Statement of Compliance

Västtrafik BoB-APIs

(Server-side)

BoB-Version: v1.3.0

Västtrafik Release, VT BoB-module: 1.1

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**Revision History:**

|  |  |  |
| --- | --- | --- |
| Revision | Description | Author |
| PA12 | Version for Review | Mikael Fröberg, Mathias Johansson |
| PA13 | Added GET /ticket/{ticketId} and GET /ticketbundle/{ticketbundleid} as Supported operations. | Mikael Fröberg |
| PA14 | Corrections after review. Updated VT BoB-module to 1.1  In 1.1 support was added for operations:   * GET /ticket/{ticketId} * GET /ticketbundle/{ticketBundleId} |  |
| PA15 | POST /whitelist, corrected to GET /whitelist |  |
| PA16 | Added clarification on line information when making a request to the product API containing a route. |  |
| PA17 | Editorial Updates | Mathias Johansson |
| Rev. A |  | Mikael Fröberg |
| Rev. B | RequestId is required in POST /ticket | Mikael Fröberg |
| Rev. C | localEventId is required in POST /validation/{ticketId} and POST /inspection/{ticketId} | Mikael Fröberg, Mathias Johansson |
| Rev. C1 | POST /device/key requires client to be authenticated as pos. | Mikael Fröberg |

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# General

## Compliance

One of the following compliance statements are made for each part of the BoB-specification:

* ”Supported”: An API, operation or attribute is supported.
* ”Partially Supported”: An API, operation or attribute is partially supported.
* ”Not Supported”: An API, operation or attribute is not supported.

As for error handling, the following applies:

* A missing Mandatory attribute will result in Error handling: HTTP Response Code 400 Bad Request
* An unknown attribute that is received will be ignored and the operation will continue.
* Error codes specified in the BoB API specifications are used, if not otherwise stated
* Error codes related to the above compliance statements are detailed in the compliance definitions below
* Error codes related to authentication, see 1.2 Authentication and Authorization
* Error codes related to authorization, see 1.2 Authentication and Authorization

### Supported

#### API level

A Supported API means all its operations and attributes are supported. Still business rules may apply to operations, see Authorization.

For a Supported API, compliance statements on operations and attributes are not needed and is therefore omitted.

#### Operation level

A Supported operation means all its request and response attributes are supported

For a Supported operation, compliance statements on attributes are not needed and is therefore omitted.

#### Attribute

A supported attribute means it is processed. Still restrictions may apply to the set of values supported – notes in footnotes.

For a Supported attribute, compliance statements on sub-attributes are not needed and are therefore omitted.

### Partially Supported

#### API level

A partially supported API means some of its operations and attributes are supported.

#### Operation level

A partially supported operation means some of its request and/or response attributes are supported.

#### Attribute

A partially supported attribute means that some of its sub-attributes are not supported.

### Not Supported

#### API level

A non-supported API means that none of its operations are supported.

#### Operation level

A non-supported operation means its request and response are not supported.

Error handling: HTTP Response Code 501 Not Implemented

#### Attribute

A non-supported attribute means that the operation will not be accepted, if not otherwise is specifically stated in this document.

Error handling: HTTP Response Code 400 Bad Request

## Authentication and Authorization

### Authentication

This section describes the authentication of JWTs supplied in the context of accessing an operation in Västtrafik´s BoB APIs. For the issuing of JWTs see chapter 2.

All communication with the Västtrafik BoB API must use TLS (Transport Layer Security) version 1.2 or above.

Authentication involves:

* Validating the JWT signature
  + Public authentication keys need to be available in the Samtrafiken Participant Metadata API
* Validating the BoB holder of key claim, bobHok. Holder of key claim is required to be present
* Validating expiration properties of the JWT

If any of the above validation fails, the result is a HTTP Response Code 401 Unauthorized.

### Authorization

BoB specification defines a set of roles. Västtrafik´s BoB implementation makes authorization decisions based on those roles.

In general, the “pos” role (Point of Sale) needs to be preceded by a commercial contract with Västtrafik, and set up internally internally to be able to handle accounting and invoicing. Not doing so results in a failed authorization.

For specific operations, the authorization requirements are defined per operation in the specific API chapters.

A failed authorization results in a HTTP Response Code 403 Forbidden.

