

Terms of Reference (TOR)

For

Electronic Imaging System 电子影像系统

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1. Executive Summary 执行概要

Guangxi Nanning East Asia Sugar Group has planned to implement a business digital transformation project aimed at leverage business operations. The project will use an innovative technology to build the capacity of operations. The system will provide a platform to easily digitize data leading to business standardize within East Asia Sugar Group. 广西南宁东亚糖业集团计划实施业务数字化转型项目以优化业务操作，采用创新技术实现业务能力的提升。该系统将为数据的数字化提供平台，促进集团内部业务操作的统一和标准化。

2. Background 背景

Guangxi Nanning East Asia Sugar Group (hereinafter referred to as EAS) is invested by Mitr Phol Group of Thailand since its entering Chongzuo city of Guangxi in 1993. Now East Asia Sugar Group has 10 companies: 6 sugar mills with the cane milling capacity of 92,000 tons/day and sugar output of approximately 1 million tons per year, which crushed 8.74 million tons of cane and produced 1,040,000 tons of sugar in total in crop 2017/18, ranking the third place in China and the first place in Guangxi; 3 biomass electric power plants with the generating capacity of 390 million kwh per year; and 1 BB fertilizer plant with the capacity of 100,000 tons per year. The above 10 companies are accounted independently. At present, more than 3,500 employees work with and; over 350,000 cane growers build good relationship with the Group. The Group can realize sales revenue of approximately RMB8 billion yuan and tax payment of about RMB500 million yuan per year. 广西南宁东亚糖业集团（以下简称东亚糖业），由泰国两仪集团于 1993 年进入广西崇左市成立，现有 10 家公司：6 家糖厂，日处理甘蔗能力 9.2 万吨/天，年产糖量 100 万吨左右。2017/18 年榨季集团甘蔗压榨量 874 万吨，产糖量 104 万吨，居全国第三、广西第一；3 家 30MW 生物质能源发电厂，年发电能力约 3.9 亿度；1 家掺混肥料厂，年产肥料 10 万吨。集团 10 家公司独立核算。集团现有员工 3500 多人，与集团有密切联系的蔗农超过 35 万人。年销售额约 80 亿元，年度纳税总额 5 亿元左右。

Currently, business operation is mainly operated in both manually and also in the ERP SAP system. As a model, East Asia Sugar co., Ltd. would like to leverage the business process in area of PPP (Plants, Purchase, Pay) with process digitally and able to get advantage from digital theme. We are using SAP EHP8 ERP system and Weaver OA system. 鉴于目前各项业务仍以人工手动和 ERP SAP 系统操作为主，集团拟在工厂、采购、财务付款（PPP）三个业务系统先行实施数字化业务流程优化，并从中总结出业务流程数字化的优势，以此作为范例。我们正在使用的是 SAP EHP8 ERP 系统和泛微 OA 系统。

The proposed digital platform will mostly be utilized at first or second level operations in EAS. The development of technologies supporting this project, require tools and components that are

user friendly, easy to sustain and possibly be replicated in various other facilities and settings in the future. The developer should interpret and prescribe suitable solutions, considering current industry standards, ease of use and maintenance, as well as sustained future outlook. 上述数字化平台将主要用于集团的一、二级业务。基于项目的技术研发要求相关工具和组件应以方便用户为主要考量，且易于将来维护和和其它设备、设置中进行复制。在制定相应方案时，开发人员应将现行行业标准、系统操作和维护是否简便纳入考虑，并具有一定的前瞻性。

3. Objective of the project 项目目的

- To create a platform that will assist EAS to address the challenge of digital business transformation through improve operation and data management at the required level. 通过平台的创建，优化操作和管理数据，帮助东亚糖业应对数字业务转型的挑战。
- Digitalize data with the aid of a coding system that is aligned to business requirements. 借助基于业务需求的编码系统对数据进行数字化处理。
- Alignment of system to digital tools such as mobile, QR code, workflow etc. through innovative mechanisms. 通过创新机制，使系统与手机、二维码、工作流等数字工具保持一致。

4. Scope of work and key deliverables 工作范围和关键交付成果

This assignment is to design, develop and deploy a customized programs. The detailed scopes of work are specified in Annexure I. 项目主要任务是定制程序的设计、开发和实施。具体工作范围详见附件一。

