

e-Boks

APIs

Appendix A3 – REST enXML –  
Retrieval system

Version 3.0.4

## Table of contents

A3.1	Introduction .....	4
A3.1.1	References to other documentation .....	4
A3.2	Overview of function area .....	5
A3.2.1	Delivery form: Push .....	5
A3.2.2	Set up of service for retrieval system .....	5
A3.2.3	Resource overview .....	6
A3.2	Resources .....	7
A3.2.1	Message .....	7
A3.2.2	UserCredentials .....	8
A3.2.3	Content .....	8
A3.2.4	MailboxMetadata .....	9
A3.2.5	AttachmentList .....	9
A3.2.6	Attachment .....	9
A3.2.7	Metadata .....	10
A3.1	Notifications .....	10
A3.1.1	Order Signed .....	11
A3.1.2	Order Rejected .....	12
A3.1.3	Order About To Expire .....	12
A3.1.4	Order Expired .....	13
A3.1.5	Order Canceled .....	13
A3.1.6	Employee Signed .....	13
A3.1.6.1	Denmark .....	14
A3.1.6.2	Sweden .....	14
A3.1.6.3	Norway .....	15
A3.1.7	Legal Entity Rejected .....	16
A3.1.8	Legal Entity Signed .....	16
A3.1.9	Verification Failed .....	17
A3.1.10	PAdES Generated .....	17
A3.1.11	OrderFinalized .....	17

## Version history

Version	Published date	Changes
3.0.4	August 2017	<ul style="list-style-type: none"> <li>Added country specific ID tags for Employee Signed.</li> </ul>
3.0.3	May 2017	<ul style="list-style-type: none"> <li>Completed a review to update with new information and correct terminology and concepts.</li> </ul>
3.0.2		<ul style="list-style-type: none"> <li>Changes in version 3:               <ul style="list-style-type: none"> <li>Notification UserSigned renamed to LegalEntitySigned</li> <li>Notification user rejected renamed to LegalEntityRejected</li> <li>Notification Verification failed added.</li> <li>Notification PadesGenerated added.</li> </ul> </li> </ul>
3.0.1		<ul style="list-style-type: none"> <li>Message.UserCredentials added</li> <li>Resource UserCredentials added</li> </ul>
3.0		<ul style="list-style-type: none"> <li>Support for two-way communication added</li> </ul>
2.1		<ul style="list-style-type: none"> <li>New notification Order signed awaits SDO</li> <li>Notification UserSigned renamed to LegalEntitySigned.</li> </ul>
0.1		<ul style="list-style-type: none"> <li>Created from Danish document version 6.3</li> <li>Changed all Authority references to e-Boks</li> <li>Added chapter on push notifications</li> </ul>

## A3.1 Introduction

This document describes e-Boks REST API for the function area relating to a retrieval system. The document is aimed at developers and architects who need to integrate a retrieval system to their own solution.

### A3.1.1 References to other documentation

The REST API consists of the function areas explained in the following documents:

- **Appendix A1 – REST enXml – Dispatch system.** A customer can use a dispatch system to send *messages* to *end users*.
- **Appendix A4 – REST enXml – Portal system.** A customer can use a portal system to embed functionality from e-Boks into sender portals. The API can be used to fetch number of unread messages from an end user logged on to the sender portal.
- **HTTP return codes and error codes** describes the general use of HTTP return codes for the REST API and the specific error codes. See the document e-Boks REST API, Concepts and Reading guide.

## A3.2 Overview of function area

This function area provides the following features:

1. A customer with ongoing access via an external system to receive messages that have arrived via one or more mailboxes that are set up to be emptied via this retrieval system.
2. For messages the customer has requested to be signed, it is possible to receive notifications about signing events. It is possible to receive events in the following situations (notice this is not a complete list):
  - a. A legal entity (company or citizen) on the message has completed signing
  - b. An employee has signed
  - c. The message is signed successfully

### A3.2.1 Delivery form: Push

During the configuration of a retrieval system, the delivery form is set to **Push** and an end point is specified as requested by the customer. Each time an end user writes a new message – either initiates or replies – it will result in an xml resource of type Message that is delivered to the end point. Similarly for signing events: Each event will trigger an xml resource of type Notification that is delivered to the end point.

