Introduction to Operational Technology (OT)

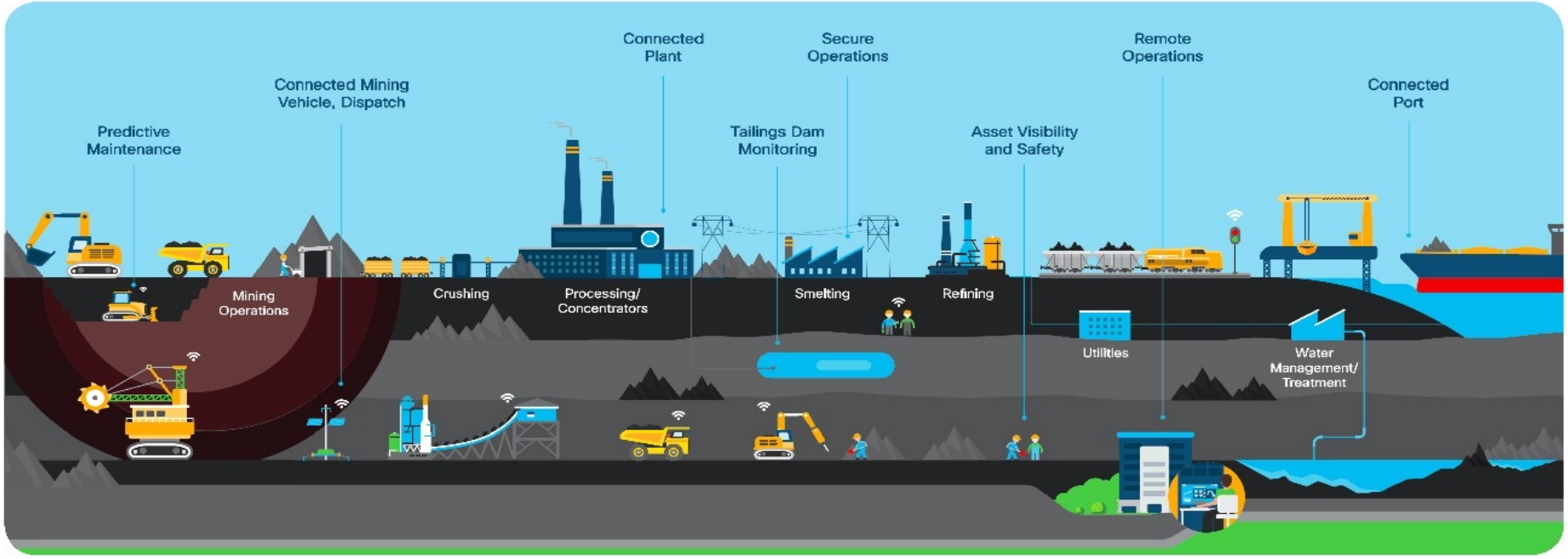
What is Operational Technology (OT)?

*"Programmable systems or devices that interact with the **physical environment** (or manage devices that interact with the physical environment). These systems/devices detect or cause a direct change through the monitoring and/or control of devices, processes, and events.*

Examples include industrial control systems, building management systems, fire control systems, and physical access control mechanisms."

NIST SP 800-37 Rev. 2

https://throughput.world/blog/industry/manufacturing-operations-management/



Machine Uptime & Predictive Maintenance

- Heavy equipment operations
- Crush / Convey / Process instrumentation sensors
- Remote SCADA data collection
- DCS/PLC connectivity
- Asset monitoring

Safety & Security

- Cybersecurity
- Physical security
- Worker location
- Gas and leak detection
- Minimize environmental impact
- Tailing pond monitoring

