

Tandvårdsstöd
Care Provider Interfaces
Send Attachment v2

IT-product

Date

Version

Send Attachment v2

2016-08-16

RevJ

Versions

| Version | Date | Changes | Name |
|---------|------------|--|---------------|
| RevA | 2011-03-28 | Signed off by journal system vendors | |
| RevB | 2012-04-23 | <ul style="list-style-type: none"> Update due to ambiguity in text regarding response from CRM to JCAPS. Updates chapters "Integration 1" and "SendAttachment Response" Updated the GetMessageResponse to reflect the .xsd, updated description on the saving to Content Manager and linking to transaction. Added section on antivirus scanning. Added MIME type field, corrected error messages Updated into Web Services Updated external and internal names | |
| RevC | 2013-03-04 | Added error message 004 | Lars Dalenius |
| RevD | 2014-10-23 | <ul style="list-style-type: none"> Changed attachment max size from 10 to 40 MB in ch. 4.1 and in error message 103 Added DICOM file type (.dcm) in ch. 6 Updated figures1 & 2 in ch. 3 Updated batch info in ch. 7 after review. Updated the attachment and reference list. Changed contact person and author. | Lars Dalenius |
| RevE | 2015-02-24 | <ul style="list-style-type: none"> Updated table 6: changed error no from 102 to 104. New table format and updated volume statistics in table 7. General updates for conformity with other contracts. Added or updated chapters "Sample xml". Removed unused integration 2 (push interface) from table in ch. 3. Signed-off | Lars Dalenius |
| RevF | 2015-10-19 | Added information för xml-validation of file name, ch 3.2 and example for XML-validation error Figure 7. | Lars Dalenius |
| RevG | 2015-12-22 | Added info for message handling in SHS, ch. 2.1 | Lars Dalenius |
| RevH | 2016-03-08 | More info for filename requirements, ch. 3.2. | Lars Dalenius |
| RevI | 2016-06-13 | <ul style="list-style-type: none"> Attribute "vendor-name" is changed to mandatory. Length of "vendor-name" is changed to char (30). Length of "product-name" is changed to char(30). Added "Complex Type" in tables for grouped elements, i.e yellow lines, since this is the type used in the xml-schema. Some restructuring of chapters for file types and anti-virus scanning. Updated statistics. Signed-off by Mohamed Osman. | Lars Dalenius |
| RevJ | 2016-08-16 | Minor change, length of filename changed from char(255) to char(100) in Table 2 and ch. 3.2. | Lars Dalenius |

Attachment- and reference list

| Number | Title, document ID, search path | Version |
|--------|---|---------|
| 1 | Solman: 009_15_I-316_SendAttachments | |
| 2 | Solman: 009_20_xml_schema_pack | |
| 3 | Grupprum Tandvårdsstöd förvaltning, typ=Systemdokument: Teknisk arkitektur Tandvårdsstöd | |

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1 Introduction

| | |
|------------|--|
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| Release | DecR 2016 |

The main information in this document is the tables which contain all parameters and their translation between XML and SAP parameters. There are some color codes used in the tables:

| Color | Description |
|-------|---|
| | Cells are changed or added in this version of the document. |
| | Parameters are removed in this version of the document. |
| | Parameter is not translated between XML and SAP. |
| | Complex Type which does not contain a single value, but several parameters. |

Table 1 Overview over colour codes used in the message parameter and translation tables.

2 Integrations

The Care Provider Interface “SendAttachment” makes use of one interface for the internal FK communication with SAP:

| No | Description |
|----|---|
| 1 | Integration used to allow the dental system to send an attachment request to SAP. |

The message request will be sent via the SHS internal queue service as a WS request from SHS to SAP-CRM. The anticipated message flow is depicted in the following diagram (SHS = FK:s Spridning och HämtningSystem):