### A3.2.2 Set up of service for retrieval system

This document assumes that a *retrieval system* has been set up. This section briefly describes the options that must be configured to retrieve via REST.

For a customer to be able to receive *messages* from end users via REST, it is a requirement that there is at least one *mailbox*. To create a mailbox, contact the e-Boks technical support. The mailbox must be set up to empty via a retrieval system. Several mailboxes can be set up to empty via the same retrieval system.

The URL that must be called when a new message is delivered must be specified during configuration of the retrieval system. The Payload will contain the xml resource **Message**, which describes the actual message. The service must issue a receipt for this by returning the http status code 200.

#### How is delivery guaranteed? Applying the service idempotent

The delivery of a message is done using the design principle, **idempotent**. What this means is that whenever a value is applied twice, it gives the same result as if applied only once.

So, for a message delivery sent to the specified URL where the service that the URL points to receives the message, but the delivery is unsuccessful (that is, the return response is not returned due to technical problems), the message will be re-delivered to the service until a positive return response is received. In this situation where the message is already received, it is crucial that the service returns with a confirmation of receipt (http status code 200).

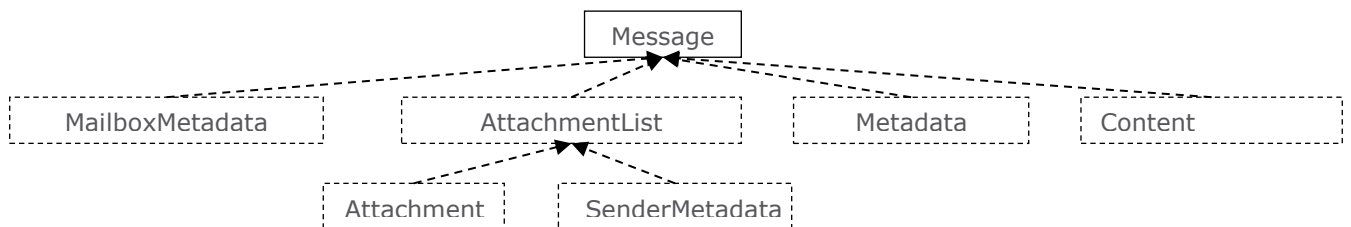
## What happens if the message cannot be delivered?

If for some reason the service that the URL points to does not respond, for example due to a service window, the following remedying activities will take effect:

1. On Day 1. Attempts will be made to deliver the message at frequent intervals (high frequency).
2. From Day 2 and up to, and including, Day 30, an attempt will be made to re-deliver the message once a day.
3. Day 31. Delivery is abandoned.

### A3.2.3 Resource overview

The following resources and types are used with regards to a retrieval system.



- **Message**  
Contains information on a message, including the sender, title, time of receipt, the actual binary content as well as attachments and their content.
- **AttachmentList**  
Describes a list of *attachments*.
- **Attachment**  
Describes an attachment, including the title, format, and a reference to the binary content.
- **Metadata**  
Contains *metadata* used by the sender to automate the routing of the message.
- **MailboxMetadata**  
Includes the metadata, if any, the end user has completed regarding the inquiry. This metadata is defined in the *mailbox* that is set up by e-Boks.
- **Content**  
Contains the content of the document base 64 encoded in base 64.

## A3.2 Resources

All resources for the function area are documented below. Each resource has a corresponding XSD schema with the same name.

### A3.2.1 Message

Message		RESOURCE
<i>Purpose</i>	The resource contains information on a <i>message</i> including <i>documents</i> .	
R	MessageURL	Reference to the message. Relevant when sender wants e-Boks to store a copy of the message. This is an additional service that can be requested at e-Boks.
R	UserCredentials	Holds information about the end user who sends the message.
R	Type	<i>Message</i>   <i>Receipt</i>  The sender can request receipt confirmation. The confirmation will be returned as type <i>receipt</i> .
R	CorelatedMessageId	During replies, the message that is replied will be referenced here.
R	Title	Title of the message/Name of the document when the user has uploaded a file.
R	Content	The actual binary content of the message encoded in the Base64 format.  If MessageType = "receipt" this field will contain a standard text, which indicates that this message is a receipt.  See the resource <b>Content</b> for details.
R	SizeInBytes	The size of the content of the message in kilobytes before Base64 encoding.
R	ReceivedDateTime	Time of receipt.  If MessageType = "receipt" this field will contain the time of the end user's acceptance.
R	NoOfAttachments	Number of attachments.
R	AttachmentList	List of attachments.

