

A person is seen from behind, looking through a binocular viewer. The viewer is a circular device with a textured lens and two handles. The person is wearing a dark, textured jacket. In the background, a city skyline is visible, with the Empire State Building being the most prominent structure. The sky is a pale, hazy blue, suggesting a clear day. The overall mood is one of observation and discovery.

Otis ONE™ Technical Overview

OTIS

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Agenda

1. IBC 2018 code requirements
2. Otis ONE System overview
3. IoT data collection
4. Cyber security
5. Third-party systems



IBC-2018 Code Requirements

IBC 3001.2 Requires emergency elevator communication systems for the deaf, hard of hearing and speech impaired.

Four key requirements for an emergency two-way communication system:

1. Two-way voice communication
2. Two-way text communication
3. Video-based interactive conferencing technology
4. Voice-only option for hearing individuals

ASME A17.1-2019 Emergency communication language similar to IBC 2018 requirements

Code Adoption

Red states: adopted IBC 2018 and A17.1 2019

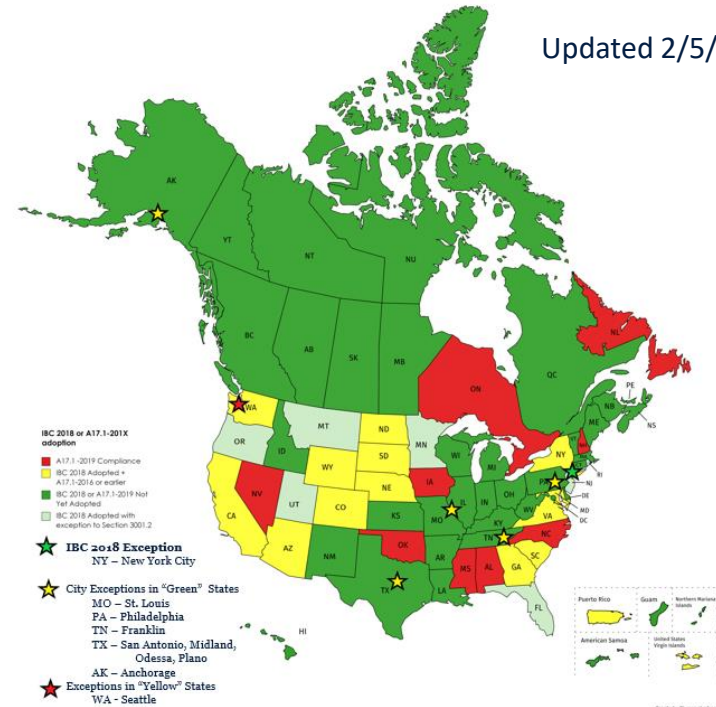
- **7 US states & 2 Canadian provinces:** AL, IA, MS, NC, NV, NH, NL, OK, ON
- Seattle, WA
- SC – enforced 4/21
- ON – enforced 10/21
- CO – enforced 1/22

Yellow states: adopted IBC 2018 but not A17.1 2019

- **13 US states:** AZ, CA, CO, GA, MD, ND, NE, NY, SC, SD, VA, WA, WY
- Anchorage, AK

Green states: Code currently does not apply; monitoring for code adoption

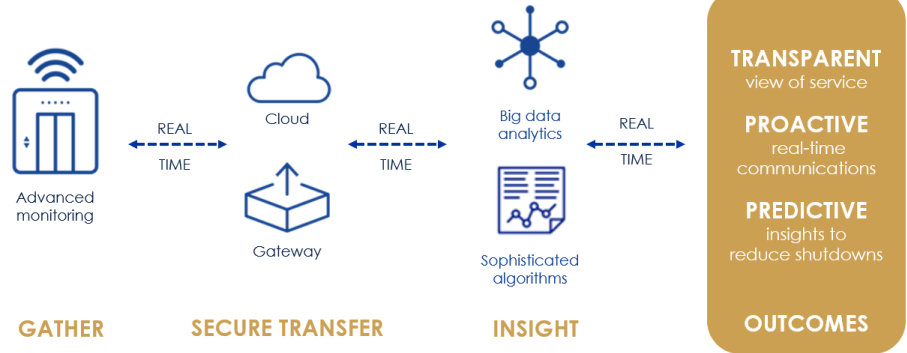
Updated 2/5/21



Otis ONE™ Overview

Personalized smart vision of service with IoT real-time data

- Otis ONE is an IoT platform for connected elevators
- Data is sent to the Otis Cloud constantly where analytics transforms raw data into useful information
- Otis service team members use information to provide a better customer experience
- Otis ONE supports an emergency communication system compliant with current elevator codes: IBC 3001.2-2018 and ASME A17.1-2019



IoT Data Collection

Cab

- Car and hall buttons
- Door reversal devices
- In car stop switch
- Car load sensors/status
- Landing accuracy
- Releveling performance
- Door fully open/closed contacts
- Door performance
- Car gate switch
- Rollback

Pit

- Pitt emergency stop switch
- Governor tension contact

Machine Room

- Operational mode
- Group communication
- Subsystem communication
- Speed control system
- Solid state safety devices
- Safety circuit & components
- Contactors & relays
- Car velocity sensors
- Drive, brake & emergency brake
- Overspeed switch on governor
- AC power, DC power supplies, fuses & batteries

Hoistway

- Ropes/belts – traction, stretch, tension, wear
- Door zone sensors
- Hoistway door switches
- Terminal stopping device sensors
- Earthquake sensors
- Position systems
- Hoistway temperature sensor
- Hoistway access detection

Otis ONE Plus Video

IBC 2018 and A17.1-2019 compliant communication system

- Surface mounted screen to replace PI
- Yes or No Text Communications with trapped passenger through screen
- Response via the phone button
- Authorized Personnel can view into the cab via a camera mounted on ceiling



Normal operation

Emergency operation

Third-Party Monitoring Systems

- Third-party emergency communication systems are available
- Some third-party systems require an analog phone line and an internet connection
- Otis ONE IoT performance data is not available with third-party systems
- OTISLINE can currently monitor some third-party systems

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