SANDBOX

HS-WIM

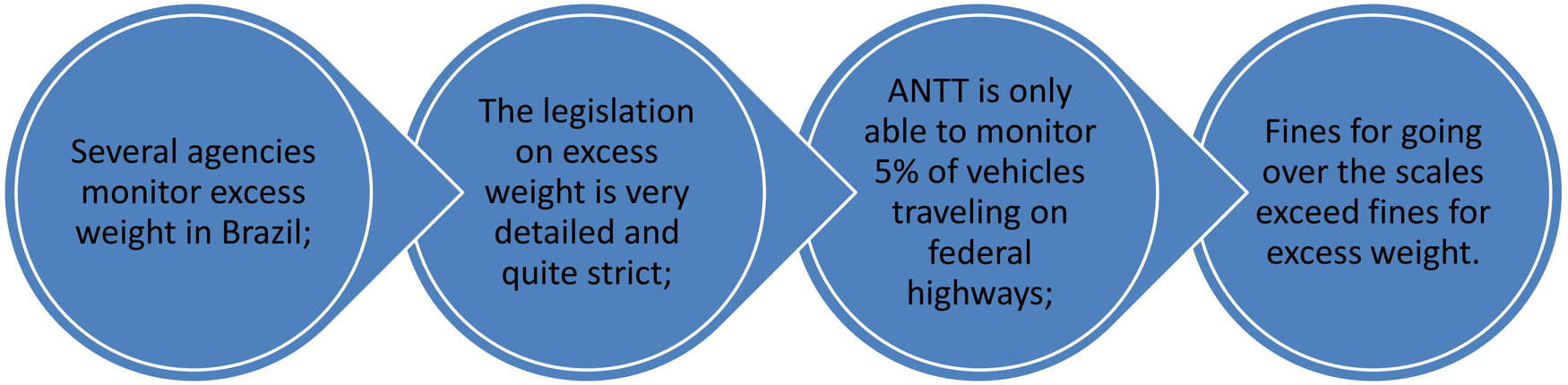
Implementation of WIM for Direct Weight Enforcement in Brazil

OCTOBER 2024

ANTT
AGÊNCIA NACIONAL DE TRANSPORTES TERRESTRES

SUMMARY

The Need for Direct Weight Enforcement in Brazil



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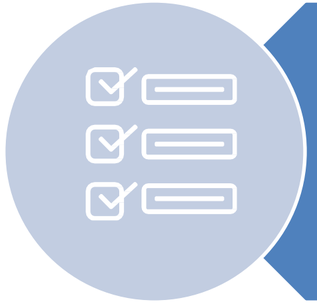
Regulatory Sandbox (Agile regulatory governance)

- **Differentiated Rules**: Exceptions are created to allow companies to test innovations that would otherwise be unfeasible without regulatory adjustments, implementing measures to mitigate excessive risks with the aim of evaluating regulatory changes.

- **Fixed Timeframe**: Testing is a critical part of the regulatory sandbox process. Although the testing period may vary depending on the type and objectives of the regulatory sandbox, it is important that the testing period is time-limited to maintain agility and prevent underdeveloped or otherwise unviable business models from operating indefinitely.



- **Criteria and Limits**: As a guiding principle, tests are conducted under specific conditions, limits, and safeguards aimed at user protection and the proper functioning of service provision/policies, allowing for regulatory monitoring to assess societal benefits and any potential risks they may introduce.

Project description

Phase 1:

- **HS-WIM Installation**
- **4 scales along the Ecovias do Cerrado concession (2 in 2023 and 2 in 2024)**

