

WORKSHOP A

SESSION ONE

Presentation 5

Advancement of vehicle inspection in Japan

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Japan

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Advancement of Vehicle Inspection in Japan

The National Agency of Vehicle Inspection (NAVI)

Kazuro KURIHARA, Chief Executive

- ◆ Basic Information on National Agency of Vehicle Inspection(NAVI)
- ◆ Basic Information on Vehicle Inspection in Japan
- ◆ Inspection Method for Two Wheel Vehicle
- ◆ Three-Dimensional Measurement and Image Capture, Digitalization and Compiling Database of Inspections Results
- ◆ Inspection Method Improvements
 - Speed limiter device(SLD) function inspection
 - Exhaust emission inspections utilizing on-board diagnostics (OBD)
 - Inspections of used cars converted into electric vehicles (Conversion EV)

Date of Establishment

July 1, 2002, derived from MLIT

* MLIT ; Ministry of Land, Infrastructure, Transport and Tourism

Capital

€93 Million

Fiscal Budget

€95 Million (FY2012)

Number of Employees

818(as of April 2013)

Number of Vehicles Inspected

7.48 Million (FY2011)

Number of Vehicles Inspected per a Inspector

about 10,000 yearly

Inspection Fee

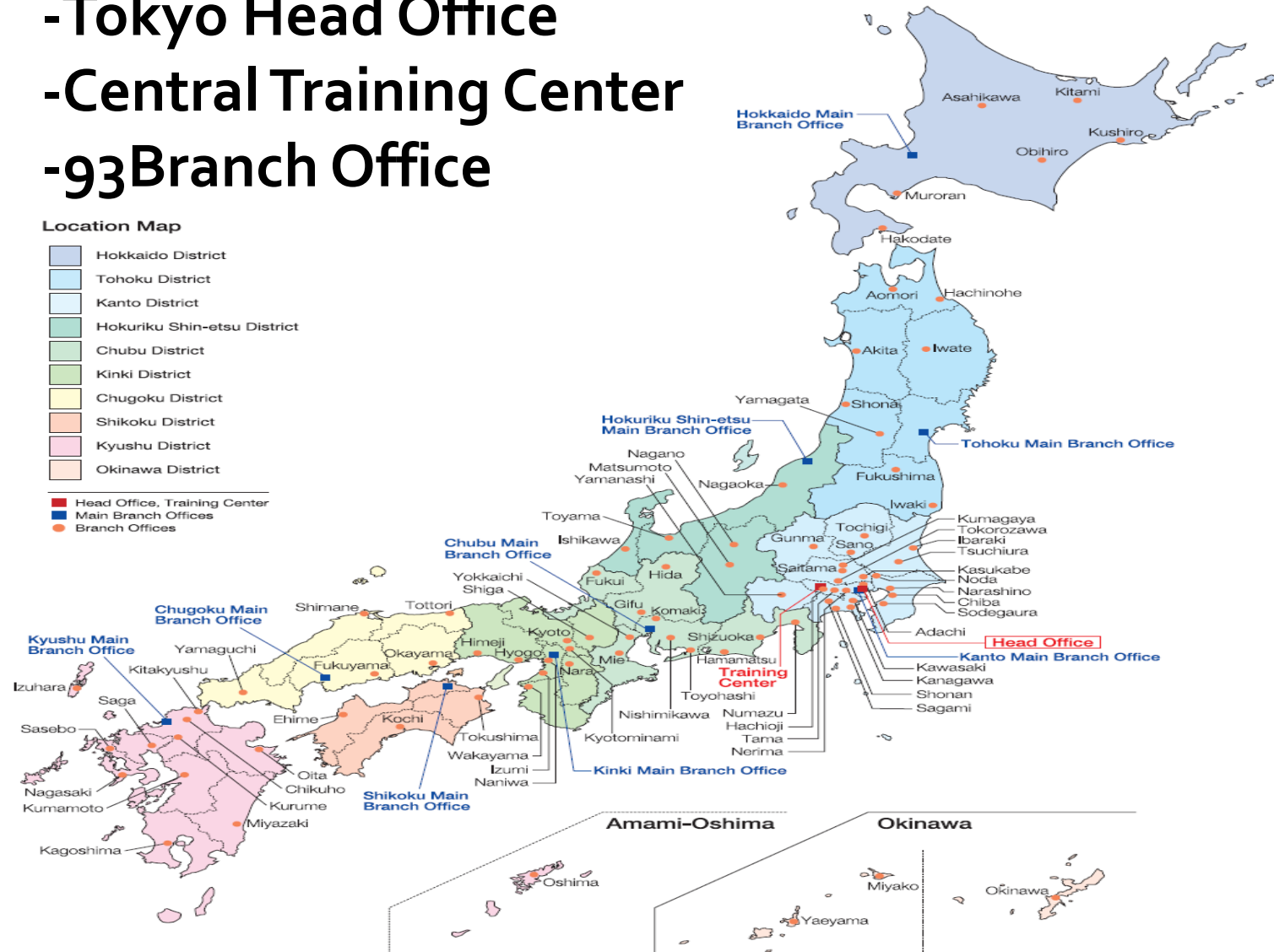
about 14€ (PTI)

