**Software Requirements Specification (SRS) Template**

**Project:** Customer Relationship Management

**Version:** 1.0

**Authors:** K S SAGARI

MAHIMA R SHETTY JYOTSANA S JAHNAVI SRINATH

**Date:** 18-08-2025

**Status:** Model Answer / Approved

**Revision history**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version | Date | Author | Change summary | Approval |
| 1.0 | 03-09-2025 | Instructor | SRS with diagrams  embedded |  |

**Approvals**

|  |  |  |  |
| --- | --- | --- | --- |
| Role | Name | Signature / Email | Date |
| Course Coordinator |  |  |  |

**Table of Contents**

1. Introduction
2. Overall description
3. External interfaces
4. System features (detailed)
5. Non-functional requirements (detailed)
6. Quality attributes & Acceptance tests
7. UML Use-Case Diagram
8. Requirements Traceability Matrix (RTM)

## Introduction

* 1. Purpose

This document is a Software Requirements Specification (SRS) for a Customer Relationship Management (CRM) system that helps organizations manage the customer lifecycle across Reach, Acquire, Convert, Retain, and Loyalty stages

* 1. Scope

This SRS covers user interactions with the CRM system related to reaching, acquiring, converting, and retaining customers, as well as managing loyalty. It includes functionalities for managing leads, tracking sales pipelines, and handling customer support. The document excludes external third-party software beyond APIs and hardware specifications.

* 1. Audience

Developers, QA Engineers, System Integrators, Marketing team and sales staff, maintenance technicians, and project managers

* 1. Definitions

List of acronyms:ATM, PIN, OTP, UI, API, EMV, TLS, RTO, RPO

## Overall description

* 1. Product perspective

The CRM system is a web-based application that interacts with various user roles to manage customer data and interactions. It includes a user interface, a backend for data processing, and networked services for integration with other platforms.

* 1. Major product functions (detailed) The CRM will support:
     + Marketing campaign management (reach)
     + Lead capture & onboarding (acquire)
     + Lead scoring & sales conversion (convert)
     + Customer support & engagement tracking (retain)
     + Rewards, referrals & feedback for loyalty (loyalty)
  2. User roles and characteristics (expanded)
     + Marketing executive (runs campaigns, monitors reach)
     + Sales executive (tracks leads, converts customers)
     + Customer support (handles retention and complaints)
     + Manager/Administrator (monitors analytics, sets KPIs)
     + Customer (interacts via portal/email/SMS for loyalty programs
  3. Operating environment

The CRM system will operate on a secure cloud-based platform accessible via web browsers. It will use standard enterprise databases and will be integrated with other business systems via APIs.

* 1. Constraints

GDPR/Data privacy compliance, must integrate with email/SMS gateways, scalability to thousands of customers.

## External interface requirements

* 1. User interfaces

The primary UI will be a responsive, web-based dashboard with clear navigation menus. The interface must be optimized for various screen sizes.

* 1. Hardware interfaces

None specific (runs on standard computers/servers).

* 1. Software interfaces
     + Email Marketing API: For sending automated emails and tracking campaign performance.
     + Payment Gateway API: For processing sales transactions and subscriptions.
     + Customer Support API: For integrating with helpdesk software.
     + Analytics API: For sending event data to business intelligence tools.
  2. Communications

Secure HTTPS/TLS for all communication.

<< Make sure overall there are at least 15 FRs for overall project, 5 NFRs, 2 security objectives and 5 Security requirements>>

## System features (detailed)

Each requirement below includes acceptance criteria and a reference test case. Requirement IDs follow CRM-F-###

