Unit 3, Kimberley Business Incubator Centre
C/O Pniel Road and Tyburn Street
Kimberley, Northern Cape, South Africa
+27 (53) 010-1113 ☎ +27 (84) 698-3888 ☎
sales@joxicraft.co.za ✈
support@joxicraft.co.za ☎

Dear KZNERA Team,

Following our recent discussions regarding the payment system integration for the KZNERA Liquor Licensing platform, I am pleased to provide comprehensive details on the implementation approach, payment flow architecture, and integration framework.

1. EXECUTIVE SUMMARY

The KZNERA payment system will implement a **revolutionary wallet-centric architecture** that transforms how license payments are processed. Instead of direct payments for each transaction, all payment methods will load credit into user wallets, creating a streamlined, secure, and efficient payment ecosystem.

CORE ARCHITECTURE - WALLET SYSTEM:

- Central Wallet System - All transactions flow through user wallets
- Credit Loading Methods - Card, EFT, ATM, Mobile Money all load wallet credit
- Pre-funded Model - Users maintain positive wallet balance for license operations
- KZNERA-owned Gateway - Complete control over wallet infrastructure
- Real-time Balance Management - Instant updates and transaction processing
- Comprehensive Audit Trail - Every wallet transaction fully traceable

2. WALLET-BASED PAYMENT ARCHITECTURE

2.1 CENTRAL WALLET SYSTEM

RECOMMENDATION: We strongly recommend implementing a **wallet-first payment architecture** where all payment methods translate into wallet credits. This approach provides superior control, transparency, and user experience.

WALLET SYSTEM BENEFITS:

- Simplified Transactions - One-click payments from pre-loaded wallets
- Faster Processing - Instant debit from wallet balance (no gateway delays)
- Better Cash Flow - Funds collected in advance of service delivery
- Reduced Transaction Fees - Single bulk loading vs multiple small transactions
- Enhanced Security - No payment details stored or transmitted during license operations
- Improved Reconciliation - Single source of truth for all financial transactions

2.2 WALLET LOADING METHODS

Loading Method	Description	Processing Time	Wallet Credit
EFT/Bank Transfer	Direct bank deposit with reference	1-24 hours	Auto-credited after verification

Credit/Debit Cards	Secure card payment to load wallet	Real-time	Instant credit
ATM Deposit	Cash deposit at any major bank ATM	2-4 hours	Credit after bank confirmation
Mobile Money	MTN, Vodacom mobile wallet transfer	Real-time	Instant credit
In-Branch Deposit	Physical bank branch deposit	Same day	Credit after verification
Corporate Top-up	Bulk wallet loading for companies	Pre-arranged	Batch credit processing

2.3 WALLET OPERATION FLOW

User Journey:

