



Safety Management Systems (SMS)

Information Technology

August 13, 2019



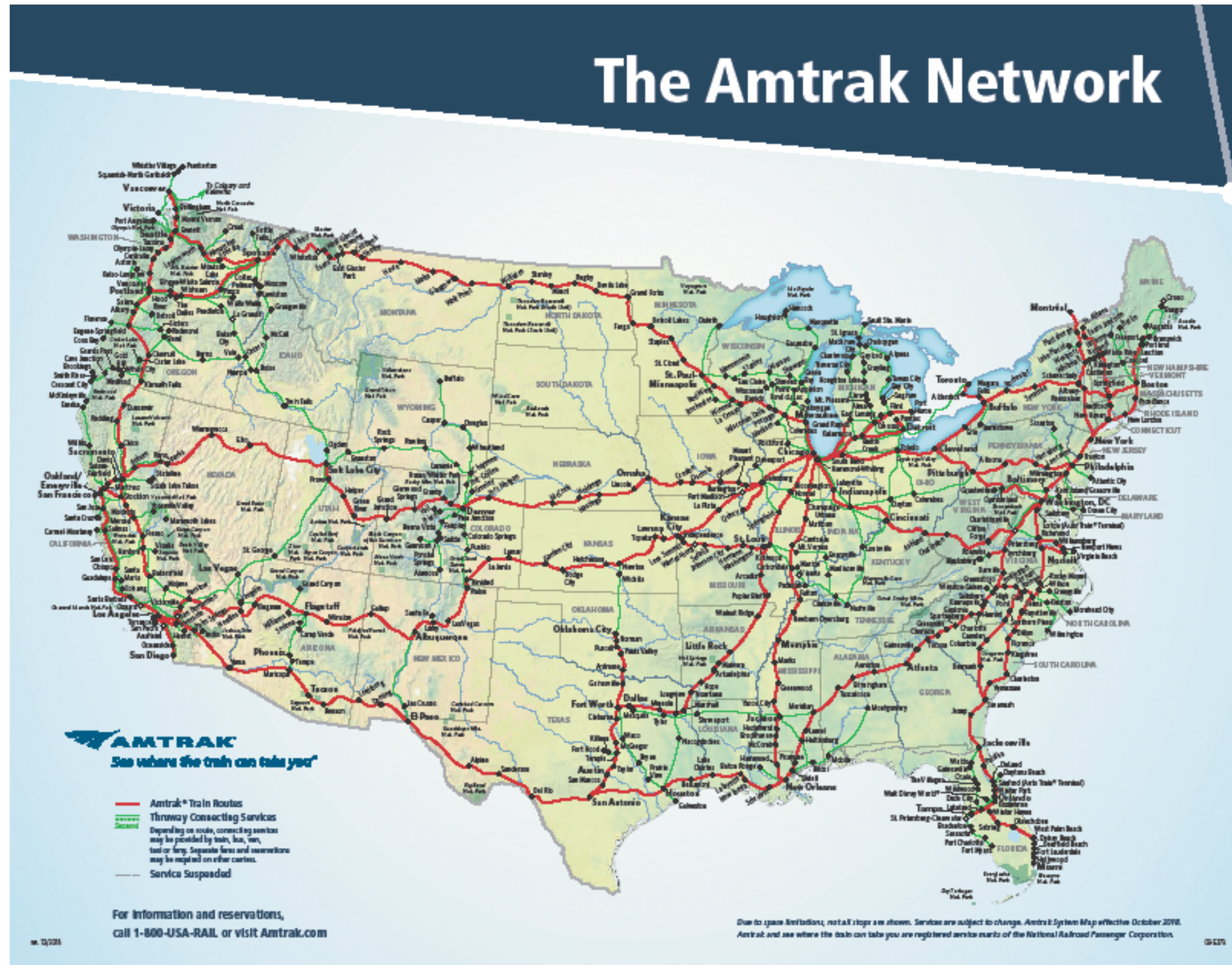
Safety Technology

Takeaways

IT powers SMS with

- Automation
- Enterprise deployment of in-house innovations
- Data
 - ❑ Report key Safety Performance Indicators
 - ❑ Monitor for consistent, reliable results
 - ❑ Streamlined data collection; paper to electronic

Overview of the Amtrak Network



CSO Statement on the Safety Challenge

Customer and employee fatalities and serious injuries

- Too many

NTSB Report (November 2017)

- “...*a deficient safety culture at Amtrak.*” (p. 62)

CSO's Safety Strategy

1. Implement a Safety Management System at Amtrak

- In advance of regulatory requirement
- Be an industry leader
- Learn from other industries (aviation, healthcare, etc.)

