



### Confidentiality Clause

This document and the information in it is provided in confidence and may not be disclosed to any third party or used for any other purpose without the express written permission of Eurobase Banking Solutions, a Eurobase International Group company.

# Contents

EXECUTIVE SUMMARY	4
EUROBASE RESPONSE FORMAT	5
Annex A	6
Annex B:	10
Annex C	13
Annex D	15

#### **EXECUTIVE SUMMARY**

Eurobase Banking Solutions ("Eurobase") would like to thank Hodge Bank ("Hodge") for the opportunity to respond to their Request For Information for a Treasury Management System (TMS) and Asset & Liability Management Solution (ALM). This response aims to demonstrate how Eurobase can confidently partner with Hodge to offer a cost-effective, risk-free, combined Treasury Management and ALM solution, which also includes standard integration with ALMIS, if required. Hodge can take added confidence from the fact that Eurobase is an established and financially secure provider of treasury, ALM, sales desk and regulatory compliance solutions.

We are aware of the importance of this project and would like to assure Hodge of our commitment to provide full support, ensuring a successful and timely implementation.

Eurobase is committed to delivering a solution that covers the requirements outlined in the RFI Questionnaire. In summary, this includes:

#### ATMS which:

- > Can report the daily cash and asset position on a single system, where the collation of the information is automated
- Has dashboard reporting
- Facilitates pre-trade analysis and initiates and captures trades
- Can reconcile and confirm trades and cash movements including bank reconciliation
- Has a workflow management feature
- Is secure and has strong control framework
- Can interact with Hodges' new data warehouse
- Removes the manual spreadsheets and physical paper trail
- Can produce accounting journal entries

#### An ALM solution which:

- Can assist the treasury team to manage the balance sheet
- Assess an extensive range of market and liquidity risks
- Can model the balance sheet dynamically
- Can run complex end-to-end calculations with minimal manual steps
- Can populate and file UK regulatory returns
- Can calculate hedge accounting entries and balance sheet which would be compliant with IFRS9/ IAS39
- Facilitates capital management
- > Can interact with Hodge's new data warehouse
- Removes the manual spreadsheets
- Can produce accounting journal entries

By selecting Eurobase, Hodge will recognise the benefits of a partnership with an organisation that:

- Has 30 years' experience of delivering Treasury and ALM solutions globally
- Will provide a long-term relationship and commitment to Hodge
- Has a 100% success rate for delivery
- Is committed to significant ongoing product investment
- Holds a fully referenceable, worldwide, customer base
- Is a treasury specialist dedicated to providing the highest calibre of software solutions coupled with staff boasting unparalleled skills and expertise
- Delivers the most highly regarded support service in the industry
- > Offers a choice of deployment options

We would also like to highlight to Hodge Eurobases' best practice approach to solution delivery; a streamlined implementation methodology to ensure phased key deliverables during the project life cycle, enabling the use of critical system functionality during the early stages of the project. In order to meet Hodges requirements and objectives, our highly experienced team will work closely with your internal team and maintain strict project governance backed up by our ISO9001 and ISO27001 certifications.

#### **EUROBASE RESPONSE FORMAT**

In accordance with the instructions outlined within the Hodge RFI Questionnaire, the following pages make up our response via the completion of the four annex sections covering the following topics:

- > Annex A: General Questions
- > Annex B: TMS Functionality
- > Annex C: ALM Functionality
- Annex D: References