5. Implementation Methodology and Deliverables 实施方案和交付成果

The details explanation of methodology that is instructional steps or guidelines to manage the project to ensure project are working well and also completed on time. The method is use to achieve the objective of the project that will accomplish a perfect result. And also define the key check point with key deliverables to evaluate the status of the project. 实施方案是项目实施的指导方针，用于项目管理，以确保项目的顺利开展和按时完成。该方案对如何达成项目目标和理想效果、如何确定关键检查点和关键可交付成果以评估项目进度予以指导。

Project meeting and minute of meeting need to be defined regularly. 定期召开项目会议并形成会议纪要。

6. Project Organization Structure with Role and Responsibility 项目组织结构 (角色和职责)

Project organization need to be described to ensure that there are enough team members and provide a team of experts with the approved skill sets who shall be adequately qualified and experienced in both development projects and IT related field to satisfactorily and timely deliver the expected outputs. 项目组织架构的制定是为了确保有足够的团队成员，并配备一个在项目开发和IT 相关领域都具备足够资质和经验的专家团队，以圆满和及时地交付预期成果。

Profile of team members with their roles and responsibilities are also described in details.同时详细描述了团队成员及其角色和职责。

7. Project Timing 项目时间

The project time frame need to be defined with list of deliverables as per explain in the detailed project methodology and deliverables. 根据项目实施方案和交付成果中列出的交付成果清单制定项目时间表。

8. Ownership and Copyright 所有权和版权

The developer is required to hand over the final product by 31.12.2019. 开发者必须在 2019 年 12 月 31 日前交付最终产品。

The final product is developed and customized for EAS. All source codes and technical documents shall be accessible by customers, convenient for maintenance, and the copyright rights shall be shared by both parties. 最终产品针对 EAS 定制开发，须开放所有源代码、技术文档给客户以供维护，版权双方共有。

9. Warranty 质保

Provide three-month online support after the implementation of the system, and then one-year warranty period after the end of the three-month online support. During this period, the developer is responsible for the following technical support 项目上线后提供 3 个月的上线支持，上线支持结束后，再提供一年质保。在此期间，开发人员应提供以下技术支持：

- Update patches 更新补丁
- Fix bugs 修复错误

- Make post-deployment changes to the system based on feedback from user experience 根据用户体验反馈，对系统进行部署后更改。

10. Scope of price proposal 价格

Vendors have to submit their technical and financial (price offers) as separate components of one application as follows 供应商应提交技术和财务（报价）方案，作为投标文件的组成部分，包括：

- Comprehensive CV 综合介绍
- Technical proposal 技术方案
- Financial proposal 财务方案

The offer should be all inclusive (Lump Sum Amount), with all costs (professional fees, travel costs, living allowances, communications, consumables, etc.) that could possibly be incurred by the consultant should already factored into the final amounts submitted in the proposal 报价应为包干价（包干总价），包含指派顾问在项目工作期间可能产生的所有费用（专业费用、差旅费、生活补助、通讯、消费品等）。

The contract price is fixed regardless of changes in the cost components. 即使费用细分项目调整，合同总价固定不变。

Applications must be clearly marked “MP & EAS PPP Project” 申请时候需要注明“MP & EAS PPP 项目”

11. Annexure I – Detailed scope of the project 附件 1- 具体项目范围

The details of the scope includes following 具体项目范围包括：

11.1 System Requirement Specification 系统需求规范

11.1.1 Database 数据库

Using SQL SERVER database in EAS. 东亚采用 SQL SERVER 数据库。

The system must encrypt personal data, usernames and password stored in the database using Advanced Encryption Standards (AES). 系统必须采用高级加密标准（AES）对储存于数据库中的个人资料、用户名称及密码进行加密。

11.1.2 Application 应用

All request and data transfer between the server and the database must be done over an SSL connection. 服务器和数据库之间的所有请求和数据传输都必须通过 SSL 连接完成。

The application shall have tutorial documentation, for the purpose of educating new users as well as acting as a reference. Clear procedures and proper protocol must be explained in detail, as often these tasks must respect both legal and business concerns. These procedures shall be presented in step by step instructions which are accompanied by both screenshots and application tooltips. The goal here is to produce an interface which can self-teach its own practice to any first time users. 应用文件应包含教程，以便对新用户进行指导并作为参考资料。必须有清楚流程和适当协议（计算机术语）的详细解释，通常应该既遵循相关法规又能符合相关业务需求，通过操作程序的逐步说明，并附带截图和应用程序工具提示，以方便首次使用的用户独立学习和操作。

