The process of machine-to-machine connection relevant to the VAT return

(eÁFA M2M system)

Nemzeti Adó- és Vámhivatal

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Terms, abbreviations

Term	Description
API	Application programming interface.
VAT Act	Act CXXVII of 2007 on Value Added Tax.
VAT analytics	In this document, VAT analytics means a statement for a given return period containing the most important data of source documents and additional individual data (e.g. tax rate, tax code) that can be used to assign voucher data to the corresponding line of the current return form.
Return draft	The XML file of return drafts prepared on the basis of tax administration and customer knowledge rules in the eÁFA interface.
Return XML	Data content produced by the NTCA during API communication that can be approved by the taxpayer as return. Following the approval, this XML legally fulfils the function of a return. The return XML can be located in the reply of queryDeclarationData, part of which are the result of validation, the head data of the return, the hash code of Data XML, the additive data of the return and Bevfeld XML.
Bevfeld XML	The XML file of the form-based return; its data content can be viewed in the General Form Filling Framework Program (ÁNYK).
CDPS	Customs declaration processing system.
Data XML	eÁFA data XML is a data structure containing the following: tax accounted for, VAT analytics, data on the current VAT return. All these data are stored in the data structure defined by the tax administration. This XML legally does not constitute a return; it is a document on which it is based. Data XML is described by the earData schema.
M2M	Machine-to-machine connection.
NTCA	National Tax and Customs Administration.
SHA-512	512-bit Secure HASH algorithm (Secure Hash Algorithm 3, RFC6234).
SHA3-512	512-bit Keccak encryption secure HASH algorithm (FIPS-202)[1]
Standard tax code	Tax code file developed by the NTCA, basically defining transaction types.
Taxpoint date	Taxation point in the VAT system: setting the date when a tax liability is incurred regarding the given transaction, or when the VAT subject exercises the right to deduct. The taxpoint date determines in which return period a given voucher falls.
Technical user	User necessary for data submission through the REST API, created by the Primary user in the system.
Management program	Programs or systems used by the taxpayer that are capable of API communication with the eÁFA M2M system. These include corporate management systems, accounting programs and any other client-side programs that facilitate or support the tax return process or provide ex-post control.
XML	eXtensible Markup Language, W3C standard (https://www.w3.org/TR/xml/).
XSD	XML Schema Definition, W3C standard https://www.w3.org/TR/xmlschema11-1/).

Document history

Date	Credit	Version	Changes
10.02.2023	CzSz	1.0	First release

[1] https://nvlpubs.nist.gov/nistpubs/FIPS/NIST.FIPS.202.pdf

INTRODUCTION

The NTCA published the XSD drafts related to the eÁFA M2M system on GitHub on 10 February 2023. This document describes the interpretation of the published data structure, the fundamental, client-side processes of the eÁFA M2M system. It constitutes the basis for the interface specification in preparation, however, it should not be considered a complete and finished interface specification.

The purpose of publishing this document is to facilitate client-side reporting of the data structure. Suggestions received until 1 March 2023 will be evaluated and utilized by the NTCA during the development processes.

Concerning the planning of client-side developments, it is important to highlight that the XSD schema of the eÁFA M2M system and the process description cannot be regarded as definitive. Based on the above, the NTCA may change parts of the operation or the schema.

Communications shared in the Online Invoice System on the GitHub forum are part of the developer support. Besides the usual documentation format, openAPI-based interactive interface documentation (Swagger) will also be provided for developer support. In addition to the above, it is also worth following the NTCA's press releases on the subject.

1 PREREQUISITES OF CLIENT-SIDE OPERATION

Both on the NTCA's and the client's side, there are several prerequisites of the eÁFA M2M system. On the NTCA's side, the maintenance and update of standard tax codes are an ongoing obligation, while on the taxpayers' side, the establishment of the connection between corporate tax codes and standard tax codes is necessary. Moreover, the management system must also be able to handle the specificities of the eÁFA M2M system on the client's side, a number of abilities must be accounted for during the management system's development.

On the NTCA's side, there are no functional requirements regarding the operation of management systems. It is up to the software developers to decide how to develop the processes and screens of management systems. The development of all API communications in the eÁFA M2M system is not a requirement. When designing the system, we identified several prerequisites on the NTCA's side that are worth evaluating on the client's and/or software developer's side. In this chapter, we draw attention to a number of issues that, based on our current knowledge, may be worth considering or are prerequisites due to the operation of the eÁFA M2M system.

1.1 The connection between the standard tax code and corporate tax code

The standard tax codes do not impose any obligation to be used in businesses' management systems. Of course, a management system can switch to the use of standard tax codes, however, it does not imply any obligation arising from the use of the system, neither is it an expectation of the tax administration.

The list of standard tax codes includes all the transactions relevant to the returns that can be derived from the VAT Act. Typically, a client's own list of tax codes is substantially shorter. Thus, in the client customisation part of the accounting program, it is worth assigning the tax codes used by the business to the standard tax codes, rather than implementing the whole list of standard tax codes into the client's system.

Assigning the tax codes used by the client to the standard tax codes when using the eÁFA M2M system is important from several aspects. Therefore, on the management system's side, the whole process should be reviewed and the assigning should be considered accordingly. Regarding the NTCA, a suitable solution is to store the table listing the corresponding tax codes in a database, however, it can also be handled at a transactional level.

The connection between client tax codes and standard tax codes should be established in such a way that one client tax code is connected exclusively to one standard tax code. Nevertheless, it is possible for one standard tax code to be connected to several client tax codes. If one client tax code is connected to several standard tax codes, major operational problems occur, which should be handled on the client's side.

The connection of tax codes can be established through the developer of the management system, but it can also be done by the user. Bear in mind that problems resulting from tax code mismatches will occur on the user's side. Whether the standard tax codes are displayed on the client's side is decided by the management program's developer or customer. For the system to operate, it is not required that the standard tax codes are displayed on the user's side. However, if any problems occur regarding the assigning of tax codes, it constitutes an unidentifiable problem on the user's side.

When corresponding the tax codes to each other, it should be remembered that the NTCA may change the standard tax codes over time. For each current taxpoint date, there is one or zero standard tax code list, which can be queried via API communication through the management program. Since the standard tax codes have temporal validity, the taxpoint date can be forward-looking as well. However, a standard tax code catalogue valid for the following tax year, for example, cannot be queried at any time before the tax year. This is why it can happen that a forward-looking query may not always have a valid standard tax code catalogue.

Handling the change of standard tax codes, if it concerns the client's corporate tax codes, is an obligation of the client. In the case of using standard tax codes that are no longer valid, no VAT return can be prepared from the data XML.

1.2 Management program

The eÁFA M2M is a complex system consisting of several types of services on the NTCA's side. However, the NTCA does not expect the client to communicate with exclusively one management program during the entirety of the return submission process. The client decides which management program to use for the queries, uploading and approval of returns. The NTCA does not validate that different management programs are involved in each communication on the client's side.

Nevertheless, the NTCA expects these management programs to identify themselves during communication, and supply the following data:

- softwareId: ID of the management program
- softwareName: name of the management program
- softwareOperation: type of operation of the management program (local program or online service)
- softwareMainVersion: main version of the management program
- softwareDevName: name of the developer of the management program
- softwareDevContact: electronic contract details of the developer of the management program
- softwareDevCountryCode: country code of the developer of the management program
- softwareDevTaxNumber: tax number of the developer of the management program

Since the NTCA allows the client to use different management programs in different operations, the above data must be provided during each communication.

The NTCA continuously monitors communication problems, the use of incorrect data structures and other anomalies. If, according to the analysis of the tax administration, the problem is linked to the program developer, not the user, the NTCA, based on the above data, will be able to precisely identify the software developer and the software concerned. Thus, the NTCA will be able to give direct feedback to developers on any errors or problems.

Due to the fact that the eÁFA is an M2M service, the NTCA may impose restrictions on management program versions that communicate substantially differently than specified in the interface specification and interfere with or hinder the operation of the system. These restrictions may also be perceived by the user.

In order to properly support the above operation, the NTCA may introduce preliminary software registration. The software registration does not require the software developer to have a Hungarian tax number. The aim of the registration is for the tax administration to create the softwareId, identify incorrectly communicating programs and support contacting the developer.

1.3 Data retention

On the NTCA's side, the retention of data uploaded through eÁFA M2M communication is restricted. On one hand, the restriction is time based, on the other hand, it is specific to the uniqueness of the head data (declarationInfo) of the return. The uniqueness of the head data is the combination of the following data:

- taxNumber: tax number of the taxpayer submitting a tax return
- declarationType: type of the return
- declarationKind: kind of the return
- declarationFrequency: return frequency
- declarationPeriodStart: start of the return period
- declarationPeriodEnd: end of the return period
- version: version number of the return

Therefore, if the same taxpayer with the same tax number specifies the same return type, kind, frequency and period in two different data XMLs, then, on one hand, the version number must be different, and on the other hand, the tax administration will only retain the data file with the newer version number, the one with the older version number will be automatically deleted.