#### Annex A: General Questions

Ref:	Question	Short description of the scope coverage and possible limitations
	Company	
1.	Please provide a company and senior management team	Eurobase is an international software and service provider to financial institutions operating in over 25 countries. We provide enterprise wide solutions for banks, brokers and corporates as well as (re)insurance companies.
	biography.	Our customers have a long and lasting relationship with Eurobase and all will verify our professional approach to doing business and commitment to product investment; delivering ongoing value above and beyond our initial engagements.
		Board Members:
		John Wilson – Chairman and Group CEO
		Since founding the company in the late 1980s, John Wilson has been the driving force behind Eurobase's continuous growth and success over the last 25 years. With a background in statistics, John began his career as a management trainee with ITT, the former US multinational, where he worked on developing complex business systems such as inventory management in a number of different departments before transferring to the main IT department. He has also worked in a systems management role with C E Heath PLC, as a founding director for Datasure and as a managing director for Dutch software company Rendeck, before going on to found Eurobase Systems.
		<u>Joe Locke</u> – CEO Banking & Insurance Solutions
		Joe Locke was appointed CEO of Banking & Insurance Solutions in February 2015. Joe has significant experience gained from over 20 years of developing and implementing software solutions worldwide within banking (eFX, treasury management) and insurance (general, London market, Lloyd's, reinsurance & captives). Joe was a software developer price to moving into project management, before assuming a senior management position.
		<u>Jonathan Moon</u> – Group Financial Director
		Jonathan is a qualified accountant with over 20 years post qualification experience. Prior to joining Eurobase, he was at PayPoint PLC, a bill payment and cash collection service, where he held a number of key positions. He was heavily involved in a number of key projects there including; setting up the finance function from scratch, floatation of the company on the London Stock Exchange, acquisitions both in the UK and abroad and implementation of new retailer products. Before PayPoint he had worked in the construction industry and public practice.
		<u>Peter Morgan-Hare</u> – Group Commercial Director
		As the group's commercial director of Eurobase, Peter is responsible for the commercial and contract negotiations for all of the group's divisions. Peter joined Eurobase in April 2006, bringing with him experience in systems integration, consultancy, software and services, with a particular focus on the financial services sector. Peter had previously been appointed to key roles in companies such as Hoskyns, Merrill Lynch, Coopers & Lybrand, Ernst & Young, PLAUT Consulting, Intelligroup Europe and most recently Telehouse Europe. These roles have given Peter board-level experience in major consultancies and IT companies and have comprised responsibilities ranging from senior project and programme management, management of large, skilled teams and business units, commercial negotiations, business and product development, including start-ups and the building of successful partnerships.

2.	Please describe your overall business scope and goals. What is your business strategy?	Our aim is to be recognised as thought leaders in the sectors we operate, and to deliver innovative solutions that provide real business value to our customers.
		Since 1988, the Eurobase Group has accumulated significant market experience and expertise, allowing us to provide consistently high quality support to our clients and form lasting relationships throughout the industry. By investing in the best people in the market to build our technology we can assure our clients that their specifications will be met on time and to the very highest quality. We believe that an in-depth understanding of our environment can have a significant impact on functionality. At Eurobase, we are proud of our unique position within the market and ensure that we are always up to date with the latest news and innovations in business and technology. We are also a medium-sized group, with flat internal structures and executive roles for major shareholders, meaning we can listen more effectively both to the market and to our clients and make more informed decisions faster.
		Every person and every business is unique, and we pride ourselves on our flexible and personal approach, providing solutions and services that can be adapted and scaled to fit almost every kind of business. Our professional, personable consultants carefully assess your needs and are on-hand at every stage to answer your questions and to make the process as smooth as possible.
3.	Please list your top five clients, stating years of relationship and product provided?	Rand Merchant Bank (South Africa)     Year Relationship     Product: siena TMS & siena eSolutions
		Banco do Brasil (New York & London)     Year Relationship     Product: siena TMS & MiFID II Regulatory Reporting
		Bank of Ireland (Ireland)     4 Year Relationship     Product: siena TMS & siena eSolutions
		Zenith Bank (London)     Year Relationship     Product: siena TMS & MiFID II Regulatory Reporting
		BACB (London)     19 Year Relationship     Product: siena TMS & MiFID II Regulatory Reporting
4.	How many UK financial services clients do you have?	In excess of 30 UK clients.
5.	Please provide details of any clients that are similar to Hodge	Two good examples of Eurobase customers that operate in a similar space to Hodge are Paragon Bank and Cambridge and Counties Bank. Both of these customers have integrated treasury and ALM.
6.	Can you please supply your last annual accounts	Please see attached supporting document entitled 'Eurobase International Accounts 2016_17'.

