.....	5
<i>OperatorAction:.....</i>	<i>5</i>
SOAP URL.....	5
WSDL.....	5
Schema URL:s.....	5
<i>Conditions:.....</i>	<i>5</i>
SOAP URL.....	5
WSDL.....	6
Schema URL:s.....	6
<i>ServiceInformation: .....</i>	<i>6</i>
SOAP URL.....	6
WSDL.....	6
Schema URL:s.....	6
<i>TrafficMessage: .....</i>	<i>6</i>
SOAP URL.....	6
WSDL.....	6
Schema URL:s.....	6
<i>EmergencyInfo:.....</i>	<i>6</i>
SOAP URL.....	6
WSDL.....	6
Schema URL:s.....	7
<i>Weather:.....</i>	<i>7</i>
SOAP URL.....	7
WSDL.....	7
Schema URL:s.....	7
<i>Data Dictionary LevelC: .....</i>	<i>7</i>
SOAP URL.....	7
WSDL.....	7
Schema URL:s.....	7
<i>Data Dictionary: .....</i>	<i>7</i>
SOAP URL.....	7
WSDL.....	7




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Schema URL:s.....	7
<i>LocationCode</i> :.....	8
SOAP URL.....	8
WSDL.....	8
Schema URL:s.....	8
<i>RoadConditionSection</i> : .....	8
SOAP URL.....	8
WSDL.....	8
Schema URL:s.....	8
<i>Weatherposts</i> : .....	8
SOAP URL.....	8
WSDL.....	8
Schema URL:s.....	8
WSDL.....	9
PUSH .....	9
DATEX II SERVICES AND CONNECTIONS .....	9
LEVELS.....	11
<b>EXTENSIONS .....</b>	<b>12</b>
<b>MANAGEMENT MESSAGES.....</b>	<b>12</b>
DELETE 2.3 .....	12
DELETE 3.0 .....	12
ID .....	12
<i>Situation</i> .....	12
<i>SituationRecord</i> .....	13
SITUATIONVERSIONTIME.....	13
<b>HANDLE VERSIONS .....</b>	<b>13</b>
SITUATION .....	13
<i>New</i> .....	13
<i>Update</i> .....	14
<i>Delete</i> .....	14
SITUATIONRECORD .....	14
<i>New</i> .....	14
<i>Update</i> .....	14
<i>Delete</i> .....	14
<i>During synchronization</i> .....	14
<i>Inactive</i> .....	14
<b>XML EXAMPLES .....</b>	<b>15</b>
<b>REFERENCES .....</b>	<b>15</b>

## DATEX II

This document gives short information in English of the DATEX II 3.0 feeds from Swedish Transport Administration (STA).

### Services

All services support both SOAP and HTTP Get.

#### Transport / communication

We use web services according to the regular DATEX II profile. URL's to services, WSDL and schemas are listed for each service in this document.

#### Delivery modes

In Sweden we use both PULL and PUSH services.

#### Delivery format

HTTP Get returns data in XML.

#### Publication types

The following publications from the DATEX II standard are used:

- SituationPublication
- MeasuredDataPublication
- GenericPublication
- PredefinedLocationsPublication
- MeasurementSiteTablePublication

#### Base URL for the DATEX II 3.0 environments

##### *Production*

<https://datex.trafikinfo.trafikverket.se/>

##### *Test*

<https://datex-test.trafikinfo.trafikverket.se/>

## HTTP GET

A simple http get is possible to do against the Pull Web service secured with Basic Authentication. User name and password is required.

The URL's for HTTP Get is the same as those for Web Services with basic authentication.

Ex.

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/Accidents](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/Accidents)

## PULL

With pull you can get all active situations of a certain type ex. Accidents, TrafficMessages, Conditions etc.

The pull web services are secured with Basic Authentication.

STA will create a specific username and password for each client. In order to access the DATEX II pull services you need to register as a user first.

Below you will find the url to DATEX II Pull web services in production:

### Traffic information:

#### Accidents:

##### SOAP URL

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/Accidents](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/Accidents)

##### WSDL

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/Accidents?wsdl](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/Accidents?wsdl)

##### Schema URL:s

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/Accidents?xsd](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/Accidents?xsd)

#### OperatorAction:

##### SOAP URL

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/OperatorActions](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/OperatorActions)

##### WSDL

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/OperatorActions?wsdl](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/OperatorActions?wsdl)

##### Schema URL:s

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/OperatorActions?xsd](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/OperatorActions?xsd)

#### Conditions:

##### SOAP URL

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/Conditions](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/Conditions)

**WSDL**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/Conditions?wsdl](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/Conditions?wsdl)

