



## SCHEDULE 2 – SAAS SERVICE DESCRIPTION

V5.20.1.00.00 – valid from May 1, 2020

### TABLE OF CONTENTS

<b>1.</b>	<b>Introduction</b>	<b>3</b>
<b>2.</b>	<b>System Modules and Components and General System Services</b>	<b>3</b>
<b>3.</b>	<b>Implementation and Consulting</b>	<b>3</b>
3.1.1	Standard Implementation	3
3.1.2	Add-On Implementation Services	4
3.1.3	Review Day	5
<b>4.</b>	<b>Cash Management</b>	<b>5</b>
4.1	LMCash and LMStatus	5
<b>5.</b>	<b>Bank Connectivity</b>	<b>5</b>
5.1	Project	5
5.1.1	Overview	5
5.1.2	The Elements Involved in Payment Projects	6
5.1.3	LMPayment	6
5.2	Vendor Verification	6
5.3	CSP Package for the BELLIN SWIFT Service	7
5.3.1	Service Scope	7
5.3.2	Customer Participation	7
5.3.3	Service Requirements	7
<b>6.</b>	<b>Financial Instruments</b>	<b>8</b>
6.1	Module	8
6.1.1	TTContract	8
6.1.2	TTDealing	8
6.1.3	TTGuarantee	8
6.1.4	TTLC	8
6.1.5	TTGL	8
6.2	Add-ons	9
6.2.1	Trading Platforms	9
6.2.2	EMIR	9
6.2.3	Matching	10
6.2.4	Risk Analysis	10
<b>7.</b>	<b>Forecasting and Planning</b>	<b>11</b>
7.1	LMPlanning	11
<b>8.</b>	<b>Multilateral Netting</b>	<b>11</b>
8.1	ICNetting	11
8.2	ICDispute	11
<b>9.</b>	<b>Add-on Services</b>	<b>11</b>
9.1	BELLIN Connect	11
9.2	Cloud Service: SaaS Service Level	11
9.2.1	General Scope	11
9.2.2	System Uptime Monitoring	12



9.2.3	Cloud Service Comparison	12
9.3	Market Data	13
9.4	BELLIN Integration Service (BIS)	13
9.4.1	Data Exchange Across Networks	13
9.4.2	BELLIN Client Transport	15
<b>9.4.2.1</b>	Summary	15
<b>9.4.2.2</b>	Details	15
9.5	SSO	15
9.5.1	BELLIN Cloud - Third-party Authentication	15
9.6	Tokens (Two-factor Authentication/2FA)	15
9.6.1	General Information	15
9.6.2	The Tokens	15
9.6.3	Use	16
9.6.4	Token Replacement	17
9.7	Languages	17
9.7.1	Languages with full maintenance and support	17
9.7.2	Languages without full support	17



## 1. Introduction

This document specifies the state-of-the-art technology and Software features as well as the corresponding service levels on the date specified on the title page. These specifications are subject to regular modifications and enhancements. BELLIN will always ensure that existing services will at a minimum continue to meet the service levels as described in this document.

## 2. System Modules and Components and General System Services

BELLIN's tm5 is a modular system fully provided in the BELLIN Cloud. Customers may select suitable modules and components for their company. Available options are outlined in the proposal. Additional modules can always be licensed and added at any time.

Any number of users and companies in a corporate group can work with the web-based tm5 platform. Prices listed in the proposal always apply to an unlimited number of users and/or companies, unless expressly agreed otherwise. The monthly subscription fees include both usage rights and maintenance services consisting of Software maintenance and the Support Helpdesk.

Maintenance automatically includes the BELLIN tm5 Software as well as any Updates and Releases provided by BELLIN at regular intervals. It also entitles a customer's central treasury department to call the Support Helpdesk in case of questions regarding system use. Treasury and process consulting is offered and provided by BELLIN consultants in addition to services provided by the Support Helpdesk.


The customer shall take full responsibility for providing users with a compatible web browser (Google Chrome, Microsoft Internet Explorer 11.0 or Microsoft Edge) and access to the system via internet or intranet to enable them to fully use the Software pursuant to their respective authorization rights.

## 3. Implementation and Consulting

Implementation is key to a successful project over the long-term. Supplementing BELLIN's intuitive treasury management system, tm5, our team of expert consultants assist with the strategic implementation and operation of the platform. Having holistic support from our in-house consulting team provides a key cog in allowing our Customers to take full advantage of the wide array of powerful functions within the system.