	Service Platform/ Provision	
7.	How is the service delivered – i.e. SaaS/ Cloud Based or 'on premise'?  If on premise, what are the high-level hardware platform requirements. E.g. Server OS, Number of Server Instances, Architecture?  If SaaS, what platform does it run upon (e.g. Azure/ AWS/GCP etc)?  What Security Accreditation is in place?	Hodge can choose the type of solution delivery most suited to them from a choice of hosted, managed service and on-premise implementation options.  Minimum hardware requirements:  16Gb  2/4 core CPU  1 TB Disk  Software Dependencies:  SQLServer 2014+  SQLServer Reporting Services  Apache Tomcat  Java 8  SaaS deployment can be on public cloud or in a private, dedicated data centre.  Eurobase is ISO27001 certified.
	Implementation capability & capacity	
8.	Please describe how you would support the implementation of the system  Is there an 'in house' implementation capability or are third parties/channel partners engaged?  What is the capacity of the implementation team and what is their anticipated commitment over the coming period?  If the team is 'in house' what is the balance between permanent and temporary/contract resource?	Eurobase does not engage in channel partners during project implementations; implementations are completed using Eurobase resources only.  We anticipate that for Hodge the project will last approximately 2-3 months taking into account Hodge resource availability and testing plan. Depending upon the size and timescales of our customer projects, our Project Manager will assign the most relevant resources to each project to ensure milestones are met. We may, therefore, allocate between 1 and 4 team members per project.  The Implementation team is entirely UK based, and consists of permenent members of staff (no contractors employed).  Eurobase has never failed to meet the agreed project implementation plan of a customer deployment to-date. A successful rollout of siena is based around the partnership of Hodge and Eurobases' project teams working together. To achieve best possible quality deliverables we recommend a combination of onsite and offsite meetings, remote sessions, conference calls and email communications.

	Support Provision	
9.	Please describe your support model.  How is the system/service supported?  Where is the support team located?  What are the hours of service?	We provide complete functional, user and technical support for the proposed siena solution Standard and enhanced service models form part of our contractual SLA agreement. Issues can be reported to our London-based Support Team through our dedicated phone line, email address or online customer portal (including chat facility). Standard support hours are 9am – 5:30pm Monday – Friday excluding UK Bank Holidays. Extended support hours are available, if required (including 24/7/365).
10.	Please provide details of training services you would provide.	Full on-site training, including IT administration, solution configuration and end user training will be written into the project plan and delivered at relevant points along the way. The majority of the training will be delivered prior to UAT so as the relevant Hodge resources are well versed in solution functionality to complete UAT. Our standard training schedule covers the following topics:  • Operator and administrator training (general to all products which includes system settings, configuration, user settings etc.);  • Technical support (installation/upgrade training, application control);  • Deal capture – functional product training;  • Risk management and compliance – functional product training.
	Integration	
11.	Please describe your approach to 'import' data from source data systems.  • What protocols and transfer mechanisms are supported?  • If custom data transformation is required where and how is this carried out?  • How may data be exported from the system?	siena is complemented with a wide array of bi-directional adaptors supporting transaction capture, exposure and limit connections, rate data and static connections to load customer information.  Existing components and libraries provide translation, protocol and transport management which enable siena to interface with any external system. Adaptors exist for non-application specific implementations such as XML over JMS/MQ Series and for proprietary API's New adaptors can be built quickly using our ready to deploy adaptor toolkit. sienas existing API's ensure seamless integration with all external systems and feeds. siena also has a fully tradable FIX API providing connectivity to all external systems whose API's are FIX compliant.  Customisations to any interface are straightforward and can be carried out by either Hodge or Eurobase personnel.  Example interfaces include; Deal Import/Export, Rate Import/Export, Limit Checking call-outs, RDBMS interface & Static data take-on via:  TCP & UDP  Offer fixed length and delimited support  XML is the preferred transport protocol  Import & Export of data is handled using XSLT transforms  SSL is supported with encryption
12	Please describe the data infrastructure within your systems.  Does the company provide an embedded reporting tool as standard with the system?  Can the customer access this data either directly or indirectly using its own BI tools?	siena offers a wide range of standard reports. In addition, the siena Relational Gateway provides a real-time interface to any recognised RDBMS allowing Hodge to create its own reports, dashboards or views without requiring input or support from Eurobase. siena utilises an in-memory database to maximize real-time performance. For reporting and archive purposes all data is mirrored instantly to a relational database in real-time. All trading and ALM data is available in real time for:  • Reporting – including access via Hodges own reporting tools to cover areas such as:  • Trade reporting  • Audit reporting  • ALM & Risk reporting  • Distribution of formatted data to downstream systems to cover areas such as regulatory and compliance reporting (IFRS, IAS, COREP, FINREP, etc.)  The siena Relational Gateway enables the export of all data used by siena to any SQL-compliant relational database. Data is published in real-time and is available for any existing BI tools to consume.

