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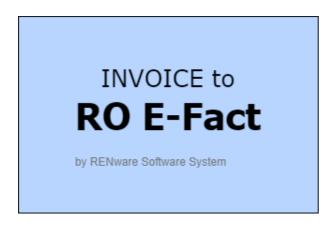
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## I. INVOICEtoROefact



**RENware Software Systems** 

## 1 INVOICEtoROefact

### Facturi emise in Excel, problema rezolvata cu INVOICEtoROefact!

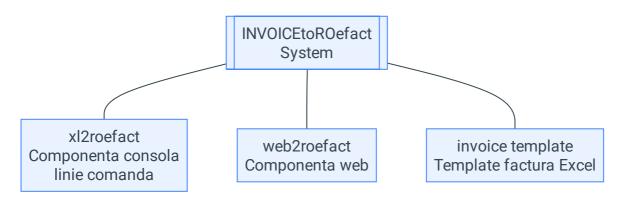
Emiteti si folositi in continuare facturi in Excel. Acest sistem va produce fisierul XML de care aveti nevoie pentru sistemul ANAF E-Factura

(https://www.anaf.ro/anaf/internet/ANAF/despre\_anaf/strategii\_anaf/proiecte\_digitalizare/e.factura).

Si mai mult, daca aveti nevoie, puteti Integra aceste facturi si alte sisteme externe prin metode moderne, uzuale, curente, incetatenite de ani de zile si binecunoscute de specialistii din IT.

## 1.1 Componentele si facilitatile sistemului

Sistemul **INVOICEtoROefact** ofera urmatoarele componente:



- xl2roefact version 0.7rc0 procesarea facturilor din interfata linie de comanda (aplicatie tip consola)
  - xl2roefact consola aplicatie linie comanda CLI
  - xl2roefact developer biblioteca sursa python dezvoltari proprii
  - xl2roefact desktop ...in curind ... aplicatie desktop GUI
  - xl2roefact mobile ...in curind... aplicatie pentru mobile Android si iOS

- web2roefact version n/a procesarea facturilor din interfara web
- invoice template version 0.1.20 model / sablon factura in Excel

Descrierea facilitatilor acestor componente poate fi accessata aici.

## 1.2 Date identificare

- p/n: 0000-0095
- code-name: api\_to\_roefact
- commercial name: INVOICEtoROefact
- site web (https://invoicetoroefact.renware.eu/)
- Git Hub repository (https://github.com/petre-renware/api\_to\_roefact)
- Git Hub releases (https://github.com/petre-renware/api\_to\_roefact/releases)
- copyright: RENware Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)
- · general system license

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## 2 Componentele sistemului

### **Cuprins:**

- · Componentele sistemului
  - Componente
    - xl2roefact
    - xl2roefact Python library
    - · web2roefact
    - invoice template
  - · Criterii de clasificare
  - Note

Sistemul consta din mai multe componente toate avind acelasi obiectiv central: **emiterea de facturi si procesarea facturilor emise existente deja**. Faptul ca sunt mai multe componente asigura *mai multe cai alternative* de a atinge obiectivul central, cai ce pot fi utilizate in paralel (concurent, in acelasi timp) in functie de "dotarea tehnica" a fiecaruia, de afinitatea fiecaruia la un "gen" de sisteme sau pur si simplu de preferinta de moment a fiecaruia.

## 2.1 Componente

Sistemul ofera urmatoarele componente:

- xl2roefact version 0.7rc0 procesarea facturilor in mod linie de comanda
- xl2roefact Python library version 0.7rc0 procesarea facturilor prin cod / program (development propriu)
- web2roefact version n/a procesarea facturilor din interfara web
- invoice template version 0.1.20 model / sablon factura in Excel

Facilitatile generale ale fiecareia din acestea sunt prezentate in continuare.

## 2.1.1 xl2roefact

Aplicatie linie de comanda pentru procesarea facturilor. Facilitati (vezi "Criterii de clasificare"):

- · Operare: CLI
- Introducere si import factura (INp):
  - XLSX

✓ JSON
✓ FORM
Export si salvare factura electronica (EXp);
✓ JSON
✓ XML
✓ EXCEL (pentru recipisa incarcare ROeF)
✓ PDF
✓ Ready to Run
✓ ROeF

Descriere detaliata aici

## 2.1.2 xl2roefact Python library

Pachet (biblioteca) public *Python* utilizabil pentru dezvoltare / extindere aplicatii proprii. Facilitati (*vezi "Criterii de clasificare"*):

- Operare: din cod software
- Introducere si import factura (INp):
  - XLSX
  - JSON
  - FORM
- Export si salvare factura electronica (EXp);
  - JSON
  - XML
  - ✓ EXCEL (pentru recipisa incarcare ROeF)
  - PDF
- Ready to Run
- ROeF

Descriere detaliata aici

## 2.1.3 web2roefact

Aplicatie web pentru procesarea facturilor. Facilitati (vezi "Criterii de clasificare"):

· Operare: WEB

Introducere si import factura (INp):
✓ XLSX
✓ JSON
✓ FORM
<ul> <li>Export si salvare factura electronica (EXp);</li> </ul>
✓ JSON
✓ XML
EXCEL (pentru recipisa incarcare ROeF)
✓ PDF
✓ Ready to Run
✓ ROeF
2.1.4 invoice template
Sablon factura in format Office Excel. Facilitati (vezi "Criterii de clasificare"):
Operare: din aplicatie Office Excel
Introducere si import factura (INp):
✓ XLSX
JSON
FORM
Export si salvare factura electronica (EXp);
<ul> <li>Export si salvare factura electronica (EXp);</li> <li>JSON</li> </ul>
JSON
JSON  XML
<ul> <li>✓ JSON</li> <li>✓ XML</li> <li>✓ EXCEL</li> <li>✓ PDF (din aplicatia Office Excel)</li> </ul>
✓ JSON  ✓ XML  ✓ EXCEL

## 2.2 Criterii de clasificare

In scopul identificarii mai usoare a componentelor necesare acestea sunt clasificate dupa urmatoarele criterii:

• Operare interfata de operare al componentei:

- CLI linie de comanda (din consola tip "command prompt" sau terminal)
- WEB web din browser
- din cod software
- · din aplicatia locala Office Excel
- INp modul de introducere si import a facturii:
  - XLSX import dintr-un document Office Excel unde a fost deja introdusa anterior preluarii. Ca si instrument de introducere poate fi folosit oricare din cele ce permit salvarea / exportul in format XLSX (alte formate, in special cel anterior XLS nu sunt importabile ci trebuiesc "convertite" la formatul xlsx)
  - JSON import din format JSON
  - FORM factura se poate introduce manual direct in sistem, acesta punind la dispozitie un formular dedicat acestei operatii
- **EXp** formatul de exportare si salvare a facturii electronice<sup>1</sup>:
  - JSON format folosit pentru interschimbarea, interfatarea datelor cu sisteme standard REST (de exemplu Oracle EBS)
  - XML format folosit pentru interschimbarea, interfatarea datelor cu sisteme standard SOAP <sup>2</sup> (de exemplu RO eFact, SAP)
  - EXCEL format Office Excel xlsx
  - PDF format Adobe PDF tiparibil
- **Ready to Run** specifica faptul ca acea componenta poate fi folosita ca atare, fara o instalare prealabila ("ready to run") altfel aceasta trebuie instalata inainte de utilizare
- ROeF specifica faptul ca acea componenta permite incarcarea automata<sup>3</sup> a facturii in sistemul ANAF SPV RO
  eFact

## 2.3 Note

- 1. Exportul facturilor in formatele EXCEL si respectiv PDF se face utilizind formatul vizual al documentului din componenta invoice template ←
- 3. incarcarea automata a facturii in sistemul ANAF RO eFact este conditionata de configurarea respectivei componente cu credentialele necesare autentificarii in acest sistem (altfel acesta informatie va fi ceruta utilizatorui pentru introducere manuala) ←

## II. xl2roefact

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## 3 xl2roefact

## version 0.7rc0

#### Legaturi externe utile:

- **Web Site** (https://invoicetoroefact.renware.eu/) . (Pentru acces corect la toate referintele din acest document vizitati site-ul dedicat acestui sistem.)
- Pachet PyPi (https://pypi.org/project/xl2roefact/)
- Surse GitHub (https://github.com/petre-renware/api\_to\_roefact/)
- Referinta dezvoltare software biblioteca Python (https://invoicetoroefact.renware.eu/xl2roefact/doc/README\_xl2roefact\_library.html)
- Referinta API (https://invoicetoroefact.renware.eu/xl2roefact/doc/wrapper\_810.05a-xl2roefact\_DLD\_specs.html)

## 3.1 Facilitati



Aceasta componenta este "totul despre crearea de facturi electronice" din formatul Excel office (xlsx). Aplicatia poate genera factura in format JSON, XML, PDF si o poate incarca in sistemul *RO E-Fact*<sup>1</sup>.

Aceasta componenta ofera urmatoarele facilitati (acestea fiind obiectivele fundamentale ale componentei):

- transformarea facturilor din Excel in formatul XML cerut de catre sistemul ANAF RO E-Fact pentru incarcare
- incarcarea acestora in sistemul ANAF RO E-Fact<sup>1</sup>
- transformarea facturilor din Excel intr-un format JSON intermediar, independent de platforma si care permite integrarea acestora cu alte sisteme (standard REST)
- **generarea facturii in format PDF** pentru transmiterea acesteia catre client, semnarea electronica, tiparirea si arhivarea acesteia in format fizic (in general manipularea facturii in format "human readable")

Componenta ofera doua instrumente pentru realizarea si indeplinirea acestor obiective:

- x12roefact o aplicatie de tip linie de comanda (disponibila pentru sistemele de operare Windows, Linux si MacOS)
- x12roefact PyPi **blioteca standard Python** utilizabila pentru dezvoltari proprii in scopul extinderii altor sisteme existente (*custom development*)

## 3.2 Instalarea aplicatiei xl2roefact

Instalarea aplicatiei xl2roefact este disponibila in urmatoarele variante:

- pentru Windows:
  - MSI pachet instalare pentru Windows
  - EXE executabil Windows in format "portabil" (un singur fisier)
- pentru Linux:
  - ...in curind... DEB pachet instalare pentru Linux Debian
  - ...in curind... RPM pachet instalare pentru Linux
  - ...in curind... APPIMG executabil Linux in format "portabil" (un singur fisier)
- pentru Mac OS X
  - ...in curind... DMG pachet instalare pentru MacOS <!--
- · ca script Python indiferent de sistemul de operare;
  - Pachet Python (https://pypi.org/project/xl2roefact/) biblioteca / libraria completa pe PyPi (inclusiv sursele)

Pentru acces la pachetele de instalare vezi sectiunea de descarcare resurse.

**Note:** \* utilizarea ca script Python necesita existenta ca mediul Python3 min 3.10 sa fie instalat local \* numele pachetelor includ versiunea de aplicatie utilizata si sistemul de operare pentru care sunt disponibile \* pentru echivalent utilizare portabila pentru Linux se poate instala biblioteca Python dupa care devine utilizabil scriptul Python "ca orice alta comanda Linux"

## 3.3 Configurarea aplicatiei xl2roefact

Parametrii de configurare aplicatiei se gasesc in fisierul *config\_settings.py*. Acestia sunt sub elaborati in limbaj Python prin utilizarea conventiilor de constante conform recomandarilor PEP (numele capitatlizat) si sunt acompaniti de linii de explicatii privind aplicabilitatea lor.

