Storage for Automation System

Data Management Solutions for Industrial Automation

23MCT303 - Data Analytics in Automation System
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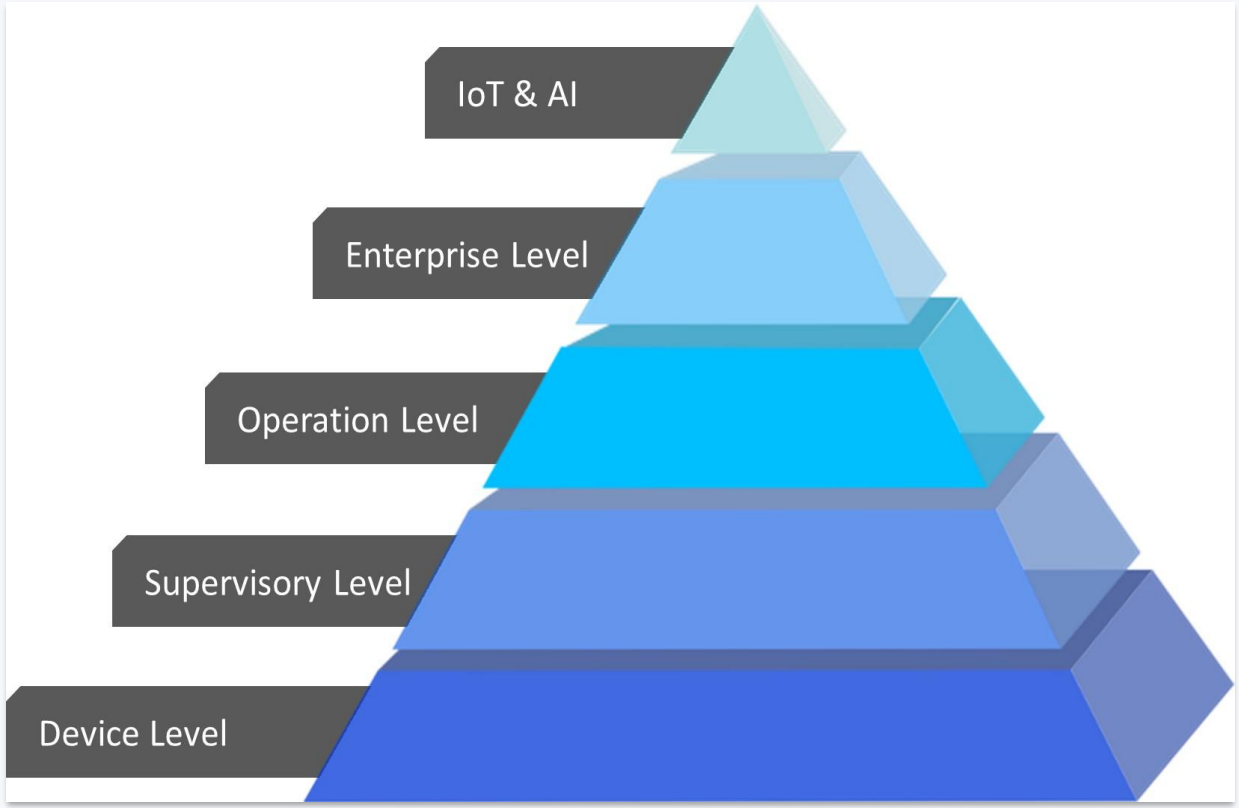
Introduction to Storage in Automation Systems

- **Data-Driven Operations** — Storage enables collection and analysis of operational data for process optimization
- **Historical Analysis** — Long-term data storage allows trend analysis and predictive maintenance
- **Real-time Decision Making** — Fast access to stored data supports immediate operational decisions
- **System Integration** — Storage solutions bridge different automation components and systems