11.1.3 Communication 通信

All communication between the server, session app and system application will be done over SSL. 服务器、会话应用程序和系统应用程序之间的所有通信都将通过 SSL 完成。

The database will communicate via an encrypted remote connection using SSL. 数据库将使用 SSL 通过加密的远程连接进行通信。

11.1.4 Interoperability 互操作性

System should support 系统需支持:

- Data transfer and sharing on much more than a local or enterprise-wide scale 远超本地或企业范围的数据传输和共享
- Knowledge transfer and integration 知识转移与整合
- Image transfer 图像传输
- Integration with SAP and non-SAP applications 与 SAP 和非 SAP 应用程序集成

11.1.5 System error correction 系统误差修正

The system must require high levels of error correction and input validation. 系统要求高水准的误差校正和输入验证。

11.1.6 Others 其它

All electronic approval processes shall be based on the organizational structure consistent with the one for OA system (synchronize with HR). 所有的电子审批流程，使用和 OA 系统一致的组织机构（同步 HR）。

11.2 Modules 模块

The major features include, but not limited in each digital transformation process. 主要功能包括但不限于各项数字化转型流程。

Able to work flexible in the digital tools; QR code, Web-based both computers and mobiles/tablets, Mobile responsive, Work flow etc. 能够灵活地使用数字化工具：二维码、网络计算机和手机/平板电脑、移动端响应、工作流程等。

Develop **Electronic Imaging System** at least following feature 开发**电子影像系统**

至少要有以下特征：

11.2.1 Image acquisition 图像采集

Users generate documents in OA, expense reimbursement, contract management, tax information management, fund management, SAP and other systems, synchronize to the image system, generate document identification code (bar code/two-dimensional code), create tasks to be scanned, and trigger the electronic image interface mechanism. 用户在泛微办公、费用报销、合同管理、税务信息管理、资金管理、SAP 等系统中生成单据，同步到图像系统，生成单据标识码（条码/二维码），创建需要扫描的任务，触发电子图像接口机制。

11.2.1.1 Image Scanning 图像扫描

- 1.1. PC-side image scanning 电脑端图像扫描
- 1.2. PC-side image complementary scanning 电脑端图像的补扫
- 1.3. mobile terminal image scanning 移动端图像扫描
- 1.4. mobile terminal image Complementary scanning 移动端图像扫描
2. Bar Code Recognition 条码识别
3. QR Code Recognition 二维码识别
4. Electronic Bill Collection 电子发票导入

5. Collection of Electronic Vouchers 电子凭证的采集

11.2.1.2 Image Correction 图像修正

The electronic image system has the function of OCR and can handle many different scenes. 电子图像系统使用 OCR 识别功能，可以处理多种不同的场景。

1. Editing 编辑
2. Blackside removal 去除黑点
3. Reduction, amplification and rotation 减速、放大和旋转
4. PIC Storage size litter than 300K 图像存储大小 300K

11.2.1.3 Image Processing 图像处理

The electronic image system has the function of OCR and can handle many different scenes. 电子图像系统使用 OCR 识别功能，可以处理多种不同的场景。

1. Grouping 分组
2. Image deletion 图像删除
3. Image Replacement 图像替换
4. Image upload and download 图片上传下载
5. Image rescanning and supplementary scanning 图像重扫描和补充扫描
6. Verification of Bills 票据验真（增值税发票）
7. Image Matching 影像匹配

11.2.1.4 Image Access 影像调阅

OA, expense reimbursement, contract management, tax information management, fund management, SAP and other systems in the business approval link, the examiner can access the image through the "image access" function in the approval interface. 泛微办公自动化、费用报销、合同管理、税务信息管理、资金管理、SAP 等系统在业务审批环节，审查员可以通过审批界面中的“图像访问”功能访问图像。

