

Federal Motor Carrier Safety Administration
Office of Analysis, Research and Technology

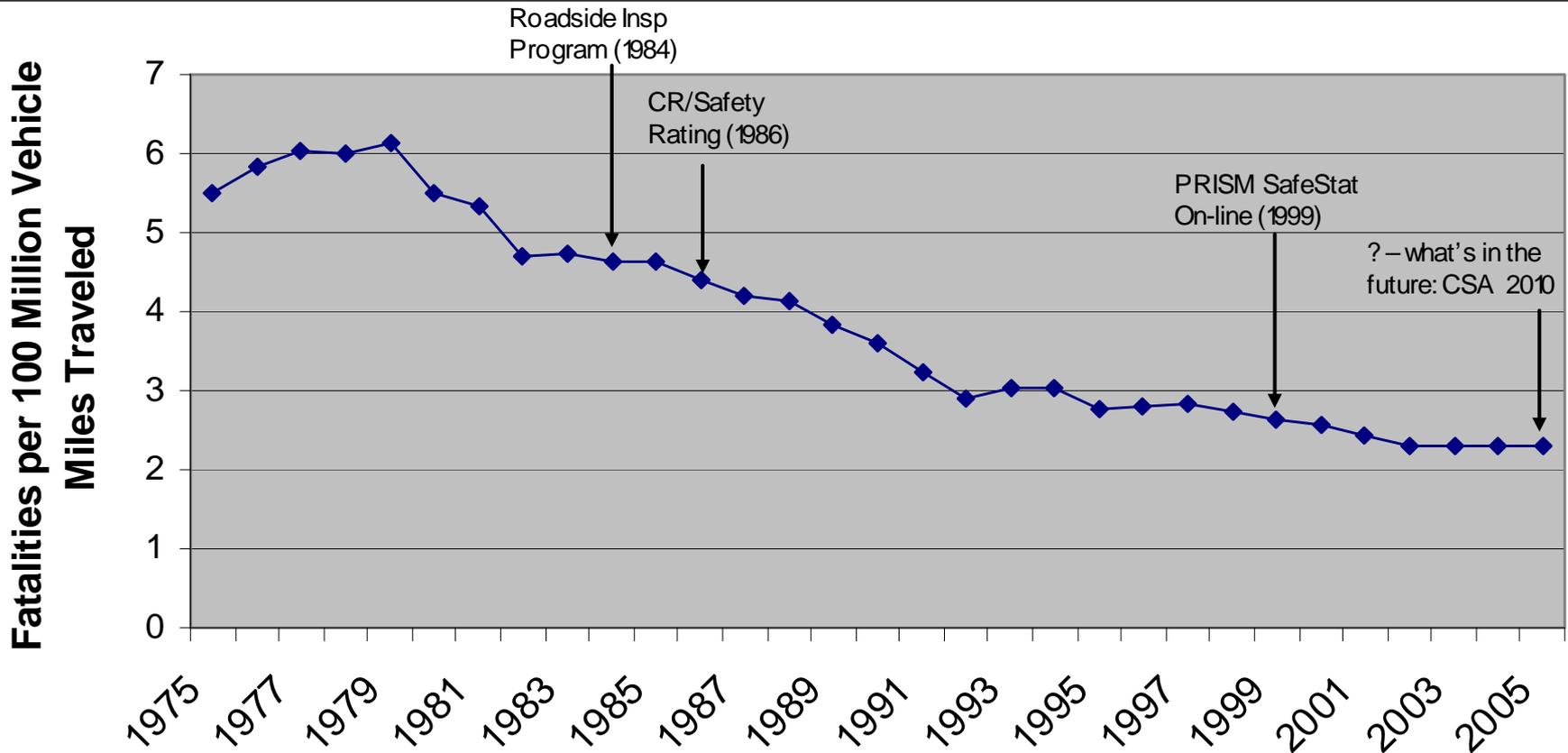


Comprehensive Safety Analysis CSA 2010 Update

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CSA 2010

2009 TRB 88th Annual Meeting
ART Forum

Why Comprehensive Safety Analysis (CSA 2010)?