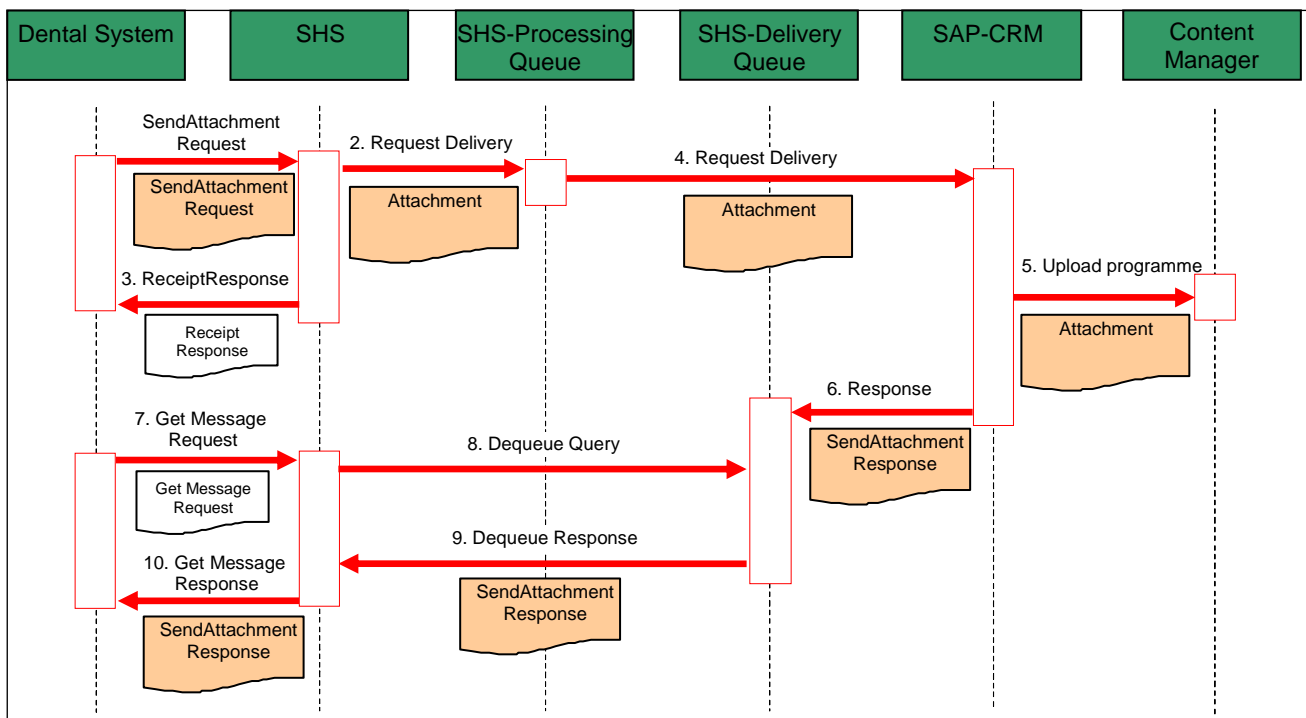


Figure 1 Sequence diagram for the SendAttachment interface

Architecturally, the messages will flow in the following manner:

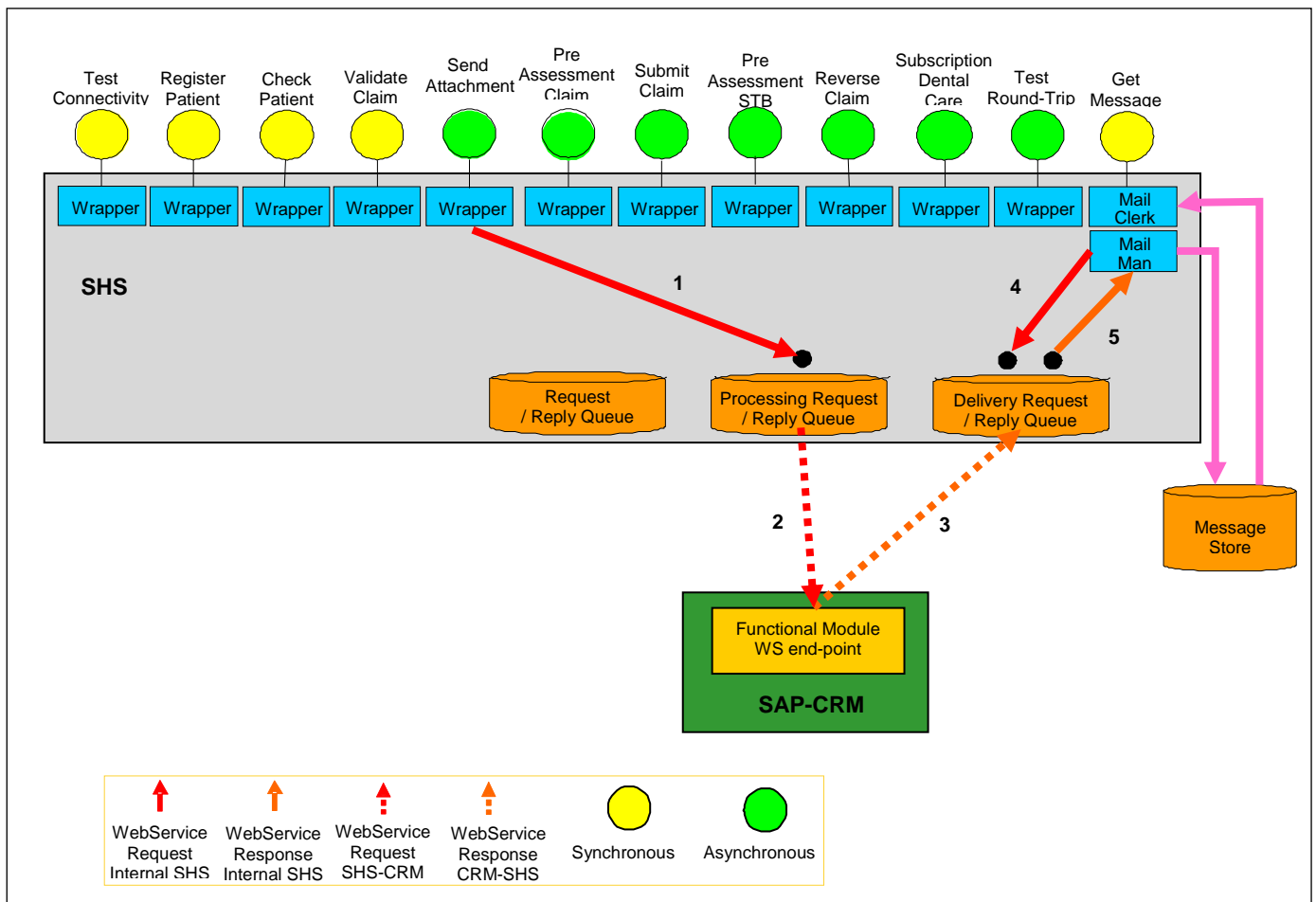


Figure 2 Architectural overview for the SendAttachment interface.

2.1 Message handling in SHS

1. If SHS fails to deliver the inbound message to SAP-CRM (Figure 1 step 4), SHS should place the inbound message back into the processing queue for later retry. An error response with error-code 004 is placed into the reply queue to be retrieved asynchronously by the dental system (**Fel! Hittar inte referenskälla.**Figure 1 step 6).

3 Integration 1

The interface is invoked by the dental system which sends a request and receives a synchronous response back. The second integration which describes the asynchronous response sent back to the dental system mailbox is described in the next chapter.

3.1 SendAttachment request

The SendAttachment request message is used as an input message to the SendAttachment interface. It contains all of the details that must be provided in order for an upload to be processed by the Försäkringskassan system.

The SAP CRM function module to call is “ZCRM_ATTACH_DOCUMENT”. Only one attachment can be attached to each SendAttachmentRequest, the maximum size of the request is 40 MB.

3.1.1 Message and translation

The following section describes how to translate the incoming request parameters and attributes from the XML message (i.e. a SendAttachment message) received at SHS into the request that must be sent to the SAP CRM system through the web service.

