SNI Tax Document Suite
e-Invoice Solution
Technical Overview Document

Product Name
e-Invoice

DOCUMENT IDENTIFICATION

Version	Status	Changed Part	Date	User
V1.0	Initial Version	N/A	05.11.2022	Emrah Oflaz

1. Variables Used in the Document

MoF: Ministry of Finance
TEST: Test Systems
LIVE : Live Systems
SOAP : Simple Object Access Protocol
SD: Sales and Distribution Module of SAP
FI: Financials Module of SAP
MM: Material Management Module of SAP

2. SAP Version Support

- SNI add-ons are supported all SAP ECC versions including
- SAP ECC
- SAP HANA DB
- SAP IS-U
- SAP HER
- SAP AFS
- SAP Retail
- SAP S4 HANA
- SAP ECC on HANA DB

3. Scope

SNI TDS supported Documents:

- Outbound einvoice
- Inbound einvoice

SNI TDS Supported Data Extraction Points

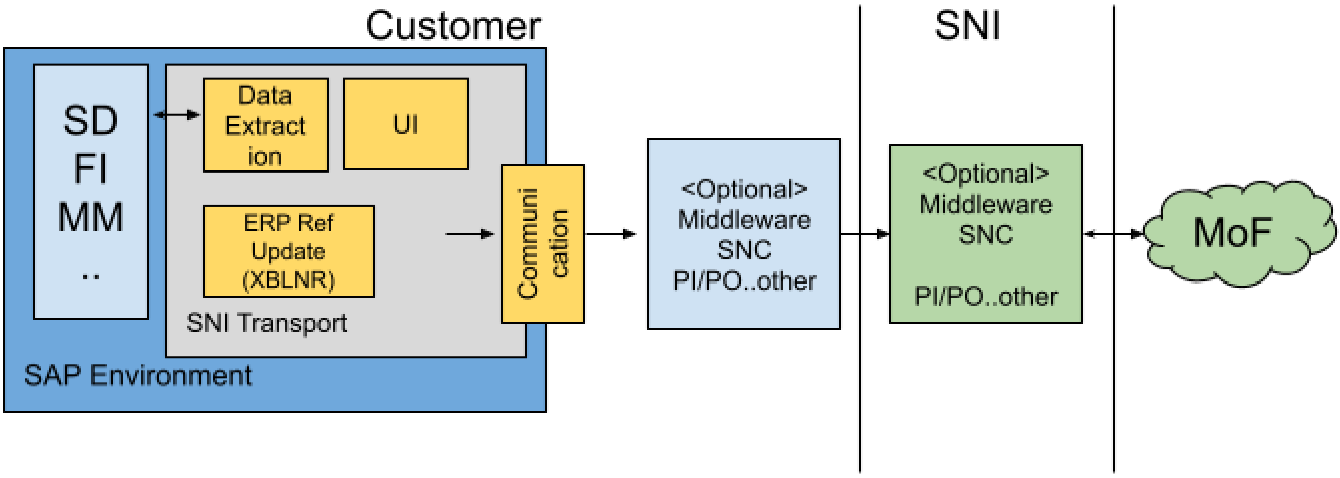
- Outbound einvoice data extraction from SD billing document
- Outbound einvoice data extraction from FI accouning document
- Outbound einvoice data extraction from MM (return) invoice document

4. Package Delivery

Development package is delivered as SAP Transport file, and can be imported into SAP system via STMS (SAP Transport Management System)

5. System Architecture

The SNI e-Invoice solution is based on the sending and receiving of invoices in accordance with the relevant authority standards via SAP ECC. Users can monitor / manage all processes and archives from the SAP environment .