Sources: Vehicle Miles of Travel and Registered Vehicles: Federal Highway Administration. Fatal Crashes, Vehicles Involved, and Fatalities: National Highway Traffic Safety Administration, Fatality Analysis Reporting System (FARS).

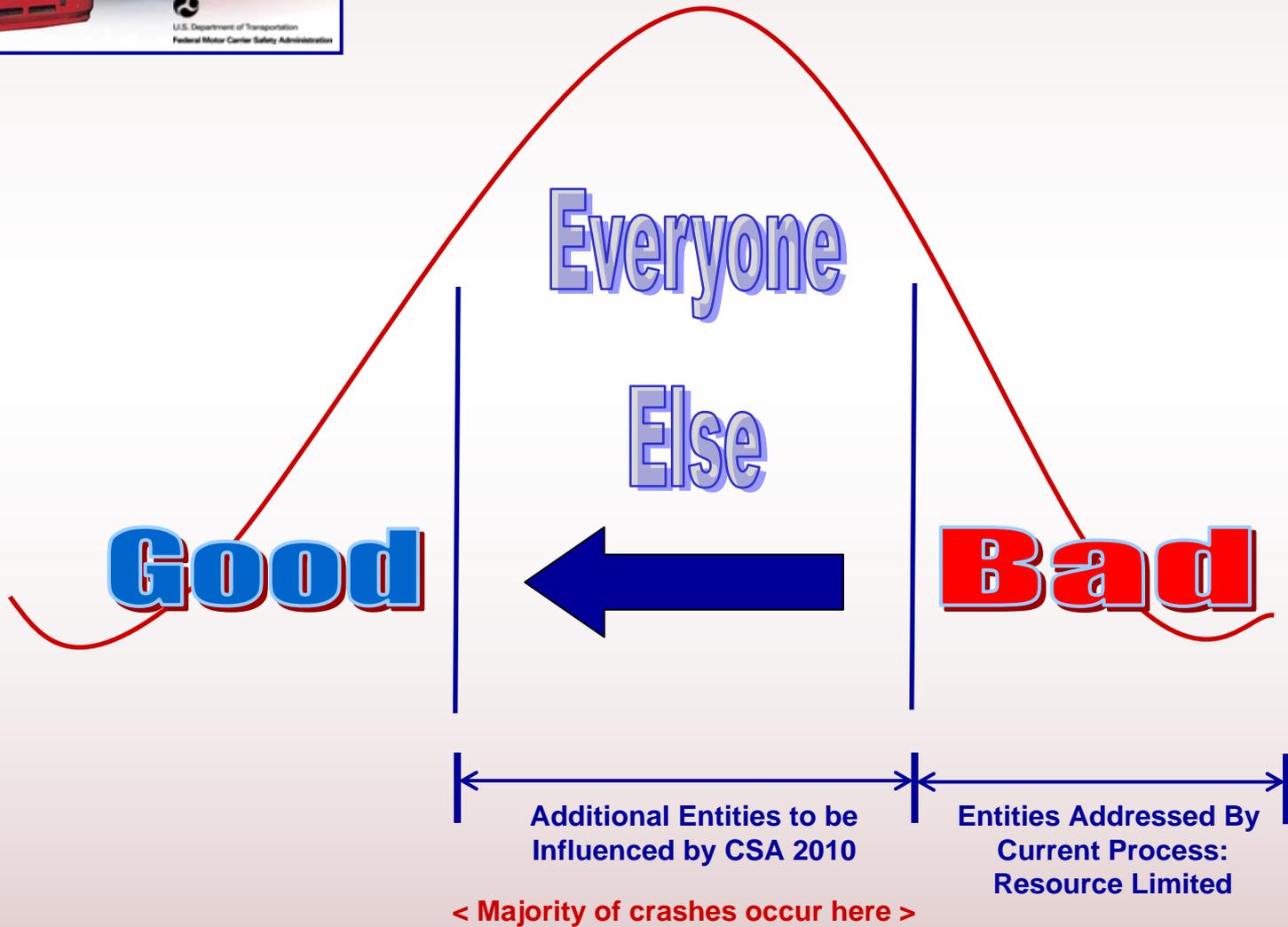


Why CSA 2010?