Worker Productivity

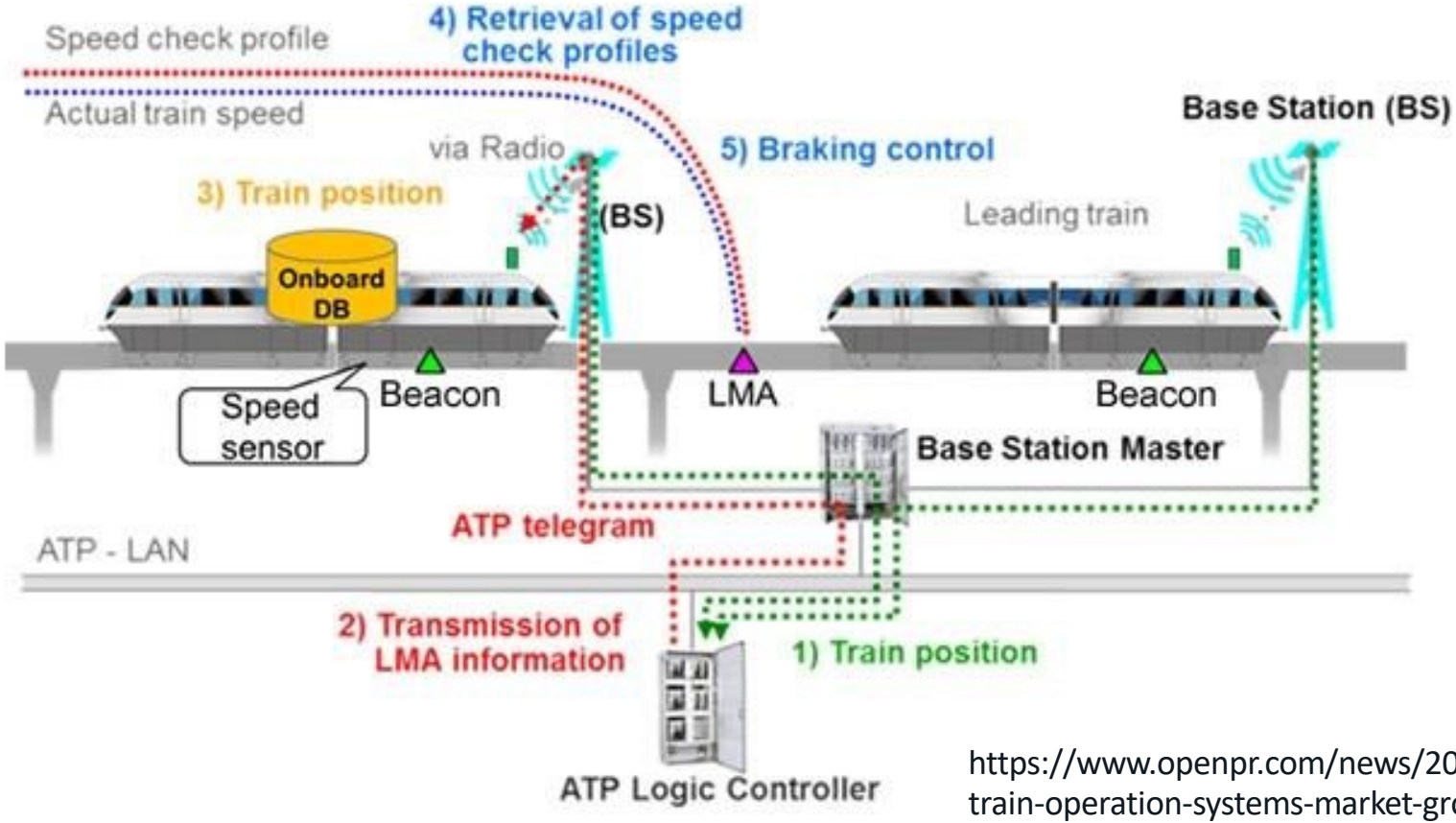
- Work Order Processing
- Employee location
- Dynamic scheduling
- Work tickets via tablets