# Authentication API

Supported[[1]](#footnote-1)

Notes on issued JWT:

* JWTs always include the claim holder-of-key,”bobHok”.
* Participants authenticating a JWT issued by Västtrafik are recommended to assert the holder-of-key.
* JWTs may include proprietary claims. Those are prefixed with ”vt-” and should be ignored.

For an example JWT, see chapter 10

# Device API

Supported

## GET /device/kdk

Supported

#### Authorization

bobAuthZ: [val, ins]

## POST /device/key

Supported

#### Authorization

Authorization policy: [pos]

# Inspection API

Partially Supported

## POST /inspection/{ticketId}

Partially Supported[[2]](#footnote-2) [[3]](#footnote-3) [[4]](#footnote-4)

#### Authorization

bobAuthZ: [ins]

## POST /inspection

Partially Supported[[5]](#footnote-5) [[6]](#footnote-6)

#### Authorization

bobAuthZ: [ins]

# Product API

Partially Supported

## GET /product

Partially Supported

#### Authorization

bobAuthZ: [pos,tvm]

### Request - Partially Supported

* Headers:
  + Accept-Language Not Supported[[7]](#footnote-7)
* Query parameters:
  + productCategoryId Supported
  + fareCategoryId Not Supported
  + travellerCategoryId Supported
  + originLocation Not Supported
  + destinationLocation Not Supported
  + productProperties Not Supported

### Response - Partially Supported

* Headers:
  + Content-Language Supported[[8]](#footnote-8)
  + Expires Supported
* Body:
  + productSetAlternatives Partially Supported
    - products Partially Supported
      * product Partially Supported[[9]](#footnote-9)

## POST /product

Partially Supported

#### Authorization

bobAuthZ: [pos,tvm]

### Request - Partially Supported:

* Headers:
  + Accept –Language Not Supported[[10]](#footnote-10)
* Body:
  + filter Partially Supported
    - route Partially Supported[[11]](#footnote-11)
      * coordinate Not Supported
      * groupId Supported
        + type Supported[[12]](#footnote-12)
    - group Supported[[13]](#footnote-13)
      * groupType Supported[[14]](#footnote-14)
    - area Not Supported
    - fareCategoryIds Not Supported
    - productCategoryIds Supported
    - travellersCategoryId Supported[[15]](#footnote-15)
    - travellersPerCategory Supported[[16]](#footnote-16)
    - productProperties Not Supported
    - adjacencies Not Supported
    - temporal Not Supported

### Response – Partially Supported:

* Headers:
  + Content-Language Supported[[17]](#footnote-17)
  + Expires Supported
* Body:
  + productSetAlternatives Partially Supported
    - products Partially Supported
      * product Partially Supported[[18]](#footnote-18)

## GET /product/{productId}

Partially Supported

#### Authorization

bobAuthZ: [pos,tvm]

### Request - Supported

### Response – Partially Supported

* Headers:
  + Content-Language Supported[[19]](#footnote-19)
  + Expires Supported
* Body:
  + product Partially Supported[[20]](#footnote-20)

## GET /productcat/fare

Partially Supported

#### Authorization

bobAuthZ: [pos]

### Request – Partially Supported

* Headers:
  + Accept-Language Not Supported[[21]](#footnote-21)

### Response - Supported

* Headers:
  + Content-Language Supported[[22]](#footnote-22)
* Body:
  + fareCategories Supported[[23]](#footnote-23)

## GET /productcat/product

Partially Supported

#### Authorization

bobAuthZ: [pos,tvm]

### Request – Partially Supported

* Headers:
  + Accept-Language Not Supported[[24]](#footnote-24)

### Response - Supported

* Headers:
  + Content-Language Supported[[25]](#footnote-25)
* Body:
  + productCategories Supported

## GET /productcat/traveller

Partially Supported

#### Authorization

bobAuthZ: [pos]

### Request – Partially Supported

* Headers:
  + Accept-Language Not Supported[[26]](#footnote-26)

### Response - Supported

* Headers:
  + Content-Language Supported[[27]](#footnote-27)
* Body:
  + travellerCategories Supported

## POST /manifest

Partially Supported

#### Authorization

bobAuthZ: [pos,tvm]