6. Countries Supported

Type	Country	Application
Invoice	Turkiye	einvoice
Invoice	Turkiye	earchive
Delivery	Turkiye	eDelivery
Invoice	Romania	einvoice
Delivery	Romania	eDelivery
Invoice	Saudi Arabia	einvoice
Invoice	Egypt	einvoice
Invoice	Poland	einvoice

Invoice	Indonesia	eInvoice
Invoice	Hungary	eInvoiceReporting
Invoice	Spain (SII)	eInvoiceReporting
Invoice	Italy (FatturaPA)	eInvoice
Invoice	Malaysia	eInvoice
Invoice	Belgium	eInvoice
Invoice	Greece	eInvoice
Invoice	Dubai	eInvoice
Invoice	Denmark	Invoice
Invoice	Nigeria	eInvoice
Invoice	Macedonia	eInvoice
Invoice	Germany	eInvoice
Invoice	France	eInvoice

7. SAP Objects Overview

7.1. Coding&Comment Language

- Coding is based on ABAP old syntax to support all SAP versions
- Comment&Variable language is English

7.2. Namespace

- All SAP objects are under /SNI/* namespace

7.3. Language

TDS system is available English and related country's local language.

7.4. Unicode Support

Unicode and non-Unicode systems are supported

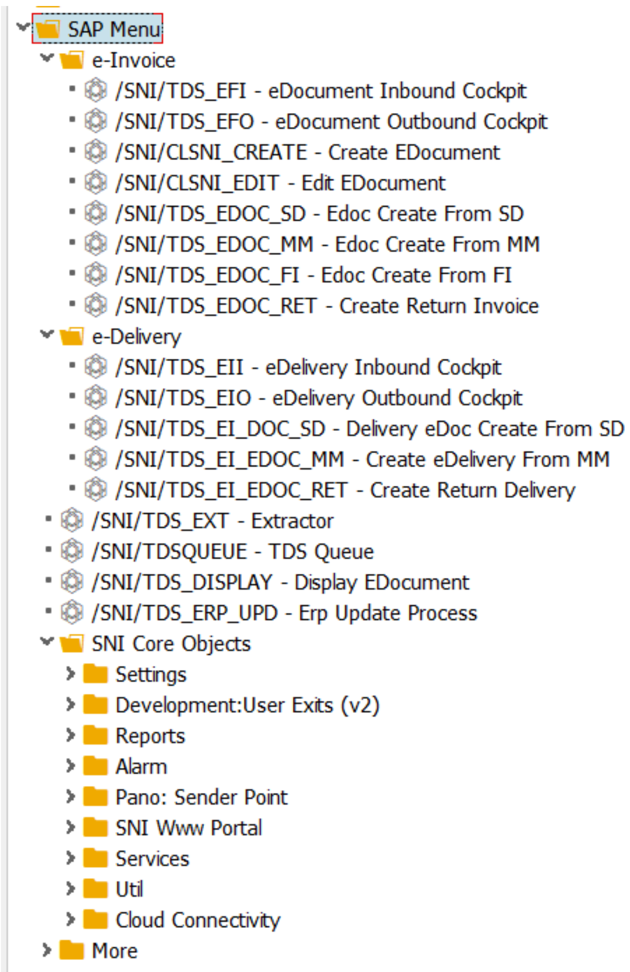
7.5. Main Menu

- TDS system's main area menu : /N/SNI/TDS

7.6. Main Components

Cockpit	Inbound Invoice Outbound Invoice	User Reports for Documents
Create Dialog	User can create eDocument via dialog screens	
Extractor	Data Extraction program	
Erp Update	Based on User confirmation; System program can update reference data to ERP objects with legal/created numbers * Example: FI- Reference number SD- Reference number	
Communication	Communication programs	
Other	Other	

Example Menu /n/SNI/TDS



7.7. Customizing/Soft configs

(i) Transport package does not have any SAP standard customising.

