

Automatic 3D Dimension Scanner for Vehicle Inspection

01

1. Why we need external dimension measurement system for PTI ?

02

2. Technical Evolution for Dimension Measurement

03

3. COSBER's Solution in Dimension Scanner

Issue 1: Road safety issue for vehicle's body modification.

Background in China:

- More than 30 millions Commercial Vehicles in China, Main are Heavy Good Vehicle (Truck).
- Sharp competition in Fright rate cause to the illegal modification.

Illegal Modification



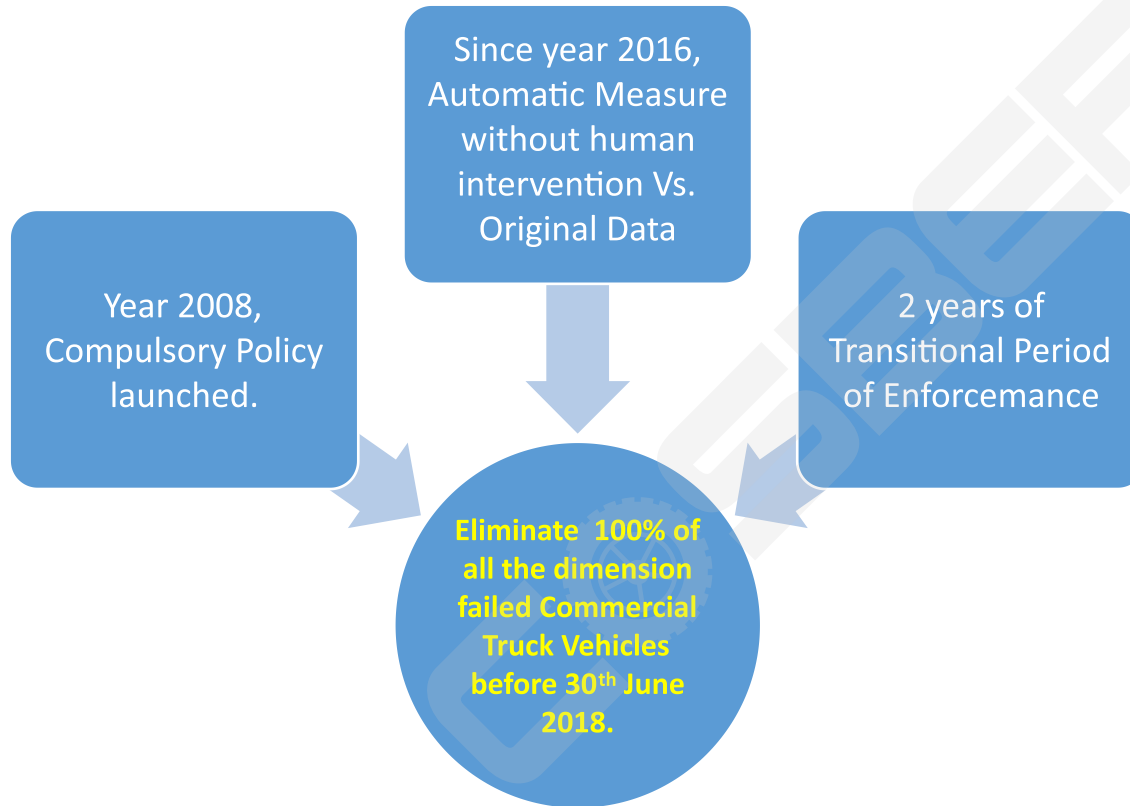
Over Weight



Accidents Damage



Issue 2: External Dimension check in PTI enforcement.



Safety & Satisfactions for Everybody!

GB 41020
T 34



中华人民共和国国家标准

GB 1589—2016
代替 GB 1589—2004

汽车、挂车及汽车列车外廓尺寸、
轴荷及质量限值

Limits of dimensions, axle load and masses for motor vehicles, trailers and
combination vehicles

Milestones of Elimination

Deadline Time	Reaches to
Before 30th June 2017	20%
Before 30th September 2017	40%
Before 31th December 2017	60%
Before 31th March 2018	80%
Before 30th June 2018	100%

Manual type dimension Measurement, but lots of disadvantages:

1. Time Consumes

2. Human Danger

- Many labor.
- Many task point.
- Too much time
- Climbing

3. Less Accuracy

- Difficult to Assessment
- Responsibility to inspector
- "Blind" point

4. Potential Tempering

- Manual recording
- NO monitoring
- "Manipulation"

