

# SRS - Software Requirements Specification

Project: FinTPc

Version: 1

Date: 02.10.2017

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Author: Denisa Agatie

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## 1 Introduction

### 1.1 Purpose

<Identify the product whose software requirements are specified in this document, including the revision or release number. Describe the scope of the product that is covered by this SRS, particularly if this SRS describes only part of the system or a single subsystem.>

**FinTP** is a complete open source application that processes financial transactions, automates business flows and offers operational risk containment and compliance to regulatory and industry standards for banks.

**FinTP** and all ancillary documentation is distributed freely and openly through the FINkers United community and provides collaboration ground for rapid development and integration of new technologies, such as crypto currencies, biometric security, data analysis algorithms. This creates an open infrastructure for achieving real-time payments and a better management of liquidity and assets.

**FinTP** source code complies with GPLv3 license and it capitalizes on a 12 years practice proven qPayIntegrator designed and implemented by Allevo back in 2002. FinTP's predecessor has been live at 10 financial institutions and has successfully managed their daily operations, automating their flows, centralizing their transactions and ensuring end-to-end interoperability.

**FinTP** is a reliable financial middleware to manage the transactions flows with features for:

**Business area:** liquidity reporting and forecasting, enhanced interoperability with the bank's corporation customers, as well as flexible service for individuals based on the extended use of SWIFT standardized messages set for remittances (SWIFT Remit).

**Operations area:** support for the most popular financial information transfer instruments (credit transfer, direct debit, debit instruments and securities), as well as multicurrency enablement, and operational risk containment functionalities (such as accounting reconciliation, duplicate detection, AML filtering).

**IT area:** insurance of the data quality: end-to-end persistent transactions, system resilience (transactions mirroring to back-up platform), native ISO20022 support, easy operational and data flows configurations through embedded XML schemas etc.

**FinTPc** is an extension of FinTP functionalities. **FinTPc** addresses SMEs / corporations specific flows, ensuring consolidation of treasury and financial business to optimize the resources allocation and efficiency, and providing a single view of the financial operations, cash reporting and forecasting, accounting reconciliation (i.e. AR/AP with the banks' statements of account), transaction filtering, all customized for company usage.

This document contains the detailed software requirements specifications of **FinTPc**.

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## 1.2 Document Conventions

<Describe any standards or typographical conventions that were followed when writing this SRS, such as fonts or highlighting that have special significance. For example, state whether priorities for higher-level requirements are assumed to be inherited by detailed requirements, or whether every requirement statement is to have its own priority.>

In chapter 3 System Features, scenarios and functionalities respect the following naming conventions:

- SBASEnn – base scenario number nn, mandatory
- FBASEnn – base functionality number nn, mandatory
- SRECONnn – reconciliation scenario number nn, mandatory
- FBASEnn – reconciliation functionality number nn, mandatory

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### 1.3 Intended Audience and Reading Suggestions

<Describe the different types of reader that the document is intended for, such as developers, project managers, marketing staff, users, testers, and documentation writers. Describe what the rest of this SRS contains and how it is organized. Suggest a sequence for reading the document, beginning with the overview sections and proceeding through the sections that are most pertinent to each reader type.>

This document is addressed to experts with different professional profiles, involved in development, documentation, testing and implementation:

- Business Analysts
- Solution / Software Architects
- Designers & Developers
- Testers
- Implementers
- Support Personnel
- Project Managers
- Documentarists

Reviews and contributions are expected from all professionals listed, as this document is an artefact used in designing, developing, testing and documenting the project.

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## 1.4 Project Scope

<Provide a short description of the software being specified and its purpose, including relevant benefits, objectives, and goals. Relate the software to corporate goals or business strategies. If a separate vision and scope document is available, refer to it rather than duplicating its contents here. An SRS that specifies the next release of an evolving product should contain its own scope statement as a subset of the long-term strategic product vision.>

Allevo launches its application for processing financial transactions (**FinTP**) into open source at the beginning of 2014. The open source version is a rework of the commercial version of the application (**qPI**), with added support for open source 3rd party software prerequisites for internal database, message oriented middleware and application server, enhanced documentation for code and design, integration with open source developer tools and other changes required for an application published into open source.

**FinTP** provides building blocks for processing financial transaction, helping banks, SMEs, corporations, public administrations, and micro-financing institutions to:

- Consolidate business work flows
- Create flexible interfaces for various market infrastructures
- Process various kinds of funds transfers (such as credit transfer, direct debit, debit instruments, treasury flows) while providing safe operations and duplicate detection
- Gain several operation functionalities (such as liquidity reporting, accounting reconciliation, AML transactions filtering, remittances management, and competitive reports)

Some of the most important technical requirements for such an application are its reliable messages delivery (with persistent End To End transactions, assurance that messages are delivered and not duplicated) and its processing capacity (number of messages processed over a period of time, eliminating the waiting times).

In 2017 Allevo starts the **TOSS** project, aimed to develop **FinTPc**, an innovative software solution for the processing of financial transactions for SMEs and corporations, distributed in open source. **FinTPc** can be seen an extension of **FinTP**, following the same high-level architecture, but will feature a new user interface and reworked functionalities and workflows, addressing specific flows.

**FinTPc** is an application suite that provides SMEs and corporate treasuries the following functionality:

- Integration of all payments initiated by ERP systems, human resources, etc. of the corporation - representing supplier invoices; taxes, duties and excise duties; salaries etc.;
- Creating automatic / manual payment transactions from Payments Business Area;
- Organization of financial transactions by type or by paying company (paying entities according to the internal business lists);
- Defining templates for simple, repetitive or multiple transactions from Payments Business Area;
- Manual payment correction;
- Enrichment of transactions with useful information for accounting registration, monitoring, reconciliation and reporting;
- Reports by supplier, appropriate account in the accounting plan, location, reporting codes;

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- Validation of transactions from Payments Business Area (created manually or imported from ERP);
- Detecting possible duplicate transactions based on pre-configurable criteria;
- Checking payer or supplier accounts with 'black' lists;
- Validating the IBAN format;
- Investigating, correcting, canceling and / or authorizing transactions from Payments Business Area;
- Generating standard or custom payment messages (MT101, ISO20022 pain.001);
- Importing statements;
- Routing incoming messages (receipts or confirmations) to internal applications (ERP, accounting, human resources, etc.);
- Reconciliation of payments with supplier invoices;
- Reconciliation of collections with invoices issued;
- Reconciliation of accounting records with payment confirmation from statements;
- Pre-defined reports and client-specific customization;
- Auditing user activity;
- Archiving transactions and reporting archived data;
- Comprehensive product documentation - source and rewrite code, operation and administration of FinTPc executable code.

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## 1.5 References

<List any other documents or Web addresses to which this SRS refers. These may include user interface style guides, contracts, standards, system requirements specifications, use case documents, or a vision and scope document. Provide enough information so that the reader could access a copy of each reference, including title, author, version number, date, and source or location.>

TOSS project documentation:

- Approved business plan of the project
- SWIFT Standards MT:  
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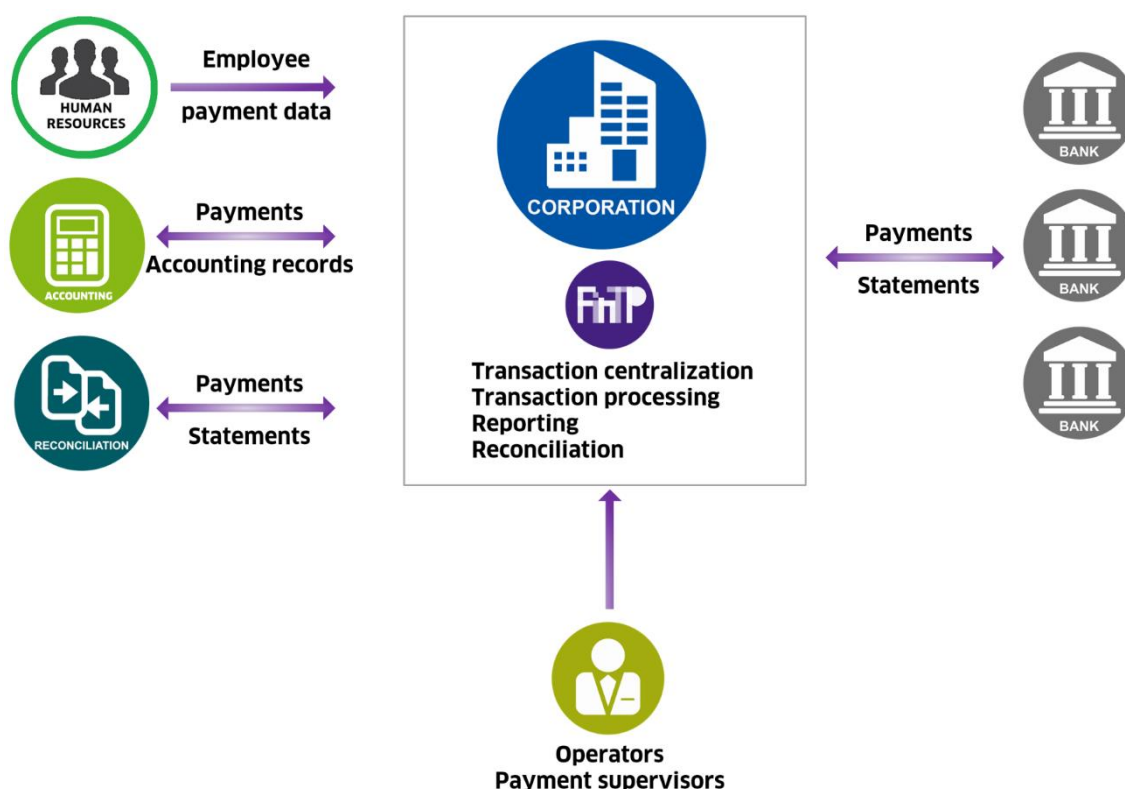


## 2 Overall Description

### 2.1 Product Perspective

<Describe the context and origin of the product being specified in this SRS. For example, state whether this product is a follow-on member of a product family, a replacement for certain existing systems, or a new, self-contained product. If the SRS defines a component of a larger system, relate the requirements of the larger system to the functionality of this software and identify interfaces between the two. A simple diagram that shows the major components of the overall system, subsystem interconnections, and external interfaces can be helpful.>

**FinTPc** is aimed to automate a corporation's processes and flows in treasury departments. **FinTPc** is positioned in the centre of financial flows within a corporation, integrating core systems that process financial transactions (Human Resources Application, ERPs and accounting) and applications connecting to banks either directly (Internet Banking / Cash Management application) or market infrastructures such as SWIFT.



The key benefits provided by **FinTPc** are:

- Consolidation of all corporation/group financial transactions
- Streamlining operations by:
  - integrating payments from other applications
  - flows automation
  - automatic generation of consolidated reports
  - risk containment of duplicate or invalid payments
- Reducing fraud-related risks in connection with bank interface access

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- Generating reports and company relevant statistic

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## 2.2 Product Features

<Summarize the major features the product contains or the significant functions that it performs or lets the user perform. Details will be provided in Section 3, so only a high level summary is needed here. Organize the functions to make them understandable to any reader of the SRS. A picture of the major groups of related requirements and how they relate, such as a top level data flow diagram or a class diagram, is often effective.>

The main building blocks provided by **FinTPc** are:

- **Administration:** provides capabilities for defining **Users and Rights**, **Application Management** and configuration (including routing logic, parameters, validations) and **Business Management** configuration of various lists (partner banks, entities and accounts, partners and accounts, black lists and so on).
- **Application Interfaces:** represent the external interfaces to other applications, for importing financial transactions or sending financial transactions in various structured formats for the corresponding business flows (**payments**, **statements** and **invoices**)
- **Transactions Processing:** provide users with the possibility of **creating** different types of transactions, either manually or based on pre-defined templates, **editing** transactions imported in FinTPc or enriching them based on the lists defined in FinTPc
- **Reconciliation** provides support for automatic or manual matching between two sources of data
- **Reporting** is based on persistent data stored in FinTPc, users can generate predefined or customized reports for specific business or operational needs
- **Audit Trails** ensure the basis for tracking workflows and exceptions or recording user actions within the application, necessary for performing investigations for exceptions or consistency checks
- **Archiving** is a functionality that automates the export of processed data from FinTPc into backups (external files), based on criteria specific for each workflow

The **FinTPc** diagram bellow presents the main features described above. Features that are mandatory for any specific configuration / deployment are written in **bold**, while features are only optionally configured are written in light grey.

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## 2.3 User Classes and Characteristics

<Identify the various user classes that you anticipate will use this product. User classes may be differentiated based on frequency of use, subset of product functions used, technical expertise, security or privilege levels, educational level, or experience. Describe the pertinent characteristics of each user class. Certain requirements may pertain only to certain user classes. Distinguish the favoured user classes from those who are less important to satisfy.>

**FinTPc** is used by the following user profiles:

- *Security Administrators* – ensure user management and access rights
- *Application Administrators* – ensure administration of FinTPc, providing support for managing specific business requests on the application configuration
- *Support and Monitoring Personnel* – provide continuous monitoring of FinTPc and initiate investigations when errors occur
- *Operators* – perform business operations provided by FinTPc, like actions on financial transactions (create, modify, reject, authorize), reconciliation, generate various reports and so on
- *Supervisors* – oversee the overall result of business processing, like generating reports on financial transactions

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## 2.4 Operating Environment

<Describe the environment in which the software will operate, including the hardware platform, operating system and versions, and any other software components or applications with which it must peacefully coexist.>

**FinTPc** needs to be easily adopted and to be seamlessly integrated into the payments system of a corporation. From this perspective, the technological choices need to take into consideration the following common principles that can be applied to most corporations targeted by this application:

- Corporations have limited technological variety, mostly using basic/common operating systems (Windows, Linux)
- Corporations rarely have deals for enterprise software platforms from big established technology vendors (like IBM, Oracle, Microsoft); most applications are deployed with built-in/embedded 3<sup>rd</sup> party products
- Corporations are *cost-aware*, so proposed technological solutions and hardware resources required by FinTPc should not introduce high costs for the implementation project
- Corporations' technical teams are not very specialized in narrow technology fields, they rather cover a broader range of activities (they rarely have designated personnel that provides administration just for databases, or operating systems, or application servers, or networking, etc.). Therefore, the application should be easily to install, configure, administer & maintain
- Integration between applications is usually what vendors provide in the off-the-shelf products. Most common interfaces are with files with structured formats (csv/xslt, xml, fin), but they also use other types of interfaces like different communication protocols (ftp/ftps), web services (https), database tables

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## 2.5 Design and Implementation Constraints

<Describe any items or issues that will limit the options available to the developers. These might include: corporate or regulatory policies; hardware limitations (timing requirements, memory requirements); interfaces to other applications; specific technologies, tools, and databases to be used; parallel operations; language requirements; communications protocols; security considerations; design conventions or programming standards (for example, if the customer's organization will be responsible for maintaining the delivered software).>

**FinTPc** is an open source application, distributed under GPL v3 license. All prerequisites required for deploying, exploiting and maintaining FinTPc should be also be open source. The adopter of FinTPc should have the possibility to choose between different technologies in order to align to the corporation's internal requirements, policies and personnel knowhow.

- FinTPc has to be supported both on Windows and Linux platforms
- FinTPc must not require high computing resources (CPU, RAM, disk) for small transaction volumes
- Client workstations have not be limited to only one web browser – most common browsers have to be supported: Chrome, Firefox, Internet Explorer
- Open source third-party products required should either have an enterprise version supported by an established technology vendor or an equivalent into an commercial product (for instance, the operating system can be CentOS but also RHEL / Windows Server)
- Deployment architectures should be flexible to accommodate specific customer requirements – e.g. the possibility to have a single-server installation or a distributed architecture with centralized database on one server and application on another server, deployed on premise or hosted in a datacenter
- Integration to the corporation's LDAP server should be possible but not mandatory. Alternatives to integrating to the corporation LDAP server could be other types of authentication or delivering a standalone LDAP solution dedicated for FinTPc
- The official language should be English, but FinTPc application interface should have support for multiple common languages. This can be also achieved by ensuring that third party browser add-ons can perform translation for the interface in multiple languages
- FinTPc has to accommodate high security standards for accessing the user interface, data between interfaces, encryption, protection by implementing CIA controls (Confidentiality, Integrity and Availability)
- Flows defined in FinTPc should be able to run in parallel, so the ones with high priority do not impact the ones with a lower priority from a performance perspective, or changes implemented on one flow do not affect others

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## 2.6 User Documentation

<List the user documentation components (such as user manuals, on-line help, and tutorials) that will be delivered along with the software. Identify any known user documentation delivery formats or standards.>

The application will be delivered with two manuals:

- User manual
- Installation and administration manual

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## 2.7 Assumptions and Dependencies

<List any assumed factors (as opposed to known facts) that could affect the requirements stated in the SRS. These could include third-party or commercial components that you plan to use, issues around the development or operating environment, or constraints. The project could be affected if these assumptions are incorrect, are not shared, or change. Also identify any dependencies the project has on external factors, such as software components that you intend to reuse from another project, unless they are already documented elsewhere (for example, in the vision and scope document or the project plan).>

**FinTPc** is a financial middleware that provides integration between various applications / systems that process financial transactions in a corporation. Each of these applications have implemented their own interface to other application, from a technological perspective (files, web services, databases, queues, and so on) or data format perspective (structured positional files, csv/excel, xml, and so on). This document covers the most common interfaces with banking applications (internet banking systems, TMS applications, Cash Management applications), ERPs, Human Resources Applications, Accounting applications from both perspectives. The application has to be designed to allow easy integration with other types of interfaces.

Each corporation has its own governance in place, with different roles and processes defined throughout its business line. This translates also in different workflows within the financial workflows. **FinTPc** has to be designed to allow easy configuration of workflows, so that processes can be adapted to specific corporate requirements (e.g. segregation of data and roles, four-eye principle for some critical actions, granularity of user rights and access).

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### 3 System Features

<This template illustrates organizing the functional requirements for the product by system features, the major services provided by the product. You may prefer to organize this section by use case, mode of operation, user class, object class, functional hierarchy, or combinations of these, whatever makes the most logical sense for your product.>

<Don't really say "System Feature 1." State the feature name in just a few words.>

<Provide a short description of the feature and indicate whether it is of High, Medium, or Low priority. You could also include specific priority component ratings, such as benefit, penalty, cost, and risk (each rated on a relative scale from a low of 1 to a high of 9).>

<List the sequences of user actions and system responses that stimulate the behaviour defined for this feature. These will correspond to the dialog elements associated with use cases.>

<Itemize the detailed functional requirements associated with this feature. These are the software capabilities that must be present in order for the user to carry out the services provided by the feature, or to execute the use case. Include how the product should respond to anticipated error conditions or invalid inputs. Requirements should be concise, complete, unambiguous, verifiable, and necessary. Use "TBD" as a placeholder to indicate when necessary information is not yet available.>

<Each requirement should be uniquely identified with a sequence number or a meaningful tag of some kind.>

#### 3.1 Concepts

Nr crt.	Concept	Definition
1.	Application Interface	Represents the integration between FinTPc and other applications. It is defined by communication protocol and structured data format.  Application interface can be internal and external.  Internal application interface represents the integration between FinTPc and corporate's core applications (ERP, accounting, human resources).  External application interface represents the integration between FinTPc and applications that ensure connection to business partners.
2.	Financial Message	Is a structured data set exchanged on an application interface. A message contains one or more financial transactions.
3.	Business Area	Is defined as a logical classification for different categories of financial transactions, such as : <ul style="list-style-type: none"> <li>- Payments</li> <li>- Invoices</li> <li>- Statements</li> </ul> Classification is based on financial transactions that share a set of related information that meet a business purpose.