- -Package brings its own customizing tables and some example data with.
- -Soft config means ; Some settings which can not be moved across system via Transport; it must be done at each system&client

7.8. Communication:

- Communication between SAP and SNI systems over visa Web services , both REST and SOAP supported over HTTPs.
- Any Middleware which supports Web service is supported between SAP and SNI communication. Spect can be given by SNI
- In case middleware is mandatory but customer does not have a middleware to use SNI have a connector software which works as middleware included in package

7.8.1. Communication Protocol

- HTTPS is supported (over SSL)
- HTTP is supported only between SAP and Middleware

7.8.2. Communication-Authorization:

- OAUTH2 + JWT Tokens <Recommended>
- Basic+Static IP
- VPN

7.8.3. Customer Side Developments

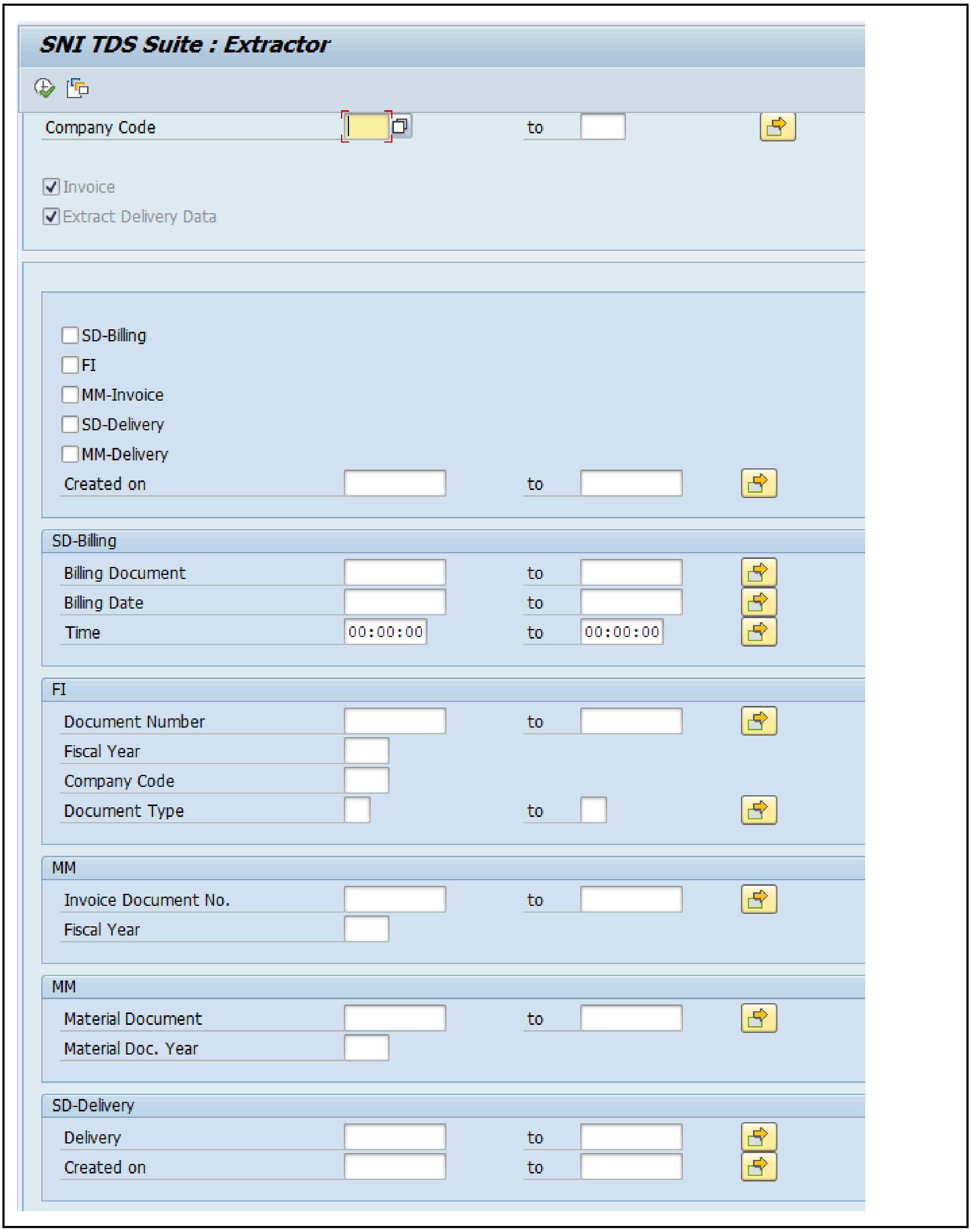
In case customer specific coding needed, customer's development rules are applied, changes are done at in SNI Package's user exits.