### Request – Partially Supported

* Headers:
  + Accept –Language Not Supported[[28]](#footnote-28)
* Body:
  + productManifestQuery Partially Supported
    - recoverTickets Not Supported
    - discount codes Not Supported
    - productSelections Partially Supported
      * productProperties Not Supported

### Response – Partially Supported:

* Headers:
  + Content-Language Supported[[29]](#footnote-29)
* Body
  + productSetManifest Partially Supported[[30]](#footnote-30)

## GET /manifest/{manifestId}

Partially Supported

#### Authorization

bobAuthZ: [pos,tvm]

### Request – Partially Supported

* Headers:
  + Accept –Language Not Supported[[31]](#footnote-31)
* Parameters:
  + manifestId Supported

### Response – Partially Supported:

* Headers:
  + Content-Language Supported[[32]](#footnote-32)
* Body
  + productSetManifest Partially Supported[[33]](#footnote-33)

## Response Definitions

### Product

* + productId Supported
  + productTitle Supported
  + productDescription Supported
  + validityPeriod Supported
  + productCategoryId Supported
  + fareCategoryId Not Supported
  + travellerCategoryId Not Supported
  + travellersPerCategory Supported
  + fares Supported
  + productExpire Supported
  + productProperties Not Supported
  + spatialValidity Partially Supported
    - routes Not Supported
    - areas Not Supported
    - groups Supported

### ProductSetManifest

* + manifestId Supported
  + productSetTitle Supported[[34]](#footnote-34)
  + productSetDescription Supported[[35]](#footnote-35)
  + manifest Supported
  + manifestExpire Supported
  + distinct Supported[[36]](#footnote-36)
  + bookingRequired Not Supported
  + fares Supported
  + products Partially Supported
    - product Partially Supported[[37]](#footnote-37)
  + discountCodes Not Supported
  + recoverTicketIds Not Supported

# Ticket API

Partially Supported

## GET /ticket

Not Supported

## POST /ticket

Partially Supported

#### Authorization

bobAuthZ: [pos,tvm]

### Request – Partially Supported

* Body
  + manifestMtbTemplate Supported
  + ticketholder NotSupported
  + ticketIssuer NotSupported[[38]](#footnote-38)
  + ticketPublicKey NotSupported[[39]](#footnote-39)
  + recoverTicketId NotSupported
  + issueMtb Supported[[40]](#footnote-40)
  + requestId Supported[[41]](#footnote-41)
  + startOfValidity NotSupported
  + bookingId NotSupported

### Response – Supported

* Headers
  + **Location** Supported
* Body
  + ticketIds Supported
  + settlementId Supported
  + ticketBundle Supported

## GET /ticket/{ticketId}

Partially Supported

#### Authorization

bobAuthZ: [pos,tvm]

### Request – Partially Supported

* Parameters
  + ticketId Supported

### Response – Supported

* Body
  + ticketId Supported
  + issuedAt Supported
  + ticketPayload Supported
  + mtb Supported
  + ticketholder Not Supported
  + activeStatus Supported
  + recoverStatus Supported
    - recovered Supported[[42]](#footnote-42)
    - recoveredAmount Supported[[43]](#footnote-43)
  + refundStatus Supported
  + refundableStatus Supported
  + hinderedStatus Not Supported

## GET /ticket/{ticketId}/refundableStatus

Supported

#### Authorization

bobAuthZ: [pos,tvm]

Point of Sale needs to be PID 14.

Ticket needs to be issued by the same Sales Channel as invoking the refund.

## GET /ticket/{ticketId}/refundStatus

Supported

#### Authorization

bobAuthZ: [pos,tvm]

Point of Sale needs to be PID 14.

Ticket needs to be issued by the same Sales Channel as invoking the refund.

## PUT /ticket/{ticketId}/refundStatus

Supported

#### Authorization

bobAuthZ: [pos,tvm]

Point of Sale needs to be PID 14.

Ticket needs to be issued by the same Sales Channel as invoking the refund.