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		FinTPc design allows definition of new business areas.
4.	Financial Transaction	<p>Represents the information exchanged between counterparties that is part of a larger financial flow. In FinTPc represents an element that defines an individual financial operation.</p> <p>Financial transactions are logically grouped in business areas based on their predefined business purpose.</p> <p>Financial transactions can be also referred as transactions.</p>
5.	Status	Represents a property of a financial transaction that indicates its processing phase.
6.	Action	<p>Is a processing operation on financial transactions either:</p> <ul style="list-style-type: none"> <li>• automatically, based on predefined processing configuration, referred as Routing Rule (RR), or</li> <li>• manually, based on user decisions, referred as User Action (UA).</li> </ul>
7.	Event	Represents auditing trails related to processing of financial transactions and actions performed in the user interface.
8.	Queue	Represents a collection of financial transactions grouped together with the purpose of applying the same set of actions.
9.	Entity	<p>Is an organization with a collection of bank accounts associated. A bank account can correspond only to one entity.</p> <p>Entities can be internal and external. If internal or external is not explicitly specified, entity means both internal and external.</p> <p>Internal entities are the organisations for which FinTPc manages the financial flows.</p> <p>External entities are business partners of the internal entities</p> <p>Financial transactions from Payments Business Area are issued from internal entities accounts to other internal entities accounts, to external entities accounts or to other accounts.</p> <p>Statements can be received and processed only for internal entities accounts.</p>
10	User Right	Represents access granted to users in the user interface for actions and data enquiry.
11	Reconciliation	The matching process between financial transactions based on predefined criteria
12	Original transaction	<p>Represents the initial form of the transaction:</p> <ul style="list-style-type: none"> <li>- The created form for those transactions that are created directly in FinTPc;</li> <li>- The fetched form for those transactions that are fetched from corporate's core applications</li> </ul>

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### 3.2 FinTPc processing model

**FinTPc** is a financial middleware which empowers business users to define and control the process of transferring financial transaction between various corporate systems.

Embedded *Financial Transaction Editor* offers the capability of creating new transactions or manually correcting them before processing.

*Reports and statistics* provides needed insights on processed transactions for business operations.

*Transaction processing* develops according to the following stages:

1. Fetch financial messages from Application Interfaces
2. Format, Store and Route financial transactions
3. Publish financial messages to Application Interfaces

1. *Fetch stage* assumes the existence of predefined Application Interface. FinTPc can interface with Database Systems, File Systems, Messaging Systems and Web Services.

The purpose of this stage is to reliably interface with other financial application and perform preparation steps for next processing stage.

During this stage the main operations are:

- a. Backup fetched messages
- b. Split messages by transactions
- c. Transform transactions in easily parsing format
- d. Augment transaction with data collected by other application calls (WS, DB)
- e. Transfer transactions to the core application processor

2. *Format, Store and Route stage* is performed by both the core application processor and user interaction. The purpose of this stage is to offer processing control to the users and deliver business capabilities over processed transactions.

*Format and Parse.* By formatting, the financial transaction content is interpreted and transformed into an application understandable format. FinTPc is required to fully understand financial transactions in order to deliver all the business capabilities. Once transactions are formatted and stored, they are ready to be segregated and operated by user chosen criteria, checked for duplicates, validated, enriched, grouped, correlated, sent to a reconciliation process (see product features and actions chapter).

Interpreted information is stored in an easily accessed way. After being persisted, transactions are available at any moment for reporting.

*Route.* By routing, the users strictly control transactions transfer between application interfaces. The control is exert using

- queues to segregate transactions into collections as business operations require and using
- queue's predefined actions in order distinctly operate each collection as needed

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*So segregating transactions and operations, at business operation will, is the main purpose of routing capability.*

Transactions delivered to the core processor are collected in entry queues according to custom configuration of fetching stage. Actions performed by core application processor called *routing rules* take control and operate on delivered transactions. Routing rules are user defined, but sequentially executed by the core application processor. *Format and Store* is a mandatory routing rule on entry queues.

During routing, transactions can be held in queues for user audit and routing decisions. User decisions on held transactions are performed by **user actions**.

Transactions can be moved from entry queues to application predefined intermediate queues that deliver features like *duplicate detection* or *investigation of process failed transactions*. Other user defined intermediate queues are possible in order to perform more grained processing segregation on transactions.

In order to have transactions published to an application interface, they need to be previously collected in exit queues. Only exit queues have the capability to push transactions to the publishing stage processing. Each receiving application interface is bound to a publishing stage and usually requires a specific receiving transaction format. Transforming transactions to required format need to be among last actions performed on exit queues

After being pushed to publishing stage, transactions are no longer available for other operations than correlation with related messages. Published transactions are still available for reporting.

To provide a higher quick overview of processed transactions, there is a status reported on each transaction. Status changes according to relevant actions performed during processing.

Modifying transaction information during routing can conflict with routing decision made on previous values of transaction information. Such conflicts break the reliable and predictable transfer of financial transactions. FinTPc avoids these conflicts by providing limited and strictly controlled transactions modifications mechanisms.

**3. Publishing stage.** The purpose of this stage is to reliably interface with other financial applications and perform preparation steps according to application interface requirements

During this stage the main operations are:

- a. Group transactions into batched (if required by application interface)
- b. sign messages (if required by application interface)
- c. Transfer message to existing predefined interfaces according to interface protocol and digital data format

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## 3.3 Data Structures



data%20structures  
%20and%20mappin

### 3.3.1 Financial message structure for transactions - Payments Business Area

#### 3.3.1.1 Internal Application Interface

Sheet: Internal pymt struct

#### 3.3.1.2 External Application Interface

Financial messages are sent to bank in SWIFT FIN MT file format or ISO20022 pain.001.001.03 format.

##### 3.3.1.2.1 SWIFT FIN MT file structure

Sheet: map FinTPC->MT pymt (MT structure – fields column)

##### 3.3.1.2.2 ISO20022 pain.001.001.03 format

Sheet: map FinTPC->pain pymt

### 3.3.2 Financial message structure for transactions - Invoices Business Area

#### 3.3.2.1 Internal Application Interface

Sheet: Internal invn struct

### 3.3.3 Financial message structure for transactions – Statements Business Area

#### 3.3.3.1 Internal Application Interface

Sheet: map FinTPC->Internal stm

#### 3.3.3.2 External Application Interface

##### 3.3.3.2.1 Csv file structure

Sheet: External stm structure csv

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## 3.4 Administration

### 3.4.1 FBASE01 – User Management

#### Functional requirements

User accounts and authentication are managed by an LDAP application (Active Directory or others).

User rights are managed in FinTPc.

FinTPc is provided with a predefined user granted with *UserAdministrator* right that can:

- import users from LDAP application;
- grant access to other application users;

User rights are defined in the table below.

Category	User Right	Details
User Administrator	Manage Users	<ul style="list-style-type: none"> <li>- import users from LDAP application</li> <li>- assign user rights to other application users</li> </ul>
Application Administrator	View Configuration Lists	View Configuration Lists (Parameters list and Business days calendar)
	Modify Configuration Lists	Update values in Lists.
	View Routing Rules	View Routing Rules
	Modify Routing Rules	Add, delete and update Routing Rules.
	View Queues	View Queues
	Modify Queues	Add, delete and update queues
	View Events	View Events in Events Report
	View performance tracking reports	View reports in FinTPc Tracker Module
Business Administrator	View Internal Entities list	View Internal entities and accounts list
	Modify Internal Entities list	Add, delete and update Internal Entities and accounts list.
	View External Entities list	View External entities and accounts list
	Modify External Entities list	Add, delete and update External Entities and accounts list.
	View Banks list	View Banks list
	Modify Banks list	Add, delete and update Banks.

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Reconciliation	View Reconciliation	View automatic and manual reconciliation results.
	Manually match	Manually match transactions; This right can be granted only to users with View Reconciliation right
Transaction and template access	View	View right granted to users per Internal Entity and Transaction Type; This right allows users to view specific transactions* in queues, general report and templates list
	Operate	Operate right granted to users per Internal Entity and Transaction Type. This right allows users to operate the following user action types: reject, suspend, authorize and investigate on specific transactions* This right can be granted only to users with View right
	Create and Edit	Create and edit right granted to users per Internal Entity and Transaction Type. This right allows users to create/edit specific transactions* and templates; This right can be granted only to users with View right
	Supervise	View, Operate, Create and edit rights granted to users per all internal entities and transaction types, including those transactions which are not assigned to an entity

\*belonging to an Internal entity (Debtor Name for Payments, Buyer Name (Issued invoices)/Seller Name (Received invoices) for Invoices and .... for Statements

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### 3.4.2 FBASE02 – Application configurations

#### Functional requirements

##### 3.4.2.1 Configuration Lists

Configuration lists are used in the application to configure different processes.

FinTPc has the following configuration lists, available for users with predefined rights described in [FBASE01– User Management](#):

1. Parameters list
2. Business days calendar

##### 3.4.2.1.1 Parameter list

Name	Description and usage	Values
Archive period	Configured per: <ul style="list-style-type: none"><li>- Business Area -&gt; all transaction types in the business area inherit the same values</li><li>- Transaction Types -&gt; can be set if parent business area is not configured</li></ul> Transactions and related events are archived according to configured period.	Number of business days per Business Area or Transaction types
Events archive period	All events excepting the related transaction events are archived according to configured period.	Number of business days
Archive interval	Archiving process runs during this time interval.	Hour interval 00-24 format
Duplicate detection period	Configured per: <ul style="list-style-type: none"><li>- Business Area -&gt; all transaction types in the business area inherit the same values</li><li>- Transaction Types -&gt; can be set if parent business area is not configured</li></ul> Period used to detect possible duplicate transactions.	Number of business days per Business Area or Transaction types
EOD time	The moment when FinTPc runs all end of day operations.	

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### 3.4.2.1.2 Business day calendar

Business day calendar provides the possibility to define working days and free days.

It is used in the duplicate detection and archiving processes.

### 3.4.2.2 Routing rules

Routing Rules can be accessed by users with predefined rights described in [FBASE01– User Management](#).

FinTPc offers an automatic processing transactions mechanism based on routing rules. *Routing rules* represent actions (described in the table below) that allow an easy configuration of the business flows according to business necessities; these actions are applied to financial transactions that meet specific conditions built on transaction fields.

Action	Description
Format	Change the financial transaction format to a known format
MoveTo	Move the financial transaction from current queue to a destination queue
ChangeHoldStatus	Hold financial transaction in current queue, till a user action is performed.
Complete	Cancel financial transaction processing; optionally sending it to source internal/external application interfaces with the corresponding reject code;
Validate	Validate financial transactions with information from business lists
Enrich	Enrich financial transaction with information fetched from business lists, see <a href="#">FBASE12 – Enrich financial transactions</a>

FinTPc allows to define multiple routing rules on each queue.

Routing rules are grouped and are active between two time limits that are configured on each routing rules group.

FinTPc allows to export/ import Routing rules from one instance of FinTPc to another one. For import process there are following constraints:

- All related queues are defined
- All related business lists are defined
- All transaction format mapping rules are defined

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### 3.4.2.3 Interfaces configuration

FinTPc can be integrated with internal or external applications through different communication protocol and structured data formats.

#### 3.4.2.3.1 Fetch - File format

Files containing messages are fetched from configured *Source* folder and moved to a backup folder:

- configured *Error* folder for error at retrieving process
- configured *Success* folder for successfully retrieving process

#### 3.4.2.3.2 Publish - File format

Files are published to configured *Destination* folder.

#### 3.4.2.3.3 Fetch - DB table

Data are fetched from configured *Source* DB table.

#### 3.4.2.3.4 Publish - DB table

Data are published to configured *Destination* DB table.

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### 3.4.3 FBASE03 – Business management

#### 3.4.3.1 Business Lists

Business lists are used in the application in processes like routing, enrichment, validation or editing transactions.

##### 3.4.3.1.1 Banks list

This list contains all financial institutions (banks) related to company (both paying and beneficiary) .The list is viewed/ managed by users with *View/ Modify Banks list* right.

The operator defines the following information for banks in which the internal entities has active accounts and those where external entities have accounts:

Field	M/O	Length	Comments
Bank name	M	35x	
BIC	M	8x	Unique; Bank Identifier Code
Address	O	70x	
Country	M	2x	

#### Note:

The relations between lists ( *Banks list* referred as BL, *Internal entities and accounts* referred as IEL and *External entities and accounts* lists - referred as EEL) are:

BL.BIC = IEL.BIC

BL.BIC = EEL.BIC

Possible actions:

- ✓ Add a new record;
- ✓ Modify all elements of the record (except BIC); options:
  - Save – save changes
  - Cancel – discard changes
- ✓ Delete a bank – A confirmation is required - if the corresponding BIC doesn't exist in *Internal entity and accounts* list or *External entity and accounts* list. Otherwise, the corresponding BIC(s) must be previously deleted from *Internal entity and accounts* list or *External entity and accounts* list.
- ✓ Search/ Filter – on any field defined for a bank

##### 3.4.3.1.2 Accounting codes list

This list contains all the accounting codes used by the company.

This list is viewed/ managed by users with *View/ Modify Internal entities list* right.

An accounting code is defined per a transaction type from Payments Business Area, with the possibility to define the same accounting code for many transaction types.

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Field	M/O	Length	Comments
Transaction Type	M	35x	Unique; Drop down list with all possible values defined for Payments Business Area: Salary Payment, Supplier Payment, Tax Payment, VAT Payment, Other Payment
Accounting Code	M	35x	
Accounting Name	M	35x	

Possible actions:

- ✓ Add a new record;
- ✓ Modify all elements of the record; options:
  - Save – save changes
  - Cancel – discard changes
- ✓ Delete a record – A confirmation is required
- ✓ Search/ Filter – on any field defined

### 3.4.3.1.3 Location codes list

This list contains all the location codes used by the company.

This list is viewed/ managed by users with *View/ Modify Internal entities list* right.

A location code is defined per an Internal Entity (*Name* field from *Internal entities and accounts list*), with the possibility to define many location codes for the same entity, but only one of them is set as default.

Field	M/O	Length	Comments
Entity name	M	35x	Drop down list with <i>Name</i> field from <i>Internal entities and accounts list</i>
Location Code	M	35x	Unique
Location name	M	35x	
Default	M	1x	Y – location used in enrichment process; Y value is unique per entity

Possible actions:

- ✓ Add a new record;
- ✓ Modify all elements of the record; options:
  - Save – save changes
  - Cancel – discard changes
- ✓ Delete a record – A confirmation is required

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- ✓ Search/ Filter – on any field defined

#### 3.4.3.1.4 Budget codes list

This list contains all the budget codes used by the company.

This list is viewed/ managed by users with *View/ Modify Internal entities list* right.

Field	M/O	Length	Comments
Budget Code	M	35x	Unique
Budget Name	M	35x	

Possible actions:

- ✓ Add a new record;
- ✓ Modify all elements of the record; options:
  - Save – save changes
  - Cancel – discard changes
- ✓ Delete a record – A confirmation is required
- ✓ Search/ Filter – on any field defined

#### 3.4.3.1.5 Internal entities and accounts list

This list contains all the entities and bank accounts. They represent the paying accounts of the company.

This list is viewed/ managed by users with *View/ Modify Internal entities list* right.

The user defines the following information for all entities of the company.

The following fields are defined for an internal entity:

Field	M/O	Length	Comments
Name	M	35x	unique
Address	O	70x	
City	O	35x	
Country	O	2x	
Fiscal Identification Code	M	10x	unique

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Entity Accounts: one entity has a collection of bank accounts associated. A bank account corresponds only to one entity.

Field	M/O	Length	Comments
-------	-----	--------	----------





Entity name	M	35x	Drop down list with all internal entities defined
Currency	M	3x	
Account number (IBAN or ID)	M	35x	Unique; If begins with RO then Validate IBAN RO structure
BIC	M	8x	If Account number begins with RO Then is fetched from Banks list based on BIC(1,4) = IBAN(5,4) Else manually choose from drop-down BIC list
Description	O	70x	
Locked	O	1x	Y – account assigned to black list
Default	O	1x	Y – account used in enrichment process; Y value is unique per entity
Other details	O	70x	E.g. The reason of adding account in black list

M – Mandatory

O – Optional

x – Alphanumeric character (including blanks)

d – Numerical character

Possible actions:

- ✓ Add a new entity and the related accounts
- ✓ Modify all elements for the entity and/or the related accounts, except entity name; options:
  - Save – save changes
  - Cancel – discard changes
- ✓ Delete a bank account – A confirmation is required;
- ✓ Delete an entity and all the related accounts – A confirmation is required; The entity is marked as deleted
- ✓ Search/ Filter – on any field defined for an entity or an account

#### 3.4.3.1.6 External entities and accounts list

This list contains all the business partners of the company and their bank accounts. Basically, contains the beneficiaries of the financial transactions and their accounts.

This list is viewed / managed by users with *View/ Modify External entities list* right.

The following fields are defined for an external entity:

Field	M/O	Length	Comments
Name	M	35x	unique
Address	O	70x	
City	O	35x	
Country	O	2x	

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Fiscal Identification Code	M	10x	Unique
Email	O	35x	
MaxAmount	O	17,2d	

External Accounts: one entity has a collection of bank accounts associated. A bank account corresponds only to one entity.

Field	M/O	Length	Comments
Entity name	M	35x	Drop down list with all external entities defined
Currency	M	3x	
Account number (IBAN or ID)	M	35x	Unique; If begin with RO then Validate IBAN RO structure
BIC	M	8x	If Account number begins with RO Then is fetched from BIC list based on BIC(1,4) – IBAN(5,4) Else manually choose from drop-down BIC list
Description	O	70x	
Locked	O	1x	Y – account assigned to black list
Default	O	1x	Y – account used in enrichment process; Y value is unique per entity
Other details	O	70x	E.g. The reason of adding account in black list

M – Mandatory

O – Optional

x – Alphanumerical character (including blanks)

d – Numerical character

Possible actions:

- ✓ Add a new entity and the related accounts
- ✓ Modify all elements for the entity and/or the related accounts, except entity name; options:
  - Save – save changes
  - Cancel – discard changes
- ✓ Delete a bank account – A confirmation is required;
- ✓ Delete an entity and all the related accounts – A confirmation is required;
- ✓ Search/ Filter – on any field defined for an entity or an account

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#### 3.4.3.1.7 Accounts black list

*Accounts black list* is obtained by filtering *Internal entities and accounts list* and *External entities and accounts list* on *Locked* field = Y.

### 3.4.3.2 Templates

#### 3.4.3.2.1 Financial transaction Templates – Payments Business Area

Transaction templates are created by users with Create - Transaction and template access right described in [FBASE01– User Management](#).

FinTPc allows to define templates in order to create repetitive financial transactions from payments business area.