### 3.1.1 Standard Implementation

Standard implementations are delivered remotely by the Customer's assigned implementation team. The following deliverables are included in our standard:

Service Category	Service Description	Deliverable to Customer
 <b>Project Management</b>	Understand project objectives, breakdown project tasks, understand and assign project resources, create project plan and update project plan as project continues	Project plan with updates
	Attend weekly BELLIN project calls, weekly bank calls, and other project related calls. Formalize minutes from each meeting and distribute action item lists	Weekly project calls with minutes

 <b>Scoping &amp; Design</b>	Understand project scope, breakdown project scope into requirements, documentation of scope and requirements, provide preliminary solution proposal	Scoping document and requirements outline
	Review, understand, and diagram current state workflows. Propose, discuss, and diagram future state workflows.	Current state and future state workflow
	Review and diagram treasury & accounting system and data architecture. Propose and diagram how tm5 fits in and how data will flow to and from tm5 to other systems	System integration and data mapping design
 <b>Configurations &amp; Training</b>	Data entry of client specific data to allow testing and go-live	System configuration prior to go-live
	Training of admin users on system functionalities and usage	System training
 <b>Testing &amp; Go-live</b>	Assist customer track progress and perform end-to-end technical tests to ensure data is flowing from source to destination as designed without loss of information	Successful technical tests
	Assist customer track progress and manage user acceptance tests to ensure end-users are able to operate the system to achieve listed objectives	Successful user acceptance tests
	Assist customer track progress and manage go-live cut over activities to ensure successful final adoption of system for day to day operations	Go-live cut-over

### 3.1.2 Add-On Implementation Services

BELLIN is aware that the needs associated with implementation projects can differ greatly from one customer to another. To assist with the introduction of tm5, BELLIN therefore provides add-ons for projects which may benefit from additional services. Total effort is to be determined by project following scoping. The following add-on deliverables are available:

Service Category	Service Description	Deliverable to Customer
 <b>Project Management</b>	Track items requiring decisions from project sponsors, track issues and gaps in project, create periodic sponsorship update presentations with overview on project status and details	Sponsorship presentations
 <b>Scoping &amp; Design</b>	Project phasing by region: scoping and phasing of implementation by regions	Phased Scoping Document per Region
 <b>Configurations &amp; Training</b>	Training of end users (non-admin users) on system functionalities and usage	End-user training
	Creation of custom end-user documentations (Job Aids) by job type. E.g. AP user job aid, Accounting user job aid, netting user job aid, etc.	Custom end-user documentation

 <b>Testing &amp; Go-live</b>	Project phasing by region: testing and go-live in phases by region	Phased Technical Test, UAT, Go-live by Region
 <b>On-site Consulting</b>	Onsite visit by project consultants to perform any of the implementation services offered. Travel expense to be discussed and approved by customer prior to booking.	Onsite meeting minutes

### 3.1.3 Review Day

Among the various consulting projects BELLIN conducts on a regular basis, the Review Day has proven to be particularly valuable. Once the project has been completed, users begin their daily work with tm5 and the customer’s contact with the consultant decreases. Employees join or leave the team, processes change constantly, while initially established routines have taken root.

The Review Day serves to optimize established processes, to train users in Software use or to uncover untapped potential. We recommend including a Review Day in the budget plan at least once per year and to commit to this particular process for the long term.

## 4. Cash Management

### 4.1 LMCash and LMStatus

Cash Management with Financial Status

Short-term Planning of Current Accounts and Liquidity Evaluation in Relation to Key Dates

Cash management is one of the fundamental tasks of every treasury. Treasurers use this component to determine expected balances of all current bank and clearing accounts. Users can process electronic bank statements in various formats (e.g. MT940), compare planning data with account statements, review account balances based on various criteria, and determine optimal cash forecasts using planned transactions e.g. MT 942 files. **LMCASH** is the component for daily cash management.

The financial status **LMSTATUS** processes the cash and contract management data already available in tm5 simply and quickly. It provides an overview of the liquidity status or the utilization of lines of credit at any level and for any part of the corporate group in real time or for any specified period of time based on a number of filters in conjunction with the Financial Instruments module. The financial status is a good example of reporting “embedded” in tm5. This achieves true global transparency at the push of a button.

## 5. Bank Connectivity

### 5.1 Project

#### 5.1.1 Overview

tm5 offers various banking communication standards, both domestic (e.g. EBICS, FTX, MBS) and international (e.g. SWIFT) as well as proprietary (host-to-host) connections. As a rule, a communication channel is used in combination with one or several file formats to exchange data.

