

**e** Boks.dk

**REST API**

**Reading and concept guide**



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## Introduction to e-Boks REST APIs

This document provides an overview of the system-to-system REST APIs provided by e-Boks. It contains a description of all the general terms and concepts used in the REST API descriptions.

- **Notice:**

The scope for this document does not include the APIs for the e-Boks Portal solution or the mobile APIs.

Contact e-Boks Support if you have questions regarding these two products.

### Target audience

The intended target audience for the REST API documentation is developers and architects with private senders and distributors who are tasked with setting up an integration solution towards e-Boks. Notice that in this document private senders can also be referred to as companies.

### Version history

Version	Data of change	Changes
1.0	February 2018	<p>Created document in a limited draft scope. The document contains among others</p> <ul style="list-style-type: none"> <li>• General introduction to the REST API that applies to all system types such as dispatch and retrieval systems</li> <li>• Explanation to applied concepts for all system types</li> <li>• A section with a reading guide for the system types</li> <li>• A terminology list that applies to all system types</li> </ul>
2.0	August 2018	<p>Updates to correct initial content omissions, flaws, etc.</p> <p>This is the first official release of the document.</p>

## Getting started

We recommend that you read this document to become familiar with the overall terms and concepts that apply in all the REST API documentations.

To get started, read the following sections:

- [Sender \(company\) API setup, page 5](#)  
Explains the integration from sender to e-Boks.
- [e-Boks terms and conditions, page 16](#)  
The rules that apply, irrespective of the REST API.

Use the following topic as a means of reference when using the REST API documentation:

- [e-Boks terminology, page 1](#)  
The terms used everywhere in the APIs; they display in italics in the API appendices.

## Sender (company) API setup

The below table provides an overview of each system-to-system API for a sender to use when communicating with ee-Boks. The description includes among others specifications of standards and protocols.

The table is intended as a guideline for users of the REST API. The guidelines include concepts that are explained in separate sections in this document.

The topic [Terminology, page 23](#) contains an in-depth list of terms used when operating with the REST API.

Sender		
API	Usage	Integration
Dispatch of messages via REST API	Respond to message	REST HTTP TLS/SSL
Retrieval of messages via REST APIs	Get messages from the Inbox into own digital mailbox	REST HTTP TLS/SSL

## REST API overview

The e-Boks REST APIs follow the officially recognized REST standards and offers the functionality listed below. See the functionality according role under the section **Overview of system roles**.

- Determine whether an end user is registered to a sender and set up to receive a specific type of dispatch.
- Send messages to specific end users, with the possibility of attachments.
- Send messages to several recipients in one action.
- Retrieve information about the dispatch, the content, and any attachments.
- Use reply (entry) forms in connection with end user responses to messages.
- Register and deregister end users to a sender and registration groups.
- End users can be private citizens or companies.

The transport protocol used is **HTTPS**.

All URL references used in the REST API interface have the following base:

**<https://api.e-boks.com/int/rest/srv.svc>**

To access the integration test environment, you must add **demo** before that URL:

**<https://demo-api.e-boks.com/int/rest/srv.svc>**

It is possible to apply version information to the interface, for example:

**<https://api.e-boks.com/int/rest/srv.svc/2/>**

## REST API structure

The REST API is divided into four function type areas. Each area is described in a separate document (appendix), where the current document is considered the principal document as it provides the introduction to using the REST APIs.

List of appendices:

- **Appendix A1 – REST – Dispatch system** describes the REST API for the Dispatch system used by a sender to send messages to end users.
- **Appendix A2 – REST – Register** describes the REST API for a register used by a sender to manage registrations for end users and retrieve notification settings. A register is used when a sender acts on behalf of an end user.
- **Appendix A3 – REST – Retrieval system** describes the REST API for the Retrieval system used to receive messages via a mailbox.
- **Appendix A4 – REST – Portal** describes the REST API for a portal and applies when an end user logs on. A portal is used by a sender to among others perform these actions:
  - Retrieve an end user's most recent messages
  - Query for the number of unread messages

## HTTP status codes and error code format

For every operation in the REST API, the system returns an HTTP response status code.

The specific errors that may occur for every operation are described under the specific REST API in the appendix sections. Also, there are general errors that may occur for any operation, for example, Invalid XML.

## HTTP status codes

This section lists the use of standard HTTP codes in REST API.

Code	Title	Use	Get	Put	Delete	Error
200	OK	Success	x	x	x	
400	Bad request	Invalid input parameter	x	x	x	x
401	Unauthorized	Access denied	x	x	x	x
403	Forbidden	Query not allowed	x	x	x	x
404	Not found	Resource not found	x	x	x	x
409	Conflict	Query conflicts with another resource		x		x
410	Gone	Resource no longer exists	x	x	x	x
500	Internal server error	Server error	x	x	x	x

## Error code format

The XML format is used for the application specific error codes that are returned by e-Boks.

## XML output example

Status Code: NotFound (404)

Status Description: End user not recognised

Properties: ErrorCode, ErrorId, ErrorText

```
<?xml version="1.0" encoding="utf-16"?>
<Error xmlns="urn:eboks:en:3.0.0" xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
  <ErrorCode>4007</ErrorCode>
  <!-- Freetext, that describes the error that has occurred-->
  <ErrorID>2018-01-18-14.50.58.367349</ErrorID>
  <ErrorText>End user not recognized</ErrorText>
</Error>
```

## Security architecture

System calls security is used on the integration of dispatch system, registry, and sender. The requirements are:

- Service consumer sends an inquiry and receives a response synchronously.
- Service provider requires the use of SSL with the mandatory client authentication (2-way SSL).

## Validations performed for each system call

Systems that make a request, identify themselves via an input parameter and this information is used in every call to verify the following:

- System rights: The system verifies whether the request has the required rights to perform the requested call.
- User rights: For portal integration via REST, the system verifies whether an end user has the right to perform the requested function.
- Context-specific rights: The system identifies specific scenarios, for example:
  - System verifies whether the right content type is linked to the dispatch system. Even though a dispatch system has the right to dispatch messages, and others, not all content types can be dispatched.
  - Sender can only search own dispatches, and a company or private individual can only retrieve own mail.
  - When accessing another end user's mailbox, only the stated folders can be accessed.