The following Templates categories are defined:

- **Simple** - individual template with certain fields pre-filled. By using this type of template, one or more identical transactions are generated.
- **Multiple** – templates list used to create one transaction for each template in the list. This type of template corresponds to transactions with regular character, having the same frequency and same time, for instance salary payments.

For details about using templates, see [Create financial transactions based on a template](#).

In order to create **Simple templates**, the following information is filled in:

Field	M/O	Length	Comments
Template category	M	10x	Fix value: Simple
Name	M	35x	unique
Debtor Name	M	35x	drop-down list with <i>Name</i> field from <i>Internal entities and accounts list</i>
Debtor Account	M	35x	drop-down list with <i>Account number (IBAN or ID)</i> field corresponding to Ordering Entity Name above
Transaction type	M	35x	drop-down list with possible values: Salary Payment, Supplier Payment, Tax Payment, VAT Payment, Other Payment
Amount	O	17,2d	
Creditor Name	M	35x	drop-down list with <i>Name</i> field from <i>External entities and accounts list</i>

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Creditor Account	M	35x	drop-down list with <i>Account number (IBAN or ID)</i> field corresponding to Beneficiary name above
Remittance Information	O	70x	
Accounting Code	O	35x	Automatically filled in with Accounting code field from Accounting code list filtered on Transaction type field equals the above Transaction type chosed
Location Code	O	35x	drop-down list with <i>Location Code</i> field from Location codes list, filtered on Entity name field equals the above Ordering Entity chosed
Budget Code	O	35x	drop-down list with <i>Budget Code</i> field from <i>Budget Code list</i>

Possible actions:

- ✓ Modify all elements of a record; options:
  - Save – save changes
  - Cancel – discard changes
- ✓ Delete a record – A confirmation is required;
- ✓ Search/ Filter – on any field defined for a record
- ✓ Copy a record – create a new template based on a pre-defined template. The name of the new template must be modified. Also, FinTPc allows to modify any other fields.

In order to create **Multiple templates**, the following information is filled in:

Field	M/O	Length	Comments
Template category	M	10x	Fix value: Multiple
Name	M	35x	unique
Template list	M	-	A list with Simple templates

Possible actions:

- ✓ Create and add a Simple templates to the list;
- ✓ Delete Simple templates from the list – A confirmation is required;
- ✓ Delete the list and all related Simple templates – A confirmation is required;
- ✓ Search/ Filter – on Name field

### 3.5 Application Interface

#### 3.5.1 FBASE04 – Internal application interface method - Payment and Invoice Business areas

##### Functional requirements

FinTPc fetches and publishes financial messages (data) in the following formats:

- file format (e.g.: xls, csv)
- DB table format

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### 3.5.1.1 Fetch - File format

*Interface method:* files fetched from a specific source folder.

A financial message contains one or more transactions of the same business area.

*Financial message structure:*

The structure of the file is described in:

- [File structure](#) - for payments
- [File structure](#) – for invoices

*Naming convention:*

#### **Fetch file**

For a unique identification of a fetched file in FinTPc, a name convention is used. For instance:

<AA><yymmdd><xx>.<ext>:

- AA - a specific code referred to the content of the file
- yymmdd – the date when the file is fetched
- xx – an incremented number
- ext - the file extension

E.g. The first file fetched from human resources department in 10.01.2018 has the following name: HR18011001.csv

#### **Backup file**

For a unique identification of a backup file (in the predefined *Success* and *Error* folders – see [Fetch - File format](#)) a name convention is used:

<yyyymmddHHMMSS><input file name>

### 3.5.1.2 Publish - File format

*Interface method:* files published to a specific destination folder

For each output format are used different folders or file naming convention.

*Financial message structure:*

The structure of file is described in: [File structure](#)

*Naming convention:*

For a unique identification of FinTPc published files, a name convention is used. For instance:

<AA><yymmdd><xx>.<ext>:

- AA - a specific code referred to the content of the file
- yymmdd – the date when the file is published
- xx – an incremented number
- ext - the file extension

E.g. The first file published in 10.01.2018 has the following name: ST18011001.csv

### 3.5.1.3 Fetch - DB table

*Interface method:* data fetched from a specific DB table

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### *Financial message structure:*

The DB table structure is described in:

- [DB table structure](#) – for payments
- [DB table structure](#) – for invoices

### *Naming convention:*

The name of the source table is preconfigured in the implementation phase.

In DB table, State field of each record is updated with one of the following states:

- 0 for a new record
- 1 for a record in process
- 2 for successfully retrieving process
- 9 for error at retrieving process

### **3.5.1.4 Publish - DB table**

*Interface method:* data published to a specific DB table

### *Financial message structure:*

The structure of DB table is described in: [DB table structure](#)

.

### *Naming convention:*

The name of the destination table is preconfigured in the implementation phase.

In DB table, State field of each record is set with the following states:

- 0 for a new record

### **3.5.1.5 Specific implementations**

#### **Allevo implementation:**

FinTPC fetches transactions from the following applications:

- Payments Business Area:
  - Accounting application: Source application code = ACC; DB table

See “data structures and mapping.xlsx” attached in the [Data Structures](#), sheet “map internal ->FinTPC pymt”

- Invoices Business Area:
  - Accounting application: Source application code = ACC; DB table

See “data structures and mapping.xlsx” attached in the [Data Structures](#), sheet “map Internal->FinTPC inv”

FinTPC publishes financial messages to the following applications:

- Payments Business Area:
  - Accounting application (ACC): DB table

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See “data structures and mapping.xlsx” attached in the [Data Structures](#), sheet “map FinTPc->Internal pymt”

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### 3.5.2 FBASE05 – Internal application interface method for financial transactions - Statements Business area

#### *Functional requirements*

FinTPc publishes statement transactions to the corporate's core applications in the following formats:

- file format (.csv)
- DB table format

#### **3.5.2.1 File format**

*Interface method:* files published to a specific destination folder

For each output format are used different folders or file naming convention.

*Financial message structure:*

The structure of file is described in: [File structure](#)

*Naming convention:*

For a unique identification of FinTPc published files, a name convention is used. For instance:

<AA><yymmdd><xx>.<ext>:

- AA - a specific code referred to the content of the file
- yymmdd – the date when the file is published
- xx – an incremented number
- ext - the file extension

E.g. The first file published in 10.01.2018 has the following name: ST18011001.csv

#### **3.5.2.2 DB table**

*Interface method:* data published to a specific DB table

*Financial message structure:*

The structure of DB table is described in: [DB table structure](#)

*Naming convention:*

The name of the destination table is preconfigured in the implementation phase.

In DB table, State field of each record is set with the following states:

- 0 for a new record

#### **3.5.2.3 Specific implementations**

##### **Allevo implementation:**

FinTPc publishes financial messages containing a single transaction, to the following applications:

- Statements Business Area:
  - Accounting application (ACC): DB table

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See “data structures and mapping.xlsx” attached in the [Data Structures](#), sheet “map FinTPC->Internal stm”

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### 3.5.3 FBASE06 – External application interface method for financial transactions – Payments Business Area

#### Functional requirements

FinTPc publishes financial messages to external applications in the following format:

- file format (FIN - MT101, XML ISO20022- pain.001.001.03)

#### 3.5.3.1 File format

*Interface method:* files published to a specific external destination folder.

FinTPc groups financial transactions by any predefined fields, formats them according to each bank specification and batches them in files.

The files can be published to one or more destination folders and/or different formats depending on Debtor Agent BIC and Currency Amount.

#### Financial message structure:

The structure of file is described in:

- [SWIFT FIN MT file structure](#)
- [ISO20022 pain.001.001.03 format](#)

#### Naming convention:

For a unique identification of FinTPc published files, a name convention is used. For instance:

<AAAA><yymmdd><xx>.<ext>:

- AAAA - a specific code referred to the content of the file
- yymmdd – the date when the file is published
- xx – an incremented number
- ext - is the file extension

E.g. The first file published in 10.01.2018 to BNKA bank in ISO20022 - pain.001.001.03 format has the following name:

BNKA18011001PAIN.xml

#### 3.5.3.2 Specific implementations

##### Allevo implementation:

*Naming convention:* See “data structures and mapping.xlsx” attached in the [Data Structures](#), sheet “map FinTPc->MT pymt” – **Batch No and File name**

FinTPc groups transactions according to [Authorization queue type](#) and batches these groups into the following formats:

- transactions with *Debtor Agent BIC* = BNKAROBU and *Amount @ccy* = RON are published into MT files format (one file for each batch)  
See “data structures and mapping.xlsx” attached in the [Data Structures](#), sheet “map FinTPc->MT pymt”

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- transactions with *Debtor Agent BIC* = BNKAROBU and *Amount @ccy* = EUR are published into pain.001.001.03 files format (one file for each batch)
  - transactions with *Debtor Agent BIC* = BNKBROBU and *Amount @ccy* = RON are published into pain.001.001.03 files format (one file for each batch)
  - transactions with *Debtor Agent BIC* = BNKBROBU and *Amount @ccy* = EUR are published into pain.001.001.03 files format (one file for each batch)
- See “data structures and mapping.xlsx” attached in the [Data Structures](#), sheet “map FinTPC->pain pymt”

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### 3.5.4 FBASE07 – External application interface method for financial transactions – Statements Business Area

#### *Functional requirements*

FinTPc fetches statements from external applications in the following format:

- file format (MT940/ csv)

#### **3.5.4.1 File format**

*Interface method:* files fetched from a specific external source folder.

*Financial message structure:*

The structure of file is described in:

- [Csv file structure](#)

*Naming convention:*

For a unique identification of a backup file (in the predefined *success* and *error* folders) a name convention is used.

For Instance:

**<yyyymmddHHMMSS><input file name>**

Different folders are used for each bank.

#### **3.5.4.2 Specific implementations**

**Allevo implementation:**

FinTPc fetches transactions from BNKAROBU and BNKBROBU banks (<Servicer> <Financial Institution Identification><BICF>).

Source application code = STM, file format

See “data structures and mapping.xlsx” attached in the [Data Structures](#), sheet “map External->FinTPc stm”, “csv structure” column

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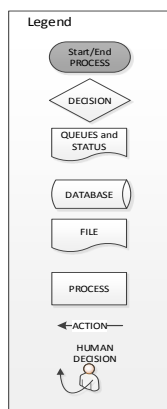
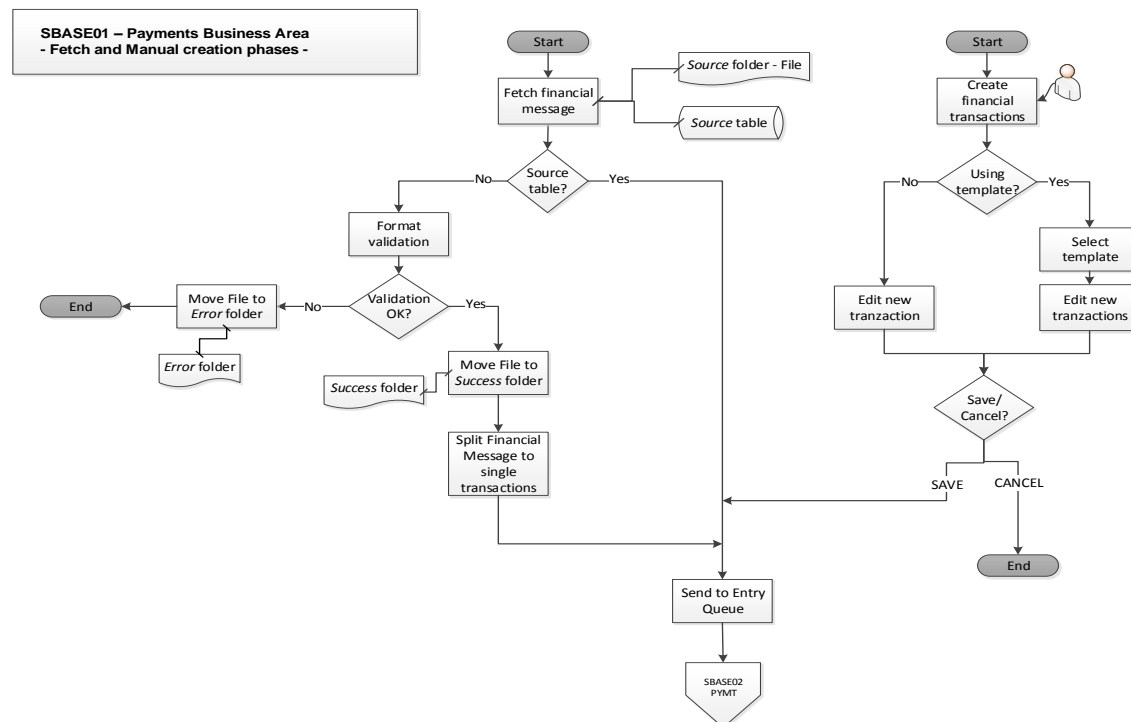
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## 3.6 Transactions processing

### 3.6.1 SBASE01 – Payments Business Area: Fetch and Manual creation phases

#### Scenario



#### Functional requirements:

[FBASE01 – User Management](#)

[FBASE02 – Application configurations](#)

[FBASE03 – Business management](#)

[FBASE04 – Internal application interface method - Payment and Invoice Business areas](#)

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[FBASE08 - Transaction status and actions](#)

[FBASE09 – Transform financial messages and transactions](#)

[FBASE10 - Queues](#)

[FBASE11 – Create financial transactions – Payments Business Area](#)

[FBASE15 – Business validations](#)

[FBASE16 – Reports and statistics](#)

[FBASE17 – Archive](#)

[FBASE18 – Audit Trails](#)

### **Project requirements:**

- a. Integrarea tuturor plăților inițiate de sistemele ERP, resurse umane etc ale corporației – reprezentând facturi furnizor; impozite, taxe și accize; salarii etc.;
- c. Organizarea plăților după tipul acestora sau după firma plătitore (conform nomenclatorului intern);
- i. Detectarea posibilelor instrucțiuni duplicate bazat pe criterii configurabile;
- f. Imbogatirea instrucțiunilor de plata cu informatii utile pentru inregistrare, monitorizare, reconciliere si raportare; - FBASE12 – Enrich financial transactions
- h. Validarea instructiunilor de plata (create manual sau importate din ERP); - FBASE 03 - Validations
- j. Configurarea limitelor de plata pentru fiecare furnizor, detectia automata a depasirii nivelului configurat si investigarea instructiunilor de plata care depasesc plafonul stabilit; - FBASE 03 - Validations
- k. Verificarea conturilor furnizor cu listele “negre” - FBASE 03 - Validations
- l. Validarea formatului IBAN; - FBASE 03 – Validations
- e. Corectie manuala a platilor; FBASE11 – Edit financial transactions
- u. Rapoarte predefinite si posibilitatea personalizarii acestora specifica clientului (rapoarte furnizori, rapoarte bancare, posibile duplicate, instructiuni anulate, cautare instructiuni de plata dupa variate criterii); - FBASE14 – Reports and statistics
- v. Definirea si administrarea grupurilor de utilizatori dupa profilul rolului acestora; - FBASE02 – Application management
- w. Auditarea activitatii utilizatorilor; - FBASE16 – Events
- x. Arhivarea tranzactiilor si raportarea datelor arhivate; - FBASE15 - Archive
- g. Raportare dupa furnizor, cont corespunzator din planul contabil, locatie, coduri de raportare; FBASE14 – Reports and statistics
- d. Definirea de machete si liste de machete pentru plati repetitive sau multiple; FBASE04 – Business management

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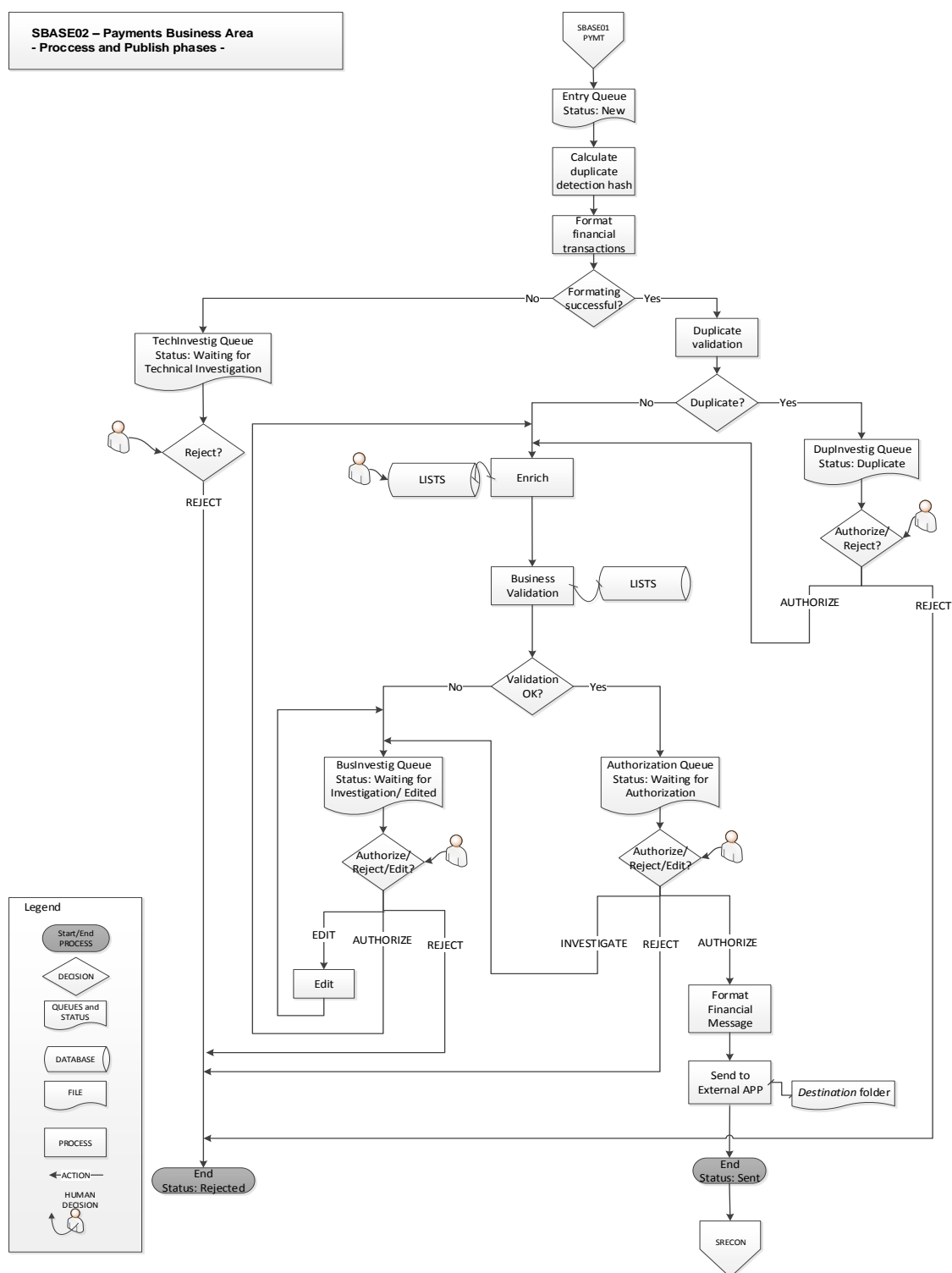
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### 3.6.2 SBASE02 – Payments Business Area: Process and Publish phases