Configurare aplicatiei se poate face interactiv si din aplicatie. Pentru a obtine help referitor la detaliile comenzi se va folosi

```
xl2roefact settings --help
```

Configurarile existente si regulile recomandate in configurarea aplicatiei se afiseaza folosind comanda:

```
xl2roefact settings --rules
```

## 3.3.1 Configurarea din fisier extern

Configurarea aplicatuiei se poate face si prin intermediul unui fisier extern numit "sablon de configurare" (en: configuration template). Sablonul permite configurarea aplicatiei prin modificarea fragmentelor de text care trebuiesc cautate in fisierul Excel pentru identificarea diverselor informatii aferente facturii.

Sablonul este in format YAML (https://yaml.org/) iar informatiile ce trebuiesc descrise sunt explicate individual in comentarii insotitoare. De asemenea este util a fi citite si recomandarile date in pagina de descriere a aplicatiei.

Pentru a beneficia de cobfigurarile facute de dumneavoastra trebuie sa creati un fisier app\_settings.yml in directorul curent din care lansati aplicatia, fisier ce contine noile configurari dorite. Numele fisierelui este obligatoriu a fi respectat.



### Fisiere de configurare multiple

De retinut ca acest fisier este considerat (daca exista) cel din directorul curent de unde lansati aplicatia. Deci daca v-ati creat mai multe directoare de lucru (de exemplu pentru clienti diferiti) puteti crea fisiere de configurare specifice, cite unul in fiecare director.

#### Fisier de configurare global

In conditiile folosirii kitului MSI pentru o instalare locala a aplicatiei (cu utilizari multiple si repetate) si in situatia in care se doreste schimbarea configurarii implicite a aplicatiei se vor urma acesti pasi:

- in directorul de instalare a aplicatiei se va crea daca nu exita directorul data/
- in acest director se va crea un fisier app\_settings.yml cu configurarea globala dorita

Aceasta configurare inlocuieste configurarea implicita si se va aplica global in utilizarea aplicatiei. In continuare configurarile existente in directorul curent suprascriu configurarea globala (se aplica cu precedenta).

Aici puteti gasiti pentru descarcare un model de sablon de configuare.

## 3.4 Utilizare nomenclator de furnizori

Aplicatia xl2roefact permite utilizarea datelor pentru furnizori din fisiere externe (in locul informatiilor din fisierele Excel) lucru ce poate fi folositor in urmatoarele situatii:

- cind utilizatorul aplicatiei o face in scopuri personale si multe facturi emise il au *pe el ca furnizor*. Aceast lucru permite ca informatia din Excel referitoare la furnizor sa fie sumara sau sa lipseasca, factura finala format PDF fiind generata cu aplicatia
- cind utilizatorul aplicatiei o foloseste pentru a emite facturi pentru alte firme si astfel este mai comod sa foloseasca fisiere cu datele acestor firme decit sa introduca informatia in fiecare factura
- cind se doreste ca datele furnizorului sa fie preluate dintr-un sistem extern ce le poate exporta ca si fisisre

## 3.4.1 Reguli generale de utilizare

Aceasta sectiune descrie regulile generale ce trebuiesc avute in vedere pentru o completa si corecta utilizare a facilitatii "Nomenclator furnizori":

- Nomenclatorul de furnizori se va completa intr-unul sau mai multe fisere de date (de tip text, vezi mai jos formatul exact).
- · Un fisier acomodeaza un singur furnizor. Pentru mai multi furnizori se vor folosi fisiere diferite.
- Numele fisierului (fara extensie) trebuie sa coincida cu o cheie alternativa a furnizorului respectiv. Prin cheie alternativa se intelege acea cheie care este unica si poate asigura regasirea furnizorului prin folosirea ei. Ca si exemple din practicile curente ar fi cimpul numit uzual code sau code\_name existent in mai toate sistemele de business. Acesta are avantajul unicitatii si a unei reprezentari "umane" (en: human readable). Desigur un cimp de tip cheie primara / ID este ideal dar de obicei acesta este tehnic iar valoarea sa nu ofera prea multe indicatii.
- Formatul fisierului este YAML (https://yaml.org/) standard, fara folosirea de modele de date complexe, aatfel incit o eventuala conversie JSON <--> YAML sa poata fi realizata manual in ambele sensuri si fara necessitatea unor cunostinte avansate ci la nivel de redefinire a numelor cheilor.

### 3.4.2 Locatia nomenclatorului

Fisierele cu datele furnizorilor pot sta in urmatoarele locatii:

- directorul curent este locatia cu prioritatea maxima si in caz de "duplicate" ale unui fisier, cel de aici va fi luat in considerare
- directorul data/ din locatia unde este instalata aplicatia

Recomandari si practici uzuale:

- In situatiile in care sistemul este instalat pe un computer ce se foloseste frecvent cu aplicatia xl2roefact si exista un set de furnizori frecvent folositi se recomanda folosirea directorului data/ pentru stocarea fisierelor nomenclator astfel incit sa poata fi refolosite usor.
- In situatia folosirii a "multe" fisiere date furnizori se recomanda crearea unui director dedicat in locatia utilizata (vezi mai sus) si acesta sa fie referit in numle fisierului.

### 3.4.3 Utilizarea nomenclatorului

Pentru a folosi cu aplicatia un fisier tip nomenclator furnizor se va utiliza optiunea:

```
xl2roefact xl2json -o fisier_furnizor
```

unde fisier\_furnizor este numele fisierului ce contine datele unui furnizor. Locatia acestui fisier este relativa la locatia considerata pentru folosire

## 3.4.4 Sablon pentru nomenclator de furnizori

Sablonul este proiectat pentru utilizarea in facturile emise si contine numai informatiile necesare in acest scop. Astfel cimpurile existente trebuiesc pastrate, adica nu vor fi sterse.

Vor fi respectate si completate corespunzator cimpurile specificate ca obligatoriii (en: mandatory in comentariile aferente fiecarui cimp.

Pentru acele cimpuri pentru care informatia este necunoscuta sau considerata irelevanta se va completa cu null.

Se vor putea adauga orice alte cimpuri suplimentare cu conditia sa fie respectat formatul fisierului ( YAML ). acestea nu vor fi folosite de catre aplicatie, ci pur si simplu ignorate.

Aici puteti gasiti un model de sablon de configuare.

## 3.5 Comenzile aplicatiei

Interfata aplicatie este realizata utilizind conventiile si practicile uzuale pentru aplicatii tip linie de comanda consola. Pentru informatii privind comenzile se poate folosi optiunea de **help**, dispobilia atit la nivelul general:

```
xl2roefact --help
```

cit si la nivel detaliat pentru fiecare comanda

```
xl2roefact [COMMAND] --help
```

#### Lista comenzilor:

- about Afiseaza informatii despre aceatsa aplicatie (copyright, scop, etc)
- settings \_ Afiseaza parametrii de configurare a aplicatiei. Vezi sectiunea de configurare a aplicatiei
- xl2json Transforma fisierul (fisierele) Excel in forma JSON pentru utilizare ulterioara ca forma de date standardizat pentru schimbul de informatii cu alte sisteme electronice

#### Comenzile detaliate:

## 3.5.1 xl2roefact

Application global information (command agnostic).

Usage:

```
xl2roefact [OPTIONS] COMMAND [ARGS]...
```

#### Options:

```
-V, --version show application version
--install-completion Install completion for the current shell.
--show-completion Show completion for the current shell, to copy it or customize the installation.
```

#### 3.5.1.1 about

Provide a short application description.

Usage:

```
xl2roefact about [OPTIONS]
```

### 3.5.1.2 settings

Display application configuration parameters and settings that are subject to be changed by user.

Args:

```
`rules`: show recommended rules to follow when change application configurable settings (available in both RO & EN languages). Defaults to `False`.
```

## Usage:

```
xl2roefact settings [OPTIONS]
```

### Options:

```
-r, --rules show settings recommended update rules
```

### 3.5.1.3 xl2json

Extract data from an Excel file (save data to JSON format file with the same name as original file but .json extension).

Args:

```
`invoice_type_code`: invoice type (for exaple regular invoice or storno) as this info is not usually subject of Excel file. Default to `380` (regular / usual invoice)

`file_name`: files to process (wildcards allowed).

`files_directory`: directory to be used to look for Excel files. Defaults to `invoice_files/`.

NOTE: if default directory does not exists will consider current directory instead

`owner_datafile`: File to read invoice supplier (owner) data instead Excel.

`verbose`: show detailed processing messages". Defaults to `False`.
```

### Usage:

```
xl2roefact xl2json [OPTIONS] [FILE_NAME]
```

#### Options:

```
--invoice-type [380]
                                 [default: 380]
[FILE_NAME]
                                 files to process (wildcards allowed)
                                 [default: *.xlsx]
-d, --files-directory DIRECTORY
                                directory to be used to look for
                                Excel files (if default directory
                                does not exists will consider
                                current directory instead).
                                 [default: invoice_files/]
-o, --owner-datafile PATH
                                File to read invoice supplier
                                 (owner) data instead Excel.
-v, --verbose
                                 show detailed processing messages
```

## 3.6 Practici si regului referitoare la continutul facturilor din Excel

Acest capitol se refera la modul in care este "tratat" continutul fisierului Excel cu factura, mai exact la modalitatea in care informatia facturii este cautata, identificata si gasita in scopul de a fi salvata in oricare din formatele de "factura electronica / E-Fact".

Utilizarea sablonului de factura Excel ce este livrat impreuna cu aplicatia **ESTE O VARIANTA DE LUCRU RECOMANDATA**, dar nu obligatorie. Chiar si in cazul utilizarii acestuia, prin modificarea "structurii" acestuia, informatia poate ajunge *nerecognoscibila / neidentificabila* total sau partial daca nu sunt urmate regulile expuse.

In general trebuie facuta diferenta intre datele facturii si modul in care aceasta va fi tiparita (va aparea la tiparire / previzualizare).

Mai exact **continutul informational** al facturii nu trebuie nici confundat si nici mixat cu **formatul de afisare al acesteia** (layout). Pentru acesta din urma se recomanda a fi folosite cu precadere *regulile de formatare* din Excel si nu cele stocare a datelor. Un exemplu este un numar zecimal oarecare unde:

- una este valoarea introdusa intr-o celula (de ex cu 3 zecimale) si
- alta este valoarea afisata (cu 2 zecimale) aceasta din urma trebuie obtinuta prin formatarea celulei respective de a afisa 2 zecimale prin rotunjire insa valoarea efectiva trebuie sa fie cea originala cu 3 zecimale, lucru (diferenta) care se poate vedea la editarea continutului celulei.

## 3.6.1 Reguli recomamdate in configurarea aplicatiei pe specificul Excel al facturilor dumneavoastra

#### Reguli recomandate pentru adaptarea aplicatiei la modelul dvs de factura in Excel:

- fiecare parametru are un hep scurt (liniile ce incep cu caracterul #) citi-l inainte de a modifica uun parametru
- nu schimbati numele parametrilor asa cum este el specificat inainte de semnul egal ( = )
- listele sunt incluse intre paranteze drepte ( [ . . . ] ) si elementele lor sunt separate prin caracterul virgula ( , )
- sirurile de caractere sunt incluse intre ghilimele (caracterul ")
- daca doriti stergerea unei listei (de ex daca nu doriti nici o optiune pentru acea lista) doar lasati acel parametru cu valoarea [] nu stergeti in nici un caz acel parametru

- nu adaugati parametrii suplimentari (altii decit cei specificati aici), acestia nu vor fi utilizati fara a modifica aplicatia (de asemenea riscati sa induceti erori in cod)
- pentru datele calendaristice in celulul Excel a se utiliza formatul standard de data ( date ) si modificati formatul de afisare in formatul dorit pe factura tiparibila

## (en-us) Recommended rules to configure the application to your Excel invoice model:

- each parameter has a short help (lines starting with # character) read it before changing that parameter
- do not change parametrs name as specified before equal (=) sign
- lists are enclosed in sqaured brackets ( [ . . . ] ) and items are separated by comma character ( , )
- strings are enclosed in " characters
- if you want to clear a list (for example you do not wants any options inside) just let it as <PARAMETR NAME> = [] do not drop that parameter
- do not add supplementary parameters, they will not be used without software changes (also risk to induce potential errors)
- for calendaristic dates Excel cells use date format and change it as display option to show wanted format

## 3.7 Tutorial utilizare aplicatie

## 3.7.1 Organizarea informatiei

Aplicatia xl2roefact "promoveaza" structurarea informatiei procesate astfel incit sa fie evitata situatia "de aglomerare" a directorului curent cu fisiere ce trebuiesc identificate si izolate in situatia in care se fac procesari in masa (pe mai multe fisiere / facturi sursa).