If one of the above rules fails to apply, the API returns an error, and the call will not be made.

## System identification

All requests must include the input parameter, **sysid**. This parameter specifies the system. This applies to dispatch systems, registries, portals, and retrieval systems.

It is not sufficient to identify the system via the certificate associated with the system because a distributor may make the same system available to several senders. To the distributor, it is a huge advantage not to have a unique certificate for every single sender that uses the system. For such scenarios, the distributor is more likely to use own certificate for several dispatch systems. The section **Overview of system roles** explains how a dispatch system/registry can be configured differently from one sender to the next, for which reason the specific system is required to identify itself.

## Overview of system roles

A system can only perform the functions within its function area. The following table provides the options for system types.

System type	Function
Dispatch system	<ul style="list-style-type: none"> <li>• Determine whether an end user can receive dispatches</li> <li>• Create single dispatches to end users</li> <li>• Create batch dispatches to end users and retrieve receipt lists</li> <li>• Get information about a dispatch</li> <li>• Update or recall scheduled dispatches</li> <li>• Search previously sent and scheduled dispatches</li> </ul>
Registration	<ul style="list-style-type: none"> <li>• Get end user registrations and notifications settings</li> <li>• Register and deregister end users to a sender and registration groups</li> </ul>
Retrieval system	<ul style="list-style-type: none"> <li>• Get a list of messages from connected mailboxes</li> <li>• Get a message from the connected mailboxes</li> <li>• Delete a message from the connected mailboxes</li> </ul>
Portal	<ul style="list-style-type: none"> <li>• Get end user registrations and notifications settings</li> <li>• Register and deregister end users to a sender and registration groups</li> <li>• View number of unread own messages for an end user</li> <li>• Determine whether an end user is active</li> <li>• Create an end user as a registered user</li> <li>• Determine whether an end user accepted terms of use</li> </ul>

## System setup before system-to-system calls

A system-to-system call requires an e-Boks assisted setup.

At sender site, the system administrator must be responsible for the setup of a dispatch system.

The dispatch system, portal, and registry system types require the upload of a certificate. The certificate ensures secure data transport between e-Boks servers and users, and identification of senders.

## Parameters setup for the dispatch systems/registrations

A dispatch system can retrieve registration lists of end users who want to receive dispatches from this system. On a similar note, registrations can retrieve profile setting lists of all users who are registered with specific registration groups. However, this only applies to registration groups linked to one or several dispatch systems with sender-specific registry. The registration is set up with the assistance of e-Boks for the specific dispatch system/registration.

The registration conditions for an end user differ depending on whether the query is done via a registry or a dispatch system.

### Example

An end user is registered to receive content type TEST. However, this end user will not receive content type TEST if the email address is not specified or has not been confirmed. The call will show that this user is registered, but calls made to the dispatch system will show the user has not registered because it is not possible to deliver the content type TEST.

## Practical matters

Sender is required to do the following:

- Specify a certificate for each system (dispatch system, registry, portal).
- Ensure SSL Version 3.0 with a key length of 128 bit is used.
- Check regularly the validity of a certificate, for example, whether it is blocked.
- Have a person responsible for the renewal of the distributor certificates.

 For details on certificates, you are referred to the section **Sender certificates** explained in the document **Secure distribution, Implementation Guide**.

Apart from the section on certificates, this manual is dedicated to giving new senders and distributors a 360 degree introduction to sending secure dispatches via e-Boks.

## Secure error codes

The error codes returned by the REST operations are always validated applying proper security measures. This approach prevents disclosure of unauthorized system information, such as end user names.

This principle applies universally and guarantees that external parties cannot make assumptions regarding the existence of the mailbox based on the error codes.

## Dispatch - combinations of finalization and verification methods

The two new properties, finalization and verification, can be specified on content types and/or as new properties during dispatch, present several new scenarios. The below table displays the valid combinations for implicit and explicit orders, respectively. These two types of orders are used in regards to digital signing. The implicit signing method applies to companies only, and is the most common signing method. The explicit signing order applies to documents that need signing by a private citizen, such as a new employment contract, a lease contract, etc.

 For details on digital signing, you are referred to the documentation provided with the e-Boks Digital Signing solution.

### For implicit orders

Finalization/Verification	IDRights online	Logged on must sign	None
None			
IDRights online	0		
IDRights offline	1		
Min reached	2	3	4
Manual	5	6 As-is	7 As-is

### Notation to table on implicit orders

- 0 After each signature, the finalization will be verified for the associated legal entity by calling IDRights. When the IDRights call requests that there must be an adequate number of signers to make it legal, the signing order for this legal entity can be finalized. In the future, validators other than IDRights will be added. For this scenario, the IDRights call is made with an online request, which is more expensive than offline.
- 1 Same as above, except this is an offline call to IDRights, which is less expensive than online.
- 2 When the number of signers (in total for the sign order for all legal entities) meets the minimum required number as specified for the associated content type, the signing process is finalized for the complete order. When the SDO is returned (to e-Boks), there will be a validation against IDRights to establish whether each legal entity in the sign order has completed an adequate signing process. Depending on the outcome of the validation, one the following notifications will display:
  - Order completed (adequate signing)
  - Verification failed (inadequate signing)
- 3 The order is completed when there is a minimum number of signers. When the SDO is returned (to e-Boks), it will be verified whether all users who logged on and requested to sign are identical to those who actually signed (as stated by RIDs in the SDO).
- 4 The order is completed when there is a minimum number of signers (in total). When the SDO is returned (to e-Boks), there will be no validation. The SDO recipient must manually verify the signatures.
- 5 Each legal entity must manually close the sign order when it is assessed that there is an adequate number of signers from each specific entity. This is done by pressing a **Finalize** button, which in this case will be present. When all entities have closed their part of the order, the order is considered completed. When the SDO is returned (to e-Boks), it is verified against IDRights for each entity.