This means that the NTCA system does not store the different statuses of the uploaded data files. If the client requires it, however, they need to make the necessary developments.

The NTCA retains the latest XML version until the return deadline, any previously uploaded versions are automatically deleted. No more than 3 days can pass between the start – manageDeclarationUpload – and end – manageDeclarationFinalize – of uploading. If the uploading has already started, but the manageDeclarationFinalizeRequest has not yet been received at the end of the 3 days, the tax administration deletes the uploaded data file(s).

After the data XML is fully uploaded (manageDeclarationFinalizeRequest operation), the NTCA ensures the retention of the uploaded data files (in the case of factoring contract attachment, data files) for a limited period of time without the approval of the return XML. The restrictions imposed by the NTCA do not concern the law-abiding taxpayers' tax return submission activity.

During the planning of client-side communication, the management programs developed by the client must take all these temporal restrictions into account. It is the tax administration's basic principle regarding data retention that only data that can be linked to returns approved by taxpayers are retained in the long term, and temporary data retention only supports the smoothness of machine-to-machine communication.

If the client submits their tax return through the eÁFA M2M connection, the VAT analytics related to the given return will be a part of it. Therefore, if, for example, in the case of a tax

administration audit, the VAT return is complete[2], the tax auditor cannot request additional data for VAT analytics as the content of the records. In addition to the VAT analysis, the auditor can still include vouchers, contracts and other documents in the evidentiary procedure.

It is important to highlight that temporary data storage by the tax administration does not mean that the NTCA assumes the taxpayer's obligation to retain VAT analytics. The taxpayer is still obliged to retain VAT analytics, which, in this case, also means the retention of data XML. Extracting the VAT analytics from data XML (extracting the vatAnalytics node) is not a requirement. The taxpayer can ensure their obligation to retain the VAT analytics by retaining the complete data XML.

The NTCA retains the data content of the uploaded and approved data XML in its own systems, however, only makes it available for download for up to 90 days on the client's side. Based on the above, the taxpayer has up to 90 days to take care of their own data XML data file (also containing the VAT analytics of the given period).

Regarding the retention of data XML, it is important to highlight that it is only possible to query it in the case of a submitted return XML. The eÁFA M2M system does not retain data XMLs that are not approved for 90 days, these will not be available for download from the NTCA's side. The tax administration will not retain data XML files on the basis of which the return XML has not been approved by the client, or has been replaced by a newer version.

During the period of 90 days, if any technical problem occurs on the taxpayer's side, or the uploaded data XML data file is lost, it can still be downloaded through the tax administration's service. The purpose of this service is to deal with specific technical problems, not to support data retention. After the 90th day, the data XML cannot be downloaded from the NTCA's side, either on a system level or on individual request, it cannot be handed over to the taxpayer.

The taxpayer's obligation to retain does not only include the data XML but also its hash code. The data XML is not a part of the return XML, however, the return XML contains the hash code of data XML. In order to build a credible connection between the return XML and data XML, it is also essential that the client retains the hash code.

1.4 Handling foreign currency

A business can decide to keep its accounts in a currency other than Hungarian Forint. Since the tax return can only be submitted in Hungarian Forint, the supporting VAT analytics can only be in HUF. The exchange from the currency of the accounting records to Hungarian Forint must comply with the legal requirements. The data structure must only contain sums in HUF, no other currency can be included.

[2] A VAT analysis is complete if every data stored in the taxpayer's management system is displayed within the vatAnalytics node (including ledger data). The VAT analytics is considered complete even in the absence of sourceDocumentType.

Based on the above, a functional requirement for the management program to exchange the sums stored in the program and required for the given VAT return to Forint. In the exchange, rounding is allowed according to the general rules of mathematics. Rounding can be done to HUF, or to one or two decimal places.

1.5 Validation

The eÁFA M2M system subjects every uploaded data XML file to technical and business validation. Processing the data XML file is an asynchronous process. The time needed for validation depends on the total size of the data file and the workload of the system, for which no preliminary limit value can be given. On the management program's side, however, one must be prepared that validation does not necessarily happen immediately or almost immediately.

The NTCA does not expect entire technical and business validations to be run on the client's side. However, it makes these validations available in the eÁFA M2M specifications. The software can use or extend the NTCA's validation logic in its own system.

1.6 XML API authentication

Taxpayers can authenticate themselves on the eÁFA machine interface using technical users created in the Online Invoice System, with corresponding authentications data, in the manner and structure defined in the NTCA's common schema.

The client can create a different user for invoice data services and VAT returns, however, it is also possible to use one technical user used in the Online Invoice System. The client decides which technical user to choose in the eÁFA M2M system.

2 THE PROCESS OF DATA XML UPLOAD AND RETURN XML APPROVAL

Uploading the data XML and approving the return XML, prepared from data XML, are fixed processes, the operations are built on each other. During the process, the operations should be invoked in the following order:

1. ManageAttachmentUpload (optional)
2. ManageDeclarationUpload
3. ManageDeclarationPartition
4. ManageDeclarationFinalize
5. QueryDeclarationData (optional but strongly recommended)
6. ManageDeclarationSubmission

2.1 Uploading attachments

If a factoring contract is attached to the return, it should be the first to be uploaded. The size of the attached file cannot exceed 100 MB. Supported extensions are PDF, JPEG and PNG.

As part of the API, a generic claimCheckStore is provided for the client, where the taxpayer can temporarily store files until their quota is reached. Storing is subject to authentication. Following a successful upload, the client receives a unique claimCheckId for each uploaded file. This ID must be included in the return XML.

If the user creates and uploads several versions of the return XML, while the factoring contract is unchanged, they can reference the claimCheckId of the previously uploaded document in the most recent version. Therefore, there is no need to upload the otherwise unchanged factoring contract for each return XML version.

There are two other restrictions regarding the uploaded attachment: no more than 12 files can be uploaded, and the tax administration retains the uploaded files for 3 days. If a file that has been uploaded is not needed anymore and must be deleted due to the 12-file restriction, it can be done with the PurgeAttachment operation. Every claimCheckId the user wishes to delete must be listed in the operation. If it is unknown, it can be queried from the system with the QueryAttachmentList operation. This operation does not only lists claimCheckIds, but also the name, extension, hash code and validity date of the uploaded file.

2.2 Compiling the data XML file

The data necessary for the data XML must be compiled on the accounting program's, management system's side. The source of these data may be the client's system database, however, it may also be the data necessary to manually compile the data XML during the VAT analytics compilation process. As a result of the process, the client program compiles a complete data XML file.

The client calculates the SHA3-512 hash value of the final data XML, then compresses the object in gzip format. Afterwards, the client – depending on whether the size of the encoded object exceeds the maximum partition size – determines how many partitions the return to be uploaded will consist of.

The NTCA can set the partition size as parameter, by default, it is 128 Mb. The maximum number of partitions is 16, meaning that the partitionCount value of manageDeclarationUploadRequest cannot exceed 16. The maximum size of data XML is 2 Gb uncompressed. Exceeding these values is prevented by validation.

As a result of the process, the following output should be provided by the client's program:

- number of data XML partitions
- parts of data XML fragmented into appropriate-sized partitions

- hash value of data XML

2.3 Uploading the data XML

Uploading the data XML is a three-step process, i.e. the client must consecutively start three types of operations. The invoking order of the operations is the same as the order of the subchapters. The upload ID of data XML is declarationUploadId, which connects the three operations.

The client can only have 1 ongoing upload process at a time. If the client made a mistake when compiling or uploading the return XML, they can start a new return upload operation. In this case, every previously uploaded and still uploading partition is deleted, and, with the new declarationUploadId, the upload can begin again.

2.3.1 ManageDeclarationUpload

First, the client invokes the general data upload launch operation of eÁFA API. In addition to the basic authentication, the following must be given in the request:

- for what kind of return is the XML uploaded (currently, it may only be VAT returns, however, the structure is generic exactly because it is open to further expansion in the future),
- how many partitions are included in the given data file (see the chapter titled Compiling the data XML file)
- the hash value of the internal content, the data XML.

As a result of a successful operation, the client receives one declarationUploadId, which can be used as reference to upload the partitions. The reply message of the operation also contains a period of validity, 3 days at the most by default. The period of validity of a declarationUploadId is 3 days, and if no manageDeclarationFinalizeRequest is sent to the given ID within this period, the eÁFA M2M system deletes the uploaded data files.

2.3.2 ManageDeclarationPartition

During the upload of the partition, a multipart REST request is distributed, one is an XML with data described by the schema, the other is a bytestream with the partition's data. During the upload, the declarationUploadId + partition number is unique. There are no restrictions concerning order during the upload, the client only has to make sure that the upload has been successful in the case of each partition.

2.3.3 ManageDeclarationFinalize

After the partitions have been uploaded, the client has to acknowledge to the server the overall success of the operation with a finalisation request. If successful, the server sends back a processing ID, the declarationProcessingId. After the processing has been completed, the

return can be submitted by referring to this ID.