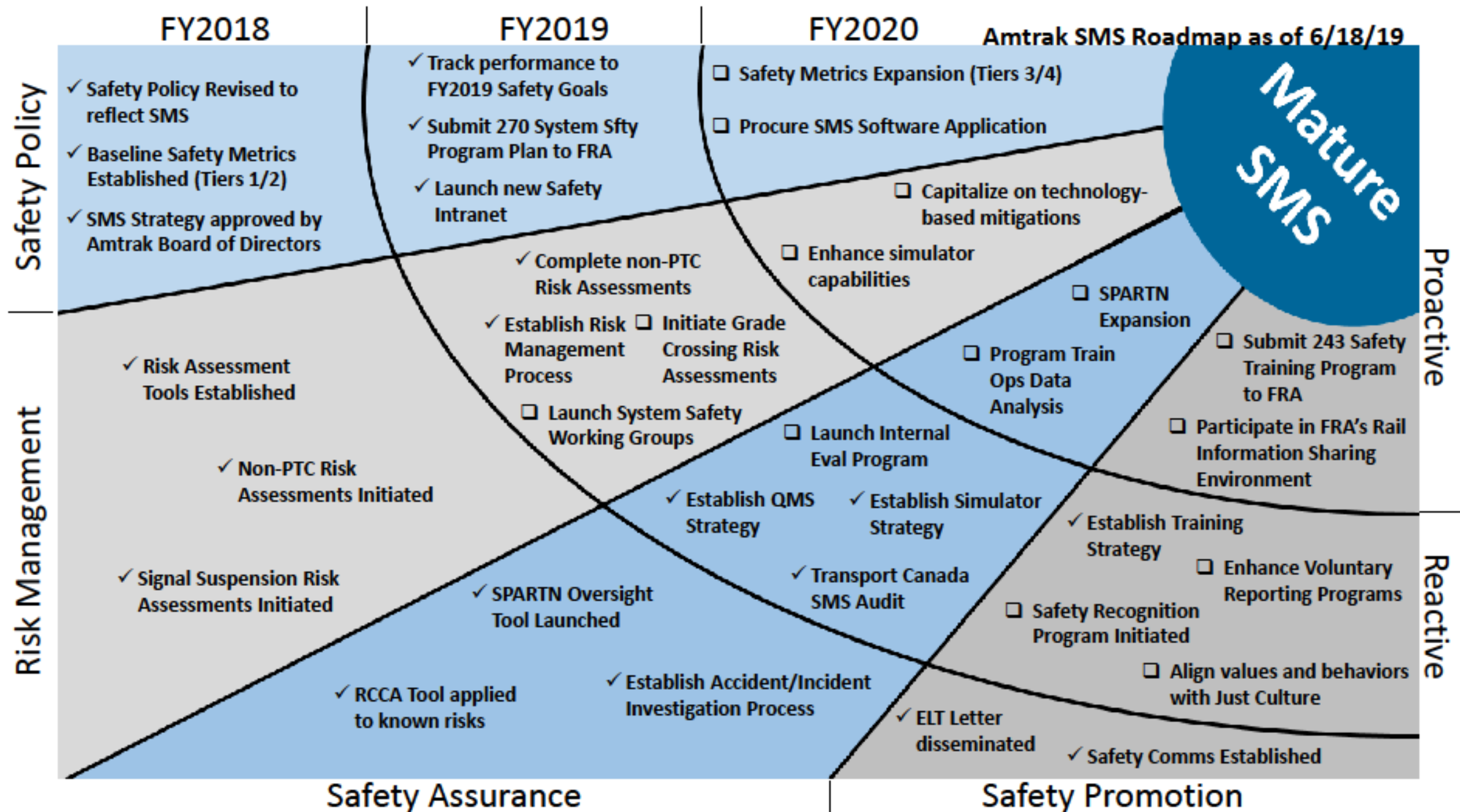
2. Implement train control technology

- Passenger rail service should be 100% compliant with regulation
- Be an industry leader
- Where train control won't exist, use SMS to chart path towards equivalency