* PTI ; Periodical Technical Inspection

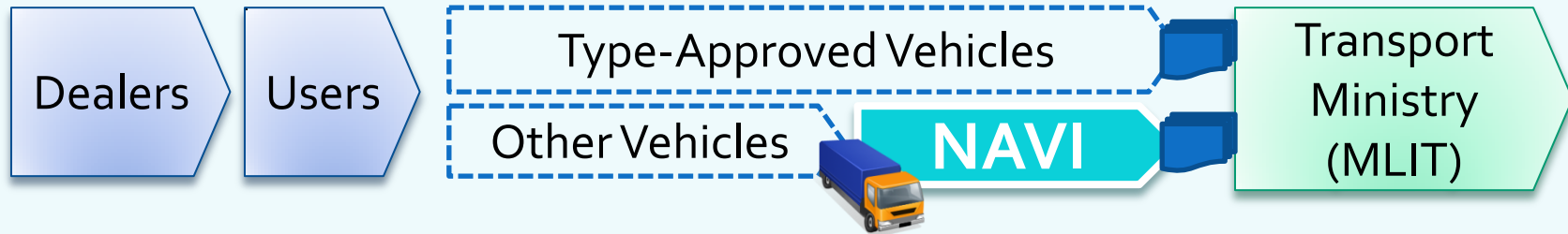
(1 € = 130 Yen)

- Tokyo Head Office
- Central Training Center
- 93 Branch Office

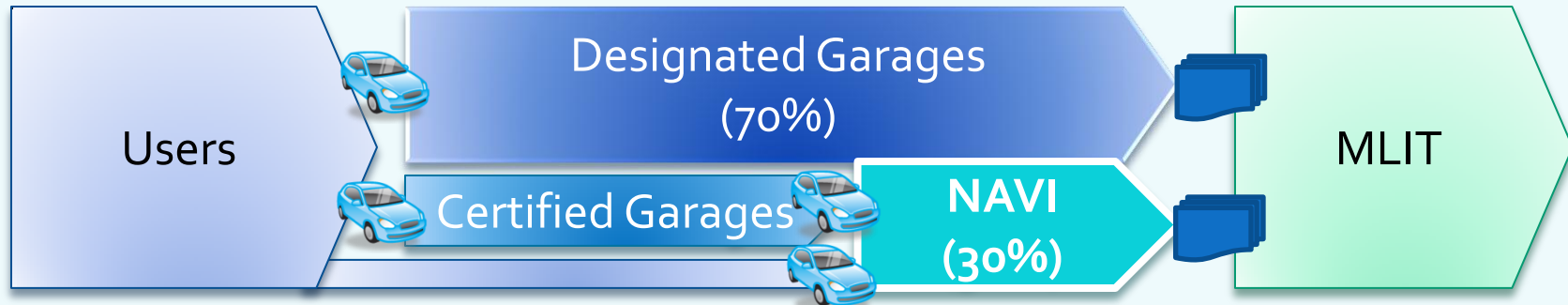
Location Map



◆ Initial Inspection



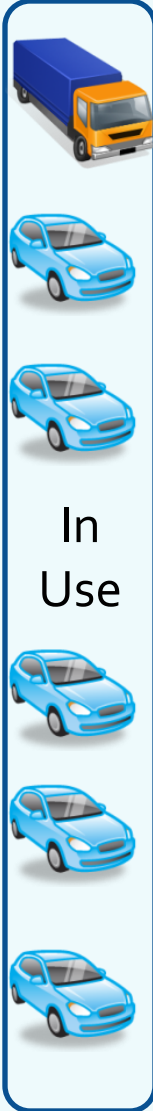
◆ Periodical Technical Inspection(PTI)



