

CMDA Plan Permit Scraper - Requirements Document

Document Version 1.0

Date: January 2026

Prepared By: Thirumurugan Subramaniyan

Section No.	Title	Subsections / Description
1	Project Overview	Project title, client, objectives, business problem, solution benefits
1.1	Project Title	CMDA Plan Permit Scraper – Zoho CRM Integration System
1.2	Client	Ajantha Bathroom Products and Pipes Pvt. Ltd
1.3	Project Objective	Automated scraping, processing, and CRM lead creation
1.4	Business Problem	Manual effort, errors, delays, and tracking challenges
1.5	Solution Benefits	Time saving, accuracy, scalability, reporting
2	Business Requirements	Functional and non-functional requirements
2.1	Functional Requirements	Scraping, extraction, processing, CRM, reporting
2.1.1	Data Scraping Requirements	Website scraping, PDF download, fault tolerance
2.1.2	Data Extraction Requirements	Permit, applicant, architect details
2.1.3	Data Processing Requirements	Validation, deduplication, sales assignment
2.1.4	CRM Integration Requirements	Zoho CRM OAuth, lead creation, batching
2.1.5	Reporting Requirements	Excel reports, PDF summaries, statistics
2.1.6	Notification Requirements	Email alerts and reports

Section No.	Title	Subsections / Description
2.2	Non-Functional Requirements	Performance, reliability, usability, security
2.2.1	Performance Requirements	Processing speed, concurrency
2.2.2	Reliability Requirements	Retry logic, data integrity
2.2.3	Usability Requirements	GUI, progress indicators
2.2.4	Security Requirements	Credential encryption, privacy
2.2.5	Compatibility Requirements	OS, Excel, CRM, email
3	User Requirements	Roles, needs, UI expectations
3.1	User Roles	Sales Manager, Sales Team, IT Administrator
3.1.1	Sales Manager	Monitoring, reports, territory management
3.1.2	Sales Team Members	Lead follow-up, CRM updates
3.1.3	IT Administrator	Configuration, troubleshooting
3.2	User Interface Requirements	Screens, navigation, feedback
3.2.1	Main Screen Requirements	Controls, progress, branding
3.2.2	Navigation Requirements	Layout, consistency
3.2.3	Feedback Requirements	Notifications, errors
4	Data Requirements	Input and output data
4.1	Input Data Sources	CMDA website, PDF documents
4.1.1	CMDA Website Data	HTML tables, yearly data
4.1.2	PDF Documents	Permit and architect details
4.2	Output Data Requirements	Excel, CRM, reports
4.2.1	Excel Report Format	Column definitions

Section No.	Title	Subsections / Description
4.2.2	Zoho CRM Lead Fields	CRM field mapping
4.2.3	Report Files	Excel, PDF, database files
5	Process Requirements	End-to-end workflow
5.1	Main Processing Workflow	Scraping, processing, CRM, reporting
5.1.1	Scraping Process	PDF collection and parsing
5.1.2	Data Processing Process	Validation, matching
5.1.3	CRM Integration Process	Lead creation
5.1.4	Reporting Process	Report generation
5.2	Business Rules	Sales assignment, matching logic
5.2.1	Sales Territory Assignment	Area-based mapping
5.2.2	Record Matching Rules	Matched vs unmatched
5.2.3	Data Validation Rules	Field constraints
5.2.4	Error Handling Rules	Retry and logging
6	Integration Requirements	External system integration
6.1	External System Integrations	Zoho CRM, Email, File system
6.1.1	Zoho CRM Integration	REST API, OAuth
6.1.2	Email System Integration	Gmail SMTP
6.1.3	File System Integration	Local storage
6.2	Data Exchange Requirements	Formats and APIs
6.2.1	Data Formats	Input/output formats
6.2.2	API Specifications	Endpoints and responses
7	Quality Requirements	Performance, security, usability
7.1	Performance Requirements	Speed and resource usage