#### Scenario

SBASE02 – Payments Business Area  
- Process and Publish phases -



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#### Functional requirements:

[FBASE01 – User Management](#)

[FBASE02 – Application configurations](#)

[FBASE03 – Business management](#)

[FBASE04 – Internal application interface method - Payment and Invoice Business areas](#)

[FBASE06 – External application interface method for financial transactions – Payments Business Area](#)

[FBASE08 - Transaction status and actions](#)

[FBASE09 – Transform financial messages and transactions](#)

[FBASE10 - Queues](#)

[FBASE12 – Send Accounting registrations to Internal applications](#)

[FBASE13 – Edit financial transactions](#)

[FBASE14 – Enrich financial transactions](#)

[FBASE15 – Business validations](#)

[FBASE16 – Reports and statistics](#)

[FBASE17 – Archive](#)

[FBASE18 – Audit Trails](#)

**Project requirements:**

b. Crearea de instrucțiuni de plată automată/manuală

o. Inițierea înregistrării contabile pentru instrucțiunile de plată create manual;

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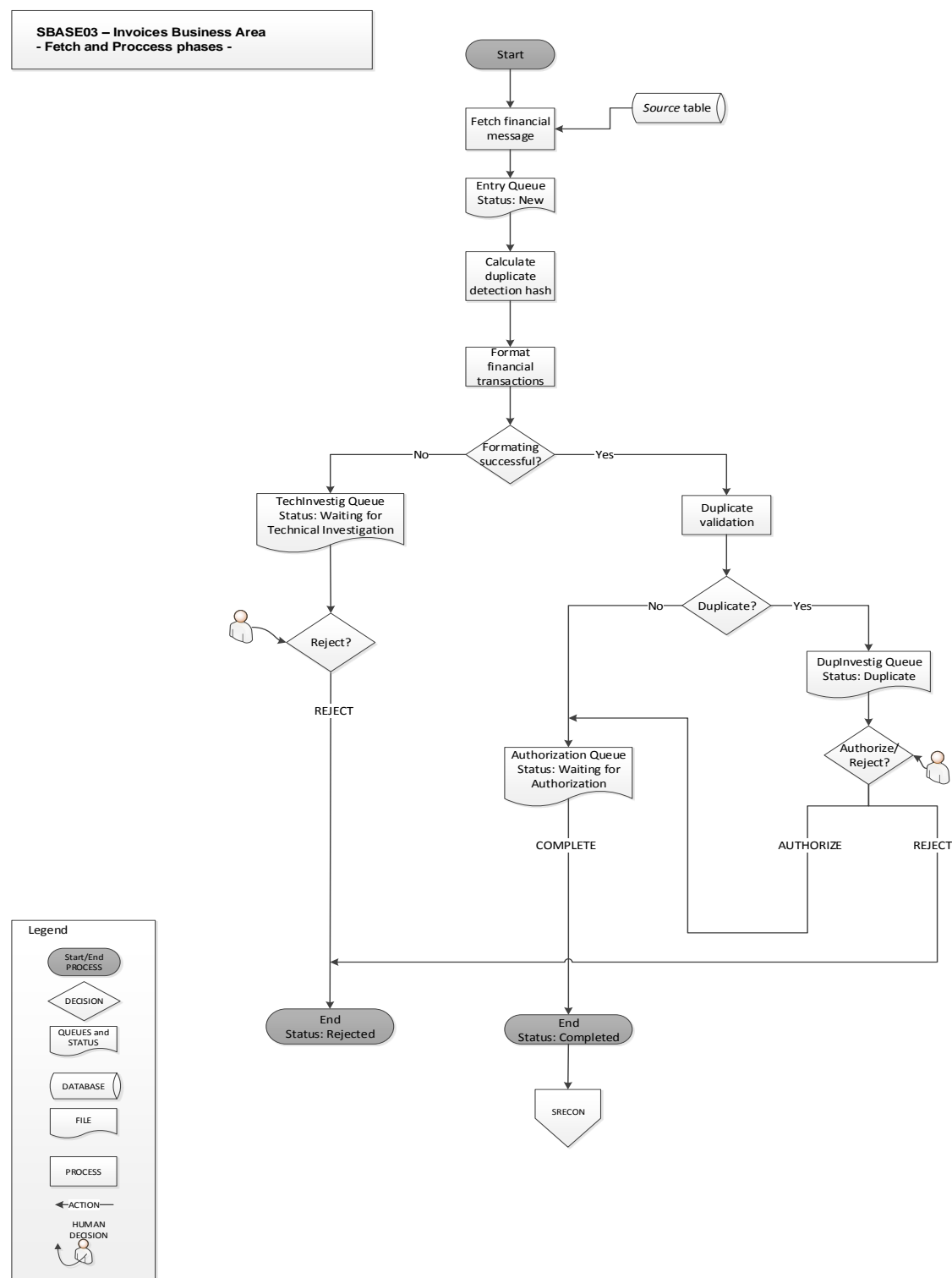
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### 3.6.3 SBASE03 – Invoices Business Area: Fetch and Proccess phases

#### Scenario



#### Functional requirements:

[FBASE01 – User Management](#)

[FBASE02 – Application configurations](#)

[FBASE04 – Internal application interface method - Payment and Invoice Business areas](#)

[FBASE08 - Transaction status and actions](#)

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[FBASE09 – Transform financial messages and transactions](#)

[FBASE10 - Queues](#)

[FBASE15 – Business validations](#)

[FBASE16 – Reports and statistics](#)

[FBASE17 – Archive](#)

[FBASE18 – Audit Trails](#)

**Project requirements:**

n. Generarea mesajelor standard Swift pe plată (MT101, ISO20022 pain.001);

m. Investigarea, corecția, anularea și/sau autorizarea instrucțiunilor de plată;

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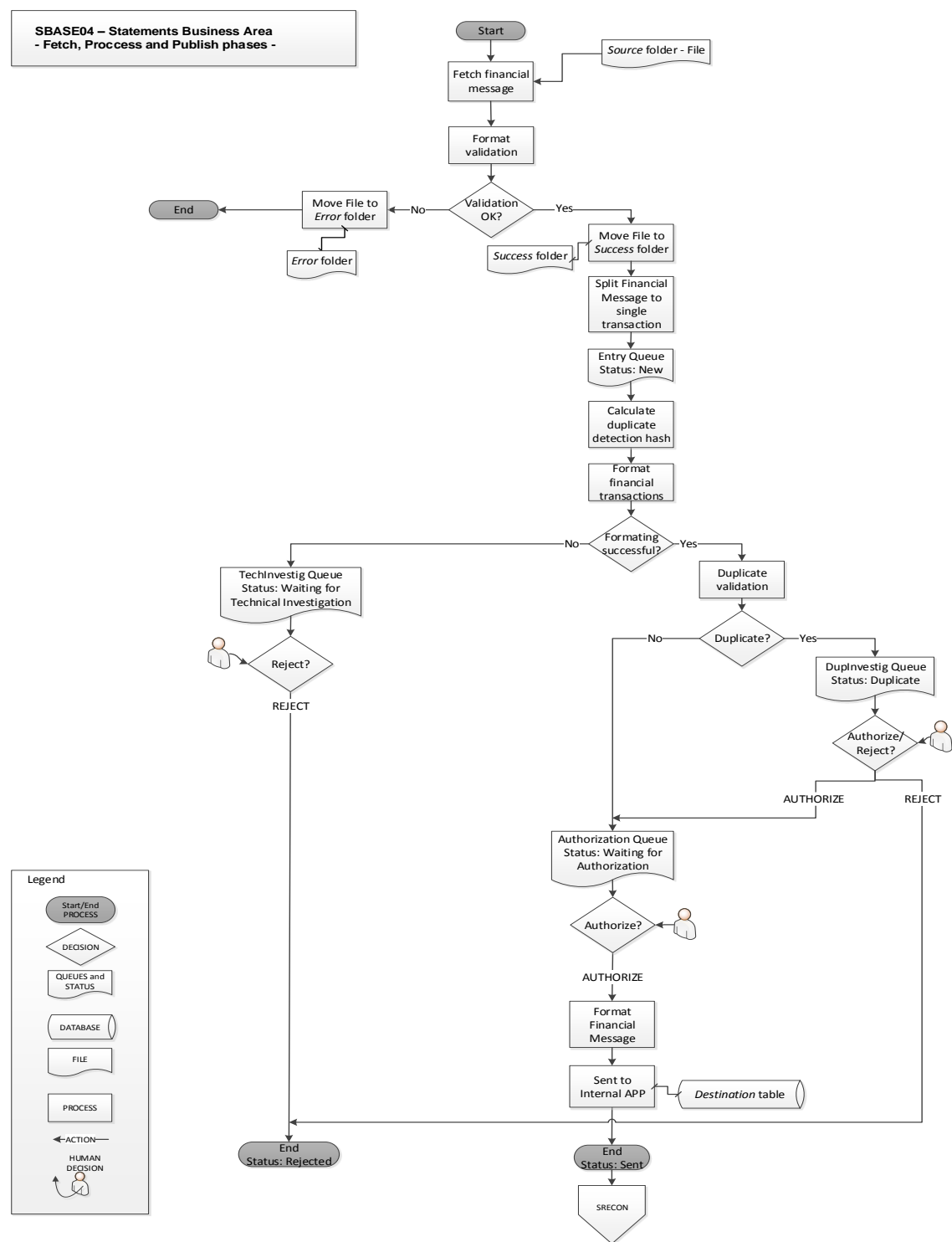


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### 3.6.4 SBASE04 - Statements Business Area: Fetch, Process and Publish phases

#### Scenario



#### Functional requirements:

[FBASE01 – User Management](#)

[FBASE02 – Application configurations](#)

[FBASE05 – Internal application interface method for financial transactions -Statements Business area](#)

[FBASE07 – External application interface method for financial transactions – Statements Business Area](#)

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[FBASE08 - Transaction status and actions](#)

[FBASE09 – Transform financial messages and transactions](#)

[FBASE10 - Queues](#)

[FBASE15 – Business validations](#)

[FBASE16 – Reports and statistics](#)

[FBASE17 – Archive](#)

[FBASE18 – Audit Trails](#)

**Project requirements:**

- a. Integrarea tuturor plăților inițiate de sistemele ERP, resurse umane etc ale corporației – reprezentând facturi furnizor; impozite, taxe și accize; salarii etc.;
- i. Detectarea posibilelor instrucțiuni duplicate bazat pe criterii configurabile;

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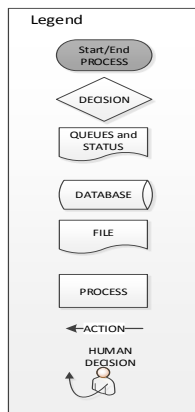
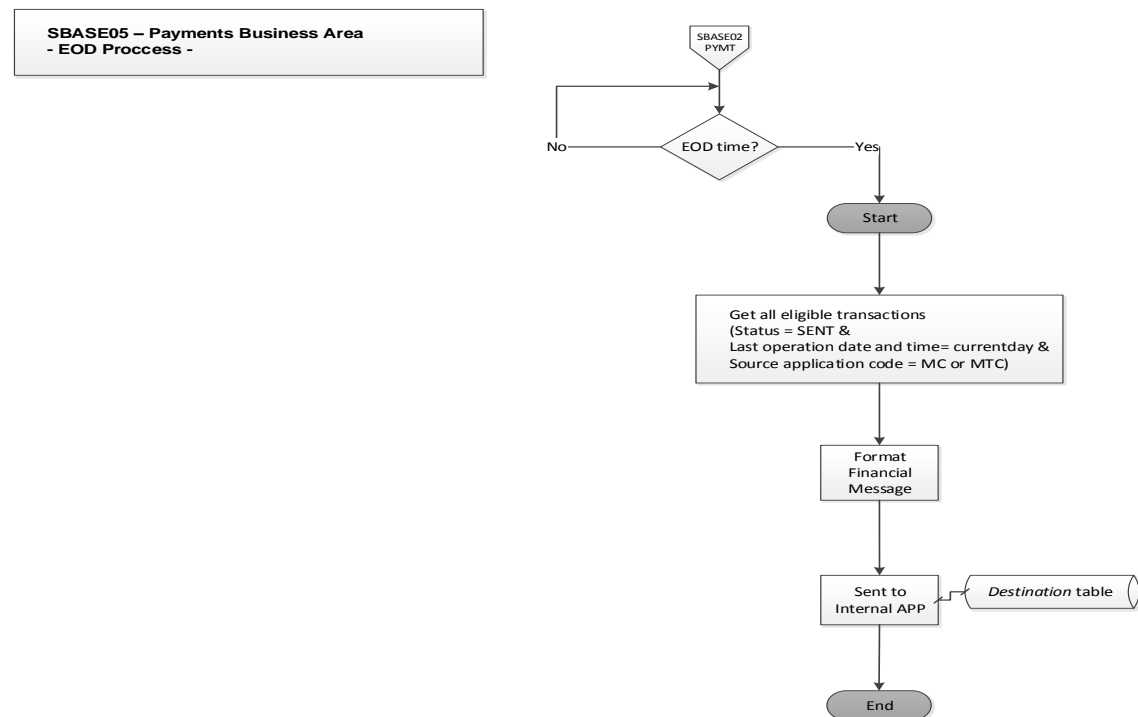


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### 3.6.5 SBASE05 - Payments Business Area: EOD Process

#### Scenario



#### Functional requirements:

[FBASE01 – User Management](#)

[FBASE02 – Application configurations](#)

[FBASE08 - Transaction status and actions](#)

[FBASE09 – Transform financial messages and transactions](#)

[FBASE12 – Send Accounting registrations to Internal applications](#)

[FBASE18 – Audit Trails](#)

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## Project requirements:

- o. Inițierea înregistrării contabile pentru instrucțiunile de plată create manual;

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### 3.6.6 FBASE08 - Transactions

Financial transactions (manually created in FinTPc or fetched from internal/ external application) are routed to specific queues depending on their Business Area and other business needs.

At queue level, a user can view/operate transactions according to his predefined Transaction and template access rights described in [FBASE01– User Management](#).

At queue level there are available the following:

- Search transactions by all the fields that are displayed at this queue level
- User actions (see [User Action Types](#))

Accessing a transaction (either from reports or queues), FinTPc allows to view transaction details (**Business and reporting details, Processing details, Interface details, Other details – described below**)

For a transaction is available the following information described in

[Required transaction information](#).

#### 3.6.6.1 FinTPc transactions formats

##### 3.6.6.1.1 Transactions from Payments Business Area

Sheet: map internal ->FinTPc pymt

##### 3.6.6.1.2 Transactions from Invoice Business Area

Sheet: map Internal->FinTPc inv

##### 3.6.6.1.3 Transactions from Statements Business Area

Sheet: map External->FinTPc stm

##### 3.6.6.1.4 Required transaction information

For each financial transaction the following information categories are available:

#### 1. Business details:

- Payments Business Area: The details for payments are described in [Transactions from Payments Business Area](#)
- Invoices Business Area: The details for invoices are described in [Transactions from Invoice Business Area](#)
- Statements Business Area: The details for statements are described in [Transactions from Statements Business Area](#)

#### Transaction reference

FinTPc generates an unique Transaction reference for each financial transaction and it is used in the investigation process, searching and reporting, and optionally can be transmitted to internal/external applications. The maxim length of this reference is 35 characters. Depending on customer requirements it can be limited to 12 characters (Swift restriction for FIN messages is 16 characters, 35 is for ISO messages, but some financial institutions restrict it to 12).

The reference has the following structure: YYYYMMDDHHmmSSff

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## 2. Processing details:

Field	Comments
Status	See <a href="#">Transaction Status</a>
Operation details	the reason description filled in by users when reject/suspend a transaction or move to investigation;  It is limited to 140 characters
Validation Errors	information about validation errors, if they exist
Source application	• Service Name
Current queue	The name of the current queue

## 3. Interface details:

- Source file name : the name of the fetched files
- Destination file name : the name of the published files

## 4. Other details:

- Details of the related Original transaction:
  - For modified transactions from Payments Business Area - original information
  - For enriched transactions from Payments Business Area - original imported information
- Details of the Possible duplicates transactions
- Details of the transaction related Events

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### 3.6.6.2 Transaction Types

Financial transactions are categorized in the following types:

Business Area	Financial transaction type	Definition	Identification criteria
Payments	Salary Payment	Transaction is the payment of salaries	XML root = <CstmrCdtTrfInItN Sala>
	Supplier Payment	Transaction is related to a payment to a supplier	XML root = <CstmrCdtTrfInItN Supp>
	Tax Payment	Transaction is the payment of taxes	XML root = <CstmrCdtTrfInItN Tax>
	VAT Payment	Transaction is the payment of value added tax	XML root = <CstmrCdtTrfInItN Vatx>
	Other Payment	Other payment purpose	XML root = <CstmrCdtTrfInItN Othr>
Invoices	Invoice		XML root = <FinInvc>
Statements	Statement transaction		XML root = <BkToCstmrDbtCdtNtfctn>

One financial transaction type corresponds to one Business Area.

### 3.6.6.3 User Action Types

Transactions held in queues may be operated by users; The following user actions are available:

- Reject (Transaction level action):** Cancels financial transaction processing and sends it to source internal/external application interfaces with the corresponding reject code; change its status to Completed - Rejected. The reject code is chosen from a predefined list with the possibility to fill in the reason (Operation details).  
 The reject codes are predefined at least for the following situations:
  - reject duplicate transactions,
  - reject transactions (other reason)
- Suspend (Transaction level action):** suspends financial transaction processing.  
 The suspend code is chosen from a predefined list with the possibility to fill in the reason (Operation details).  
 The suspend codes are predefined at least for the following situations:
  - duplicate transactions,
  - suspend transactions (other reason)
- Authorize (Group level and transaction level action):**  
 Depending on business area:
  - Batches transactions in financial messages and publishes it to internal/external interface or publishes transactions belonging to one group, one by one - for authorization queues. For grouping details, see [Authorization queue type](#).
  - Resends transactions on the business flow - for all other queue types. In this case the reason (Operation details) is clean up.
- Investigate (Transaction level action):** Moves transactions to a business investigation queue type. When this action is performed, reason is required to be filled in (Operation details).

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- **Edit (Transaction level action):** Corrects transaction by editing specific predefined fields. For details about editing process, see [FBASE12 – Edit financial transactions](#)

For further information about how user actions are used in the business flows, see [SBASE01 – Payments Business Area: Fetch and Manual creation phases](#), [SBASE02 – Payments Business Area: Process and Publish phases](#), [SBASE03 – Invoices Business Area: Fetch and Process phases](#), [SBASE04 - Statements Business Area: Fetch, Process and Publish phases](#), [SBASE05 - Payments Business Area: EOD Process](#), [SRECON01 – Reconciliation](#)

### 3.6.6.4 Transaction Status

Financial transactions have an initial, intermediate or a final status. As an action result, an initial status is changed to an intermediate one and an intermediate status is changed to another intermediate one or to a final one. A status is final when it can not be modified by any action (routing rule or user action). A transaction with a final status can be viewed only in reports. Bellow are all status descriptions and the matrix of changing status.