## Reach (Marketing)

Description: Attract and capture new leads for the business.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Req ID | Requirement | Type | Priority | Source/S takehold er | Acceptance criteria / Test case ref | Commen ts / Depende ncies |
| CRM- F-001 | The system shall allow creation and management of marketing campaigns. | Functi onal | High | Marketin g / Sales | C-CRM-F-  001: A user can create a campaign with a name, budget, and start/end dates. Test:  TC-Mktg-01 | Requires Admin permissi ons |
| CRM- | The system | Functi | High | Marketin | AC-CRM-F- | Requires |
| F-002 | shall track | onal |  | g / | 002: A | integratio |
|  | and report on |  |  | Manage | report can | n with |
|  | campaign |  |  | ment | be | lead |
|  | performance, |  |  |  | generated | capture |
|  | including key |  |  |  | showing the |  |
|  | metrics like |  |  |  | number of |  |
|  | leads |  |  |  | leads |  |
|  | generated. |  |  |  | attributed to |  |
|  |  |  |  |  | a specific |  |
|  |  |  |  |  | campaign. |  |
|  |  |  |  |  | Test: TC- |  |
|  |  |  |  |  | Mktg-022 |  |
| CRM- | The system | Functi | Mediu | Marketin | AC-CRM-F- | Requires |
| F-003 | shall | onal | m | g | 003: Leads | third- |
|  | integrate with |  |  |  | from a | party API |
|  | external APIs |  |  |  | social | keys |
|  | (e.g., social |  |  |  | media form |  |
|  | media) for |  |  |  | are |  |
|  | lead capture. |  |  |  | automaticall |  |
|  |  |  |  |  | y populated |  |
|  |  |  |  |  | into the |  |
|  |  |  |  |  | CRM. Test: |  |
|  |  |  |  |  | TC-Mktg-03 |  |

## Acquire (Onboarding/Lead Capture)

Description: Convert leads into structured customer data.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Req ID | Requiremen t (shall...) | Type | Priority | Source/S takehold er | Acceptanc e criteria / Test case ref | Commen ts / Depende ncies |
| CRM- | The system | Function | High | Sales / | AC-CRM- | Requires |
| F-004 | shall | al |  | Marketin | F-004: A | form-to- |
|  | automaticall |  |  | g | form | CRM |
|  | y capture |  |  |  | submissio | integratio |
|  | leads from |  |  |  | n on the | n |
|  | specified |  |  |  | website |  |
|  | web forms. |  |  |  | creates a |  |
|  |  |  |  |  | new lead |  |
|  |  |  |  |  | record in |  |
|  |  |  |  |  | the CRM. |  |
|  |  |  |  |  | Test: TC- |  |
|  |  |  |  |  | Acq-01 |  |
| CRM- | The system | Function | High | All users | AC-CRM- | Core |
| F-005 | shall | al |  |  | F-005: A | CRM |
|  | provide a |  |  |  | user can | function |
|  | centralized |  |  |  | view and |  |
|  | database to |  |  |  | edit a |  |
|  | store and |  |  |  | customer's |  |
|  | manage all |  |  |  | profile, |  |
|  | customer |  |  |  | including |  |
|  | profiles. |  |  |  | contact |  |
|  |  |  |  |  | details and |  |
|  |  |  |  |  | history. |  |
|  |  |  |  |  | Test: TC- |  |
|  |  |  |  |  | Acq-02 |  |
| CRM- | The system | Function | HIgh | Sales | AC-CRM- | Requires |
| F-006 | shall allow | al |  |  | F-006: A | manual |
|  | manual |  |  |  | sales | data |
|  | creation and |  |  |  | representa | entry UI |
|  | import of |  |  |  | tive can |  |
|  | lead |  |  |  | manually |  |
|  | records. |  |  |  | add a new |  |
|  |  |  |  |  | lead |  |
|  |  |  |  |  | record. |  |
|  |  |  |  |  | Test: TC- |  |
|  |  |  |  |  | Acq-03 |  |

