



Sixth SHRP 2 Safety Research Symposium

National Road Safety Action Plan in China

Dr. Yan Wang

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交通运输部公路科学研究院
RESEARCH INSTITUTE OF HIGHWAY MINISTRY OF TRANSPORT

Outline

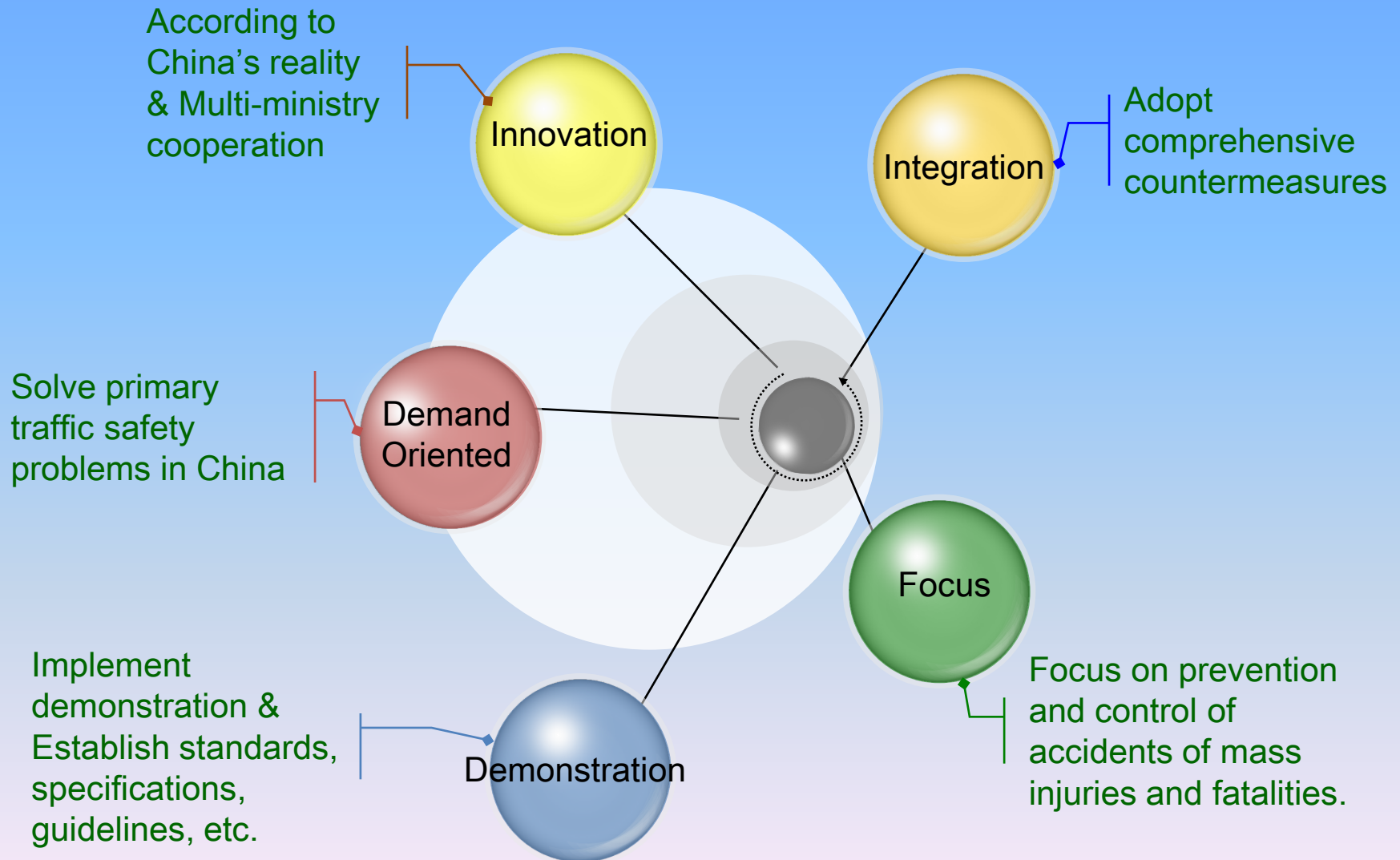
- 1 Initiative of “Road Safety Action Plan”
- 2 Phase I
- 3 For Next Phase?

