Collaboration with Development & QA

User Stories

- As an Operator, I want real-time alerts to schedule cleaning and avoid yield loss.
- As an Analyst, I need downloadable reports to share insights with stakeholders.
- As an Operator, I want to adjust cleaning schedules based on cost-benefit data.

API Specification Outline

Endpoint: POST /api/soiling-analysis

Request:

```json
{ "timestamp": "2023-10-01T12:00:00Z", "sensor_id": "PV_123" }
```

Response:

```json
{ "soiling_loss": 6.2%, "recommendation": "Clean by 2023-10-05" }
```

Test Scenarios

- Positive: Valid sensor data → Returns soiling loss and recommendation.
- Negative: Missing timestamp → Returns 400 error with "Invalid request."