Any SAP parameters that are not mentioned in the table below are optional and will not need to be sent in :

| XML | | | | SAP | Transformation info | | Details | |
|------------|---------------------|----------|-----------|------------|---------------------|----------------|--|---|
| Name | Element / Attribute | Optional | Data type | Parameters | Comp. | Transformation | Description | Comments |
| request-id | Attribute | | char (36) | IRequestId | No | No | ID used to link the request with the response. | The request id is sent to SAP-CRM in order to be able to link the request with the asynchronous response. |

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| XML | | | | SAP | Transformation info | | Details | |
|-----------------------|---------------------|----------|-----------|-------------|---------------------|----------------|---|---|
| Name | Element / Attribute | Optional | Data type | Parameters | Comp. | Transformation | Description | Comments |
| shs-invoked-interface | | | char (36) | | | | Specifies the interface that is called. | This attribute may be ignored. It is not sent to SAP-CRM. |
| vendor-name | Attribute | | char (30) | | | | | This attribute is mandatory, it is used for statistics. |
| product-name | Attribute | X | char (30) | | | | | This attribute may be ignored. It is not sent to SAP-CRM. |
| version-number | Attribute | X | char (15) | | | | | This attribute may be ignored. It is not sent to SAP-CRM. |
| organization-number | Attribute | X | int (10) | IOrgNum | No | No | The organizational number of the care provider. | This XML attribute is always overwritten by SHS with the ID from the certificate. The certificate is issued with the care provider's organization number as ID. |
| user-id | Attribute | | int (12) | IUserId | No | No | User sending the request. | Used for iLogging purposes |
| clinic-id | Element | | int (8) | IClinicId | No | No | The id that the clinic has been assigned by FK. | |
| external-id | Element | | char (40) | IExternalId | No | No | The id of the claim used in the journal systems | |
| transaction-id | Element | | int(10) | ITransId | No | No | The ID of the transaction (e.g.. reimbursement visit, preassessment claim etc.) | |

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| XML | | | | SAP | Transformation info | | Details | |
|-----------|---------------------|----------|-----------|------------|---------------------|----------------|--|---|
| Name | Element / Attribute | Optional | Data type | Parameters | Comp. | Transformation | Description | Comments |
| end-flag | Element | | boolean | IEndFlag | No | No | A value true or false signalling if there are more documents to come from the journal system user for this case. | |
| filename | Element | | char(100) | IFilename | No | No | The filename of the attachment, validated against the XML-schema | See ch. 3.1.2 for filename requirements |
| mime-type | Element | | Char | IMimetype | No | No | Field added in SHS to describe which MIME type the attachment | Field is not sent from journal system, but added in SHS |
| content | Element | | binary | IContent | No | No | The content of the attachment | In the XML, this field must be formatted as a MIME part in the MTOM message |

Table 2 Overview over parameters and their translation for the SendAttachment request.

3.1.2 Sample XML

```

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:tan="http://fk.se/SHS/xsd/tanden" xmlns:xml="
http://www.w3.org/2005/05/xmlmime">
  <soapenv:Header/>
  <soapenv:Body>
    <tan:FK.TV.SendAttachmentRequest.v2
      organization-number="2021005521"
      request-id="00000001-1000-0000-0000-000000000003"
      shs-invoked-interface="Check Patient v3"
      vendor-name="FKtest"
      product-name="R4Tanden"
      version-number="V3"
      user-id="193801097506">
      <tan:external-id>9990001112002</tan:external-id>
      <tan:clinic-id>33300001</tan:clinic-id>
      <tan:transaction-id>8000016210</tan:transaction-id>
      <tan:end-flag>false</tan:end-flag>
      <tan:filename>33300001_Daganteckning
      20141201-20141231_20150210.docx</tan:filename>
      <tan:content xmlns:contentType="application/octet-stream">
      cid:115248352446</tan:content>
    </tan:FK.TV.SendAttachmentRequest.v2>
  </soapenv:Body>
</soapenv:Envelope>
    
```

Figure 3 Sample XML for a SendAttachment request

3.2 Filename requirements

Format: clinic-id_descriptive name_date.<filename extension>

The filename consists of three parts divided by ”_” (underscore) and a suffix (filename extension), eg. .xls .doc .xlsx .docx.