## GET /ticket/{ticketId}/recoverableStatus

Supported[[44]](#footnote-44)

#### Authorization

bobAuthZ: [pos,tvm]

## GET /ticket/{ticketId}/recoverStatus

Supported[[45]](#footnote-45)

#### Authorization

bobAuthZ: [pos,tvm]

## PUT /ticket/{ticketId}/recoverStatus

Supported[[46]](#footnote-46)

#### Authorization

bobAuthZ: [pos,tvm]

## GET /ticket/{ticketId}/hinderedStatus

Not Supported

## PUT /ticket/{ticketId}/hinderedStatus

Not Supported

## PUT /ticket/{ticketId}/revoke

Supported

#### Authorization

bobAuthZ: [pos,tvm]

Point of Sale needs to be PID 14.

Ticket needs to be issued by the same Point of Sale as invoking the revoke.

## GET /ticket/{ticketId}/active

Not supported

## PUT /ticket/{ticketId}/active

Not supported

## GET /ticket/{ticketId}/event

Supported

#### Authorization

bobAuthZ: [val, ins]

## GET /ticket/{ticketId}/event/{eventId}

#### Authorization

bobAuthZ: [val, ins]

## POST /ticketbundle

Not supported

## GET /ticketbundle/{ticketBundleId}

Partially Supported

#### Authorization

bobAuthZ: [pos,tvm]

### Request – Partially Supported

* Parameters
  + ticketBundleId Supported

### Response – Supported

* Body
  + ticketBundleId Supported
  + ticketIds Supported
  + settlementId Supported
  + ticketPayload Supported
  + manifestId Not Supported
  + mtb Supported

# Validation API

Partially Supported

## POST /validation/{ticketId}

Partially Supported[[47]](#footnote-47), [[48]](#footnote-48),[[49]](#footnote-49)

#### Authorization

bobAuthZ: [val]

## POST /validation

Partially Supported[[50]](#footnote-50), [[51]](#footnote-51)

#### Authorization

bobAuthZ: [val]

## GET /whitelist

Not Supported.

## GET /ticklemacros

Supported

#### Authorization

Authorization policy: [anonymous]

## GET /ticklemacros/{serial}

Supported

#### Authorization

Authorization policy: [anonymous]

## GET /blacklist

Supported[[52]](#footnote-52)

#### Authorization

bobAuthZ: [val]

## GET /fraudcheck

Not supported

# Traveller API

Not Supported

# Booking API

Not Supported

# Appendix – Examples

## Authentication API - JWT

{

"jwtCompact": "eyJhbGciOiJFUzI1NiIsImtpZCI6IjE0OmF1dGgtdGVzdC0wMSJ9.eyJpc3MiOiIxNCIsInN1YiI6InBvczE0IiwiZXhwIjoxNTM4NTY4MzE4LCJib2JIb2siOiI5MTcxZGRmZjk0MTZkYjY2ODlkMjZjYzhhM2YzOGJkZmQ4MDU0YmNmIiwidnRDaGFubmVsSWQiOiIxIiwiYm9iQXV0aFoiOiJwb3MifQ.2b47QYoJOewvP6AHMSEnmTD4FqvvkfIIj1coiQHUOs8Nd50H1\_HoiA-sVoSksf0Hl1JQguCz4Tf8SU-fWbRm4w",

"header": {

"alg": "ES256",

"kid": "14:auth-test-01"

},

"payload": {

"iss": "14",

"sub": "pos14",

"exp": 1538568318,

"bobHok": "9171ddff9416db6689d26cc8a3f38bdfd8054bcf",

"vt-channel-id": "1",

"bobAuthZ": "pos"

}

}

## Product API – Route Property

 "route": [{

            "groupId": { "type": "line", "id": "9015014132103039" },

            "stopId": "9022014003085001"

        },

        {

            "groupId": { "type": "line", "id": "9015014132103039" },

            "stopId": "9022014014311002"

        }

    ]