For successful bank connections, the banks need to offer communication using international standards (SWIFT or host-to-host) or national standards (e.g. EBICS). In addition, they need to be able to process MT101 or formats based on XML ISO20022. During a project, BELLIN will start with the banks which have previously been successfully connected by BELLIN.



## 5.1.2 The Elements Involved in Payment Projects

### 5.1.2.1 Communication Setup:

- SWIFT onboarding, H2H connectivity and/or EBICS communication
- Support and guidance for completing contract documents and questions about these documents
- Installation of communication channels and setup of BIC/certificate/EBICS payment gateway

### 5.1.2.2 Operation of Communication and Formats:

- Participation in coordination phone calls
- Technical setup of banks, SWIFT onboarding of banks, setup of EBICS IDs including a test environment if necessary
- Testing of MT101 or XML files and coordination with customer IT teams and banks – if necessary/possible
- Licenses for all formats and development of formats
- Third-party and internal communication costs such as SWIFT (independent of volume)
- Conversion from the BELLIN csv format to the bank-specific ISO20022 XML format
- Adaptation of formats in the event that a new description is submitted to us by the bank/customer
- Technical payment support

### 5.1.2.3 Bank Communication Configuration

- Standard setup of tm5 in the master data
- Definition of signing authorities
- Configuration of LMPAYMENT master data

### 5.1.2.4 Additional Services Available

- Scoping
- Project management, status reports, etc.
- Coordination of appointments for the customer or the banks
- Documentation in relation to formats, connectivity or configuration

## 5.1.3 LMPayment

### Payments - Four-dimensional Payments

This component integrates electronic banking for all group companies on a single treasury platform. It supports payments in all four dimensions – multi-country and multi-bank transactions for both domestic and cross-border payments. **LMPAYMENT** is more than just a payment factory; it represents the basis for local and global electronic banking for organizations of all sizes. In addition to the basic component, an extensive payment format library is available, and formats can be selected accordingly. The component covers the full process, starting with the entry of manual payments or the processing of payment files in the corresponding formats licensed. The payment is then authorized following a multidimensional authorization process which is managed in tm5, fully independently of the authorization rights on file at a bank. Subject to the established technology, payment orders can then be transmitted to any bank worldwide for execution.

Payment orders may be executed on bank accounts at third-party banks or on intercompany accounts.

## 5.2 Vendor Verification

With Vendor Verification, customers can configure a payment beneficiary whitelist and blacklist.



When a payment enters tm5, Vendor Verification compares the account information of the beneficiary with the customer's whitelist and blacklist. If the account information fails to match accounts on the whitelist, Vendor Verification either provides a warning or blocks the payment. Vendor Verification validates single and bulk payments. If validation fails on any part of a bulk payment, the entire bulk payment fails validation. Customers configure the level of verification for any of their accounts. Users decide whether to override the verification result to retain full control over their payments.

### **5.3 CSP Package for the BELLIN SWIFT Service**

All BELLIN SWIFT Service customers are members of the SWIFT Standardised Corporate Environment (SCORE), the world's most powerful banking network. To protect this network and all of its members, SWIFT requires everyone to adopt strict safeguards as part of its Customer Security Programme (CSP). These safeguards are checked annually and from 2020 must also be approved by an external auditor.

#### **5.3.1 Service Scope**

BELLIN provides resources to help customers meet CSP requirements with minimal effort. BELLIN retains and manages SWIFT tokens for customers subscribing to this service. BELLIN continues to handle communication with SWIFT. BELLIN goes through SWIFT's security requirements with the customer. BELLIN submits the self-attestation on customer's behalf. BELLIN's CSP Package covers the CSP Assessment.

#### **5.3.2 Customer Participation**

The customer agrees to cooperate with BELLIN staff as there are certain information required from the customer side and checks that need to be performed.

#### **5.3.3 Service Requirements**

- BELLIN retains and manages your SWIFT tokens on customer's behalf.
- The customer tm5 is operated in the BELLIN Cloud.
- Pricing based on current BELLIN pricing model.
- Customer agrees to its anonymized financial data to be processed by tm5 and be used as a basis for developing AI-supported security features.

If customer uses the BELLIN SWIFT Service to make payments, the following also applies:

- Login must be with two-factor authentication via BELLIN Connect.
- All payment orders must be verified using Vendor Verification.