- 6 Each legal entity must manually complete the signing order by pressing **Finalize**. When all entities have completed and the SDO is returned (to e-Boks), it must be verified whether the actual signers stated in the SDO match the end users, who initiated the signing process (the end users who logged on and pressed **Sign**).
- 7 Each legal entity must manually complete their signing process by pressing **Finalize**. When the SDO is returned (to e-Boks), there will be no validation.

### For explicit orders

Finalization/Verification	IDRights online	Logged on must sign	None
None	x	x	x
IDRights online			
IDRights offline			
Min reached			
Manual			

## Calls across interfaces

This topic outlines the calls (functions) for REST services with regards to the dispatch and the retrieval systems.

The title for the functions includes the reference to the appendix that provides the in-depth description to send the REST call.

### Example:

A1.3.1 Single dispatch/updating a dispatch

where:

A1.3.1 Is the reference to the appendix

Single dispatch/updating a dispatch Is the title of the REST call

## Dispatch system

\* = this call will only succeed in connection with the Archive solution. This is an add-on product. Contact e-Boks for details.

Function	REST	File-based FTP
A1.3.1 Single dispatch/update a dispatch	X	
A1.3.2 Batch dispatch	X	
A1.3.3 Retrieve receipt list for batch dispatches	X	
A1.3.4 Sign for batch delivery receipt	X	
A1.3.5 Recall undelivered dispatch*	X	X
A1.3.6 Get information for a specific dispatch*	X	X
A1.3.7 Get content of a dispatch*	X	X
A1.3.8 Get content of an attachment*	X	X
A1.3.9 Search for a dispatch (sent or scheduled)*	X	X
A1.3.10 Determine if end user can receive a specific content type	X	X
A1.3.11 Get registration list	X	
A1.3.12 Get part of registration list	X	
A1.3.123 Get dispatch status	X	
A1.3.14 Update expiry status		
A1.3.15 Finalize sign status		
A1.3.16 Expire sign order	X	X

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Function	REST	File-based FTP
A1.3.17 Get DispatchStatus (SignStatus Version2)		
A1.3.18 Update expiry date	x	
A1.3.19 Finalize sign order	x	

## Forms: Use of reply (entry) forms

e-Boks supports the use of forms for the two-way communication (that is, the e-Boks Secure dialog solution). Sender can apply forms to be used to respond to and initiate messages between end user and sender.

The form is configured by e-Boks according to sender's requirements.

 You can read more about the Secure dialog solution in the topic xx. For specific details regarding the use of forms, you are referred to the e-Boks Secure dialog, Implementation guide

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## e-Boks terms and conditions

This topic explains the general terms that apply, irrespective of the REST API that is used.

### Conditions for a message to be sent to an end user

Before a sender can make a dispatch to an end user, it must be determined if the end user can accept the REST call (inquiry).

 For details on the below calls, see Appendix A1 - REST enXML - Dispatch system.

Sender must complete the following actions to initiate the inquiry:

a. Determine via content type

If the specified content type for the new message is linked to a mandatory registration group, the message will always be sent, irrespective of the end user being registered. Notice the special rules that apply to the use of mandatory registration groups.

b. Determine via registration list

It is possible for a sender to retrieve a registration list via a REST call to the dispatch system.

The list shows whether a user is registered for a specific content type or for the entire sender scope. In this case, an inquiry with the specific content type is sent to the recipient's digital mailbox.

c. Determine via specific content type

It can be established whether a certain end user is registered for a given content type via the below REST operation. The operation can only be used for single dispatches (and not for batch dispatch).

d. Specify dialog thread

If the end user has initiated the communication, the following will constitute a reply.

Where a reply is involved, a sender can reply the end user irrespective of end user being registered for the content type specified in the message, provided the following conditions are met with:

1. End user has initiated contact with sender; that is, a reply is involved.
2. End user is registered with a sender.
3. The reply is made within 30 days.

To indicate that a reply is involved, the dialog thread must be specified in the message. The dialog thread is found in the message in which the end user initially made contact.

For dispatches where each dispatch indicates that several end users are to receive the message, all recipients must be registered. The entire dispatch will be rejected if only one recipient is missing or otherwise unable to receive digital mail.

### Naming a dispatch: Message identifier

Sender will make a dispatch to initiate contact to an end user. The dispatch becomes a message when an end user receives it. Dispatch and message differ depending on the information they contain:

- Dispatch has information relevant to a sender
- Message has information relevant to end user (recipient)

During creation, a dispatch is assigned a unique identifier, that is a **Message ID**. Subsequently, this identifier

contributes to recognizing a specific dispatch (and message that came from this dispatch).

Message ID is assigned as follows:

- For REST API dispatch system - sender must specify the Message ID.
- For batch dispatch interfaces two options are available:
  - Sender can specify the Message ID
  - or
  - e-Boks generates the Message ID

Message ID is returned to sender via a receipt if a receipt is required.

### Message ID format

When the Message ID is specified by a sender, it must comply with the following format.

- The first six characters must be identical to the ID of the dispatch system from where the dispatch is sent (possibly there will be a need to add preceding zeros (0). Example: 000149).
- Up to the following 40 characters must specify a unique identifier for the message for the relevant dispatch system. This is done to make the Message ID unique across the sender's dispatch systems. Thus, the maximum length for a Message ID is 46 characters; the minimum – four characters. The Message ID must only contain URL non-reserved characters.

To support the existing e-Boks interface for batch dispatch, the Message ID from this interface need not meet the same requirements. However, the maximum length is still 46 characters. Dispatch will be rejected if it does not meet the conditions for the above format and in which a response mailbox and subject are specified for the specific content type.

### Dispatching HTML messages

When dispatching HTML messages, the following requirements apply, regardless of the applied REST API.