If, during the processing of data XML, no error message is received, the automatization of the return submission process can later be initiated in the manageDeclarationFinalize operation. Then the value of preliminaryConfirmation is “true”, in which case, no further approval is needed. Therefore, the return XML is automatically approved without the ManageDeclarationSubmission operation, however, this option is only activated later, when the system is started, only false values are accepted.

2.4 Submission

The submission of the return can be reached via several steps from the uploaded data file. First, the tax administration’s system carries out validations as an asynchronous process, then the return can be sent for approval. As a first step, the VAT return is returned by the eÁFA system, which must be approved by a primary user. The submission of the VAT return consists of two steps: machine communication and human approval.

2.4.1 XML validation

The eÁFA system subjects the uploaded data XMLs to validation, after which one of three response messages is sent back:

- GeneralError: the return XML did not meet one of the technical validations. In this case, the return XML cannot be submitted, the business validations do not run on the XML. In the response, the system sends back the validation error code and the corresponding message, based on which the source of the error can be exactly identified. In this case, the business error and warning validations do not run. The XML file cannot be submitted as a return.
- Response error: the XML met the basic technical validations, but not the business error validations. In this case, the complete business error/warning validation runs, meaning that the validation does not stop at the first error. The XML file cannot be submitted as a return.
- Notification: the XML met the basic technical validations, but a warning type error message is received. This is also possible when there is a business error. If there is no business error, then, regardless of what kind of and how many warning error messages are received, the XML file can be submitted as a return.

The user can decide to submit the return as a result of the XML validation (if there is no error response message), or compile the next version of the XML. If a new version is generated and uploaded, the system automatically deletes the earlier version. Therefore, the previously uploaded XML file can no longer be approved or queried. The user must decide whether they approve the return through this return submission cannel until the end of the tax settlement period, or by the date set in the eÁFA M2M system.

The validation of data XML is an asynchronous process, its current status may be queried with the queryDeclarationProcessingStatus operation. The declarationProcessingId must be provided for the query. This value can be found in the ManageDeclarationFinalize response

message. If it is not known to the client, it can be queried in the queryDeclarationList operation's response message.

DeclarationStatus can have the following values:

- RECEIVED
- PROCESSING
- BEVFELD_CHECK: return processing under pre-check
- FINISHED: processing completed
- SUBMITTED: return approved
- ABORTED

During validation, the eÁFA M2M system submits data XML to technical, business and return processing (Bevfeld) validation. During business validation, for example, the system carries out an examination of the VAT analytics context: it connects the data of VAT analytics with the data of data submission, and looks for anomalies. The system also examines the return XML prepared form data XML, and checks whether, if submitted, it can be processed. Errors hindering the processing of the return constitute blocking errors in the system's logic. The eÁFA M2M system does not allow the submission of erroneous returns.

The complete result of the validation is received in the FINISHED status. If the asynchronous validation is error-free, the eÁFA M2M system compiles the VAT return XML file.

2.4.2 VAT return XML

In the eÁFA M2M system, the VAT return suitable to produce legal effect is the data content of the QueryDeclarationData operation. It is not the data file uploaded by the taxpayer that should be considered a return, but rather the XML file resulting from this operation, which consists of the following:

- Technical data: the header and result nodes are returned in the communication, however, they are not part of the VAT return.
- declarationInfo: head data of the return
- conentHash: hash code of the uploaded XML file
- declarationSchema: return schema of the uploaded file
- declarationSummary: basic summary data of the return
- BevfeldData: the base 64 binary data of the Bevfeld XML (XML that can be loaded into an ÁNYK form) generated on the basis of the uploaded XML file and the tax administration's algorithm
- originalRequestVersion: request version value of the return

When the taxpayer approves the return, they do not approve the data file they uploaded as return, but rather the content of the data file returned by the tax administration. This is why it is essential on the client's side that the user learns about the content of the

QueryDeclarationDataResponse response message, and bases their decision about the approval of the return upon its data content.

2.4.3 Approval of the VAT return XML

It is only possible to approve a VAT return XML if the processing of the data XML has been completed (is in FINISHED status) and is error-free. At this point, the VAT return's content can again be queried via the QueryDeclarationData operation. Prior to the approval of the VAT return, querying the return is not required for the system to operate.

Approving the VAT return XML consists of two steps:

1. The approval of the VAT return XML can be initiated with the ManageDeclarationSubmission operation.
2. The primary user must decide on the approval via an associated mobile application.

The tax identification code of the primary user who receives the tax administration's push notification and can decide on the approval of the return must be provided in the recipientTaxIdentificationNumber element of the ManageDeclarationSubmissionRequest operation.

The eÁFA M2M system returns the pre-approval data content of the return in the ManageDeclarationSubmissionResponse response. This data content must be displayed on the client's side, because the user decides on the approval of the return based on this data content.

The primary user will be able to decide on the approval of the return via a mobile application. In the tax administration's system, the processing of the return starts at the time of approval via the application. If approved, the two-step return approval is completed, and the processing of the return begins in the NTCA' system. In the case of a joint right of representation, an approval via the eBEV Portal is added to the process.

3 ELEMENTS OF DATA XML

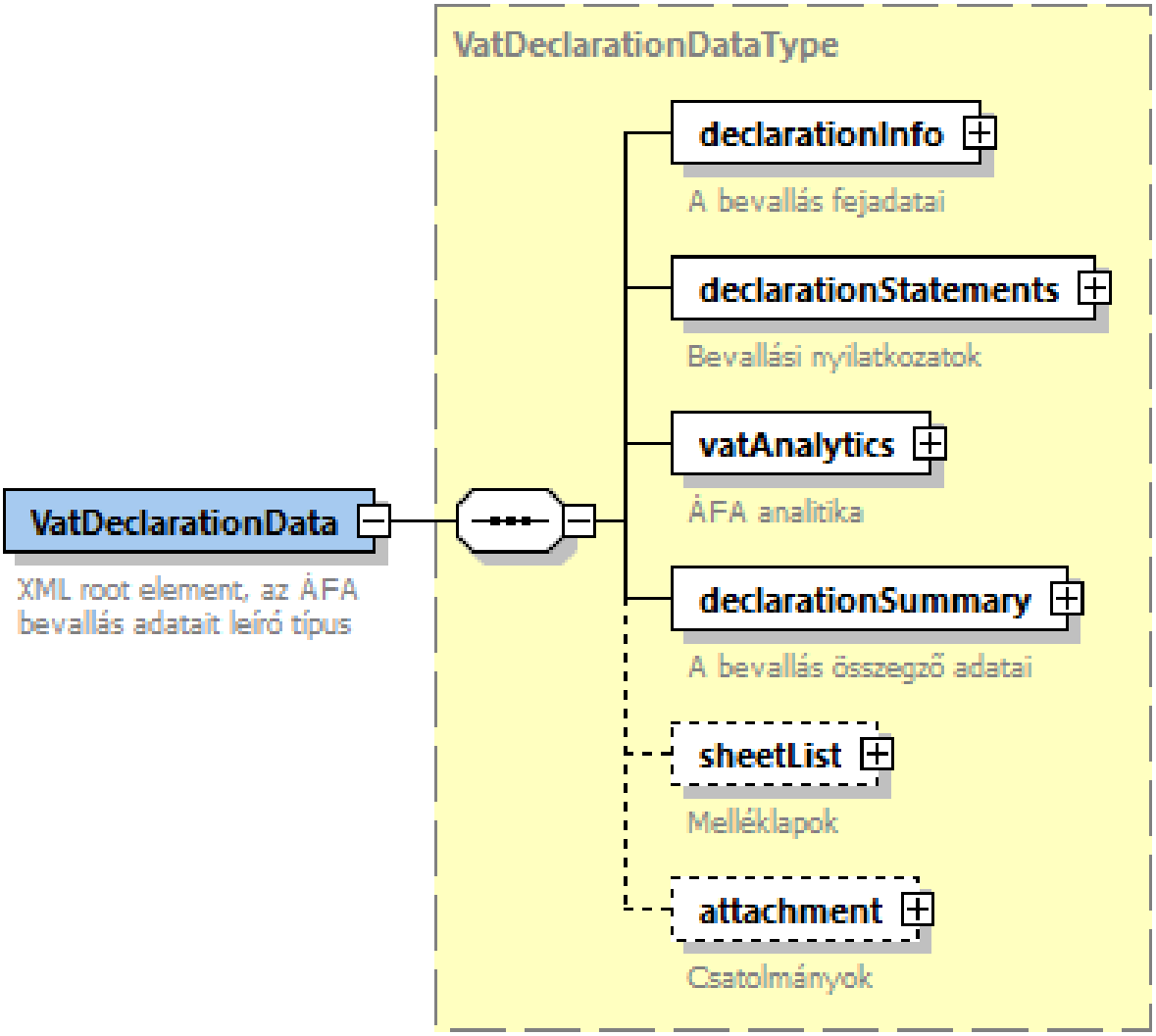
The taxpayer's VAT return is prepared based on the data XML, however, it should be not confused with the tax return. In addition to VAT return data, the latter contains VAT analytics. It aims at enabling the eÁFA M2M system to prepare the VAT return on the basis of the XML file, from which the taxpayer can make the decision to submit the tax return.