## Convert (Sales Funnel)

Description: Guide and manage the sales process from lead to closed deal.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Req ID | Requirem ent | Type | Priority | Source/ Stakeh older | Acceptance criteria / Test case ref | Comme nts / Depend encies |
| CRM- | The | Function | High | Sales | AC-CRM-F- | Require |
| F-007 | system | al |  |  | 007: A user | s |
|  | shall track |  |  |  | can move | pipeline |
|  | opportunit |  |  |  | an | configur |
|  | ies |  |  |  | opportunity | ation |
|  | through |  |  |  | from one |  |
|  | customiza |  |  |  | stage to the |  |
|  | ble |  |  |  | next in the |  |
|  | pipeline |  |  |  | sales |  |
|  | stages. |  |  |  | pipeline. |  |
|  |  |  |  |  | Test: TC- |  |
|  |  |  |  |  | Conv-01 |  |
| CRM- | The | Function | High | Sales / | AC-CRM-F- | Dashbo |
| F-008 | system | al |  | Manag | 008: The | ard view |
|  | shall |  |  | ement | dashboard | required |
|  | provide a |  |  |  | displays |  |
|  | visual |  |  |  | opportunitie |  |
|  | dashboar |  |  |  | s |  |
|  | d of the |  |  |  | categorized |  |
|  | sales |  |  |  | by their |  |
|  | pipeline. |  |  |  | current |  |
|  |  |  |  |  | stage. Test: |  |
|  |  |  |  |  | TC-Conv- |  |
|  |  |  |  |  | 02 |  |
| CRM- | The | Function | Mediu | Sales | AC-CRM-F- | Require |
| F-009 | system | al | m |  | 009: A | s |
|  | shall |  |  |  | lead's score | integrati |
|  | provide a |  |  |  | is updated | on with |
|  | lead |  |  |  | based on | engage |
|  | scoring |  |  |  | their | ment |
|  | mechanis |  |  |  | interactions | data |
|  | m to |  |  |  | (e.g., email |  |
|  | prioritize |  |  |  | opens, |  |
|  | leads. |  |  |  | website |  |
|  |  |  |  |  | visits). Test: |  |
|  |  |  |  |  | TC-Conv- |  |
|  |  |  |  |  | 03 |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CRM- | The | Function | High | Sales | AC-CRM-F- | Require |
| F-010 | system | al |  |  | 010: An | s task |
|  | shall |  |  |  | alert is sent | manage |
|  | generate |  |  |  | to a | ment |
|  | automate |  |  |  | salesperso | feature |
|  | d follow- |  |  |  | n for a task |  |
|  | up |  |  |  | due date. |  |
|  | reminders |  |  |  | Test: TC- |  |
|  | for sales |  |  |  | Conv-04 |  |
|  | tasks. |  |  |  |  |  |
| CRM- | The | Function | Mediu | Sales | AC-CRM-F- | Require |
| F-011 | system | al | m |  | 011: A user | s |
|  | shall allow |  |  |  | can | template |
|  | users to |  |  |  | generate a | manage |
|  | generate |  |  |  | PDF | ment |
|  | and send |  |  |  | proposal |  |
|  | proposals |  |  |  | based on a |  |
|  | or quotes |  |  |  | template |  |
|  | to |  |  |  | with |  |
|  | customers |  |  |  | populated |  |
|  | . |  |  |  | data. Test: |  |
|  |  |  |  |  | TC-Conv- |  |
|  |  |  |  |  | 05 |  |

## Retain (Customer Support)

Description: Manage and track customer issues to ensure satisfaction.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Req ID | Requireme nt | Type | Priority | Source/ Stakeho lder | Acceptance criteria / Test case ref | Comme nts / Depend encies |
| CRM- | The system | Functi | High | Custom | AC-CRM-F- | Core |
| F-012 | shall | onal |  | er | 012: A new | support |
|  | provide a |  |  | Support | support | module |
|  | ticket |  |  |  | ticket can be | function |
|  | manageme |  |  |  | created, |  |
|  | nt module |  |  |  | assigned, |  |
|  | for support |  |  |  | and tracked |  |
|  | cases. |  |  |  | to |  |
|  |  |  |  |  | resolution. |  |
|  |  |  |  |  | Test: TC- |  |
|  |  |  |  |  | Retain-01 |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| CRM- | The system | Functi | High | All | AC-CRM-F- | Require |
| F-013 | shall | onal |  | users | 013: A user | s |
|  | maintain a |  |  |  | can view a | integrati |
|  | complete |  |  |  | log of all | on with |
|  | history of |  |  |  | emails, | commun |
|  | all |  |  |  | calls, and | ication |
|  | customer |  |  |  | support | tools |
|  | interactions |  |  |  | tickets for a |  |
|  | . |  |  |  | specific |  |
|  |  |  |  |  | customer. |  |
|  |  |  |  |  | Test: TC- |  |
|  |  |  |  |  | Retain-02 |  |