1. File format must be HTML.
2. Message physical content must contain a valid HTML document.
3. Messages must not contain JavaScript.

The above requirements apply because the sent content displays unchanged in the end user's browser.

### Sample HTML dispatch

```
<html>
<head>
<title> </title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/>
</head>
<body>
<p>Information description...</p>
</body>
</html>
```

### Message metadata

Messages and dispatches contain information on their context, for example, sender and recipient, and their content.

The common designation for this information is metadata. This metadata is divided into different types:

- **Standard metadata**

Always specified and includes, for example, sender, received, time of dispatch or receipt, the size of the content and its format.

- **Mailbox metadata**

Can be set up for each subject for the mailbox and is used by the sender's systems to navigate an inquiry from an end user to the required system in a company and is presented by:

- Hidden fields – added automatically and are always present when a sender receives a message.
- Non-hidden fields – completed by the end user and are only included when the private individual initiates the inquiry.

- **Sender metadata.**

This is used by the sender to link additional relevant information to the message by attaching a file. The attachment is hidden from the end user and if the end user replies to the message, this file will be attached when the sender receives the message.

In physical terms, the file can have any content whatsoever (it does not need to be XML, even though the file name must always contain the suffix **.xml**). e-Boks only transfers this data without processing it. The file is included in the Mb price for the dispatch.

- **attention.xml.**

This represents an attachment that senders can attach on delivery of a message. The file corresponds to the text field: To whom it may concern, in a traditional physical letter. Contact information can be made available via contact points. The contact points are defined in the attention.xml file and consists of one or more values, such as {Name, Department}.

Companies can in particular via the end user interface set up rules for moving the message based on P numbers. If the file is attached, a P number will appear in the field ProductionUnitIdentifier, and when the end user has set a rule that corresponds to the P number, archiving will be possible based on this setting.

The file contains the resource AttentionFormat. The file is not schema-validated upon receipt in e-Boks. Therefore, sender is recommended to perform schema validation before delivery. The file will never be visible in the end user interface. The file is included on automatic forwarding and on delivery via the retrieval system. The file is included in the Mb price for the dispatch.

- **sagdokument.xml.** An attachment designed for a structured description of the content of the message. e-Boks is used merely as the transport medium and does not consider the content.

The file contains the resource Sagdokument. The file is not schema-validated upon receipt in e-Boks. Therefore, sender is recommended to perform schema validation before delivery. The file is not visible in the end user interface. The file is included on automatic forwarding and on delivery via the retrieval system. The file is included in the Mb price for the dispatch.

In combination, this metadata is used for automatic allocation and handling of the messages.

## Character set

All XML documents that are delivered must be encoded in UTF8. Any text, irrespective of applied encoding, must only contain characters included in ISO 8859-1 (Latin-1, Western European).

For all interfaces, the content of messages, documents, and attachments with file type TXT and HTM are encoded in ISO

8859-1.

When an end user uploads a file that is attached to a dispatch, it is assumed that the sender is able to process the file in the format the end user has used.

## Operational considerations

### Dispatch from sender to end user - physical size

When a sender communicates with an end user the following must be taken into account:

- Messages to end users can take up to 99.5 Mb. The total sum of content for a main document and any attachments must not exceed this limit.

**1 Mb is equivalent to 1024 Kb.**

- Automatic forwarding via secure email supports up to and including 10 Mb. The message will not be forwarded if a sender delivers a dispatch that exceeds 10 Mb, and the end user has set automatic forwarding via S/MIME (company user). Instead, a message is sent informing that a large dispatch is delivered and can be accessed via the end user interface.
- Messages with up to 10 attachments, including attachments containing metadata.

### Dispatch from end user to sender - physical size

An inquiry from an end user to a sender usually has a limit of 10 Mb. A sender can request a limit increase up to 99.5Mb by contacting e-Boks A/S. An inquiry sent by an end user via the end-user interface or system integration is validated with the permitted limit. Companies that use system integration can retrieve limit size via a system call.

### Obligation to cache

Service consumers must call individual REST operations only once a day. This is the case for operations retrieving configuration information. If this is the case, this will be stipulated under the specification of the individual operation.

## Message title

Regardless of which interface is used for sending a message, the message title comprises the following elements:

1. Fixed text: Represents text that is predominantly generic and text that does not constitute a security risk.
2. Variable text: Represents text that can be subject to easy adjustment/editing. Notice that this type of text in general contains sensitive information related to personal data.

A title that contains fixed and variable text can for example be a bank account statement where the fixed text may display a title and where the variable text most likely represents sensitive bank data.

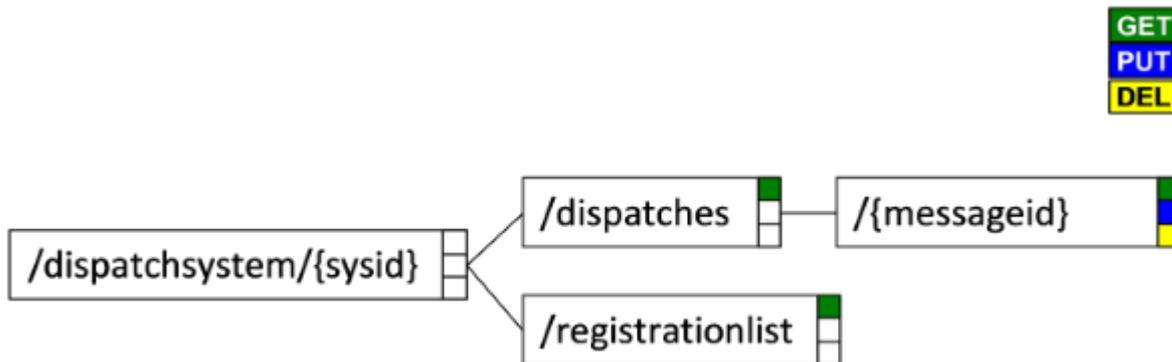
Notice that the part of the schema that defines a title appears longer. This is the impact from other user scenarios.