Initiative of the Action Plan



Feb.18, 2008, Ministry of Science and Technology, Ministry of Transport and Ministry of Public Security signed a cooperation agreement of “National Road Safety Action Plan” in the Great Hall of People.

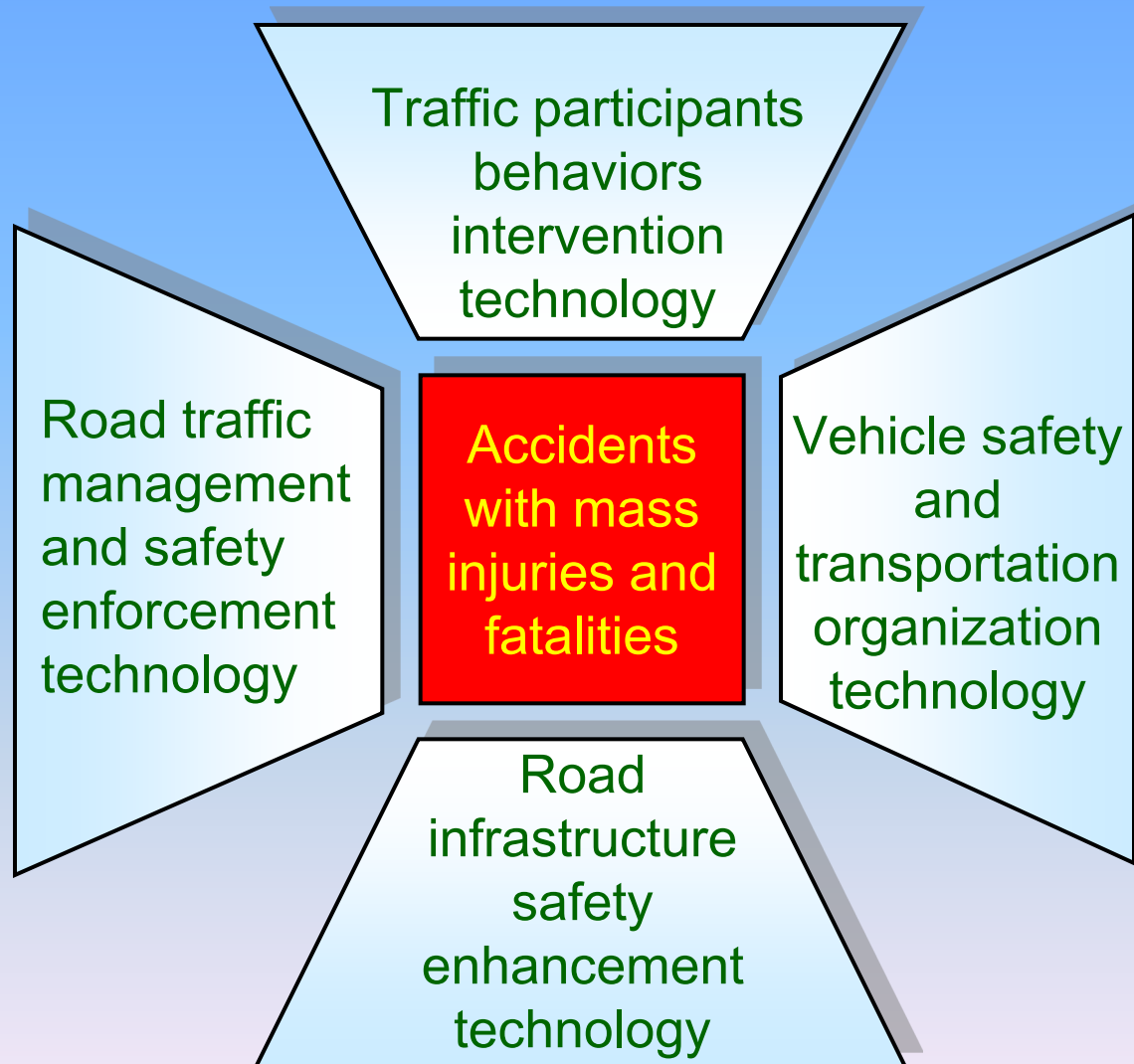
Principles of the Action Plan




Goals of the Action Plan

1. Under a cooperative working mechanism among the three ministries mentioned before, a series of research results on road safety with good practical effect are anticipated.
2. Greatly improve the ability of road accidents prevention, pre-warning, control and emergency rescue. Decrease Fatal and serious injured accident.
3. Through years of consecutive efforts, fatalities in road traffic accidents and the number of serious traffic accidents decline, and the mortality approaches the level of moderately developed country.

Activities of the Action Plan



Activities of the Action Plan



Traffic participants
behaviors
intervention
technology

1. Traffic participants behaviors analysis technology
2. Traffic participants behaviors monitoring and intervention technology
3. Identification and pre-warning technology of abnormal condition of commercial vehicle drivers
4. Training, test and management technology for drivers
5. Adaptation analysis of drivers to traffic environment
6. Road safety communication and education technology

Activities of the Action Plan

1. Vehicle safety performance inspection technology
2. Transportation organization safety technology
3. Commercial vehicle operation monitoring technology.



Vehicle safety
and
transportation
organization
technology

Activities of the Action Plan

1. Safety assessment technology during road design and operation period
2. Road infrastructure disease monitoring, pre-warning, repairing technology
3. Operation safety monitoring and emergency management technology for large bridge and tunnel
4. Traffic safety monitoring, pre-warning and risk control technology under adverse weather.



Road
infrastructure
safety
enhancement
technology

Activities of the Action Plan



Road traffic management and safety enforcement technology

1. Traffic enforcement technology
2. Accidents management and emergency rescue technology
3. Traffic organization and safety enhancement technology under abnormal condition
4. Accidents analysis and reconstruction technology
5. Rapid dealing technology of serious traffic accidents
6. Identification and control technology of traffic violation.