◆ Modification Inspection, Roadside Inspection



* Except for light motor vehicles



Measurement Lane

Compliance Check Lane

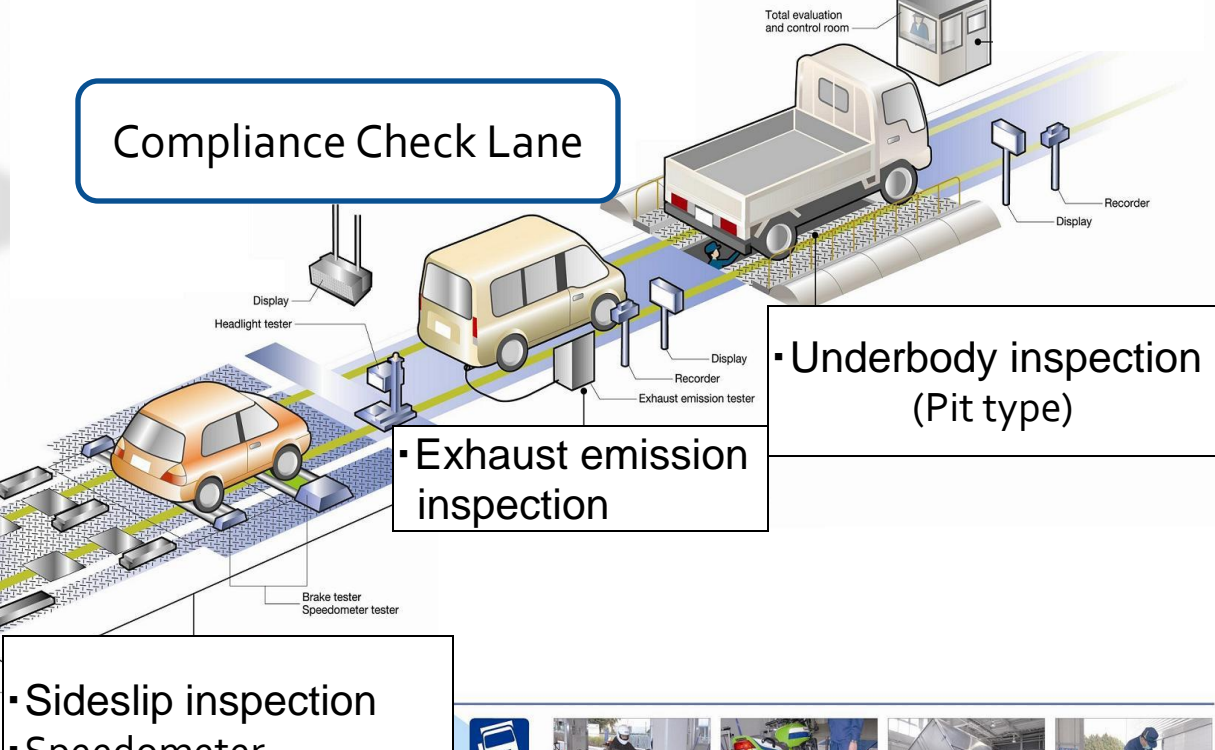
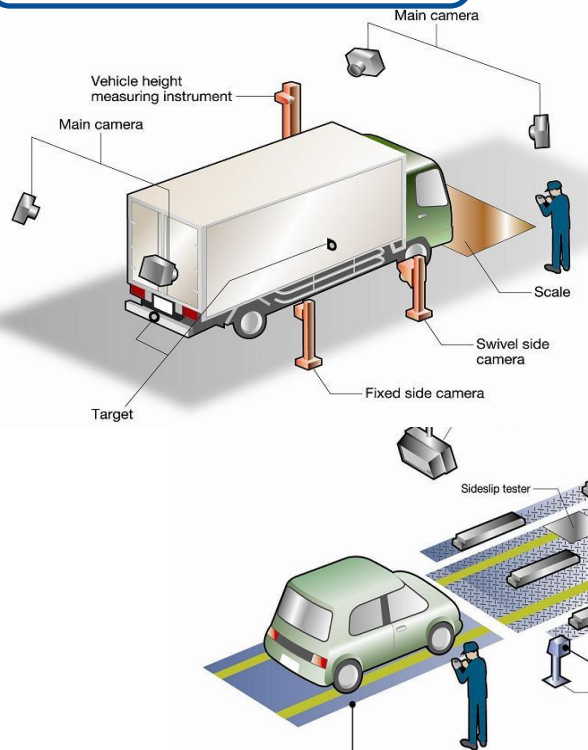
• Total evaluation