Max total length of the filename including filename extension = 100 char.

The attachments’s filename is validated against the XML-schema. If the naming requirements are not met, the SendAttachment request is not accepted and error 003 (Invalid XML) is returned.

The file extension is validated and if the file type is not allowed, error 104 (Felaktig filtyp) is returned. See ch. 3.3 for valid file types.

The requirements and examples are described in the following chapters.

3.2.1 clinic-id

Format: 333xxxxx, where x is replaced with the clinic's unique id.

Length = 8 digits, starting with three digits "3".

This makes it easy for FK's CaseHandler to group all files for a specific clinic by sorting files by filename.

3.2.2 descriptive name

Free text, all allowed chars for filename in Windows environment, eg. space, hyphen, underscore. Note that underscore is allowed within the descriptive name. See Table 3 for examples.

Length = 78-79 char (depending on the length of the suffix, e.g. xls alt. xlsx)

3.2.3 date

Format: YYYYMMDD

Length = 8 char.

See Table 3 for example of what date that should be used for different attachments.

3.2.4 Examples for descriptive name and corresponding date

The following table has Swedish examples since that's the language used in the Dental Care System (TandVårdsSystemet, TVS in swedish).

| Descriptive filename (example) | Date |
|---|--------------|
| Daganteckning <fromdate>-<todate> (ange vilken period daganteckningen avser, t.ex: Daganteckning 19141201-19141212) | Dagens datum |
| Karies_Föregående tandvård | Dagens datum |
| Remiss_Remissvar | Dagens datum |
| Skrivelse_Meddelande | Dagens datum |
| Anamnes | Dagens datum |
| Terapi_Behandlingsplan | Dagens datum |
| Tandstatus | Dagens datum |
| Tandteknisk följesedel | Dagens datum |
| Tandteknisk faktura | Dagens datum |
| Kostnadsförslag | Dagens datum |
| EU-kort | Dagens datum |
| Intyg | Dagens datum |
| Läkarintyg | Dagens datum |

| Descriptive filename (example) | Date |
|--------------------------------|--------------------|
| Parod_Fickstatus | Undersökningsdatum |
| Röntgen | Exponeringsdatum |
| Foto | Exponeringsdatum |

Table 3 Example for descriptive name and date

3.2.5 Example

An example for how the xml-element <filename> in a SendAttachment request can look like:

```
<filename>33300001_Daganteckning 20141201-20141231_20150210.docx</filename>
```

3.3 File types

The allowed file types are listed in the table below:

| S.No | File type |
|------|--|
| 1 | .cmp, .pcx, .pmg (DentalEye file types) |
| 2 | .jpg |
| 3 | .pdf |
| 4 | .txt |
| 5 | .doc, .docx, .ppt, .pptx, .xls, .xlsx (Microsoft office file types) |
| 6 | .html |
| 7 | .png |
| 8 | .bmp |
| 9 | .rtf |
| 10 | .odt, .ods, .odp, .odg (Open office file types) |
| 11 | .gif |
| 12 | .dcm (DICOM, medical imaging) |

Table 4 File formats allowed from journal systems

3.4 Antivirus scanning

If a document fails in the antivirus scanning, an error message will be sent. It will be error code 003 “invalid XML”. This error message will also be sent if the request does not fulfill the XML schema.

3.5 SendAttachment receipt

A receipt is sent back to the user when the request has been received correctly. The receipt does not contain any specific parameters, just the request id and organization number in order to match the response with the request.

3.5.1 Message and translation

The parameters and translation are shown in the table below:

| SAP | XML | | | | Transformation info | | Details | |
|-----------|---------------------|---------------------|----------|-----------|---------------------|----------------|--|---|
| Parameter | Name | Element / Attribute | Optional | Data type | Comp. | Transformation | Description | Comments |
| | request-id | Attribute | | char (36) | | | ID used to link the response with the request. | This value must be copied from the "request-id" message on the inbound request XML message. |
| | organization-number | Attribute | | int (10) | | | Used to place the message in the right mailbox in SHS. | This value will also be set as a JMS property. |

Table 5 Overview over the parameters and their translation for a SendAttachment receipt.