Types of Storage in Automation Systems

Local Storage

Directly connected to PLCs and controllers

- SD/CF cards
- Fast access
- Limited capacity
- Backup for critical data

Edge Storage

Located near data sources

- Reduced latency
- Local processing
- Network optimization
- Offline operation

Cloud Storage

Centralized remote storage

- Scalable capacity
- Remote access
- Advanced analytics
- Cost-effective

Data Historians

Specialized time-series data

- High-speed collection
- Compresses data
- Trend analysis
- Industry standard

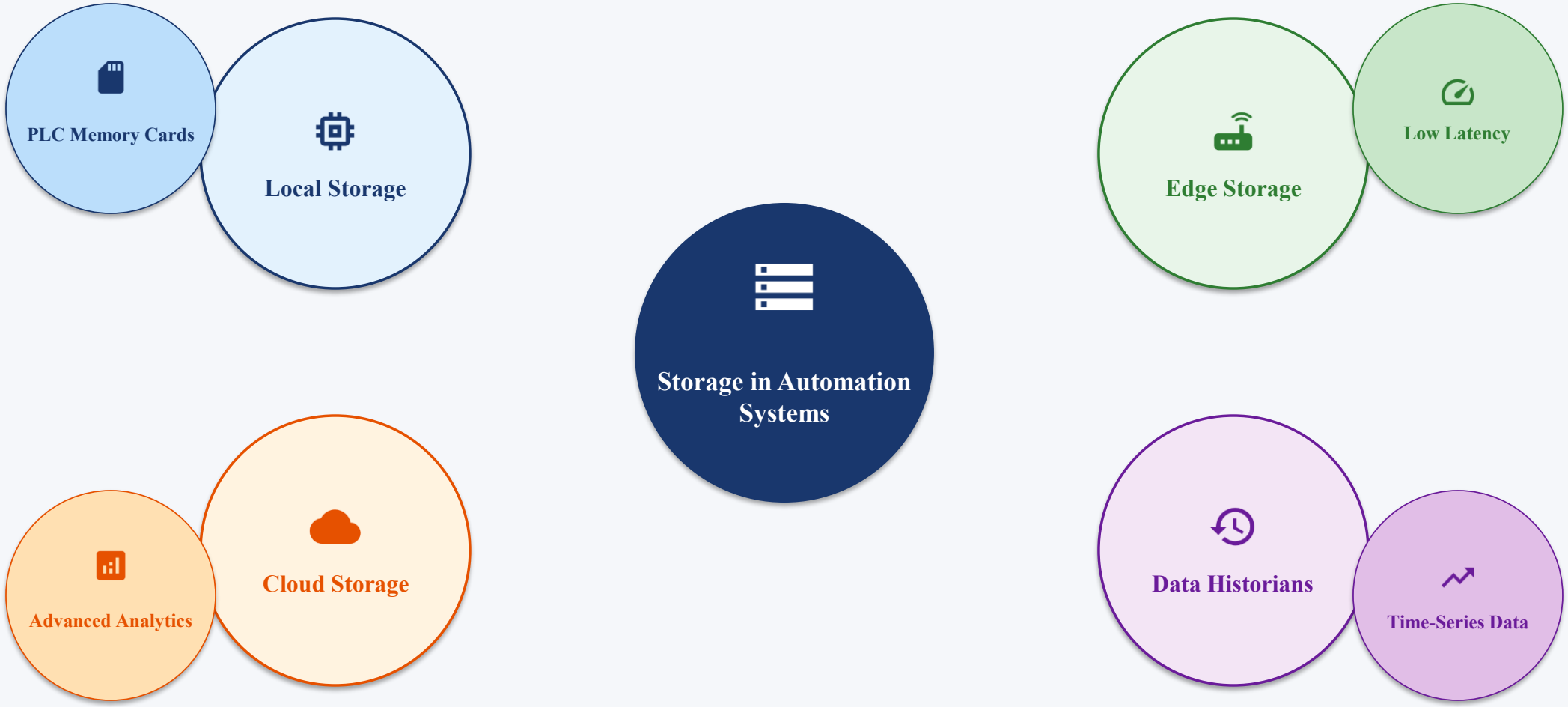
Speed

Latency

Capacity

Analytics

Mind Map: Storage Systems in Automation



Summary and Recap

Key Points

Strategic Importance

Storage enables data-driven operations, historical analysis, and real-time decision-making in automation systems

Storage Types

Local, Edge, Cloud, and Data Historians each serve specific roles in the automation ecosystem

Evolution

Modern systems increasingly adopt hybrid approaches combining multiple storage solutions

Key Takeaways

- Match storage type to use case
- Balance speed vs. capacity
- Consider security requirements
- Plan for future scalability