Section No.	Title	Subsections / Description
7.2	Reliability Requirements	Accuracy and recovery
7.3	Security Requirements	Data protection
7.4	Usability Requirements	User experience
8	Constraints	Technical, business, regulatory
8.1	Technical Constraints	OS, runtime, hardware
8.2	Business Constraints	CRM and process limits
8.3	Regulatory Constraints	Compliance and privacy
9	Assumptions	Technical, business, operational
9.1	Technical Assumptions	System stability
9.2	Business Assumptions	Sales process
9.3	Operational Assumptions	Daily usage
10	Dependencies	External and internal dependencies
10.1	External Dependencies	CMDA, Zoho, Gmail
10.2	Internal Dependencies	Sales team, IT
10.3	Development Dependencies	Libraries and frameworks

1. PROJECT OVERVIEW

1.1 Project Title

CMDA Plan Permit Scraper - Zoho CRM Integration System

1.2 Client

Ajantha Bathroom Products and Pipes Pvt. Ltd

1.3 Project Objective

To develop an automated system that extracts planning permit data from the Chennai Metropolitan Development Authority (CMDA) website, processes the information, and creates leads in Zoho CRM for sales team follow-up.

1.4 Business Problem

Currently, the sales team manually searches for new construction permits on the CMDA website, extracts relevant information, and manually creates leads in CRM. This process is:

- Time-consuming (4-6 hours daily)
- Prone to human error
- Inconsistent in data collection
- Delayed in lead creation
- Difficult to track and report

1.5 Solution Benefits

- Time Saving: Reduce manual work from 6 hours to 15 minutes daily
- Accuracy: Ensure 100% data consistency and completeness
- Timeliness: Real-time lead creation as permits are published
- Reporting: Automated analytics and performance tracking
- Scalability: Process unlimited permits without additional resource

2. BUSINESS REQUIREMENTS

2.1 Functional Requirements

2.1.1 Data Scraping Requirements

- Must extract data from CMDA website for years: 2022, 2023, 2024, 2025
- Must handle different entry counts (10, 25, 50, All records per page)
- Must download PDF documents from the website
- Must extract text content from downloaded PDFs

- Must continue processing even if some records fail

2.1.2 Data Extraction Requirements

- Must extract the following fields from each permit:

- File Number
- Planning Permission Number
- Permit Number
- Date of Permit
- Date of Application
- Mobile Number
- Email ID
- Applicant Name with Address
- Nature of Development
- Site Address
- Area Name

- Must extract architect details from approval letters:

- Architect Name
- Architect Address
- Architect Email
- Architect Mobile Number

2.1.3 Data Processing Requirements

- Must identify and extract dwelling unit information
- Must categorize records as matched or unmatched based on business rules
- Must assign sales team members based on geographical areas
- Must handle shared sales territories (e.g., "Jagan / Karthik")
- Must validate and clean extracted data
- Must compare new records with existing database to avoid duplicates

2.1.4 CRM Integration Requirements

- Must authenticate with Zoho CRM using OAuth 2.0
- Must create Leads in Zoho CRM with all extracted information
- Must assign leads to correct sales team members
- Must calculate number of bathrooms based on dwelling units

- Must handle batch creation of records (up to 100 at a time)
- Must provide success/failure feedback for each record

2.1.5 Reporting Requirements

- Must generate Excel reports with all extracted data
- Must include hyperlinks to original PDF documents
- Must generate PDF summary reports with statistics
- Must track successful vs failed scrapes
- Must record new vs existing records

2.1.6 Notification Requirements

- Must send email alerts for unmatched areas
- Must send email reports for matched/unmatched records
- Must send alert when no new records are found
- Must include attachments with detailed data

2.2 Non-Functional Requirements

2.2.1 Performance Requirements

- Must process 100+ PDFs within 30 minutes
- Must handle PDFs up to 10MB in size
- Must support concurrent processing of multiple years
- System response time for GUI operations: < 2 seconds

2.2.2 Reliability Requirements

- Must achieve 95% successful data extraction rate
- Must continue processing even if individual PDFs fail
- Must automatically retry failed operations
- Must maintain data integrity throughout processing

2.2.3 Usability Requirements

- Must have intuitive graphical user interface
- Must provide clear progress indicators
- Must show real-time statistics during processing
- Must have professional branding and styling
- Must require minimal training for users

2.2.4 Security Requirements

- Must securely store CRM credentials
- Must encrypt authentication tokens
- Must not store sensitive data in plain text
- Must comply with data privacy regulations