R	MailboxMetadata	Specifies the mailbox used, subject, and it contains a list of metadata from the subject.
---	-----------------	---

### A3.2.2 UserCredentials

UserCredentials		TYPE
<i>Purpose</i>	An end user can send messages via the mailboxes. The end user must be logged on to e-Boks to send to a mailbox. This type contains information about the end user who sends the message.	
R	MessageSender	Specifies the end user who sent the message.
R	CertificateIssuer	The issuer of the certificate used when the end user logged on. This field is not completed since the information is currently not available.
R	CertificateOrganisation	If the message was sent by a company (as end user), the name of the organization will appear here when available in the certificate during log on.
R	CertificateSubjectSerialNumber	The specific ID of the certificate – that is the SubjectSerialNumber.
R	SenderRegistrationId	If the message was sent by a company (as end user), the official organization number (such as CBR) will appear here as it is described in the certificate.

### A3.2.3 Content

Content		RESOURCE
<i>Purpose</i>	The resource describes a document file.	
R	DataURL	Reference to the data. Relevant when the sender has requested an additional service at e-Boks to store a copy.
R	Data	The binary content of the message with Base64 encoding.
R	FileExtension	The file extension of the file, such as PDF.
R	Encoding	Encoding of data



### A3.2.4 MailboxMetadata

MailboxMetadata		TYPE
<i>Purpose</i>	The type contains metadata from a mailbox for a message. Regarding form responses, this resource will contain a list of fields and values.	
<i>Contains a list of elements consisting of the two fields below and a list of metadata keys/value sets.</i>		
R	MailboxId	Specifies the mailbox.
R	MailboxSubjectId	Specifies the subject.
<i>Metadata, as a list of keys/value sets. (MailboxMetadataList)</i>		
R	MailboxMetadataKey	The key
R	MailboxMetadataValue	The value

### A3.2.5 AttachmentList

AttachmentList		TYPE
<i>Purpose</i>	The type contains a list of information on attached documents or appendices.	
<i>Contains a list of the type Attachment.</i>		

### A3.2.6 Attachment

Attachment		TYPE
<i>Purpose</i>	The type contains information on an attachment, including a reference to the actual content, that is a document or appendix.	
<i>Authenticity on forwarding</i>	The fields 'Origin...' specifies the origin of the attachment.	
R	Name	The name of the document.
R	Content	See resource <b>Content</b> for details.
R	SizeInBytes	The size of the file in kilobytes before Base64 encoding.
R	OriginSenderName	Specifies the sender that originally sent the message. The field specifies the authenticity of the attachment.

R	OriginReceivedDateTime	If the field <b>OriginSenderName</b> is completed, the time at which the end user originally received the attachment will display.
R	OriginSenderRegistrationId	If the field <b>OriginSenderName</b> is completed, the time at which the end user originally received the attachment will display.
R	OriginCustomerId	e-Boks customer number of original sender.

### A3.2.7 Metadata

Metadata		TYPE
<i>Purpose</i>	The type contains FESD-specific metadata fields.	
<i>Comment</i>	The fields in this type are part of the available FESD standard.	
C	DocumentId	Identifies a document.
C	ActorId	Identifies the participant.
C	CaseId	Identifies the case.
C	CategoryId	Classification of the case.

### A3.1 Notifications

Notifications are relevant only for senders who have this configured.

Notifications are sent whenever an event occurs for a sign order. This is a list of the events that trigger a notification:

- Order signed
- Order rejected
- Order about to expire
- Order expired
- Order canceled
- Employee signed
- Legal entity rejected
- Legal entity signed
- Verification failed
- PadesGenerated

All notifications contain the messageID of the sign order, the time at which the notification was sent, and the notification type. All notifications moreover have a Time field to define a time stamp.

The events that trigger notifications are explained in the following. Some of the notifications will contain additional information depending on type.

The receiver of the notifications must acknowledge the receipt by returning the http status-code **200 OK**. The receiver must also be able to handle the same notification being sent more than once.

