IntelliDrive℠
Safer. Smarter. Greener.

Human Factors for IntelliDrive

IntelliDrive Safety Workshop
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What is human factors?

- The application of knowledge about human abilities, limitations, and other characteristics to the design of equipment, tasks, and jobs
  - Human-centered design
  - Robust set of evaluation methods and design heuristics
- For IntelliDrive, it will focus on interface designs that are effective without adding distraction

Human Factors for IntelliDrive

Goal: To develop guidelines to ensure IntelliDrive interfaces are effective without increasing distraction.

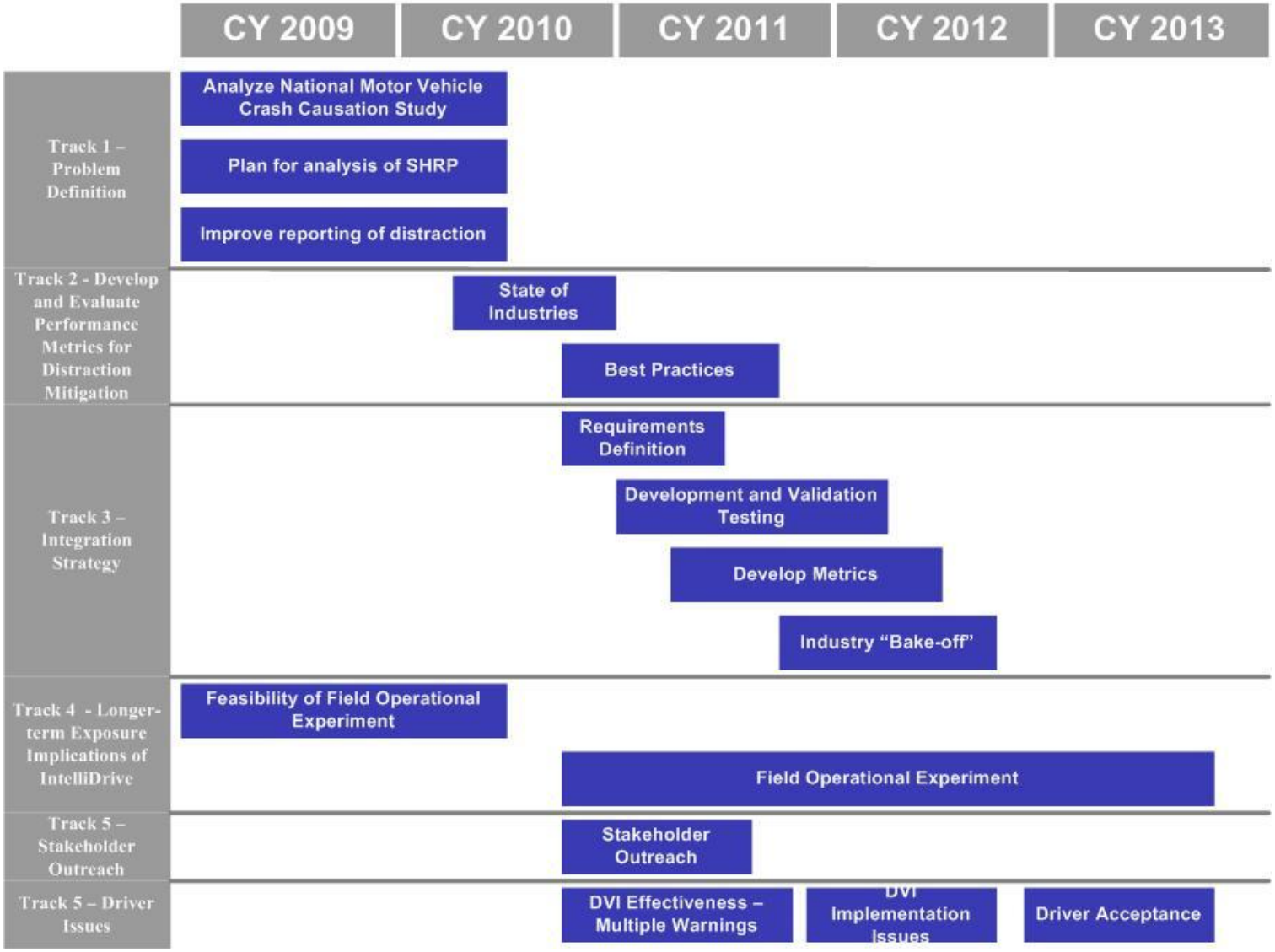
Multiple Users:

- Passenger vehicles
- Heavy trucks
- Transit operators

Multiple Applications:

- Safety
- Sustainability
- Mobility

Human Factors for IntelliDrive Research Plan



Track 1: Problem Definition

- Goal: To better understand the distraction problem in the vehicle fleet
- Outcomes: A way to better monitor distraction for all devices/technologies
- Main tasks:
  - Analyze National Motor Vehicle Crash Causation Study
  - Plan for analysis of SHRP
  - Improve reporting of distraction

Track 2: Performance Metrics

- Goal: To develop performance metrics (i.e., to establish tests) to measure distraction potential.
- Outcomes: Objective test procedures, ratings of devices.
- Main tasks:
  - Review of current guidelines
  - Best practices for interfaces