## Reading guide

This topic presents the method used to describe resources and operations in REST.

### How to read a REST graph

The REST operations are illustrated by a URI graph that shows HTTP operations available for a functionality area. A simplified example is shown below.



Each HTTP operation has the color coding indicated below. If color is not specified, then no operations are available.

<b>GET</b>	Green for GET. GET represents the read operation
<b>PUT</b>	Blue for PUT . PUT represents the update/replace operation
<b>DEL</b>	Yellow for DEL. DEL is short for delete and represents the deleting of an operation

The graph specifies the number of URIs and is read from left to right.

A URI can contain one or more parameters, surrounded by { }. The first part of the graph, “/dispatchsystem/{sysid}”, thus contains the parameter “sysid”, and can, for example, be “/dispatchsystem/1234”. It has no operations available.

The example above shows the following operations:

- GET /dispatchsystem/{sysid}/dispatches
- GET /dispatchsystem/{sysid}/dispatches/{messageid}
- PUT /dispatchsystem/{sysid}/dispatches/{messageid}
- DELETE /dispatchsystem/{sysid}/dispatches/{messageid}
- GET /dispatchsystem/{sysid}/registrationlist

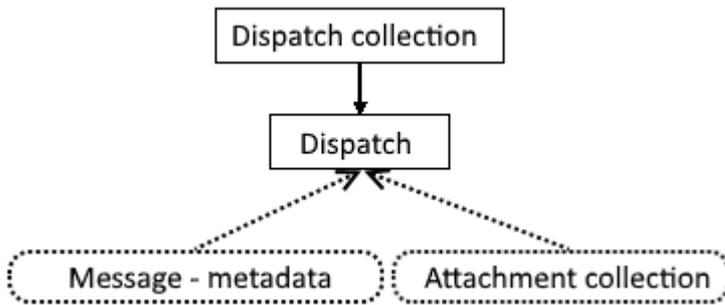
### How to read a resource and a type

Resources are data objects that are used as input or output for the operations in the REST graph.

Types are smaller data structures included in one or more resources.

Resources and types are documented using an overview, showing their relations, and via a table for each describing the purpose, the related XML schema, and every single field.

The illustration below is an example of an overview of resources and types.



- Resources are shown with a solid line
- Types are shown with a dotted line.
- A reference from one resource to another resource is shown with a solid arrow.
- The reference follows the direction of the arrow.
- A dotted arrow indicates that a type or a resource form part of another type or resource. The inclusion follows the direction of the arrow.

Each resource and type are explained in a table below the call syntax. The explanation includes the purpose and each individual field. The table may include examples and comments.

**Example: Dispatch resource**

`dispatchsystem/{sysid}/dispatches/{messageid}`

**RESOURCE**

<i>Purpose</i>	This resource describes a dispatch to be sent. The content itself and the content of any attachments are included at the time of creation.
R    Type	Message/Notification. To ensure backward compatibility, the original designation of notification has been retained.
C    Content type	Specifies the content type for the dispatch.
U    Title	The title of the dispatch
C    Metadata	Metadata for the dispatch

- The entry field for **Content type** is mandatory on creation.
- The **Type** field derives from the content type. This field is read-only (R).
- The **Title** field is also mandatory, but can subsequently be updated.
- Field names starting with lower case are attributes.
- Names starting with upper case are elements.

## How to read an operation

Each operation in the interface is described in a table. The table displays purpose, input parameters, output content, and error codes that can may be returned. The table can also contain examples of use and comments.

### Sample setup

REST  
oper-  
ation

**dispatchsystem/{sysid}/dispatches/{messageid}** **GET**

Table  
with  
explan-  
ation

<i>Purpose</i>	Purpose of the operation.
<i>Examples of use</i>	Describes examples where the operation is used.
<i>Input parameters</i>	Describes all parameters in the URI.
<i>Input search parameters</i>	Describes any search parameters.
<i>Output content</i>	This section presents the result of the call.
<i>Error codes</i>	This section presents possible error codes that can be returned. The first code is e-Boks specific error code. The related HTTP return code displays in brackets.

PUT operations can only update fields in a resource that are marked as updateable—U (view resource explanation earlier in this document).

## Terminology

The below terminology list contains a number of specific definitions used in the REST interfaces. Many of these terms relate to user interface descriptions.

A B C D E F I M N O P R S T V W X

Term	Definition
A	
Address book	The address book is accessed in the end user interface. It gives an end user access to contact all connected senders.
Archive folder	End user can create archive folders from the user interface to which any message can be moved.
Attachments	<p>Attachments are files that can be attached to a message.</p> <p>There are two types of attachments:</p> <ul style="list-style-type: none"> <li>• Stand-alone attachments Attachments are uploaded as stand-alone documents.</li> <li>• General attachments (formerly termed Enclosure) A general attachment is uploaded once and can subsequently be referred to repeatedly. If the same document is to be enclosed for multiple end users, such as user manuals, the recommendation is to use a general attachment.</li> </ul>
Automatic forwarding vs manual forwarding	<p>End user can configure rules for the user interface so that all messages received in the Inbox will be sent to a secure email address.</p> <p>For each rule, it is possible to configure if it should be triggered automatically when messages are received, or it should be done manually</p>
Attention.xml	See <a href="#">XML documents</a>
B	
Batch dispatch	<p>A series of single dispatches that behave as a batch dispatch must use the REST interfaces that are intended for a batch dispatch.</p> <p>Batch dispatches operate asynchronously, and the receipt only becomes available via a subsequent call that retrieves receipt lists.</p>
C	
Certificate	<p>All end users log on to their digital mailbox via a certificate.</p> <p>Denmark: OCES certificates (Public Certificates for Electronic Services).</p> <p>Sweden and Norway: Predominantly BankID.</p>
Company	A company is also a sender. Sender is the predominant term used in regards to the e-Boks suite of products .