3.5.2 Sample XML

The following sample demonstrates a SendAttachment receipt returned synchronously:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <FK.TV.ReceiptResponse request-id="a4924e42-4214-ba93-af22-98739237ab08"
      organization-number="2021005521" xmlns="http://fk.se/SHS/xsd/tanden"/>
  </soapenv:Body>
</soapenv:Envelope>
```

Figure 4 Sample XML for a SendAttachment receipt

3.6 SendAttachment Response

SAP CRM will always return a synchronous response to the attachment request to SHS. This response will indicate that the attachment was successfully stored in the Content Manager. The end-user will not receive the response synchronously since a receipt was already returned in SHS but the response will be sent to the clinics mailbox in SHS inside a GetMessage container message.

3.6.1 Message and translation

The parameters and translation are shown in the table below:

| SAP | | XML | | | Transformation info | | Details | |
|------------|------------|---------------------|----------|-----------|---------------------|----------------|--|---|
| Parameter | Name | Element / Attribute | Optional | Data type | Comp. | Transformation | Description | Comments |
| ERequestId | request-id | Attribute | | char (36) | No | No | ID used to link the response with the request. | This value must be copied from the "request-id" message on the inbound request XML message. |

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| SAP | XML | | | | Transformation info | | Details | |
|-----------|---------------------|---------------------|----------|-----------|---------------------|----------------|---|---|
| Parameter | Name | Element / Attribute | Optional | Data type | Comp. | Transformation | Description | Comments |
| EStatus | | | | | | | Internal status from SAP-CRM used by SHS to determine which xml structure to use. Valid values: S=Success | If status=S, this xml structure is used. If status=E, the xml structure for error message is used, see ch. 3.7 |
| | organization-number | | | | | | The care provider's organization number | This value must be copied from the "organization-number" parameter in the inbound request XML message. |
| | clinic-id | | | | | | The SHS property end-recipient will be set to the value of clinic-id. | This value must be copied from the "organization-number" parameter in the inbound request XML message. |

Table 6 Overview over the parameters and their translation for the synchronous SendAttachment Response.

3.6.2 Sample XML

The following sample message demonstrates a typical response when the SendAttachment request was successful and the document was uploaded:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <FK.TV.GetMessageResponse request-id="00000001-1000-0000-0000-000000000100"
      organization-number="5568619612" xmlns="http://fk.se/SHS/xsd/tanden">
      <SendAttachmentResponse.v2 request-id=
        "00000001-1000-0000-0000-000000000003"/>
    </FK.TV.GetMessageResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

Figure 5 Sample XML for a successful SendAttachment response.

3.7 SendAttachment Error response

An error response is sent if there is a technical problem or if the header validation fails. Technical errors could be sent directly from the SHS, but header validation errors are sent from SAP CRM.

In situations where the inbound message from SHS is corrupted or there is an issue sending the request to SAP, SHS will generate an error response and send it to the clinic mailbox.

Error messages are sent back synchronously from SAP-CRM, but asynchronously from the dental journal systems point of view.

3.7.1 Message and translation

The parameters and translation are shown in the table below:

| SAP | XML | | | | Transformation info | | Details | |
|----------------------------------|-------------------------|-----------------------|----------|------------|---------------------|----------------|---|--|
| Parameter | Name | Element/ Attribute | Optional | Data type | Comp. | Transformation | Description | Comments |
| IRequestId | request-id | Attribute | | char (36) | | | ID used to link the response with the request. | This value must be copied from the "request-id" message on the inbound request XML message. |
| Estatus | | | | | | | Internal status from SAP-CRM used by SHS to determine which xml structure to use. Valid values: E=Error | If status=E, this xml structure is used. |
| | organization-number | Attribute | | int (10) | | | The organizational number of the care provider. | This value must be copied from the "organization-number" message from the inbound request XML message. |
| EZclaimMessage | error | Complex Type | | | | | | |
| EZclaimMessage\ EerrorNumber | error/ error-code | Element | | int (3) | No | No | The unique code for the type of error that has occurred | |
| EZclaimMessage\ EerrorMessage | error/ error-text | Element | | char (255) | No | No | The header/short description of the error | |
| EZclaimMessage\ EerrorDetail | error/ error-details | Element | X | char (255) | No | No | A more detailed description of the error. | Not used today |

Table 7 Overview over the parameters and their translation for an Error response.

3.7.2 Sample XML

The following sample message demonstrates an error response:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <FK.TV.GetMessageResponse request-id="00000001-1000-0000-0000-000000000100"
      organization-number="5568619612" xmlns="http://fk.se/SHS/xsd/tanden">
      <ErrorMessage request-id="00000001-1000-0000-0000-000000000003">
        <error>
          <error-code>203</error-code>
          <error-text>Åtgärden misslyckades - Ärendet stängt för inskick
          </error-text>
        </error>
      </ErrorMessage>
    </FK.TV.GetMessageResponse>
  </soapenv:Body>
</soapenv:Envelope>
```