Track 3: Integration Strategy

- Goals: To determine how best to integrate multiple devices (including in-vehicle and portable), warnings to minimize distraction
- Outcomes: Integration strategies
- Main tasks:
  - Develop concept of operations
  - Develop test procedures
  - Assess implementation

Track 4: Long-term Exposure

- Goal: To understand long-term driver adaptation to better understand how driver assistance technologies impact safety
- Outcomes: Better estimates of benefits, optimization of these driver assistance technologies through interface design
- Main tasks:
  - Determine feasibility of a field operational study
  - If feasible, conduct the study

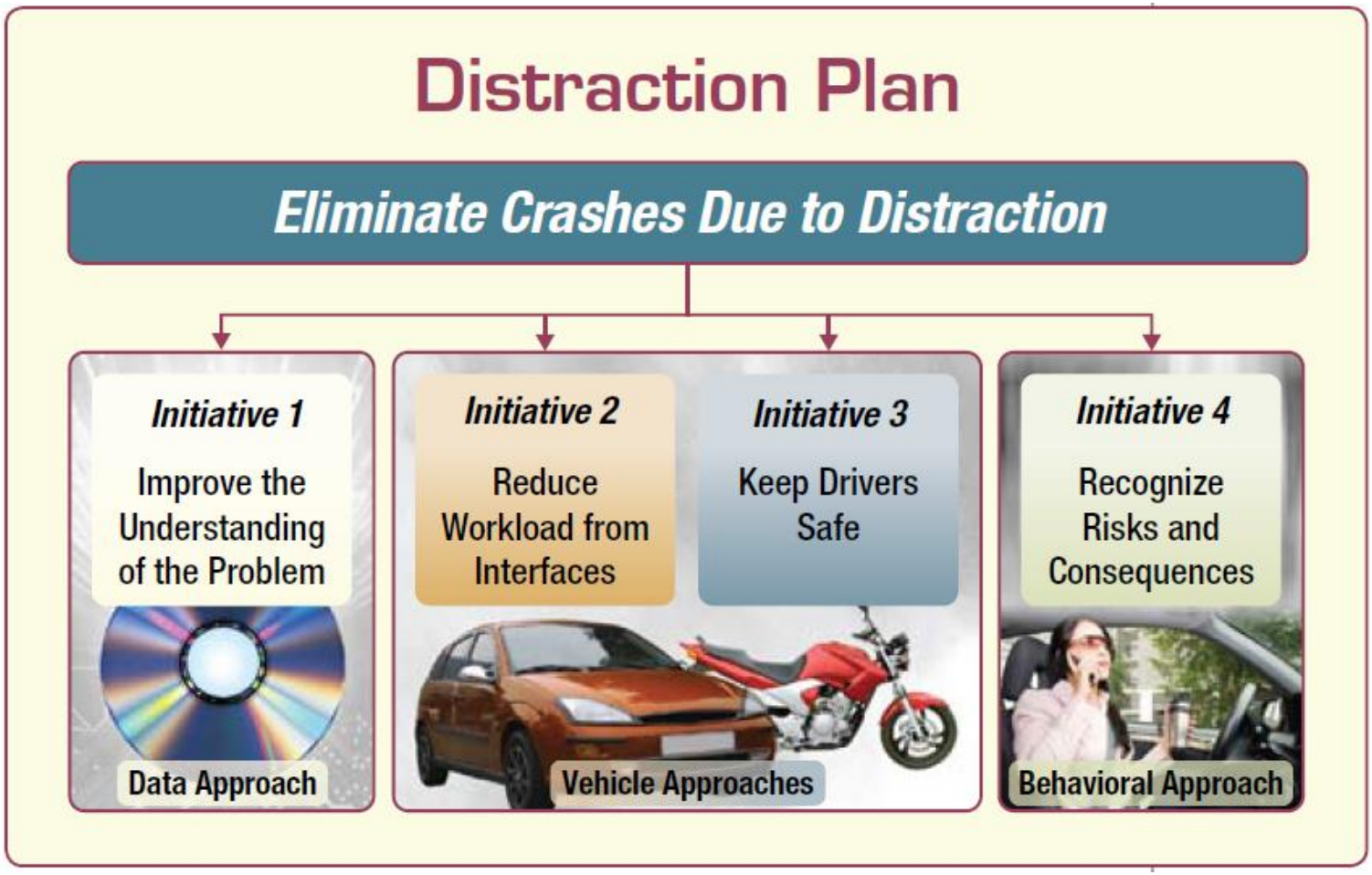
Track 5: Outreach

- Goal: To engage all stakeholders to ensure success of the program
- Outcomes: Collaborations that will result in innovative research designs, stakeholder buy-in, and a consistent message from the program
- Main tasks: Various meetings, including a kickoff later this year

V2V Plan: Tracks 5 and 7

- Track 5: Driver Issues
  - Goal: To determine the best interface design characteristics (effectiveness, driver acceptance)
  - Outcomes: Provides data on other aspects of interface design to further refine guidelines
- Track 7d: Commercial Vehicle HF/Driver Issues
  - Goal: To develop guidelines to look at message delivery, workload
  - Outcome: Set of guidelines that will be leveraged through HFID

NHTSA Distraction Plan



Primary Outcomes

- Better understanding of driver behavior
- Improved driver assistance technologies
- Interface design guidelines for IntelliDrive technologies