• Underbody inspection (Pit type)

• Exhaust emission inspection

- Sideslip inspection
- Speedometer inspection
- Headlight inspection
- Brake inspection

- Confirmation of identity
- External inspection

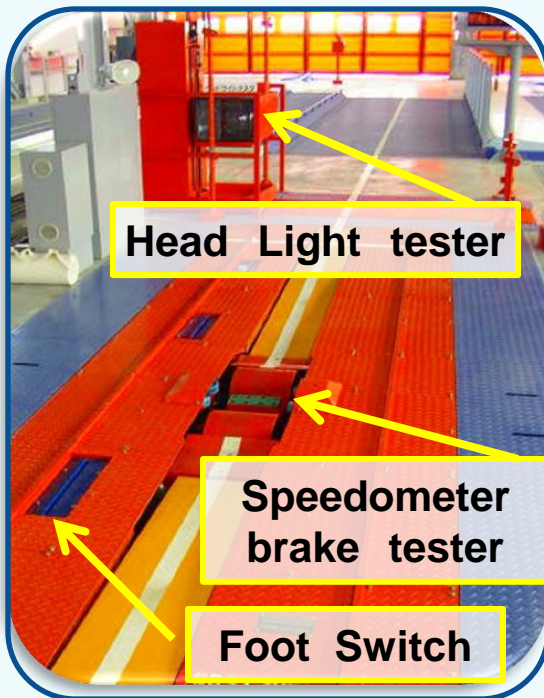


1. Basic Information on two wheel vehicle inspection in Japan

- ◆ Subject of inspection: engine displacement over 250cc
- ◆ Annual inspection number: approx. 410,000
- ◆ Valid period of inspection certificate: 2 year [3 year (initial inspection)]

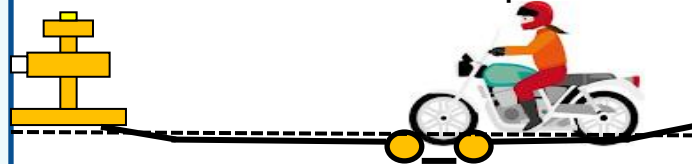
2. Inspection equipment for two wheel vehicle