8. Data Extraction Process

Data extraction can be done via :

- User exit saves the document number + extraction job sends data to SNI
- User can send documents via report via entering document details
- User can send data manually via dialog program
- New output type can be created and output program can send data

/SNI/TDS_EXTRACT: Main Function Module For Data Extraction Based
/SNI/TDS_EXT : Main Extractor Report, can be used to extract& send data to SNI


SNI TDS Suite : Extractor
Company Code
to
Invoice
Extract Delivery Data
SD-Billing
FI
MM-Invoice
SD-Delivery
MM-Delivery
Created on
to
SD-Billing
Billing Document
to
Billing Date
to
Time
00:00:00
to
00:00:00
FI
Document Number
to
Fiscal Year
Company Code
Document Type
to
MM
Invoice Document No.
to
Fiscal Year
MM
Material Document
to
Material Doc. Year
SD-Delivery
Delivery
to
Created on
to

8.1.1. Extractor/Document Creation Processing Logic

- Via User-Exit/Output Program & Job:
  - In user exit table /SNI/CRCLSNIPROC is filled via /SNI/CR_CLSNI_TDS_PROC Function Module
  - Data can be send to SNI via report /SNI/TDS_QUEUE_REP

- Manual Entry
  - If number of invoices are not high, this method can be an option

T-code	Expression
/SNI/TDS_EI_DOC_SD	Delivery eDoc Create From SD Delivery
/SNI/TDS_EI_EDOC_MM	Create eDelivery From MM
/SNI/TDS_EDOC_SD	Edoc Create From SD
/SNI/TDS_EDOC_MM	Edoc Create From MM
/SNI/TDS_EDOC_FI	Edoc Create From FI
/SNI/CLSNI_CREATE	Create EDocument Manually

- Source object & object ID based keys are used therefore one document can be extracted at once.

8.1.2. Extract Data Automatically After SAP Documents

Sd billing document user exit	EXIT_SAPLV60B_001
Sd delivery document user exit after goods movement	LE_SHP_GOODSMOVEMENT (BADI)
MM Type related	EXIT_SAPMM07M_001

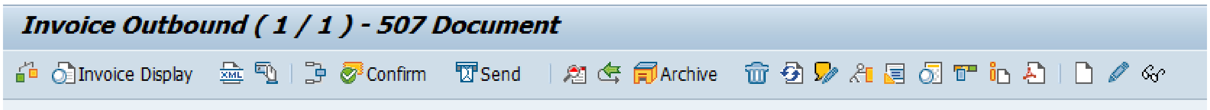
9. Reports & Cockpits

System brings main reporting programs which called “cockpit”, user can see&do actions (sign&send&downlaod&send mail ..) from these reports

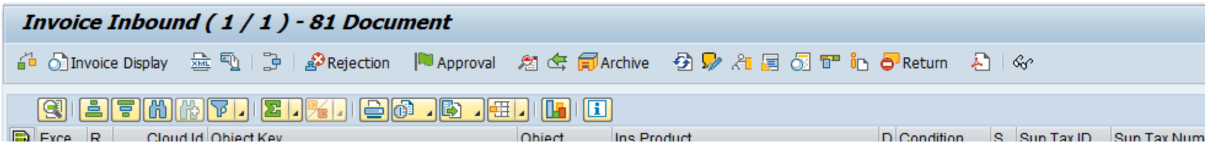
T-Code
/SNI/TDS_EFI - Inbound Einvoice
/SNI/TDS_EFO - eInvoice Outbound Cockpit

Main Cockpit Actions:

Outbound

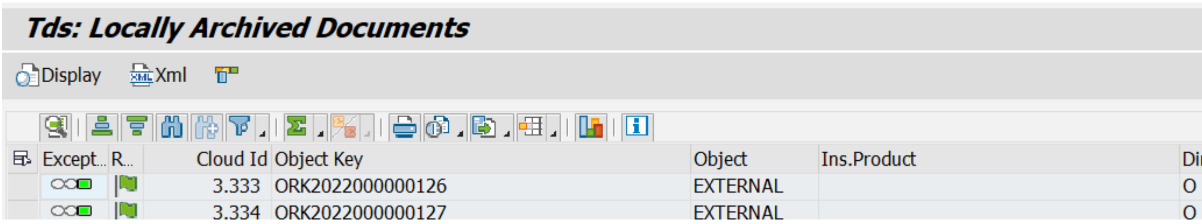


Inbound



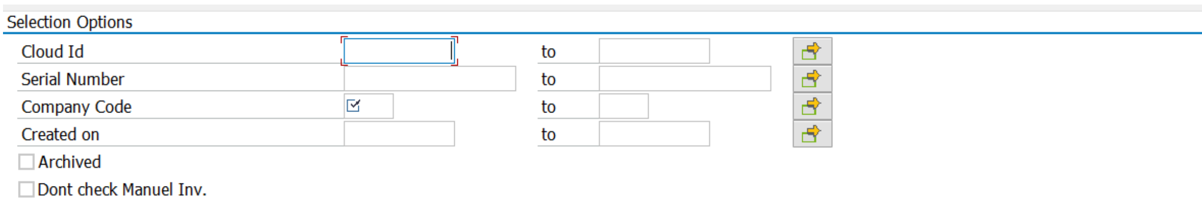
9.1. /SNI/TDS_LARCH - Tds: Local Archive

After the completed documents are archived in the TDS cockpit, they are uploaded to SAP. You can check these documents from the local archive cockpit.



9.2. /SNI/TDS_ERP_UPD - Erp Update Process

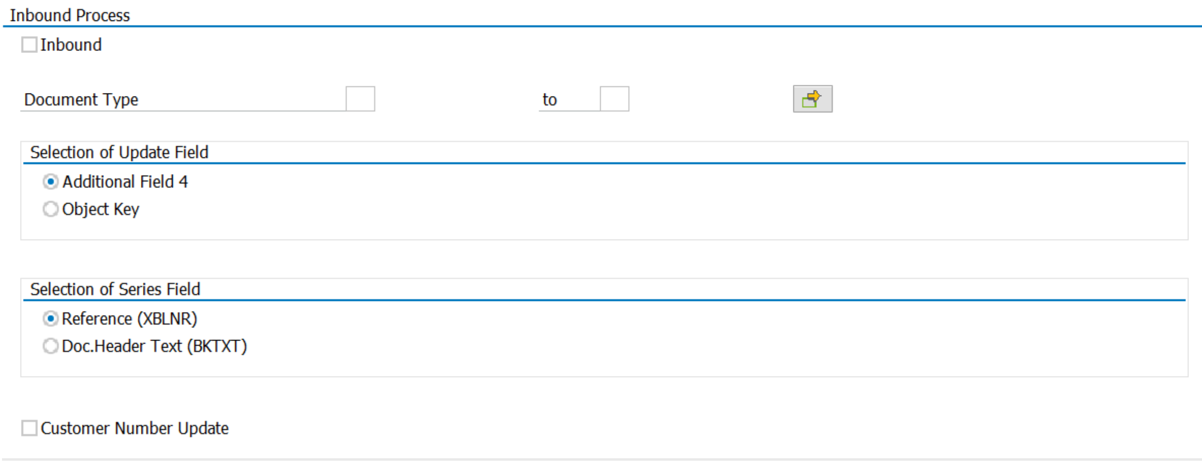
Selection Options



Archived: When this checkbox is selected, only archived documents will be searched.

Dont check Manual Inv.: It should be used to not check manual invoices. One important thing that this should not be used for inbound documents.