Data XML contains the following data:

- Head data
- Statements regarding the return
- VAT analytics
- Return summary data

- Sheets
- Attachments

As a first step in the preparation of their return, the taxpayer compiles the VAT analytics supporting the return in their management program. Return-specific data should be added to the VAT analytics.



XML root element, az ÁFA bevallás adatait leíró típus	XML root element, type describing the data of the VAT return
A bevallás feladatai	Head data of the return
Bevallási nyilatkozatok	Return statements
ÁFA analitika	VAT analytics
A bevallás összegző adatai	Summary data of the return
Melléklapok	Sheets
Csatolmányok	Attachments

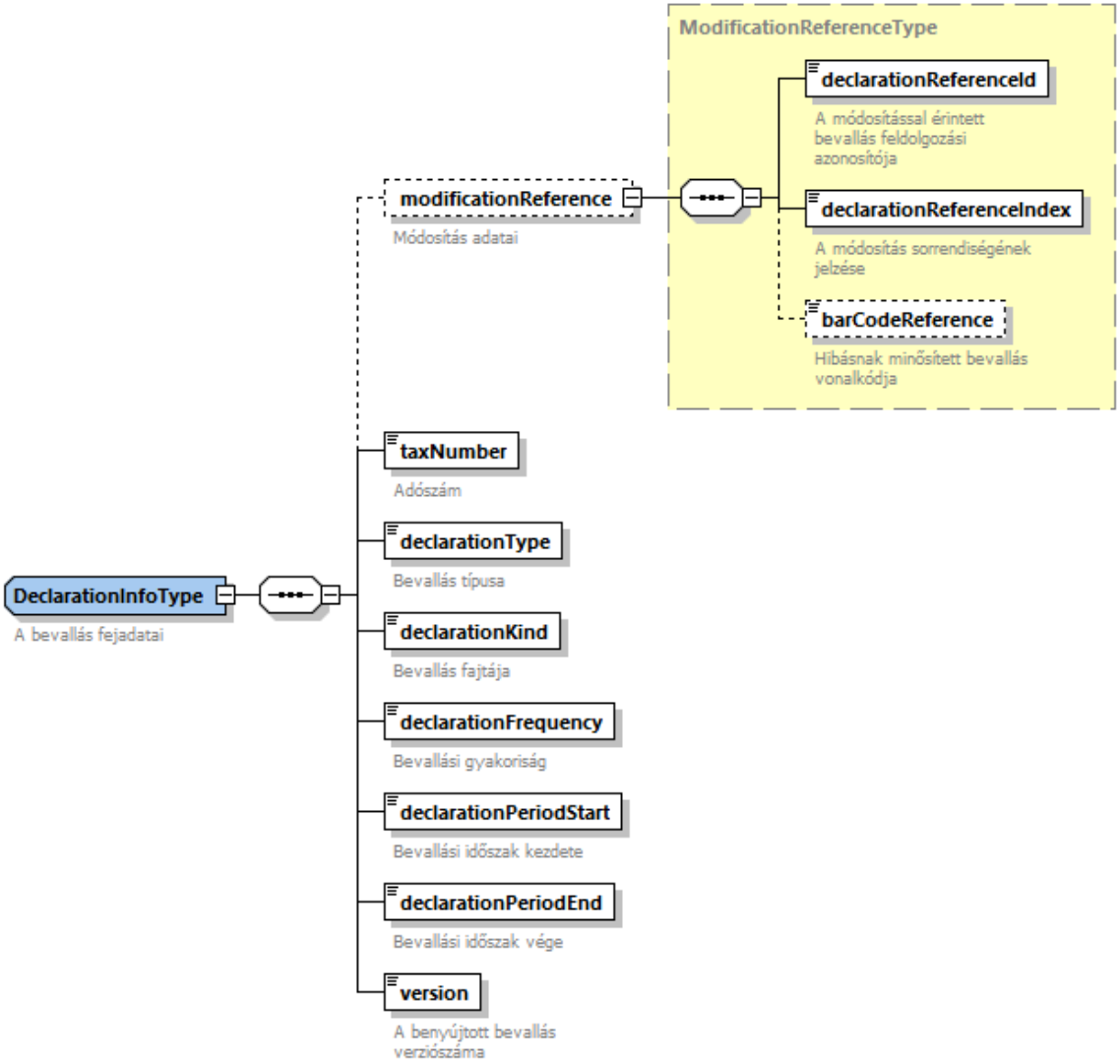
Figure 1: Main nodes of data XML

During the compilation of VAT analytics and return data, there may be data that are given manually by the user. The NTCA does not expect every data to be stored in the management program prior to the preparation of the VAT analytics. The user providing some of the data when the analytics is being prepared is a suitable solution. However, as much data as possible

should be generated automatically from the management program.

The compilation of the VAT analytics is not necessarily an automatism that is created at the push of a button. The appropriate operational logic is that for each period, VAT analytics is prepared in several versions. The tax administration does not store the different versions, nor does it not draw conclusions from version numbers. An important aim for the NTCA is for the approved VAT return containing no serious errors (this is why returns with errors cannot be approved), and containing as few other errors as possible. Therefore, the NTCA expects that the client integrates the results of the validations into their own processes, resulting in better and better quality VAT analytics and VAT returns.

3.1 Elements of declarationInfo



A bevallás fejadatai	Head data of the return
Módosítás adatai	Data of the modification
Adószám	Tax number
Bevallás típusa	Type of the return
Bevallás fajtája	Kind of the return
Bevallási gyakoriság	Return frequency
Bevallási időszak kezdete	Start of the return period
Bevallási időszak vége	End of the return period
A benyújtott bevallás verziószáma	Version number of the submitted return
A módosítással érintett bevallás feldolgozási azonosítója	Processing ID of the modified return
A módosítás sorrendiségének jelzése	Indication of the order of modification
Hibásnak minősített bevallás vonalkódja	Bar code of the returned qualified as erroneous

Figure 2: Elements of declarationInfo

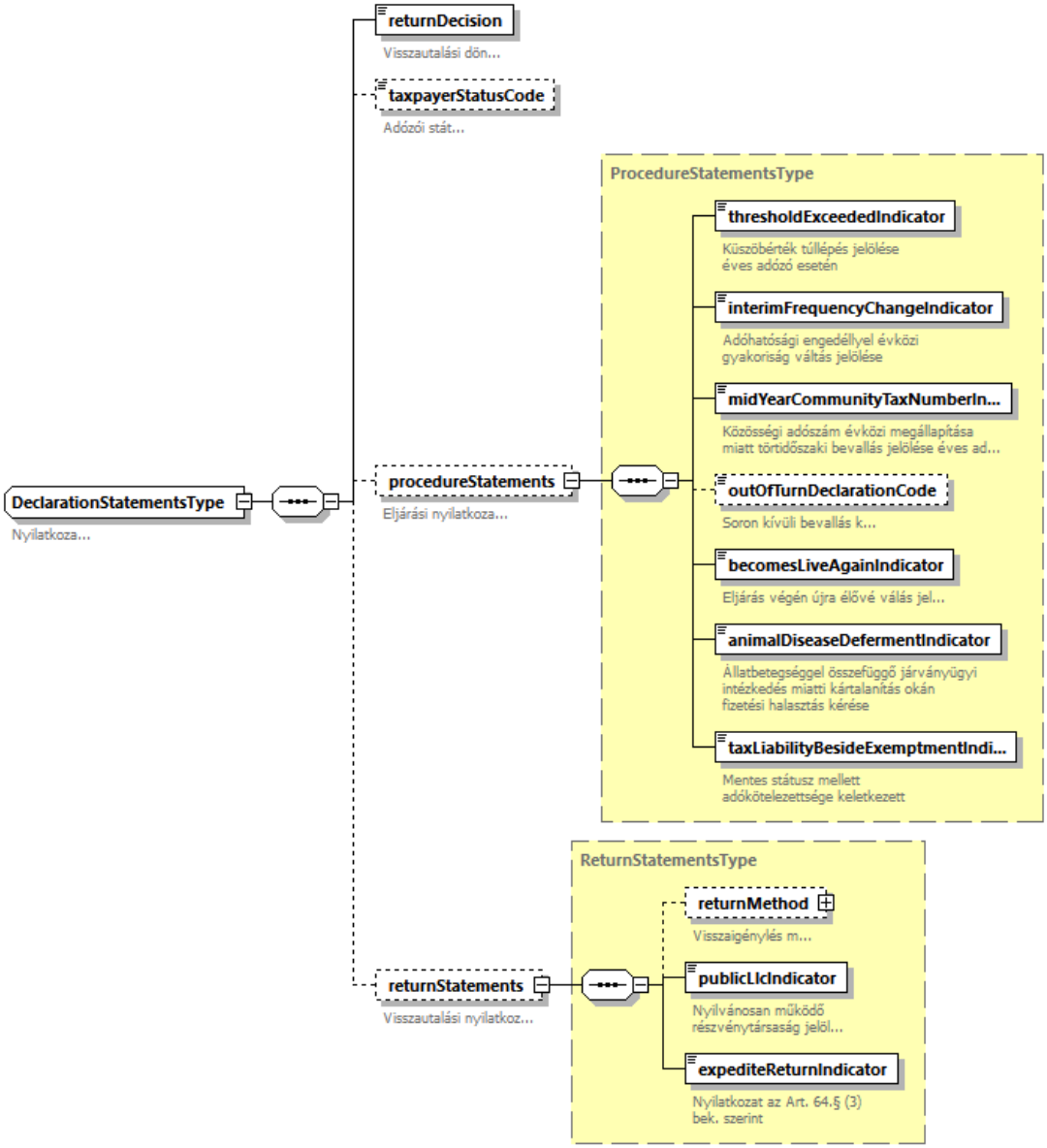
The modificationReference node is used to reference the modifying returns within the system's boundaries. Considering that this function is not a starting scope in the eÁFA system, these tags will not be used for a while. The goal now is to be able to later receive the business data needed for modification, without changing the schema.