## 6. Financial Instruments

### 6.1 Module

#### 6.1.1 TTContract

Interest, FX and Commodities – Managing Treasury Transactions/Contract Management

In **TTCONTRACT**, users manage, document and evaluate any treasury deals based on various methods. These include FX deals (Spot, Swap, NDF or different kinds of Options), commodity management deals (Forwards and Futures), short and long-term interest deals (Money Market Deals, Loans, Interest Swaps) but also the management of lines of credit, leasing deals or collateral. In addition to managing deals, **TTCONTRACT** also focuses on intercompany processes that help meet all security and compliance requirements. These include, for example, separation into type of deal, entry, evaluation and the necessary reconciliation with the respective counterparties.

#### 6.1.2 TTDealing

IC Trading Platform – the Electronic Trading Platform

The component **TTDEALING** forms the basis for the agreement of deals between group companies or with third parties. A particular focus is on agreeing and optimizing the processing of intercompany lines of credit, FX and interest deals as well as securities. In **TTDEALING**, interfaces to trading platforms, such as 360T, Bloomberg or FXall, can be set up. **TTDEALING** also supports electronic transaction matching and ensures timely and transparent planning.

#### 6.1.3 TTGuarantee

Management of All Guarantees

In addition to typical treasury transactions, **TTGUARANTEE** provides users with a very detailed overview of bank, group and received guarantees. Fees are calculated automatically and transferred to Cash Management for monitoring. **TTGUARANTEE** supports intercompany processing of guarantees on behalf of.

In addition to managing guarantees, users can also apply for guarantees from banks electronically via an additional service in connection with the BELLIN SWIFT Service directly from tm5 and have them confirmed by the bank. This replaces paper-based applications.

#### 6.1.4 TTLC

LC Management – Managing the Import and Export of Letters of Credit (LC)

This component fully supports LC management and related individual shipments. This includes fee calculation and commercial cash flows. Full integration of this data in credit line utilization or cash management is ensured.

In addition to managing LCs, users can also apply for LCs electronically via an additional service in connection with the BELLIN SWIFT Service directly from tm5 and have them confirmed by the bank. This replaces paper-based applications.

#### 6.1.5 TTGL

Accounting – Preparation of Data for Accounting

**TTGL** connects treasury and financial accounting. This component ensures accounting record reconciliation for valuations or deferred interest as well as determining booking instructions.



## 6.2 Add-ons

### 6.2.1 Trading Platforms

#### 6.2.1.1 Interface with 360T Trading Platform

An interface with the electronic trading network 360T enables users to transfer XML files of traded transactions directly to tm5. All data relating to concluded transactions thus becomes available in tm5 for later analysis. This saves users the work of manually entering these transactions. For further processing in tm5, several fields in 360T need to be configured in advance. A prerequisite for using 360T is a 360T platform license with the provider. A technical requirement for using 360T in tm5 is a license for the Financial Instruments module. After the transfer of transaction data from 360T to tm5 has been configured, both manual and automatic transfers are possible.

#### 6.2.1.2 Interface with FXall Trading Platform

An interface with the FXall Trading Platform allows for the CSV-based import of traded transactions in tm5. All data relating to concluded transactions thus becomes available in tm5 for later analysis. This saves users the work of manually entering these transactions. For further processing in tm5, several individual fields need to be configured in advance in order to correctly identify trading partners and type of deal and include them in tm5 accordingly.

A prerequisite for using FXall is an FXall license with the provider. A technical requirement for using FXall in tm5 is a license for the Financial Instruments module. The format of the CSV file is defined by FXall and customers must apply to FXall to obtain the format.

#### 6.2.1.3 Interface with Bloomberg Trading Platform

An interface with the Bloomberg electronic trading network allows for the CSV-based (v2.4 or v2.12) import of traded transactions in tm5. All data relating to concluded transactions thus becomes available in tm5 for later analysis. This saves users the work of manually entering these transactions. For further processing in tm5, several individual fields need to be configured in advance in order to correctly identify trading partners and type of deal and include them in tm5 accordingly.

A prerequisite for using Bloomberg is a Bloomberg platform license with the provider. A technical requirement for using Bloomberg in tm5 is a license for the Financial Instruments module. BELLIN configures the delivery of deals to a specific network location in the customer network. The import into tm5 is then initiated directly in tm5's Bloomberg component with deals requested from the network and recorded in tm5.