Astfel, aplicatia se asteapa ca fisierele Excel sursa (adica facturile de procesat) sa fie copiate in directorul invoice\_files/ de unde vor fi citite si tot aici vor fi create fisierele rezultate (JSON, XML, etc). Acest director este relativ la directorul curent de unde este lansata aplicatia si considerat "implicit" cu acest nume dar daca se doreste un alt director acest lucru poate fi facut folosind parametrul --files-directory (sau prescurtat -d) la lansarea aplicatiei astfel:

xl2roefact -d "calea si numele directorului dorit"



Nota

Ghilimelele sunt necesare numai daca numele si calea (path) contin caracterul spatiu.

## **Exemple:**

• pentru stabilirea directorului curent ca sursa pentru fisierele factura Excel:

```
xl2roefact -d ./
```

• procesarea tuturor facturilor facturilor din luna iunie, copiate intr-un director dedicat sub directorul curent:

```
xl2roefact -d ./facturi_iunie/
```

## 3.7.2 Exemplu de procesare a unei facturi

se creaza directorul recomandat pentru stocarea facturilor in Excel:

```
md invoice_files
```

- se copiaza factura factura\_A.xlsx in acest director apoi se revine in directorul anterior daca acesta a fost schimbat pentru efectuarea copierii
- se lanseaza aplicatia:

```
xl2roefact xl2json
```

In urma acestor operatii, in directorul invoice\_files vor rezulta:

```
□ invoice_files/
├── □ factura_A.xlsx # fisierul Excel original
└── □ factura_A.json # fisierul JSON rezultat in urma procesarii
```

- factura\_A.xlsx ca fiind fisierul Excel original cu factura
- factura\_A.json acesta fiind fisierul format JSON rezultat in urma procesarii si ce poate fi folosit pentru interschimbarea electronica a informatiei intre sisteme

## 3.8 Aspecte tehnice referitoare la formatul fisierului JSON aferent facturii

Acest fisier este cel generat de catre aplicatie in urma executiei acesteia cu comanda x12 j son . Formatul JSON are urmatoarra structura de baza:

```
{
    "Invoice": {...},
    "meta_info": {...},
    "excel_original_data": {...}
}
```

Cheile de la primul nivel contin:

- Invoice datele efective ale facturii
- meta\_info

- informatii referitoare la procesarea facturii si mapa de conversie a cheii Invoice din formatul JSON in formatul XML cerut de sistemul RO E-Fact
- harta de ajutor in conversia formatului JSON in formatul XML acceptat de sistemul RO E-Fact (cheie meta\_info.map\_JSONkeys\_XMLtags) si definititiile XML aferente (cheie meta\_info.invoice\_XML\_schemes)
- alte informatii despre fisierul Excel prelucrat (numele, worksheet cu factura, data si ora procesarii, CRC pentru verificare, etc)
- excel\_original\_data informatiile originale din fisierul Excel, asa cum au fost ele identificate si gasite precum si locatia (adresele celulelor). Aceste informatii sunt utile in cazul in care exista neclaritati in urma procesuluicde conversie pentru "a intelege" de unde si cum arata informatiile originale din fisierul Excel

Detalii suplimentare despre formatul JSON se gasesc in documentația Referinta dezvoltare software.

## 3.9 Descarcare (download) aplicatie xl2roefact CLI

- Pachet instalare aplicatie Windows
- · Pachet instalare script Python
- Model de sablon de configuare
- · Sablon fisier-date informatii furnizor

## 3 10 Referinta dezvoltare software

Documentatia "Referinta dezvoltare software" ofera detail necesare pentru utilizarea bibliotecii sursa in dezvoltari specifice, extindere si integrare cu alte sisteme.

## 3.11 Date identificare

- part number (p/n): 0000-0095-x12roefact
- producator si copyright: RENWare Software Systems (referinte detalii tehnice: Petre Iordanescu, petre.iordanescu@gmail.com)

## 3.12 License

## 3.13 Note

1. Toate interactiunile cu sistemul ANAF RO E-Fact necesita o conexiune la internet si un set de credentiale ANAF RO E-Fact ale companiei pentru care se incarca factura. In lipsa acestora, fisierul XML generat de aplicatie poate fi incarcat ulterior (de ex de catre departmentul contabilitate) ← ←

## III. web2roefact

## 4 Under construction page



UPCOMING...

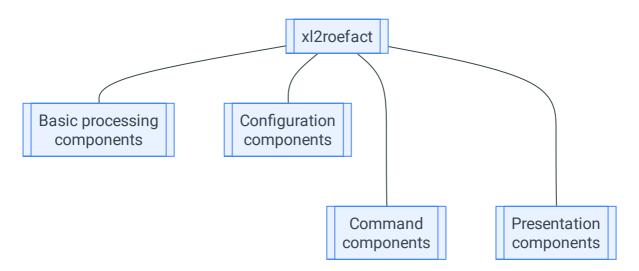
## IV. xl2roefact python library

# 5 Software development reference using xl2roefact python library

## version 0.7rc0

- Software development reference using xl2roefact python library
  - Library components
    - · Basic processing components
    - · Command components
    - · Configuration components
    - Presentation components
  - Install library
    - Install from PyPi
    - Install from distribution packages
  - Aspecte tehnice referitoare la formatul fisierului JSON aferent facturii
  - Sysyem database and parameters
  - API Refrence
  - Download xl2roefact library

## 5.1 Library components



## 5.1.1 Basic processing components

These components assure the basic elementary-raw processing of information. Their interface is pure technical and require basic development knowledge to be used "as is".

- rdiny read an Excel file and extract invoice data to a JSON file format
- wrxml write, convert the JSON invoice file to a XML file format, respecting schemes required by RO EFact standard
- chkxml check generated XML file
- ldxml load an invoice (ie, its XML associated file) to ANAF SPV system
- chkisld check if an invoice is already loaded in ANAF SPV system

## 5.1.2 Command components

These components are 2nd level layer components desined to implement user level functionalities.

- settings manage system settings
- x12json process Excel file and store extracted invoice data in JSON format. More detais here
- json2xml process JSON file and convert it to XML (ROeFact standard compliant)
- json2pdf process JSON file and produce invoice as PDF format
- xm12roefact upload XML format invoice to "SPV RO eFactura"

## 5.1.3 Configuration components

These are the components that assure and make possible system configurablitity at user level.

- config\_settings USER level configuration define application settings & parameters mainly used in invoice info / data detection and extract from invoice Excel format file
- sys\_settings SYSTEM level configuration system database and parameters, not changeable at user level in current application usage (changing these parameters needs code updating to make them effective) details in section Sysyem database and parameters

## 5.1.4 Presentation components

These are 2nd level layer components that make sysyem usable in various forms such as command line console application, daemon / server that runs in background and can be called from local or remote clients, library interfaces (for extensions and custom development) that hide low level technical execution details.

- app\_cli contains the code for xl2roefact application command line (CLI) format
- \_\_main\_\_ assures right package "addressing" as Python modele (ie, running as python -m x12roefact ...)
- \_\_version\_ keeps current system version and helper functions to assure standard and canonical representation of version string
- \_\_init\_\_ assure friendly exposing of system public objects (and of course classic pytgon role of "package maker")

## 5.2 Install library

Library can be installed using 2 methods:

- · install from PyPi
- · install from site archive of distribution packages

## 5.2.1 Install from PyPi

The library installation can be done using standard Python instruments:

```
pip install xl2roefact
```

This command will install by default the last stable version. For other versions, standard PyPi procedure to install a specific version must be used.

## 5.2.2 Install from distribution packages

To install from distribution packages first download the package version intended to install (see download section), choose the package type (if you have no special option, then choose WHEEL format) and install it using pip as any other Python library installation (detailed in Python official documentation).

## 5.3 Aspecte tehnice referitoare la formatul fisierului JSON aferent facturii

Acest fisier este cel generat de catre aplicatie in urma executiei acesteia cu comanda x12 j son . Structura de baza a acestui fisier este:

```
{
    "Invoice": {...},
    "meta_info": {...},
    "excel_original_data": {...}
}
```

Cheile de la primul nivel contin:

- Invoice datele efective ale facturii
- meta\_info
  - informatii referitoare la procesarea facturii si mapa de conversie a cheii Invoice din formatul JSON in formatul XML cerut de sistemul RO E-Fact
  - harta de ajutor in conversia formatului JSON in formatul XML acceptat de sistemul RO E-Fact (cheie meta\_info.map\_JSONkeys\_XMLtags) si definititiile XML aferente (cheie meta\_info.invoice\_XML\_schemes)
  - alte informatii despre fisierul Excel prelucrat (numele, worksheet cu factura, data si ora procesarii, CRC pentru verificare, etc)

• excel\_original\_data - informatiile originale din fisierul Excel, asa cum au fost ele identificate si gasite precum si locatia (adresele celulelor). Aceste informatii sunt utile in cazul in care exista neclaritati in urma procesuluicde conversie pentru "a intelege" de unde si cum arata informatiile originale din fisierul Excel

An example of JSON generated file is available here

## 5.4 Sysyem database and parameters

System database is an object that interface library components with physical stores of parameters and data required by system and its applications.

Sometimes it can contain both physical and logical interfaces one example being InvoiceTypes which consists of:

- InvoiceTypes: dict the physical store of invoice types name and codes
- InvoiceTypesEnum: Enum the logical object with invoice types implemented as standard Python enumeration (enum)

This let open the possibility that in future versions to "externalize" physical data-objects to other systems or distinct files, but letting small / tinny physical data-objects to stay in sys\_settings.py module.

## 5.5 API Refrence

(https://invoicetoroefact.renware.eu/xl2roefact/doc/wrapper\_810.05a-xl2roefact\_DLD\_specs.html)

## 5.6 Download xl2roefact library

· Pachete instalare biblioteca Python formate WHEEL si DIST

## 6 xl2roefact python library API Reference

## version 0.7rc0

- xl2roefact python library API Reference
- \_\_version\_\_
  - \_\_version\_\_
  - normalized\_version
- app\_cli
  - about
  - settings
  - xl2json
  - called\_when\_no\_command
  - run
- \_\_init\_\_
  - \_version\_\_
- \_\_main\_\_
- sys\_settings
  - InvoiceTypes
- Idxml
- wrxml
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  - rdinv
  - get\_excel\_data\_at\_label
  - mk\_kv\_invoice\_items\_area
  - get\_invoice\_items\_area
  - get\_merged\_cells\_tobe\_changed
  - build\_meta\_info\_key
  - get\_partner\_data
- chkxml
- chkisld
- libutils
  - hier\_get\_data\_file
  - complete\_sexe\_file

- invoice\_taxes\_summary
- dict\_sum\_by\_key
- isnumber
- find\_str\_in\_list
- config\_settings
  - DEFAULT\_DUE\_DATE\_DAYS
  - rules\_content
  - load
- data

7 \_\_version\_\_

x12roefact version info.

```
####### #####
# # ## ##
####### ####
# ## # # #
           ### ### # ## #
## ## #
## ## # #
            # # # ## #
 ## # #
            # # # ## #
##
# ## # # ####
            # # # ## #
            # # ## ##
# ## # # #
####### ######
            #### #####
           ####### ###### ##### ##### ######
           # # # # ## ## ## ## ##
###### #####
# ## # # # # # # # # # # #
                      # # ##### # #
```

## 7.0.0.1 \_\_version\_\_

current 0.7rc0, previous 0.6

## 7.0.0.2 normalized\_version

```
def normalized_version(raw_version: str = __version__) -> str
```

transform version string in canonical form.