2.2.5 Compatibility Requirements

- Must work on Windows 10/11 operating systems
- Must support Excel 2016 and later
- Must integrate with Zoho CRM
- Must work with Gmail for email notifications

3. USER REQUIREMENTS

3.1 User Roles

3.1.1 Sales Manager

- Primary Goal: Monitor lead generation and team performance

- Tasks:

- Run the scraper for different years
- Generate reports
- Review unmatched areas
- Assign territories to sales team

- Needs:

- Simple interface with start/stop controls
- Visual progress indicators
- Comprehensive reports
- Email notifications

3.1.2 Sales Team Members

- Primary Goal: Receive qualified leads in CRM

- Tasks:

- Receive leads in Zoho CRM
- Follow up with prospects
- Update lead status

- Needs:

- Accurate lead information
- Timely lead delivery
- Complete contact details
- Correct territory assignment

3.1.3 IT Administrator

- Primary Goal: Maintain and configure the system

- Tasks:**

- Install and configure the application
- Update sales territory mappings
- Troubleshoot issues
- Manage credentials

- Needs:**

- Configuration files
- Error logging
- Maintenance tools
- Documentation

3.2 User Interface Requirements

3.2.1 Main Screen Requirements

- Display company logo and branding
- Show year selection buttons (2022-2025)
- Display entry count dropdown (10, 25, 50, All)
- Show total records found for selected year
- Include Start Scraping button
- Include Generate Report button
- Show progress bar during scraping
- Display loading animation
- Show completion message with statistics

The screenshot shows the 'CMDA PLAN PERMIT SCRAPER' application window. At the top, it displays the company logo 'AJANTHA' and the text 'Ajantha Bathroom Products and Pipes Pvt.Ltd'. Below this, the title 'CMDA PLAN PERMIT SCRAPER' is centered. A sub-instruction 'Extract digitally generated Planning Permits from CMDA - Zoho Automation and CRM integration' is present. The main interface includes a 'Selected Year: 2025' dropdown, a 'Choose Year' dropdown with options 2025, 2024, 2023, and 2022, and a 'Select Entry Count' input field set to 10. A progress bar at the bottom indicates 'Scraping: 10% (1 of 10)'. A 'Start Scraping' button is located below the progress bar. A copyright notice at the bottom states '© 2024 Ajantha Bathroom Products - AI Powered Zoho CRM Automation'.

3.2.2 Navigation Requirements

- Single-screen interface (no complex navigation)
- Clear visual hierarchy
- Consistent color scheme (company colors)
- Responsive layout for different screen sizes
- Tooltips for complex operations

3.2.3 Feedback Requirements

- Real-time progress updates
- Success/failure notifications

- File save location display
- Error messages in plain language
- Confirmation dialogs for important actions