In addition, deal requests can be generated in tm5 to be exported as CSV files. Deal requests can then be imported to Bloomberg FXEM. To do so, a "DEALREQUESTID" must be configured as a "note field" in the Bloomberg system. This enables users to connect imported deals with a deal request in tm5. It is possible to automatically generate back-to-back deals wherever an internal tm5 client has been assigned to a deal request.

### 6.2.2 EMIR

A direct connection from tm5 enables customers to report derivatives directly from tm5 to the trade repository REGIS-TR without having to maintain an individual company account with REGIS-TR. Reports for all deals with banks as well as group companies are created and transmitted. The price for the service covers the first 5,000 successful reports p.a. Additional reports are invoiced in packages of 1,000. Please note that FX derivatives generally only require one report, whereas several reports per deal are required for commodity futures.



It is the responsibility of the customer to ensure accurate and complete reporting when using the BELLIN EMIR Service. Customers can apply for a separate, read-only account at REGIS-TR in order to double-check the reported data. BELLIN assumes no liability for the accuracy and completeness of REGIS-TR reports.

### 6.2.3 Matching

The term “matching” refers to the mutual electronic confirmation of transactions between companies and banks. The BELLIN Matching Service covers the exchange of messages in connection with FX deals (SPOT, SWAP, Forward, NDF and barrier options) as well as Money Market Deals. tm5 provides a direct overview of any deals for which messages were sent as well as the successful confirmation by the bank or a possible mismatch. The system compares data automatically, which means that changes to matching deals are either not possible or immediately obvious.

The BELLIN Matching Service lets companies create and send electronic messages to the connected banks to confirm transactions. They can also collect these confirmation messages from the respective banks. There are three essential requirements for using the BELLIN Matching Service:

- The customer has licensed the Financial Instruments module and uses it to manage the respective transactions and all relevant data.
- The customer has access to SWIFT via the BELLIN SWIFT Service. In this case, the SWIFT Network can be used to exchange messages with the customer’s banks.
- The BELLIN Matching Service was ordered and has been configured by a BELLIN consultant.

When establishing the BELLIN Matching Service, it is important to note that at least three parties (SWIFT/bank/BELLIN) will be involved.

- BELLIN needs to install and configure the functionality in tm5.
- The bank needs to be informed and be capable of receiving and processing confirmation messages (MT3xx) from the customer via SWIFT. In turn, the bank will also be able to send confirmations to the customer’s SWIFT Code.
- The BELLIN SWIFT Service not only has to be set up by BELLIN but also needs to be activated by SWIFT.

It is to be expected that it will take a few days or weeks to coordinate the parties involved before messages can be exchanged smoothly. An accurate prediction of the project duration is therefore not possible but it should take no more than a few weeks.

The Bank Connectivity subscription is a requirement for this service. An agreement with the bank regarding the acceptance of payment orders is not required for the exchange of confirmation messages.

### 6.2.4 Risk Analysis

#### 6.2.4.1 TTRISKWATCH

Risk Management – Mathematical Analysis of Financial Risk

Sensitivities or Value-at-Risk can be calculated and simulations carried out in this add-on. It forms the basis for a mathematically predicted risk analysis and is an important element of overall risk management within the framework of IFRS reporting obligations.



## 7. Forecasting and Planning

### 7.1 LMPlanning

Liquidity Planning – Medium to Long-term Forecasting/Liquidity Planning

**LMPLANNING** enables a long-term forecast of liquidity developments for each company, department or the entire group. On one hand, past payments and cash flows are evaluated for future use based on individually defined planning categories and planning structures; on the other hand, future payments are planned, processed and evaluated based on various different scenarios. The results in **LMPLANNING** are then available for corporate risk management, in particular in combination with refinancing contracts (funding) or currency hedging (hedging), and efficiently facilitate analysis of financial plans e.g. plan/plan, plan/actual or plan/forecast comparisons.

## 8. Multilateral Netting

### 8.1 ICNetting

Reconciliation – Reconciliation of Intercompany Invoices

The **ICNETTING** component of tm5 serves to optimize intercompany reconciliation – between all group companies and for all users. BELLIN customers are no longer limited to receivables or payables-driven netting. Instead, they can harness the full potential of **AGREEMENTDRIVENNETTING®**.

Reconciliation of Intercompany Cash Flows

In **ICNETTING**, users organize all cash flows within the group processed via the netting center or related sub-centers. This component also helps users calculate netting statements and organize the resulting intragroup payment transactions to conclude the netting process.