**Schema URL:s**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/Conditions?xsd](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/Conditions?xsd)

**ServiceInformation:****SOAP URL**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/ServiceInformations](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/ServiceInformations)

**WSDL**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/ServiceInformations?wsdl](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/ServiceInformations?wsdl)

**Schema URL:s**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/ServiceInformations?xsd](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/ServiceInformations?xsd)

**TrafficMessage:****SOAP URL**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/TrafficMessages](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/TrafficMessages)

**WSDL**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/TrafficMessages?wsdl](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/TrafficMessages?wsdl)

**Schema URL:s**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/TrafficMessages?xsd](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/TrafficMessages?xsd)

**EmergencyInfo:****SOAP URL**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/EmergencyInfo](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/EmergencyInfo)

**WSDL**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/EmergencyInfo?wsdl](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/EmergencyInfo?wsdl)

**Schema URL:s**

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/EmergencyInfo?xsd](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/EmergencyInfo?xsd)

**Weather:****SOAP URL**

[https://datex.trafikverket.se/D2ClientPull/WeatherPullServerBA/2\\_3/Weather](https://datex.trafikverket.se/D2ClientPull/WeatherPullServerBA/2_3/Weather)

**WSDL**

[https://datex.trafikverket.se/D2ClientPull/WeatherPullServerBA/2\\_3/Weather?wsdl](https://datex.trafikverket.se/D2ClientPull/WeatherPullServerBA/2_3/Weather?wsdl)

**Schema URL:s**

[https://datex.trafikverket.se/D2ClientPull/WeatherPullServerBA/2\\_3/Weather?xsd](https://datex.trafikverket.se/D2ClientPull/WeatherPullServerBA/2_3/Weather?xsd)

**Metadata (static data):****Data Dictionary LevelC:****SOAP URL**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/datadictionarylevelc](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/datadictionarylevelc)

**WSDL**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/datadictionarylevelc?wsdl](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/datadictionarylevelc?wsdl)

**Schema URL:s**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/datadictionarylevelc?xsd](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/datadictionarylevelc?xsd)

**Data Dictionary:****SOAP URL**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/datadictionary](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/datadictionary)

**WSDL**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/datadictionary?wsdl](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/datadictionary?wsdl)

**Schema URL:s**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/datadictionary?xsd](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/datadictionary?xsd)

**LocationCode:****SOAP URL**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/locationcode](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/locationcode)

**WSDL**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/locationcode?wsdl](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/locationcode?wsdl)

**Schema URL:s**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/locationcode?xsd](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/locationcode?xsd)

**RoadConditionSection:****SOAP URL**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/roadconditionsection](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/roadconditionsection)

**WSDL**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/roadconditionsection?wsdl](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/roadconditionsection?wsdl)

**Schema URL:s**

[https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2\\_3/roadconditionsection?xsd](https://datex.trafikverket.se/D2ClientPull/SituationPullServerBA/2_3/roadconditionsection?xsd)

**Weatherposts:****SOAP URL**

[https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2\\_3/WeatherMetaData](https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2_3/WeatherMetaData)

**WSDL**

[https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2\\_3/WeatherMetaData?wsdl](https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2_3/WeatherMetaData?wsdl)

**Schema URL:s**

[https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2\\_3/WeatherMetaData?xsd](https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2_3/WeatherMetaData?xsd)



## WSDL

If you intend to change the value of the SOAP address location in the WSDL file to our production or test environment you can find this in the wsdl-file for each DATEX II pull service.

Example from wsdl-file:

```
<soap:address location=".../snapshotPullService/2018"/>
```

```
<!--
```

```
Here, the "location" depends on each implementation and MUST be filled by each developer, for instance "http://localhost:8080/snapshotPullService/2018"-->
```

## PUSH

Push is used to push information to the client on occurrence. A subscription is defined at STA side. A web service according to the WSDL Push\_v3\_0.wsdl is required at the supplier side.

With PUSH only **one** situation at a time is sent. When something has changed in the situation the whole situation is sent again.

## DATEX II services and connections

### Traffic information:

#### Accident

All active accidents.

#### Service Information

Reports of deviations and cancellations of the Swedish Transport Administration ferry services. Contains information on ferry routes, estimated duration and possible restrictions.

#### Conditions

Regularly updated information about road conditions from traffic management's assessment based on camera images, weather forecasts and information reported by the contractors.

For information about road condition sections and coordinates please take a look at meta data service

[https://datex.trafikverket.se/d2clientpull/metadataba/2\\_3/roadconditionsection](https://datex.trafikverket.se/d2clientpull/metadataba/2_3/roadconditionsection)

Contains positions (longitude, latitude), roadConditionSectionValues (From, To)

#### Traffic Messages

This information may include convoy driving, unforeseen obstructions, queue warnings

#### Emergency Info

Information on emergencies that affects the traffic. Emergency modes are extraordinary events. Positioned by location Code County.