4. DATA REQUIREMENTS

4.1 Input Data Sources

4.1.1 CMDA Website Data

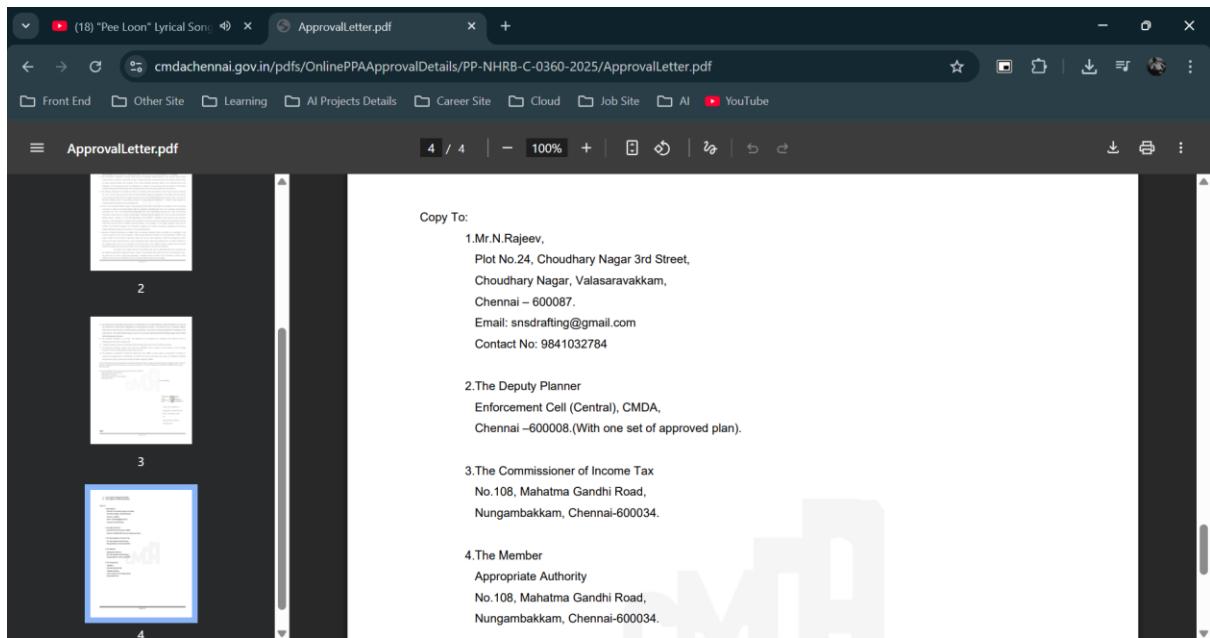
- Source: <https://cmdachennai.gov.in/OnlinePPAApprovalDetails/>
- Format: HTML tables with PDF links
- Frequency: Daily updates
- Years Required: 2022, 2023, 2024, 2025, 2026
- Records per Page: Variable (10, 25, 50, All)

Sl. No.	File No.	Permit No.	Permit Issued Date	Building Category	Approval Letter	Approved Plan	Development Charges	Plan Per
1	CMDA/PP/NHRR/S/0474/2025	01-02509	31-12-2025	Non High Rise Buildings	Annual	Approved	Development	Plan

4.1.2 PDF Documents

- Type: Planning permission documents
- Size: 100KB - 10MB per document
- Format: Scanned/Text PDFs

- Content: Permit details, applicant information, architect details



4.2 Output Data Requirements

4.2.1 Excel Report Format

Column Name	Data Type	Required	Description
File No.	Text	Yes	CMDA file number
Planning Permission No.	Text	Yes	Planning permission number
Permit No.	Text	Yes	Building permit number
Date of Permit	Date	Yes	Permit issue date
Date of Application	Date	Yes	Application submission date
Mobile No.	Text	Yes	Applicant mobile number
Email ID	Text	Yes	Applicant email address
Applicant Name	Text	Yes	Full applicant name
Applicant Address	Text	Yes	Complete applicant address
Nature of Development	Text	Yes	Type of construction
Dwelling Unit Info	Text	Yes	Number of units/dwellings
Site Address	Text	Yes	Construction site address
Area Name	Text	Yes	Geographical area

Column Name	Data Type	Required	Description
Architect Name	Text	Yes	Registered architect name
Architect Address	Text	Yes	Architect office address
Architect Email	Text	No	Architect email address
Architect Mobile	Text	No	Architect mobile number
View Online	Hyperlink	Yes	Link to original PDF
Approved Plan	Hyperlink	No	Link to approved plans
Approval Letter	Hyperlink	No	Link to approval letter
Salesperson	Text	Yes	Assigned sales team member

4.2.2 Zoho CRM Lead Fields

- Lead Name (First Name + Last Name)
- Company Name
- Email
- Mobile Number
- Planning Permission Number
- Nature of Development
- Area Name
- Site Address
- Architect Name
- Number of Bathrooms (calculated)
- Number of Units (extracted)
- Lead Owner (Salesperson)
- Lead Source (Digital Leads)
- Date of Permit

The screenshot shows the Zoho CRM interface for the Leads module. The left sidebar includes links for Home, Reports, Analytics, My Requests, CRM Teamspace, Workqueue, Leads (which is selected), Accounts, Contacts, Deals, Create Quotes, and Quote Link. The main area displays a list of leads with the following columns: Lead Owner * (with a dropdown menu), Planning Permission No, and Lead Name. A search bar at the top right allows filtering by lead name. A total of 679 records are shown, with a page size of 1 to 100.