## Annex B: TMS Functionality

Phase	Question	Response
13.	Name of your TMS System('s)	siena Treasury Management
14.	Does your system support daily cash and liquidity management?  If yes please describe how you would support daily cash and liquidity management?	Yes.  Dealers are provided with a real-time view of all cash flows and a ladder of future movements. Cash flows are separated by real and notional flows to take account of the impact of derivatives. Cash flows can be rolled up to monthly and annual summaries or Hodges own 'bucket' structure, additionally they can be separated into individual trading books. Full drilldown and export to excel is standard to all projections. Cash flows generated in upstream and downstream systems can be imported into siena and will be reflected instantly in the siena Treasury cash flows. Bank statements and SWIFT MT94nn messages can also be pulled directly into siena. Other Nostro balances can be imported in real-time or on a batch basis, providing users with a real-time 7 day Nostro balance view. Cash flow reporting and projections can be broken down by currency, portfolio, book and deal type. Every cash flow movement is shipped to the ALM component that will provide Hodge with liquidity stress testing and reporting (LCR, etc.)
15.	Does your system support a wide range of financial instruments?  If yes please describe which financial instrument, facilities, assets and derivatives your system supports.	Yes. siena supports a wide-range of asset classes as standard including term deposits both fixed and floating, multi-currency current and call accounts as well as bonds and CD's. For example:  Term Loans and Deposits Fixed/Floating/Tracker & Penalty Rates Rate Fixing Flexible interest periods & Amortisation Schedules/Rollovers/Capitalisation Accounts, Call & Notice Call Repo & Reverse Repos & Extensions Term funding schemes CD's, FRN's Bonds FX spot, Forwards, Options, NDF's etc Internal deals: inter-book, transfers etc FRA's, IRS, Index Swaps, Options, Futures.
		In addition siena is highly configurable; new deal types can be created by adapting a fundamental deal type template.
16.	Does your system perform pre-trading analysis? • If yes please describe how you would support pre-trading analysis.	Yes. siena provides a range of functions that inform and control all pre-trade decision processes such as security yield analysis and PV01. Rate checking is automated to ensure deals are within permitted range and within acceptable spreads. Deals can also be measured against preset min/max limits and benchmark rates from neutral suppliers. Real-time limit checks are also performed pre-deal via sienas own limit module or by an in-transaction call out to a third party limit system. Limit checks include: Credit, Ratings, Product and Daily Aggregate, Net & Gross Settlement, Loan Equivalent Risk, Maximum Term, User Limits, Trading Limits and Stop Loss Limits (Margin).