Status	Description
<b>New</b>	It's the <b>initial status</b> of a transaction fetched from internal/external applications or created in FinTPc
<b>In process</b>	It's an intermediate status; the transaction continues the flow
<b>Waiting for Technical Investigation</b>	It's an <b>intermediate status</b> , the transaction could not be automatically procesed
<b>Waiting for Business Investigation</b>	It's an <b>intermediate status</b> , the transaction failed at least one of the business validations or was manually sent to be investigated
<b>Waiting for Duplicate Investigation</b>	It's an <b>intermediate status</b> , the transaction was detected as a possible duplicate of another transaction.
<b>Waiting for Authorization</b>	It's an <b>intermediate status</b> , the transaction is valid and is waiting to be authorized.
<b>Completed - Sent</b>	It is a <b>positive final status</b> , the transaction was finalized (sent to internal/ external interface).
<b>Completed - Rejected</b>	It is a <b>final negative status</b> , the transaction was rejected and sent in to internal/external interface, with the corresponding code.
<b>Completed - Suspended</b>	It is a <b>final positive or negative status</b> , the transaction was finalized. The business flow does not

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	allow to send the transactions to internal/external interfaces.
--	-----------------------------------------------------------------

Depending on specific business flow configuration, some status may not appear for a Business Area. For current implementation see SBASE requirements. E.g.

Transactions from Invoices Business Area are automatically suspended and never sent to external interface, so these transactions may have as final status only Completed - Suspended .

The action applied in order to modify status is found at the intersection of a row - Initial Status with a column - Resulted Status.

Resulted Status Initial Status	New	In process	Waiting for Technical Investigation	Waiting for Business Investigation	Waiting for Duplicate Investigation	Waiting for Authorization	Completed - Sent	Completed - Rejected	Completed - Suspend
New	x	Format	x	x	x	x	x	x	x
In process	x	x	RR:MoveTo [investig queue type] *automatically detected	RR:MoveTo [business investig queue type]	RR:MoveTo [duplicate queue type] *automatically detected	RR:MoveTo [authorization queue type] *automatically detected	x	x	x
Waiting for Technical Investigation	x		x	x	x	x	x	UA:Reject	UA:Suspend
Waiting for Business Investigation	x	UA:Authorize UA:Edit	x	x	x	x	x	UA:Reject	UA:Suspend
Waiting for Duplicate Investigation	x	UA:Authorize	x	x	x	x	x	UA:Reject	UA:Suspend
Waiting for Authorization	x		x	UA:Investigate	x	x	UA:Authorize	UA:Reject	RR:Complete
Completed - Rejected	x		x	x	x	x	x	x	x
Completed - Sent	x		x	x	x	x	x	x	x
Completed - Suspend	x		x	x	x	x	x	x	x

#### Legend

RR - Routing Rule  
UA - User Action

There are some other special status relative to the reconciliation feature, see [FRECON01 – Reconciliation](#) chapter.

### 3.6.7 FBASE09 – Transform financial messages and transactions

According to each specific scenario, FinTPC:

- fetches financial messages from internal or external applications, formats and splits them into single financial transactions according to scenario to which they belong to.

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- groups more financial transactions, formats, batches and publishes them to internal or external applications into one financial message according to scenario to which they belong to.

The transformation of a transaction from a specific format to another one is made based on the corresponding mapping.

See mappings in “data structures and mapping.xlsx” attached in the [Data Structures](#) as follow:

- Internal application to FinTPc, Payments Business Area: sheet “map internal ->FinTPc pymt”
- FinTPc to internal application, Payments Business Area: sheet “map FinTPc->Internal pymt”
- FinTPc to external application, Payments Business Area: sheet “map FinTPc->MT pymt”
- FinTPc to external application, Payments Business Area: sheet “map FinTPc->pain pymt”
- Internal application to FinTPc, Invoices Business Area: sheet “map Internal->FinTPc inv”
- FinTPc to internal application, Invoices Business Area: sheet “map FinTPc->Internal stm”
- External application to FinTPc, Payments Business Area: sheet “map External->FinTPc stm”

### 3.6.8 FBASE10 - Queues

Queues are viewed/managed by users with predefined rights described in [FBASE01– User Management](#).

In FinTPc offers the following queue types:

- Technical Investigation
- Business Investigation
- Duplicates Investigation
- Authorization

FinTPc allows users to access Transaction details ( [FBASE08 - Transactions](#)) for those transactions held in queues.

#### 3.6.8.1 Technical Investigation queue type

A Technical Investigation queue contains financial transactions from all Business Areas.

Transactions that failed during processing, from unexpected reasons (other than those covered by business rules), are automatically routed to a Technical Investigation queue type in order to be further investigated by users.

All transactions held by this type of queue share the Waiting for Technical Investigation status.

In Allevo implementation, it is used the following configuration:

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Business Area	Grouped by*	Transaction information
Payment	Debtor Agent BIC Debtor Account	<b>Group level:</b> <ul style="list-style-type: none"> <li>- Debtor agent BIC</li> <li>- Debtor Account</li> <li>- Number of transactions</li> <li>- Total Amount</li> </ul> <b>Transaction level:</b> <ul style="list-style-type: none"> <li>- Transaction Type</li> <li>- End to End Id</li> <li>- Creditor Name</li> <li>- Creditor Account</li> <li>- Creditor Agent BIC</li> <li>- Amount (CCY and Amount)</li> <li>- Requested execution date</li> </ul>
Statement	Account Credit or Debit Indicator	<b>Group Level:</b> <ul style="list-style-type: none"> <li>- Account</li> <li>- Credit or Debit Indicator</li> <li>- Number of transactions</li> <li>- Total Amount</li> </ul> <b>Transaction Level:</b> <ul style="list-style-type: none"> <li>- Transaction Reference</li> <li>- Amount (Identification-Currency and Amount)</li> <li>- Value date</li> </ul>
Invoices	Buyer Name Seller Name	<b>Group Level:</b> <ul style="list-style-type: none"> <li>- Buyer Name</li> <li>- Seller Name</li> <li>- Number of transactions</li> <li>- Total Amount</li> </ul> <b>Transaction Level:</b> <ul style="list-style-type: none"> <li>- Identification</li> <li>- Type code</li> <li>- Issue date</li> </ul>

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		- Creditor Reference - Due Payable Amount
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\* Grouping is the same, depending on the financial transaction type

FinTPc has two default technical investigation queues, with the following fixed names:

- *InvestigOutQueue* – a technical investigation queue for financial transactions fetched from internal application interface;
- *InvestigInQueue* – a technical investigation queue for financial transactions fetched from external application interface;

### 3.6.8.2 Business Investigation queue type

A Business Investigation queue contains financial transactions from the same Business Area.

Transactions detected as invalid when processed and business validation rules are applied ([FBASE15 – Business validations](#)), are automatically routed to a Business Investigation queue type in order to be further investigated by users.

Also, transactions may be manually sent by users to a Business Investigation queue type in order to be further investigated or edited.

All transactions held by this type of queue share the Waiting for Investigation status.

Business Area	Grouped by*	Transaction information
Payment	Debtor Agent BIC Debtor Account	<b>Group level:</b> <ul style="list-style-type: none"> <li>- Debtor agent BIC</li> <li>- Debtor Account</li> <li>- Number of transactions</li> <li>- Total Amount</li> </ul> <b>Transaction level:</b> <ul style="list-style-type: none"> <li>- Transaction Type</li> <li>- End to End Id</li> <li>- Creditor Name</li> <li>- Creditor Account</li> <li>- Creditor Agent BIC</li> <li>- Amount (CCY and Amount)</li> <li>- Requested execution date</li> </ul>

\* Grouping is the same, depending on the financial transaction type

### 3.6.8.3 Duplicates Investigation queue

A Duplicates queue contains financial transactions from the same Business Area.

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Transactions detected (based on predefined transaction duplicate criteria) as possible duplicates are automatically routed to a Duplicates Investigation queue type.

All transactions held by these queue types share the Waiting for Duplicate Investigation status.

Business Area	Grouped by*	Transaction information
Payment	Debtor Agent BIC Debtor Account	<b>Group level:</b> <ul style="list-style-type: none"> <li>- Debtor agent BIC</li> <li>- Debtor Account</li> <li>- Number of transactions</li> <li>- Total Amount</li> </ul> <b>Transaction level:</b> <ul style="list-style-type: none"> <li>- Transaction Type</li> <li>- End to End Id</li> <li>- Creditor Name</li> <li>- Creditor Account</li> <li>- Creditor Agent BIC</li> <li>- Amount (CCY and Amount)</li> <li>- Requested execution date</li> </ul>
Statement	Account Credit or Debit Indicator	<b>Group Level:</b> <ul style="list-style-type: none"> <li>- Account</li> <li>- Credit or Debit Indicator</li> <li>- Number of transactions</li> <li>- Total Amount</li> </ul> <b>Transaction Level:</b> <ul style="list-style-type: none"> <li>- Entry Reference</li> <li>- Amount (CCY and Amount)</li> <li>- Booking date</li> <li>- Value date</li> </ul>
Invoices	Buyer Name Seller Name	<b>Group Level:</b> <ul style="list-style-type: none"> <li>- Buyer Name</li> <li>- Seller Name</li> <li>- Number of transactions</li> </ul>

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		<ul style="list-style-type: none"> <li>- Total Amount</li> </ul> <b>Transaction Level:</b> <ul style="list-style-type: none"> <li>- Identification</li> <li>- Type code</li> <li>- Issue date</li> <li>- Creditor Reference</li> <li>- Due Payable Amount</li> </ul>
--	--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

\* Grouping is the same, depending on the financial transaction type

### 3.6.8.4 Authorization queue type

An Authorization queue contains financial transactions from the same Business Area.

Transactions that passed all validations are automatically routed to an Authorization queue type, according to the business flow, in order to be authorized by users and published to internal or external applications.

All transactions held by this type of queue share the Waiting for Authorisation status.

In Allevo implementation, it is used the following configuration:

Business Area	Grouped by*	User view
Payment	Debtor Agent BIC Debtor Account	<b>Group level:</b> <ul style="list-style-type: none"> <li>- Debtor agent BIC</li> <li>- Debtor Account</li> <li>- Number of transactions</li> <li>- Total Amount</li> </ul> <b>Transaction level:</b> <ul style="list-style-type: none"> <li>- Transaction Type</li> <li>- End to End Id</li> <li>- Creditor Name</li> <li>- Creditor Account</li> <li>- Creditor Agent BIC</li> <li>- Amount (CCY and Amount)</li> <li>- Requested execution date</li> </ul>

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Statement	Account Credit or Debit Indicator	<b>Group Level:</b> <ul style="list-style-type: none"> <li>- Account</li> <li>- Credit or Debit Indicator</li> <li>- Number of transactions</li> <li>-Total Amount</li> </ul> <b>Transaction Level:</b> <ul style="list-style-type: none"> <li>- Entry Reference</li> <li>- Amount (CCY and Amount)</li> <li>- Booking date</li> <li>- Value date</li> </ul>
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\* Grouping is the same, depending on the financial transaction type

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### 3.6.9 FBASE11 – Create financial transactions – Payments Business Area

#### Functional requirements

Financial transactions are created by users with predefined rights described in [FBASE01– User Management](#).

FinTPc allows to create financial transactions by filling in all needed information or based on predefined templates.

#### 3.6.9.1 Create financial transactions based on a template

Financial transactions are created based on templates previously defined in FinTPc, described in [Financial transaction Templates – Payments Business Area](#).

If a financial transaction is created based on a template, the user may fill only the empty fields in the layout and save it.

Different financial transactions types are created based on the following template categories:

- simple templates
- multiple templates

#### Simple templates

To create transactions based on a Simple template, the following actions are performed:

- *Select* a template from the list of all Simple templates defined in FinTPc
- Edit the number of transactions to be created; default value is 1
- *Create* transactions: the selected number of identical transactions are created containing all the information filled in template
- *Edit* Amount and Remittance Information fields for each transaction created according to FinTPc structure – see [Transactions from Payments Business Area](#)
- Save the new transactions.
- *Cancel*: discard the previous actions. A confirmation is required

#### Multiple templates

To create transactions based on a Multiple template, the following actions are performed:

- *Select* a template from the list of all Multiple templates defined in FinTPc
- *Check Simple templates to ignore*: the corresponding transactions are not created
- *Create* transactions: the transactions are created containing all the information filled in simple templates
- *Edit* Amount and Remittance Information fields for each transaction created according to FinTPc structure – see [Transactions from Payments Business Area](#)
- Save the new transactions.
- *Cancel*: discard the previous actions. A confirmation is required

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### 3.6.9.2 Create transactions from Payments Business Area directly in FinTPc

FinTPc allows to create financial transactions by filling in all needed information.

In order to create transactions, the following data must be filled:

- Transaction type - drop down list with possible values: Salary Payment, Supplier Payment, Tax Payment, VAT Payment, Other Payment
- Creation date and time - is automatically generated by FinTPc with current date and time
- Requested execution date – is automatically generated by FinTPc with current date; it can be edited by user
- Debtor name – drop down list with *Name* field from Internal entities and accounts lists – mandatory data
- Debtor account – drop down list with *Account number (IBAN or ID)* from Internal entities and accounts lists filtered on *Name* field equals the above *Debtor name* selected; default is selected the *Account number (IBAN or ID)* corresponding to *Default* field is checked– mandatory data;
- Debtor Agent BIC – is automatically prefilled by FinTPc with *BIC* field from Internal entities and accounts lists filtered on *Account number (IBAN or ID)* equals the above *Debtor account* selected – mandatory data;
- Debtor Postal Address – is automatically prefilled by FinTPc with *Address* field from Internal entities and accounts lists filtered on *Name* equals the above *Debtor name* selected – optional data;
- Debtor identification number (CIF) - is automatically prefilled by FinTPc with *Fiscal Identification Code* field from Internal entities and accounts lists filtered on *Name* equals the above *Debtor name* selected – optional data;
- Creditor Name - manually filled in or selected from drop down list with *Name* from External entities and accounts lists – mandatory data;
- Creditor account – manually filled in or selected from drop down list with *Account number (IBAN or ID)* from External and accounts lists filtered on *Name* field equals the above *Creditor name* selected; default is selected the *Account number (IBAN or ID)* corresponding to *Default* field is checked – mandatory data;
- Creditor Agent BIC – automatically prefilled by FinTPc with *BIC* field from External entities and accounts lists filtered on *Account number (IBAN or ID)* equals the above *Creditor account* selected or manually filled in – optional data;
- Creditor Agent Name – automatically prefilled with *Bank name* from Banks list filtered on *BIC* field equals the above *Creditor Agent BIC* selected - optional data;
- Creditor Postal Address - automatically prefilled by FinTPc with *Address* field from External entities and accounts lists filtered on *Name* equals the above *Creditor name* selected– optional data
- Creditor identification number (CIF/CNP) - manually filled in or automatically prefilled by FinTPc with *Fiscal Identification Code* field from External entities and accounts lists filtered on *Name* equals the above *Creditor name* selected - optional data; Amount: manually filled in - mandatory data
- Currency – automatically prefilled by FinTPc with *Currency* field from Internal entities and accounts lists filtered on *Account number (IBAN or ID)* equals the above *Debtor account* selected - mandatory data
- Remittance Information:
  - Line 1 – manually filled id – optional data
  - Line 2 – manually filled in – optional data

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- Line 3 – manually filled in – optional data
  - Line 4 – manually filled in – optional data
- Internal information:
- Accounting code - automatically filled in with Accounting code field from Accounting code list filtered on Transaction type field equals the above Transaction type choosed – optional data
  - Location code - drop-down list with *Location Code* field from Location codes list, filtered on Entity name field equals the above Ordering Entity choosed – optional data
  - Budget code - drop-down list with *Budget Code* field from *Budget Code list*

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### 3.6.10 FBASE12– Publish Accounting registrations to Internal applications

#### *Functional requirements*

FinTPc generates accounting registrations for all transactions manually created in the application (from Payments Business Area) and publishes to external applications interface.

At end of day (see [Configuration Lists](#) – “EOD time” parameter), all these accounting registrations are published to internal application interface – see [Specific implementations](#).

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### 3.6.11 FBASE13 – Edit financial transactions

#### Functional requirements

##### 3.6.11.1 Editing process

Financial transactions are edited by users with predefined rights described in [FBASE01– User Management](#).

FinTPc allows edit transactions from specific investigation queue.

The following fields can be modified:

- Payments Business Area:
  - **Debtor Account** - drop down list with *Account number (IBAN or ID)* and *Locked* different from Y, from Internal entities and accounts lists filtered on *Name* field equals the *Debtor name* of the transaction – mandatory data;
  - **Creditor Name** - manually filled in or selected from drop down list with *Name* from External entities and accounts lists – mandatory data;
  - **Creditor Account** – manually filled in or selected from drop down list with *Account number (IBAN or ID)* from External and accounts lists filtered on *Name* field equals the above *Creditor name* selected – mandatory data; Creditor
  - **Agent BIC** – automatically prefilled by FinTPc with *BIC* field from External entities and accounts lists filtered on *Account number (IBAN or ID)* equals the above *Creditor account* selected or manually filled in – optional data;
  - **Creditor Agent Name** – automatically prefilled with *Bank name* from Banks list filtered on *BIC* field equals the above *Creditor Agent BIC* selected - optional data;
  - **Creditor Postal Address (AdrLine)** - automatically prefilled by FinTPc with *Address* field from External entities and accounts lists filtered on *Name* equals the above *Creditor name* selected– optional data
  - **Creditor Identification Number (CIF/CNP)** - manually filled in or automatically prefilled by FinTPc with *Fiscal Identification Code* field from External entities and accounts lists filtered on *Name* equals the above *Creditor name* selected - optional data;
  - **Amount** - mandatory data
  - **Currency** - automatically prefilled by FinTPc with *Currency* field from Internal entities and accounts lists filtered on *Account number (IBAN or ID)* equals the above *Debtor account* selected - mandatory data
  - **Requested Execution Date** – ISODate, mandatory data
  - **Remittance Information** – manually filled in – optional data
  - **Location code** - drop-down list with *Location Code* field from Location codes list, filtered on Entity name field equals the above *Debtor name* chosed
  - **Budget code** - drop-down list with *Budget Code* field from *Budget Code list*
- Statements and Invoices Business Areas: not applicable

After performing these modifications, the following operations are available:

- *Save* – save the modifications
- *Cancel* – discard the modifications. A confirmation is required

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### 3.6.12 FBASE14 – Enrich financial transactions

#### Functional requirements

The transactions are enriched with data from various lists, according to customer specific configuration. For more information about the lists, see [FBASE03 – Business management](#).