**Operator Action**

Describes handling of road events eg. speed, diversion

-----  
All these services contain dynamic data.

For information on definitions and Swedish translations please take a look in *Swedish Datex II Data Dictionary 3.0* static meta data service

- [http://datex-test.trafikinfo.trafikverket.local/D2ClientPull/DataDictionary/3\\_0/WebService.aspx](http://datex-test.trafikinfo.trafikverket.local/D2ClientPull/DataDictionary/3_0/WebService.aspx)

Ändra till prod url när denna är på plats

**Weather:**

**Observe this pull services below is still in DATEX II 2.3 version**

**Weather Data**

Information about the weather situation along the roads based on reports from automatic road weather stations. Contains data about air and surface temperature, precipitation, wind direction and wind speed. This service contains dynamic data.

For information about measurement post positions and measure values index please take a look in metadata service

- [https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2\\_3/WeatherMetaData](https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2_3/WeatherMetaData)

**Metadata (static data):****Location Code Table Publication**

This service can be used if you wish to use location code table to determine the location object. Gives an exact reference to the road net and information about direction.

- [https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2\\_3/locationcode](https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2_3/locationcode)

**Weather Posts**

For information about measurement post positions and measurement values (between 1-8)

- [https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2\\_3/WeatherMetaData](https://datex.trafikverket.se/D2ClientPull/MetaDataBA/2_3/WeatherMetaData)

**Road Condition Sections**

For information about road condition sections and position

- [https://datex-test.trafikinfo.trafikverket.se/D2ClientPull/MetaDataBA/2\\_3/roadconditionsection](https://datex-test.trafikinfo.trafikverket.se/D2ClientPull/MetaDataBA/2_3/roadconditionsection)

**Data Dictionary Level B**

This service describes Swedish translations for Level B Data Dictionary

- [https://datex.trafikverket.se/d2clientpull/metadataba/2\\_3/datadictionary](https://datex.trafikverket.se/d2clientpull/metadataba/2_3/datadictionary)

### Data Dictionary Level C

This service describes Swedish translations for Level C Data Dictionary

- [https://datex.trafikverket.se/d2clientpull/metadataba/2\\_3/datadictionarylevelc](https://datex.trafikverket.se/d2clientpull/metadataba/2_3/datadictionarylevelc)

## Levels

DATEX II standard use levels. In Sweden we use LevelB (LevelB is compatible with LevelA). The following summarise the services and what level.

Version	Publication	Service
3.0	SituationPublication	Accident
		TrafficMessages
		OperatorAction
		Conditions
		ServiceInformation
		EmergencyInfo (Freetext)
2.3	LevelC SituationPublication (only in v. 2.3)	EmergencyInfo (Freetext)
2.3	MeasuredDataPublication	WeatherDataService
2.3	GenericPublication	
		LocationCodeTablePublicationService
2.3	PredefinedLocationsPublication	PredefinedLocationsPublication_RoadConditionSectionsService
2.3	MeasurementSiteTablePublication	MeasurementSiteTablePublication_WeatherPostsService
		MeasurementSiteTablePublication_TrafficData

---

## Extensions

### Management messages

A situation is always sent with all of their current situation records, at all times, ie *new situations*, *update* and *delete*. You see no difference between a new situation and an update. There may be one or more situationRecords in a situation.

Ex. It may be an accident that is associated with a situationRecord where the type is set to road closed. Some events may also have associated restrictions that will record the situationRecord to the parent record. Any restriction in the case pointing out its parent in that it has a manageCause.

### Delete 2.3

A deletion of a situation identified by the sending of lifeCycleManagement.end set to true.

Ex. `<lifeCycleManagement>`  
    `<end>true</end>`  
    `</ lifeCycleManagement >`

### Delete 3.0

A deletion of a situation identified by the sending of managementStatus set to closed.

Ex.

```
<?xml version="1.0" encoding="UTF-8"?>
<informationManagement>
  <inf:informationManagedResourceList>
    <inf:elementReference>
      <managementStatus xmlns="http://datex2.eu/schema/3/informationManagement">closed</managementStatus>
      <reference xmlns="http://datex2.eu/schema/3/informationManagement" id="SE_STA_TRISSID_1_17929053" />
    </inf:elementReference>
  </inf:informationManagedResourceList>
</informationManagement>
```

## Id

### Situation

Every situation has a unique id which is set with an attribute to the situation. Ex. `<situation id="GUIDe57f2ec5-b685-482a-99cf-5f9a2ee60c94">`

When update Id are same as in the original situation. Note it is recommended to always keep up a situation.

