**Technical Design Document (TDD)  
Dynamics 365 CE CRM MVP Journey Planning**

**Date:** 2025-05-21  
**Prepared For:** Dynamics 365 CE Implementation Team  
**Based on:** FDD - CRM MVP Journey Planning Requirements

**1. Introduction**

This Technical Design Document (TDD) translates the functional requirements outlined in the Functional Design Document (FDD) for the Dynamics 365 CE CRM MVP Journey Planning solution into comprehensive technical specifications. The TDD covers all aspects of customization, integration, data migration, PCF component evaluation, security, and includes tabular interpretations, code/pseudocode, and other technical artifacts as required.

**2. Comprehensive Coverage of FDD**

**2.1. Functional to Technical Mapping**

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| --- | --- | --- |
| **Functional Requirement** | **Technical Specification / Solution** | **Visual (Tabular) Interpretation** |
| Capture journey plans for field agents | * Custom Entity: **Journey Plan** * Attributes: Agent, Date, Route, Activities * Business Process Flow for planning stages | |  |  | | --- | --- | | **Journey Plan** | **Field Type** | | Agent | Lookup (User) | | Date | DateTime | | Route | Text | | Activities | Subgrid (Activity Entity) | |
| Approval process for journey plans | * Business Process Flow with Approval Stage * Custom fields: Status, ApprovedBy, ApprovalDate * Power Automate Flow for notifications | |  |  | | --- | --- | | **Status** | **Option Set** | | Draft | 0 | | Pending Approval | 1 | | Approved | 2 | | Rejected | 3 | |
| Integration with external mapping service | * Custom Integration using Azure Function/Logic App * REST API Invocation from D365 Plugin/JavaScript | See Integration Strategy section |
| Role-based access for journey management | * Custom Security Roles: Field Agent, Supervisor, Admin * Privilege Matrix for CRUD on Journey Plan | See Role & Privileges Matrix below |

**3. Customization Analysis**

**3.1. Entities and Attributes Table**

|  |  |  |
| --- | --- | --- |
| **Entity Name** | **Description** | **Attributes** |
| Journey Plan | Represents a planned journey for a field agent | * Journey Plan ID (Primary Key) * Agent (Lookup: User) * Date (DateTime) * Route (Text) * Activities (Subgrid/Relationship) * Status (Option Set: Draft, Pending Approval, Approved, Rejected) * ApprovedBy (Lookup: User) * ApprovalDate (DateTime) * Notes (Multiline Text) |
| Journey Activity | Represents an activity/task within a journey plan | * Activity ID (Primary Key) * Journey Plan (Lookup: Journey Plan) * Type (Option Set: Visit, Meeting, Delivery, etc.) * Location (Text/Geolocation) * StartTime (DateTime) * EndTime (DateTime) * Status (Option Set: Scheduled, Completed, Cancelled) |

**3.2. Customization Details**

|  |  |  |  |
| --- | --- | --- | --- |
| **Customization** | **Description** | **Configuration Steps** | **Code/Pseudocode (if applicable)** |
| Custom Entity: Journey Plan | Store journey plans for field agents | 1. Create new entity "Journey Plan" 2. Add fields as outlined above 3. Set up relationships to Agent(User) and Activities 4. Configure Views and Forms |  |
| Business Process Flow: Journey Approval | Stage-based process for plan creation and approval | 1. Create BPF on Journey Plan entity 2. Define stages: Draft, Submit, Approval, Approved/Rejected 3. Configure field visibility per stage | Pseudocode for Approval Notification: On 'Submit for Approval' stage:   If Status = 'Pending Approval' Then     Send Email to Supervisor   End If |
| JavaScript: Field Validation | Validate that EndTime > StartTime on activity | 1. Add JS web resource to form 2. Register OnChange for StartTime/EndTime 3. Show error if validation fails | // Pseudocode On change of StartTime or EndTime: If EndTime is not after StartTime:   Show error notification on form |

**3.3. Role and Privileges Matrix**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Role** | **Create** | **Read** | **Update** | **Delete** | **Approve** | **Assign** |
| Field Agent | Yes | Own | Own | No | No | Own |
| Supervisor | Yes | Business Unit | Business Unit | Yes | Yes | Business Unit |
| Admin | Yes | Organization | Organization | Yes | Yes | Organization |