- ◆ **Current Operational Model Limitations**
 - Safety fitness determination tied to compliance review.
 - Very labor intensive.
 - Result: We assess only small fraction of industry.
 - Primary Focus is on carriers for rating purposes



Paradigm Shift



Proposed Changes in Intervention Model

Today's Model: Compliance Review	CSA 2010 Interventions
<ul style="list-style-type: none"> ◆ Limited to compliance review (CR); complete review needed to rate carrier 	<ul style="list-style-type: none"> ◆ Broad array of progressive interventions ◆ Warning Letters, Targeted Roadside Inspections, Focused Investigations (Off and On site), Comprehensive Investigations ◆ Follow-on Cooperative Safety Plans, NOVs ◆ NOCs/Settlement Agreements
<ul style="list-style-type: none"> ◆ CR is resource intensive 	<ul style="list-style-type: none"> ◆ Range of interventions commensurate with risk: varying resource requirements
<ul style="list-style-type: none"> ◆ CR assesses broad compliance through rigid set of acute/critical regulations 	<ul style="list-style-type: none"> ◆ Interventions target unsafe behavior
<ul style="list-style-type: none"> ◆ Generally, audit approach 	<ul style="list-style-type: none"> ◆ Investigative approach; causal factor analysis and remedies

Measurement System Concept

Measure performance of an entity in each Behavior Analysis & Safety Improvement Categories (BASICs)

- ◆ Methodology designed to weigh on-the-road safety data based on its relationship to crash risk
- ◆ Focuses on safety behaviors that lead to crashes

Safety Event Data Sorted by Entity

- ◆ Two measurement systems for CSA 2010:
 - Carrier Safety Measurement System (CSMS)
 - 24 months, ~300K crash records, 6.6 million inspection records
 - Driver Safety Measurement System (DSMS)
 - 36 months, ~440K crash records, 9.6 million inspection records
 - Potential to add additional measurement systems in the future
 - HM Shipper

