INDICATIVE OFFER

Hungary: VAT ID validation

From:

Sándor Róka,
Chief Technical Officer
SystemFox Consulting Kft.
H-1117 Budapest, Irinyi József u. 4-20. B

Recipient:

Réka Juhos
Tax Department
Lidl Magyarország Bt
1037 Budapest, Rádl-árok 6.

Budapest, 28.08.2022

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Founded in 2002

HQ in Budapest

SAP® PartnerEdge® Member

Partner with:
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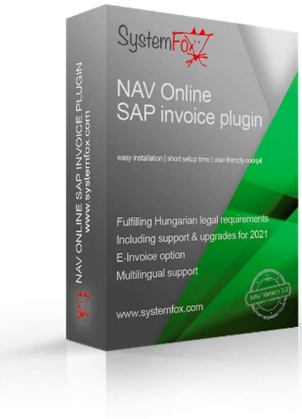
SystemFox
NAV Online SAP invoice plugin
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Fulfilling Hungarian legal requirements
Including support & upgrades for 2021
E-Invoice option
Multilingual support
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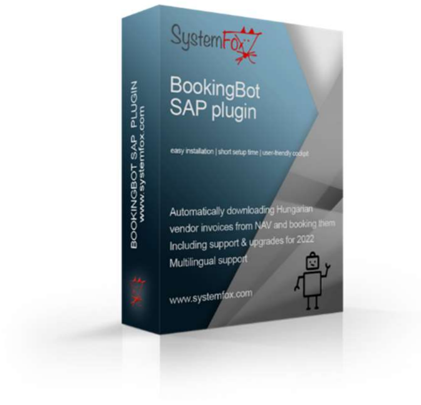
SystemFox
BookingBot SAP plugin
easy installation | short setup time | user-friendly cockpit
Automatically downloading Hungarian vendor invoices from NAV and booking them
Including support & upgrades for 2022
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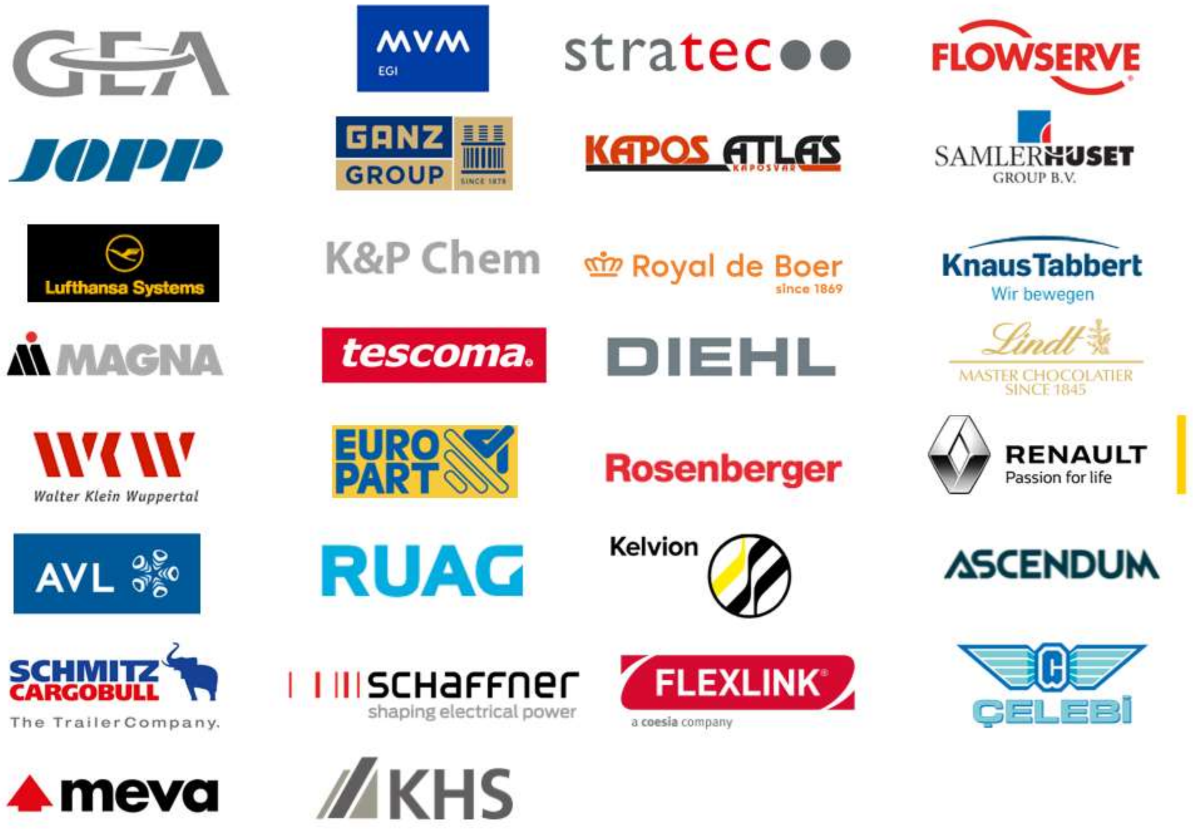
Our customers