1. **Initial Registration** → Create KZNERA wallet account
2. **Wallet Loading** → Choose any payment method to add credit
3. **Balance Confirmation** → Real-time wallet balance display
4. **License Payment** → Deduct fees directly from wallet
5. **Transaction History** → Complete audit trail of all wallet activities
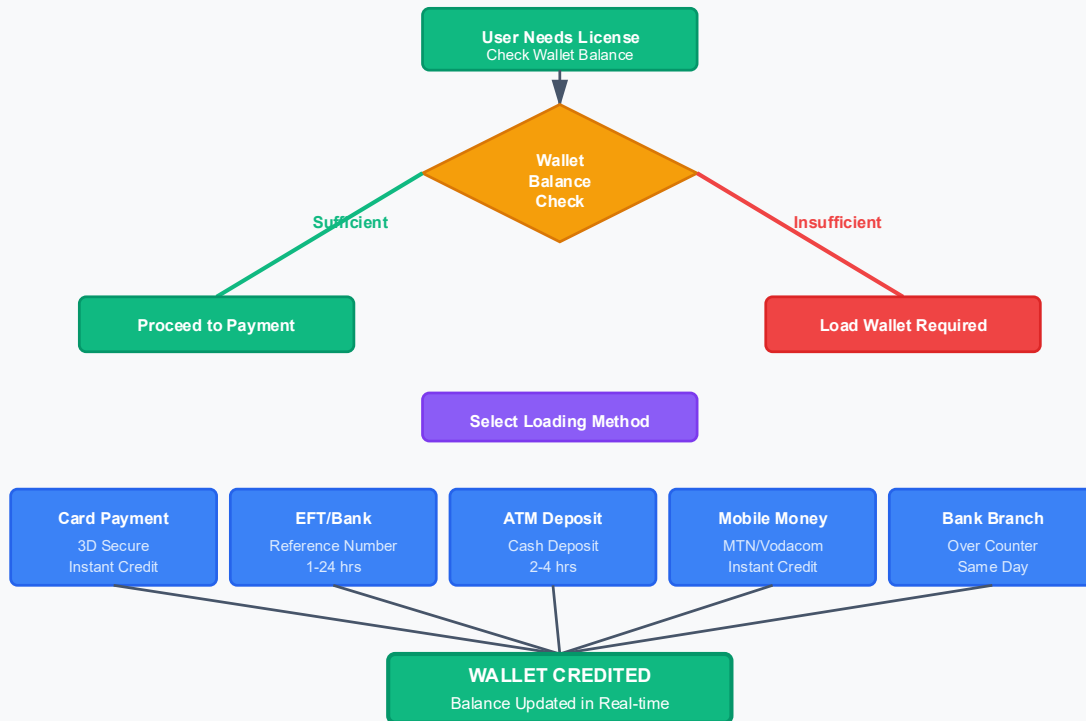
Technical Implementation:

- **Wallet Engine:** Dedicated microservice for balance management
- **Transaction Ledger:** Immutable record of all wallet transactions
- **Balance Verification:** Real-time balance checks before operations
- **Auto-Refund:** Automatic refund to wallet for cancelled applications
- **Minimum Balance:** Optional minimum balance requirements
- **Auto-Top-up:** Optional automatic wallet recharge from saved payment method
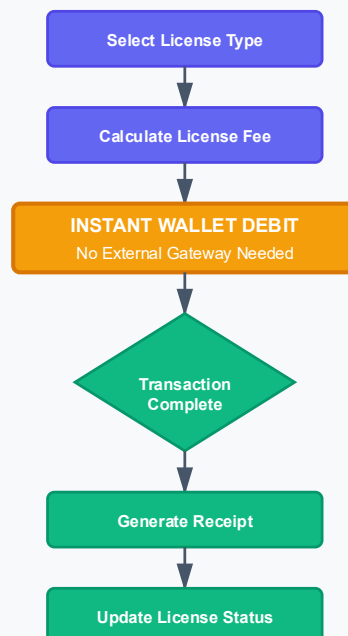
3. WALLET-CENTRIC PAYMENT FLOW

KZNERA Wallet-Centric Payment Flow

All Payment Methods Load Wallet Credit Only

PART 1: WALLET LOADING PROCESS

User Needs License
Check Wallet Balance

Wallet Balance Check

Sufficient → **Proceed to Payment**

Insufficient → **Load Wallet Required**

Select Loading Method

Card Payment	EFT/Bank	ATM Deposit	Mobile Money	Bank Branch
3D Secure	Reference Number	Cash Deposit	MTN/Vodacom	Over Counter
Instant Credit	1-24 hrs	2-4 hrs	Instant Credit	Same Day