3. Use data and technology to improve safety

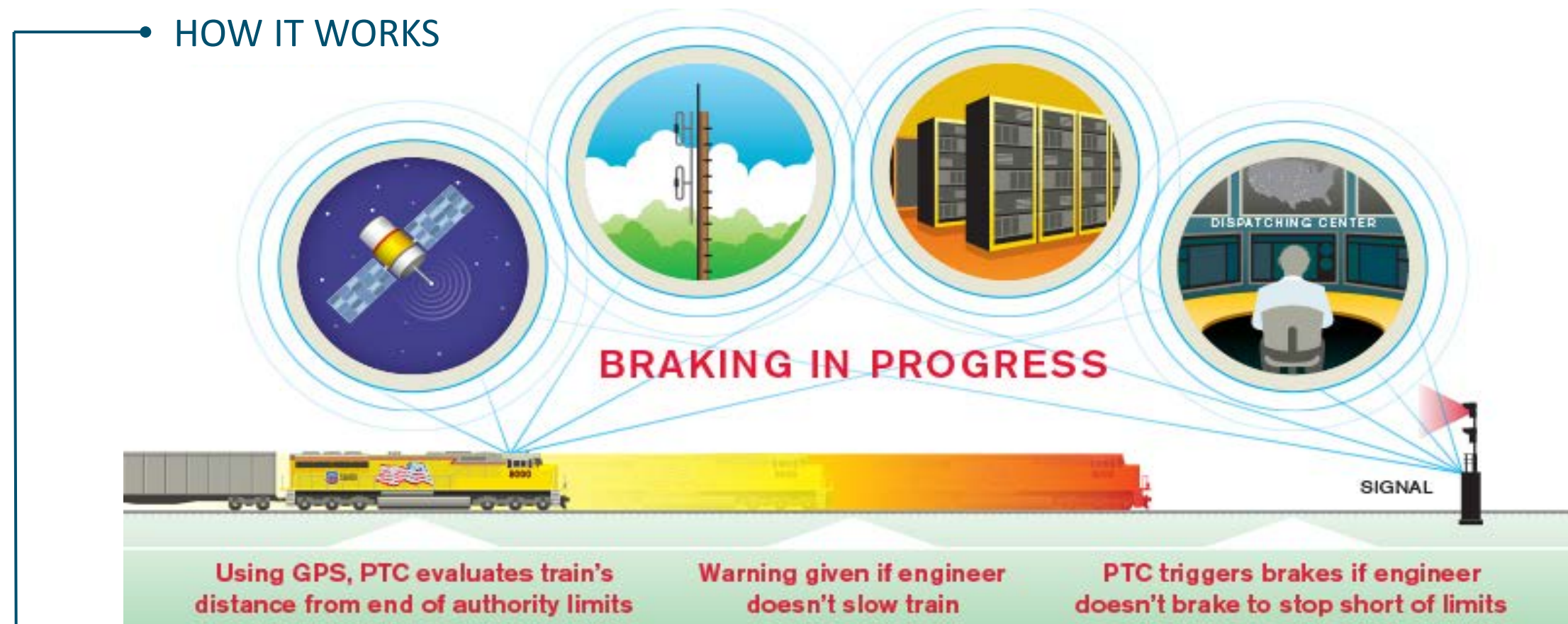
- Train safety data – every train, every trip, every day

Safety Department Roadmap to SMS



IT Automation

Positive Train Control (PTC) is a technology capable of automatically controlling train speeds and movements, should a train operator fail to take appropriate action in the prevailing conditions.



For example, PTC can force a train to stop before it passes a signal displaying a stop indication, or before running through an improperly lined switch, averting a potential collision.

IT Data Management

1. Safety Performance Indicators
 - Data warehouse and Tableau
 - working towards leading indicators
2. Monitor for consistent, reliable results
 - data scientists to ensure statically valid
3. Streamlined data collection; paper to electronic
 - SMS RFP process is underway



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