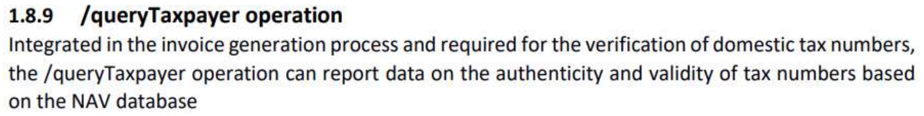
Legal Background

In Hungary all invoices should be reported to the authorities ("NAV") automatically a soon as the invoice issued. The details of the process, data formats and protocols are described on the official documentation here: https://onlineszamla.nav.gov.hu/dokumentaciok (HU|EN|DE languages)

As short technical summary, the reporting endpoint is a REST API. All companies must register a technical user (getting a username, password, XML signature and exchange keys) for the invoicing programs in use, the communication is secured using strong encryption (SHA3-512).

Inproper, delayed, or failed reporting may cause high penalty, consequently it is essential to collect high-quality customer data (especially if the customer is a legal entity, a company). Customer VAT-number and address pre-validation is strongly recommended.

Beside the mandatory reporting functions the referenced REST API offering endpoints for data pre-validations too, see "/queryTaxpayer" operation in the referenced doc.



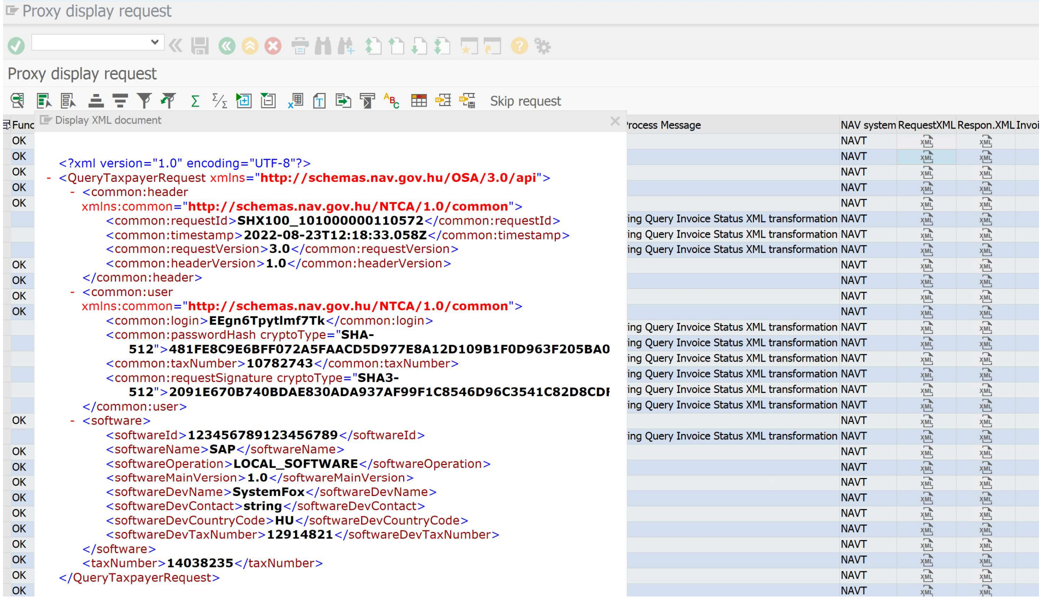
1.8.9 /queryTaxpayer operation

Integrated in the invoice generation process and required for the verification of domestic tax numbers, the /queryTaxpayer operation can report data on the authenticity and validity of tax numbers based on the NAV database