### A3.1.1 Order Signed

The Order Signed notification is sent when a sign order is complete and has been signed by all recipients. The Signed Data Object (SDO) is returned along with the notification. The SDO is a legally binding document. It is an XML file that contains the proof of signatures. The Time field contains the time at which the sign order was completed. If verification was requested the notification will inform about the type of verification that was requested. Possible values are as follows:

- **None.** No verification has been performed.
- **LoggedOnMustMatchSigner.** It was successfully verified that the users who logged on and initiated signing were the same who performed the actual signing.
- **ID-Rights.** (Currently only available in Norway and Sweden) In this case the ID-Rights register is used for verification of each corporate legal entity in the signing order. It has successfully been verified that the actual signers as stated in the SDO have power of attorney to sign for the legal entity.

```
<?xml version="1.0" encoding="utf-8" ?>
<Notification xmlns="urn:eboks:en:3.0.0">
  <MessageID>000966201208211102541093</MessageID>
  <NotificationTime>2012-07-13T21:49:57</NotificationTime>
  <NotificationType>OrderSigned</NotificationType>
  <VerificationMethod>idRights</VerificationMethod>
  <Time>2012-07-13T21:00:00</Time>
  <SDOlist>...</SDOlist>
</Notification>
```

### A3.1.2 Order Rejected

The Order Rejected notification is sent when a sign order has been rejected by a recipient. The reason for the rejection is returned along with the SDO of any recipient(s) who may already have signed the order. Information about the recipient who rejected the sign order, is returned in the DispatchRecipientList. The Time field contains the time at which the order was rejected.

```
<?xml version="1.0" encoding="utf-8" ?>
<Notification xmlns="urn:eboks:en:3.0.0">
  <MessageID>000966201208211102541093</MessageID>
  <NotificationTime>2012-07-13T21:49:57</NotificationTime>
  <NotificationType>OrderRejected</NotificationType>
  <Time>2012-07-13T21:00:00</Time>
  <SDOlist>...</SDOlist>
  <RejectionReason>Lorem ipsum dolor sit amet</RejectionReason>
  <DispatchRecipientList>
    <DispatchRecipient>
      <Id>1802640001</Id>
      <Type>P</Type>
      <Nationality>DK</Nationality>
    </DispatchRecipient>
  </DispatchRecipientList>
</Notification>
```

### A3.1.3 Order About To Expire

The Order About To Expire notification is sent when a sign order is about to expire within a given period. A list of recipients who have not signed is contained in DispatchRecipientList. The Time field contains the expiry date of the sign order.

```
<?xml version="1.0" encoding="utf-8" ?>
<Notification xmlns="urn:eboks:en:3.0.0">
  <MessageID>000966201208211102541093</MessageID>
  <NotificationTime>2012-07-13T21:49:57</NotificationTime>
  <NotificationType>OrderAboutToExpire</NotificationType>
  <Time>2012-07-13T21:00:00</Time>
  <DispatchRecipientList>
    <DispatchRecipient>
      <Id>1802640001</Id>
      <Type>P</Type>
      <Nationality>DK</Nationality>
    </DispatchRecipient>
  </DispatchRecipientList>
</Notification>
```

### A3.1.4 Order Expired

The Order Expired notification is sent when a sign order has expired. The Time field contains the expiry date of the sign order. The notification will contain the SDO of any recipient who signed the order before it expired.

```
<?xml version="1.0" encoding="utf-8" ?>
<Notification xmlns="urn:eboks:en:3.0.0">
  <MessageID>000966201208211102541093</MessageID>
  <NotificationTime>2012-07-13T21:49:57</NotificationTime>
  <NotificationType>OrderExpired</NotificationType>
  <Time>2012-07-13T21:00:00</Time>
  <SDOlist>...</SDOlist>
</Notification>
```

### A3.1.5 Order Canceled

The Order Canceled notification is sent when a sign order is canceled by the dispatcher. The Time field contains the time at which the order was canceled. The notification will contain the SDO of any recipient who signed the order before it was canceled.

```
<?xml version="1.0" encoding="utf-8" ?>
<Notification xmlns="urn:eboks:en:3.0.0">
  <MessageID>000966201208211102541093</MessageID>
  <NotificationTime>2012-07-13T21:49:57</NotificationTime>
  <NotificationType>OrderCanceled</NotificationType>
  <Time>2012-07-13T21:00:00</Time>
  <SDOlist>...</SDOlist>
</Notification>
```

### A3.1.6 Employee Signed

The Employee Signed notification must be configured by e-Boks for the sender to receive it.