WALLET CREDITED
Balance Updated in Real-time

PART 2: LICENSE PAYMENT FROM WALLET

Select License Type

Calculate License Fee

INSTANT WALLET DEBIT
No External Gateway Needed

Transaction Complete

Generate Receipt

Update License Status

WALLET MANAGEMENT FEATURES

- Auto Top-up Settings
- Balance Alerts & Notifications
- Transaction History & Statements
- Instant Refund to Wallet
- Multiple License Payments
- Corporate Wallet Management
- Minimum Balance Alerts
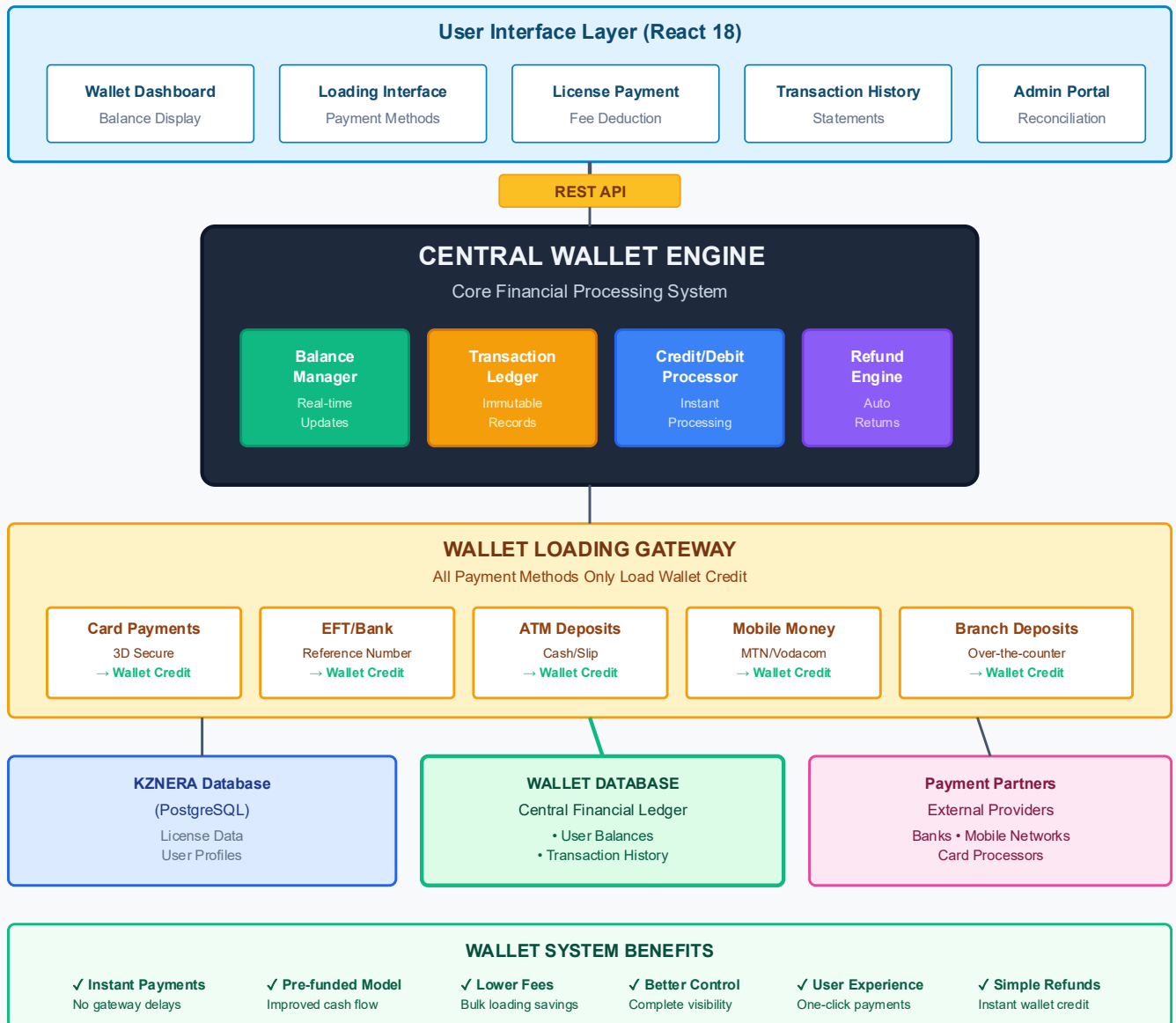- Bulk Loading Options
- Withdrawal Rules & Limits

DIRECTOR(S): MR S MEREEOTLHE

JOXI CRAFT

KZNERA Wallet-Centric Integration Architecture

Central Wallet System with Multiple Loading Methods

User Interface Layer (React 18)

Wallet Dashboard	**Loading Interface**	**License Payment**	**Transaction History**	**Admin Portal**
Balance Display	Payment Methods	Fee Deduction	Statements	Reconciliation