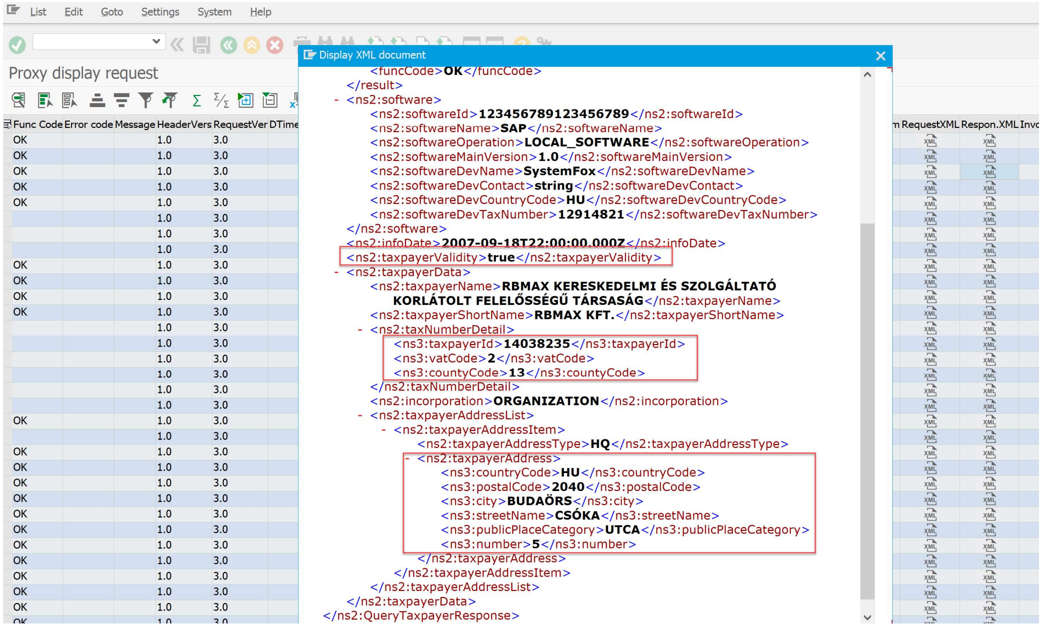
NAV REST-client implementations by SystemFox Consulting

At SystemFox we have several years' experience with the referenced API, we have implemented most of NAV REST endpoint clients for our products. Our NAV Online Invoice, Tax Control and Booking Bot for SAP ERP and for S4/Hana implemented in ABAP.

See below the structure of an example /queryTaxpayer request and response XML structure from our ABAP implementation:

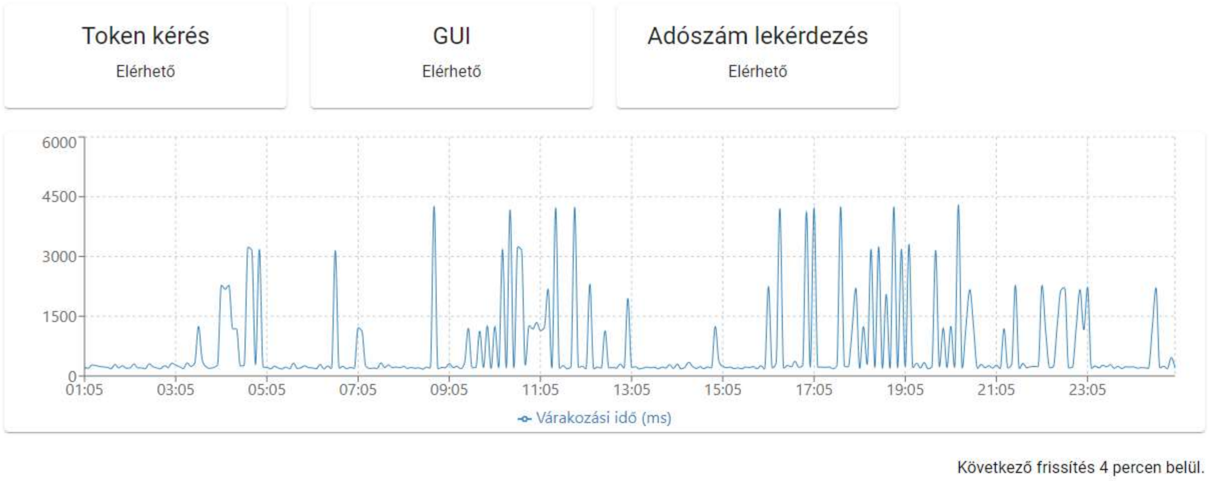


```
  <?xml version="1.0" encoding="UTF-8"?>
- <QueryTaxpayerRequest xmlns="http://schemas.nav.gov.hu/OSA/3.0/api">
  - <common:header
    xmlns:common="http://schemas.nav.gov.hu/NTCA/1.0/common">
        <common:requestId>SHX100_101000000110572</common:requestId>
        <common:timestamp>2022-08-23T12:18:33.058Z</common:timestamp>
        <common:requestVersion>3.0</common:requestVersion>
        <common:headerVersion>1.0</common:headerVersion>
    </common:header>
  - <common:user
    xmlns:common="http://schemas.nav.gov.hu/NTCA/1.0/common">
        <common:login>EEgn6Tpytlmf7Tk</common:login>
        <common:passwordHash cryptoType="SHA-
          512">481FE8C9E6BFF072A5FAACD5D977E8A12D109B1F0D963F205BA0
        <common:taxNumber>10782743</common:taxNumber>
        <common:requestSignature cryptoType="SHA3-
          512">2091E670B740BDAE830ADA937AF99F1C8546D96C3541C82D8CDI
    </common:user>
  - <software>
        <softwareId>123456789123456789</softwareId>
        <softwareName>SAP</softwareName>
        <softwareOperation>LOCAL_SOFTWARE</softwareOperation>
        <softwareMainVersion>1.0</softwareMainVersion>
        <softwareDevName>SystemFox</softwareDevName>
        <softwareDevContact>string</softwareDevContact>
        <softwareDevCountryCode>HU</softwareDevCountryCode>
        <softwareDevTaxNumber>12914821</softwareDevTaxNumber>
    </software>
    <taxNumber>14038235</taxNumber>
  </QueryTaxpayerRequest>
```



```
        <funcCode>OK</funcCode>
    </result>
  - <ns2:software>
        <ns2:softwareId>123456789123456789</ns2:softwareId>
        <ns2:softwareName>SAP</ns2:softwareName>
        <ns2:softwareOperation>LOCAL_SOFTWARE</ns2:softwareOperation>
        <ns2:softwareMainVersion>1.0</ns2:softwareMainVersion>
        <ns2:softwareDevName>SystemFox</ns2:softwareDevName>
        <ns2:softwareDevContact>string</ns2:softwareDevContact>
        <ns2:softwareDevCountryCode>HU</ns2:softwareDevCountryCode>
        <ns2:softwareDevTaxNumber>12914821</ns2:softwareDevTaxNumber>
    </ns2:software>
    <ns2:infoDate>2007-09-18T22:00:00.000Z</ns2:infoDate>
    <ns2:taxpayerValidity>true</ns2:taxpayerValidity>
  - <ns2:taxpayerData>
        <ns2:taxpayerName>RBMAX KERESKEDELMI ÉS SZOLGÁLTATÓ
          KORLÁTOLT FELELŐSSÉGŰ TÁRSASÁG</ns2:taxpayerName>
        <ns2:taxpayerShortName>RBMAX KFT.</ns2:taxpayerShortName>
      - <ns2:taxNumberDetail>
            <ns3:taxpayerId>14038235</ns3:taxpayerId>
            <ns3:vatCode>2</ns3:vatCode>
            <ns3:countyCode>13</ns3:countyCode>
        </ns2:taxNumberDetail>
        <ns2:incorporation>ORGANIZATION</ns2:incorporation>
      - <ns2:taxpayerAddressList>
          - <ns2:taxpayerAddressItem>
                <ns2:taxpayerAddressType>HQ</ns2:taxpayerAddressType>
              - <ns2:taxpayerAddress>
                    <ns3:countryCode>HU</ns3:countryCode>
                    <ns3:postalCode>2040</ns3:postalCode>
                    <ns3:city>BUDAÖRS</ns3:city>
                    <ns3:streetName>CSÓKA</ns3:streetName>
                    <ns3:publicPlaceCategory>UTCA</ns3:publicPlaceCategory>
                    <ns3:number>5</ns3:number>
                </ns2:taxpayerAddress>
            </ns2:taxpayerAddressItem>
        </ns2:taxpayerAddressList>
    </ns2:taxpayerData>
</ns2:QueryTaxpayerResponse>
```