#### 3.6.12.1 Data enrichment process

The following fields are enriched (if they are not provided by Internal application interface):

➤ Payments Business Area:

- **Initiating Party/ Name** – *Name* from Internal entities and accounts lists filtered on *Account number (IBAN or ID)* field equals the *Debtor Account* provided – mandatory data;
- **Debtor Name** – *Name* from Internal entities and accounts lists filtered on *Account number (IBAN or ID)* field equals the *Debtor Account* provided; – mandatory data;
- **Debtor Account** - *Account number (IBAN or ID)* with *Locked* different from *Y* from Internal entities and accounts lists filtered on *Name* field equals the *Debtor Name* provided and *Default* field is checked – mandatory data;
- **Debtor Agent BIC** - *BIC* field from Internal entities and accounts lists filtered on *Account number (IBAN or ID)* equals the *Debtor Account* – mandatory data;
- **Debtor Postal Address** – *City, Country, Address* fields from Internal entities and accounts lists filtered on *Name* equals the *Debtor name* – optional data;
- **Debtor identification number (CIF)** – *Fiscal Identification Code* field from Internal entities and accounts lists filtered on *Name* equals the *Debtor name* – optional data;
- **End To End Identification** - Transaction reference – mandatory data;
- **Creditor Name** – *Name* from External entities and accounts lists filtered on *Account number (IBAN or ID)* field equals the *Creditor Account* provided;
- **Creditor Account** - *Account number (IBAN or ID)* with *Locked* different from *Y* from External entities and accounts lists filtered on *Name* field equals the *Creditor Name* provided and *Default* field is checked – mandatory data;
- **Creditor Agent BIC** – *BIC* field from External entities and accounts lists filtered on *Account number (IBAN or ID)* equals the *Creditor account* – optional data;
- **Creditor Agent Name** – *Bank name* from Banks list filtered on *BIC* field equals the *Creditor Agent BIC* - optional data;
- **Creditor Postal Address** - *City, Country, Address* fields from External entities and accounts lists filtered on *Name* equals the *Creditor name* – optional data
- **Creditor Contact Details** - *Email* field from External entities and accounts lists filtered on *Name* equals the *Creditor name* – optional data
- **Creditor identification number (CIF/CNP)** – *Fiscal Identification Code* field from External entities and accounts lists filtered on *Name* equals the *Creditor name* - optional data;
- **Currency** – *Currency* field from Internal entities and accounts lists filtered on *Account number (IBAN or ID)* equals the *Debtor account* -

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mandatory data Requested execution date - automatically generated by FinTPc with current date;

- **Transaction reference** - FinTPc generates a unique Transaction reference described in [Required transaction information](#) – Transaction reference;
- **Accounting code** - *Accounting code* field from Accounting code list filtered on *Transaction type* field equals the *Transaction type* – optional data
- **Location code** - *Location Code* field from Location codes list, filtered on *Entity name* field equals the *Debtor Name* and *Default* field is checked

➤ Statements:

- **Owner Name** – *Name* from Internal entities and accounts lists filtered on *Account number (IBAN or ID)* field equals the *IBAN* provided; – mandatory data;
- Transaction reference - FinTPc generates a unique Transaction reference described in [Required transaction information](#) – Transaction reference;

➤ Invoices:

- Transaction reference - FinTPc generates a unique Transaction reference described in [Required transaction information](#) – Transaction reference;
- Seller/Buyer Name - *Name* from Internal entities and accounts lists filtered on *Account number (IBAN or ID)* field equals the *Seller/Buyer Account* provided; – mandatory data;

If the transactions fetched from corporate's core applications do not contain mandatory information needed for enrichment process (for e.g.: Debtor name/account, Creditor name/account), the transactions are automatically routed to investigation queue with the following description in the *Validation Errors* field: "not enough binding information". Also, the fields with missing information are highlighted.

If the necessary information for enrichment process is missing in lists, it is required an update of this lists.

### 3.6.12.2 *Unsupported characters replacement*

Depending on customer requirements, FinTPc replaces an unsupported characters set.

#### **Allevo implementation:**

For External application interface, file format - SWIFT FIN MT file structure, that supports *Basic Latin* character set:

a b c d e f g h i j k l m n o p q r s t u v w x y z A B C D E F G H I J K L M N O P Q R S  
T U V W X Y Z 0 1 2 3 4 5 6 7 8 9 / - ? : ( ) . , ' + Space

FinTPc replaces any other character with dot (".").

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### 3.6.13 FBASE15 – Business validations

#### Functional requirements

FinTPc supports different types of validation, depending on the transaction types and business requirements, described below.

#### 3.6.13.1 Format validation

This validation is applied in the following situations:

Context	Condition	Result
When financial messages/files (containing financial transactions from Payments Business Area) are generated in pain.001 format	And fail the validation with standard ISO20022-pain001.001.003 XML schema definition (xsd)	Transactions are automatically routed to the configured investigation queue
When financial messages/files (containing financial transactions) are fetched	And fail the validation with defined XML schema definition (xsd)	The financial messages/files is moved to configured <i>Error</i> folder

#### 3.6.13.2 Duplicate detection

It's an optional configured validation. Duplicate detection period is set in [Lists](#).

This validation is applied in the following situations:

Context	Conditions	Result
When financial transactions are fetched or created in FinTPc	And fail the validation with duplicate criteria (described below)	Transactions are automatically routed to the configured duplicates investigation queue

#### Duplicate criteria

Duplicate criteria may be different from one implementation to another.

The following fields are used as default duplicate criteria in order to detect possible duplicates:

Business area	Fields
Payments	<ul style="list-style-type: none"><li>- Amount</li><li>- Currency</li><li>- Value date</li><li>- Payment type</li><li>- Ordering account</li><li>- Beneficiary account</li></ul>

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Statements	<ul style="list-style-type: none"> <li>- Account identification</li> <li>- Statement number/ Sequence number</li> <li>- Account servicing institution reference</li> </ul>
Invoices	<ul style="list-style-type: none"> <li>- Amount</li> <li>- Currency</li> <li>- Due date</li> <li>- Seller account</li> <li>- Buyer name</li> <li>- Invoice no.</li> </ul>

### 3.6.13.3 Account validations

This validation is applied on transactions from Payments Business Area. The following validations are possible:

- Romanian IBAN syntax
- Romanian IBAN – Bank correspondence
- Accounts from Accounts black list

#### 3.6.13.3.1 Romanian IBAN syntax

If the IBAN starts with RO, the validation is applied in the following situations:

Context	Condition	Result
When financial transactions are fetched in FinTPc with IBAN provided (Debtor Account and Creditor Account)	And fail the validation with mod-97 algorithm (described below)	<ul style="list-style-type: none"> <li>• Transactions are routed in configurable Investigation queue</li> <li>• The reason "Invalid IBAN" is specified in the Validation Errors field</li> </ul>
When financial transactions are manually created in FinTPc (directly or using a template) and IBAN editing is allowed (Debtor Account and Creditor Account)		<ul style="list-style-type: none"> <li>• A warning "invalid IBAN" message is displayed</li> </ul>
When financial transactions are edited in FinTPc and IBAN editing is allowed (Debtor Account and Creditor Account)		<ul style="list-style-type: none"> <li>• A warning "invalid IBAN" message is displayed</li> </ul>
When the IBAN is added to Internal/External entities and accounts lists (Account number (IBAN or ID))		<ul style="list-style-type: none"> <li>• A warning "invalid IBAN" message is displayed</li> </ul>

In the situation that a warning is displayed, IBAN is reintroduced and all other data are preserved.

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## Mod-97 algorithm

An IBAN is validated by converting it into an integer and performing a basic *mod-97* operation (as described in ISO 7064) on it. If the IBAN is valid, the remainder equals 1.

The algorithm of IBAN validation is as follows:

1. Check that the total IBAN length is correct as per the country. If not, the IBAN is invalid. For Romania, IBAN length is 24.
2. Move the four initial characters to the end of the string
3. Replace each letter in the string with two digits, thereby expanding the string, where A = 10, B = 11, ..., Z = 35
4. Interpret the string as a decimal integer and compute the remainder of that number on division by 97

If the remainder is 1, the check digit test is passed and the IBAN might be valid.

Example: To validate IBAN RO49AAAA1B31007593840000:

1. true
2. it becomes AAAA1B31007593840000RO49
3. it becomes 1010101011131007593840000272449
4. the remainder of 971010101011131007593840000272449 on division by 97 is 1.

According to algorithm above, the IBAN is valid.

### 3.6.13.3.2 Romanian IBAN – Bank matching

If the IBAN starts with **RO**, the validation is applied in the following situations:

Context	Condition	Result
When financial transactions are fetched in FinTPc with IBAN provided (Debtor Account and Creditor Account)	And fail the validation: 5 to 8 characters from IBAN exact match with 1 to 4 characters from corresponding bank BIC (Debtor Account - Debtor Agent BIC and Creditor Account - Creditor Agent BIC);	<ul style="list-style-type: none"><li>• Transactions are routed in configurable Investigation queue</li><li>• The reason "IBAN doesn't match BANK BIC" is specified in the Validation Errors field</li></ul>

### 3.6.13.3.3 Accounts from Accounts black list

This validation is applied in the following situations:

Context	Condition	Result
When financial transactions are fetched in FinTPc with account provided (Debtor Account and Creditor Account)	And the account is matched with <Account number (IBAN or ID)> field from Account black list	<ul style="list-style-type: none"><li>• Transactions are routed in configurable Investigation queue</li><li>• The reason "Account on black list" is specified in the Validation Errors field</li></ul>

In the situation that a warning is displayed, Account is reintroduced and all other data are preserved.

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### 3.6.13.4.2CNP (Personal Identification Number) validation

The validation is applied in the following situations:

Context	Condition	Result
Financial transactions are fetched in FinTPc with beneficiary CNP provided (the length of Creditor Identification Number (CIF/CNP) is 13 characters)	And fail the validation with the check digit (described below)	<ul style="list-style-type: none"><li>• Transactions are routed in configurable Investigation queue</li><li>• The reason "Invalid CNP/PIN" is specified in the Validation Errors field</li></ul>

#### CNP validation algorithm:

The 13<sup>th</sup> digit of the CNP is a check digit (auto detection code) in relation with the other 12 digits of the CNP. The check digit is calculated based on the following rule: every digit from CNP is multiplied with every digit on the same position from the following number 279146358279; the results are aggregated and the final result is divided to 11. The obtained number after the MODULO 11 operation represents the check number. If the check number is 10, then the check number is 1.

Ex: CNP: 1730610156203.

1 7 3 0 6 1 0 1 5 6 2 0

x x x x x x x x x x x x

2 7 9 1 4 6 3 5 8 2 7 9

2 49 27 0 24 6 0 5 40 12 14 0

$2+49+27+0+24+6+0+5+40+12+14+0 = 179$

$179:11= 16, 3$  (represent the last digit, from CNP)

### 3.6.13.5 Amount validation

This validation is applied on transactions from Payments Business Area. The following validation is possible:

- Maximum amount on transaction per beneficiary

#### 3.6.13.5.1Maximum amount on transaction per beneficiary

The validation is applied in the following situations:

Context	Condition	Result
---------	-----------	--------

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Financial transactions are fetched in FinTPc	And fail the validation: transaction amount (Amount field) is greater than amount limit set in External entities and accounts (EEAL) list, MaxAmount field (filtered on Creditor Name = EEAL.Name)	<ul style="list-style-type: none"> <li>Transactions are routed in configurable Investigation queue</li> <li>The reason "Amount exceeds limit" is specified in the Validation Errors field</li> </ul>
Financial transactions are manually created in FinTPc (directly or using a template) and amount editing is allowed		<ul style="list-style-type: none"> <li>A warning "Amount exceeds limit" message is displayed</li> </ul>
Financial transactions are edited in FinTPc and amount editing is allowed		<ul style="list-style-type: none"> <li>A warning "Amount exceeds limit" message is displayed</li> </ul>

In the situation that a warning is displayed, Amount is reintroduced and all other data are preserved.

### 3.6.13.6 Debtor account/Debtor name validation with Internal entities and accounts list

This validation is applied on transactions from Payments, Statements and Invoices Business Areas, in the following situations:

The following validations are possible:

- Debtor Account
- Debtor Name

#### 3.6.13.6.1 Debtor Account

The validation is applied in the following situations:

Context	Condition	Result
Financial transactions (Payments) are fetched in FinTPc with Debtor account provided	And fail the validation: Debtor account (for Payments)/Identification IBAN (for Statements)/Creditor Account (for Invoices) = <i>Account Number (IBAN or ID)</i> from Internal entities and accounts list (IEAL)	<ul style="list-style-type: none"> <li>Transactions are routed in configurable Business investigation queue</li> <li>The reason "The entity is not defined in Internal entities and accounts list" is specified in the Validation Errors field</li> </ul>
Financial transactions (Statements) are fetched in FinTPc with Account provided		
Financial transactions (Payments) are fetched in FinTPc with Debtor Name and Debtor Account provided		

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Financial transactions (Statements) are fetched in FinTPc with Owner Name and Identification IBAN provided		
Financial transactions (Invoices) are fetched in FinTPc with Seller Name and Creditor Account provided		
Financial transactions (Payments and Statements) are resend on the business flow from Business Investigation Queue		

### 3.6.13.6.2 Debtor Name

Context	Condition	Result
Financial transactions (Payments) are fetched in FinTPc with Debtor Name provided	And fail the validation: Debtor name (for Payments)/Seller Name (for Invoices) exists in Internal entities and accounts list (IEAL): dbtrName field = Name from IEAL	<ul style="list-style-type: none"> <li>Transactions are routed in configurable Business investigation queue</li> <li>The reason "The entity is not defined in Internal entities and accounts list" is specified in the Validation Errors field</li> </ul>
Financial transactions (Invoices) are fetched in FinTPc with Seller Name provided		

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### 3.7 Reconciliation

Financial transactions reconciliation is an optional feature.

Reconciliation is an automatic or manual process of matching 2 or more financial transactions from different Business Areas, with the scope to provide consistency and accuracy in financial accounts.

FinTPc allows to configure different types of reconciliation, depending on the transaction types involved, scenarios being the same for each reconciliation type.

#### 3.7.1 SRECON01 – Reconciliation

*Scenario*

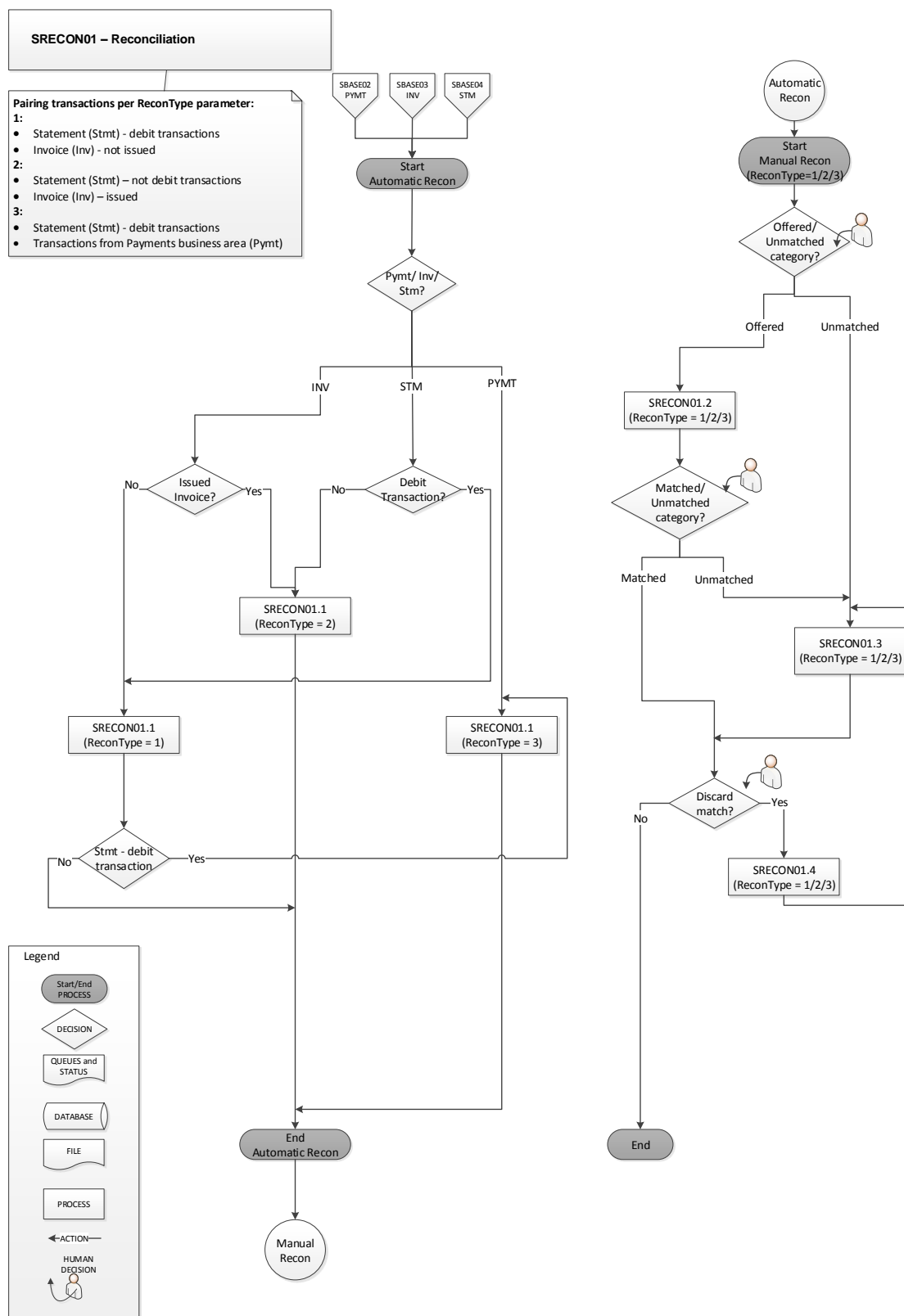
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## Functional requirements:

[FBASE01 – User Management](#)

[FBASE02 – Application configurations](#)

[FBASE08 - Transactions](#)

[FBASE09 – Transform financial messages and transactions](#)

[FBASE18 – Audit Trails](#)

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[FRECON01 – Reconciliation](#)

[FRECON02 - Reconciliation report](#)

**Project requirements:**

- r. Reconcilierea platilor cu facturile furnizor;
- s. Reconcilierea incasarilor cu facturile emise;
- t. Reconcilierea inregistrarilor contabile cu extrasele de cont