Safety Event Data Sorted by BASIC

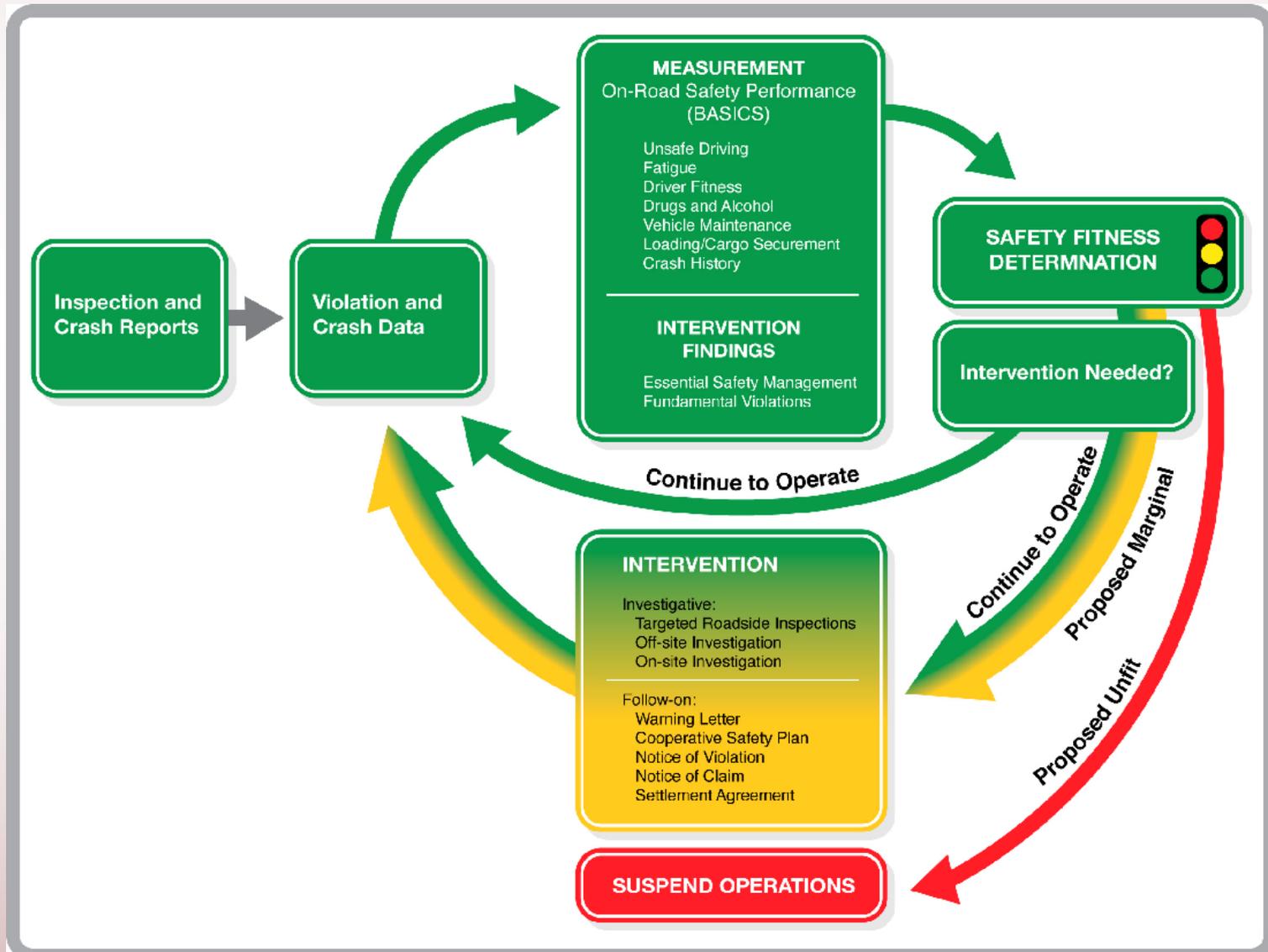
- ◆ Unsafe Driving (Parts 392 & 397)
- ◆ Fatigued Driving (Parts 392 & 395)
- ◆ Driver Fitness (Parts 383 & 391)
- ◆ Controlled Substances/Alcohol (Part 392)
- ◆ Vehicle Maintenance (Parts 393 & 396)
- ◆ Improper Loading/Cargo (Parts 392, 393, 397 & HM)
- ◆ Crash Indicator



SafeStat vs. CSA 2010 Safety Measurement System (SMS)

SafeStat	SMS
Organized in 4 broad categories— Safety Evaluation Areas (SEAs)	Organized by 7 BASICs
Identifies carriers for CR	Identifies safety performance problems to determine intervention level
Uses only out-of-service (OOS) and moving violations from inspections	Emphasizes on-road safety performance, using <u>all</u> safety-based inspection violations
No impact on safety rating	Used to propose adverse safety fitness determination based on carriers' own data
No risk-based violation weightings	Risk-based violation weightings
Assesses carriers only	Two distinct safety measurement systems— carriers and drivers

CSA 2010 Operational Model



Comprehensive Safety Information (CSI)

Federal Motor Carrier Safety Administration

[Overview](#)

[Carrier Measurement](#)

[Driver Measurement](#)

[Intervention Management](#)

[Guidance](#)

[SEARCH](#) | [REPORT](#)

Performance Search

BASIC:

Recommendation:

HARROW SEARCH BY:

Carrier State:

Carrier Type:

↑ Tip: Use * (an asterisk) for a wildcard search.

