**Section 3.2: Data Flow Diagram – Design Phase**

**Overview**

A Data Flow Diagram (DFD) is critical to understanding how data moves within the RTC Salesforce CRM system. It outlines the flow of information between users, system objects, and integrated modules. The DFD serves as a blueprint for both development and auditing, ensuring that no data entity is orphaned or duplicated.

This section visualizes the complete information exchange—from when a driver is assigned to a trip, to when a fare report is compiled. It defines how different Salesforce components (like custom objects, flows, dashboards, and triggers) interact in a controlled, logical manner.

**Purpose of the Data Flow Diagram**

* Map out how operational data circulates between modules and users
* Define integration points, object relationships, and API touchpoints (if any)
* Support validation rule, flow, and trigger development
* Reduce redundancy and streamline information access

**Data Flow Levels**

Two levels of DFDs were developed:

**Level 0 – High-Level System View**

* **User Inputs**: Driver, Conductor, Station Manager, Admin
* **Core Modules**: Trip Management, Employee Database, Fare Collection, Bus Assignment
* **Outputs**: Dashboards, Reports, Logs

**Level 1 – Detailed Entity Interactions**

* Trip creation triggers fare calculation (Flow)
* Fare gets linked to Trip, Employee, and Bus
* Fare values update real-time revenue dashboards (Trigger)
* Employee shift assignment updates object relationships
* Scheduled reports extract cumulative fare and trip data

**Suggested Visual: DFD Diagram (Level 1)**

Include entities:

* Users (Driver, Conductor, Manager)
* Salesforce Custom Objects (Trip, Employee, Bus, Fare)
* Data Stores (Report Logs, Dashboards)
* Data Movement (Arrows showing Flows and Automation)

A diagram of a data flow

AI-generated content may be incorrect.

**Entity-Level Data Interactions**

| **From** | **To** | **Type of Flow** | **Method** |
| --- | --- | --- | --- |
| Driver | Trip | Data Entry | Lightning Record Page |
| Trip | Fare | Calculation | Auto-Launched Flow |
| Fare | Dashboard | Update | Trigger + Report Subscription |
| Station Manager | Employee Shift | Assignment | Screen Flow |
| Employee | Trip | Association | Lookup Field |

**Data Validation & Integrity Layer**

* **Validation Rules** prevent incomplete trip data submission
* **Trigger Logic** auto-updates dashboards upon fare submission
* **Lookup Filters** ensure only active employees and buses are selectable
* **Scheduled Flows** generate and distribute daily summary reports

A diagram of data flow

AI-generated content may be incorrect.

**Advantages of the Data Flow Model**

1. **Improved Data Accuracy** – Real-time updates reduce inconsistencies
2. **Reduced Manual Work** – Automation eliminates repetitive entry
3. **User Clarity** – Each stakeholder knows where and how data enters/exits
4. **Technical Traceability** – Helps developers troubleshoot and optimize flows

**Conclusion**

The Data Flow Diagram offers a complete visualization of how the RTC system functions under the hood. It provides clear pathways for information exchange, object interaction, and user access. It ensures that Salesforce's powerful automation and validation features are aligned with data movement, making the entire system more efficient, reliable, and scalable for public transport operations.