In our other, experimental web-based project https://vanenav.net/ we are using Microsoft .NET running in Docker container and React JS in the browser. The VaneNAV project providing historical availability and speed-test log info of NAV webservice for our clients.



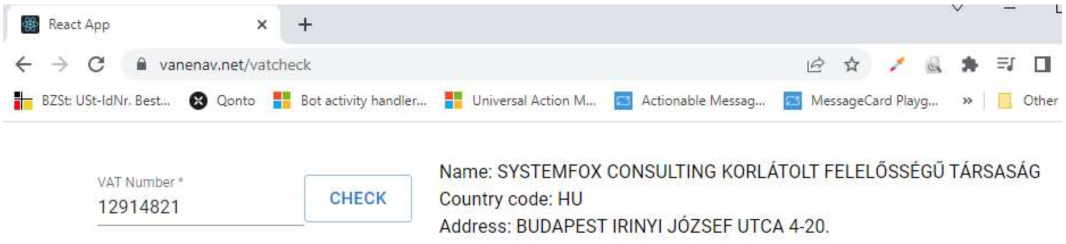
Token kérés
Elérhető

GUI
Elérhető

Adószám lekérdezés
Elérhető

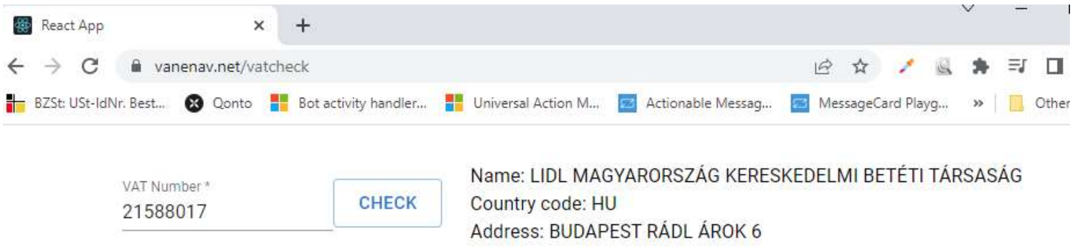
Következő frissítés 4 percen belül.

We have a simple VAT number check test-implementation on the same website, see https://vanenav.net/vatcheck.



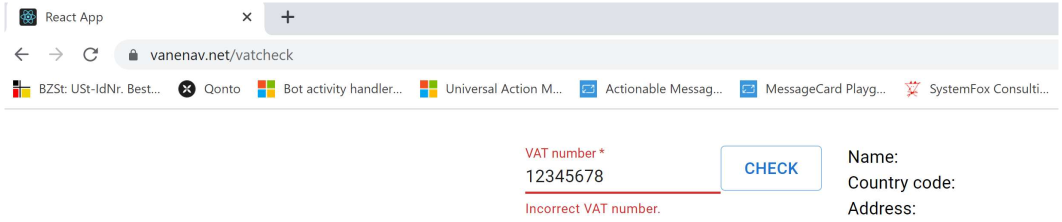
VAT Number *
12914821
CHECK

Name: SYSTEMFOX CONSULTING KORLÁTOLT FELELŐSSÉGŰ TÁRSASÁG
Country code: HU
Address: BUDAPEST IRINYI JÓZSEF UTCA 4-20.