## Loyalty (Rewards & Engagement)

Description: Reward customer loyalty to encourage repeat business.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Req ID | Require ment | Type | Priority | Source/ Stakeho lder | Acceptanc e criteria / Test case ref | Commen ts / Depende ncies |
| CRM-F- | The | Functi | Medium | Marketi | AC-CRM- | Requires |
| 014 | system | onal |  | ng / | F-014: A | loyalty |
|  | shall |  |  | Manage | user can | module |
|  | support |  |  | ment | manually |  |
|  | a points- |  |  |  | add or |  |
|  | based |  |  |  | deduct |  |
|  | loyalty |  |  |  | loyalty |  |
|  | program |  |  |  | points for a |  |
|  |  |  |  |  | customer. |  |
|  |  |  |  |  | Test: TC- |  |
|  |  |  |  |  | Loyalty-01 |  |
| CRM-F- | The | Functi | High | Manage | AC-CRM- | Requires |
| 015 | system | onal |  | ment | F-015: A | data |
|  | shall |  |  |  | report | from |
|  | generate |  |  |  | shows the | loyalty |
|  | reports |  |  |  | number of | module |
|  | on |  |  |  | active |  |
|  | custome |  |  |  | loyalty |  |
|  | r loyalty |  |  |  | members |  |
|  | metrics. |  |  |  | and total |  |
|  |  |  |  |  | points |  |
|  |  |  |  |  | redeemed. |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | Test: TC- Loyalty-02 |  |

## Non-functional requirements (detailed)

NFRs below are measurable and tied to test plans. IDs follow CRM-NF-###.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Req ID | Requirement | Category | Priority | Acceptance criteria / Measurement |
| CRM-NF-001 | Overall page load time shall be ≤ 3 seconds for 95% of requests under normal  load. | Performance | High | 95th percentile page load time ≤ 3s in performance test. Test: TC-Perf-01 |
| CRM-NF-002 | System shall provide 99.5%  availability monthly; scheduled maintenance  excluded. | Reliability | High | Uptime reports show  ≥ 99.5%  monthly. Test: Ops reports. |
| CRM-NF-003 | All personal data must comply with GDPR/  Privacy  regulations. | Security/Com pliance | High | Audit checklist pass, no plaintext PII stored. Test: TC-Sec-01 |
| CRM-NF-004 | The system shall support a minimum of 100  concurrent users without significant performance  degradation. | Scalability | High | Load testing with 100 users maintains response times below 5 seconds.  Test: TC-  Perf-02 |
| CRM-NF-005 | The user interface shall be responsive and fully | Usability/Acc essibility | Medium | UI passes responsive design tests on various |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | functional on screen sizes from 320px to 1920px width. |  |  | devices. Test: TC-UX-01 |

* 1. **Security**

# Security Objectives

* + - * Data Confidentiality: Ensure that sensitive business data are accessible only to authorized personnel.
      * System Integrity: Protect the system and its data from unauthorized modification or deletion.

# Security Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Req ID | Requirement | Type | Priority | Acceptance criteria / Test case ref |
| CRM-SR-001 | All network connections must use TLS 1.2+  encryption. | Security | High | Network traffic is verified to be encrypted using TLS 1.2 or higher. Test: TC-Sec-02 |
| CRM-SR-002 | User passwords must be stored using a strong, salted cryptographic hash function. | Security | High | Database audit shows no plaintext passwords.  Test: TC-Sec- 03 |
| CRM-SR-003 | The system shall implement Role-Based Access Control (RBAC) to  enforce permissions. | Security | High | A sales user cannot access or modify a marketing campaign.  Test: TC-Sec- 04 |
| CRM-SR-004 | The system shall log all | Security | Medium | Log review shows all login |