Lead Owner *	Planning Permission No	Lead Name
Abhishek R G		Boopathy Maren
Abhishek R G		Sharvin kumar Sharvi
Abhishek R G		Karthikyan Soundarapandian and Inthu
Abhishek R G		Citrasan Arasan
Abhishek R G		Engineer
Abhishek R G		Rijesh engineer Rejish

The screenshot shows the Zoho CRM interface for the Digital Leads module. The left sidebar includes links for Home, Reports, Analytics, My Requests, CRM Teamspace, Products, Quotes, My Jobs, Locations, Showroom Employee, Digital Leads (selected), and Projects. The main area displays a list of digital leads with the following columns: Plan Permission, Lead Source, Lead Owner, and Email. A search bar at the top right allows filtering by lead name. A total of 67 records are shown, with a page size of 1 to 67.

Plan Permission	Lead Source	Lead Owner	Email
OL-PP/NHRB/0515/2025	Digital Leads	Venkatesh	prabhu.ts@ha.com
OL-PP/NHRB/0511/2025	Digital Leads	Venkatesh	caprasanth79.com

4.2.3 Report Files

- Excel Report: Saved in Downloads folder with timestamp
- PDF Summary Report: Generated on demand
- Temporary Files: Stored in temp directory during processing
- Database File: "ExistData.xlsx" for tracking processed records

File No.	Permissi	Name	Address	Area	Name	Architect	Architect	Architect	Architect	Architect	Architect	Architect	Architect	Architect	Architect	Architect	Architect	Architect	Architect
2. CMDA/PP/OL-PP/HRE OL-	Not Found	Not Found	Not Found	Thiru.T.V. No.12, Jan Building : #79 dwelling; Old Door # Mylapore															
3. CMDA/PP/OL-PP/HRE OL-01886	16-06-2022/19/10/2022/902509176	mohamed TANSIDCO 1, MSB 1, S The Planni		- - -	- - -	Thiru. A. M No. 4, Polik													
4. CMDA/PP/OL-PP/NHI OL-01906	25-06-2022/22/03/2022/944400934	venran200 MIS PRAGA 8/9, C 27, Planning P 8 dwelling Plot No.C-Adamabakk																	
5. CMDA/PP/OL-PP/HRE OL-01873	12-06-2022/18/05/2022/967713317	design@k Kishor Gok 5, Bishop The Planni																	
6. CMDA/PP/OL-PP/HRE OL-01666	25-03-2022/04/03/2022/984069922	sreepathy R Revathik 7 & 8, Flat Planning P 13 dwelling; Pot Nos.7 Adamabakk																	
7. CMDA/PP/OL-PP/NHI OL-01532	29-01-2022/11/09/2022/87545808C	athulyam ATHULYAM 5/8, 1, Thiru Proposed +11 dwelling; Door No.5 Adamabakk																	
8. CMDA/PP/OL-PP/NHI OL-02247	17-10-2022/19/06/2022/97419510C	shreanikd ASHOK KU Tiruvottiy. Planning P Single dwe Ranjith Ro. Adyar																	
9. CMDA/PP/OL-PP/NHI OL-02407	08-12-2022/26/05/2022/915002011	kceeltdpur KCEE PROF 8/19, A, 2n Planning P 10 Dwelling Old Door # Adyar																	
10. CMDA/PP/OL-PP/NHI OL-02320	12-11-2022/06/08/2022/99620309C	anilreddy Venugopal 32, na, Dh: Proposed +5 dwelling Plot No.30 Adyar																	
11. CMDA/PP/OL-PP/HRE OL-02082	28-08-2022/07/01/2022/984104801	sdineshku COROMAN 600032, Ac Planning P abutting G Adyar																	
12. CMDA/PP/OL-PP/NHI OL-01908	26-06-2022/08/01/2022/830002345	share2msc ABDUL KAI 349/125, N Proposed + Old Nos. 2 Adyar																	
13. CMDA/PP/OL-PP/NHI OL-01869	11-06-2022/06/02/2022/70922453C	aperiasam PERIASAM 7, NIL, MAI Proposed +6 Dwelling Plot No.6 #Adyar																	
14. CMDA/PP/OL-PP/NHI OL-02323	12-11-2022/28/04/2022/93423339C	nagalingar M Kandav 7/49, NIL, Planning P 20 dwelling Plot No.2 (Agaramthre																	
15. CMDA/PP/OL-PPD/LC OL-02073	25-08-2022/29/05/2022/97908817C	planning@RUBY BUIL 247, B, VEL Proposed I S.No.100/Agaramthre																	
16. CMDA/PP/OL-PPD/LC OL-01675	28-03-2022/20/01/2022/93423339C	M Kandav 7/49, NA, Proposed : S.No.236/Agaramthre																	
17. CMDA/PP/OL-PPD/LC OL-01804	19-05-2022/30/09/2022/988400881	brindhava SMK ENTE 24 A, 24 A, Planning P S.No.84/1Agraharan																	
18. CMDA/PP/OL-PPD/LC OL-02236	16-10-2022/03/07/2022/99403796C	sunassoci MIV Propri 71, 71, Kal Planning P S.Nos. 177 Alamathi																	