Carrier A

Overview | **Carrier Measurement** | **Driver Measurement** | **Intervention Management** | **Guidance**

SEARCH | **SUMMARY** | UNSAFE | FATIGUE | FITNESS | DRUG/ALCOHOL | VEHICLE | CARGO | CRASH | HISTORY

Home > Carrier Measurement > Summary [price](#) | [Logout](#)

Using **January 25, 2008 snapshot** [How do I correct my data?](#) [Measurement Profile](#) [Methodology](#)

Carrier Measurement: Summary [Print](#)

OPERATIONAL MODEL TEST CARRIER TYPE: **CONTROL GROUP** ([edit](#)) ASSIGNED SIMGR: **N/A**

CARRIER INFORMATION			
DOT #:	1111	Carrier Operation:	Interstate

Last CR Date:	8/16/2005	Safety Rating:	S
Date of Last MCS-150 Update:	02/27/2007	SafeStat Category:	
Accident SEA:	15.61	Vehicle SEA:	36.76
Driver SEA:	72.25	Safety Management SEA:	

Carrier A: Safety Measurement Results

CRASH ACTIVITY (within 2 years)

# of Crashes:	10	# of Crashes with Injuries or Fatalities:	5
# of Towaways:	10	# of HM Releases:	0

INSPECTION ACTIVITY (within 2 years)

Driver Inspections:	329	VH Inspections:	274	HM Inspections:	0
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CARRIER SAFETY MEASUREMENT

	BASIC	Measure	Percentile [*]	# inspections resulting in violation of BASIC
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3

[Driver Fitness](#)



0.65

99.2

66

5	Vehicle Maintenance		6.00	70.7	191
6	Improper Loading/Cargo Securement		0.73	32.7	16
INDICATOR					# crashes
7	Crash Indicator		0.11	43.0	10

* The percentile is shaded in yellow when the intervention threshold is exceeded, red when the percentile is greater than or equal to 97% (except for Controlled Substances and Alcohol and Crash Indicator), otherwise there is no shading.

Carrier A: Driver Fitness Violations

INSPECTION SUMMARY [\(View Detail Report\)](#)

Relevant Inspections:	327	Peer Group Size:	101-500 Inspections
Inspections resulting in Driver Fitness Violation:	63	Number of Driver Fitness Violations:	84

VIOLATION HISTORY: DRIVER FITNESS

Description	Violation	# Violations	# OOS Violations	Violation Severity Weight
Operating a CMV without a CDL	383.23A2	3	3	3
Driver qualification	391.11	6	1	6
Interstate driver under 21 years of age	391.11B1	1	1	6
Non-english speaking driver	391.11B2	7	4	6

No medical certificate on driver's possession

391.41A

39

0

Improper medical examiners certificate form

391.43H

1

0

Expired medical examiner's certificate

391.45B

11

0

[View Detail Data](#)

Select Focus: None Relevant Inspections Inspections with Driver Fitness Violations

Generate

Carrier A: Inspections w/Driver Fitness Violations

DRIVER FITNESS INSPECTION RESULTS (63 records)													
Date	Last Name	First Name	Lic #	Lic State	Driver DOB	Rpt #	Rpt State	Viol OOS?	Time Weight	Viol Sev. Weight	OOS Weight	Insp Value	Viol Value
1	1/15/2008	Driver 1				LAAQ003965	LA					2	
Driver Fitness Violation:	391.11 Driver qualification							N	2	6	0		12
	383.23A2 Operating a CMV without a CDL							Y	2	3	2		10
2	1/12/2008	Driver 2				0073001441	FL					2	
Driver Fitness Violation:	391.41A No medical certificate on driver's possession							N	2	1	0		2
3	12/20/2007	Driver 3				0005084224	NC					2	
Driver Fitness Violation:	391.15A Driving a CMV while disqualified							Y	2	6	2		16
4	12/7/2007	Driver 4				0075002570	GA					2	
Driver Fitness Violation:	391.41A No medical certificate on driver's possession							N	2	1	0		2
5	12/4/2007	Driver 5				SPK0002734	NJ					2	
Driver Fitness Violation:	391.11 Driver qualification							N	2	6	0		12
	391.41A No medical certificate on driver's possession							N	2	1	0		2
	383.23A2 Operating a CMV without a CDL							Y	2	3	2		10
6	11/27/2007	Driver 6				0756000120	US					2	
Driver Fitness Violation:	391.41A No medical certificate on driver's possession							N	2	1	0		2
7	11/18/2007	Driver 7				S013000364	PA					2	
Driver Fitness Violation:	391.41A No medical certificate on driver's possession							N	2	1	0		2
8	10/29/2007	Driver 8				LAGG003299	LA					2	



