

VIDEO #3 page 1

SEGMENT 1

OPENING STATEMENT

OPERATIONAL CONDITIONS AND REAL-WORLD LIMITATIONS

Most public demonstrations of autonomous operation of commercial truck driving show the best possible conditions such as:

Clear Highways and road conditions.

Good weather condition.

Light to moderate traffic congestion.

But freight transportation does not operate under perfect conditions every day.

Today, we're going to discuss the operational realities that autonomous systems must deal with in the real-world driving scenarios we have currently.

SEGMENT 2

WEATHER LIMITATIONS

Weather remains one of the largest challenges for autonomous systems.

Heavy rain may interfere with cameras and sensors.

Snow can cover lane markings.

Fog can reduce visibility.

Ice changes traction conditions.

Dust and debris may interfere with perception systems.

These are not small problems, and they are major operational realities

VIDEO #3 page 2

SEGMENT 3

CONSTRUCTION ZONES AND ACCIDENT SCENES

Construction zones are another major challenge.

Lane markings may disappear.

Traffic patterns change unexpectedly.

Police officers and construction workers may direct traffic manually.

Accident scenes create unpredictable situations involving emergency vehicles, debris, and sudden traffic changes.

Human judgment becomes extremely important in these environments.

SEGMENT 4

CUSTOMER YARDS AND BACKING OPERATIONS

One of the biggest differences between highway demonstrations and real freight operations involves customer yards.

Truck drivers regularly deal with tight docks

Blindside backing

Congested yards

Changing instructions

Live loading and unloading freight and constantly moving personnel and equipment and these situations remain difficult and challenging to standardize currently and will require more than a change involving truck drivers to make the system operate safely as well as efficiently.

VIDEO #3 page 3

SEGMENT 5

OPERATIONAL DESIGN DOMAIN

The operating environments we discussed previously brought us back to the Operational Design Domain.

Autonomous systems operate inside defined operational boundaries.

That may include specific routes.

Specific weather conditions.

Specific speeds.

And specific roadway environments.

This is one of the most important realities often missing from public discussions.

CLOSING

Autonomous commercial truck driving systems may perform well under controlled conditions, but real freight operations involve weather, construction, traffic unpredictability, customer facilities, and constantly changing operational environments.

That is why operational limitations remain one of the biggest realities in the autonomous trucking industry today.

We will be discussing transportation regulatory entities in our next video and how they oversee and provide guidance within the development, implementation and operation of the autonomous systems.