Term	Definition
	<p>Company/sender have own digital mailboxes in which they receive, make replies, or initiate inquiries.</p> <p>Notice that a sender or company can also act as an end user.</p>
Consent	An end user who subscribes to a registration group consents to receive messages from the registration group that belongs to a particular sender.
Content type	<p>A content type is used to categorize dispatches by type.</p> <p>Content types are related to a registration group and set up for a specific dispatch system. A content type specifies the type of messages that can be sent.</p> <p><b>Examples</b></p> <p>Pay slip, annual report, mortgage, etc.</p>
CPR	<p>This is the Danish unique ID for private citizens. (Centrale Personregister).</p> <p>The Danish format is DDMMYY-####, and where the last four digits are unique for the person. The last digit must be an even number for female and an odd number for male.</p> <p>The term <b>SSN</b> (social security number) applies in all English versions.</p> <p>In Norway, the terms is <b>fødselsnummer</b>.</p> <p>In Sweden, the term is <b>personnummer</b>.</p>
D	
Delegates/third-party access/access holder	<p>End users can give other end users access to view messages in their digital mailbox. This group of people is referred to as delegates, access holders, or third-party access. This requires that the access giving end user provides the delegate with a password to gain access. A delegate cannot respond to or forward messages to which they have been granted access.</p>
Dispatch	<p>When a sender wants to send a message to an end user, this is done using this resource. The dispatch must have a specific content type. Dispatches can be planned, deferred, and canceled.</p> <p><b>Example:</b></p> <p>A pay slip (content type) sent from a sender's dispatch system.</p>
Dispatch system	<p>A system that allows a sender to dispatch digital messages to end users.</p> <p>The dispatch system is set up by e-Boks using the internal configuration tool Admin program. There are various distribution channels, such as REST.</p>
Dialog thread	When a message is sent back and forth between a sender and an end user, the end user can view all the messages included in the dialog in an overview (both the sent messages and the replies). The information that links the messages is called the dialog thread.
Digital mailbox	Private individuals and companies can get access to a digital mailbox in e-Boks, given

Term	Definition
	that they have accepted the terms of use are accepted. End users and senders can receive messages and documents, make replies, etc., from within the mailbox.
Document	<p>A file that can be attached to a message.</p> <p>The document format can example be PDF, DOCX, ODF, GIF, JPG, or equivalent. The end user moreover has the option to upload own files to the mailbox.</p>
E	
e-Boks status	Indicates whether an end user has accepted the e-Boks terms of use and thereby has status as an e-Boks user.
End user	<p>Citizen or company who receive dispatches. An individual is identified by a Social Security Number - SSN (CPR in Denmark). A company is identified by a CVR number (Centrale virksomhedsregister) in Denmark. This is a list of all registered companies in Denmark) number in Denmark. Not supported in Norway or Sweden.</p> <p>An end user must accept the terms of use for digital mail. The user who sends and receives mail (this can be a sender and an end user) is classified by the e-Boks external interfaces (such as REST API) and data model. The end user has a digital mailbox. This is not necessary for a sender.</p>
End user interface	<p>The web interface that end users use to log on and access own messages in e-Bokss.</p> <p>The access may also take place via a portal solution provided by e-Boks.</p>
F	
Form	It is possible to link a form to a mailbox and/or a subject. End users can initiate and respond to queries via forms that are sent as structured responses. The forms display in the supported languages. End user can be requested to upload any files associated with the completion of the form.
I	
IDRights	This is an interface provided by Danish Nets. The IDRights feature offers validation regarding whether there is a sufficient number of signers has signed a particular document, and hereby making it legal.
iFrame	<p>This refers to the Portal solution. See <a href="#">Portal</a>.</p> <p>Sender can implement a portal solution on own website either from a new page or by implementing the e-Boks Portal solution in an iFrame.</p> <p>An iFrame is used to present a website within a website. e-Boks will provide assistance during this process. The mandatory protocol is HTTPS.</p>
Inbox	Each digital mailbox has an inbox as a repository for messages. The end user can define rules for moving messages to other archive folders.
Interim repository	This is a repository for documents that sit there for a short term of period before it either gets accepted by the end user or it becomes obsolete and will be deleted.

Term	Definition
	<p>The setting is configured by e-Boks.</p> <p>When a sender submits a document to the Interim repository, users who have registered with the sender will receive the document directly in the Inbox in e-Boks.</p> <p>For users who have not registered to the sender, the document will be placed in the Interim repository. At log-on, the user will be presented with a text indicating that the particular sender has a document for delivery. When the user accepts to receive the document, the user automatically registers with the sender.</p>
M	
Mailbox	<p>Sender can have multiple mailboxes. End user can then contact sender via these mailboxes. Mailboxes can be set up in a hierarchical structure. A mailbox can have one or more connected subjects. A message can be replied to if it has specified a response mailbox which is a reference to a mailbox. Mailboxes can have mailbox metadata.</p>
Mailbox folder	<p>Mailboxes can be grouped applying mailbox folders. A mailbox folder can have underlying mailbox folders. The overall structure is called the contact hierarchy.</p>
Mandatory registration group	<p>Messages initiated by an end user can contain mailbox metadata if this has been specified for the subject being sent to. Mailbox metadata is set up for the individual subject and is used to link specific information to messages. This can either be hidden fields with fixed values, or non-hidden fields. The non-hidden values are entered by the end user and the hidden values is fixed text that is defined during the set up of the subject.</p>
Message	<p>A message may contain 0 or multiple attachments (stand-alone or general). A message can contain confidential and personal information. If a message specifies a response mailbox, it is possible to respond to the message. Messages can be forwarded to another mailbox. End users can for example forward to their private email addresses.</p>
Message ID	<p>Dispatches become messages once they are sent. Both types are identified via the same message ID. This ID can be generated by a sender and must then be unique within the relevant dispatch system. The ID is then used to match receipts for a dispatch and possibly to recall the dispatch or change the dispatch time.</p>
Metadata	<p>Messages can include information that describes the actual message. There are a few types of metadata:</p> <ul style="list-style-type: none"> <li>• Sender metadata</li> <li>• Mailbox metadata</li> </ul>
N	
Notification	<p>Notifications are events or incidents that are presented to the end user once they have logged on. Among others, these include the following: email could not be sent to the specified email address, inquiry to a mailbox could not be delivered.</p>
O	
OCES	<p>Public Certificates for Electronic Service. Private individuals can be issued with a personal certificate that can, for example, be used as a digital signature. Companies can be</p>