- ◆ 72 branch offices



Inspection flow of two wheel vehicle tester

1. Front wheel brake inspection and Speedometer inspection



2. Rear wheel brake inspection (and Speedometer)

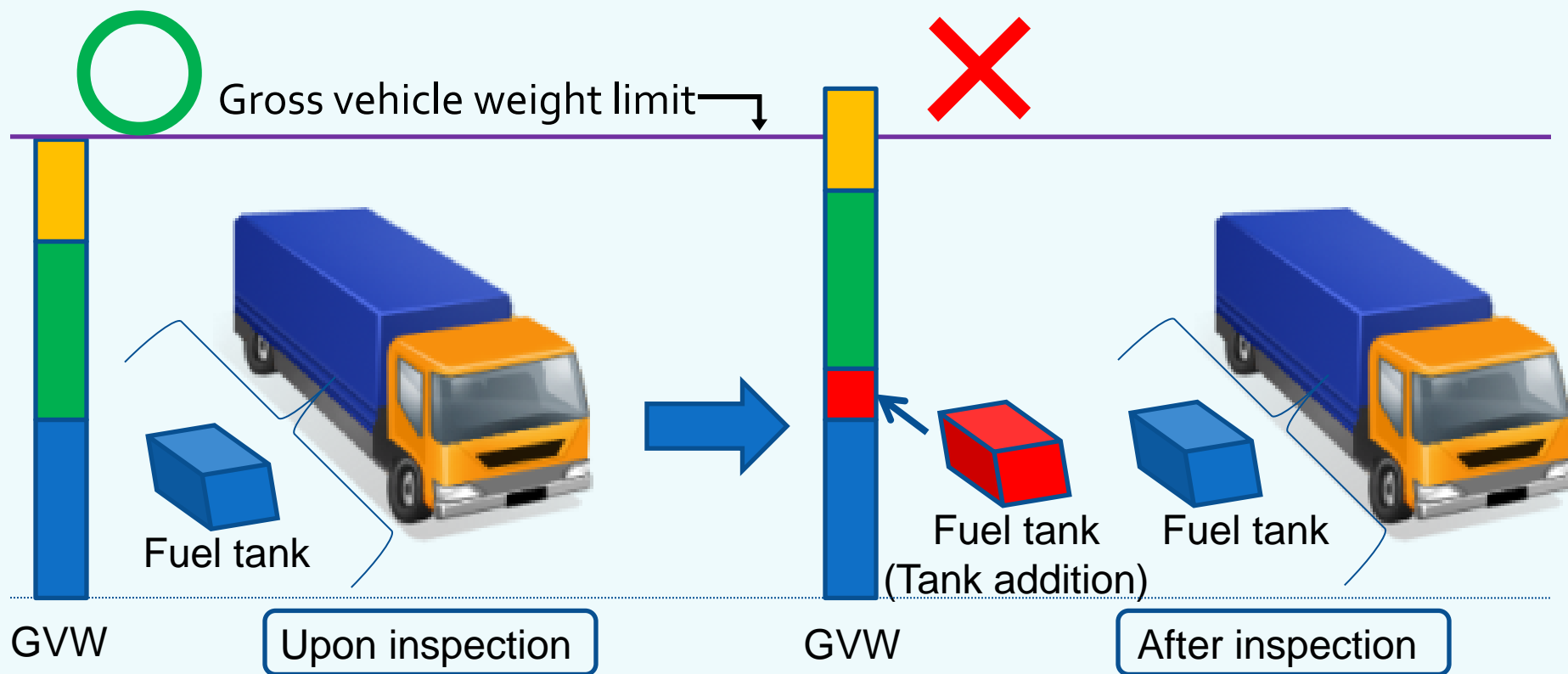


3. Headlight inspection



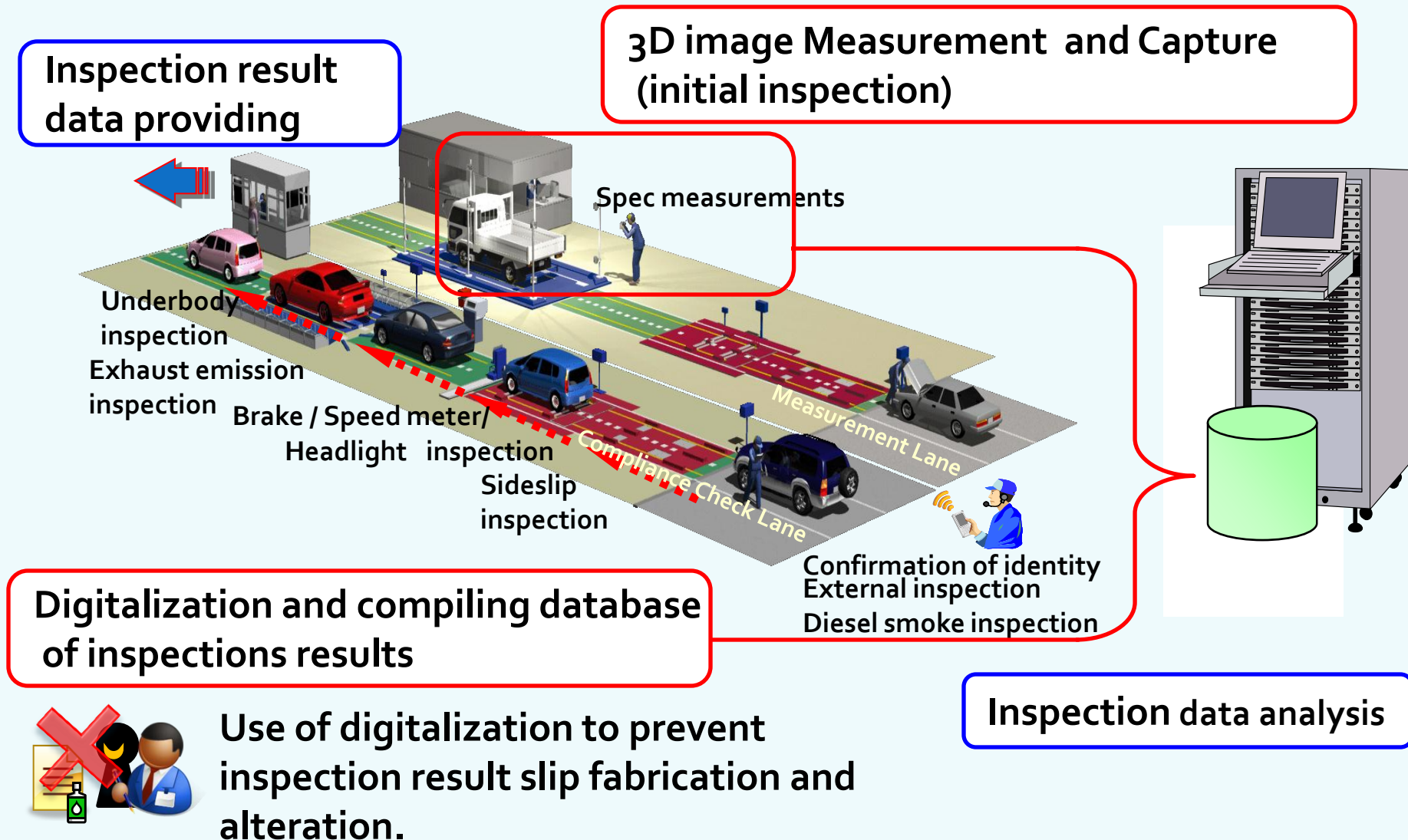
● Tester operates when the rider treads on foot switch in every stage