### SituationRecord

Each situationRecord has a unique id which is set as an attribute of the situationRecord. Ex.

```
<situationRecord xsi:type="AbnormalTraffic" id="SE_SRA_TRISSID_1_26860015">
```

When update the id are the same as the initial situationRecord.

If a situationRecord has an overallEndTime and that time has passed, one can interpret it so that the event/situation record has expired (can be removed or not shown). It can thus, in some cases take a while before it comes a delete alternative to an update will overallEndTime moving forward.

To determine which message is the latest (ie most recent) it is recommended that you look at the

```
version <situationRecordVersion>6</situationRecordVersion>
```

or *versiontime*

```
<situationRecordVersionTime>2019-12-07T10:57:46.767+01:00</situationRecordVersionTime>
```

If there is no overallEndTime shall be interpreted as "valid until further notice." In these cases, there will always be a delete. Note that a situation may never be anything but deleted should be construed as if all situationRecord is completed then the situation should be removed.

For some situationsRecord will never be deleted. These are updated in such a case all the time and applies until there is a new update. This is particularly true for the road conditions, road conditions overview and ferries (WeatherRelated RoadConditions, RoadConditionOverview).

### SituationVersionTime

On the situation is an extension of a situationVersionTime. It shall be used to determine which situation is the latest.

Ex. 

```
<situationVersionTime>2019-12-07T10:57:46.767+01:00</situationVersionTime>
```

## Handle versions

### Situation

A situation is always unique. Use the situationVersionTime to determine which version is the latest.

Ex.

```
<situationVersionTime>2019-12-07T10:57:46.767+01:00</situationVersionTime>
```

Always keep up a situation that is the situationRecords that appears is always the applicable. This is important because there are cases where it will not be any end to certain messages. In those cases, "disappear" a situation between updates. If you have lost or missed an update this phenomenon can occur.

### New

Check if id exist. Is there not then it is a new situation.

### Update

If Id exist it is an update. Check out the situationVersionTime so that it is a newer message than what is available.

### Delete

Nothing is sent to indicate that a situation has been removed. Instead, we interpret that a situation is removed when the situation records are removed.

## SituationRecord

For each delivery, so comes the current situation with the situation of active situationRecords available.

### New

Check if Id exist. If there is not then it is a new registration.

### Update

If Id exist it is possibly an update. Check the version of the situation record version time (most current time) alt. situation record version (highest number).

### Delete

Check in the same way as the update above first. Upon removal can situation record version time and situation record version to be the same. Only the difference

```
<managementStatus xmlns="http://datex2.eu/schema/3/informationManagement">closed</managementStatus>
```

At each update check if any situationRecord has disappeared ie situationRecord is not included in the message sent. In cases such removal shall be made.

Things to consider is also the risk that messages can come in the "wrong" order. This means that you should not do a "hard" delete on the situationRecords in the database. Would a removal precede an update so would surely not be any removal of the update.

The recommendation is to mark for deletion and then do a cleanup after a number of days.

### During synchronization

Much the same controls as above. When you find an event that is missing then the whole situation is to be replaced.

### Inactive

Data for example roadwork includes start date, end date, and status information about the roadworks are active or not.

The plan for the roadwork may be long calendar terms, which means that the roadwork can start and end several times and the status changed from active to inactive.

Check the flag in the field `validityStatus`, which shall be set to *suspended*. This indicates that the roadwork are inactive.

Ex.

```
<validity>
  <validityStatus>suspended</validityStatus>
  <validityTimeSpecification>
    <overallStartTime>2020-05-29T01:00:00+02:00</overallStartTime>
    <overallEndTime>2020-11-30T23:00:00+01:00</overallEndTime>
  </validityTimeSpecification>
</validity>
```

## XML examples

Sample files are available via the DATEX II pull services. There you can retrieve sample data for different object types.

Ex. If you want to see examples of accidents, download data here:

[https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3\\_0/Accidents](https://datex.trafikinfo.trafikverket.se/D2ClientPull/SituationPullServerBA/3_0/Accidents)

## References

[www.datex2.eu](http://www.datex2.eu), official DATEX II web site

[https://www.trafikverket.se/e-tjanster/portaler-och-databaser/hamta-data/#datex\\_ii\\_\\_trafikinformation\\_vag\\_i\\_realtid](https://www.trafikverket.se/e-tjanster/portaler-och-databaser/hamta-data/#datex_ii__trafikinformation_vag_i_realtid), Swedish DATEX II information web, both in Swedish and English versions