This notification is sent when an employee representing a company has signed an order. The Time field contains the time of signing. <DispatchRecipientList> contains information of the signer.

If multiple employees are required to sign a document, then this notification is delivered every time an employee has signed the document. When all end users have signed the document the notification Legal Entity Signed is also sent.

Notice: The ID tag must have country specific information.

Denmark	ID tag syntax: <b>CVR:RID</b> Example: <code>&lt;Id&gt;45568652:67382283&lt;/Id&gt;</code>
Sweden	ID tag syntax: <b>ORGNO:SSN:CN</b> Example: <code>&lt;Id&gt;9697771104:198712280059:Fredrik Hans Arvi Kalholm&lt;/Id&gt;</code>
Norway	ID tag syntax: <b>ORGNO:PID:SSN</b> Example: <code>&lt;Id&gt;810296372:9578-6000-4-94316:07055114131&lt;/Id&gt;</code>

### A3.1.6.1 Denmark

When Danish end users sign for a company, the ID property will contain further information in the following format: "CVR:RID" where:

- CVR is official organization number according to the Danish business registry
- RID is the employee specific number

#### Sample employee signing – Denmark

```
<?xml version="1.0" encoding="UTF-8"?>
<Notification xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="urn:eboks:en:3.0.0">
  <MessageId>001497201708151050340045</MessageId>
  <NotificationTime>2017-08-15T10:51:41.9069101+02:00</NotificationTime>
  <NotificationType>employeeSigned</NotificationType>
  <Time>2017-08-15T10:51:39</Time>
  <DispatchRecipientList>
    <DispatchRecipient>
      <Id>45568652:67382283</Id>
      <Type>V</Type>
      <Nationality>DK</Nationality>
      <Name>Arne Pontoppidan</Name>
    </DispatchRecipient>
  </DispatchRecipientList>
</Notification>
```

### A3.1.6.2 Sweden

When Swedish end users sign for a company, the ID property will contain further information in the following format: "ORGNO:SSN:CN" where:

- ORGNO is official organization number
- SSN is social security number (such as CPR in Denmark and personnummer in Sweden, no hyphen).
- CN – common name from certificate.

### Sample employee signing – Sweden

```
<?xml version="1.0" encoding="UTF-8"?>
<Notification xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="urn:eboks:en:3.0.0">
  <MessageId>001497201708151050340045</MessageId>
  <NotificationTime>2017-08-15T10:42:05.0208341+02:00</NotificationTime>
  <NotificationType>employeeSigned</NotificationType>
  <Time>2017-08-15T10:42:01</Time>
  <DispatchRecipientList>
    <DispatchRecipient>
      <Id>9697771104:198712280059:Fredrik Hans Arvi Kalholm</Id>
      <Type>V</Type>
      <Nationality>SE</Nationality>
      <Name> Fredrik Hans Arvi Kalholm</Name>
    </DispatchRecipient>
  </DispatchRecipientList>
</Notification>
```

### A3.1.6.3 Norway

When Norwegian end users sign for a company, the ID property will contain further information in the following format: "ORGNO:PID:SSN" where:

- ORGNO is official organization number
- PID is the personal ID from the end user's certificate (equal to PID in Denmark).
- SSN is social security number

### Sample employee signing – Norway

```
<?xml version="1.0" encoding="UTF-8"?>
<Notification xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="urn:eboks:en:3.0.0">
  <MessageId>001497201708151050340045</MessageId>
  <NotificationTime>2017-08-15T10:46:22.88516+02:00</NotificationTime>
  <NotificationType>employeeSigned</NotificationType>
  <Time>2017-08-15T10:46:18</Time>
  <DispatchRecipientList>
    <DispatchRecipient>
      <Id>810296372:9578-6000-4-94316:07055114131</Id>
      <Type>V</Type>
      <Nationality>NO</Nationality>
      <Name> FLAA, SIGNE</Name>
    </DispatchRecipient>
  </DispatchRecipientList>
</Notification>
```

### A3.1.7 Legal Entity Rejected

The Legal Entity Rejected notification must be configured by e-Boks for the sender to receive it.