Used in \_\_init\_\_.py to return \_\_version\_\_ object as will be seen by package consumers

## **Arguments**:

raw\_version - a raw version string. Defaults to package current version string.

#### Returns:

str: canonical version string

## 8 app\_cli

app\_cli: the command line application for all xl2roefact functionalities.

Identification:

- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

#### 8.0.0.1 about

```
@app_cli.command()
def about()
```

Provide a short application description.

## 8.0.0.2 settings

```
@app_cli.command()
def settings(rules: Annotated[
    bool,
    typer.
    Option("--rules", "-r", help="show settings recommended update rules"),
] = False)
```

Display application configuration parameters and settings that are subject to be changed by user.

### **Arguments:**

• rules - show recommended rules to follow when change application configurable settings (available in both RO & EN languages). Defaults to False.

## 8.0.0.3 xl2json

```
@app_cli.command()
def x12json(
    invoice_type: InvoiceTypesEnum = InvoiceTypesEnum.NORMALA.value,
    file_name: Annotated[
        str, typer.Argument(
            help="files to process (wildcards allowed)")] = "*.xlsx",
    files_directory: Annotated[
        Path,
        typer.Option(
            "--files-directory",
            "-d".
            exists=False,
            file_okay=False,
            dir_okay=True,
            writable=True,
            readable=True,
            resolve_path=True,
            help=
            "directory to be used to look for Excel files (if default directory does not exists
will consider current directory instead)."
        ),
    ] = "invoice_files/",
    owner_datafile: Annotated[
        Path,
        typer.Option(
            "--owner-datafile",
            "-o",
            exists=False,
            file_okay=False,
            dir_okay=False,
            writable=False,
            readable=True,
            resolve_path=False,
            help="File to read invoice supplier (owner) data instead Excel."),
    ] = None,
    verbose: Annotated[
        bool,
        typer.
        Option("--verbose", "-v", help="show detailed processing messages"),
    ] = False)
```

Extract data from an Excel file (save data to JSON format file with the same name as original file but .json extension).

#### **Arguments:**

- invoice\_type\_code invoice type (for exaple regular invoice or storno) as this info is not usually subject of Excel file. Default to 380 (regular / usual invoice)
- file\_name files to process (wildcards allowed).
- files\_directory directory to be used to look for Excel files. Defaults to invoice\_files/. NOTE: if default directory does not exists will consider current directory instead
- owner\_datafile File to read invoice supplier (owner) data instead Excel.
- verbose show detailed processing messages". Defaults to False.

#### 8.0.0.4 called\_when\_no\_command

```
@app_cli.callback(invoke_without_command=True)
def called_when_no_command(
    ctx: typer.Context,
    version: Annotated[
        bool,
        typer.Option("--version", "-V", help="show application version"),
] = False)
```

Application global information (command agnostic).

#### 8.0.0.5 run

NOTE: for run "reason to be" as copy of app\_cli see iss 0.1.22b 240216piu\_a

9 \_\_init\_\_

### 9.0.0.1 \_\_version\_\_

default conversion takes place over xl2roefact actual version

10 \_\_main\_\_

xl2roefact.main: Python package standard file to assure run as python -m xl2roefact.

Identification:

- code-name: \_\_main\_\_
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

Deployments:

- Windows: MSI installer with EXE application.
- Linux: x12roefact executable shell as wrapper for x12roefact.py.

Specifications:

- command general format: python -m x12roefact [OPTIONS] COMMAND [ARGS]....
- help: python -m xl2roefact --help.

## 11 sys\_settings

System database and parameters.

This module acts as an "ORM" between x12roefact system and different data objects. It contains:

- tinny physical data objects (Section 1.)
- logical data objects (Section 2.)
- interfaces to external data objects as files or other specialized systems (Section 2.)

#### Notes:

- "Sections 1, sl, ..." organization of code even is just a pure visual one, is recommended to be respected and followed it being intended to increase code readability and latter maintainability.
- IMPORTANT to keep in mind: This module IS NOT intended to be modified by end users or administrators. Only development stuff can alter this database because application code must be updated accordingly.
- · for updaters remark: because dependencies, code sections should follow strict enumerated order in comments

#### References:

- copyright: (c) 2024 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

## 11.0.0.1 InvoiceTypes

Section 2. INTERFACES & LOGICAL data

## 12 Idxml

ldxml: modul de incarcare a facturii in sistemul ANAF E-Factura

#### Identification:

- code-name: ldxml
- · copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

## Specifications:

- document cerinte initiale: 110-SRE-api\_to\_roefact\_requirements.md section Componenta x12roefact
- INTRARI: fisier f-XML
- IESIRI: raport cu validarea si identificatorul incarcarii

## 13 wrxml

wrxml: modul de generare a fisierului format XML

Identification:

- code-name: wrxml
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

Specifications:

- document cerinte initiale: 110-SRE-api\_to\_roefact\_requirements.md section Componenta xl2roefact
- INTRARI: fisier f-JSON
- IESIRI: fisier format XML conform cerintelor si sistemului ANAF E-Factura (cod: f-XML)

## 14 rdinv

rdinv: modul de procesare a fisierului Excel ce contine factura si colectare a datelor aferente.

Formatul acceptat fisier Excel este XLSX.

Identification:

- code-name: rdiny
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

Specifications:

- document cerinte initiale: 110-SRE-api\_to\_roefact\_requirements.md section Componenta x12roefact
- INTRARI: fisier format XLSX ce contine factura emisa (cod: f-XLSX)
- IESIRI: fisier format JSON imagine a datelor facturii (cod: f-JSON)

#### 14.0.0.1 rdinv

read Excel file for invoice data.

Produce a dictionary structure + JSON file with all data regarding read invoice: canonical KV data, meta data, map to convert to XML and original Excel data.

#### **Arguments**:

- file\_to\_process the invoice file (exact file with path).
- invoice\_worksheet\_name the worksheet containing invoice, optional, defaults to first found worksheet.
- invoice\_type\_code code of invoice type, for example "380" for regular.
- debug\_info key only, show debugging information, default False.
- owner\_datafile specify a file to read supplier data from, default None meaning to read supplier data from Excel file.

#### Returns:

• dict - the invoice extracted information from Excel file as dict(Invoice: dict, meta\_info: dict, excel\_original\_data: dict)

#### Notes:

- db: pylightxl object: EXCEL object with invoice (as a whole)
- ws: pylightxl object: WORKSHEET object with invoice

#### 14.0.0.2 get\_excel\_data\_at\_label

get "one key Excel values", like invoice number or invoice issue date.

#### **Arguments**:

- pattern\_to\_search\_for for example for inv number, will pass the PATTERN\_FOR\_INVOICE\_NUMBER\_LABEL.
- worksheet the worksheet containing invoice (as object of pyxllight library).
- area\_to\_scan area of cells to be searched, default whole worksheet.
- targeted\_type what type expect (will try to convert to, if cannot will return str), default str.
- down\_search\_try establish if DOWN search method is tried, default True.

#### Returns:

None if not found OR dictionary containing: \* "value": int | float | str - the value found covenred to requested targeted\_type if possible or str otherwise; if "out of space" then returns None \* "location": (row, col) - adrees of cell where found value

#### Notes:

• normal scan order is 1.RIGHT, 2.DOWN (if allowed), 3.IN-LABEL only in given area and pattern.

#### 14.0.0.3 mk\_kv\_invoice\_items\_area

```
def mk_kv_invoice_items_area(invoice_items_area_xl_format) -> dict
```

transform invoice\_items\_area in "canonical JSON format" (as kv pairs).

#### **Arguments**:

invoice\_items\_area\_xl\_format - invoice items area in Excel format (ie, DataFrame with row, col, data).

#### Returns:

• invoice\_items\_area\_xl\_format - dictionary with invoice items in Excel format (ie, rows, columns).

#### Notes:

• for ROefact XML model (& plan) see invoice\_files/\_\_model\_test\_factura\_generat\_anaf.xml.

#### 14.0.0.4 get\_invoice\_items\_area

get invoice for invoice\_items\_area, process it and return its Excel format.

Process steps & notes:

- find invoice items subtable.
- · clean invoice items subtable.
- extract relevenat data.
- NOTE: all Excel cell addresses are in (row, col) format (ie, Not Excel format like "A:26, C:42, ...")

#### **Arguments**:

- worksheet the worksheet containing invoice (as object of pyxllight library).
- invoice\_items\_area\_marker string with exact marker of invoice items table.
- NOTE this is the UPPER-LEFT corner and is determined before calling this procedure.
- wks\_name the wroksheet name (string) of the worksheet object.

#### Returns:

invoice\_items\_area - dictionary with invoice items in Excel format (ie, rows, columns).

#### 14.0.0.5 get\_merged\_cells\_tobe\_changed

scan Excel file to detect all merged ranges.

#### **Arguments:**

- file\_to\_scan the excel file to be scanned.
- invoice\_worksheet\_name the worksheet to be scanned.
- keep\_cells\_of\_items\_ssd\_marker tuple with cells that will be marked IN ANY CASE to be preserved:
- use case: to keep all potential invoice items ssd rows.
- format: tuple(row, col, val) where row & col are relevant here
- default: None

#### Returns:

cells\_to\_be\_changed - list with cells that need to be chaged in format (row, col).

#### Notes:

- function is intended to be used ONLY internal in this module.
- use openpyx1 library to do its job.

#### 14.0.0.6 build\_meta\_info\_key

build meta\_info key to preserve processed Excel file meta information: start address, size.

#### Notes:

- (1.) all cell addresses are in format (row, col) and are absolute (ie, valid for whole Excel file).
- (2.) this function is designed to be used internally by current module (using outside it is not guaranteed for information 'quality').

#### **Arguments**:

- excel\_file\_to\_process name of file to process as would appear in meta\_info key.
- invoice\_worksheet\_name the worksheet name as would appear in meta\_info key.
- ws\_size worksheet size as would appear in meta\_info key (index 0 max rows, index 1 max columns).
- keyword\_for\_items\_table\_marker the content of cell used as start of invoice items subtable as would appear
   in meta\_info.

found\_cell - position of cell used as start of invoice items subtable as would appear in meta\_info key (index 0 row, index 1 column).

#### Returns:

meta\_info - dictionary built with meta information to be incorporated in final invoice dict

#### 14.0.0.7 get\_partner\_data

Get invoice partener data from Excel.

