USER STORY AND ACCEPTANCE CRITERIA

User Story 1: Real-Time Shipment Tracking

As a supply chain manager,

I want to track the real-time status of shipments from various carriers,

so that I can monitor delivery progress and take action in case of delays.

Acceptance Criteria:

1. The system shall display the current status of all shipments (e.g., In Transit, Delivered, Delayed) in real-time.
2. The system must automatically update shipment status every time an event occurs (e.g., when a shipment reaches a checkpoint).
3. The user can filter shipments by status, carrier, origin, destination, and date range.
4. If the shipment is delayed, the system must send an automatic notification to the user.
5. The system shall display ETA (Estimated Time of Arrival) for all shipments.

User Story 2: Inventory Level Monitoring

As a warehouse manager,

I want to see real-time inventory levels across all warehouse locations,

so that I can prevent stockouts or overstocking.

Acceptance Criteria:

1. The system shall display inventory levels for each product across all warehouse locations in real-time.
2. The user must be able to filter the inventory view by product, location, and category.
3. The system must trigger a low-stock alert when inventory levels drop below a predefined threshold.
4. The system must allow the user to set custom inventory thresholds for different products.
5. The system must show current inventory alongside forecasted demand for comparison.

User Story 3: Integration with Carrier Systems via API

As a developer,

I want the platform to integrate with external carrier systems using APIs,

so that shipment data is automatically updated in real-time without manual intervention.

Acceptance Criteria:

1. The system must be able to consume real-time shipment data from external carriers using RESTful APIs.
2. The system must authenticate external carriers using OAuth 2.0 or other secure methods.
3. The API must be able to handle both real-time and batch processing for carriers with different data submission methods.
4. In case of API failure, the system must retry the connection up to 3 times and send an error notification if the failure persists.

5. The API integration must support both JSON and XML data formats.

User Story 4: Generate Custom Supply Chain Reports

As a supply chain analyst,

I want to generate customizable reports on shipment performance and inventory levels,

so that I can make data-driven decisions.

Acceptance Criteria:

1. The user must be able to generate reports based on shipment status, carrier, delivery timelines, and inventory levels.
2. The system must provide the option to export reports in multiple formats (Excel, PDF, CSV).
3. The user should be able to schedule recurring reports (e.g., daily, weekly) and receive them via email.

4. The system must allow the user to customize report templates, including choosing specific data fields and filters.
5. The system must generate reports within 30 seconds for up to 1,000 records.

User Story 5: Real-Time Alerts for Delays and Stock Levels

As a warehouse supervisor,

I want to receive real-time alerts for shipment delays and low inventory levels,

so that I can proactively address issues before they escalate.

Acceptance Criteria:

1. The system must send real-time alerts to the user when a shipment is delayed or inventory levels fall below the threshold.
2. The user must be able to configure alert preferences for specific products, locations, or shipment statuses.

3. Alerts must be delivered via email, SMS, or in-app notifications, based on user preference.
4. The alert notification must include relevant details such as shipment ID, location, delay reason, and expected resolution time.
5. Users should be able to acknowledge or dismiss alerts from the notification interface.

User Story 6: Role-Based Access Control (RBAC)

As an administrator,

I want to control user access to the platform's features based on roles,

so that sensitive information is protected, and users only see data relevant to their responsibilities.

Acceptance Criteria:

1. The system must support role-based access control, with predefined roles such as Admin, Manager, and User.
2. Administrators must be able to create and assign custom roles with specific access rights.

3. Users with limited roles should not be able to access or modify data that falls outside their permissions.
4. The system must enforce permissions at both the feature level (e.g., reporting, tracking) and the data level (e.g., shipment status, inventory levels).
5. Audit logs must track any changes to user roles and access settings, including who made the changes and when.

User Story 7: Historical Shipment and Inventory Data Access

As a compliance officer,

I want to access historical shipment and inventory data,

so that I can generate reports for audits and regulatory compliance purposes.

Acceptance Criteria:

1. The system must store shipment and inventory data for at least 7 years.

2. The user must be able to filter historical data by date range, shipment status, inventory levels, and location.
3. The system must provide the option to export historical data in CSV and PDF formats.
4. Historical data must be accessible within 5 seconds of a query for up to 10,000 records.
5. The system must maintain the integrity of historical data, ensuring it cannot be modified once archived.

User Story 8: Data Migration from Legacy Systems

As a developer,

I want to migrate data from the existing manual or legacy systems to the new platform,

so that all historical shipment and inventory records are available in the new system.

Acceptance Criteria:

1. Data from legacy systems must be mapped to the new platform's data structure before migration.

2. A data validation process must ensure that migrated data is accurate, complete, and free of duplicates.
3. The migration process must ensure minimal system downtime and no data loss.
4. A backup of all legacy data must be maintained in case of migration failure.
5. Users must be able to verify the accuracy of migrated data within the new system post-migration.

User Story 9: Dashboard Customization

As a supply chain manager,

I want to customize my dashboard,

so that I can see the information that is most relevant to my role.

Acceptance Criteria:

1. Users must be able to add, remove, and rearrange dashboard widgets (e.g., shipment tracking, inventory levels).

2. The system must allow users to save multiple dashboard configurations and switch between them.
3. Dashboard widgets must update in real-time, reflecting the latest shipment and inventory data.
4. Users should be able to set up dashboard filters (e.g., by location, product, shipment status).
5. The system must allow users to share their customized dashboard views with other team members, based on permissions.

User Story 10: Secure Data Exchange Between Systems

As a security officer,

I want to ensure that all data exchanged between the platform and external systems is encrypted,

so that sensitive shipment and inventory data is protected.

Acceptance Criteria:

1. All data exchanged between the platform and external systems must be encrypted using TLS 1.2 or higher.
2. API keys used for external system integration must be securely stored and managed.
3. The system must support secure authentication protocols, such as OAuth 2.0, for external integrations.
4. Data exchange logs must be maintained for audit purposes, including timestamps and status of the exchange.
5. In the event of a data exchange failure, the system must retry up to 3 times and notify the administrator if the issue persists.