Inbound Process



Document Type: Accounting invoice document type.
Selection of Update Field

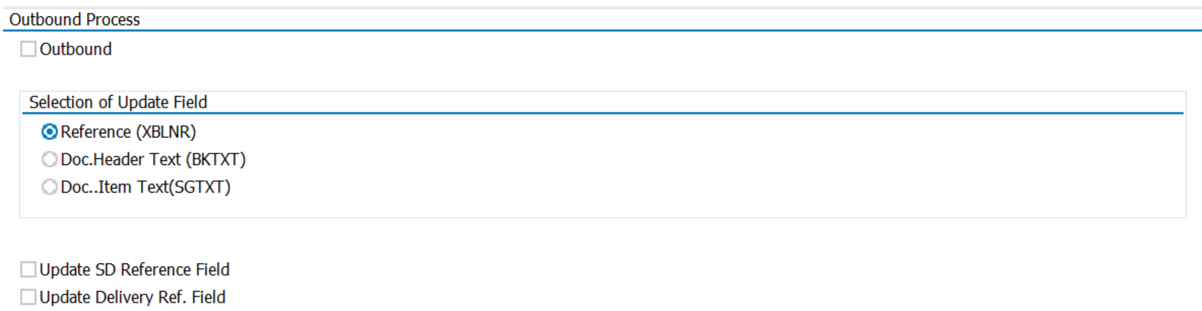
- **Additional Field 4:** When this field is selected, the FI document number will be updated via 'Additional Field 4'.
- **Object Key:** When this field is selected, the FI document number will be updated via 'Object Key'.

Selection of Series Field

- **Reference(XBLNR):** Checks XBLNR from the FI table.
- **Reference(BKTXT):** Checks BKTXT from the FI table.

Customer Number Update: It is used to update the partner number fields in incoming documents.

Outbound Process



Reference (XBLNR): Updates XBLNR from FI table.
Doc. Header Text(BKTXT): Updates BKTXT from FI table.
Doc. Item Text(SGTXT): Updates SGTXT from FI table.
Update SD Reference Field: It is necessary to click this field to update the reference field on the SD side.
Update Delivery Ref. Field: It is necessary to click this field to update the ref. field of delivery note documents.(This field works only for delivery note documents.)

Note: The programm cannot be run simultaneously for Inbound and Outbound documents.

10. Authorization Concept

- Every report uses /SNI/CR_AUTH function module before run, function module reads and rescricts user’s authorizaed activity&company codes based on authority-object `/SNI/CRINS`

Object	Field	Values(**)
/SNI/CRINS	/SNI/INSTA	SNI Product
	BUKRS	Company Code
	ACTVT	01: Create 02: Change 03: Display 29: Inbound Display 36: Extended maintenance

(***)Product List

SII	SII: SNI SII System
ITD	ITD: SNI Italian Spesometro System
HUK	HUK: SNI Hungary Kobak Sys
ITP	ITP: SNI Italian FatturaPA
ESF	ESP: Spain: FacturaE System
PPL	PPL: Peppol
ASII	ASII: SNI SII Basque: Alava
BSII	BSII: SNI SII Basque: Bizkaia
CSII	CSII: SNI SII Canary Islands
GSII	GSII: SNI SII Basque: Guipuzcoa
SAU	SAI: SNI SII Saudi
MTD	MTD: GB:MTD Making Tax Digital
IDR	IDR: IDR:Indonesia eFactur
PLWL	PLWL: Poland White List
PP	PP: Peppol
ED	ED: Turkey-Eledger

EDB	EDB: Turkey-Eledger Gib Archive
EI	EI: Turkey-EDelivery
EF	EF: Turkey-Einvoice
EA	EA: Turkey-Earchive
TRBK	TRBK: Turkey-Ebanka
TRMT	TRMT: Turkey-EMutabakat(e-reconciliation)
TREQ	TREQ: Turkey-Ef Queue
FR2	FR2: Fr2: SNI ERP Posting System
TRFS	TRFS: Turkey-eAccounting Document
GKP	GKP: Tr Gekap System
EMF	EMF: Turkey e-Accounting Document
EARP	EARP: Turkey EA Reporting
GRC	GRC: SII Greece
OTH	OTH: Other- Custom Usage
S4EF	S4EF: Turkish Einvoice v2 (J)
AP	AP: AP Invoice Automation
SFNO	SFNO: Saft-Norway
TIK	TIK: Tik Link Shortener
ROU	ROU: Romania- Einvoice
RTO	RTO: Romania- ETransport
IA	IA: Inflation Accounting
K2	K2: VAT Return Calculation
CERP	CERP: Cloud ERP Data
EAMN	EAMN: EAMAN
CERT	CERT: TR: Cloud ERP Data-Turkiye
SRB	SRB: Serbia eInvoice
VIES	VIES: Vies System
SOZL	SOZL: Sni SOZLH object (contract)
PLF	PLF: Poland eInvoice
MY	Malaysia
SIIDE	Germany
NG	Nigaria
SIIEGP	Egypt