Objects of the Action Plan

Include

- Arterial highway
- Expressway
- Rural low-volume road



Not include

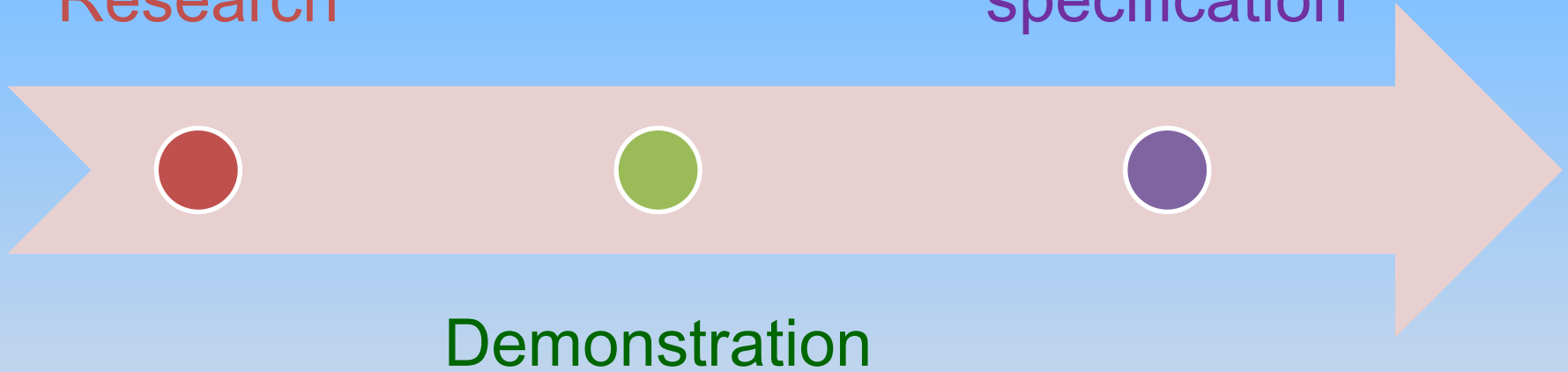
- Urban road and street



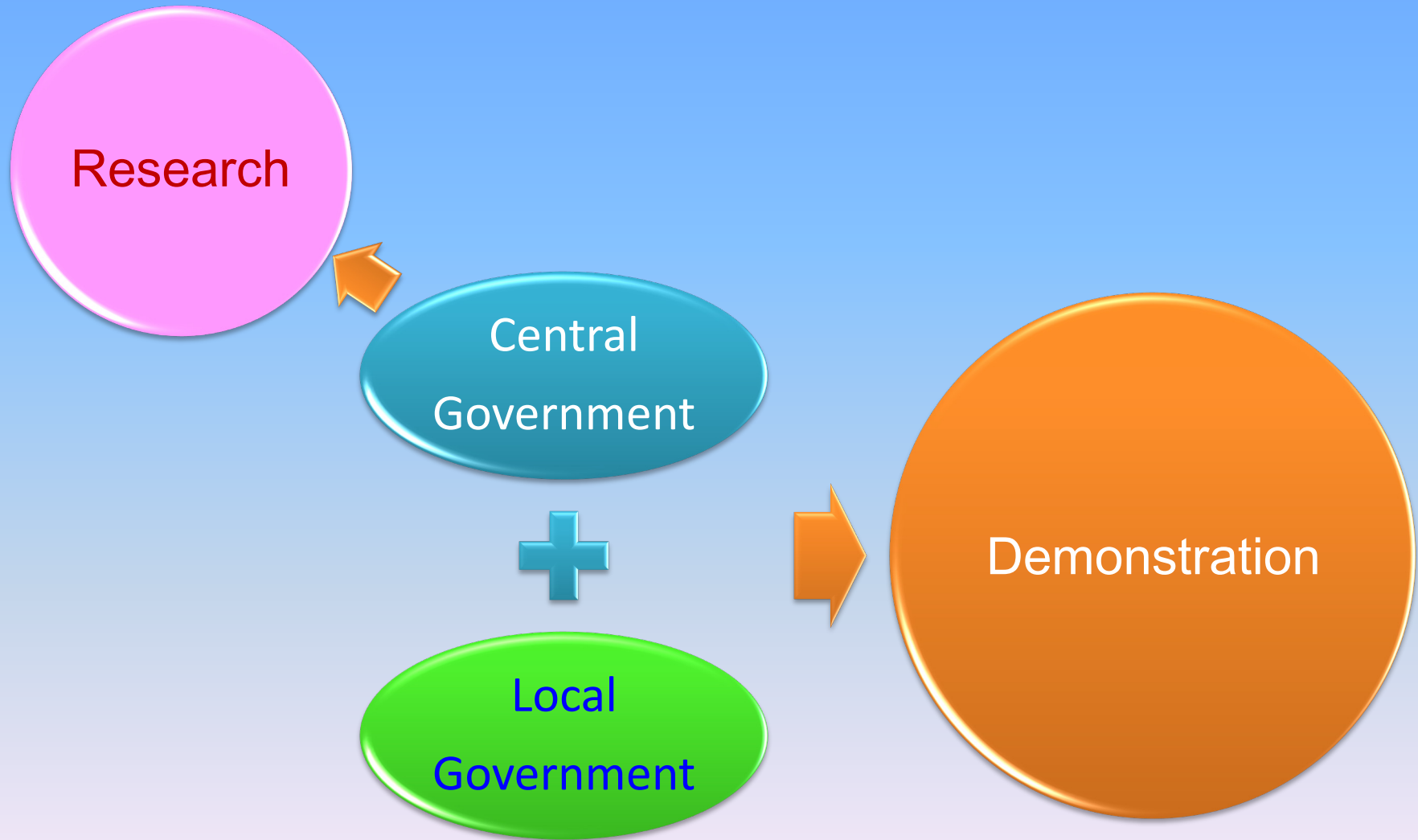
The way of Implementation

Research

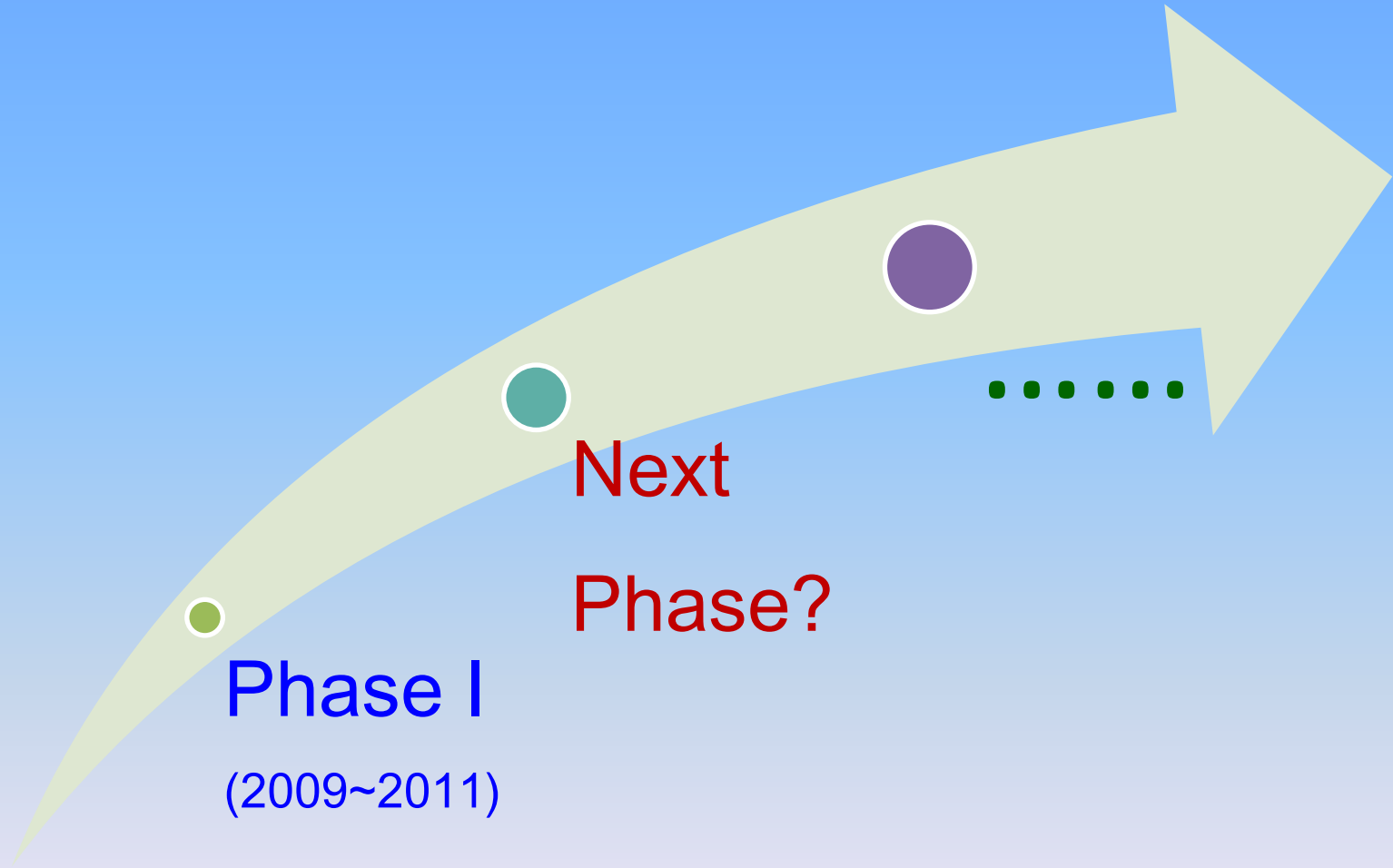
Standard &
specification



Funding of the Action Plan



Phase of the Action Plan



Outline

- 1 Initiative of “Road Safety Action Plan”
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Project in Phase I (2009~2011)

Comprehensive prevention and control technology of fatal and serious injured accidents and demonstration

- **Sub.1:** Traffic safety data integration and exchange platform construction technology and demonstration
- **Sub.2:** Road network in mountain area safety enhancement technology and demonstration.
- **Sub.3:** Expressway safety and information service technology and demonstration.
- **Sub.4:** Commercial vehicle operation safety enhancement technology and demonstration.
- **Sub.5:** Road users safety enhancement technology and demonstration.
- **Sub.6:** Traffic safety monitoring, assessment, and management technology of road network.
- **Sub.7:** Road traffic enforcement technology and demonstration.