Example of Unauthorized Body-Building After Inspection



- Unauthorized body-building after inspection to pad maximum load and for other purposes has become a social issue.
- Vehicles mounted with unauthorized secondary equipment exceed the regulated values for gross vehicle weight. This creates safety problems linked to longer braking distance, structural durability and other areas.

Three-Dimensional Image Measurement and Capture, Digitalization and Compiling Database of Inspections Results



3次元測定・画像取得装置 撮影 測定日時 2008/04/16 15:38:32
✖

ファイル(F) ツール(T) ヘルプ(H)

撮影画面

測定画面

測定結果画面

データ登録画面

データ読出

撮影中止

システム終了

画像保存用の撮影を行います。必要に応じて車体サイズとカメラ設定を変更し、撮影開始ボタンを押してください。


前右



前左



後右



後左



次の撮影時のカメラの明るさの設定

暗

明

暗

明


暗


明

暗

明

側面右









側面左








外部機器の画像データ

取込

削除

取込

削除

写真をクリックすることで拡大表示できます。

スタート
3次元測定・画像取得...
安全でない取り外し

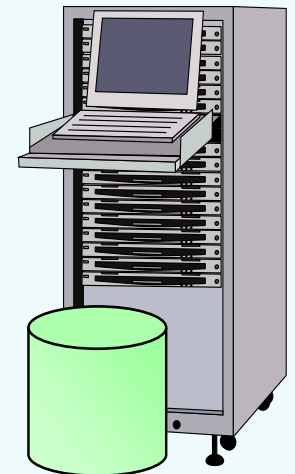
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Application measure examples

- ◆ Extraction of problematic data potentially leading to recalls
- ◆ Extraction of matters demanding priority inspection
- ◆ Extraction of matters demanding priority check and maintenance

Status of Actions

- ◆ Database conversion implementing application measures(2013-2014)
- ◆ Implement of application measures(2014～)