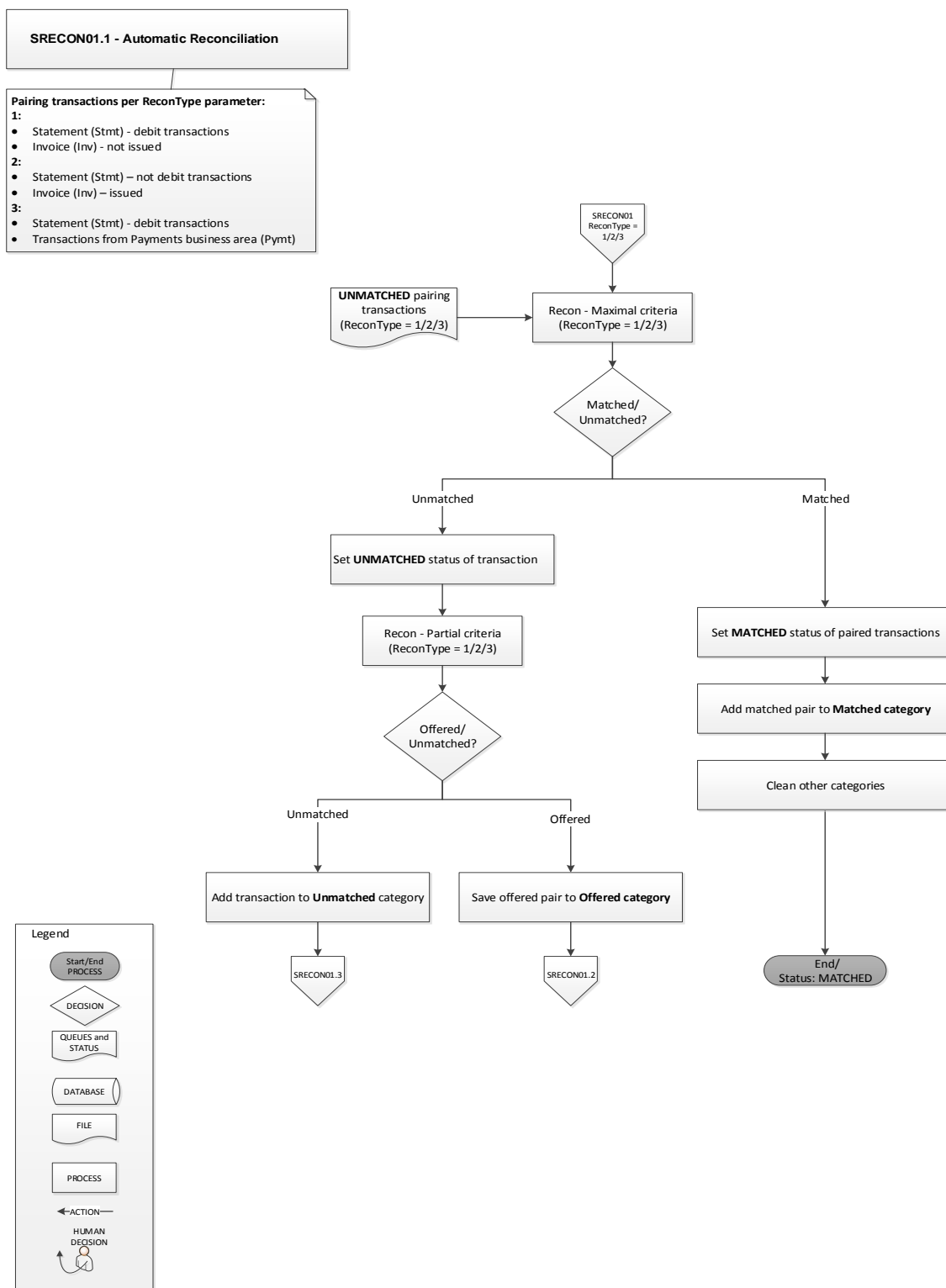
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### 3.7.1.1 SRECON01.1 - Automatic Reconciliation



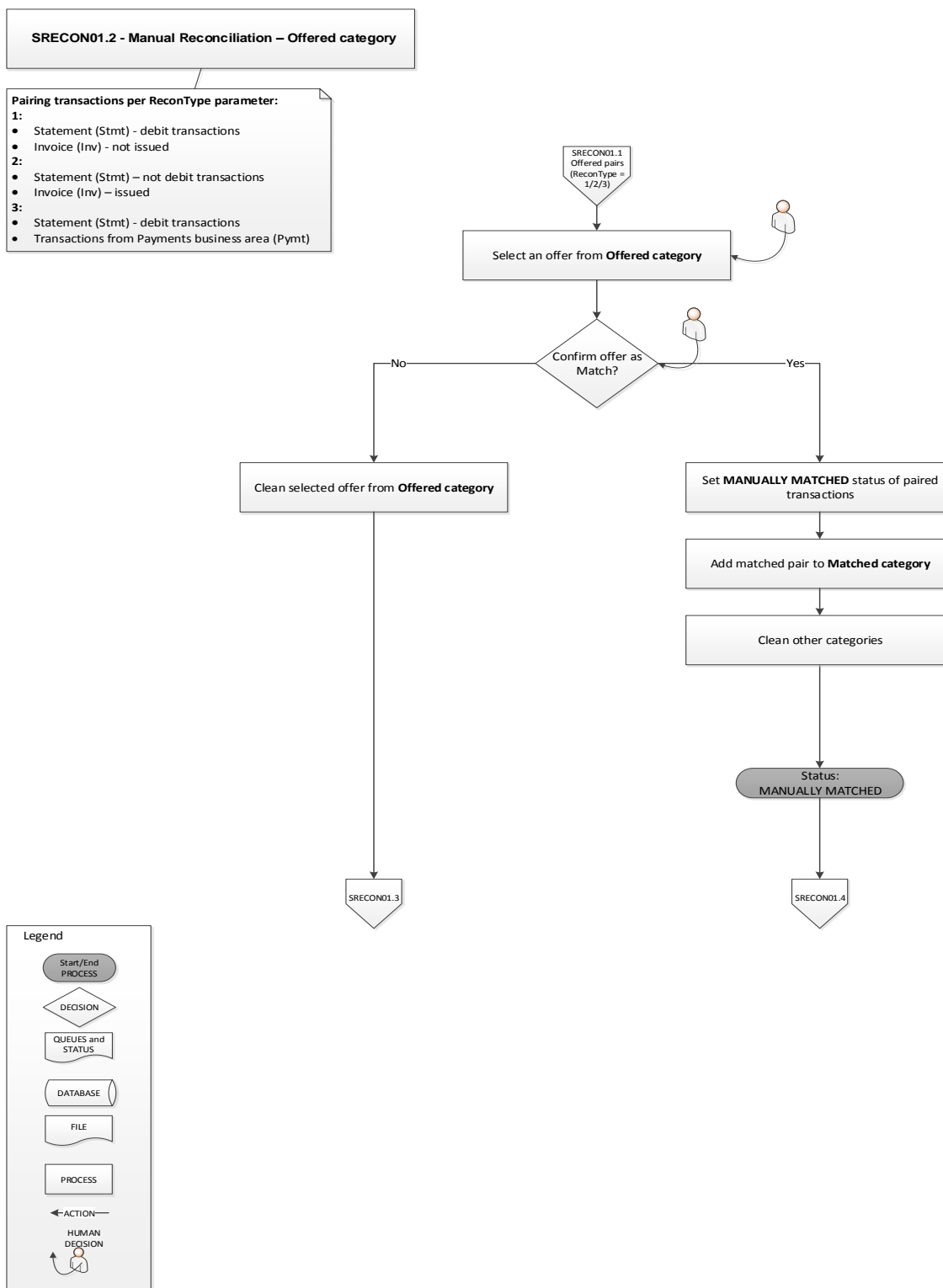
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### 3.7.1.2 SRECON01.2 - Manual Reconciliation – Offered category



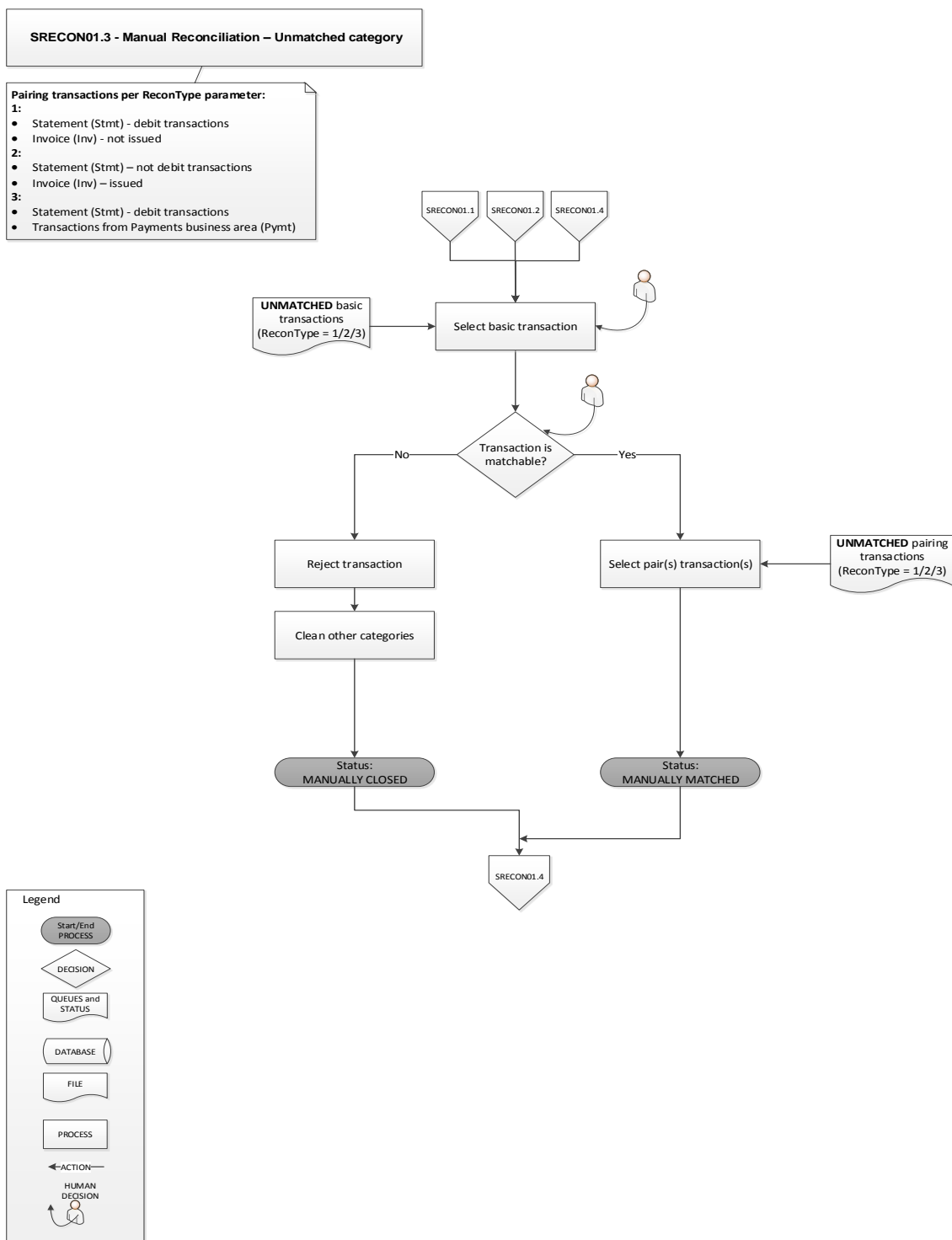
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### 3.7.1.3 SRECON01.3 - Manual Reconciliation – Unmatched category



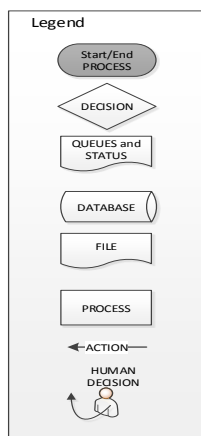
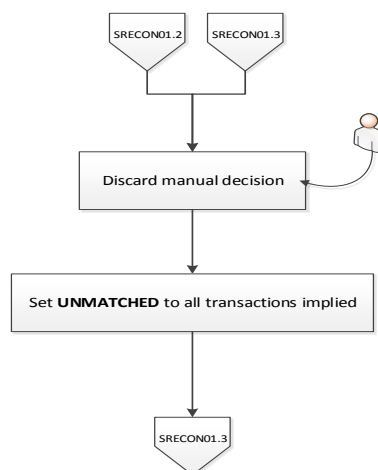
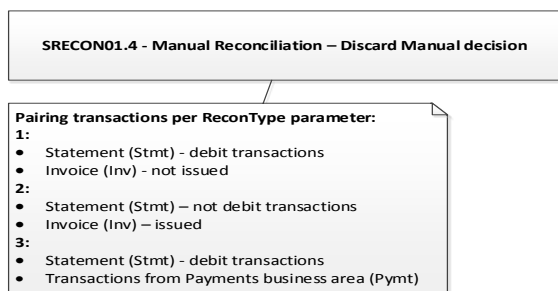
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### 3.7.1.4 SRECON01.4 - Manual Reconciliation – Discard Manual decision



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### 3.7.2 FRECON01 – Reconciliation

#### Functional requirements

Financial transactions reconciliation feature is available to users with predefined rights described in [FBASE01– User Management](#).

#### 3.7.2.1 Reconciliation process

Reconciliation is an automatic or manual process of matching 2 or more financial transactions from different Business Areas. Unlike the automatic reconciliation where only 2 transactions are involved, in the manual reconciliation may be involved 2 or more transactions.

Automatic reconciliation is performed by exact matching fields of transactions; these fields are defined during the analysis period (see [Reconciliation criteria](#))

Financial transactions involved in automatic reconciliation process can be:

1. Matched: All defined field criteria are matched; in this case, the result is a final match.
2. Partially matched: A sub set of the defined field criteria is matched; in this case, the result is an offered match that needs to be manually confirmed.
3. Unmatched: None of the field criteria is matched;

In the manual process, the user can execute the following operations:

- Confirm an offered match
- Match 2 or more unmatched transactions
- Close an unmatched transaction. The transaction won't appear in any offer.
- Discard a previous user decision (match or close).

In order to decide whether to manually match transactions or not, FinTPc displays all the information of the transactions involved.

#### 3.7.2.2 Reconciliation types

There are 3 reconciliation types, based on business area:

Reconciliation Type	Pairing transactions	Transactions identification
<i>Recon1: Recon supplier invoices: statement transactions (debit) related to invoices vs. invoices received from suppliers</i>	<b>Statement transactions (debit)</b>	Transaction type = Statement transaction  Credit/Debit Indicator = D  Financial transactions with status Completed - Sent
	<b>Invoices received from suppliers</b>	Transaction type = Invoice  Invoice type = Received  Financial transactions with status Completed - Suspended

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<i>Recon2: Recon issued invoices: statement transactions (credit) vs. issued invoices</i>	<b>Statement transactions (credit)</b>	Transaction type = Statement transaction Credit/Debit Indicator = C Financial transactions with status Completed - Sent
	<b>Issued invoice</b>	Transaction type = Invoice Invoice type = Issued Financial transactions with status Completed - Suspended
<i>Recon3: Recon payments: authorized financial transactions from Payments Business Area vs. statement transactions (debit)</i>	<b>Statement transactions (debit)</b>	Transaction type = Statement transaction Credit/Debit Indicator = D Financial transactions with status Completed - Sent
	<b>All financial transactions from Payments Business area</b>	Transaction type = any transaction type of Payments Business Area Financial transactions with status Completed - Sent

Automatic reconciliation process is triggered when:

- For financial transactions from Payments Business Area - status changed to *Completed - Sent*
- For financial transactions from Invoices Business Area - status changed to *Completed - Suspended*
- For financial transactions from Statements Business Area - status changed to *Completed - Sent* or *Completed - Suspended (depending on the customer requirements)*

### 3.7.2.3 Reconciliation criteria

In Allevo implementation, the following set of fields represents the defined criteria for the reconciliation process:

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Reconciliation Type	Pair Fields	
<i>Recon supplier invoices: statement transactions (debit) related to invoices vs. invoices received from suppliers</i>	<b>Statement transactions (debit)</b>	<b>Invoices received from suppliers</b>
	Entry Reference	Payment Reference
	Owner Name	Buyer Name
	Amount (Amount+ccy)	Due Payable Amount (Amount + ccy)
<i>Recon issued invoices: statement transactions (credit) vs. issued invoices</i>	<b>Statement transactions (credit)</b>	<b>Issued invoice</b>
	Entry Reference	Creditor Reference
	Owner Name	Seller Name
	Amount (Amount+ccy)	Due Payable Amount (Amount+ccy)
<i>Recon payments: authorized financial transactions from Payments Business Area vs. statement transactions (debit)</i>	<b>Statement transactions (debit)</b>	<b>All financial transactions from Payments Business Area</b>
	Entry Reference	End to End Identification
	Owner Name	Debtor Name
	Account Identification	Debtor Account
	Amount (Amount+ccy)	Amount (Amount+ccy)
	Value Date	Requested Execution Date

Note: For other implementations, different criteria may be defined.

### 3.7.2.4 Reconciliation status

As a result of reconciliation process, the transactions have one of the following **status**:

- **MATCHED** – final status, the transactions are automatically matched
- **MANUALLY MATCHED** – the transactions are manually matched
- **MANUALLY CLOSED** – the transaction is manually closed
- **UNMATCHED** – the transaction is unmatched or partially matched

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FinTPc allows to unmatched a set of transactions with “*MANUALLY MATCHED*” or “*MANUALLY CLOSED*” status. After this operation the transactions have “*Unmatched*” status.

### 3.7.2.5 Reconciliation categories

As a result of reconciliation process, transactions are grouped in the following categories:

- *Matched*:
  - pairs of 2 transactions automatically matched according to reconciliation criteria. These transactions have “*MATCHED*” status.
  - Two or more transactions manually matched. These transactions have “*MANUALLY MATCHED*” status.
- *Offered*:
  - pairs of 2 transactions partially matched according to reconciliation criteria and offered for manual confirmation or rejection. These transactions have “*UNMATCHED*” status.
- 
- *Unmatched*:
  - transactions that are not matched. These transactions have “*UNMATCHED*” status and they are submitted to a manually match process 1-n or n-1 or manually close operation.
- *Closed*:
  - transactions manually closed. These transactions have “*MANUALLY CLOSED*” status.

Resulted status (category) Initial status (category)	MATCHED (Matched category)	UNMATCHED (Offer category)	UNMATCHED (Unmatched category)	MANUALLY MATCHED (Matched category)	MANUALLY CLOSED (Closed category)
MATCHED (Matched category)		x	x	x	x
UNMATCHED (Offer category)	x		reject offer as Match	confirm offer as Match	x
UNMATCHED (Unmatched category)	x	x		create a Match	reject transaction
MANUALLY MATCHED (Matched category)	x	x	discard manual decision		x
MANUALLY CLOSED (Closed category)	x	x	discard manual decision	x	

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### 3.7.2.6 Reconciliation summary

Reconciliation process	Reconciliation process - result	Status	Category
Automatic	Matched	Matched	Matched
	Partially matched	Unmatched	Offered and Unmatched
	Unmatched	Unmatched	Unmatched
Manual	Manually matched	Manually matched	Matched
	Manually closed	Manually closed	Closed

### 3.7.3 FRECON02 - Reconciliation report

Reconciliation report is available to users with predefined rights described in [FBASE01– User Management](#).

#### Selection criteria:

- *Reconciliation type*: drop-down list or radio boxes with *Recon supplier invoices*, *Recon issued invoices*, *Recon payments*
- *Categories*: drop-down list or radio boxes with *All*, *Matched*, *Offered*, *Unmatched*, *Closed*
- *Status*: drop-down list with *All*, *UNMATCHED*, *MATCHED*, *MANUALLY MATCHED*, *MANUALLY CLOSED*
- *Internal Entity*: drop-down list with *All*, *Name* field from Internal entities and accounts List. Transactions are filtered by Owner Name/ Buyer Name/ Seller Name/ Debtor Name
- *Currency*: drop down list with *All*, *Currency field from Internal Entities and accounts List*
- *Statement/Invoice/Payment Period*: selection from FinTPc calendar. Transactions are filtered by Value date/ Payment Terms Due Date/Requested Execution Date

#### Report result:

The report contains all transactions corresponding to selected criteria.