11. Transaction Codes

- Admin
- User

T-Code	Description	Admin (assign all t-codes)	End user
/SNI/CLSNI_CALL	SNI Portal SSO	x	x
/SNI/CLSNI_COCKPIT	Cockpit Tcode	x	
/SNI/CLSNI_CREATE	Create EDocument	x	
/SNI/CLSNI_EDIT	Edit EDocument	x	
/SNI/CLSNI_EXT	CL: Extractor	x	
/SNI/CLSNI_UI	SNI Main Menu	x	
/SNI/CLSNI_UI_INIT	Ui Base Program	x	
/SNI/CR1MIGR	Cr1:Migration Main Setting	x	
/SNI/CRCLSNIPROC	Cloud Status : Process Table	x	
/SNI/CRCTOKEN_M	Token Maintenance	x	
/SNI/CRILGILI_T	CR:Departments	x	x
/SNI/CRILGILI_TM	CR:Departmen Mails	x	x
/SNI/CRINSTANCET	Instance Main	x	
/SNI/TDSQUEUE	TDS Queue	x	
/SNI/TDS_DISPLAY	Display EDocument	x	
/SNI/TDS_EDOC_FI	Edoc Create From FI	x	x
/SNI/TDS_EDOC_MM	Create eInvoice From MM	x	x
/SNI/TDS_EDOC_RET	Create Return Invoice	x	x
/SNI/TDS_EDOC_SD	Edoc Create From SD	x	x
/SNI/TDS_EFI	eInvoice Inbound Cockpit	x	x
/SNI/TDS_EFO	eInvoice Outbound Cockpit	x	x
/SNI/TDS_EII	eDelivery Inbound	x	x
/SNI/TDS_EIO	eDelivery Outbound Cockpit	x	x
/SNI/TDS_EI_DOC_SD	Delivery eDoc Create From SD	x	x
/SNI/TDS_EI_EDOC_MM	Create eDelivery From MM	x	x
/SNI/TDS_ERP_UPD	Erp Update Process	x	
/SNI/TDS_EXT	Extractor	x	
/SNI/TDS_RESP_01	Response Create	x	
/SNI/TDS_RESP_02	Response Change	x	

/SNI/TDS_RESP_03	Response Display	x	
/SNI/TDS_SEND_MAIL	Send eMail Report	x	x

12. Jobs To Be Set

Report	Expression	Min Execution Period
/SNI/TDS_ERP_UPD - Erp Update Activity	In case invoice number should be updated at SAP ERP side this job is needed	Twice a day Approx Runtime: 10 minute
/SNI/TDS_EXT - Extractor	EXtract&Sends data to SNI	Every 15 Mins Approx Runtime: seconds