#### Notes:

- for developers: function works by generating side effects and must be located in rdinv.py
- side effects: this function works by directly modifying param\_invoice\_header\_area sent parameter
- supplier\_datafile exception: if file is not found or cannot be read, this function will force complete application termination (sys.exit)

#### Arguments:

- partner\_type one of "CUSTOMER", "SUPPLIER" or "OWNER" to specify for what kind of parner get data. The value "OWNER" is designed to get data from an outside database / file (master data)
- wks current work-on pylightxl Worksheet object
- param\_invoice\_header\_area mode IN-OUT, outside param\_invoice\_header\_area as used and needed in rdinv(). This function will write back in this variable
- supplier\_datafile for partner\_type = "CUSTOMER" here is expected the file where to get supplier data

#### Returns:

None - all data is produced directly in parameters as side effect

## 15 chkxml

chkxml: modul de validare a facturii in sistemul ANAF E-Factura

#### Identification:

- code-name: chkxml
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

#### Specifications:

- document cerinte initiale: 110-SRE-api\_to\_roefact\_requirements.md section Componenta x12roefact
- INTRARI: fisier f-XML
- IESIRI: raport cu eventualele erori de validare

## 16 chkisld

chkisld: modul de verificare a starii de incarcare a unei facturi emise

#### Identification:

- code-name: chkisld
- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

#### Specifications:

- document cerinte initiale: 110-SRE-api\_to\_roefact\_requirements.md section Componenta xl2roefact
- INTRARI: fisier f-XLSX sau numarul / cheia / codul facturii
- IESIRI: valoarea echivalent TRUE daca factura a fost deja incarcata sau valoare echivalent FALSE daca factura nu a fost incarcata

## 17 libutils

general utilities library for all x12roefact components and modules.

#### Identification:

- code-name: libutils
- copyright: (c) 2023, 2024 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

#### Components:

- complete\_sexe\_file() -> bool: Rename and move resulted exe file (called from build\_sexe script)
- dict\_sum\_by\_key(dict, str) -> float:Sum a dictionary for a given key at all depth levels
- find\_str\_in\_list(list, list) -> int: Search more strings (ie, a list) in list of strings
- hier\_get\_data\_file(file\_name: str) -> Path:Get Path(file\_name) from hierarchy of locations
- invoice\_taxes\_summary(list[dict]) -> dict: Calculates invoice taxes summary as required by ROefact requirements

isnumber(str) -> bool: Test a string if it could be used as number (int or float)

#### 17.0.0.1 hier\_get\_data\_file

```
def hier_get_data_file(file_name: str) -> Path | None
```

Get Path(file\_name) from hierarchy of locations: (1) current directory, (2) package data/ directory, (3) None is file does not exists in 1 or 2 locations.

#### **Arguments**:

• file\_name - the name of the file to be returned as full path

#### Returns:

• Path - path of file if was found in (1) or (2) locations or None if not found

#### 17.0.0.2 complete\_sexe\_file

```
def complete_sexe_file(drop_source: bool = True) -> bool
```

Rename and move resulted exe file. This function is dedicated only to development phase, so various objects are hard coded.

#### Specs:

- file to process .../dist\_sexe/xl2roefact\_to\_update\_name.exe --> .../dist/xl2roefact-version-win64.exe
- Note 1: all function code suppose that current directory is root of x12roefact, ie where is located pyproject.toml of package

#### **Arguments**:

drop\_source - indicate to delete source file after copying, ie make a "move" operation, otherwise make a copy
keeping the source file. Default behaviour is to delete source.

#### Returns:

• bool - True if file was found, renamed and moved with no error

#### 17.0.0.3 invoice\_taxes\_summary

```
def invoice_taxes_summary(invoice_lines: list[dict]) -> list
```

Calculates invoice taxes summary as required by ROefact requirements.

#### **Arguments**:

• invoice\_lines - section with item lines from 'big' invoice dictionary

#### Returns:

list - usable for "cac\_TaxSubtotal" key

#### 17.0.0.4 dict\_sum\_by\_key

```
def dict_sum_by_key(search_dict: dict | list[dict], sum_key: str) -> float
```

Sum all dictionary (or list off dictionaries) items, at all levels, for a given key.

#### **Arguments**:

- search\_dict dictionary to be searched for
- sum\_key key to be searched

#### Returns:

float - with required sum

#### 17.0.0.5 isnumber

```
def isnumber(a_string: str) -> bool
```

test if a string is valid as any kind of number.

#### **Arguments**:

• a\_string - input string.

#### Returns:

• True - if input string is valid as any kind of number, orherwise False.

#### 17.0.0.6 find\_str\_in\_list

```
def find_str_in_list(list_of_str_to_find: list, list_to_search: list) -> int
```

find a substring from list\_of\_str\_to\_find in elements of list\_to\_search.

#### **Arguments**:

- list\_of\_str\_to\_find list of strings to search for.
- list\_to\_search liste where to search for substrings.

#### Returns:

• index - the index of list item which contains str\_to\_find (first found) or None if not found.

## 18 config\_settings

Configuration and setting parameters.

Regulile recomandate se gasessc in documentul (recommended rules are in document x12roefact/data/README\_app\_config\_rules.md)

#### Public objects:

rules\_content: contains the rules text (rendered)

#### Info:

- copyright: (c) 2023 RENWare Software Systems
- author: Petre Iordanescu (petre.iordanescu@gmail.com)

#### 18.0.0.1 DEFAULT\_DUE\_DATE\_DAYS

#### NOTE: "pattern-uri" (sabloane) de identificare si regasire a datelor folositi de

\_\_comanda x12json reprezentind functionalitatea de extragere a datelor din Excel si exportul lor in formatul JSON (modulul `rdinv)\_\_

#### 18.0.0.2 rules\_content

rules\_content public variable to be use as "mini help" by settings -r command of application

#### 18.0.0.3 load

def load()

Read and load settings from external data file.

## 19 data

# V. invoice template

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## 20 invoice template

- · invoice template
  - Instalarea sablonului de factura emisa
  - Recomandari in utilizarea sablonului
  - Descarcare (download) sablon factura
  - License

versiune curenta 0.1.20 formate suportate XLSX

#### 20.1 Instalarea sablonului de factura emisa

Aceasta componenta consta dintr-un director (ce nu necesita instalare speciala ci simpla copiere locala acolo unde va fi utilizat). Acest director contine:

- fisierul pentru factura invoice\_template\_CU\_tva.xlsx ce este disponibil pentru descarcare aici
- directorul released\_packages/ ce contine versiuni anterioare de sablon ce sunt inca suportate
- · prezentul document

### 20.2 Recomandari in utilizarea sablonului

Aceasta sectiune se refera la modul in care ar trebui "tratat" continutul fisierului Excel cu factura *in conditiile in care se intentioneaza ca aceasta sa fi procesata ulterior cu sistemul INVOICEtoROeFact*. Acest sablon este general valabil (este un fisier Excel ca oricare altul) deci in acest caz este important a "constientiza" faptul ca informatia aferenta facturii din Excel va fi cautata, identificata si gasita in scopul de a fi salvata in formatele de factura electronica (utilizarea acestui sablon de factura Excel impreuna cu sistemul INVOICETOROeFact ESTE O VARIANTA DE LUCRU RECOMANDATA, dar nu obligatorie).

Astfel se recomanda ca acest sablon sa fie utilizat asa cum este livrat, fara a efectua modificari majore in structura sa cum ar fi:

- modificarea formatelor (de tip de date) celulelor in scopul unei afisari "mai frumoase"
- adaugarea de informatii prin concatenare de siruri de caractere sau orice alte metode de a altera continutul vizibil al celulelor in scopul unei afisari "mai frumoase"
- modificarea locatiilor celulelor prin inserarea sau stergerea de linii, coloane sau celule noi

In general trebuie facuta diferenta intre datele facturii si modul in care aceasta va fi tiparita (va aparea la tiparire / previzualizare).

#### **DETALII TEHNICE:**

Continutul informational al facturii nu trebuie nici confundat si nici mixat cu **formatul de afisare al acesteia** (layout). Pentru acesta din urma se recomanda a fi folosite cu precadere *regulile de formatare* din Excel si nu cele stocare a datelor. Un exemplu este un numar zecimal oarecare unde:

- una este valoarea introdusa intr-o celula (de ex cu 3 zecimale) si
- alta este valoarea afisata (cu 2 zecimale) aceasta din urma trebuie obtinuta prin formatarea celulei respective de a afisa 2 zecimale prin rotunjire insa valoarea efectiva trebuie sa fie cea originala cu 3 zecimale, lucru (diferenta) care se poate vedea la editarea continutului celulei.

## 20.3 Descarcare (download) sablon factura

office Excel XLSX

20.4 License

VI. Help

## VI.I Manuale web2roefact



#### **INVOICEtoROefact System**

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## 21 Catalogul manualelor de utilizare

### **Cuprins:**

- Catalogul manualelor de utilizare
- ..



#### **INVOICEtoROefact System**

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## 22 Catalogul manualelor de configurare si administrare

### **Cuprins:**

- Catalogul manualelor de configurare si administrare
- •

## VI.II Cerintele sistemului

#### **RENware Software Systems**

## 23 Propunere tehnica

#### **Cuprins:**

- · Propunere tehnica
  - Aria de cuprindere
  - Considerente generale de securitate
  - Considerente generale privind bazele de date proprii sistemelor
  - · Considerente generale privind auditarea informatiilor
- Client: n/a not public
- Data: 2023-Noiembrie

## **1**

#### Codificarea documentelor

codificarea numelor documentelor si a proceselor este facuta in conformitate cu metodologia RENware SDEVEN (http://sdeven.renware.eu)

#### **Cuprins:**

- · Propunere tehnica
  - · Aria de cuprindere
  - · Considerente generale de securitate
  - Considerente generale privind bazele de date proprii sistemelor
  - · Considerente generale privind auditarea informatiilor

## 23.1 Aria de cuprindere

Solutiile propuse prin aceasta propunere tehnica sunt:

- INVOICEtoROefact (code-name api\_to\_roefact) integrare Sistemul National de Facturi Emise RO e-Factura descriere si cerinte aici
- PayValidaBoa (code-name payments\_validation\_board) Flux aprobare facturi primite pentru ordonantare la plata descriere si cerinte aici

In continuare se prezinta o serie de considerente generale valabile pentru toate sistemele din aria de acoperire.