Term	Definition
	issued with a company certificate that can be used as a digital signature and for verification of the client's identity in the case of system-to-system communication. Employees in a company can be issued with an employee certificate. Companies can also be issued with function-specific certificates, which are used specifically for verification of the client's identity in case of a system-to-system communication.
Operation	An operation (or a call) indicates an action that can be performed on a resource. In the REST interfaces, operation is a key term.
P	
P number	<p>Other than a company business registry number (CVR in Danish), a sender is also assigned a P number (production unit number) for each physical location the company operates from.</p> <p>This number can be used to address the message via the attention.xml file when the recipient is a business user.</p>
Portal	The portal system is set up with the assistance of e-Boks. A portal solution allows system-to-system integration whereby end user registrations and messages can be retrieved. It is designed to handle the situation when an end user is logged on. A portal can only see messages from the sender. Portal integration requires that information (transferred as input data) regarding the end user on whose behalf the call is made.
Profile settings	Information about an end user. Includes name, email, and mobile number. Profile settings are linked to an end user's digital mailbox.
R	
Recalls	A dispatch can be added an effective date at which the message must be accessible to the end user. It is possible to recall the message provided the effective date has not occurred. If the dispatch is to be delivered to several recipients, the dispatch will be recalled for all recipients.
Receipt list	For a batch dispatch each dispatch is processed asynchronously. A receipt for the progress of the dispatch can then be obtained via receipt lists.
Registration group level	End user registrations are stated as the specific registrations for a registration group for which the end user is registered to receive mail and documents.
Registration	The end user must register with registration groups to receive mail from a specific sender.
Registration group	<p>An end user registers for registration groups. A registration group contains one or more content types. See content type.</p> <p>A registration group contains a description for the end user that explains what is received upon registration. All content types associated with a registration group must be of the same type.</p>
Registration list	This is a list of registrations, each of which shows that a specific end user is registered for a specific content type or registration group. These are used in connection with a

Term	Definition
	batch dispatch.
Resource	Resources are key concepts in REST APIs.  They have several characteristics (fields) of which some are readable, some can be used during the creation process and others can be updated. Resources contain references to each other.
Response subject	The subject of a message. Hidden metadata can be set up for the subject. The hidden metadata will be added for a response.
REST int.	The international REST service owned and controlled by e-Boks. This is used by private companies (such as Danske Bank, Nordea, etc.).
Retrieval system	A sender (company, local or public authority) can be set up to receive mail in a digital mailbox via data services.  This requires the setup of a retrieval system.
RID	This is the OCES designation used in employee certificates.  The RID uniquely identifies an employee in a company or authority. Together, the CVR number (that is, the company ID) and RID identify the certificate.
Role	An end user or other users are added specific roles that entail a given function with given end user rights. A function can for example be mail distributor and administrator. Each role is assigned a set of end user rights.
Role handling	Summarized role handling can be in one of the following states: <ul style="list-style-type: none"> <li>• Inactivated There is only one role in the mailbox.</li> <li>• Standard Role handling has been activated and standard functionality is used. The user can create multiple user profiles from a given set of possible roles.</li> <li>• Extended Role handling has been activated and advanced functionality is selected. In this situation, the set of possible roles is extended.</li> </ul>
S	
Sender	A sender can be any entity such as a company, or a public or local authority. The main objective for sender is to service many end users in as few and efficient processes as possible. A sender can be connected to one or more dispatch systems. A sender has profile settings describe the sender of a particular message and how they can be contacted.
Sender metadata	Information that sender wants to include in a dispatch. This information is included in any response. Sender metadata is included in dispatches and messages as an attachment and it will only be available to the sender.

Term	Definition
Several recipients	This is an option to deliver one dispatch to several end users. All end users must subscribe to the dispatch to be accepted.
Signature verification	Signature verification is metadata for messages received by companies. The signature verification contains information about the end user who sent the message. This information comes from the certificate the end user applied to log on. The signature verification also contains information on the origin of the message attachments. If the attachments originate from a sender, then the sender will be specified. If the end user has uploaded the attachment, or it originates from elsewhere, the information regarding origin of the attachment is not included as it is not known. This makes it possible for an employee with a sender to differentiate between attachments from an end user and attachments forwarded from other senders.
Single dispatch	A dispatch to one or several end users containing only one message. If necessary, including attached documents. Single dispatches are ad hoc messages delivered almost instantly.
SSO	<p>Single Sign On (SSO) is a special cross-domain authentication and authorization scenario, where the user logs on with credentials only once AND has access to different website domains without having to log on again.</p> <p>If the user has signed in with SSO, the user must also sign out using SSO.</p>
SSN	This is the unique ID for private citizens. See <a href="#">CPR</a> .
Subject	A mailbox that is used by end user to contact sender can have one or more associated subjects. These subjects are defined with the assistance of e-Boks at the time of creating the mailbox. Subjects are used to qualify inquiries from end users. A subject can have associated mailbox metadata.
System rights	<p>System rights specify which functions the individual type of system can perform. The four types of system rights are as follows:</p> <ul style="list-style-type: none"> <li>• Dispatch system</li> <li>• Register</li> <li>• Retrieval system</li> <li>• Portal</li> </ul> <p>The system rights can, for example, authorize a sender to retrieve mail via a retrieval system.</p>
T	
Terms of use	Before end users can get access to the digital mailbox, they must accept the e-Boks Terms of use when logging on for the first time. This action grants rights for the end user to exchange information with a sender. Upon consent sender can add an end user to a specific registration group.
V/W	
Value date	The time when the message becomes accessible to the end user. Sender can recall the

Term	Definition
	message within the specified airframe for the delivery of the message, provided the effective date has not been reached.
X	
XML documents	<b>sagdokument.xml</b>  This is an attachment to a message that can add value to the message in the form of structured information. If the recipient has defined automatic forwarding to an email address or retrieves mail via system calls, this information can be accessed and processed automatically by the recipient.
	<b>attention.xml</b>  This is an attachment a message, which corresponds to the entry filed: "Attention: [name]" or "To whom it may concern" in standard paper: General terms of use.