### 8.2 ICDispute

Professional Dispute Management

This component allows systematic dispute management at invoice level and provides users with a structured escalation process within the group to come to a solution. It lays the foundation for ensuring the automatic and obligatory integration of different management levels. Disputes are solved quickly and remain transparent and analyzable.

## 9. Add-on Services

### 9.1 BELLIN Connect

**BELLIN Connect** is a mobile app that quickly connects treasury teams to their tm5 information and allows them to act on it. It is an easy-to-use tool and interface with tm5 for performing tasks and viewing data from smartphones and other devices which operate with Android/iOS.

### 9.2 Cloud Service: SaaS Service Level

#### 9.2.1 General Scope

BELLIN carries out the installation work and provides any hardware and software components required for operation and monitoring of tm5. BELLIN decides which hardware components and software systems are used for running the server and the application as well as for data backup. Only components that support the running of the system and meet security standards are used. BELLIN Cloud Services are regularly monitored within the framework of security checks and certifications and constantly updated to meet state-of-the-art technology requirements and guarantee data protection and security.



Any work covered by license and maintenance agreements in connection with the required operating system and database, as well as regular backups and storage of backups, are performed as follows:

- Daily for the current and previous week
- Weekly for the current and previous month
- Monthly for the current and previous year

Daily 24h availability of the live system or availability in accordance with the respective service levels detailed below is presumed for operating server and application. This does not apply to times of generally restricted internet availability and/or access by users. Maintenance and backups performed by BELLIN do not impair availability. Please see the BELLIN Service Level Agreement (SLA) and the detailed hosting description document for more details.

BELLIN supplies the necessary SSL certificates or an alternative secure operating medium with PCI compliant 256-bit HTTPS encryption.

## 9.2.2 System Uptime Monitoring

BELLIN offers Cloud services for its customers' treasury applications. Depending on the Cloud agreement, customers are guaranteed a specific minimum availability of the application. However, customers cannot easily measure whether this guaranteed uptime has been maintained.

BELLIN offers system uptime tracking by a neutral, third-party provider specializing in this service. BELLIN reserves the right to change service providers at any time. This service tries to access the selected website from one of multiple "probing servers" around the globe with intervals of 5 minutes or shorter. Visual information about website uptimes and downtimes will be displayed on a website.

Two versions of the service are included in the subscription depending on the Cloud Service option chosen by the customer:

- SHARED  
Access to the report for the system's demo installation (demo.mytm5.com). If the demo application is not available, this generally means that other treasury applications at the same location could be down as well.
- EXCLUSIVE  
BELLIN sets up an individual availability service for the tm5 system of the customer.

## 9.2.3 Cloud Service Comparison

### 9.2.3.1 BASIC

- BELLIN or public cloud at BELLIN's discretion
- Systems will be updated to newest release at BELLIN's discretion within the announced update window
- Uptime – 99.9%
- Information Security Package provided (Access security certificates, audit reports)
- Maintenance Window – 8 hours a month on a weekend as defined and announced by BELLIN
- RPO – 12 hours
- RTO – 24 hours
- Included in every tm5 subscription



### 9.2.3.2 PROFESSIONAL

- All of BASIC +
- Customer Choice of cloud: BELLIN or public
- Possibility to get dedicated IP address and IP address restriction for access
- Security
- Customer Security Audits possible at a fee per Audit
- Customer Security Support at an hourly fee
- Personal site monitoring possible
- Possibility for SSL Client Authentication (Client Certificates)
- Test systems
- Monthly or weekly scheduled copy of production to a test system
- Opt out of tm5 updates (max 9 months as per current SLA)
- Possibility to receive full database backup (at a fix fee per backup)
- RPO – 4 hours
- RTO – 1 hours

### 9.2.3.3 ENTERPRISE

- All of PROFESSIONAL +
- Exclusive Servers and BELLIN components

The following descriptions reference to these terms as described:

- RPO: Recovery Point Objective – the maximum amount of time the data in the recovered system is behind the latest data in the system being recovered. All transactions newer than RPO are potentially lost
- RTO: Recovery Time Objective – the maximum amount of time that may elapse before the recovered system is available after the system being recovered failed
- Security Documentation Package: The security documentation package includes the ISO Certificate and Statement of Applicability, the SOC report and Pen-Test results with the remediation calendar. All these documents are regularly updated.
- Customer Security Audits are audits, the customer or a partner of the customer does on BELLIN. This includes any audit of the product offerings (e.g. PEN tests) or any audit of BELLIN processes
- Customer Security Support includes any calls with the customer on security topics or the answering of questions/questionnaires around security. Typically, the information needed is included in the security documentation package

## 9.3 Market Data

In cooperation with third parties, BELLIN offers market data services integrated in tm5. For detailed information on the scope of these services, please consult the up-to-date service documentation in Treasury Connected ([www.treasuryconnected.com](http://www.treasuryconnected.com)). BELLIN explicitly reserves the right to adjust the services at any time.