This notification is sent when a recipient has rejected signing an order. The Time field contains the time of rejection. <DispatchRecipientList> contains information of the recipient who rejected signing the order and <RejectionReason> contains a written message explaining the reason for the rejection.

When multiple users are required to sign a document and one recipient rejects signing then the remaining users will not be able to perform signing. In addition, the notification Order Rejected is sent.

```
<?xml version="1.0" encoding="UTF-8"?>
<Notification xmlns:xs="urn:eboks:en:3.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <MessageID>000966201208211102541093</MessageID>
  <NotificationTime>2012-07-13T21:49:57</NotificationTime>
  <NotificationType>legalEntityRejected</NotificationType >
  <Time>2012-07-13T21:00:00</Time>
  <RejectionReason>Lorem ipsum dolor sit amet</RejectionReason>
  <DispatchRecipientList>
    <DispatchRecipient>
      <Id>1802640001</Id>
      <Type>P</Type>
      <Nationality>DK</Nationality>
    </DispatchRecipient>
  </DispatchRecipientList>
</Notification>
```

### A3.1.8 Legal Entity Signed

The Legal Entity signed notification must be configured by e-Boks for the sender to receive it. When the legal entity has completed the signing, this event will be sent. The actual employees who signed will be specified in the DispatchRecipient part.

This notification is sent when a recipient has signed an order. The Time field contains the time of signing. <DispatchRecipientList> contains information of the signer.

If multiple end users are required to sign a document, then this notification is delivered every time an end user has signed the document. When all end users have signed the document then the notification Order Signed is also sent.



```

<?xml version="1.0" encoding="UTF-8"?>
<Notification xmlns:xs="urn:eboks:en:3.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <MessageID>000966201208211102541093</MessageID>
  <NotificationTime>2012-07-13T21:49:57</NotificationTime>
  <NotificationType> LegalEntitySigned</NotificationType >
  <Time>2012-07-13T21:00:00</Time>
  <DispatchRecipientList>
    <DispatchRecipient>
      <Id>1802640001</Id>
      <Type>P</Type>
      <Nationality>DK</Nationality>
    </DispatchRecipient>
  </DispatchRecipientList>
</Notification>

```

### A3.1.9 Verification Failed

When verification is requested, it will be performed after the signing is finalized. If this verification fails, it will generate a verification failed notification.

```

<?xml version="1.0" encoding="utf-8" ?>
<Notification xmlns="urn:eboks:en:3.0.0">
  <MessageId>2017-01-25-08.21.18.164491</MessageId>
  <NotificationTime>2017-01-25T08:21:18.5025254+01:00</NotificationTime>
  <NotificationType>verificationFailed</NotificationType>
  <Time>2017-01-25T15:21:13.5672934+02:00</Time>
</Notification>

```

### A3.1.10 PAdES Generated

If PAdES was requested when the dispatch was delivered, sender will receive a PAdESGenerated notification after receiving the Order Signed notification. The xml based SDO will be delivered with the Order Signed notification, PAdES will be delivered separately with the PAdESGenerated notification.

```

<?xml version="1.0" encoding="utf-8" ?>
<Notification xmlns="urn:eboks:en:3.0.0">
  <MessageID>000966201208211102541093</MessageID>
  <NotificationTime>2012-07-13T21:49:57</NotificationTime>
  <NotificationType>padesGenerated</NotificationType>
  <Time>2012-07-13T21:00:00</Time>
  <SDOlist>...</SDOlist>
</Notification>

```

### A3.1.11 OrderFinalized

The signing flows at corporate entities are not known to the signing service and there is thus no indication of when the signing flow is complete. This must be defined either by a rule or by a user.

When this event occurs, the signing order is finalized and no further signing can be done.

```
<?xml version="1.0" encoding="utf-8"?>
<Notification xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="urn:eboks:en:3.0.0">
  <MessageId>2017-05-19-13.02.31.571765</MessageId>
  <NotificationTime>2017-05-19T13:03:15.8156121+02:00</NotificationTime>
  <NotificationType>orderFinalized</NotificationType>
  <Time>2012-09-27T15:21:13.5672934+02:00</Time>
</Notification>
```