**4. Integration Strategy**

**4.1. Integration Points**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Integration Point** | **Systems Involved** | **Data Flow & Mapping** | **Integration Method** | **Security** | **Error Handling** | **Performance** |
| Mapping Service | Dynamics 365 CE, External Mapping API (e.g., Bing Maps) | * Send: Journey Plan (Location, Route) * Receive: Optimized Route, Estimated Time | REST API via Azure Function/Logic App Triggered by Plugin/JS | * OAuth2.0 for external API * Service Principal for D365 Connectors | * Retry logic on failure * Error logging to Azure Log Analytics | * Async processing * Bulk requests throttled |

**4.2. Integration Pseudocode**

On journey plan save:  
  If route optimization required:  
    Call Azure Function with journey details  
    Receive optimized route  
    Update journey plan with new route and travel time  
  End If

**5. Data Migration**

|  |  |
| --- | --- |
| **Aspect** | **Details** |
| Source Data Systems | Legacy CRM, Spreadsheets, External Databases |
| Data Cleansing/Transformation | * Remove duplicates * Standardize field formats * Map old values to new option sets |
| Migration Approach | * Use Dynamics 365 Data Import Wizard for small batches * Use KingswaySoft/SSIS for large/complex migrations * Custom scripts for special transformations |
| Data Validation & Reconciliation | * Pre-migration data profiling * Post-migration record counts * Sample-based field validation * Reconciliation reporting for exceptions |

For each source record:  
  Transform data per mapping rules  
  Validate required fields  
  Insert into D365 CE  
After migration:  
  Compare counts, run validation queries, report discrepancies

**6. PCF Component Evaluation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Use Case** | **Purpose & Functionality** | **Inputs** | **Outputs** | **References** |
| Interactive Route Map | * Visualize journey route on form * Allow drag-and-drop to reorder stops | Locations, Route | Reordered Route, Selected Locations | [PCF Docs](https://learn.microsoft.com/en-us/power-apps/developer/component-framework/) |
| Journey Plan Status Timeline | * Show status changes over time visually | Status history | Timeline visualization | [PCF Gallery](https://pcf.gallery/) |

On component load:  
  Read input data (locations/statuses)  
  Render interactive map/timeline  
  On user interaction, emit output event with new data

**7. Security Considerations**

**7.1 Customizations**

* Use least privilege principle for custom entities and processes
* Apply field-level security for sensitive fields (e.g., ApprovalComments)

**7.2 Integrations**

* Secure integration endpoints with OAuth2.0 or managed identity
* Encrypt data in transit (HTTPS/TLS)
* Audit integration activity/logs

**7.3 Data Migration**

* Mask sensitive data in migration logs
* Use secure storage for migration files
* Access only by authorized migration personnel

**7.4 PCF Components**

* Validate and sanitize all user inputs
* Do not expose sensitive data via PCF props/events

**8. Appendix: Entity Attribute Listing**

**8.1 Journey Plan Attributes**

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Type** | **Description** |
| Journey Plan ID | Primary Key | Unique identifier |
| Agent | Lookup (User) | The field agent assigned |
| Date | DateTime | Date of journey |
| Route | Text | Route details |
| Status | Option Set | Draft, Pending, Approved, Rejected |
| ApprovedBy | Lookup (User) | Supervisor who approved |
| ApprovalDate | DateTime | Date of approval |
| Notes | Multiline Text | Additional comments |

**8.2 Journey Activity Attributes**

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Type** | **Description** |
| Activity ID | Primary Key | Unique identifier |
| Journey Plan | Lookup (Journey Plan) | Related journey plan |
| Type | Option Set | Visit, Meeting, etc. |
| Location | Text/Geolocation | Address or coordinates |
| StartTime | DateTime | Activity start time |
| EndTime | DateTime | Activity end time |
| Status | Option Set | Scheduled, Completed, Cancelled |

**9. Conclusion**

This Technical Design Document provides a comprehensive guide for the technical implementation of the CRM MVP Journey Planning solution in Dynamics 365 CE. All customizations, integrations, security, and data strategy are mapped from the FDD. Further detail can be extended as new requirements evolve