## 23.2 Considerente generale de securitate

- (RSEC-01) fisierele de configurare a sistemelor (fiind format text UTF-8) vor avea ca owner un utilizator dedicat sistemului respectiv sau utilizatorul root. Numai acesti doi utilizatori pot avea acces RW la aceste fisiere
- (RSEC-02) toate documentele de provenienta externa sistemelor vor fi "purtatoare" ale unui certificat digital ce atesta validitatea documentelor. Acest certificat va fi de preferinta de tip "semnatura electronica" dar nu obligatoriu calificata. Este suficient un simplu certificat (cheie) tip RSA generat intern si distribuit utilizatorilor autorizati sa emita documentele respective. O copie a certificatului (sau a certificatelor daca se vor emite mai multe) ce atesta validitatea unui document va sta pe server in locatii ce sunt conforme cu RSEC-01

## 23.3 Considerente generale privind bazele de date proprii sistemelor

- (DBS-01) bazele de date vor contine o cheie primara "real primara" (adica avind toate caracteristicile tehnice pentru PK in sensul uzual cunoscut din teoria bazalor de date). Aceasta cheie va fi de tip Char (32) reprezentind tipul uuid4 (cunoscut si ca guid) convertit la sir de caractere UTF-8 si reversibil ca transformare din string in uuid4. Aceasta cheie va fi generata automat si intretinuta de sistem deservind scopuri pur tehnice de referentiere si relationare a datelor. Modificarea manuala nu este permisa putind genera situatii de hazard.
- (DBS-02) bazele de date vor contine si o alta "cheie primara uman recongnoscibila" ( AK in teoria bazelor de date) utilizata in scop de recunoastere si regasire a informatiei de catre utilizatori. Aceasta cheie va avea urmatoarele catacterisrici:
  - va fi unica, tip Char (10) (limitarea lungimii se va aplica la introducerea datelo si nu in baza de date)
  - agnostic case, nu se va face diferenta intre litere mari sau mici (pentru a evita confuziile)
  - obligatorie iar daca utilizatorul "nu o doreste" se va default-a la PK-ul anterior
- (DBS-03) bazele de date vor fi intr-unul din formatele: (a) relational sau (b) JSON standard. Pentru bazele de date in format relational va fi preferata o solutie de SGBD tip open source matura, intretinuta in urmatoarea ordine de aplicare:
  - 1. SQLite (https://www.sqlite.org/index.html) pentru baze de date ce nu vor depasi 10,000 de inregistrari
  - 2. PostgreSQL (https://www.postgresql.org/) pentru baze de date ce se esttimeaza ca vor depasi 10,000 de inregistrari
  - 3. MariaDB (https://mariadb.org/) pentru baze de date ce se esttimeaza ca vor depasi 10,000 de inregistrari
  - prima varianta va fi preferata datoritra "portabilitatii datelor"
  - a treia varianta este enumerata ca optiune preferata a utilizatorului la varianta 2.
- (DBS-04) bazele de date vor folosi numai cimpuri formate standard, clasice si elemetare:
  - sir de carectere ( CHAR sau VARCHAR )
  - numere intregi cu semn ( INTEGER )
  - numere reale cu semn (FLOAT)

- numere combinate a caror valoare poate fi intreg sau real ( NUMBER )
- valori logice sub forma intreg cu semn astfel: 1 pentru TRUE si 0 sau NULL pentru FALSE
- valori logice sub forma de caracter astfel: prima litera din lista [Y, y, D, d, T, t] pentru TRUE si orice altceva inclusiv NULL pentru FALSE
- (DBS-05) in cazul bazelor de date relationale, integritatile referentiale vor fi evitate la maximum prin intretinerea datelor numai cu ajutorul aplicatiei sau in cazull necesitatii modificarii manuale a datelor, aceasta modfica re sa fie efectuata numai de personal calificat
- (DBS-06) informatiile de tip data-timp (data, ora, etc...) vor fi stocate de preferinta sub forma de String in formatul ISO: YYYY-MM-DD HH:MM:SS.nnnnn.
- (DBS-07) informatii de data-timp vor fi stocate avind valori agnostice de "Time Zone" adica vor fi considerate UTC lucru care va permite comparabilitatea acestora indiferent de locatia /zpna de timp de unde au fost generate.

## 23.4 Considerente generale privind auditarea informatiilor

- Cimpurile de audit ce indica utilizatori:
  - (AUD-01) pentru informatiile CONSTIENT GENERATE DE UTILIZATORI (adica generate prin activarea unor controale vizuale, prin lansarea manuala a unei aplicatii, etc), aceste cimpuri vor contine numele tip username al utilizatorului folosit pentru autentificarea in sistem
  - (AUD-02) pentru informatiile GENERATE DE SISTEM la rulari automate, periodice, de verificare, de validare, etc, aceste cimpuri vor contine textul system (pentru a evita confuzii cu utilizatori reali la nivel de sistem de operare)
- (AUD-03) Cimpurile de audit ce indica date calendaristice vor respecta standardul ISO fiind in formatul maximal YYYY-MM-DD hh:mm:ss

# INVOICE to RO E-Fact to REtwee Sedems Codem

#### **INVOICEtoROefact System**

(c) 2023 RENware Software Systems

## 24 Propunere tehnica sistem INVOICEtoROefact

#### **Cuprins:**

- Propunere tehnica sistem INVOICEtoROefact
  - Objective
  - Vedere de ansamblu a solutiei
  - Componenta xl2roefact
    - Diagrama logica de functionare a componentei
  - Componenta WEB\_DASHB
  - Componenta SYSTEM\_DB
- p/n: 0000-0095
- code-name: api\_to\_roefact
- commercial name: INVOICEtoROefact
- url propunere tehnica: http://apitoroefact.renware.eu/commercial\_agreement/110-SRE-api\_to\_roefact\_requirements.html
- git: https://github.com/petre-renware/api\_to\_roefact

### **Cuprins:**

- Propunere tehnica sistem INVOICEtoROefact
  - Objective
  - · Vedere de ansamblu a solutiei
  - · Componenta xl2roefact
    - Diagrama logica de functionare a componentei
  - Componenta WEB\_DASHB
  - Componenta SYSTEM\_DB

### 24.1 Objective

Acest sistem va asigura incarcarea facturilor emise in sistemul ANAF E-Factura (https://www.anaf.ro/anaf/internet/ANAF/despre\_anaf/strategii\_anaf/proiecte\_digitalizare/e.factura) cu respectarea reglementarilor publicate in acest sens (lista contine si legaturi catre fisierele publicate de catre ANAF):

- Conformarea la modificarile legislative si utilizarea sistemului (https://static.anaf.ro/static/10/Anaf/Informatii\_R/Informatii\_modificare\_CIUS\_RO.pdf)
- Informatii de interes referitoare la implementarea sistemului național privind factura electronică RO e-Factura (https://static.anaf.ro/static/10/Anaf/Informatii\_R/Comunicat\_e-factura\_aprilie2022\_v2\_050422.pdf)
- Instrucțiuni de utilizare
   (https://static.anaf.ro/static/10/Anaf/Informatii\_R/API/Oauth\_procedura\_inregistrare\_aplicatii\_portal\_ANAF.
   pdf)

## 24.2 Vedere de ansamblu a solutiei

Solutia api\_to\_roefact consta din urmatoarele componente:

- api\_to\_roefact . x12roefact aceasta componenta are rolul de a implementa efectiv obiectivele principale ale sistemului INVOICEtoROefact. Componenta este capabila sa ruleze atit "standalone" (ca linie de comanda CLI) dar si prin utilizarea ei de catre componenta WEB\_DASHB si astfel utilizarea ei in varianta de sistem prezentat "over internet / intranet". Prezentarea detalita a acesteia se gaseste aici.
- api\_to\_roefact . WEB\_DASHB aceasta componenta are rolul de agrega componentele si de a prezenta solutia INVOICEtoROefact "over internet / intranet". De asemenea componenta asigura modulele UI necesare pentru administrarea sistemului. Prezentarea detalita a acesteia se gaseste aici.
- api\_to\_roefact . SYSTEM\_DB .Aceasta componente reprezita baza de date a sistemului INVOICEtoROefact atit partea relationala dar si partea no-sql a acesteia (utilizata pentru eventuale sincrnizari provenite din utilizarea CLI a componentei x12roefact ). Prezentarea detalita a acesteia se gaseste aici.

Figura urmatoare prezinta schematic rolul general al componentelor precum si interactiunea acestora cu mediul exterior sistemului api\_to\_roefact.



## 24.3 Componenta xl2roefact

- (RDINV) modul de procesare a fisierului format XLSX ce contine factura si colectare a datelor aferente
  - INTRARI: fisier format XLSX ce contine factura emisa (cod: f-XLSX)
  - IESIRI: fisier format JSON imagine a datelor facturii (cod: f-JSON)
- (WRXML) modul de generare a fisierului format XML
  - INTRARI: fisier f-JSON
  - IESIRI: fisier format XML conform cerintelor si sistemului ANAF E-Factura (cod: f-XML)
- (CHKXML) modul de validare a facturii in sistemul ANAF E-Factura
  - INTRARI: fisier f-XML
  - IESIRI: raport cu eventualele erori de validare <sup>1</sup>
- (LDXML) modul de incarcare a facturii in sistemul ANAF E-Factura
  - INTRARI: fisier f-XML
  - IESIRI: raport cu validarea si identificatorul incarcarii 1
- (CHKISLD) modul de verificare a starii de incarcare a unei facturi emise

- INTRARI: fisier f-XLSX sau numarul / cheia / codul facturii
- IESIRI: valoarea echivalent TRUE daca factura a fost deja incarcata sau valoare echivalent FALSE daca factura nu a fost incarcata 2



## Formatul fisierelor Excel cu factura

XLSX este sigurul format de fisier acceptat

## 24.3.1 Diagrama logica de functionare a componentei



...#FIXME explicatii necesare?...

## 24.4 Componenta WEB\_DASHB



...INCOMING...

## 24.5 Componenta SYSTEM\_DB



...INCOMING...

- 1. raportul se scrie in baza de date a sistemului si in fisierul f-XLSX intr-un worksheet separat dedicat acestui scop ← ←
- 2. in cazul valorii echivalent TRUE se poate intoarce identificatorul incarcarii daca este disponibil 🗠

#### **RENware Software Systems**

## 25 Propunere tehnica sistem PayValidaBoa

#### **Cuprins:**

- · Propunere tehnica sistem PayValidaBoa
  - Objective
  - Vedere de ansamblu a solutiei
  - · Cerinte functionale generale
  - Componenta xxx
- p/n: 0000-0094
- code-name: payments\_validation\_board
- · commercial name: PayValidaBoa
- url propunere tehnica: http://apitoroefact.renware.eu/commercial\_agreement/110-SRE-payments\_validation\_board\_req.uirements.html
- git: n/a

#### **Cuprins:**

- · Propunere tehnica sistem PayValidaBoa
  - Objective
  - · Vedere de ansamblu a solutiei
  - · Cerinte functionale generale
  - Componenta xxx

## 25.1 Objective

Acest sistem asigura prezentarea unui "dashboard" cu lista facturilor primite si starea lor de **verificare si aprobare interna** in vederea ordonantarii lor la plata.

## 25.2 Vedere de ansamblu a solutiei

Sistemul payments\_validation\_board consta din urmatoarele componente:

• INV\_TOPMNG\_BOARD - aceasta componenta prezinta pentru MANAGEMNTul tip CFO lista facturilor primite si starea lor referitor la validarea si aprobarea lor finala si un control pentru APROBARE FINALA sau BUN DE PATA.

- INV\_CHK\_BOARD aceasta componenta prezinta pentru VERIFICATORI si APROBABTORI lista fa/turilor primite si diverse controale pentru aprobarea si scrierea de diverse note si observatii.
- INV\_NOTIF\_BOARD aceasta componenta prezinta notificari referitoare la diversele OBSERVATII si NOTE facture asupra facturilor primite in diverse stadii de aprobare de catre persoanele care efectueaza verificari asupra lor (prin componenta INV\_CHK). Notificarile sunt disponibile atit in interfata aplicatiei iar unele din ele pot fi transmise prin mail.
- INV\_LD\_FOR\_APPRV aceasta componenta permite incarcarea facturilor in fluxul de aprobare. Optiuni de incarcare:
  - manuala (dintr-un board al aplicatiei)
  - · automata dintr-un director
  - dintr-o baza de date externa sistemului (cu "marcarea" facturilor ce vor trebui incarcate)
  - la incarcare (indiferent de metoda) vor trebui specificati (sau dedusi din alte informatii) DESTINATARII ce primesc documentul
- ADMIN\_CFG aceasta componenta permite pentru ADMINISTRATORI diverse OPTIUNI DE CONFIGURARE:
  - lista utilizatorilor ce fac parte dinfluxul de aprobare
  - · adresele e-mail ale utilizatorilor
  - rolul utilizatorilor in accea ce priveste fluxul de aprobare facturile primite
  - certificate si semnaturile de certificare a "semnaturilor" de aprobare
  - ...

Figura urmatoare prezinta schematic rolul general al componentelor precum si interactiunea acestora cu mediul exterior sistemului payments\_validation\_board.



...IN PROGRESS...

## 25.3 Cerinte functionale generale



...INCOMING...