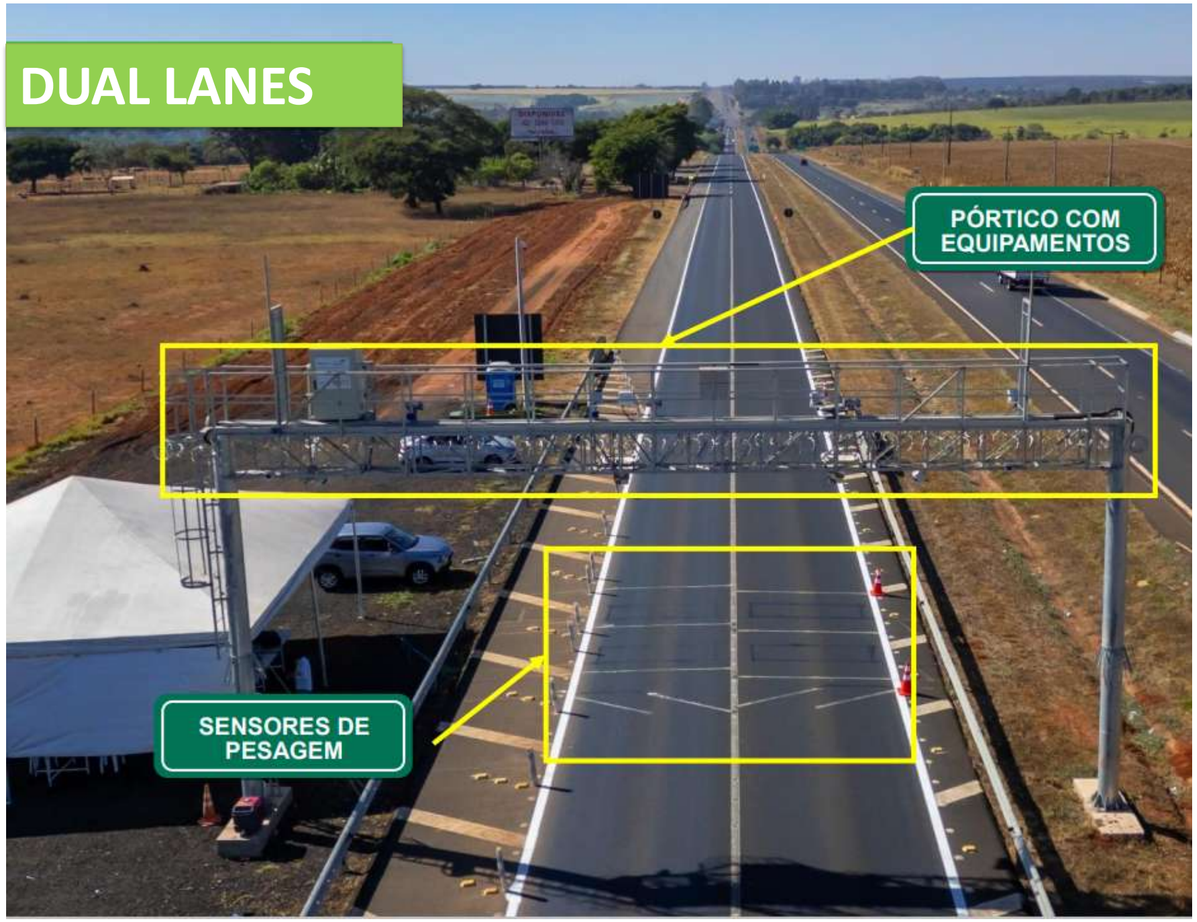
Phase 2:

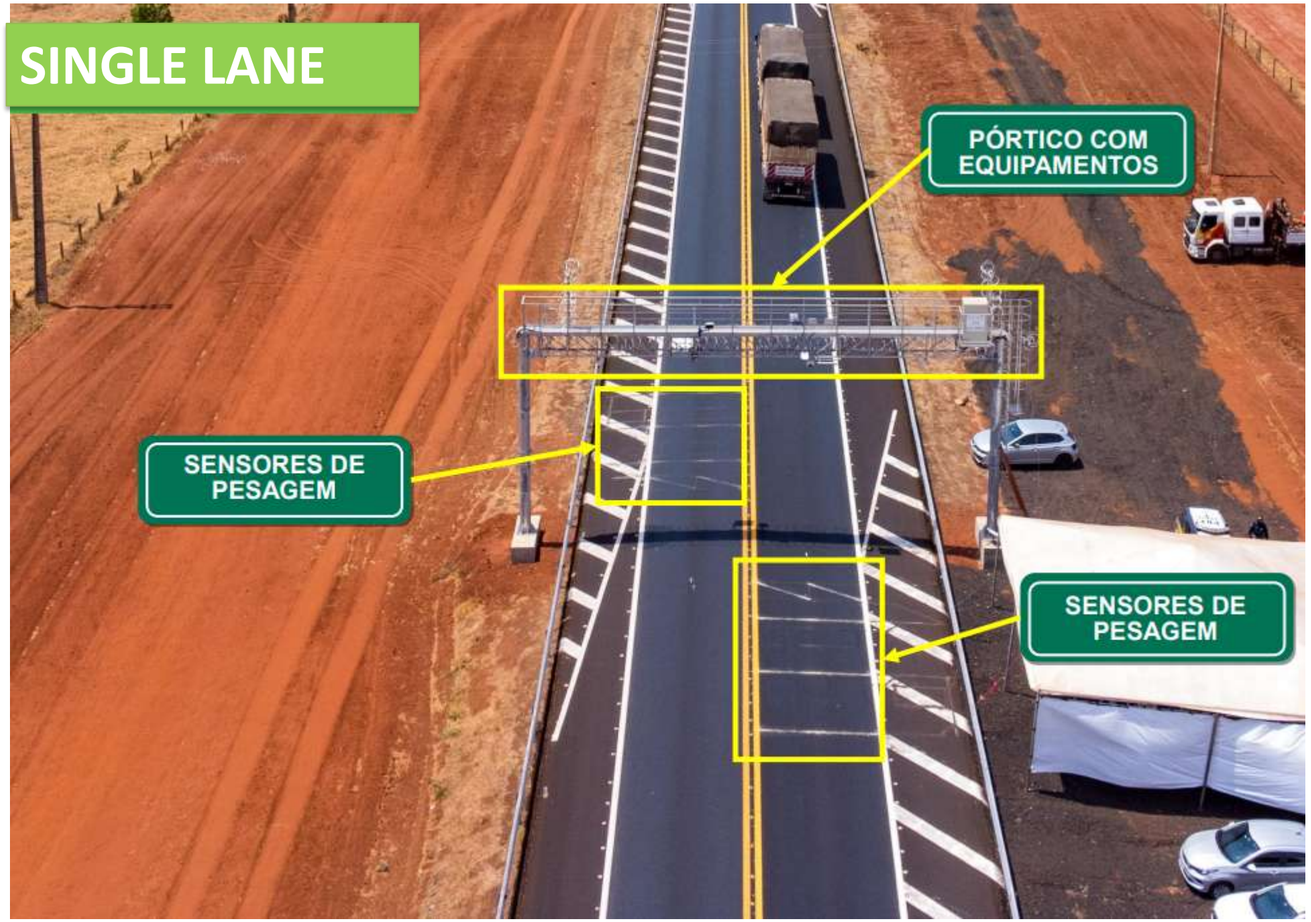
- **Statistical mode of active scales and accuracy assessments for Direct Enforcement.**
- **Certification and calibration of equipment and processes by the responsible authorities.**

Phase 3:

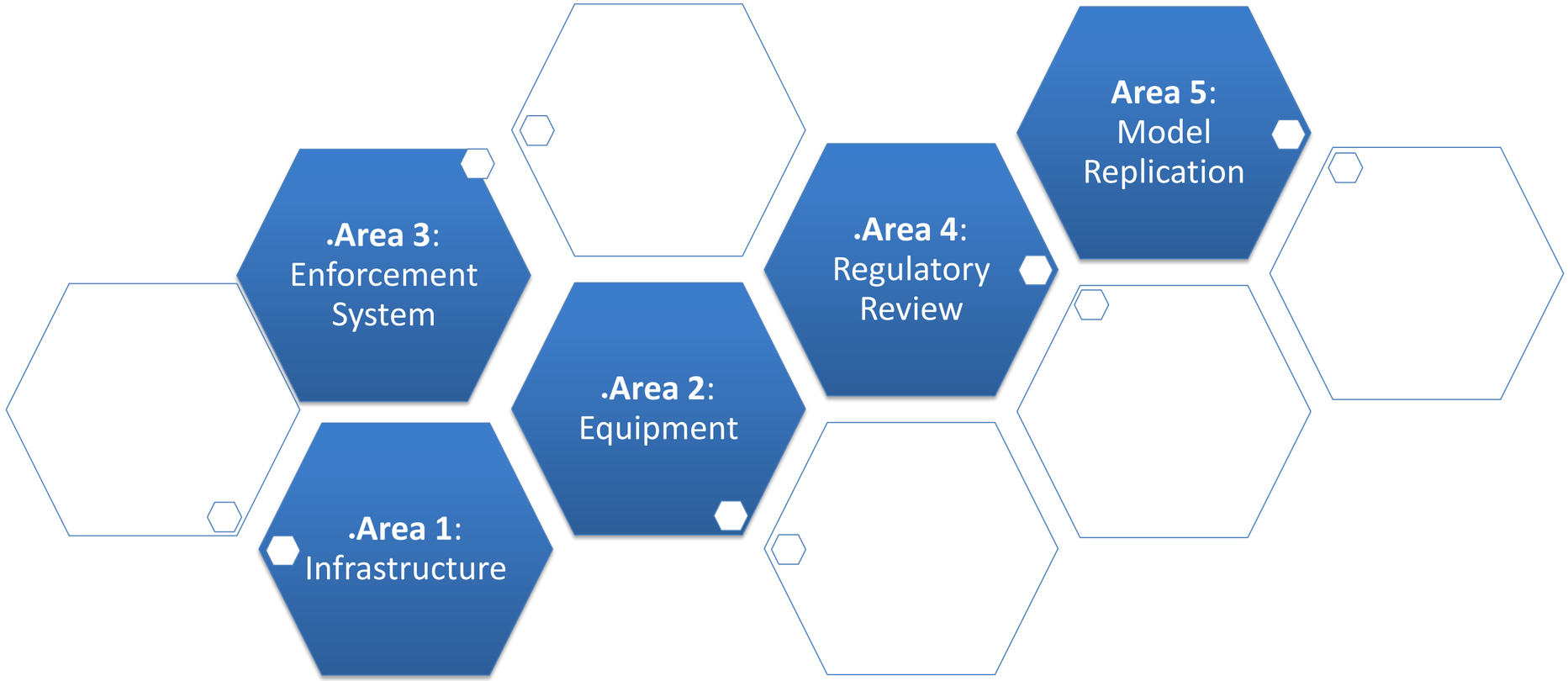
- Third stage of the project: developing regulation and enforcement mechanisms, practical application, and validation of the model.