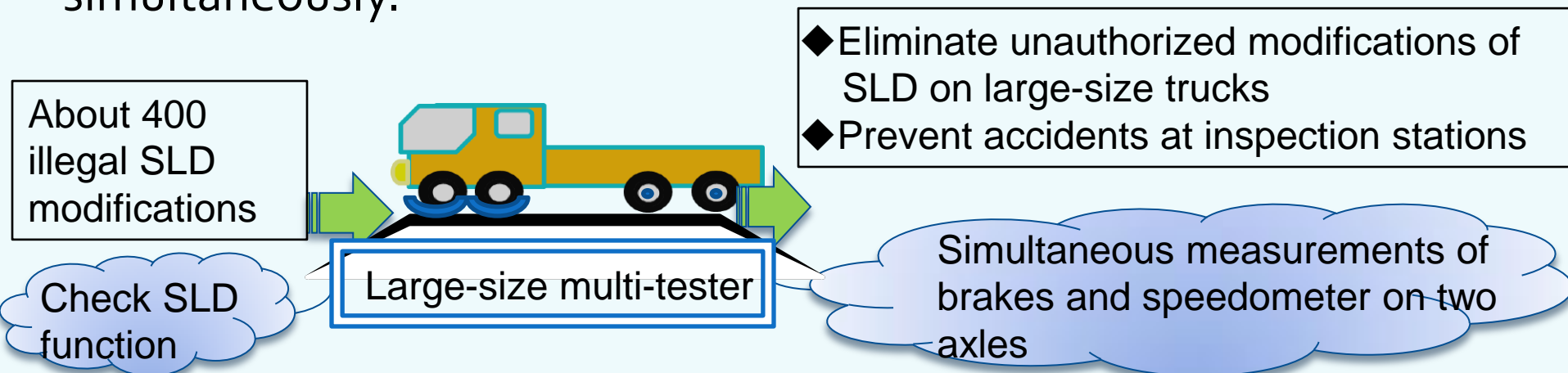
Speed limiter device(SLD) function inspection

(Status Quo)

- ◆ Large-size trucks (GVW > 8 t)are required to install SLD (MAX speed 90km/h). But unauthorized modifications occur .
- ◆ SLD function is checked by malfunction indicator lamps (MIL) and other means, but clever modifications are difficult to expose.

(Status of Actions)

- ◆ Trial introduction of equipment capable of checking SLD function and measuring braking force and speedometer accuracy on two axles simultaneously.



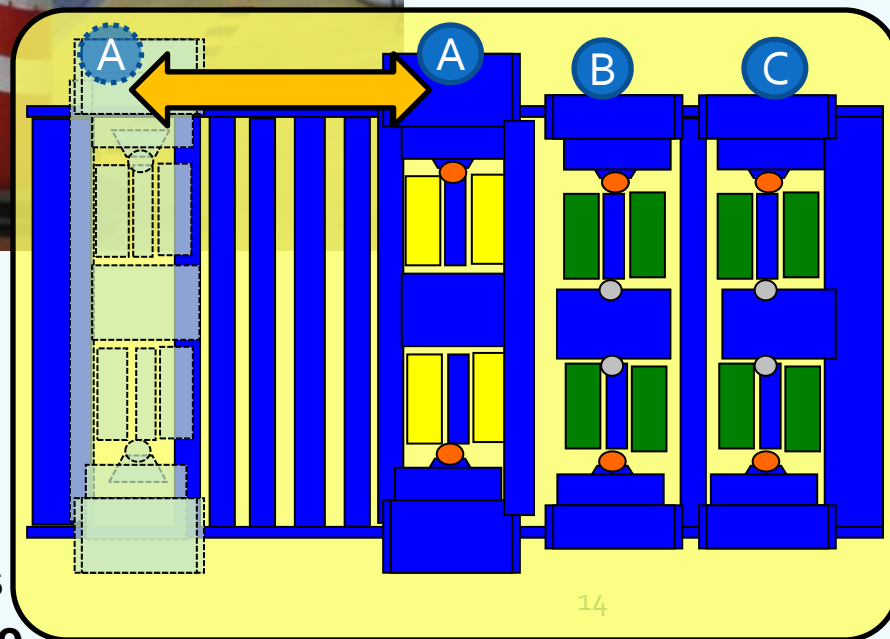
large-size multi-tester

direction of movement

movable range
of A roller

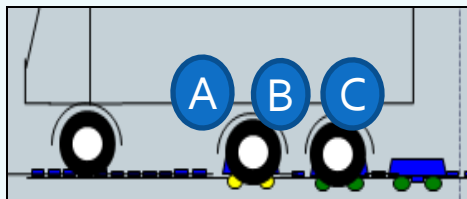
A B C

speedometer/brake
tester

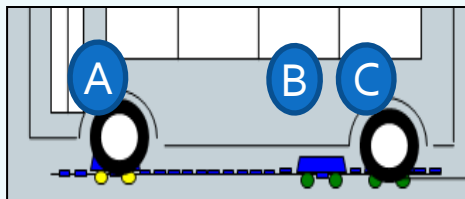


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【combination of rollers】



A and B for vehicles
with short wheel base



A and C for vehicles
with long wheel base

Exhaust emission inspections utilizing on-board diagnostics (OBD)

(Status Quo)

- ◆ Idling exhaust emission(CO, HC) is inspected . OBD function is checked by MIL.
- ◆ Exhaust emissions reduction technology makes progress very fast (aftertreatment systems, more sophisticated controls, etc.). Inspection method must be improved to keep pace with it.
- ◆ Installation on passenger cars of advanced emission OBD has been mandatory since 2008.