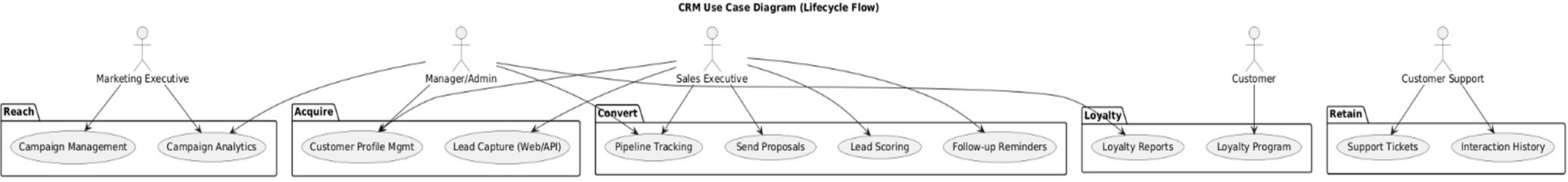
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | login attempts and failed login attempts. |  |  | events with timestamps and IP addresses. Test: TC-Sec- 05 |
| CRM-SR-005 | Sensitive data exports shall require a two- factor authentication (2FA) or admin approval. | Security | High | A user cannot export customer data without a secondary authentication step. Test: TC- Sec-06 |

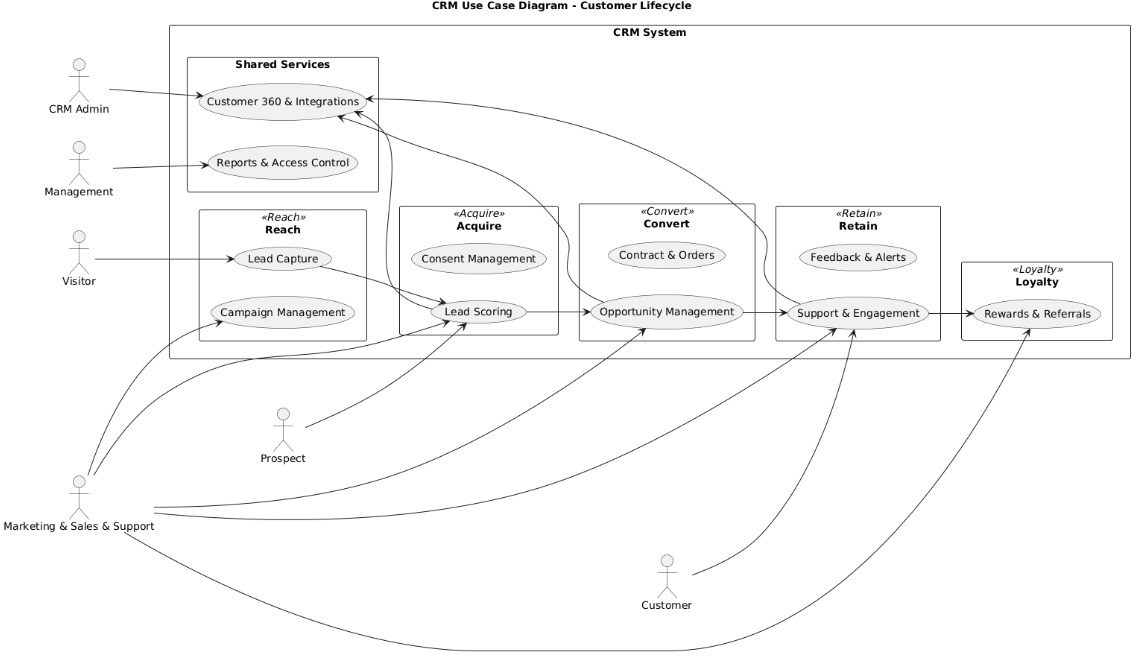
## Quality attributes & Acceptance tests

* Exit Criteria for Acceptance: All high-priority functional requirements are implemented and verified, no critical non-functional failures, and the Requirements Traceability Matrix (RTM) shows all test cases passed.
* Acceptance Test Suites: Test suites for Lead Management, Sales Pipeline, Customer Support, Performance, and Security.