Targets in Phase I

1. Preliminarily develop the systematic road safety technology.
2. By implementing large scale demonstration projects, establish series of road safety technology specifications.
3. Improve the level of safety of demonstration road network significantly.
4. Lay the cornerstone of a sustainable Road Safety Action Plan.

Specific Objectives in Phase I

Large scale of demonstration projects

1. National road safety information integration and analysis platform
2. >5000km road network for safety technology demonstration
3. >5 provinces participate in traffic safety remote education and training demonstration
4. >5000km regional road network for safety enforcement and emergency management demonstration
5. >5 provinces participate in commercial vehicles safety inspection and admittance management demonstration

Specific Objectives in Phase I

Compared with the level of safety 3-5 years ahead of project implementations, the level of safety of demonstration road network will be:

1. Annual fatalities per 10,000 vehicle kilometer travelled decrease by 20%
2. Annual number of severe accident per 10,000 vehicle kilometer travelled decrease by 50%
3. Emergency rescue efficiency increase by 50%
4. Legal commercial vehicle safety inspection rate >90%

Subject 1: Traffic safety data integration and exchange platform construction technology and demonstration

Objective

Build up the traffic safety data integration and exchange platform by integrating traffic accident database belonging to police and highway database belonging to highway agency.

Research & Development (R&D)

- ↻ Inter-agency traffic safety data platform construction technology
- ↻ Traffic safety data collection criteria
- ↻ Existing data integration technology
- ↻ Traffic safety information service system

Subject 2: Road network in mountain area safety enhancement technology and demonstration

Objective

Build up systematic road safety enhancement technology in mountain area, including road network risk assessment system, traffic operation safety control system under adverse weather, new defense and guidance facilities, emergency rescue facilities, etc.

Demonstration on inter-regional arterial road network in mountain area and inter-provincial freeway corridor.

R & D

- ↻ Systematic road infrastructure safety enhancement technology
- ↻ Operation safety management system of road network in mountain area
- ↻ Operation safety enhancement technology under adverse weather
- ↻ Safety analysis and verification of highway specifications

Subject 3: Expressway safety and information service technology and demonstration

Objective

- Develop intelligent expressway safety management and information service system
- Develop safety design technology for expressway renewal

R & D

- ↪ Expressway safety design technology based on driving behavior
- ↪ Intelligent expressway safety management technology
- ↪ Integrative expressway safety information service technology
- ↪ Operation management technology of national expressway network
- ↪ Specification on freeway safety design and service

Subject 4: Commercial vehicle operation safety enhancement technology and demonstration

Objective

Improve operation safety of commercial vehicle by building up safety performance assessment and enhancement technology system

R & D

- ↗ safety performance assessment and inspection technology of commercial vehicle
- ↗ Operation safety monitoring technology of commercial vehicle
- ↗ Driving safety training, test and evaluation technology for commercial vehicle drivers
- ↗ Specification on admittance management of commercial vehicle and drivers

Subject 5: Road users safety enhancement technology and demonstration

Objective

Improve traffic behavior safety of all road users by strengthening the effect of drivers training and test as well as the effect of traffic safety communication and education.

R & D

- ↗ Training and test improvement based on drivers behavior safety analysis
- ↗ New traffic safety communication and education technology.
- ↗ Interactive traffic safety communication and education platform
- ↗ Regulation on traffic safety training, test, communication and education

Subject 6: Traffic safety monitoring, assessment, and management technology of road network

Objective

Improve the level of traffic management by developing traffic safety monitoring, assessment and emergency management system of regional road network.

R & D

- ~ Traffic safety monitoring technology of regional road network
- ~ Traffic safety assessment and pre-warning technology of regional road network
- ~ Traffic safety information service technology of regional road network
- ~ Traffic enforcement technology
- ~ Specification on traffic safety monitoring, assessment and emergency management

Subject 7: Road traffic enforcement technology and demonstration

Objective

Improve traffic enforcement capability, including accident on-site investigation, analysis and rapid-dealing, etc., especially for serious accident.