Figure 6 Sample XML for a SendAttachment Error response.

The following sample message demonstrates an XML-validation error response:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
  <soapenv:Body>
    <soapenv:Fault>
      <faultcode>soapenv:Client</faultcode>
      <faultstring>Invalid XML</faultstring>
      <detail>
        <FK.TV.ErrorResponse request-id="597bdbbd-351b-4fc6-946f-3c1ac392de17"
          organization-number="2021005521" xmlns="http://fk.se/SHS/xsd/tanden">
          <error>
            <error-code>003</error-code>
            <error-text>Invalid XML</error-text>
            <error-details>cvc-pattern-valid: Value '3300001_Word-5_20150430.docx' is
              not facet-valid with respect to pattern
              '333\d{5}_.*_([1-9]\d)\d{2}(0[1-9]|1[0-2])((0|1|2)[0-9])|3[0-1])\..*' for
              type '#AnonType_filenameSendAttachmentRequest2Type'.</error-details>
          </error>
        </FK.TV.ErrorResponse>
      </detail>
    </soapenv:Fault>
  </soapenv:Body>
</soapenv:Envelope>
```

Figure 7 Sample XML for a SendAttachment XML-validation error.

3.7.3 Error Messages

| Code | Text | Source |
|------|--|--------|
| 001 | Connection Error | Any |
| 002 | Technical Error | Any |
| 003 | Invalid XML | SHS |
| 004 | Vi har just nu tekniska problem. Du ska inte skicka om din begäran utan vi kommer att hantera denna när våra problem är lösta. | SHS |
| 103 | Åtgärden misslyckades – Filer får vara högst 40 MB stora. | SHS |
| 104 | Åtgärden misslyckades - Felaktig filtyp | SHS |
| 106 | Åtgärden misslyckades - Försök igen | SHS |
| 203 | Åtgärden misslyckades - Ärendet stängt för inskick | CRM |
| 204 | Åtgärden misslyckades - Ej behörig användare | CRM |
| 205 | Åtgärden misslyckades - Felaktigt ärende ID | CRM |
| 206 | Åtgärden misslyckades - Felaktigt mottagnings-ID | CRM |

Table 8 List of possible error messages when sending a SendAttachment request.

4 Storing files to Content Manager

Attachments sent in from the journal system users will be stored in IBM Content Manager Commonstore for SAP using the ArchiveLink.

A batch job runs continuously which creates a link between the document in Content Manager and the transaction in SAP CRM.

When a clinic sends the final attachment for a specific order, the element end-flag is set to true. The status for this order is changed by a batch job that is scheduled to run every night. As a consequence the status “end-flag=true” doesn’t affect the order until the nightly batch job is run.

5 Volumes

The following data is based on the total traffic during April 2016 (30 days).

Distribution to be spread throughout the day, but likely to be more load during the workday hours. Load likely to be minor during weekends.

Received SendAttachment requests:

| per Year | per Month | per Day | per Hour | Size |
|----------|-----------|---------|----------|---------|
| 52 284 | 4 357 | 142 | 6 | ~300 kb |

Table 9 Preliminary forecast for the volumes of SendAttachment requests.