CMDA SCRAPING REPORT
Janatha Bathroom Products - 2025

Report Generated: 2025-01-09 15:23:56
Data File: CMDA_2025.xlsx

1. Scraping Statistics

Metric	Count
Total Records Attempted	10
Successfully Scrapped	10
Failed to Scrape	0

Failed to Scrape File Numbers: None

2. CRM Integration Results

CRM Import Status	Successful
Message	No new records to process. Excel file is up to date
Status Code	200

3. Data Analysis

New Records Count: 0

Record Type	Count
Matched Records	0
Unmatched Records	0

Unmatched Areas Count: 0

5. PROCESS REQUIREMENTS

5.1 Main Processing Workflow

5.1.1 Scraping Process

1. User selects year (2022-2025)
2. System fetches record count from CMDA website
3. User selects number of records to process
4. System scrapes PDF links from website

5. System downloads PDF documents
6. System extracts text from PDFs
7. System parses structured data from text
8. System extracts architect information

5.1.2 Data Processing Process

1. Validate extracted data
2. Clean and normalize text
3. Extract area names from addresses
4. Match areas to sales territories
5. Assign sales team members
6. Calculate derived fields (bathrooms, square feet)
7. Compare with existing records
8. Identify new records

5.1.3 CRM Integration Process

1. Authenticate with Zoho CRM
2. Format data for CRM API
3. Create leads in batches
4. Assign leads to sales team
5. Record success/failure status
6. Update existing records database

5.1.4 Reporting Process

1. Generate Excel report with all data
2. Create PDF summary report
3. Send email notifications
4. Save reports to designated folders
5. Clean up temporary files

5.2 Business Rules

5.2.1 Sales Territory Assignment

SALES TEAM TERRITORIES:

- Abhishek R G: Adambakkam, Alandur, Guindy, Madipakkam, etc.
- Jagan: Adyar, Egmore, Koyambedu, Mogappair, etc.

- Karthik: Arumbakkam, Kodambakkam, Valasaravakkam, etc.
- Venkatesh: Anakaputhur, Kindrathur, Pallavaram, Tambaram, etc.
- Dinakaran: Kottivakkam, Sholinganallur, Thiruvanmiyur, etc.
- Balachander: Maduravoyal, Ayapakkam, etc.
- Shared Territories: Jagan/Balachander, Karthik/Venkatesh, etc.

5.2.2 Record Matching Rules

- Matched Records:
 - Have "Dwelling Unit Info" populated, OR
 - Nature of Development contains keywords: school, hospital, college, etc.
- Unmatched Records: Do not meet above criteria
- New Records: Not found in existing database

5.2.3 Data Validation Rules

- Mobile numbers must be 10 digits
- Email addresses must contain "@" and ":"
- Dates must be in valid format
- Required fields cannot be empty
- File numbers must start with "CMDA"

5.2.4 Error Handling Rules

- Continue processing if single PDF fails
- Mark failed records in report
- Send alert for critical errors
- Retry failed operations once
- Log all errors for troubleshooting

6. INTEGRATION REQUIREMENTS

6.1 External System Integrations

6.1.1 Zoho CRM Integration

- Interface: REST API
- Authentication: OAuth 2.0
- Data Format: JSON
- Rate Limits: 100 records per batch
- Required Modules: Leads, Users

- Fields to Update: All lead fields as specified
- Error Handling: Retry on failure, log errors