## 9.4 BELLIN Integration Service (BIS)

### 9.4.1 Data Exchange Across Networks

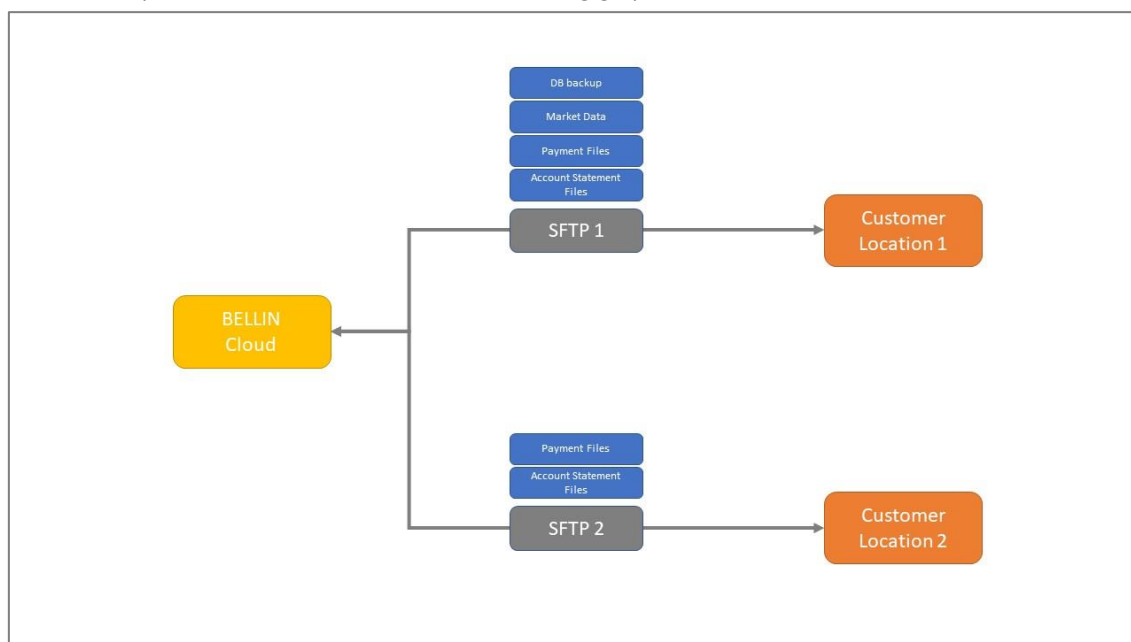
It may become necessary to exchange data between the customer network and the BELLIN network. This mainly applies to account statements and payment files but can also affect other data that requires

automatic processing. BELLIN provides several alternatives and services for this purpose, depending on data direction. Both manual and automatic processing of transmitted data is possible.

The following directions for automatic transfers and the corresponding transfer frequencies are available:

Service Name (Business Topic)	Direction		Maximum Frequency
	BELLIN -> Customer	Customer -> BELLIN	
Database backup	X	N/A	1 x per day
Account statement files	X	X	Every 15 minutes
Market data files	X	N/A (included in separate service)	Every 15 minutes
Payment files	N/A	X	Every 5 minutes
Planning data for Cash and Planning	X	X	Every 15 minutes
Accounting data files	X	X	Every 15 minutes
Netting data files	X	X	Every 15 minutes

Some services allow for multiple transfer jobs that can be set up for both directions within the same service. However, in addition to the business topics mentioned above, if an additional SFTP channel is needed (e.g. two FTP clients on the customer side), then an additional data feed service is also required. This cannot operate via the same service. The following graph illustrates this:



The SFTP server is by default located in the BELLIN Cloud while on the customer side an SFTP client is used. For other configurations prior scoping is required.