## Appendix section

**Add on e-Boks solutions** ..... **32**

## Add on e-Boks solutions

Add-on solution	Description
Secure distribution	<p>e-Boks offers a unique, cost-effective and secure digital distribution channel. e-Boks also archives all important documents in one place and hereby helps end users getting the big picture of key information in e-Boks.</p> <p>e-Boks features three types of user registrations (onboarding).</p> <div style="border-left: 2px solid red; padding-left: 10px; background-color: #f0f0f0; margin: 10px 0;"> <p><b>The document processing in e-Boks is always based on SSN (social security number), company registration ID (such as CVR), or any end user specific ID.</b></p> </div> <ul style="list-style-type: none"> <li>• Standard registration           <p>End user can subscribe to any available sender services in e-Boks. The delivery is done based on the end user's ID (such as social security number or company registration number).</p> </li> <li>• Alias registration           <p>Sender supplies documents to end users based on sender's own unique ID, such as a customer number. This type of registration requires that the end user subscribes to sender's documents in e-Boks by stating the customer specific ID and a verification key. This information is usually provided by sender on an invoice or similar type of document.</p> </li> <li>• Sender controlled registration           <p>Sender and end user can make an agreement to deliver documents in e-Boks. This type of registrations can for example include employment contracts or terms and conditions for the use of a specific service. The documents can then be delivered in e-Boks without the end user first having to make the registration.</p> </li> </ul>
Secure dialog	<p>The <b>e-Boks Secure dialog</b> solution provides sender with the option to establish confidential, reliable, and secure communication between sender and end user.</p> <p>The Secure dialog solution for the integrated portal solution is based on the concept of e-Boks mailboxes. Mailboxes are defined by sender and each mailbox can be seen as an individual contact point with various attributes.</p> <p>A communication piece is any document-type or file format sent to end user from sender and vice versa. Communication both ways has the option to be visually formatted for example applying one or more of the following formatting types:</p> <ul style="list-style-type: none"> <li>• Different font (size, color, typography),font styles (bold, italic, underline)</li> <li>• Inline images</li> <li>• Indentation</li> <li>• Alignment (left, right, centre)</li> <li>• Lists (ordered, unordered)</li> <li>• Spell check</li> </ul>

Add-on solution	Description
Payment	<p>The e-Boks Payment solution offers easy and secure online payment of invoices and an option to sign up for future and recurring payments directly from e-Boks.</p> <p>The payment flow is initiated by sender (or distributor) and must include an XML file for the invoice. This file defines how the payment features are activated for the document, and the file also contains the necessary data for the user to sign up for future and recurring (automatic) payments, if required.</p> <p>When the invoice has been delivered in e-Boks, the notification service is activated, and the recipient will receive reminders about the liability to pay the invoice before the due date.</p> <p>At this point in the process, the recipient (end user) can initiate the payment of the invoice, and will in that case be shown the available payment methods defined by sender.</p>
Portal	<p>The e-Boks Portal solution provides an integrated platform for digitizing costly and time-consuming manual processes.</p> <p>The solution provides support for the following actions:</p> <ul style="list-style-type: none"> <li>• Sender specific documents</li> <li>• Digital signing of documents</li> <li>• Sending advanced notifications</li> <li>• Secure dialog between sender and end user</li> </ul> <p>To a sender the portal solution is an attractive option for digital delivery of end user documents.</p> <p>There are many benefits for the end users – among others, there is easy access to documents whenever and wherever they want, and regardless of how they access the document, be it from a computer, a mobile phone, or a tablet,</p>
Digital Signing	<p>The e-Boks Digital Signing solution ensures an efficient and speedy communication flow between the contracting parties.</p> <p>The opportunities for signing documents digitally directly in the Integrated portal solution (or e-Boks) are numerous.</p> <p>These are merely some of the options where digital signing can apply:</p> <ul style="list-style-type: none"> <li>• Loan agreements</li> <li>• Supplier agreements</li> <li>• Employment contracts</li> <li>• Leasing contracts</li> <li>• etc.</li> </ul>
BI (Business Intelligence)	<p>The e-Boks BI (Business Intelligence) is a tool that contributes to improving the statistical knowledge level of the end user behavior and subsequently the com-</p>

Add-on solution	Description
	<p>munication processes between sender and end user. Notice that sender has only access to data for own shipments and recipients.</p> <p>The BI (Business Intelligence) solution basically consists of these two items:</p> <ul style="list-style-type: none"> <li>• Data from e-Boks and/or the Portal solution</li> <li>• External interface to display data</li> </ul> <p>Sender can combine the data from a number of predefined reports and configure the display of data in a dashboard.</p> <p>The BI (Business Intelligence) comes with the following components:</p> <p>Start package</p> <ul style="list-style-type: none"> <li>• Access to data via Microsoft Power BI</li> <li>• Review of the sender specific needs in relation to knowledge and reporting</li> <li>• Workshop with relevant sender participants to test the tool based on sender's own data</li> </ul> <p>Subscription types</p> <ul style="list-style-type: none"> <li>• Subscription type 1 - e-Boks BI Basic (target group: small sized senders)</li> <li>• Subscription type 2 - e-Boks BI Gold (target group: sender needs / volume)</li> <li>• Subscription type 3 - e-Boks BI Gold Enterprise (target group: the largest senders)</li> </ul>