17	Does your system support post-trade activities?  • If yes please describe how you would support post-trade activities (capture, confirm and settle treasury transactions).	Yes. Our post trade processing achieves high STP rates through automatic two-way settlement messaging and status updates. These are managed in real time by a suite of functions that identify exceptions and show the status of all open trades. Settlement risk is significantly reduced through netting at both the trade and the instruction level.
18.	Does your system integrate with external data sources?  If yes please describe the external data sources you support and how these are integrated	Yes. siena provides automatic interfaces with: Downstream CIF & static data sources External market & reference data feeds External trade execution venues External pricing and rate feeds Central limit stores Cash flow, bank statement & Nostro balance intakes and updates External data warehouses  All interfaces are monitored and confirmed with Ack & Nack confirmations. Interfaces can operate in both real-time as well as batch mode. Example interfaces include; deal import/export, rate import/export, limit checking call-outs, relational database (RDBMS) interface & static data take-on.  Existing components and libraries provide translation, protocol and transport management which enable siena to interface with any external system.  Adaptors exist for non-application specific implementations such as XML over JMS/MQ Series and for proprietary API's including Reuters, 360T, FXall, Bloomberg, TEMENOS T24, Oracle FLEXCUBE, EBS and Currenex.
19.	Does your system store historic asset prices and asset positions?	Yes. Closing prices are retained for all instruments subscribed to via feeds, or entered manually.
20.	Does your system have data feeds to UK banks accounts?	Yes. The solution can upload both intra-day and end of day, proprietary and/or SWIFT statements.
21.	Does your system auto-reconcile bank transactions? • If Yes, pleas describe how your system handle bank transactions and reconciliation.	Yes. siena can be configured to accept information from multiple channels in bespoke formats. This means that it is simple to reconcile transactions for accounts in different core solutions and/or accounts in different branches. The information received must, as a minimum, contain an account balance and all daily movements for a specific account.

22.	Can your system handle multi-entities, SPV and different portfolios?  If yes please describe your approach to multiple-entities, SPV, portfolios and encumbrances.	Yes. siena can be configured in a number of ways to classify, segment and categorise treasury transactions, the lowest level classification is by portfolio and trade book level. Trade books can also be placed into hierarchical structures and provide summary positional and trade views by individual, or on a collective basis across multiple book configurations. Portfolio and book definitions are also used within the posting of GL journals as filters. For more customised approaches, siena has an agreement manager module that will allow Hodge to create SPV's to house subordinated debt, asset-based securities, facilities and fully manage security and collateral margin. Agreements' references are used in distinguishing GL postings so that multi-entity accounting can be generated.
23.	Does your system have a dashboard reporting functionality?  If yes please describe the user experience on the reporting features.  Can the user drill-down on the dashboard?	Yes. siena includes real-time trade and positional blotters that can be easily configured to create user-specific dashboards with drill-down and optional alerts. A wide range of standard reports are also included with every deployment. All trading and positional data is also available in real-time for reporting, including access via Hodges own reporting tools to cover areas such as:  • Trade reporting  • Audit reporting  • ALM & risk reporting  • Regulatory and compliance reporting (IFRS, IAS, COREP, FINREP etc.)  There is a real-time interface to any recognised RDBMS should Hodge choose to create their own reports and dashboards using a third party application.
24.	Does your system have a workflow management tool?  If yes please describe the workflow management features.	Yes. siena includes a full dealing workflow from pre-trade initiation through to maturity and archive. The fully configurable workflow is further enhanced by incorporating user rights and deal statuses.
25.	Have you received any feedback from any big 4 accountancy firms or a UK regulator?  If yes can you please share the feedback given?	Many of our customers use the big 4 accountancy firms in order to select, or to manage the selection process (issue of RFI's for example), whereby the Eurobase solutions are often recommended.
26.	Does your system have document management features?  If yes please describe the document management features.	Yes. siena includes the ability to store documents and files of any format. These can be retained within the database for maximum integrity, or archived to a remote file system and referenced using a URL link.