1. The authentication API is not publicly available. [↑](#footnote-ref-1)
2. Only reporting of ticket events supported. Evaluation of MTB should be performed offline. Online operation where the MTB is evaluated server-side is not supported. [↑](#footnote-ref-2)
3. Attribute tokenTransaction ignored. [↑](#footnote-ref-3)
4. localEventId is Required, and required to be unique within the scope of PID and sending BoB-entity. UUID4 is recommended. [↑](#footnote-ref-4)
5. Only reporting of ticket events supported. Evaluation of MTB should be performed offline. Online operation where the MTB is evaluated server-side is not supported. [↑](#footnote-ref-5)
6. Attribute tokenTransaction ignored. [↑](#footnote-ref-6)
7. Accept-Language is ignored [↑](#footnote-ref-7)
8. Content-Language header is always set to “sv-SE” [↑](#footnote-ref-8)
9. Product is partially supported defined in 5.1 Response Definitions [↑](#footnote-ref-9)
10. Accept-Language is ignored [↑](#footnote-ref-10)
11. route is mutually exclusive with group. When supplying route data, it needs to include not only stop ids, but also line ids. The line id should be supplied as a groupId object for each item in the list of stops, see example in 10.2 [↑](#footnote-ref-11)
12. type must be set to “line” [↑](#footnote-ref-12)
13. group is mutually exclusive with route [↑](#footnote-ref-13)
14. groupType must be set to “zone” [↑](#footnote-ref-14)
15. Mutually exclusive with travellersPerCategory. Attribute “tra” should be an unsigned integer. [↑](#footnote-ref-15)
16. Mutually exclusive with travellersCategoryId [↑](#footnote-ref-16)
17. Content-Language header is always set to “sv-SE” [↑](#footnote-ref-17)
18. Product is partially supported defined in 5.1 Response Definitions [↑](#footnote-ref-18)
19. Content-Language header is always set to “sv-SE” [↑](#footnote-ref-19)
20. Product is partially supported defined in 5.1 Response Definitions [↑](#footnote-ref-20)
21. Accept-Language is ignored [↑](#footnote-ref-21)
22. Content-Language header is always set to “sv-SE” [↑](#footnote-ref-22)
23. Always empty list [↑](#footnote-ref-23)
24. Accept-Language is ignored [↑](#footnote-ref-24)
25. Content-Language header is always set to “sv-SE” [↑](#footnote-ref-25)
26. Accept-Language is ignored [↑](#footnote-ref-26)
27. Content-Language header is always set to “sv-SE” [↑](#footnote-ref-27)
28. Accept-Language is ignored [↑](#footnote-ref-28)
29. Content-Language header is always set to “sv-SE” [↑](#footnote-ref-29)
30. productSetManifest is defined in 5.1 Response Definitions [↑](#footnote-ref-30)
31. Accept-Language is ignored [↑](#footnote-ref-31)
32. Content-Language header is always set to “sv-SE” [↑](#footnote-ref-32)
33. productSetManifest is defined in 5.1 Response Definitions [↑](#footnote-ref-33)
34. productSetTitle and productSetDescription contain the same text [↑](#footnote-ref-34)
35. productSetTitle and productSetDescription contain the same text [↑](#footnote-ref-35)
36. Always false [↑](#footnote-ref-36)
37. Product is partially supported defined in 5.1 Response Definitions [↑](#footnote-ref-37)
38. Ignored [↑](#footnote-ref-38)
39. Ignored [↑](#footnote-ref-39)
40. Required to be true [↑](#footnote-ref-40)
41. Required to be sent, and required to be unique within the scope of PID and sending BoB-entity. UUID4 is recommended. [↑](#footnote-ref-41)
42. Always false [↑](#footnote-ref-42)
43. As a consequence of recovered being always false, recoveredAmount is never set [↑](#footnote-ref-43)
44. Supported on API level, but from a business perspective Västtrafik tickets are not recoverable. [↑](#footnote-ref-44)
45. Supported on API level, but from a business perspective Västtrafik tickets are not recoverable. [↑](#footnote-ref-45)
46. Supported on API level, but from a business perspective Västtrafik tickets are not recoverable. [↑](#footnote-ref-46)
47. Only reporting of ticket events supported. Evaluation of MTB should be performed offline. Online operation where the MTB is evaluated server side is not supported. [↑](#footnote-ref-47)
48. Attribute tokenTransaction ignored. [↑](#footnote-ref-48)
49. localEventId is Required, and required to be unique within the scope of PID and sending BoB-entity. UUID4 is recommended. [↑](#footnote-ref-49)
50. Only reporting of ticket events supported. Evaluation of MTB should be performed offline. Online operation where the MTB is evaluated server side is not supported. [↑](#footnote-ref-50)
51. Attribute tokenTransaction ignored. [↑](#footnote-ref-51)
52. Always empty list [↑](#footnote-ref-52)