VAT Number *
21588017
CHECK

Name: LIDL MAGYARORSZÁG KERESKEDELMI BETÉTI TÁRSASÁG
Country code: HU
Address: BUDAPEST RÁDL ÁROK 6

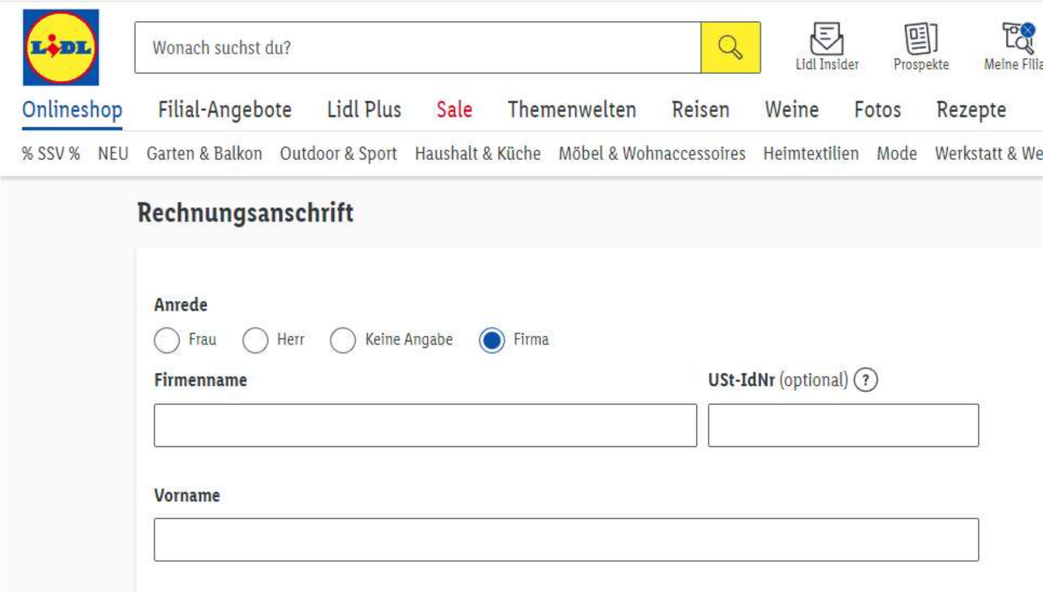


VAT number *
12345678
Incorrect VAT number.
CHECK

Name:
Country code:
Address:

Customer VAT number validation at Lidl for HU customers

Based on our discussions the end-customers can register their invoicing address on the Lidl websites or using the mobile applications. The entered VAT numbers are formally checked, but not validated against the official NAV database today. The customers can accidentally register with invalid VAT number. The reporting of the invoices issued using these invalid VAT numbers will fail.



Rechnungsanschrift

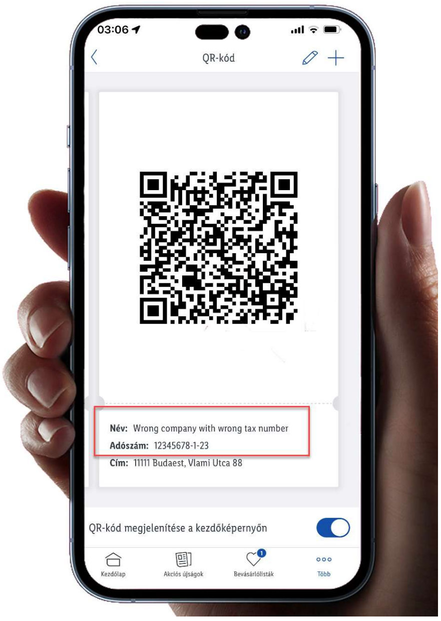
Anrede

○ Frau ○ Herr ○ Keine Angabe ● Firma

Firmenname

USt-IdNr (optional) ?