1. PC-side image viewing 电脑端图像查看

2. PC-side image auditing 电脑端图像审核
3. mobile terminal Image Viewing 移动端图像查看
4. mobile terminal image auditing 移动端图像审核

11.2.1.5 Image Management 影像管理

Functions of Electronic Imaging System 电子成像系统功能

1. Image Authorization 图像授权
2. Image Access 影像调阅
3. Image auditing 图像审核
4. Image patrol 影像巡检
5. Image archiving 影像存档

11.2.1.6 Report Management 报表管理

Functions of Electronic Archives System 电子档案系统功能：

1. Document Query 文档查询
2. Image flow recording 图像流记录
- 3.
4. Physical Archiving Query 物理存档查询

11.2.1.7 System Management 系统管理

Functions of Electronic Image and Electronic Archives System 电子影像与电子档案系统的功能

1. Log Management 日志管理
2. Parameter management 参数管理
3. Site Management 站点管理
4. Scanning Point Management 扫描点管理
5. Scanning Equipment Management 扫描设备管理

6. Scanner management 扫描人员管理

7. Image Type Management 图像类型管理

11.2.1.8 .增值税进项发票自动化处理（包含与 sap 的接口集成）VAT Invoice Automation Processing Platform (including interface integration with sap)

增值税 OCR 识别模块获取的发票信息发票代码、发票号码、开票日期、开票金额；系统自动将以上信息**单个或批量**传递到税务官网查验平台进行查验（是否合法，是否过期）；并将查验结果和全票面信息返回给 AP 平台。

VAT invoices OCR identification module obtains invoice information invoice code, invoice number, invoice date, invoice amount; the system automatically transmits the above information to the tax official network checking platform in a single or batch manner for checking (whether legitimate or expired); and returns the checking results and comprehensive invoice information to AP platform.

可以根据扫描发票后识别的发票信息自动化进行 3 单匹配（PO 订单、入库单、验收报告）。

According to the invoice information identified after scanning invoice, three matches (PO order, warehouse receipt, acceptance report) can be automatically created with SAP interface (and invoice amount adjustment accounting automation).

可以对待认证处理增值税发票进行发票认证及进行批量勾选抵扣的操作, 利用与 SAP 接口自动创建应付凭证。（供应商请对可选功能模块分开报价，是否采购由采购方确定）

The VAT invoices to be certified and processed after accounting can be certified and deducted in batches. This is optional module（optional module please quote from supplier, but whether to purchase is determined by purchaser）

11.3 General system requirements **系统通用要求**

11.3.1 Technology Transfer **技术转移**

The developer needs to engage with the EAS's project team during the project period, this is to harness transfer of technology as minor corrections and support will be done in house. However the developer must note that the EAS team have limited IT knowledge. 项目期间，开发人员应与东亚糖业项目团队合作，通过技术转移使其能够自行对微小错误予以校正，相应的技术支持公司内部即可提供。但开发人员也应注意到东亚糖业团队的 IT 知识有限。

11.3.2 Deployment of the system 系统部署

The developer is required to come up with a schedule of activities highlighting; milestones and expected deliverables such as; signing of contract, collecting user requirements, the different phases of system development, deployment and roll out etc. 开发者应制定具体行动计划，包括重大事项和预期交付成果，例如：合同签订、收集用户需求、各阶段的系统开发、部署、上线等。

The developer should also support user in terms of stabilization and making the system acceptable by the end users. 开发人员还应在稳定性、促使终端用户认可和接受该系统等方面提供支持。

11.3.3 Training 培训

The developer is required to provide training to the end users how to operate, management and administration of the system. This is also to provide an understanding of the system, its database and infrastructure configurations used during the implementation of the system. 开发者应为终端用户提供系统操作和管理等相关培训，加强对该系统及其数据库、以及所需基础设施配置的了解。

11.3.4 Documentation 文件

Content business design document including data model, user manuals (including screenshots) and any other documentation of the assignment have to be completed and handed over to the user. 须完成业务设计文档，包括数据模型、用户手册（包括屏幕截图）和其它相关文档，并移交给用户。

11.3.5 Technical Support 技术支持

The developer shall render all support activities related to the following up until the warranty period expires 质保期到期之前，开发人员还应提供后续支持：

- Troubleshooting at both application level and user level 应用程序故障的排除、用户问题的解决

- Assist focal official/client in operation of the portal 协助关键人员/客户熟悉门户网站的操作
- Fixation of bugs, incorporation of minor changes, etc. 错误修正、微调整合等