Operational Model (OM) Test

- ◆ Designed to test validity, efficiency and effectiveness of the CSA 2010 operational model concept
 - SMS
 - Progressive Interventions
- ◆ Phase 1 initiated February 2008 and Phase 2 initiated September 2008
- ◆ 4 States:
 - CO, GA, MO, and NJ
 - ~26 safety investigators (state and federal)
 - Carriers domiciled in 4 states randomly split into two groups: ~ 34 K each
 - Test group and control group
- ◆ Independent 3rd party evaluation (University of MI Transportation Research Institute)
- ◆ No regulatory or enforcement relief in test



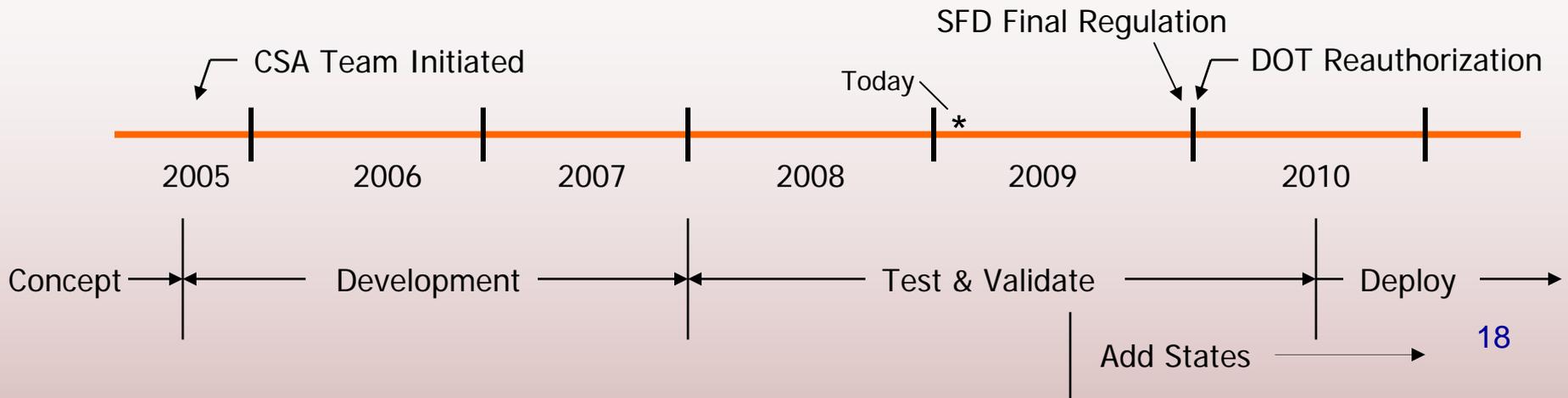
OM Test Status

Completed activity as of November 30, 2008	
Offsite Investigations	532
Focused Onsite Investigations	110
Comprehensive Onsite Investigations	22
Cooperative Safety Plans (CSPs)	395
Notice of Violations (NOVs)	17
Notice of Claims (NOCs)	57
Warning Letters (47% carrier login rate)	2,266
Inspections on test carriers (new data feeding SMS)	76,364



Status & Target Dates

- ◆ Ongoing working group bi-monthly onsite meetings and bi-weekly conference calls
- ◆ Team deployed May 2005
- ◆ Completed developmental work by December 2007
- ◆ Currently in test & validation phase
- ◆ Goal: Deploy for carriers by 2010; Drivers: reauthorization





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www.fmcsa.dot.gov/safety-security/csa2010/home.htm