Vorname



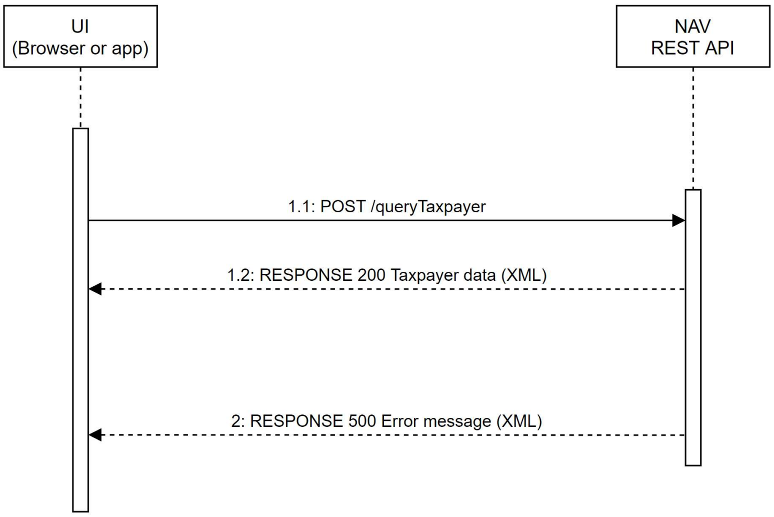
Név: Wrong company with wrong tax number
Adószám: 12345678-1-23
Cím: 11111 Budaest, Vlami Utca 88

QR-kód megjelenítése a kezdőképernyőn

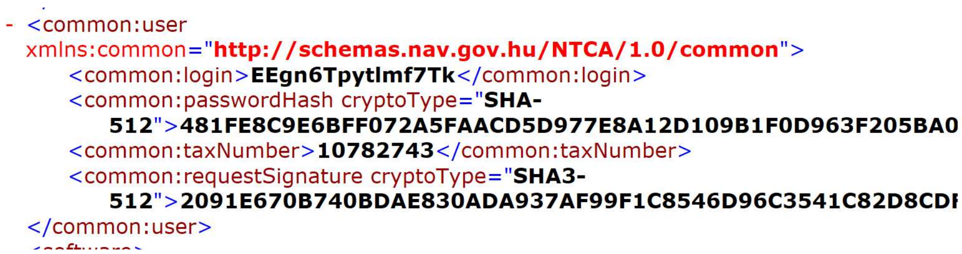
VAT number validation for Hungary - implementation scenarios for web-based systems

Scenario A – Client-only implementation

It is possible to call the NAV REST API directly from the browser or from the mobile app, using javascript, Ajax, or similar XMLHttpRequest technology.


UI
(Browser or app)
NAV
REST API
1.1: POST /queryTaxpayer
1.2: RESPONSE 200 Taxpayer data (XML)
2: RESPONSE 500 Error message (XML)

While this scenario is technically manageable, **we do not recommend it**. As described above, the service can be used only for registered NAV users, and all validation requests must be digitally signed. From the example above:

