

ANNEX 3: KEY PERFORMANCE METRICS FOR INSTANT PAYMENT

Metric	Description	Target Value (examples)	Measurement Method
Transaction Processing Performance Metrics			
End-to-End Processing Time	Total elapsed time from payment initiation to funds availability	< 10 seconds (95th percentile)	System timestamps at transaction initiation and completion
Transaction Throughput	Number of transactions processed per second	Minimum 1,000 TPS with the ability to scale to 5,000+ TPS during peak periods	Continuous monitoring of system throughput
Transaction Success Rate	Percentage of transactions completed successfully	> 99.9%	Ratio of successful transactions to total transactions
Transaction Rejection Rate	Percentage of transactions rejected due to validation errors	< 0.5%	Count of rejected transactions divided by total transaction attempts
Settlement Time	Time between transaction authorization and final settlement	<5 seconds for instant settlement model	Timestamps at authorization and settlement completion
System Availability and Reliability Metrics			
System Uptime	Percentage of time the system is fully operational	99.999% (five nines)	Continuous monitoring with automated alerting
Mean Time Between Failures	Average time between system failures	> 3,000 hours	Time tracking between documented failure incidents
Mean Time to Recovery	Average time to restore service after failure	< 5 minutes	Time tracking from failure detection to resolution
Recovery Time Objective	Time to restore service after a major disaster	< 30 minutes	Disaster recovery testing and actual incident data

Metric	Description	Target Value (examples)	Measurement Method
Recovery Point Objective	Maximum acceptable data loss during recovery	Zero data loss (synchronous replication)	Analysis of recovered data after incidents or tests
Component Availability	Availability of individual system components	>99.99% per component	Component-level monitoring
Planned Maintenance Impact	Transaction success rate during maintenance	>99.9% (minimal impact)	Comparison of success rates during maintenance vs. normal operation
Performance Scalability Metrics			
Maximum Throughput Capacity	The upper limit of transactions the system can process per second	> 5,000 TPS with ability to scale to 10,000+ TPS	Controlled load testing at increasing volumes
Horizontal Scaling Efficiency	Performance improvement when adding processing nodes	> 85% linear scaling efficiency	Performance comparison with a varying number of nodes
Vertical Scaling Limits	Performance constraints when adding resources to existing nodes	Documented limits with clear upgrade paths	Benchmark testing with increasing resources
Network Bandwidth Utilization	Percentage of available network capacity used during peak loads	< 70% of available bandwidth	Network traffic monitoring across all interfaces
Security and Fraud Prevention Metrics			
Fraud Rate	Value of fraudulent transactions as a percentage of total value	< 0.005% (5 basis points)	Analysis of confirmed fraud cases
False Positive Rate	Legitimate transactions incorrectly flagged as fraudulent	< 0.5% of all transactions	Tracking of fraud alerts and subsequent validations
False Negative Rate	Fraudulent transactions not detected by security systems	< 0.001% of all transactions	Post-transaction fraud analysis
Authentication Failure Rate	Failed authentication attempts by legitimate users	< 5% on first attempt	Authentication log analysis

Metric	Description	Target Value (examples)	Measurement Method
Security Vulnerability Remediation Time	Time to patch identified security vulnerabilities	Critical: < 24 hours High: < 7 days Medium: < 30 days	Tracking from vulnerability discovery to patch deployment
Data Encryption Coverage	Percentage of sensitive data encrypted at rest and in transit	100% of sensitive data	Security configuration audits
Penetration Testing Frequency	Regularity of security testing by independent parties	Quarterly comprehensive tests	Documentation of completed penetration tests
API Performance and Integration Metrics			
API Response Time	Time from request receipt to response delivery	< 200ms (95th percentile)	API gateway response time tracking
API Throughput	Number of API requests processed per second	> 2,000 requests per second	API gateway throughput monitoring
API Error Rate	Percentage of API calls resulting in server errors	< 0.1% server error rate	HTTP status code monitoring
API Version Adoption	Percentage of traffic on each API version	> 95% on current version	API traffic analysis by version
SDK Integration Success Rate	Percentage of SDK integrations completed successfully	> 95% success rate	SDK integration analytics and developer feedback