REST API

CENTRAL WALLET ENGINE

Core Financial Processing System

Balance Manager	**Transaction Ledger**	**Credit/Debit Processor**	**Refund Engine**
Real-time Updates	Immutable Records	Instant Processing	Auto Returns

WALLET LOADING GATEWAY

All Payment Methods Only Load Wallet Credit

Card Payments	**EFT/Bank**	**ATM Deposits**	**Mobile Money**	**Branch Deposits**
3D Secure	Reference Number	Cash/Slip	MTN/Vodacom	Over-the-counter
→ Wallet Credit	→ Wallet Credit	→ Wallet Credit	→ Wallet Credit	→ Wallet Credit

KZNERA Database	**WALLET DATABASE**	**Payment Partners**
(PostgreSQL)	Central Financial Ledger	External Providers
License Data User Profiles	• User Balances • Transaction History	Banks • Mobile Networks Card Processors

WALLET SYSTEM BENEFITS

✓ **Instant Payments**	✓ **Pre-funded Model**	✓ **Lower Fees**	✓ **Better Control**	✓ **User Experience**	✓ **Simple Refunds**
No gateway delays	Improved cash flow	Bulk loading savings	Complete visibility	One-click payments	Instant wallet credit

```
WALLET TRANSACTION FLOW:
═══════════════════════════════════════════════════════════
1. USER LOADS WALLET → Any payment method adds credit
2. WALLET BALANCE UPDATED → Real-time balance tracking
3. LICENSE PAYMENT → Instant deduction from wallet
4. TRANSACTION RECORDED → Complete audit trail
5. RECEIPT GENERATED → Proof of payment from wallet
```

5. WALLET SYSTEM IMPLEMENTATION PHASES

DIRECTOR(S): MR S MEREEOTLHE

PHASE 1: WALLET FOUNDATION (WEEK 1-2)
- Wallet Database Schema - User wallets, balances, transaction ledger
- Wallet Engine Development - Core balance management service
- Security Framework - Encryption, audit trails, fraud prevention
- API Architecture - Wallet loading and debit endpoints

PHASE 2: LOADING GATEWAY INTEGRATION (WEEK 3-4)
- Card Payment Loading - 3D Secure integration for wallet top-ups
- EFT/Bank Integration - Reference generation and verification
- ATM Deposit Support - Slip verification system
- Mobile Money Loading - USSD and app-based wallet loading

PHASE 3: WALLET OPERATIONS (WEEK 5-6)
- Balance Management - Real-time balance tracking and updates
- Transaction Processing - License payment from wallet
- Refund System - Automatic refund to wallet
- Statement Generation - Transaction history and downloads

PHASE 4: ADVANCED FEATURES (WEEK 7-8)
- Auto Top-up - Scheduled and threshold-based recharge
- Bulk Operations - Corporate wallet management
- Analytics Dashboard - Wallet usage and trend analysis
- Performance Testing - Load testing and optimization

6. SECURITY & COMPLIANCE

SECURITY MEASURES:
- PCI-DSS Compliance for card payments
- TLS 1.3 encryption for all transactions
- Tokenization of sensitive payment data
- 3D Secure authentication for online payments
- Fraud detection algorithms and monitoring

AUDIT & COMPLIANCE:
- Complete transaction audit trails
- Real-time monitoring and alerts
- Monthly reconciliation reports
- Compliance with POPIA and financial regulations

7. PAYMENT RECONCILIATION PROCESS

```
Daily Reconciliation Workflow:
1. Automated transaction matching (every 4 hours)
2. Exception reporting for mismatched payments
3. Manual review queue for exceptions
```

DIRECTOR(S): MR S MEREEOTLHE

    4. Financial system synchronization
    5. Daily reconciliation report generation

8. KEY WALLET SYSTEM INTEGRATION POINTS

8.1 KZNERA INTERNAL SYSTEMS
- Wallet Database: Dedicated database for wallet balances and transactions
- License System: Direct integration for fee calculation and payment
- Financial System: Real-time posting of wallet loads and debits
- User Management: Single sign-on with wallet account creation