## 25.4 Componenta xxx



...INCOMING...

**RENware Software Systems** 

## 26 Optiuni tehnice

#### **Cuprins:**

- · Optiuni tehnice
  - · Optiuni sistem INVOICEtoROefact
    - Recomandari sistem INVOICEtoROefact
  - · Optiuni sistem PayValidaBoa
  - Optiuni generale de implementare

Acest document prezinta posibilele optiuni tehnice la cele doua sisteme, optiuni care vor trebui agreate si (preferabil) planificate cel putin din punct de vedere al prioritatii.

## 26.1 Optiuni sistem INVOICEtoROefact

## Forma de utilizare si interactionare

- 🛮 (INVOICEtoROefact-RQ-01) varianta CLI (command line) cu utilizare "individuala"
- 🛮 (INVOICEtoROefact-RQ-02) varianta WEB cu utilizare centralizata

## Configurabilitate

- Il (INVOICEtoROefact-RQ-03) varianta in care se prelucreaza un model de fisier Excel in care sunt "fixate si blocate" locatiile celulelor ce contin date relevante
- Il (INVOICEtoROefact-RQ-04) varianta in care structura si formatul fisierului Excel contin "cuvinte cheie" ce determina regasirea date relevante (de exemplu textul "Client:" intr-o celula semnifica inceperea unei zone cu datele clientului de la acea celula in jos si pina prima celula necompletata ce va fi gasita)

#### 26.1.1 Recomandari sistem INVOICEtoROefact

- varianta (INVOICEtoROefact-RQ-01) este recomandata ca fiind "aproape obligatorie" deoarece chiar si in varianta WEB ea va trebui scrisa intr-o forma neutilizabila direct (sub forma de functie a sistemlui).
   Transformarea acestei functii in varianta CLI va permite o executie portabila ("la purtator") si offline (in situatii extreme se poate folosi doar fisierul XML generat si acesta va putea fi manual incarcat in ANAF-SPV).
   Informatia privind "starea de incarcare a facturii" va fi oricum salvata si in fisierul Excel aferent facturii si va putea fi preluata de catre varianta WEB pentru centralizarea informatiilor- a se vedea si modulul LDXML si notele de subsol aferente
- optiunea (INVOICEtoROefact-RQ-03) este recomandata ca varianta de start deoarece va permite realizarea unei variante OPERATIONALE (de lucru curent si testare) intr-un termen mai scurt, urmind ca aceasta optiune sa fie gradat extinsa si cu optiunea (INVOICEtoROefact-RQ-04). Aceasta "linie de lucru" nu va induce probleme, avind in vedere ca orice optiune / varianta aleasa ca varianta de start si planificata a fi extinsa va implica si MIGRAREA datelor deja produse la momentul extinderii ei

## 26.2 Optiuni sistem PayValidaBoa

## Д

#### Framework standardizat de orchestrare

- 🛮 (PayValidaBoa-RQ-01) utilizarea unui framework specializat de orchestrare si integrare cu alte sisteme "externe"
  - Implicatii: poate mari durata de implementare
  - Avantaje: utilizarea ulterioara pentru integrare intre sisteme ce prezita interfata standardizata (REST, SOA, NTFS, EXT4, OAuth, ...)

## Д

#### Semnare electronica a facturilor verificate

- Il (PayValidaBoa-RQ-02) utilizarea de certificat tip "semnatura electronica" pentru autentificarea verificarii facturilor EMBEDDED IN FACTURA
- 🛚 (PayValidaBoa-RQ-03) utilizarea de certificat tip "semnatura electronica" pentru autentificarea verificarii facturilor adiacet facturii disponibil pentru consultare numai in sistemul PayValidaBoa
- 🛚 (PayValidaBoa-RQ-04) verificarea facturilor nu necesita certificat tip "semnatura electronica" ci simpla informatie existenta in sistemul PayValidaBoa este suficienta

## Д

#### Baza de date 'interna / specifica' sistemului PayValidaBoa

• a se vedea documentul "Considerente tehnice generale", sectiunea "Considerente generale privind bazele de date proprii sistemelor", item "(DBS-03)" pentru opptiuni privind baza de date ce va fi utilizata "pentru operatiuni interne si specifice" de catre sistemul PayValidaBoa

## 26.3 Optiuni generale de implementare

### Sistemele tip infrastructura ce vor fi utilizate

- 🛮 (general-RQ-01) server web-HTTP pentru aplicatiile de tip WEB (ATENTIE: sistemele WEB ce vor fi implementate necesita interfata / mod de operare standard WSGI)
- 🛮 (general-RQ-02) sistem de autentificare utilizat (intern aplicatie, Google, Identity Management propriu, ...)
- 🛮 (general-RQ-03) sistemele vor rula pe infrastructura proprie sau aceastea vor rula in infrastructuri gazduite

Alte optiuni 'ad-hoc' (in sedinta)	
•	
•	
•	
•	
•	

**RENware Software Systems** 



#### Versiuni END OF LIFE

Versiunile <= 0.5 nu vor mai fi intretinute si nici disponibile incepind de la 01-May-2024 (end of life).



#### Versiunile development

Versiunile ce contin in codul / numarul lor acronimul dev sunt considerate versiuni elaborate in faza de dezvoltare software. Aceste versiuni sunt functionale dar testate doar cu date de test si nu cu date de business. Se recomanda a folosi aceste versiuni doar pentru dezvoltari proprii sau integrari cu alte sisteme.

## 27 Descarcare resurse (downloads)

## 27.1 Format sursa biblioteca Python

### 27.1.1 xl2roefact pe PyPi

Versiunea de pe pe repository-ul public PyPi permite instalarea directa in mediul Python local astfel:

pip install xl2roefact

In acest mod va fi instalata automat ultima versiune publicata pe *PyPi* (https://pypi.org/project/xl2roefact/) . Accesati linkul anterior pentru a putea accesa alte versiuni publicate pe *PyPi* si modul de instalare a acestora.

### 27.1.2 xl2roefact pachete redistribuibile



0.7

0.7rc0 settings refresh option and app settings reload by request (https://pypi.org/project/xl2roefact/0.7rc0/)



0.6

- 0.6 invoice type JSON-XML tag (https://pypi.org/project/xl2roefact/0.6)
- 0.6rc0 system database and parameters (https://pypi.org/project/xl2roefact/0.6rc0/)



- 0.5.4 invoice supplier from owner master data WHEEL
- 0.5.4 invoice supplier from owner master data DIST
- 0.5.3rc1 fix invoice JSON key "cac:Party" naming WHEEL
- 0.5.3rc1 fix invoice JSON key "cac:Party" naming DIST
- 0.5.3rc0 invoice supplier from Excel WHEEL
- 0.5.3rc0 invoice supplier from Excel DIST

## 0.4

- 0.4.1.dev1 fix sEXE bug from v(0.4.1.dev0) version WHEEL
- 0.4.1.dev1 fix sEXE bug from v(0.4.1.dev0) version DIST
- 0.4.1.dev0 xl2roefact include a data directory in package WHEEL
- 0.4.1.dev0 xl2roefact include a data directory in package DIST
- 0.4.0.dev2 externalize recommended rules for updating app setting rules WHEEL
- 0.4.0.dev2 externalize recommended rules for updating app setting rules DIST
- 0.4.0.dev1 fixed x12roefact CLI app version addressing WHEEL
- 0.4.0.dev1 fixed x12roefact CLI app version addressing DIST

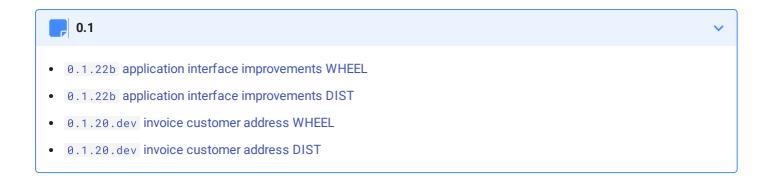
## 0.3



- 0.3.1b1 fixed bug JSON->["Invoice"]["cac\_InvoiceLine"] list[list] DIST
- 0.3.1b xl2roefact documentation fixes WHEEL
- 0.3.1b xl2roefact documentation fixes DIST
- 0.3.0b xl2roefact invoice taxes summary WHEEL
- 0.3.0b xl2roefact invoice taxes summary DIST

### 0.2

- 0.2.1b invoice values summary WHEEL
- 0.2.1b invoice values summary DIST
- 0.2.0b invoice customer info-optional items (bank, email, reg-com, phone) WHEEL
- 0.2.0b invoice customer info-optional items (bank, email, reg-com, phone) DIST

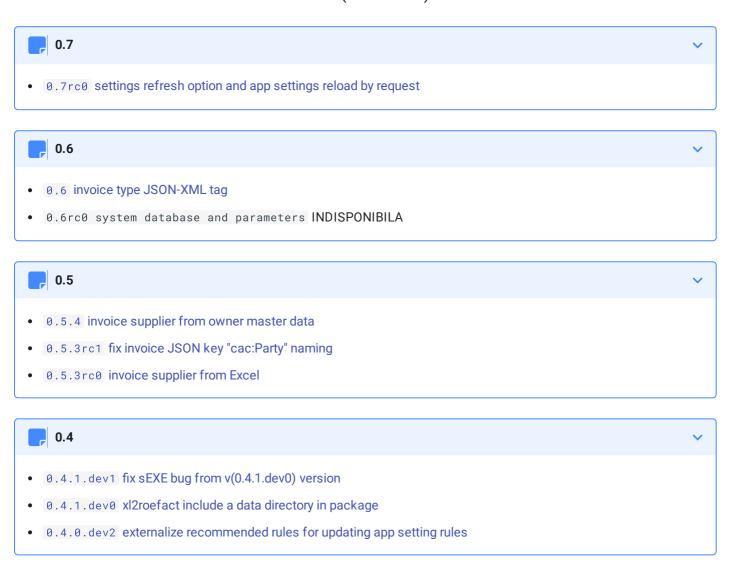


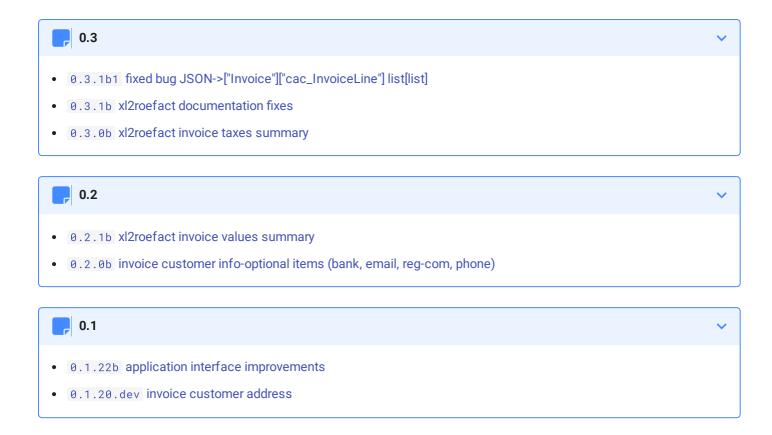
## 27.1.3 web2roefact pe PyPi

Nici o resursa disponibila.