R & D

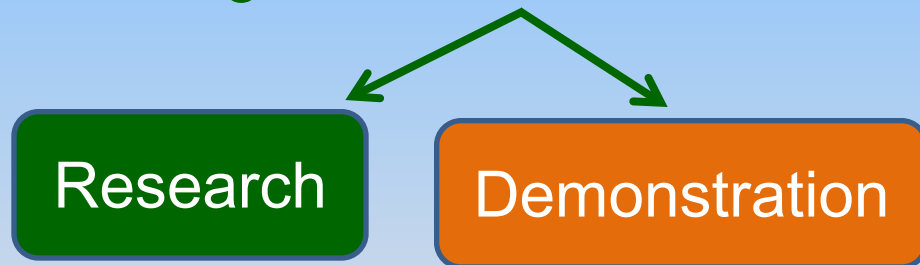
- ↗ New technology and equipment of accident rapid-dealing and on-site protection
- ↗ Traffic accident investigation and analysis
- ↗ Traffic safety enforcement technology and equipment
- ↗ Regulations on traffic safety enforcement

Funding in Phase I (2009~2011)

Total funding 129.2million US \$

Including

Central government funding 44.2 million US \$

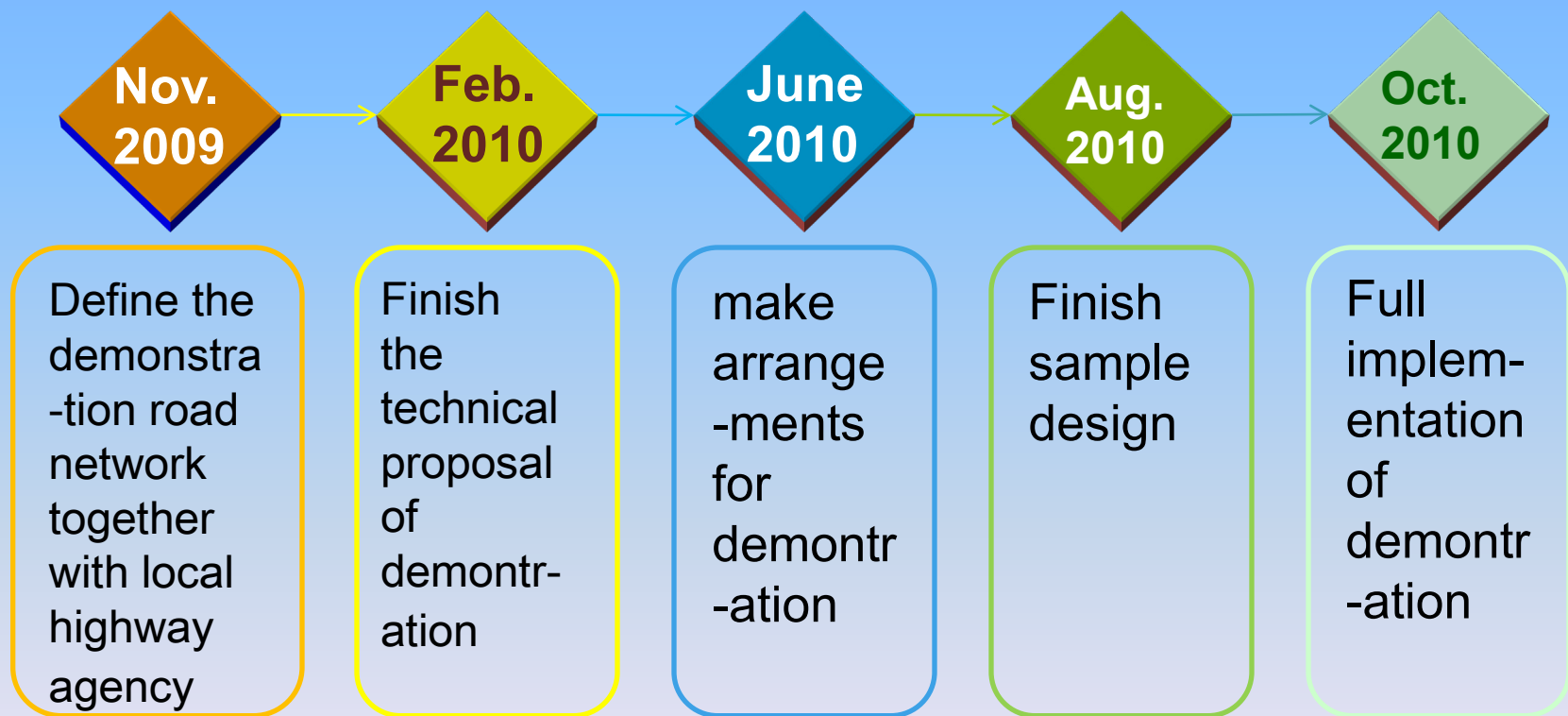


Local government funding 85 million US \$

Update in Phase I



Update of Demonstration



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Why Next Phase?



Objectives of Next Phase

Objectives

- ✓ Forecasting, active pre-warning and pre-control of significant risk
- ✓ Improve the efficiency of emergency management and rescue
- ✓ Further reduce the rate of fatal and serious injured accident and mortality rate
- ✓ Maximize protection of people's lives and property

New Technologies

- ✓ Internet of Things
- ✓ Beidou Navigation System
- ✓ Behavioristics

Research Objects

- ✓ Expressway
- ✓ Rural road and low-volume road
- ✓ Commercial vehicle

Preliminary Basis

- ✓ Integrated applying the safety facilities and monitoring equipment proposed in Phase 1

Tasks of Next Phase

Accident Active
Prevention and
Control Technology
of Expressway

1

Safety Enhancement
Technology of Rural
Road (low-volume
and in Mountain Area)

2

Operation Safety
Monitoring Services
Technology of
Commercial Vehicles

3

Traffic Participant
Behavior Analysis &
Intervention
Technology

4

Task 1 of Next Phase

1

Accident Active Prevention and Control Technology of Expressway

Problems

Weak safety supervision of Road key infrastructure (e.g. Large bridge and tunnel)

Lack of safety information collection and integration technology

Monotonous traffic safety service mode for drivers

Inefficiency of on-site first aid in serious traffic incidents



Researches

Safety status monitoring, pre-warning and management technology of road key infrastructure

Driving environment monitoring and comprehensive utilization technology and system

Interactive driving safety service technology