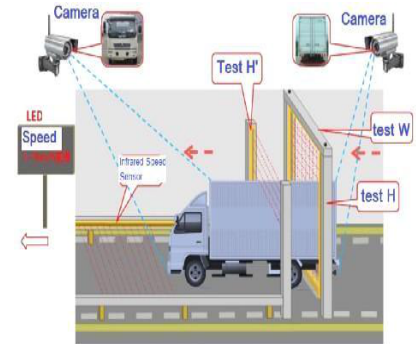
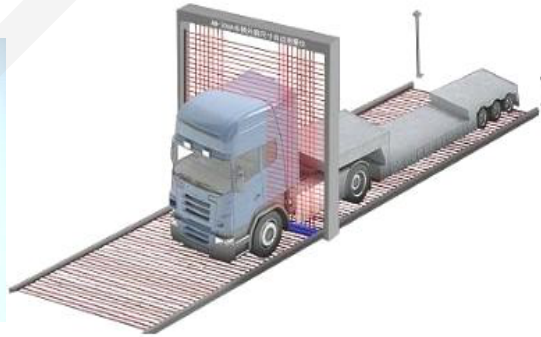
5. Poor Data Management

- Lots of paper work
- Difficult to review
- No net-working



1. Infra-Red technology: 1st generation technology, still Disadvantages:

- **Civil Construction:** Space & area taken a lot, long period civil, labor work, Easy to be flooded.
- **Infra-red rulers sensors:** Heavy mechanism, Vulnerable, Short life-time, high maintenance cost.
- **Accuracy:** Low definition, Lighting condition dependence.



2. CCD Camera Technology: **Expensive and unstable**

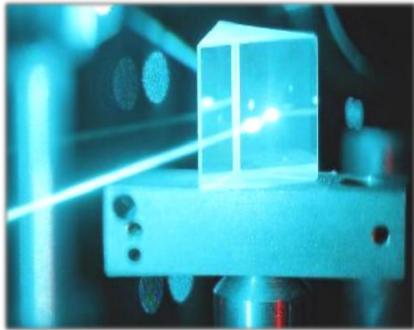
- Many camera photos merge into one panoramic picture, causes to much accuracy deviation.



- Cameras also depending on the light condition.



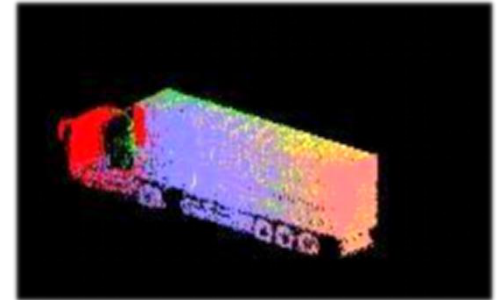
3.Laser Techonology : Accuracy, Multifunctional & Digitalization



Laser High Accuracy $\pm 10\text{mm}$

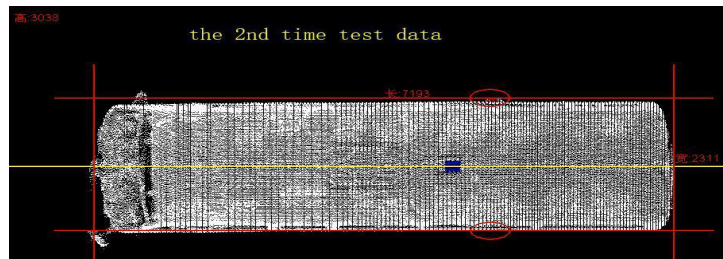
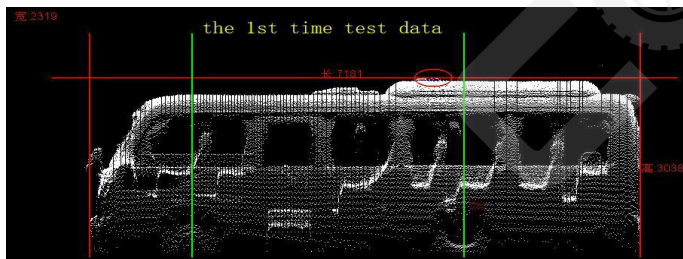
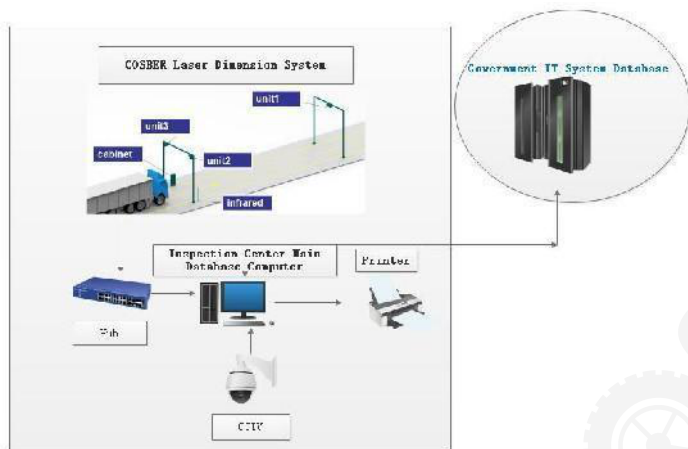