## Annex C: ALM Functionality

Phase	Question	Response
27.	Name of your ALM System('s)	siena ALM
	Balance sheet management	
28.	If yes please describe your balance sheet management features.	Yes. The solution utilises a scenario-based modelling engine. Balance sheet management features are described fully in points 29-34 below.
		The system also incorporates significant out-of-the-box MI including Liquidity Gap, Top 'N' Depositors, Walk-out, and business line profitability reporting.
29.	Can your system model a balance sheet dynamically?  If yes please describe how the system models the balance sheet dynamically,	Yes. All of the principal balance sheet items and off-balance sheet exposures are captured via a data mapping protocol. These are categorised during the mapping process, both in regulatory and firm-specific terms. These categories can then be used to apply the parameters described below to grow, shrink or otherwise model different balance sheet components according to the purpose of the scenario in question, from short-term stress scenarios to long-term business plans.
30.	Can your system model market risk?  If yes please describe your features on Market risks.	Yes. The system can model and stress IRRBB (yield-curve, basis, optionality and repricing risks for example margin compression) and FX risk. Marketable assets may be revalued, bought, sold and haircut.
31.	Can your system model liquidity risk?  If yes please describe your features on Liquidity risks.	Yes. Contractual cash flows and cash flow maturity dates are captured at cash flow level. Parameters available to model behaviour include rollover, part-rollover (in both cases for any number of days), default, drawdowns of undrawn facilities, portfolio/product growth and diminution, concentration stress (both sides of the balance sheet), liquidation of marketable assets and future dated deals. We often work with clients to support their ILAAP's in terms of compliance with stress-testing requirements.
32.	Can your system model standard and non-standard cash flow?  If yes please describe how your system models non-standard cash flows (for exampledevelopment loans and equity release products).	Yes. At each dataset refresh we capture the limit, drawn and undrawn components of such loans. The undrawn component can be modelled as to both the timing and amounts of drawdowns (we have existing users who undertake property development finance).
33.	Please describe which financial instrument, facilities, assets and derivatives your system supports.	siena ALM supports all balance sheet trades, standard derivatives, facilities and drawdowns and a range of contingent instruments.

34.	Can your system handle multi-entities, SPV and different portfolios?  • If yes please describe your approach to multiple-entities, SPV, portfolios and encumbrances.	Yes. siena ALM reflects the portfolio and trade book hierarchies created in the core siena solution. siena can be configured in a number of ways to classify, segment and categorise treasury transactions, the lowest level classification is by portfolio and trade book level. Trade books can also be placed into hierarchical structures and provide summary positional and trade views by individual or on a collective basis across multiple book configurations. Portfolio and book definitions are also used within the posting of GL journals as filters. For more customised approaches, siena has an agreement manager module that will allow Hodge to create SPV's to house subordinated debt, Asset based securities, facilities and fully manage security and collateral margin. Agreements' references are used in distinguishing GL postings so that multi-entity accounting can be generated.
	Hedge Accounting	
35.	Can your system perform hedge accounting which is compliant with IAS39/IFRS9?  If yes please describe your approach to hedge accounting.  If yes please describe the outputs available for hedge accounting.	Yes. Our solution is built upon the ALM stress testing engine which captures data at a cash flow level of granularity. It then applies the business rules that determine IFRS9 exposure classification and measurement, impairment and reporting values. These are calculated using expected loss parameters and then present-valued at the 'effective interest rate' which is calculated taking into account exposure-specific fees and costs. Parameters are set for automatic movement between impairment stages, according to each institution's own business rules. In summary, it covers the essential infrastructure and functionality required by IFRS9 including:  Effective interest rate calculation  12-month and lifetime probabilities of default, and the loss-given-default, credit conversion factor and exposure-at-default percentages  Expected credit loss where nominal ECL values are present-valued at the EIR to give discounted values for accounting and reporting purposes  Override of portfolio-level impairment stage and ECL for individual counterparties and accounts respectively  Regulatory reporting categorisation (e.g. FINREP 5.1) from which regulatory returns and internal MI are produced.
36.	Have you received any feedback from any big 4 accountancy firms or a UK regulator?  • If yes can you please share the feedback given?	Our hedge accounting and impairment solution (IFRS 9) is deployed in three UK banks. One of these presented the solution to their auditors from KPMG, who confirmed they were impressed with the solution.
	Regulatory Returns	
37.	Can your system complete UK regulatory returns?  If yes please describe your approach including which returns you cater for.  If yes please describe the value-added features on regulatory returns.	Returns are provided for specific instances, including LCR and Forecast LCR returns, and we are building PRA110 into that system. All 6 FINREP returns obligatory for UK banks with assets <£5bn (4.3.1, 4.4.1, 5.1, 7.1, 9.1.1 and 12.1) are provided.

#### Annex D: References

At the point whereby Hodge can confirm to Eurobase that we have successfully progressed to the RFP phase, upon completion and submission of the RFP we would be pleased to provide a selection of referenceable bank customers of a similar standing to Hodge Bank.