On-site emergency rescue and remote assistance technology for serious traffic incident

Task 2 of Next Phase

2 Safety Enhancement Technology of Rural Road (low-volume and in Mountain Area)

Problems

Low level of safety standard of rural low-volume road in developed region

High frequency of serious car-fall accidents on highways in mountain area

Frequent occurrence of natural disasters on highway in mountain area

The huge risk caused by road environment change in urban fringe



Researches

High-availability protection facilities and control & optimization technology

Driving safety pre-warning and control technology in severe environment/on dangerous road sections

Natural disaster forecasting, prevention and monitoring technology of highway in mountain area

Traffic control and intervention technology in traffic environment converting sections

Task 3 of Next Phase

3 Operation Safety Monitoring Services Technology of Commercial Vehicles

Problems

Lack of effective ways of monitoring and real-time control to traffic violation, e.g. speeding, fatigue driving, etc.

Lack of accurate on-route safety information service to commercial vehicle drivers

High accident risk caused by the complex road and vehicle situations in rural passenger lines



Researches

Driving process supervision and traffic violation real-time intervention technology based on Beidou Navigation System

Personalized safety information service technology

Driving safety enhancement technology of rural passenger vehicles

Task 4 of Next Phase

4

Traffic Participant Behavior Analysis & Intervention Technology

Problems

Less training methods of driving behavior under abnormal situation

Lag of behavioral characteristics researches of traffic participants

Infancy of active driving intervention technology researches and applications



Researches

Major driver's safety driving behavior training technology under abnormal situation based on training venues

Behavior characteristics of traffic participants apperception and intervention technology

Human factor-based driving operation intervention technology

谢谢
THANKS!