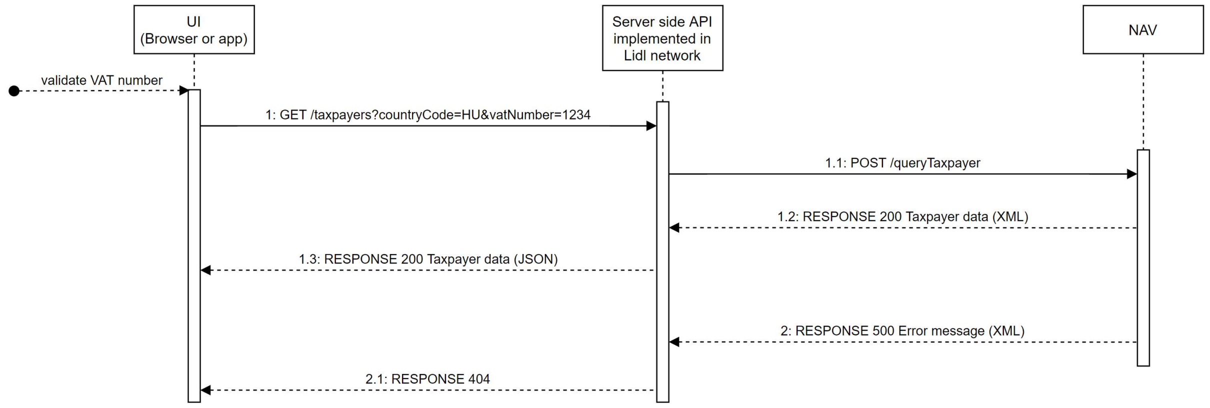


```
- <common:user
  xmlns:common="http://schemas.nav.gov.hu/NTCA/1.0/common">
      <common:login>EEgn6Tpytlmf7Tk</common:login>
      <common:passwordHash cryptoType="SHA-
         512">481FE8C9E6BFF072A5FAACD5D977E8A12D109B1F0D963F205BA0
      <common:taxNumber>10782743</common:taxNumber>
      <common:requestSignature cryptoType="SHA3-
         512">2091E670B740BDAE830ADA937AF99F1C8546D96C3541C82D8CD
  </common:user>
```

To be able to produce these signatures on client side it is necessary to publish the related username / password / signature keys to client side (browser script or app) what is a possible **security risk**, therefore we recommend a different scenario.

Scenario B – Client-server implementation

In this scenario an additional server-side component implemented in the Lidl web servers (as part of other server-side services serving the apps) The browser-based client or the mobile-app is calling the Lidl server side API providing the country code and the VAT number, and the server component is responsible for communicating with the NAV server. See the picture below.


UI
(Browser or app)
Server side API
implemented in
Lidl network
NAV
validate VAT number
1: GET /taxpayers?countryCode=HU&vatNumber=1234
1.1: POST /queryTaxpayer
1.2: RESPONSE 200 Taxpayer data (XML)
1.3: RESPONSE 200 Taxpayer data (JSON)
2: RESPONSE 500 Error message (XML)
2.1: RESPONSE 404

This is a more robust and more secure scenario, the different kind of clients can use the same server-side API. There is no difference regarding the result and user-experience.

Other considerations:

- The HU NAV service is not only providing feedback regarding the validity of VAT number, but in case of valid VAT number the response contains the business name and official registered address of the customer too. Using these data, **it is possible to automatically fill address fields on the registration forms, what is a significant improvement on the user experience**.
- Hungary is not the only country in Europe offering such kind of VAT number validation services. It is reasonable to implement the solution preparing for other countries.
- The EU VIES webservice providing similar services for companies in EU applied for EU VAT number. (https://ec.europa.eu/taxation_customs/vies/#/vat-validation). It is wort to consider this service too at implementation. At SystemFox Consulting we have a product implemented the referenced VIES API, implemented in SAP / ABAP.
- Customers can have wrong tax numbers registered in their profile from the past. It is worth to implement a function to check these VAT numbers at least ones, regularly, or before the next invoice request.

Services offered by SystemFox Consulting

We are happy to do either just consulting on the usage of the API, and let the Lidl internal team do the implementation; or also doing the implementation ourselves.

The consulting should take about 2 days.

The implementation may depend on the IT-guidelines of Lidl (testing cycles, etc.), and the required implementation technology (ABAP, .NET, JS, etc…)

Validity and Acceptance of Proposal

This is an indicative offer. A finalized offer can only be prepared after a technical meeting about the scope.

Customer's Contribution

Depending on the scope (consulting only or also implementation) we need either just a technical counterpart to discuss the API implementation, or also access to the systems.

INDICATIVE SERVICE FEE

Service	Hourly rate (net EUR)
Consultancy	100
Programming	100

Budapest, 28.08.2022.

SystemFox Consulting Kft.
Sándor Róka, CTO