Lessons Learned — SQL → NoSQL Migration, Metadata & Sharding

- **Data Migration**

• SQL tables → NoSQL documents require joining & normalization.

• map/filter/reduce ensures clean functional ETL.

• NoSQL fits IoT/time-series workloads.

- **Metadata Traceability**

• UUID, lineage, batch ID improve auditability.

• Checksums ensure data integrity.

• Units & quality flags make data transparent.

- **Sharding & Scalability**

• Sharding by farmId + day avoids hotspots.

• Distributes writes evenly for IoT workloads.

• Improves performance, load balancing, and query speed.