6.1.2 Email System Integration

- Service: Gmail SMTP
- Protocol: SMTP over SSL
- Port: 465
- Authentication: App-specific password
- Attachments: Excel files up to 25MB
- Format: HTML emails with styling
- Recipients: Configurable via .env file

6.1.3 File System Integration

- Input: PDF documents from web
- Output: Excel files, PDF reports
- Storage: Local file system
- Locations: Downloads folder, Temp folder
- Permissions: Read/Write access required

6.2 Data Exchange Requirements

6.2.1 Data Formats

- Input: PDF, HTML, JSON
- Output: Excel (.xlsx), PDF, JSON
- Intermediate: Python objects, Data Frames
- Configuration: .env files, JSON files

6.2.2 API Specifications

- Zoho CRM API Version: v2
- HTTP Methods: GET, POST
- Headers: Authorization, Content-Type
- Response Codes: Handle 200, 201, 400, 401, 429
- Pagination: Not required (batch processing)

7. QUALITY REQUIREMENTS

7.1 Performance Requirements

- Scraping Speed: Process 100 records in ≤ 30 minutes

- PDF Processing: Extract text in ≤ 10 seconds per PDF
- CRM Integration: Create 100 leads in ≤ 2 minutes
- Memory Usage: ≤ 500MB during peak operation
- CPU Usage: ≤ 50% on average system

7.2 Reliability Requirements

- Availability: 99% during business hours
- Success Rate: 95% of records processed successfully
- Data Accuracy: 98% field extraction accuracy
- Error Recovery: Automatic recovery from network failures
- Data Integrity: No data loss during processing

7.3 Security Requirements

- Authentication: Secure OAuth 2.0 flow
- Credentials: Encrypted storage in .env file
- Data Protection: No sensitive data in logs
- Access Control: Local system only, no network exposure
- Compliance: Basic GDPR principles for data handling

7.4 Usability Requirements

- Learnability: Users proficient in 30 minutes
- Efficiency: Complete scraping in 3 clicks
- Error Prevention: Clear warnings before destructive actions
- Satisfaction: Professional interface meeting corporate standards
- Accessibility: Clear text, adequate contrast, simple navigation

8. CONSTRAINTS

8.1 Technical Constraints

- Must run on Windows 10/11 only
- Requires Chrome/Chromium browser installation
- Requires Python 3.8+ runtime
- Requires 4GB RAM minimum
- Requires stable internet connection
- Requires Zoho CRM account with API access

8.2 Business Constraints

- Cannot modify CMDA website data
- Must respect Zoho CRM API rate limits
- Must comply with data privacy regulations
- Must maintain sales territory assignments
- Must preserve existing CRM data structure
- Must not disrupt current sales processes

8.3 Regulatory Constraints

- Must not scrape data outside permitted use
- Must respect website terms of service
- Must handle personal data responsibly
- Must provide opt-out mechanism if required
- Must maintain data processing records

9. ASSUMPTIONS

9.1 Technical Assumptions

- CMDA website structure remains stable
- PDF document format remains consistent
- Zoho CRM API remains available
- Internet connectivity is reliable
- User has administrative rights on computer
- Antivirus software won't block the application

9.2 Business Assumptions

- Sales territory mappings are correct
- All sales team members use Zoho CRM
- Email notifications are desired
- Reports need to be saved locally
- Historical data from 2022-2025 is needed
- Process will run daily during business hours

9.3 Operational Assumptions

- IT department will handle installation
- Sales manager will run the application

- Email alerts will be monitored
- Reports will be reviewed regularly
- System will be updated as needed
- Backup of data will be maintained

10. DEPENDENCIES

10.1 External Dependencies

- CMDA website availability and structure
- Zoho CRM API availability and stability
- Gmail SMTP service availability
- Chrome/Chromium browser compatibility
- Python package availability and updates

10.2 Internal Dependencies

- Sales team territory assignments
- CRM user account permissions
- Email account credentials
- Network firewall configurations
- IT support for installation and maintenance

10.3 Development Dependencies

- Playwright browser automation library
- PDF processing libraries (pdfplumber, PyPDF2)
- Data processing libraries (pandas, openpyxl)
- GUI framework (PyQt5)
- Report generation libraries (reportlab)