8.2 WALLET LOADING PARTNERS
- Banking APIs: EFT verification for wallet credit
- Card Processors: Secure gateway for wallet top-ups
- ATM Networks: Deposit slip verification
- Mobile Networks: USSD and app-based wallet loading
- Bank Branches: Over-the-counter wallet loading

8.3 WALLET BENEFITS FOR KZNERA
- Pre-funded Operations: Improved cash flow with advance payments
- Reduced Transaction Costs: Bulk loading vs individual transactions
- Faster Processing: Instant wallet debits (no gateway delays)
- Better Control: Complete visibility of user funds
- Simplified Reconciliation: Single wallet ledger for all transactions

9. WALLET SYSTEM PERFORMANCE METRICS

EXPECTED PERFORMANCE:
- Wallet Loading: < 3 seconds for card/mobile money top-ups
- License Payment: < 1 second wallet debit (no external gateway)
- Balance Update: Real-time balance reflection
- System Availability: 99.9% uptime SLA
- Concurrent Users: Support for 5,000+ simultaneous wallet operations
- Daily Volume: Capable of processing 50,000+ wallet transactions/day
- Cost Savings: 40-60% reduction in transaction processing fees

10. SUPPORT & MAINTENANCE

POST-IMPLEMENTATION SUPPORT:
- 24/7 payment gateway monitoring
- Real-time alert system for payment failures
- Dedicated support channel for payment issues
- Monthly performance and reconciliation reports

11. WHY WALLET-CENTRIC ARCHITECTURE?

STRATEGIC ADVANTAGES FOR KZNERA:

FINANCIAL BENEFITS:
- Improved Cash Flow - Funds collected before service delivery
- Reduced Transaction Fees - Single bulk load vs multiple small payments
- Better Revenue Predictability - Pre-funded model ensures payment
- Simplified Accounting - Single ledger for all transactions

OPERATIONAL BENEFITS:
- Instant Processing - No waiting for payment gateway responses
- Reduced Failed Transactions - Pre-verified wallet balance
- Automatic Refunds - Credits return to wallet instantly
- Batch Processing - Corporate clients can fund multiple licenses

USER EXPERIENCE BENEFITS:
- One-Click Payments - No repeated payment details entry
- Transaction History - Complete view of all wallet activities
- Faster License Processing - Instant payment confirmation
- Multiple Payment Options - Flexibility in how to load wallet

TECHNICAL BENEFITS:
- Reduced Complexity - Single payment flow for all methods
- Better Security - No payment details stored in license system
- Easier Maintenance - Centralized payment logic
- Scalability - Wallet system scales independently

12. NEXT STEPS

IMMEDIATE ACTIONS REQUIRED:
1. Wallet System Approval - Confirm wallet-centric architecture approach
2. Loading Methods Priority - Which payment methods to implement first
3. Minimum Balance Policy - Set minimum wallet balance requirements
4. Corporate Accounts - Define bulk loading and management rules
5. Refund Policy - Establish wallet refund and withdrawal rules

13. QUESTIONS FOR DISCUSSION
1. Wallet Implementation: Does KZNERA approve the recommended wallet-centric approach?
2. Initial Loading Methods: Which payment methods should we prioritize for wallet loading?
3. Minimum Balance: Should there be a minimum wallet balance requirement?
4. Wallet Withdrawals: What are the rules for withdrawing funds from wallets?
5. Corporate Wallets: How should bulk corporate wallet management work?

6. Auto Top-up: Should we implement automatic wallet recharge features?

7. Reporting Requirements: What wallet analytics and reports are needed?

We look forward to your feedback and are ready to begin implementation immediately upon your approval. The payment system will be a critical component of the KZNERA platform, ensuring smooth financial operations and enhanced user experience.

Please don't hesitate to reach out if you need any clarification or have additional requirements for the payment system implementation.

Best regards,

Sabata Mereeotlhe
Project Lead
Joxicraft (Pty) Ltd
Mobile: 0782900808
Email: sabata@joxicraft.co.za