13. Number Ranges To Be set

N/A - No need

14. User Interface

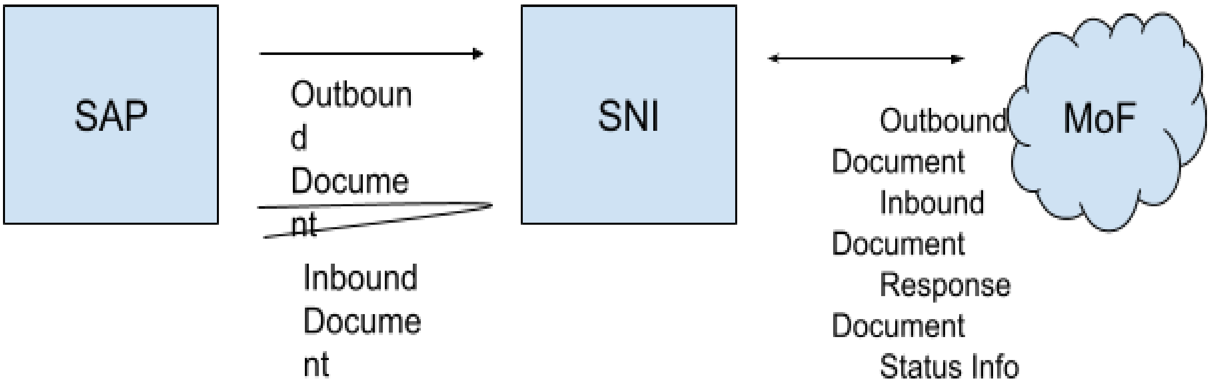
Possible UI options:

- SAP GUI : All user activities are supported and can be done via SAP GUI
- SAP Fiori : SNI provides SAP Fiori package which can be installed at customer Fiori server and Fiori application can be used
- SNI eSuite Web Access: Users can use SNI web portal for any reason like SAP user not available or similar

15. Communication Settings

15.1. Flow

- Only outbound communication is needed



15.2. Middleware Usage

- Web service passthrough supported middlewares can be used
- One passthrough routing rule is enough
- SNI also can supply middleware software without a cost
- SNI can provide cloud based middleware

15.3. Settings-Direct Integration from SAP

- SNI provides credentials
- SNI provides certificate to be installed at SAP - STRUST

15.4. Settings-Communication via Middleware

- SNI provides credentials
- SNI provides technical specifications for middleware development
- SNI provides SSL certificate to install at middleware

-

16. Storage

Based on related county's regulation, storage location and storage conditions differ. Please consult SNI for details.

16.1. Secondary Copy

In case secondary copy needed by customer; SNI can copy secondary copies of the files based on request with additional costs

Example options already done before

AWS Bucket

External server

External database

SAP related developments

17. Signature/ESeals

Based on country regulation, signature and sending the data options are different. Please consult SNI for details

SNI developed several signature softwares based on different country requirements including

EU

Turkiye

Egypt

Saudi Arabia

Company based custom seals/dongles

USB dongle

USB seals

HSM devices

18. Country Extension

At once package is installed, new country extension is done via customising. Same Cockpit will show different countries

19. Custom Requests & Regular Updates

In case custom request created; If request is solved at out of SAP it is most used option; but in case SAP side some activities are needed; requested objects are created within /SNI/ name space at customer system or can be delivered as external transport.

Regular updates in client package is shared by SNI within support package includes bug-fixes and new reports/functionalities or new country based options.

20. Government Updates

Government updates are considered at two categories;

- Needs more data
- Other changes

In case need more data, new transport may be needed to install customer SAP system, for other needs no transport needed

21. Integrated Solutions

SNI has several technology experiences and based on customer needs several systems are designed&developed, in case needed it can be discussed.
Some Examples:

Whatsapp Integration
SMS Integration
Linkshortener based solutions
Mobile accessibility
Mobile printout capabilities& devices
External Storage System
Several SAP systems Integration
Company data combining from several data sources
Ftp, sFtp
Customer specific web portals
Vendor system Integrations
AP systems ıntegrations

22. New Technologies

SNI has several options within packages, there are several versions based on SAP and other ERP and company related environments
Several Cloud Providers& Backends are Supported .

- SAP BTP
- AWS
- Azure
- Google Cloud
- On-Prem : Kubernetes
- On-Prem: Linux Server

Appendix - A

SNI Connector Server Requirements

In case SNI connector is used as middleware, a server is needed within organization and needs to be able to communicate with SAP (Only outbound SAP-> SNC)

OS: Windows Server 2008 and higher / Ubuntu Server

HDD: 200 GB free space

Processor: 4 core (min)

RAM: 8 GB USB port (If No HSM available)