Autonomous / Semi-Autonomous Operations

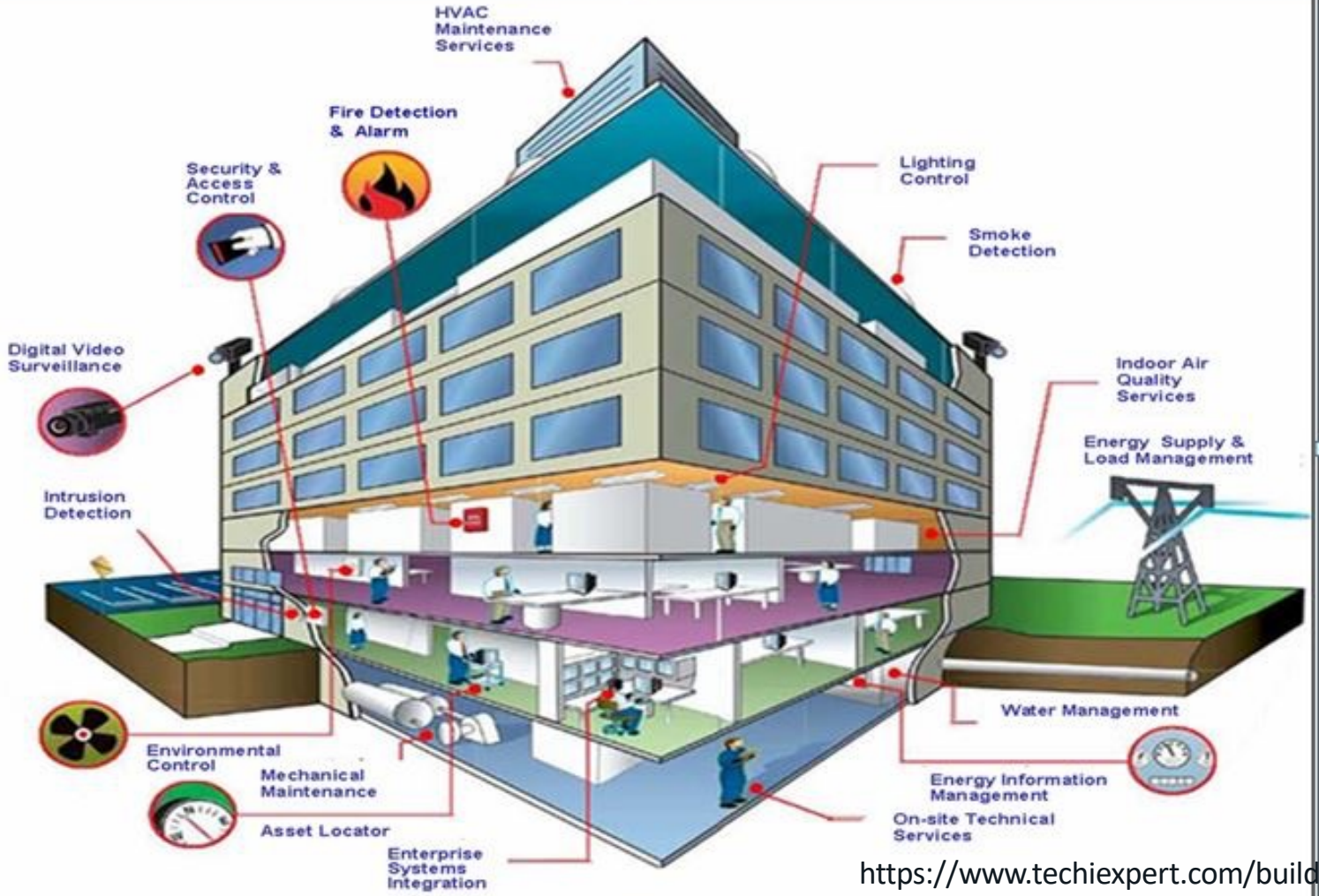
- Digital dispatch
- Autonomous drilling / hauling
- Work force optimization
- Wireless to mobile machines
- Edge compute

https://www.cisco.com/c/en/us/td/docs/solutions/Verticals/Industrial_Automation/IA_Verticals/Mining/IA-Mining-DG/IA-Mining-DG.html

Automatic Train Operation Systems



https://www.openpr.com/news/2077260/automatic-train-operation-systems-market-growth-to-be-fuelled



https://www.techiexpert.com/building-automation-system/

https://doi.org/10.3390/s16020157

Process Automation

https://web.iitd.ac.in/~suniljha/industrial_automation.php