1. **System models and diagrams**

# UML Use-Case diagram

****



1. **Requirements Traceability Matrix (RTM)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Req ID | Requireme nt short | Section ref / Design Spec | Module | Test case(s) | Status (N/P/A) | Comments |
| CRM- F-001 | Create campaigns | 4.1 / DS-  Mktg-01 | Marketin gModule | TC-  Mktg- 01 | N | Requires Admin permissions |
| CRM- F-002 | Track campaign performanc e | 4.1 / DS-  Mktg-02 | Marketin gModule | TC-  Mktg- 02 | N | Requires integration with lead capture |
| CRM- F-003 | Integrate with social | 4.1 / DS-  Mktg-03 | Marketin gModule | TC-  Mktg- | N | Requires third-party |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | APIs |  |  | 03 |  | API keys |
| CRM- F-004 | Capture web leads | 4.2 / DS-  Acq-01 | Onboardi ngModul e | TC-  Acq-01 | N | Requires form-to- CRM  integration |
| CRM- F-005 | Store customer profiles | 4.2 / DS-  Acq-02 | Onboardi ngModul e | TC-  Acq-02 | N | Core CRM function |
| CRM- F-006 | Manual lead creation | 4.2 / DS-  Acq-03 | Onboardi ngModul e | TC-  Acq-03 | N | Requires manual data entry UI |
| CRM- F-007 | Track sales stages | 4.3 / DS-  Conv-01 | SalesMo dule | TC-  Conv- 01 | N | Requires pipeline configuratio n |
| CRM- F-008 | Sales pipeline dashboard | 4.3 / DS-  Conv-02 | SalesMo dule | TC-  Conv- 02 | N | Dashboard view required |
| CRM- F-009 | Lead scoring mechanism | 4.3 / DS-  Conv-03 | SalesMo dule | TC-  Conv- 03 | N | Requires integration with engagement data |
| CRM- F-010 | Automated follow-ups | 4.3 / DS-  Conv-04 | SalesMo dule | TC-  Conv- 04 | N | Requires task managemen t feature |
| CRM- F-011 | Generate proposals/q uotes | 4.3 / DS-  Conv-05 | SalesMo dule | TC-  Conv- 05 | N | Requires template managemen t |
| CRM- F-012 | Ticket manageme nt | 4.4 / DS-  Retain-01 | Support Module | TC-  Retain- 01 | N | Core support module function |
| CRM- F-013 | Maintain interaction history | 4.4 / DS-  Retain-02 | Support Module | TC-  Retain- 02 | N | Requires integration with |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | communicati on tools |
| CRM- F-014 | Support loyalty program4.5  / DS-  Loyalty-01 | 4.5 / DS-  Loyalty-01 | LoyaltyM odule | TC-  Loyalty- 01 | N | Requires loyalty module |
| CRM- F-015 | Report on loyalty metrics | 4.5 / DS-  Loyalty-02 | LoyaltyM odule | TC-  Loyalty- 02 | N | Requires data from loyalty module |
| CRM- NF- 001 | Page load time target | 5 / DS-Perf-  01 | Frontend  /Backend | TC-  Perf-01 | N |  |
| CRM- NF- 002 | System availability | 5 / DS-  Reliability-01 | Operatio ns | TC-  Availabi lity-01 | N | Test via uptime reports |
| CRM- NF- 003 | GDPR  compliance | 5 / DS-  Comp-01 | All Modules | TC-  Sec-01 | N |  |
| CRM- NF- 004 | Support 100  concurrent users | 5 / DS-  Scalability- 01 | Backend | TC-  Perf-02 | N |  |
| CRM- NF- 005 | Responsive UI | 5 / DS-UX-  01 | Frontend | TC-UX- 01 | N |  |
| CRM- SR- 001 | TLS 1.2+  mandatory | 5.1 / DS-  Sec-01 | Commun ications | TC-  Sec-02 | N |  |
| CRM- SR- 002 | Hashed passwords | 5.1 / DS-  Sec-02 | UserMg mtModul e | TC-  Sec-03 | N |  |
| CRM- SR- 003 | RBAC  implementa tion | 5.1 / DS-  Sec-03 | UserMg mtModul e | TC-  Sec-04 | N |  |
| CRM- | Log login | 5.1 / DS- | Logging | TC- | N |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SR- 004 | attempts | Sec-04 | Module | Sec-05 |  |  |
| CRM- SR- 005 | Export approval | 5.1 / DS-  Sec-05 | AdminMo dule | TC-  Sec-06 | N |  |