Reliable in All Weather & All Vison



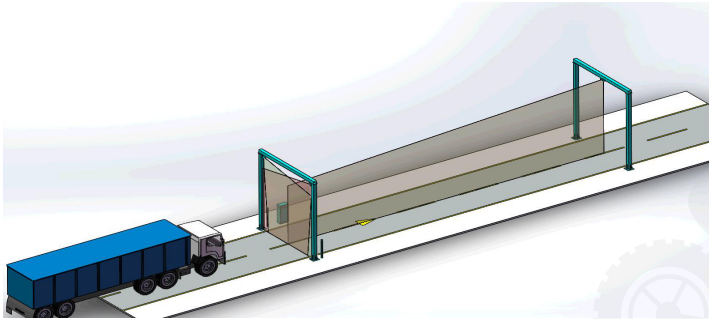
Dimensional point cloud image set up by real measured data

COSBER's Solution: Matured use of Laser Tech.+ Mathematical modelling



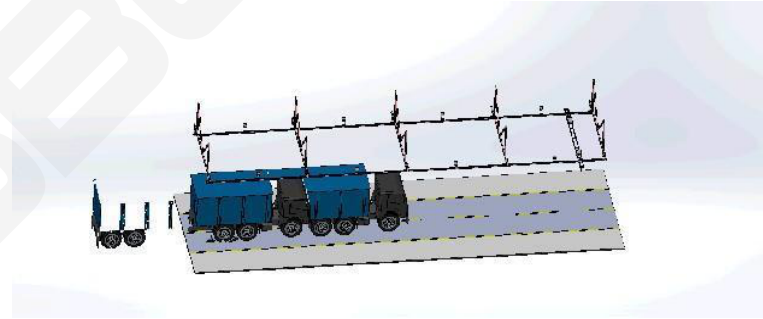
Application of Techonology with **Dynamic Mode & Static Mode**

Cosber offers to market 2 models of 3D laser Radar Dimension Scanner



◆ C-VDSS-1 (Dynamic mode):

- 3 pcs of laser radar in fix position.
- Vehicle drives-throught the Test zone to be scanned.



◆ C-VDSS-2 (Static mode):

- 2 pcs of laser radar in rail movement,
- Vehicle stands still in the Test zone to be scanned.

Automatic Dimension Scanner



Working Process

C-VDSS-2 Working Process



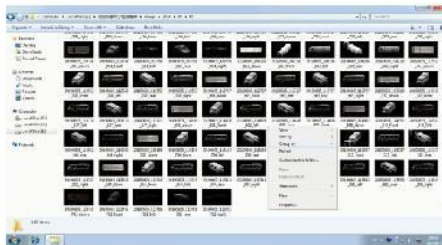
Start PC Software



Vehicle ready in place



Start to Scan



Data management



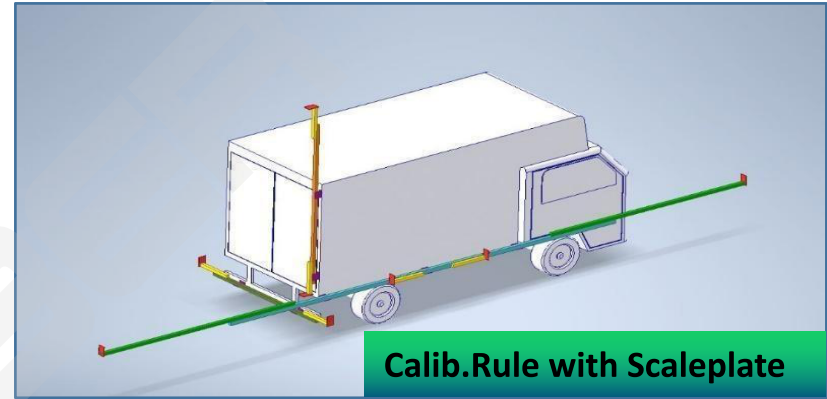
Dimension Result display



Scanning by Rail movement



Rule with Scaleplate installed in Ref. Vehicle



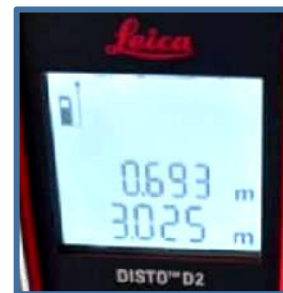
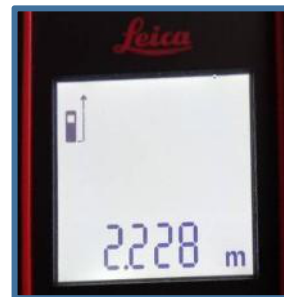
Calib.Rule with Scaleplate