The rest of the head data create uniqueness. This uniqueness is described by the following rule:

- the given taxpayer (taxNumber)
- in the given return type (declarationType and declarationKind together)
- with the given return frequency (declarationKind)
- for the given period (declarationPeriodStart and declarationPeriodEnd together)
- with the given version number (version)

may only have 1 submitted return. If the taxpayer wishes to upload a new version of the given return through the API, the version value must be increased. The system examines the uniqueness with validation.

3.2 Return statements



3 *3: Elements of declarationStatements*

Nyilatkoza…	Statement…
Visszautalási dön…	Return decision…
Adózói stát…	Taxpayer status…
Eljárási nyilatkoza…	Procedure statement…
Visszautalási nyilatkoz…	Return statement…
Küszöbérték túllépés jelölése éves adózó esetén	Threshold value exceeded indicator for yearly taxpayer
Adóhatósági engedéllyel évközi gyakoriság váltás jelölése	Mid-year frequency change indicator with tax authority authorisation
Közösségi adószám évközi megállapítása miatt törtidőszaki bevallás jelölése éves ad…	Fractional period return indicator due to mid-year statement of community tax number
Soron kívüli bevallás k…	Code of out of turn return
Eljárás végén újra élővé válás jel…	Indicator of becoming live again at the end of the procedure

Állatbetegséggel összefüggő járványügyi intézkedés miatt kártalanítás okán fizetési halasztás kérése	Request for deferral of payment of compensation due to an animal disease-related epidemics measure
Mentes státusz miatt adókötelezettség keletkezett	Tax liability incurred despite exempt status
Visszaigénylés m…	Method of return
Nyilvánosan működő részvénytársaság jelöl…	Public limited company indicator
Nyilatkozat az Art. 64 § (3) bek. szerint	Statement in accordance with Paragraph (3) of Section 64 of Act CL on the Rules of Taxation

The return declarations node is a collection of procedural and return statements that appear on the first page of the traditional return form.

returnDecision
The return decision can have three values:

- NO_RETURN: the taxpayer does not request a return
- FULL_RETURN: the taxpayer requests the return of the full amount
- TAX_ACCOUNT_TRANSFER: the taxpayer requests a transfer

The returnDecision element must always be filled in.

taxpayerStatusCode
Providing the taxpayer's status code is optional. The following values can appear when filling in the element:

- CODE_1: Legal entity liable to pay tax, having a community tax number, not considered a VAT subject
- CODE_3: Natural person with no community tax number, not considered a VAT subject
- CODE_4: Other organisation with no community tax number, not considered a VAT subject
- CODE_5: Legal entity with no community tax number, not considered a VAT subject

procedureStatements
Besides the code of the out of turn return, the node only contains boolean-type elements. It should be ensured that the boolean elements are always filled in, it is therefore advisable to set this to "false" value by default.

returnStatements
This node serves the purpose of specifying the return provisions (D block of the file). In the schema, the method of return (bank account number or postal payment details) is provided here, and two statements should be given:

- publicLIndicator: Public limited company indicator
- expediteReturnIndicator: Statement in accordance with Paragraph (3) of Section 64 of Act CL on the Rules of Taxation

3.3 VAT analytics

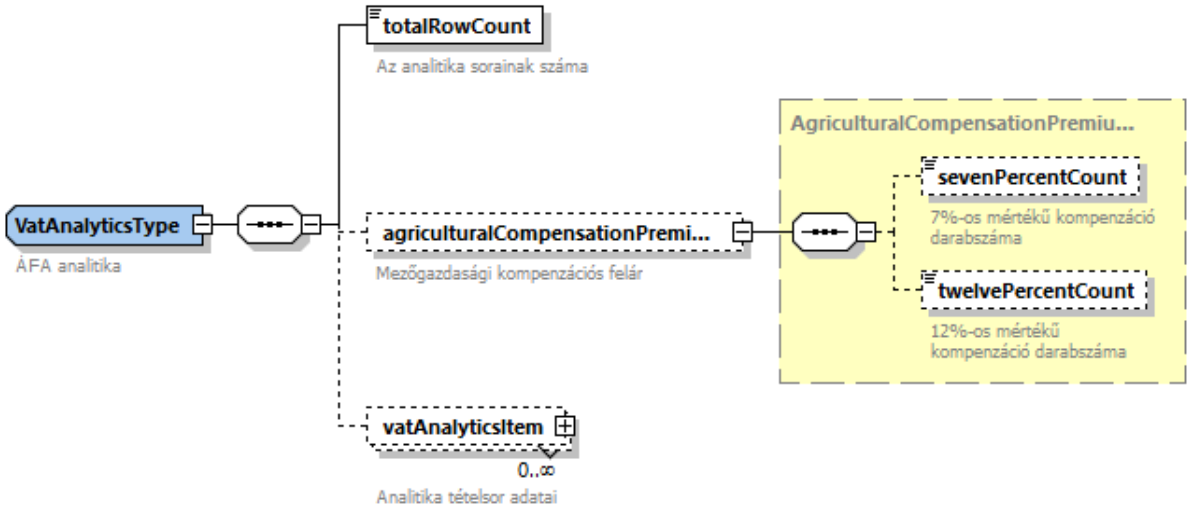


Figure 4: Elements of vatAnalytics

ÁFA analitika	VAT analytics
Az analitika sorainak száma	Number of rows of the analytics
Mezőgazdasági kompenzációs felár	Agricultural compensation markup
Analitika tételsor adatai	Data of the rows of items of analytics
7%-os mértékű kompenzáció darabszáma	Number of 7% compensation items
12%-os mértékű kompenzáció darabszáma	Number of 12% compensation items

VatAnalytics is mandatory is every return, containing tax settlements per voucher and standard tax code case. The number of rows of items of VAT analytics must always be provided. If the taxpayer submits a zero return (if there was no economic event during the period, there is no meaningful analysis), then it can be described by using the expression totalRowCount = 0 and omitting the node containing the analytics items (vatAnalyticsItem).

In the case of self-audit, a complete VAT statistics must be provided, not just the changed data. The VAT analytics of the self-audit entirely supersedes the previous VAT analytics.

The VAT analytics does not distinguish between types of voucher per row of item. If the tax

settlement of the given period contains an acquisition document including a compensation markup, the agriculturalCompensationPremium node must be filled in. Within this node, the number of acquisition documents containing the 7% and 12% compensation markups must be provided. If, based on the standard tax codes, a voucher containing a 7% and/or 12% compensation markup is in the VAT analytics, then validation forces the node to be filled in.

