**Source to Target Mapping for Business Processes**

**Team: The Special Ones**

1. Rider Volume

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| **Source System** | **Source Table/Field** | **Target Table** | **Target Field** | **Transformation Logic** |
| **Ticketing System** | rider\_entries | fact\_rider\_volume | entries | Aggregate rider entry counts by stop and time. |
| **Ticketing System** | rider\_exits | fact\_rider\_volume | exits | Aggregate rider exit counts by stop and time. |
| **Ticketing System** | stop\_id | fact\_rider\_volume | stop\_id | Map to stops using dim\_stops. |
| **Geographic System** | stop\_name | dim\_stops | stop\_name | Enrich stop details for visualization and reporting. |
| **Time Management** | datetime | dim\_time | datetime | Break into granular components like hour, day, and peak hours. |

1. Stop Utilization

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| **Source System** | **Source Table/Field** | **Target Table** | **Target Field** | **Transformation Logic** |
| **Sensor Data** | utilization\_rate | fact\_stop\_utilization | utilization\_rate | Derive stop utilization as actual usage vs. capacity. |
| **Sensor Data** | scheduled\_capacity | fact\_stop\_utilization | scheduled\_capacity | Store scheduled capacity for each stop. |
| **Ticketing System** | stop\_id | fact\_stop\_utilization | stop\_id | Link stop utilization data with stops dimension. |
| **Time Management** | datetime | dim\_time | is\_peak\_hour | Identify peak hours for utilization comparison. |

1. Line Performance

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| **Source System** | **Source Table/Field** | **Target Table** | **Target Field** | **Transformation Logic** |
| **GPS System** | delay\_minutes | fact\_line\_performance | delay\_minutes | Aggregate delay data by line and time. |
| **GPS System** | trip\_timing | fact\_line\_performance | trip\_timing | Average trip timing by line. |
| **Ticketing System** | line\_id | fact\_line\_performance | line\_id | Map to line details using dim\_lines. |
| **Sensor Data** | capacity | fact\_line\_performance | estimated\_capacity | Evaluate capacity utilization on each line. |
| **Time Management** | datetime | dim\_time | datetime | Link performance data with time dimension. |

1. Remote Monitor Mapping

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| **Source System** | **Source Table/Field** | **Target Table** | **Target Field** | **Transformation Logic** |
| **Remote Devices** | battery\_health | fact\_remote\_monitor | battery\_health | Monitor device battery metrics for predictive maintenance. |
| **Remote Devices** | status | fact\_remote\_monitor | status | Track operational status of devices. |
| **Remote Devices** | event\_type | fact\_remote\_monitor | event\_type | Capture maintenance or alert events. |
| **Geographic System** | location | fact\_remote\_monitor | location | Map remote units to geographic coordinates. |

1. Rider Segmentation

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| **Source System** | **Source Table/Field** | **Target Table** | **Target Field** | **Transformation Logic** |
| **Rider Survey** | demographic | fact\_rider\_segments | demographic | Group riders by demographics (e.g., seniors, youth). |
| **Ticketing System** | travel\_pattern | fact\_rider\_segments | travel\_pattern | Analyze travel patterns (frequent, occasional). |
| **Ticketing System** | stop\_id | fact\_rider\_segments | stop\_id | Map rider segments to specific stops. |
| **Time Management** | datetime | dim\_time | time\_of\_day | Segment travel by time of day (morning, evening, etc.). |