Verification by IR Laser meter

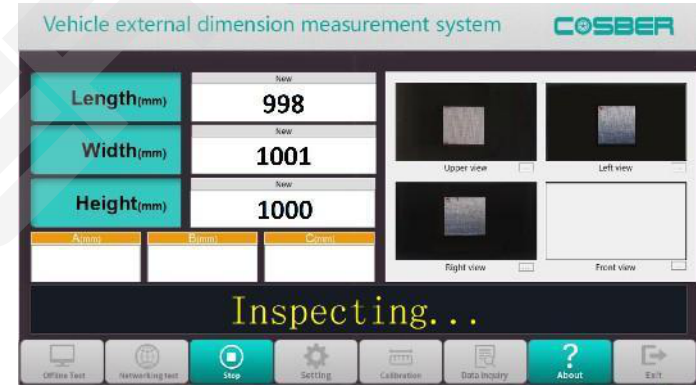
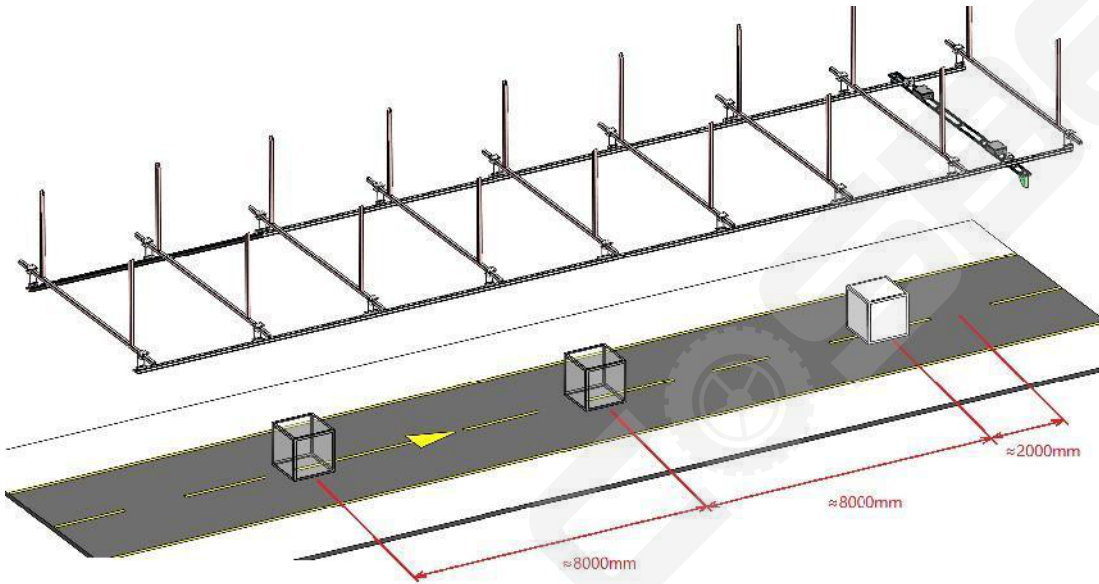


Result display in L x W xH in mm



Verification by IR laser meter

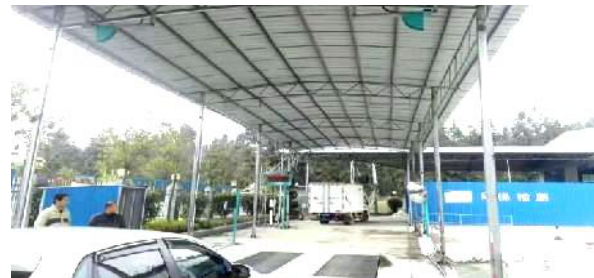
Denmension scanner Calibration Method 2



Calibrations by Scale Box

COSBER's Demension Scanner Customer Cases

CHINA



COSBER's Demension Scanner Customer Cases

THAILAND



MALAYSIA



COSBER's Demension Scanner Customer Cases

MALAYSIA



More special applicants



High-Way Toll Terminal



Vehicle Import type Approval



Special vehicle End-of-line inspection



Thank you for your concerns!

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