The result of the report contains the following information:

Reconciliation Type	Report result fields	
<i>Recon supplier invoices</i>	<b>Statement transactions (debit)</b>	<b>Invoices received from suppliers</b>

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	Entry Reference Owner Name Amount (Amount+ccy) Value date Account Identification Additional Entry Information	Payment Reference Buyer Name Due Payable Amount (Amount + ccy) Payment Terms Due Date Creditor Account Seller Name Invoice Header Identification and Type Code (Invoice No. and Serial)
<i>Recon issued invoices</i>	<b>Statement transactions (credit)</b>	<b>Issued invoice</b>
	Entry Reference Owner Name Amount (Amount+ccy) Value date Account Identification Additional Entry Information	Payment Reference Seller Name Due Payable Amount (Amount + ccy) Payment Terms Due Date Creditor Account Buyer Name Invoice Header Identification and Type Code (Invoice No. and Serial)
<i>Recon payments Payments Business Area vs. statement transactions (debit)</i>	<b>Statement transactions (debit)</b>	<b>Financial transactions(Payments Business Area)</b>
	Entry Reference Owner Name Amount (Amount+ccy) Account Identification Additional Entry Information Value date	End to End Identification Debtor Name Amount (Amount+ccy) Debtor Account Remittance Information Requested Execution date Creditor Name Creditor Account

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## 3.8 Reporting

### 3.8.1 FBASE16 – Reports and statistics

#### *Functional requirements*

FinTPc has the following general constraints and requirements:

- Reports can be run both on live data and online archived data
- Interval selection (min/max values) is used for criteria that refer to amounts and date
- Calendar is used for date selection
- The maximum range of a time interval selection is 3 months
- Drop down-menu filters allow multiple selection
- Input text filter allows partial match and case insensitive search
- Report results are displayed on multiple pages
- Report results can be exported in Excel/ PDF files
- The result of the report can be sorted by any field in the header

#### **3.8.1.1 General Transaction Report**

This report is available to users with predefined rights described in [FBASE01– User Management](#) (Transaction and template access - View right).

FinTPc allows to search transactions using *General Transaction Report* by selecting different criteria, related to each business area.

##### 3.8.1.1.1 Payments Business Area

#### **Selection criteria:**

Label	Field	Comments
Insert date	Insert date	Select date from calendar; interval
Trsansaction type	Transaction type	drop-down list with predefined Transaction types from Payments Business Area
End to End Id	End to End Identification	
Transaction Reference	Transaction Reference	
Debtor Name	Debtor Name	drop-down list with unique names (Name

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		field) from Internal Entities and Accounts list
Debtor Account	Debtor Account	drop-down list with Account number (IBAN or ID) from Internal Entities and Accounts list
Debtor Agent BIC	Debtor Agent BIC	drop-down list with BICs from Internal Entities and Accounts list
Amount	Amount	Editable input; interval
Currency	Currency	drop-down list with all unique Currencies from Internal Entities and Accounts list
Requested Execution Date	Requested Execution Date	Select date from calendar
Accounting Code	Accounting Code	drop-down list with Accounting code field from Accounting codes list
Location Code	Location Code	drop-down list with Location code field from Location codes list
Budget Code	Budget Code	drop-down list with Budget code field from Budget codes list
Status		drop-down list with all possible Status  <b>See <a href="#">Transaction Status</a></b>
Creditor Name	Creditor Name	drop-down list with Name from External Entities and Accounts List and editable input
Creditor Account	Creditor Account	drop-down list with Account Number (IBAN or ID) from External Entities and Accounts List and editable input
Creditor Agent BIC	Creditor Agent BIC	drop-down list with BICs from External

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		Entities and Accounts List and editable input
Source file name	Source file name	editable input
Destination file name	Destination file name	editable input

#### Report result:

- Insert date
- Transaction type
- Ent to End Id
- Transaction Reference
- Debtor Name
- Debtor Account
- Debtor Agent BIC
- Amount
- Currency
- Requested Execution Date
- Accounting code
- Location code
- Budget code
- Status
- Current queue
- Creditor Name
- Creditor Account
- Creditor Agent BIC
- Source file name
- Destination file name
- Remittance Information

#### 3.8.1.1.2 Invoices Business Area

##### Selection criteria for transactions

Label	Field	Comments
Insert date	Insert date	Select date from calendar; interval
Direction	Invoice type	drop down list with Issued, Received (Issued: <i>Invoice type = Issued</i> ; Received: <i>Invoice type = Received</i> )
Transaction Reference	Transaction Reference	
Seller Name	Seller Name	drop-down list with Name from Internal (for Issued)/External (for Received) Entities and Accounts list

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Buyer Name	Buyer Name	down list with Name field from Internal (for Received)/External (for Issued) Entities and Accounts list
Invoice No	Invoice Header Identification	Editable input
Invoice Serial	Invoice Header Type Code	Editable input
Due Payable Amount	Due Payable Amount	Interval; editable input
Currency	Currency	drop-down list with Currency field from Internal Entities and Accounts list

#### Report result:

- Insert date
- Direction
- Transaction Reference
- Seller Name
- Buyer Name
- Invoice no. (Invoice Header Identification)
- Invoice Serial (Invoice Header Type Code)
- Due Payable Amount
- Currency
- Creditor Reference
- Creditor Account
- Payment Terms Due Date

#### 3.8.1.1.3 Statements Business Area:

##### Selection criteria for transactions

Label	Field	Comments
Insert date	Insert date	Select date from calendar; interval
Source file name	Source file name	editable input
Statement date	From date time To date time	Select date from calendar; interval
Statement number	Electronic Sequence Number	
Statement Reference	Message Identification	
Owner Name	Owner Name	drop-down list with names from Internal

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		Entities and Accounts list
Account	Account-Identification-IBAN	drop-down list with Account number (IBAN or ID) from Internal Entities and Accounts list
Credit/ Debit Indicator	Credit Debit Indicator	drop down list C,D
Amount	Amount	Editable input;interval
Currency	Identification - Currency	drop-down list with all unique Currencies from Internal Entities and Accounts list
Value date	Value Date	Select date from calendar

#### Report result (label):

- Insert date
- Source file name
- Statement date
- Statement number
- Statement reference
- Owner Name
- Account
- Credit/ Debit Indicator
- Amount
- Currency
- Value date
- Additional Entry Information

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### 3.8.1.2 Report templates

Report templates are created by users with specific rights (Transaction and template access - View right).

FinTPc allows to create custom reports from *General Transaction Report*, by defining templates with specific names.

Report templates are created on each business area by selecting different criteria.

These reports run with pre-defined criteria from the selected template or changing only some of them. They are available only to the user who created it.

Possible actions:

- ✓ Add a new template;
- ✓ Modify any elements of the template; options:
  - Save – save changes
  - Cancel – discard changes
- ✓ Delete a template– A confirmation is required;

For e.g., the following templates can be created:

- Reports with statement transactions filtered on Credit/ Debit indicator
- Reports with transactions from Payments Business Area filtered on Debtor Agent
- Reports with cancelled transactions from Payments Business Area – Completed - Rejected status
- Reports with duplicates transactions from Payments Business Area – Waiting for Duplicate Investigation status
- Reports with all transactions from a file (imported or exported) – filter on *Source file name* or *Destination file name* fields

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### 3.8.1.3 Events Report

Events Report is available to users with predefined rights described in [FBASE01–User Management](#).

The report contains all recorded events in the application, with possibility to filter the result by recorded information:

- Event date
- Event ID
- Type of event
- User or application component associated with the event
- Hostname used
- Action type

FinTPc displays all details recorded for the selected event in the Report. For an event related to a financial transaction (from any Business Area), FinTPc allows to view the transaction in a restricted form – only General, Identification and Other category details.

Creation date and time	Creation date and time	Interval;  Default last month (it is the date when the transaction is fetched from corporate's core application or is manually created in FinTPc)
Last modified by	drop-down list with all users	
Last operated by	drop-down list with all users	
Created by	for transactions created in FinTPc, username of the creator	
Creation date and time	current date and time, filled in at the transaction creation	
Last modified by	for transactions edited in FinTPc, username of the last edit operator	

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Last modification date and time	current date and time, filled in at the transaction update	
Last operated by	username of the operator wich performs Reject,Suspend, Authorize, Investigate actions	
Last operation date and time	current date and time, filled in at the transaction update	

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## 3.9 Archiving

### 3.9.1 FBASE17 – Archive

#### *Functional requirements*

FinTPc allows archiving transactions with final status corresponding to any business area (Payment, Invoice and Statement) and events. There are the following archive types:

- online archive: transactions and events are archived with the possibility to consult them online for at least 1 year. They are moved into online archive after configured archiving period – see [Configuration Lists](#), “Archive period” and “Events archive period” parameters. This process runs during the configured time interval - see [Configuration Lists](#), “Archive interval”.
- external archive: transactions and events older than one year are exported from the application and saved as external archives on dedicated supports.

Upon operators’ request, administrators restore external archives and import them into the online archive of FinTPc for consultation.

#### **Project requirements:**

[x. Arhivarea tranzacțiilor și raportarea datelor arhivate;]

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## 3.10 Audit Trails

### 3.10.1 FBASE18 – Audit Trails

#### *Functional requirements*

FinTPc collects and records various logs and events such as errors, informational events and warnings needed for further investigation.

Events are available for users with predefined rights described in [FBASE01– User Management](#).

The following **events** are recorded:

- User log on attempts (successful or unsuccessful)
- Successful/failed use of users' privileges
- The action decisions performed by each user that result in modifying application content or financial transactions' content or status (including reason – Operation details)
- Successful and failed application authorization attempts (connection to DB, API, folders, etc.)
- Application components (connectors and routing engines) startup and shutdown
- Application failures
- Any other event that deviates from the normal behaviour of the application

The events can belong to one of the following types, depending on the architecture and design needs and the information recorded: debug, information, warning, and error. All types of events except debug and information don't contain any financial transaction data.

- An event that describes the successful operation of an application task or a user action is registered within the *information* category.
- An event that is not necessarily significant, however, may indicate the possible occurrence of a future problem is registered within the *warning* category.
- An event that is significant and indicates that the operation failed is registered within the *error* category.
- An event that is significant just for developers is registered within the *debug* category.

Depending on action type that generates the event, there are the following category:

- An event regarding the security of the system (valid and invalid logins and logoffs) is registered within the *security* category.
- An event regarding the financial transactions or configurations is registered within the *business* category.
- An event regarding the application processes (e.g. loading routing schemas, loading reconciliation criteria) is registered within the *application* category.

For an event the following information are registered:

- Event date in timestamp format
- Event ID (an unique identification number of the event)
- Type of event (debug, information, warning and error)

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- Type of action (security, business and application)
- User or application component associated with the event
- Hostname used (e.g. source and destination IPs, terminal session ID, web browser, etc.)
- Action type and description (e.g. create/ edit/ delete, its status and/or error codes)
- Additional information - does not contain financial transaction sensitive data (data from Business details category)

Events can be traced and investigated running [Events Report](#). All the details recorded for an event can be viewed by accessing the event. Older events are archived (see [FBASE16 – Archive](#)) and still accessible in the future as is required by incidents or investigation.

The audit **logs** are collected in different locations, files or database, depending on the application component that generates it. For example, the routing engine startup is recorded in the routing engine log file and user login attempts are recorded in the database online log.

All logs are easily accessible, older logs being archived and still accessible in the future as is required by incidents or investigation.

### Project requirements:

[w. Auditarea activității utilizatorilor;]

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## 4 External Interface Requirements

### 4.1 User Interfaces

<Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.>

#### The user interface of **FinTPc**

- Is web-based and compatible with popular web browsers such as Chrome, Internet Explorer and Mozilla Firefox
- Is easy to use, intuitive and simple to navigate through. The design (layout, colours, fonts and sizes) provides user with easy to read information and feedback
- There shouldn't be any unnecessary elements that bring ambiguity and complexity
- is able to support multiple languages – either through mechanisms embedded application or through third-party add-ons to the web browsers
- Most application screens provide a contextual help facility that describes the purpose of the screen & possible actions
- Navigating through screens should take into account that users are used to using web browser actions – Refresh, Back, Forward. This behaviour should not lead to errors or unexpected behaviour
- Implements high security mechanisms and protection against most common attacks (SQL Injection, access to unauthorized data, etc) defined by OWASP

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## 4.2 Hardware Interfaces

<Describe the logical and physical characteristics of each interface between the software product and the hardware components of the system. This may include the supported device types, the nature of the data and control interactions between the software and the hardware, and communication protocols to be used.>

Hardware interfaces are out of the scope of this document.

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### 4.3 Software Interfaces

<Describe the connections between this product and other specific software components (name and version), including databases, operating systems, tools, libraries, and integrated commercial components. Identify the data items or messages coming into the system and going out and describe the purpose of each. Describe the services needed and the nature of communications. Refer to documents that describe detailed application programming interface protocols. Identify data that will be shared across software components. If the data sharing mechanism must be implemented in a specific way (for example, use of a global data area in a multitasking operating system), specify this as an implementation constraint.>

**FinTPc** is a financial middleware that integrates various systems, heterogeneous from technological perspective, and provides operational and business functionality to end-users. In this respect, FinTPc represents a client-server application, where users and administrators connect through a dedicated user interface, web browser based, to perform various actions related to the workflows defined. At the same time, the server side is configured to perform processing, automating financial flows inside the corporation by integrating other applications from the payment system.

The following FinTPc interfaces are defined:

- Between FinTPc components. These interfaces are described in the architecture documents of FinTPc, where the relations between application components are detailed
- Between FinTPc and other applications. These interfaces are usually bi-directional -> messages are fetched from an application and imported into FinTPc and messages are sent to an application from FinTPc. The interfaces between applications are described in detail in chapter 3, from a technological perspective (files, database, web service, and so on) and from a data format perspective (flat file, xml, csv/excel, fin)
- Between FinTPc and users. The interaction is ensured by user interface, available as a web based application

FinTPc has to be aligned to the latest versions of prerequisite software, in order to benefit from support ensured either by vendors or other open source communities.

Choices of software prerequisites are out of the scope of this document.

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## 4.4 Communications Interfaces

<Describe the requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms.>

**FinTPc** has to be able to interface with any application that generates or imports financial transactions in a structured data format. This document can't document all possible interfaces, but describes most popular data formats, technologies and protocols that have to be implemented by FinTPc. FinTPc has to be able to implement data formats and interfaces other than the ones described in this document with reasonable development / configuration effort.

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## 5 Other Non-functional Requirements

### 5.1 Performance Requirements

<If there are performance requirements for the product under various circumstances, state them here and explain their rationale, to help the developers understand the intent and make suitable design choices. Specify the timing relationships for real time systems. Make such requirements as specific as possible. You may need to state performance requirements for individual functional requirements or features.>

#### 5.1.1 PERFBASE01 – Concurrent user access

**FinTPc** is an application used by corporations to automate their financial flows. Typical users are from IT side and Operational side (Treasury, Human Resources, Accounting, and Management). FinTPc has to be able to handle request from an estimated number of 50 concurrent users. Each request should be resolved in a reasonable time – for normal navigation users should not wait longer than 1 second, while for complex processing (generating complex reports with specific criteria) responses should not take up longer than 5 seconds.

#### 5.1.2 PERFBASE02 – Performance process transaction

The processing in FinTPc is dependent to business hours, because data generation from other applications, banks and FinTPc happen during these times. FinTPc has to be able to comfortably process daily volumes estimated by corporations (usually less than 10 000 daily transactions). The application should have to be able to scale by adding hardware resources, to some extent.

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## 5.2 Safety Requirements

<Specify those requirements that are concerned with possible loss, damage, or harm that could result from the use of the product. Define any safeguards or actions that must be taken, as well as actions that must be prevented. Refer to any external policies or regulations that state safety issues that affect the product's design or use. Define any safety certifications that must be satisfied.>

Details of complying with safety best practices from industry are out of the scope of this document. The application configuration has to accommodate various deployment scenarios, backup and restore mechanisms, resiliency capacities in line with industry standards (ISO 9001, ISO 270001) and that can be accommodated to internal policies of corporations.

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## 5.3 Security Requirements

<Specify any requirements regarding security or privacy issues surrounding use of the product or protection of the data used or created by the product. Define any user identity authentication requirements. Refer to any external policies or regulations containing security issues that affect the product. Define any security or privacy certifications that must be satisfied.>

### 5.3.1 SECUBASE01 - Lock unauthorized access

FinTPc provides protection against unauthorized access to data, through user interface or other communication protocols. Users have to be granted special access rights.

This requirement is implemented across all application component (User Interface, Application Interfaces, business rules engine)

- User interface:
  - User authentication is performed by integrating with Active Directory or another LDAP application. Users log in the application using their domain credentials.
  - Users are granted access to FinTPc in the LDAP application, which also manages password complexity & expiration, locked account status
  - User authorization is performed based on the rights defined in FinTPc
- Application Interfaces, Business rules engine:
  - Data transfer at communication level supports latest version of SSL encryption
  - Communication protocols are configured using the secure protocol when the other applications support it as well (FTPS instead of FTP, HTTPS instead of HTTP)
  - Data should be stored in encrypted format
  - All passwords are encrypted in configuration files

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## 5.4 Software Quality Attributes

<Specify any additional quality characteristics for the product that will be important to either the customers or the developers. Some to consider are: adaptability, availability, correctness, flexibility, interoperability, maintainability, portability, reliability, reusability, robustness, testability, and usability. Write these to be specific, quantitative, and verifiable when possible. At the least, clarify the relative preferences for various attributes, such as ease of use over ease of learning.>

### 5.4.1 SQABASE01 – Availability

FinTPc shall meet or exceed 99.99% uptime.

FinTPc shall not be unavailable more than 1 hour per 1000 hours of operation.

FinTPc needs less than 20 seconds to restart after a failure 95% of the time.

### 5.4.2 SQABASE02 – Maintainability

Upgrades to FinTPc are usually dictated by changes to the applications it interfaces with, technology upgrades of its prerequisites, updates on the financial standards and regulation implemented and integration of new workflows and functionality.

Any upgrades of FinTPc, irrespective of the motive, should be implemented taking into account the impact they have on the functionality and historical data processed.

Changes to FinTP, irrespective of the motive, should not affect historical data. All past processing data corresponding to FinTPc has to be displayed in the various reports implemented.

### 5.4.3 SQABASE03 – Flexibility

The application shall have the ability to make changes quickly and cost effectively, in case of extension with new functionality or deleting unwanted capabilities.

### 5.4.4 SQABASE04 – Portability

No more than 5% of the system implementation shall be specific to the operating system.

When the replacement of the current data base with another data base version or type is needed, no data loss should ensue.

### 5.4.5 SQABASE05 – Reusability

The application should have the ability that as many their components can be reused in new applications.

### 5.4.6 SQABASE06 – Robustness

The application should not have loss data in case of a major disaster like a fire or flood, or even a minor one like a local power outage or disk crash.

This requirement may be implemented through:

- Using HW with corresponding mechanism (RAID, mirroring)HW with UPS
- Operational procedures that provide procedures of save, monitoring, data restore

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#### 5.4.7 SQABASE07 – Usability

The application and subsequent patches should be able to be easily installed by an administrator (small number of steps have to be followed).

Application installation kit and patches should be able to be downloaded from a special location via a secured interface (e.g. secure ftp).

#### 5.4.8 SQABASE08 – Reliability

No more than 1 per 1000000 transactions shall result in a failure requiring a system restart.

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