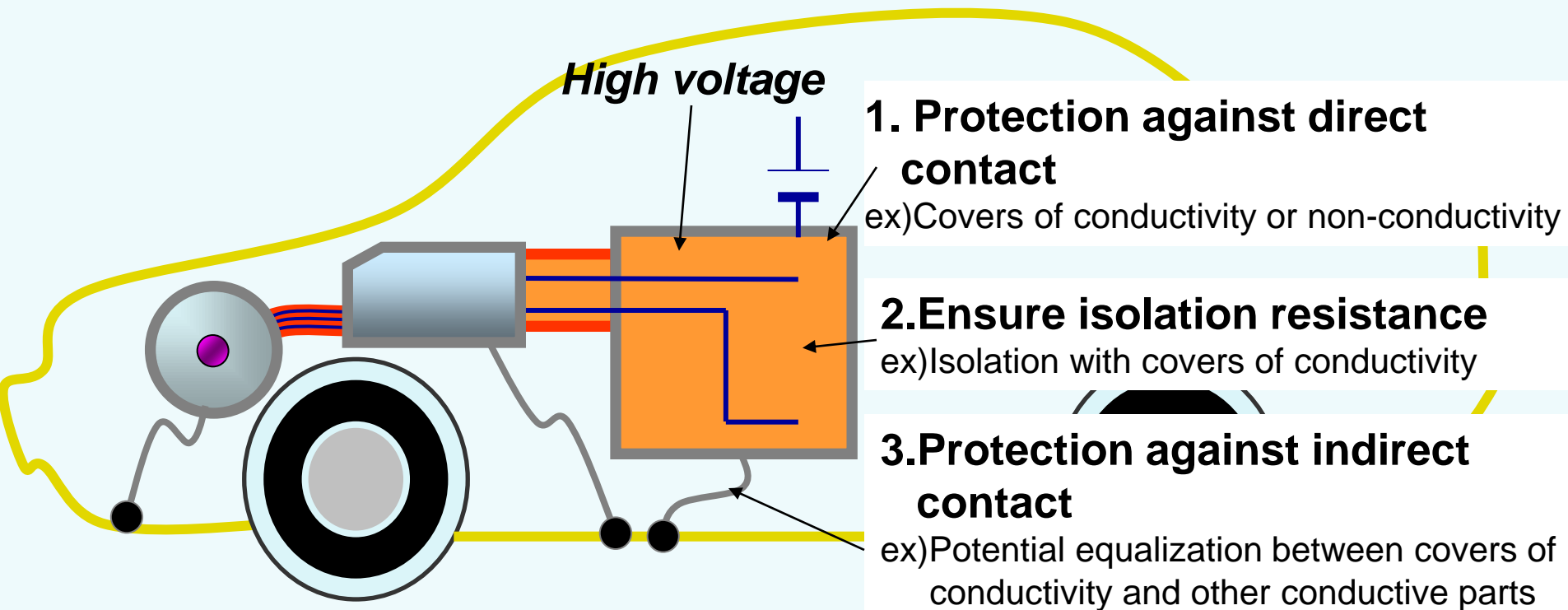
(Status of Actions)

- ◆ Trial introduction of inspection utilizing OBD scanning tools .
 - Equipment and methods capable of efficient inspections of many vehicles in short time.



Inspection for `Conversion EV`

- ◆ Number of electric vehicles(EV) and hybrid electric vehicles (HEV) :over 2 million in Japan.
- ◆ Increase of “conversion EV” – conversion of regularly marketed gasoline-engine vehicles into EV by venture companies.
- ◆ Enforcement of regulation for protection against electrical shock for conversion EV in July 2012
(In conformity to UN regulation No.100)



Converter

Speed controller



Battery

Thank You !



National Agency of Vehicle Inspection

<http://www.navi.go.jp>