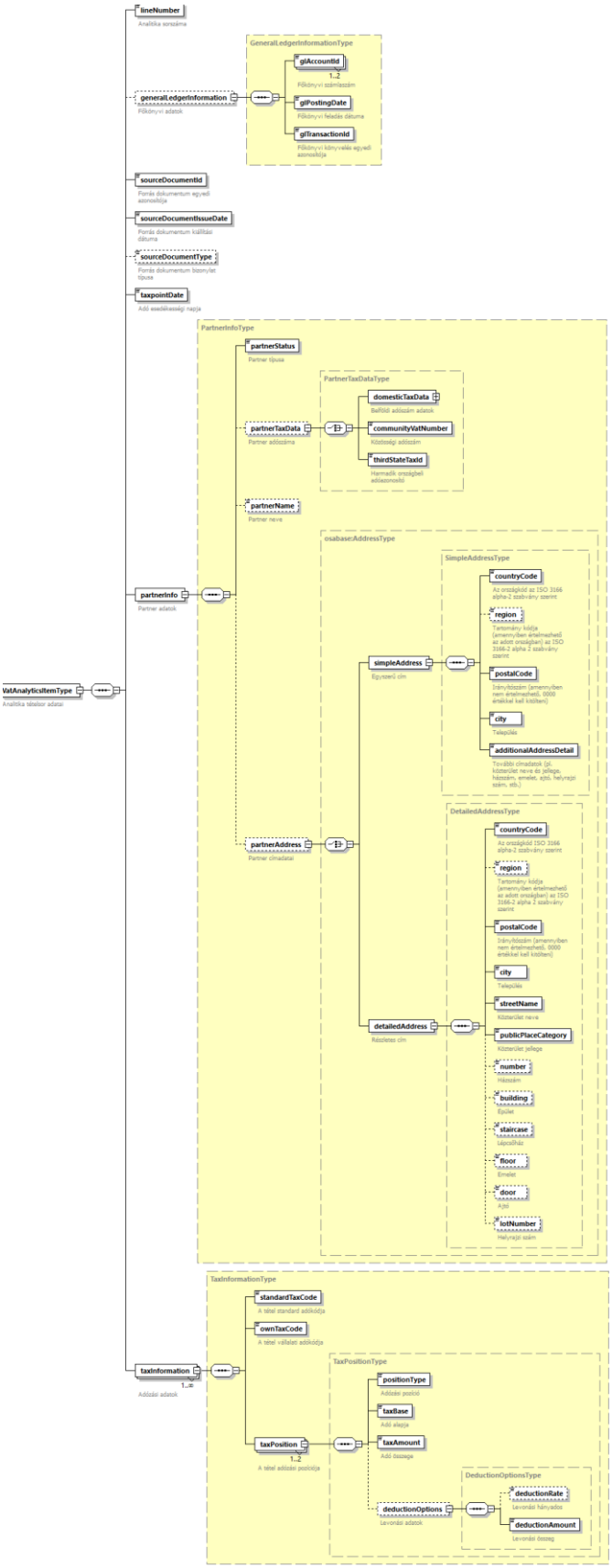


Figure 5: Rows of items of vatAnalytics

Analitika tételsor adatai	Data of the rows of items of analytics
Analitika sorszáma	Serial number of analytics
Főkönyvi adatok	Ledger data
Forrás dokumentum egyedi azonosítója	Unique ID of source document
Forrás dokumentum kiállítási dátuma	Date of issue of source document
Forrás dokumentum bizonylat típusa	Type of voucher of source document
Adó esedékesség napja	Tax due date
Partner adatok	Partner data
Adózási adatok	Taxation data
Főkönyvi számlaszám	Ledger account number
Főkönyvi feladás dátuma	Date of posting of ledger
Főkönyvi könyvelés egyedi azonosítója	Unique ID of ledger accounting
Partner típusa	Type of partner
Partner adószáma	Tax number of partner
Partner neve	Name of partner
Partner címadatai	Address data of partner
Belföldi adószám adatok	Domestic tax number data
Közösségi adószám	Community tax identification number
Harmadik országbeli adóazonosító	Third country tax number
Egyszerű cím	Simple address
Részletes cím	Detailed address
Az országkód az ISO 3166 alpha-2 szabvány szerint	Country code according to the ISO 3166 alpha-2
Tartomány kódja (amennyiben értelmezhető az adott országban) az ISO 3166-2 alpha-2 szabvány szerint	Region code (if applicable in the given country) according to the ISO 3166-2 alpha-2 standard
Irányítószám (amennyiben nem értelmezhető, 0000 értékkel kell kitölteni)	Postal code (if not applicable, 0000 value should be provided)
Település	City
További címadatok (pl. közterület neve és jellege, házszám, emelet, ajtó, helyrajzi szám, stb.)	Further address data (e.g. street name, type of public space, house number, floor, door, land register number)
Közterület neve	Street name
Közterület jellege	Type of public space
Házszám	House number
Épület	Building
Lépcsőház	Staircase
Emelet	Floor
Ajtó	Door
Helyrajzi szám	Land register number
A tétel standard adókódja	Standard tax code of the item
A tétel vállalati adókódja	Corporate tax code of the item
A tétel adózási pozíciója	Taxation position of the item
Adózási pozíció	Taxation position
Adó alapja	Tax base
Adó összege	Tax amount

Levonási adatok	Deduction data
Levonási hányados	Deduction rate
Levonási összeg	Deduction amount

When compiling the VAT analytics, the following must or should be considered regarding the value of each item.

lineNumber
The taxpayer's software assigns serial numbers to the items of the VAT analytics in XML. The serial numbers can only be positive integers, starting from 1 and increasing monotonically to infinity. No numbering gaps or duplications are allowed. One row of VAT analytics is connected to one voucher, within which the standard and corporate tax codes of the voucher can be found. Therefore, the VAT analytics is based on voucher and voucher ID, not tax code.

generalLedgerInformation
Optionally, VAT analytics may include ledger data in the generalLedgerInformation node. Ledger data are solely stored by the NTCA, no conclusions are drawn from them. These data are useful at audit procedures. If the taxpayer provides the data of this node as well, no additional data field can be requested to complete the VAT analytics during the tax audit. If the generalLedgerInformation node is filled in, the administrative burdens of taxpayer control may be reduced.

The following data must be provided within the node:

- glAccountId: ledger account number – in all cases, this means the VAT ledger account number, not the contra account number of the accounting transaction. An important requirement is that the ledger account number must be provided in the breakdown of the ledger. If two VAT ledger accounts are concerned in the transaction (e.g. in the case of a reverse charge transaction, 466 and 467), two glAccountId must be provided.
- glPostingDate: date of posting of ledger – the day on which the given transaction is recorded in the ledger. If the economic event is re-entered into the books, then the date of re-entering. Thus, it can happen that the date of posting of the ledger is much later than the end of the return period.
- glTransacitonId: unique ID of ledger accounting – identification code of the accounting of the VAT account relating to the economic event, used in the accounting software or system. It should be possible to subsequently identify the accounting item with the identification code.

If the economic event is re-entered into the books – if the re-entering does not concern a tax return –, the tax return does not have to be corrected, no self-audit has to be submitted. However, if a self-audit is submitted, the current ledger data must be provided in the VAT analytics.

Within the generalLedgerInformation node, every item must be filled in. If, therefore, the software begins to fill in the items of the generalLedgerinformation node, a value must be

entered for each item.

sourceDocumentType
The VAT analytics contains the type of source voucher as optional data. The field should only be filled in if the taxpayer's management program stores this kind of data and it can be entered according to the earData schema. The possible values of the field are the following:

- INVOICE
- RECEIPT
- CUSTOMS_DECLARATION: customs goods decision
- OTHER: other voucher

If the management program does not store this type of data, it is not an appropriate procedure for the program to present every source document with the OTHER value in the data XML.

sourceDocumentId, sourceDocumentIssueDate
The VAT analytics is document-based, therefore the ID of the voucher (sourceDocumentId) and its date of issue (sourceDocumentIssueDate) must be provided. In the case of some data sources, the voucher ID is multiform: it can include account numbers, receipt serial numbers, decision numbers or other accounting certificate numbers. Vouchers that only exist on the taxpayer's side (vouchers not connected to tax administration data reports, e.g. acquisition documents, contracts) can also be provided here.

The voucher ID (sourceDocumentId) must be the same as the ID on the voucher. If there is no such ID, the number uniquely identifying the given voucher in the accounting program or management system should be provided here.

taxpointDate
TaxpointDate is a new term besides tax codes. It is also multiform, because there are different rules for what is meant by this term in each source. The purpose of the field is to unambiguously provide the day on which tax liability and/or a right to deduct is incurred.

When determining the value of the field, the below principles should be followed:

- On the voucher related to the transaction incurring VAT liability, the date on which tax liability arises according to the Act on VAT should be provided. This date need to be within the tax settlement period.

- On the voucher related to the transaction incurring the right to deduct, the date on which the right to tax deduction arises according to the Act on VAT should be provided. This date need to be within the tax settlement period, or earlier, however, not earlier than allowed by the Act on VAT.

In connection with the vouchers, it should be remembered that one voucher can appear in several tax settlement periods. In he case of cash flow statements, for example, more taxpointDate values are connected to one voucher.

Based on the above, the value of taxpointDates can easily be derived from the Act on VAT, however, this value may not be stored by the taxpayer's accounting program. In such cases, the value of the field can be the last day of the tax settlement period.

partnerInfo
A voucher with a relevant partner which is stored in the management program must be provided in the partnerInfo node. The appropriate filling in is forced by several validations.

taxInformation
Any amount of tax codes can be connected to the given voucher. Besides the standard tax codes, the taxpayer's own, internally used tax codes must also be provided. The values of standard tax codes cannot be expanded or complemented on the client's side. The rules of standard tax code formation are public, however, it does not mean that the client can form new standard tax codes. The tax administration keeps the standard tax code catalogue, available for queries via a machine interface.

Uploading standard tax codes using other characters to achieve the same field length is not allowed either. Only the codes in the catalogue kept by the NTCA can thus be used.

There may be 1 or, at the most, 2 return positions. Values: payable (positionType = PAYABLE) and/or deductible (positionType = DEDUCTIBLE).

To each given taxation position, a tax base (taxBase) and a tax amount (taxAmount) must be connected. If the taxation position is deductible, deduction data may optionally be connected to it. The forming of deduction data to the appropriate place is ensured by validation. Typically, tax amount means the tax amount connected to the tax base.