## 9.4.2 BELLIN Client Transport

### 9.4.2.1 Summary

BELLIN Client Transport (BCT) is a specialized SFTP Client which can be installed on the customer's premises. Customers who use this client can be assured that files which are generated automatically on their site (i.e. payment files from the ERP system) are sent, untouched and directly to BELLIN's systems. Files which have been successfully sent can be archived in an encrypted state. BCT is also capable of polling a folder on BELLIN SFTP server for any pending files and automatically download (and optionally automatically decrypt) these files.

The BCT is charged as an additional business topic which can be used for multiple Customer SFTP connections.

### 9.4.2.2 Details

BCT combines three utilities into an easily installed package.

- SFTP Client
- Folder Monitoring - An event-based file system monitoring Windows service. This service watches any folder on the computer where it is installed and when a file is placed in the folder, it will automatically send it to BELLIN's network for processing by BIS.
- Encryption - Using a wizard, Customers will exchange keys with BELLIN. These keys are used to encrypt files using OpenPGP standard. Files sent out can only be able to be decrypted with the keys at BELLIN, or with the Customer's private key.

## 9.5 SSO

### 9.5.1 BELLIN Cloud - Third-party Authentication

In cooperation with a third-party provider (currently PingIdentity), BELLIN offers single sign-on technology (SSO). Several authentication methods are supported. A component that can be licensed is made available in tm5 if this option is chosen. This component enables the connection to the authentication service provider portal. Users can choose if they wish to use SSO exclusively or in addition to regular login via user name and password.

## 9.6 Tokens (Two-factor Authentication/2FA)

### 9.6.1 General Information

Two-factor authentication adds an extra layer of security to tm5 by using a token. Regular passwords are susceptible to capture either by OTSB (over-the-shoulder browsing), key logging, or the user writing the password on a yellow sticky note. Two-factor authentication forces selected users to enter a one-time password (OTP) in addition to their regular password. This OTP is supplied to the user on a hard token (key fob).

### 9.6.2 The Tokens

Our hardware token technology is based on the industry-proven Gemalto SafeNet OTP 110. It generates a new one-time password each time it is used which cannot be forged or ever used twice.

Our hardware token is powered by a battery that provides 5 years of service, depending on the number of authentications you perform.



### 9.6.3 Use

One-time passwords can be used to secure the system login and/or for payment authorization and can be activated for selected users.

The token can be enabled within the static data of a particular user. In tm5, the “User Details” page has two check boxes, one to require 2FA for tm5 login and one to require it for payment authorization. By allowing

single users to be selected, you can implement 2FA only for power users (administrators), or payment users. It also allows an administrator to temporarily disable 2FA for another user if that user has lost their token and needs to sign an urgent payment.

If a user has the “Required for 2FA Login” setting enabled, they will enter their username and password as usual, followed by the one-time password displayed on the token in the "Passcode" box. Users without a token can log in with only a username and password and leave the "Passcode" box blank.

---

Security Settings

Token ID

Required for 2FA Login

Required for 2FA Payment

---

Import Format Settings



If a user has the “Required for 2FA Payment” setting enabled, they must enter the passcode directly below the approval password on the approval page. The user cannot approve payments without a token.

	Auth. Level	Payment Method	Status	Client	Account
1	E on Bank Account	Payment	● □ □ □ □	TWAG	TWAG-DEF-EUR
2	E on Bank Account	Payment	● □ □ □ □	TWAG	TWAG-DEF-EUR
3	E on Bank Account	Payment	● □ □ □ □	TWAG	TWAG-DEF-EUR
4	E on Bank Account	Bulk Direct Debit	● □ □ □ □	TWAG	TWAG-DEF-EUR
5	E on Bank Account	Payment	● □ □ □ □	TWAG	TWAG-DEF-EUR
6	E on Bank Account	Bulk Payment	● □ □ □ □	TWAG	TWAG-DEF-EUR
Approval Password		<input type="text"/>			
Passcode		<input type="text"/>			

## 9.6.4 Token Replacement

The SafeNetOTP 110 token has a lifetime warranty and is part of the service, including free replacement (excluding shipping to BELLIN). The token never expires.

## 9.7 Languages

### 9.7.1 Languages with full maintenance and support

The following languages are preconfigured in the system and updated with every Release:

- English
- German

Help documentation and release notes are available in both languages, and customers have access to support services in line with their maintenance agreement.

### 9.7.2 Languages without full support

The following additional languages are available on request:

- Chinese
- French
- Japanese
- Portuguese
- Russian
- Spanish

System updates of these languages become available shortly after a Release. However, help documentation, release notes, and support services are not available in these languages.