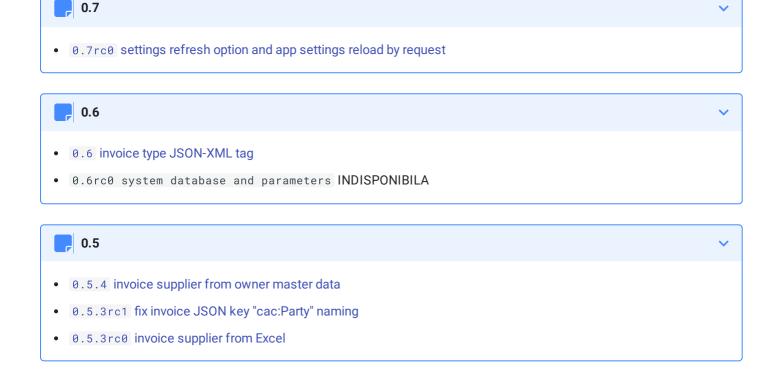
## 27.2 Windows x64

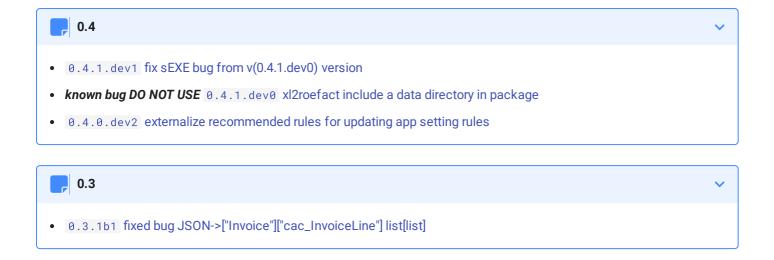
### 27.2.1 xl2roefact linie comanda kit instalare (win64-msi)





### 27.2.2 xl2roefact linie comanda executabil portabil (win64-exe)





### 27.2.3 web2roefact kit instalare (win64-msi)

Nici o resursa disponibila.

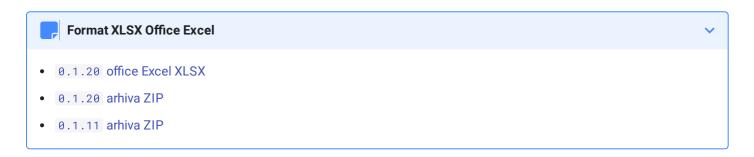
### 27.3 Linux

Nici o resursa disponibila.

### 27.4 MacOS X

Nici o resursa disponibila.

## 27.5 Sablon template factura



## 27.6 Sablon fisier configurare a aplicatiei xl2roefact

Sablonul permite configurarea aplicatiei prin modificarea fragmentelor de text care trebuiesc cautate in fisierul Excel pentru identificarea diverselor informatii aferente facturii.

Sablonul este in format YAML (https://yaml.org/) iar informatiile ce trebuiesc descrise sunt explicate individual in comentarii insotitoare. De asemenea este util a fi citite si recomandarile date in pagina de descriere a aplicatiei.

Pentru a beneficia de cobfigurarile facute de dumneavoastra trebuie sa creati un fisier app\_settings.yml in directorul curent din care lansati aplicatia, fisier ce contine noile configurari dorite. Numele fisierelui este obligatoriu a fi respectat.



#### Fisiere de configurare multiple

De retinut ca acest fisier este considerat (daca exista) cel din directorul curent de unde lansati aplicatia. Deci daca v-ati creat mai multe directoare de lucru (de exemplu pentru clienti diferiti) puteti crea fisiere de configurare specifice, cite unul in fiecare director.



#### Sablon de fisier

Urmarind acest link puteti descarca un sablon de fisier de configurare. De mentionat ca acest sablon este pre-completat cu situatii deja intilnite in practica, el fiind chiar sablonul implicit folosit de aplicatie.

## 27.7 Sablon fisier cu date furnizor

Descarcare aici.

## VII. About

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# VII.I Despre INVOICEtoROefact

#### **RENware Software Systems**

#### INVOICEtoROeFact Project

- CHANGELOG
  - 0.7 commands as layer 2 of functionalities (based on app CLI commands)
    - 0.7rc0 settings refresh option and app settings reload by request
  - 0.6 invoice type JSON-XML tag
    - 0.6rc0 system database and parameters
    - 0.6.dev1 code missing XML tags
    - 0.6.dev0 clean xl2roefact & invoicetoroefact projects (...yymmdd hhmm...)
- Archived CHANGELOGs
  - 0.5 version
  - 0.4 version
  - 0.3 version
  - 0.2 version
  - 0.1 version

## 28 CHANGELOG

- For version code structure meaning see SDEVEN methodology document (http://sdeven.renware.eu)
- <PROJECT ROOT>/doc\_src/ is the default starting location in a file path (if not clear from context) (ATTN in production environment is docs/)
- <WEB\_ROOT>/ is the HTTP server root directory, as default docs/ and supposed if no other parent is specified

# 28.1 0.7 commands as layer 2 of functionalities (based on app CLI commands)

- ... code for this module code: commands.py
- ... update doc README\_x12roefact\_library.md make a small hierarchical diagram with component layers
- · ...upd versions...

#### 28.1.1 0.7rc0 settings refresh option and app settings reload by request

- · update downloads, portal
- Published on PyPi (https://pypi.org/project/x12roefact/0.7rc0/)

- · updated doc, deliverables
- config-settings-main-func update config\_settings module to embed init code under a main() function which run @ init but can be latter called also
- 240429piu01 update doc README\_x12roefact\_library.md section "Library components" to reflect the new commands layer. Rebuild site & publish
- fix invoicetoroefact.renware.eu site for 0.6 MSI & EXE downloads

## 28.2 0.6 invoice type JSON-XML tag

- upd-dwnlds update downloads.md. site rebuild & publish
- pypi-publish publish on PyPi
- x12roefact-build build all 0.6 deliverables
- app-readme-doc check & update xl2roefact README.md:
  - example JSON schema update & build + publish site
  - ✓ doc-sys-settings-feat short note about allowed invoice type (cbc\_InvoiceTypeCode)
  - doc-sys-settings-feat in xl2roefact library doc, ie "Referinta dezvoltare sofrware"
    (README\_xl2roefact\_library.md) explain how manage system settings using sys\_config.py
  - for-dvelopers-section introduce a new section "Referinta dezvoltare sofrware" to group existing and all new things ref xl2roefact library. Reference to existing README\_xl2roefact\_library.md
  - ✓ site-0.6.dev1 restructured whole design presentation for a better view of its architecture: updated from a
    pure technical view to end-user technical view
  - 240413\_01 updated "API Reference" bullet link (from begging of doc) to point directly to published site as intended for PyPi availability in project description
- · xl2roefact change version
- refact-xl2roefact-modules-dirname refactoring xl2roefact modules directory name to src/ (old was xl2roefact/)
- InvoiceTypeCode-app-param make invoice\_type\_code choose-type app parameter
- InvoiceTypeCode-func-param make xl2roefact.rdinv() parameter invoice\_type\_code parameter with default value InvoiceTypesEnum.NORMALA

#### 28.2.1 0.6rc0 system database and parameters

- 0.6rc0+240420 build and publish release:
  - a. update versions for x12roefact and invoicetoroefact
  - b. build xl2roefact documentation
  - c. wheel deliverables build & PyPi publish
  - d. updated downloads.md

- e. site build & publish
- sys\_settings-invoice-type populated "system database" with allowed invoice types
  - created InvoiceTypes dictionary with allowed invoice types
  - created InvoiceTypesEnum as Enum to be used by CLI app parameter (dynamically generated from previous data object)
- sys\_settings-module created x12roefact/sys\_settings.py component dedicated to system settings (ie, not user configurable but only developers; is intended that later versions to use also a database for)
- cbc\_TaxPointDate will be set to 25 of next month from invoice issued month
- cbc\_DueDate search invoice\_header\_area ref PATTERN\_FOR\_DUE\_DATE pattern. Use found data if not None or default it to invoice\_header\_area["issued\_date"]["value"] + DUE\_DATE\_DAYS if None found
- PATTERN\_FOR\_DUE\_DATE update config\_settings.py & app\_settings.yml, create PATTERN\_FOR\_DUE\_DATE = ["scad", "due da", "date due"]
- inv-issdate-todate upd rdinv for final json dict convert & local save invoice issued date in datetime format to--> tmp\_reusable\_items["invoice\_issdate\_asdate"]
- cac\_Delivery set as invoice issued date
- cac\_PaymentMeans will be set to 1 supposing is unknown at invoicing issuing date
- DEFAULT\_DUE\_DATE\_DAYS new app config parameter with default value 30 days
- cbc\_Note set to "processed @ {date\_time\_now} with xl2roefact". Latter this field will be updated with text ref loading to RO-eFact data-time
- init-work set site & xl2roefact versions to 0.6rc1

#### 28.2.2 0.6.dev1 code missing XML tags

- arch-prev-rlse-chlogs archive 0.5.4 CHANGELOG
- xml-json-map updated xl2roefact.rdinv module for XML-JSON map
- fin-xml-specs made x12roefact/tests/todosXML.md file with list of XML tags to do and all other specs to complete activity
- init-work set site & xl2roefact versions to 0.6.dev1

#### 28.2.3 0.6.dev0 clean xl2roefact & invoicetoroefact projects (...yymmdd hhmm...)

- 240408piu-adm1 cleaning and updating version strings and code
  - · rebuild site
  - update xl2roefact/version.py
  - · update main versions.yml
- 240408piu-adm1 cleaning and updating environments:
  - updated xl2roefact python requirement, relaxed to >=3.10

- updated site version to 0.6.1dev0 to mark in progress work
- installed chromium on dev server

## 29 Archived CHANGELOGs





#### 29.2 0.4 version

- 0.4.1.dev0 xl2roefact include a data directory in package for various data files "built-in" package
- 0.4.0.dev2 externalize recommended rules for updating app setting rules



## 29.3 0.3 version

- 0.3.2b0 single EXE version
- 0.3.1b1 fixed bug JSON->["Invoice"]["cac\_InvoiceLine"] list[list]
- 0.3.1b promote v0.3.0b0 deliverables: WHEEL, TRA.GZ, MSI to 0.3.1b
- 0.3.0b xl2roefact invoice taxes summary



## 29.4 0.2 version

- 0.2.2.dev project development environment improvements
- 0.2.1b invoice grand totals
- 0.2.0b xl2roefact invoice customer info-optional items (bank, email, reg-com, phone)



#### 29.5 0.1 version

- 0.1.22b xl2roefact application interface improvements
- 0.1.21.post3 cleaned system documentation and site
- 0.1.21.post2 xl2roefact app detailed section with commands & options "--help" like
- 0.1.21.post1 fixed missing links in site root index page
- 0.1.21 rollout news in system portal invoicetoroefact.renware.eu
- 0.1.20.dev invoice customer address
- 0.1.19.dev invoice customer and partial invoice total values calculations
- 0.1.18.dev invoice customer CUI partial invoice total values calculations
- 0.1.17.dev fixed all application & package running standard ways
- 0.1.16.dev improving Excel kv-data search with "IN-LABEL" method
- 0.1.15 updated solution portal http://invoicetoroefact.renware.eu/
- 0.1.14.dev invoice issue date
- 0.1.13.dev invoice currency
- 0.1.12.dev invoice number
- 0.1.11.dev packaging improvements for app & xl2roefact package
- 0.1.10.dev command interface improved, msi package building, invoice template & updated documentation
- 0.1.9.dev x12roefact.RDINV running executable and distribution kit
- 0.1.8.dev improved application structure and first executable release
- 0.1.7.dev x12roefact.RDINV invoice items & metadata + OPEN ISSUES
- 0.1.6.dev commercial agreement OPTIONS document
- 0.1.5.dev init component xl2roefact for CLI application
- 0.1.4.dev Create system backbone structure
- 0.1.3.dev Enhancing payments\_validation\_board technical proposal
- 0.1.2.dev Enhancing APItoROefact technical proposal
- 0.1.1.dev Elaborating technical proposal
- 0.1.0.dev System raw backbone