The deductionOptions node must only be filled in if the amount of the voucher can only partly be deducted. DeductionAmount must always be filled in. DeductionRate is filled in if applicable. However, it is important to remember that the total amount is shown as the tax base (taxBase).

If, for example, the tax base of a voucher is HUF 1000, its tax amount is HUF 270, and is subject to a 30% deduction limitation, then, within the taxposition node, the fields should be filled in the following way:

- TaxBase=1000
- Taxamount=270
- deductionRate=0.7

- deductionAmount=189

A voucher may have a row of items that is subject to itemised deduction prohibition. In this case, there is no deduction quotient, only the deductionAmount is filled in within the deductionOptions node.

Regarding transactions of cash flow taxation, the ratio of the payment determines the right to deduct and the tax liability. The tax base and tax of the amount connected to the given payment must be provided in the VAT analytics. If, for example, the tax base of the invoice if HUF 1000, its tax is HUF 270, however, only 60% of it has been paid, then taxBase=600, taxAmount=162. The deductionOptions node only has to be filled in if the transaction is subject to a deduction limitation according to the Act on VAT. If the remaining 40% is settled in the next month, the voucher must be included in the VAT analytics with the same documentId. Then taxBase=400, taxAmount=108.

The taxBase and taxAmount data may be negative amounts, to a maximum of two decimal places.

3.4 Summary data

The rows of items of the VAT analytics with amounts contain unrounded data. Most of the summary data are derived from the amounts of the rows of data of the VAT analytics. Summary data must be provided in HUF, and not rounded to thousand Forints. Therefore, the thousand Forints rounding rule of the VAT return form does not apply here.

The NTCA publishes the correct rounding rules for the taxpayers in the interface specification. The eÁFA M2M system carries out the thousand Forints rounding when preparing the VAT return.

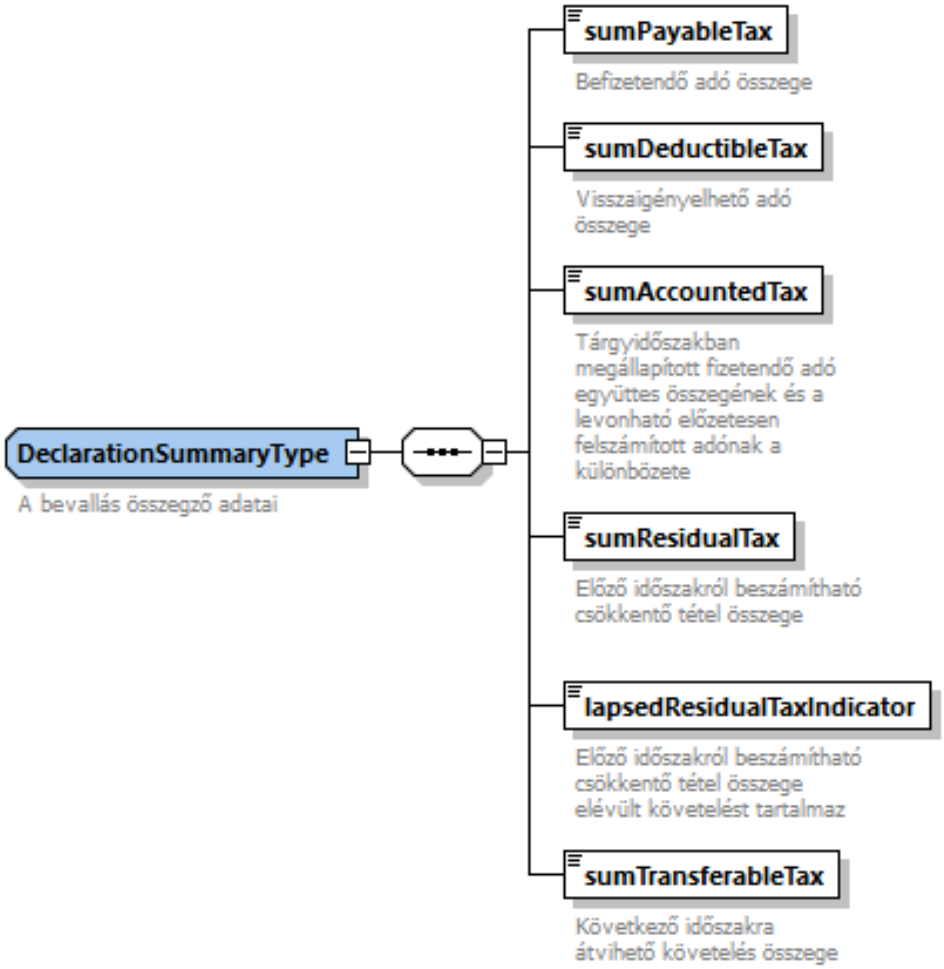
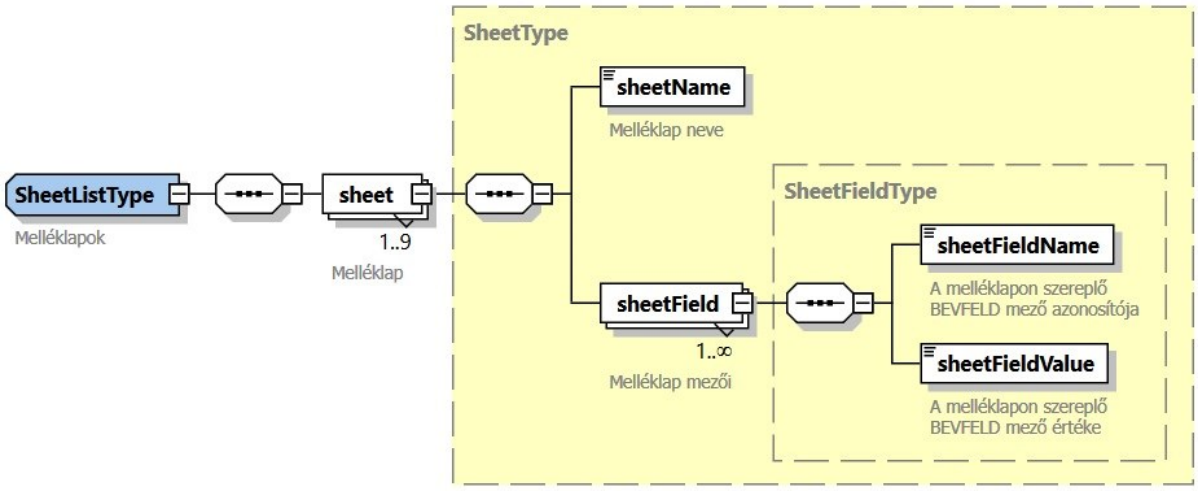


Figure 6: Elements of declarationSummary

A bevallás összegző adatai	Summary data of the return
Befizetendő adó összege	Amount of payable tax
Visszaigényelhető adó összege	Amount of reclaimable tax
Tárgyidőszakban megállapított fizetendő adó együttes összegének és a levonhatót előzetesen felszámított adónak a különbözete	Difference between the total amount of payable tax for the accounting period and the amount of deductible tax charged
Előző időszakról beszámítható csökkenő tétel összeg	Amount of decreasing item that may be included from the previous period
Előző időszakról beszámítható csökkenő tétel összege elévült követelést tartalmaz	Amount of decreasing item that may be included from the previous period contains stale claim
Következő időszakra átvihető követelés összege	Amount of claim transferable to the next period

In addition to the analytics, the taxpayer must disclose the “main” figures of the return, which mainly consist of the summary of the analytics and other data concerning the tax settlement. To decide whether these numbers are correct, the eÁFA system carries out an ERROR validation.

3.5 Sheets



7 7: Elements of sheetList

Melléklapok	Sheets
Melléklap	Sheet
Melléklap neve	Sheet name
Melléklap mezői	Sheet fields
A melléklapon szereplő BEVFELD mező azonosítója	ID of BEVFELD field of the sheet
A melléklapon szereplő BEVFELD mező értéke	Value of BEVFELD field of the sheet

The return may include sheets, which should be provided in the data XML. 9 separate sheet types are processed in the eÁFA system's API, namely:

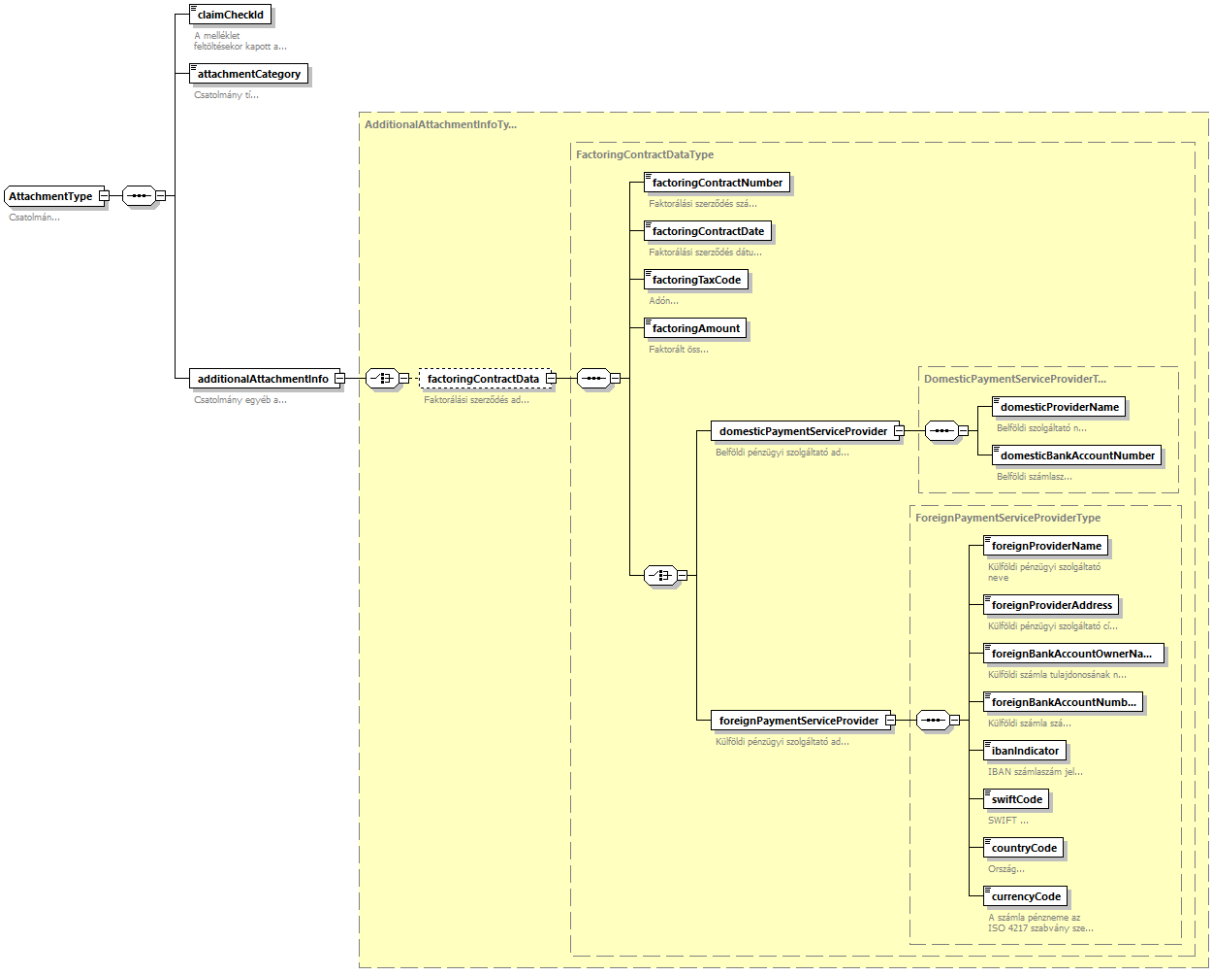
- Sheet 2
- Sheet 4 (not a starting scope)

- Sheet 6
- Sheet 7
- Sheet 8
- Sheet 9
- Sheet A88
- Sheet 170
- Sheet EUNY (not a starting scope)

The formation of most of these depends on certain tax codes or the filling in of return provisions, and can thus be validated during processing. The taxpayer should know when to submit the rest.

The structure of the sheets follows the ÁNYK XML format, it can be described with a key value pair (sheetFieldName + sheetFieldValue).

3.6 Attachments



8 8: Elements of attachment

Csatolmán…	Attachment
A melléklet feltöltésekor kapott a…	Received at the upload of the attachment…
Csatolmány tí…	Type of attachment
Csatolmány egyéb a…	Other attachment…
Faktorálási szerződés ad…	Data of factoring contract
Faktorálási szerződés szá…	Number of factoring contract
Faktorálási szerződés dátu…	Date of factoring contract
Adón…	Tax…
Faktorált öss…	Factoring amount
Belföldi pénzügyi szolgáltató ad…	Data of domestic financial service provider
Külföldi pénzügyi szolgáltató ad…	Data of foreign financial service provider
Belföldi szolgáltató n…	Name of domestic service provider
Belföldi számlasz…	Domestic bank account number
Külföldi pénzügyi szolgáltató neve	Name of foreign financial service provider
Külföldi pénzügyi szolgáltató cí…	Address of foreign financial service provider
Külfödi számla tuladonosának n…	Name of the owner of foreign bank account

Külföldi számla szá…	Foreign bank account number
IBAN számlaszám jel…	IBAN account number…
SWIFT…	SWIFT…
Ország…	Country…
A számla pénzneme az ISO 4217 szabvány sze…	Currency of the bank account according to the ISO 4217 standard

The data XML may contain attachments, also included in the return. The attached file itself is only referenced with a claimCheckId in the return. This has several advantages, the most significant of which is that this way, when a return fails the asynchronous processing, neither the client, nor the server needs to expect the attachment (up to 100MB) being redistributed on the network. Currently, only the factoring contract can be attached to the VAT return, meaning that this structure is only used there.

4 QUERY OPERATIONS

4.1 QueryAttachmentList

If no approval has been given after 3 days, the eÁFA M2M system automatically deletes the uploaded data files, including the data files of the factoring contract attachments. Another restriction is that no more than 12 attachments (not larger than 100 Mb per attachment) can be in the system on the taxpayer's side. It is possible to delete the factoring contract attachments in the eÁFA M2M system, however, this requires knowledge of the data in the data files.

If, regarding its current activity, the management program has a limit of 3 days and 12 data files, but does not know the data of the uploaded data files for deletion, it can use the queryAttachmentList operation to learn about them.

4.2 QueryCustomsDeclarationDigest

Scrollable list of results of the query operation concerning the VAT import data.

4.3 QueryCustomsDeclarationTaxCode

Query operation based on the decision number of VAT import data.

4.4 QueryDeclarationData

Return data file query operation. The declarationProcessingId element must be provided in the query. The declarationProcessingId, if unknown to the client, can be acquired as a result of the queryDeclarationList operation.

Maximum one return XML is given back as a result of the operation.

The following data elements are considered return in the eÁFA M2M system:

- Header: basic transaction data: ID, time stamp, version number
- Result: result of the business validation
- declarationInfo: head data of the return
- conentHash: hash code of the uploaded XML file
- declarationSchema: return schema of the uploaded file
- declarationSummary: basic summary data of the return
- BevfeldData: the base 64 binary data of the Bevfeld XML (XML that can be loaded into an ÁNYK form) generated on the basis of the uploaded XML file and the tax administration's algorithm
- originalRequestVersion: request version value of the return

4.5 QueryDeclarationList

Returns the identifying data of tax returns uploaded to the eÁFA M2M system during the tax return period specified in the query and the head data of the return as reply. The response message received as a result of the operation helps identifying the return that the user wishes to download on the client's side. Therefore, this operation sends back further data in addition to declarationProcessingId.

4.6 QueryDeclarationProcessingStatus

Based on the processing ID (declarationProcessingId), it sends back the processing status of the given data XML, the result of the validation and the data of the uploaded data XML.

DeclarationStatus can have the following values:

- RECEIVED
- PROCESSING
- BEVFELD_CHECK: return processing under pre-check
- FINISHED: processing completed
- SUBMITTED: return approved
- ABORTED

Since validation is an asynchronous process, and only error-free data XMLs with FINISHED

status can be approved, this query is of great significance for the return submission process.

4.7 QueryDocumentList, QueryDocumentListResult

The QueryDocumentList is the launch operation of NTCA-stored querying invoice data services, cash register receipts and import VAT data. The time period of the query – not exceeding 35 days – must be provided in this operation. The result of the query is queryId. The result of the asynchronous query can be queried using the QueryDocumentListResult operation.

4.8 QueryInvoiceTaxCode

This operation refers to the OSA InvoiceNumberQueryType operation. The input values of the query are the following:

- invoiceNumber: number of invoice or modifying document
- invoiceDirection: indicator of outgoing or incoming invoice Values: INBOUND, OUTBOUND.
- batchindex (optional): number of modifying document within the batch
- supplierTaxNumber (optional): tax number of the issuer in the case of customer-side query

The result includes the invoice extract (data of OSA InvoiceDigest), the standard tax code(s) of the invoice generated based on the tax administration algorithm, and the taxation data. As a result of the query, warnings relevant to the VAT can also be known.

4.9 QueryTaxCodeCatalog

It sends back the data of the standard tax code catalogue based on the taxpointDate specified in the query. If there is no valid standard tax code catalogue for the period defined in the query, the taxCodes node is not included in the response message. If there is a standard tax code catalogue for the given period, then, for each standard tax code, the result of the query contains the following data:

- standardTaxCode: standard tax code
- transactionCode: transaction code
- payableTaxCode: indicator of the fact that the standard tax code is included in the payable position of the tax settlement
- deductibleTaxCode: indicator of the fact that the standard tax code is included in the deductible position of the tax settlement
- taxCodeDescription: description of the tax code in Hungarian, English and German
- declarationLineData: data of the return row identifiable by the standard tax code

4.10 QueryVatDeclarationData

This operation sends back the total value of the uploaded data XML based on the declarationProcessingId.