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ISWIM

Weigh-In-Motion Systems for Direct Weight Enforcement

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Weigh-In-Motion Systems for Direct Weight Enforcement

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Introduction

- Scope
  - Direct Weight Enforcement
  - In-Road WIM
  - High Speed WIM
- Objective
  - Share experience
  - More standardization
  - Not a new standard

Weigh-In-Motion Systems for Direct Weight Enforcement

Why?

- Why Weight Enforcement?
  - Damages to road infra
  - Traffic safety
  - Unfair competition

- Limitations of Traditional Enf.
  - Expensive in operation and staff
  - Limited effect in area and time
  - Limited capacity and efficiency

Weigh-In-Motion Systems for Direct Weight Enforcement

Why?

- Advantages of Direct Enf.
  - 24/7 operation
  - 99% detection
  - Lower costs
  - No disturbance of traffic flow
  - Data also for other applications

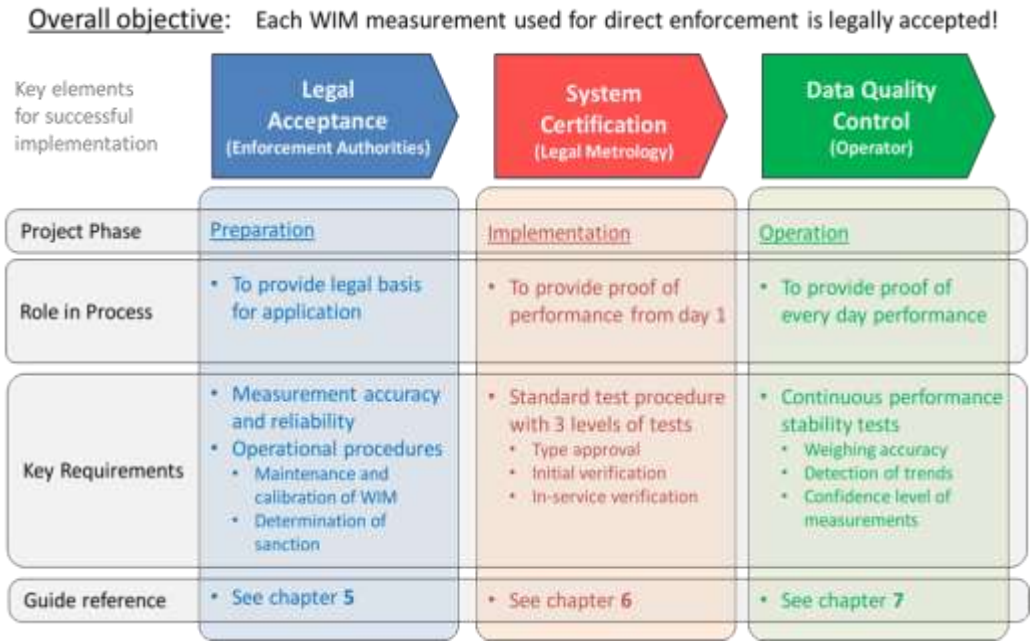
- But
  - Needs careful implementation

Weigh-In-Motion Systems for Direct Weight Enforcement

How?

- Objective
  - Guarantee of each WIM measurement used for enforcement

- 3 Key Elements
  - Legal Acceptance
  - System Certification
  - Data Quality Control



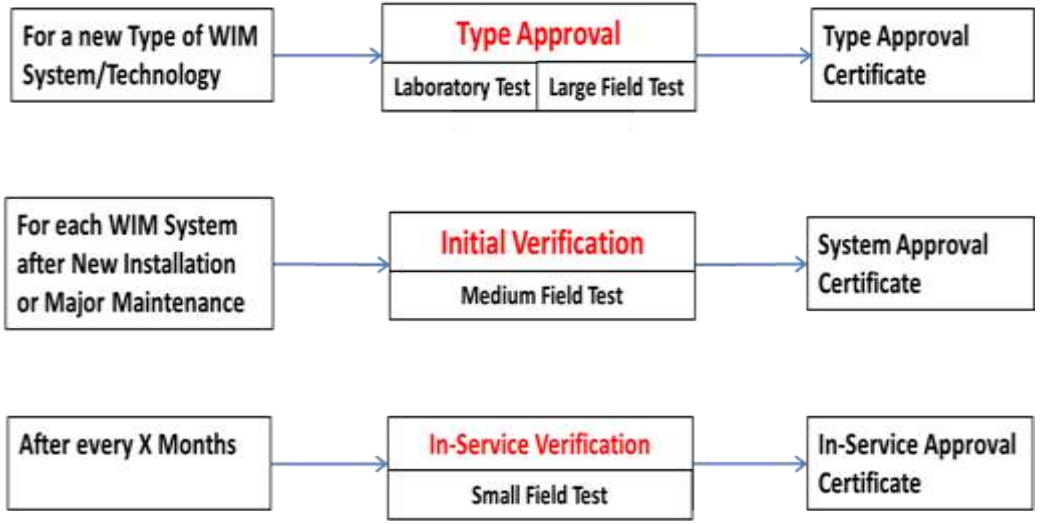
Legal Acceptance

- Metrological Requirements
  - Traceability of measurements
  - Accuracy in MPE
    - Right balance
  - Immunity to disturbances
  - Use of (inter-)national standards

- Organization
  - Authorities involved
  - Procedures

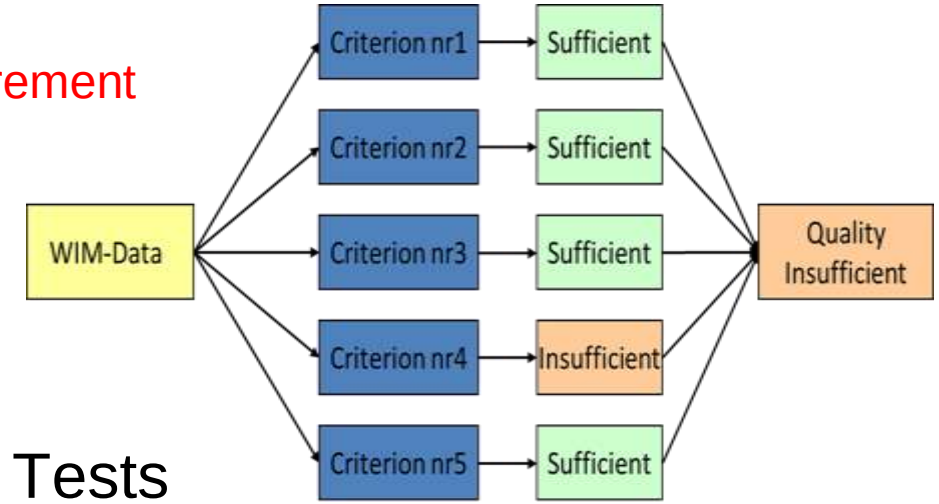
System Certification

- 3 Levels of Testing
  - Type Approval
  - Initial Verification
  - In-Service Verification
- Test Procedures
  - Laboratory Tests
  - Field Tests
  - Size & Frequency



Data Quality Control

- In-service Accuracy
  - Guarantee of each WIM measurement used for enforcement
- Performance Stability
  - Variation over time
- Measurement Accuracy
  - Reference vehicles
- Measurement Confidence Tests
  - By WIM system



Weigh-In-Motion Systems for Direct Weight Enforcement

Examples

- Czech Republic, Since 2011
- Hungary, > 120 systems, 2018
- Brazil, Road Concessionaires, 2022
- USA, New York City, 2023
- South Africa, Technology Trials, 2025

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