Project description (cont.)





Strategy for HS-WIM Implementation in Brazil



*conclusão

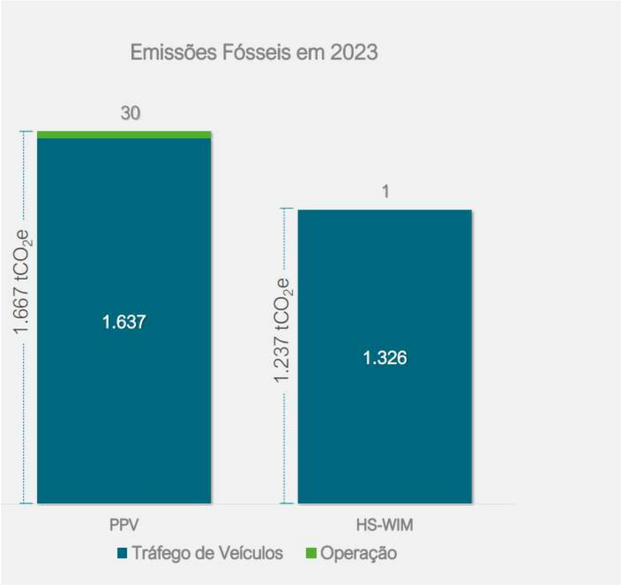
Legal and Regulatory Framework for WIM Enforcement

- **Current Regulations**: Law No. 9,503/1997, Contran Resolutions No. 882/2021 and No. 902/2022, and ANTT Resolution No. 5,379/2017. Inmetro Normative Instructions.
- **Amendments**: Need for legal adjustments to allow direct enforcement based on WIM data:

  - Mandatory construction of areas for administrative measures (Transshipment/Rearrangement).
  - Use of systems for:
    - driver guidance;
    - information (weight inquiry);
    - monitoring;
    - communication between agents and the weighing area; and
    - enforcement of scale evasions.
  - Mandatory requirement to determine the application of the administrative measure.

Main Results

	CO_2 Emission ($tonCO_2$)		
	Conventional Scale	HS-WIM	Avoided
Construction			
Vegetation Clearance	366,199	0	366,199
Mineral Inputs	179,1	10,8	168,3
Water Usage	79,6	4,8	74,8
Operation			
Electric Energy	0,12446	0,02556	0,0989
Water Usage	800,8	0	800,8
TOTAL	1059,62446	15,62556	1043,9989



Perfil de emissões

O sistema HS-WIM apresentou uma redução de emissão de **310,92** tCO_2e, ou seja, **20,4**%

Para o HS-WIM e o PPV, as emissões de tráfego de veículos correspondem a mais de **98%** do total de emissões de cada um dos sistemas

As emissões de operação são **30** vezes maiores no sistema PPV que no HS-WIM

Main Results

233 k cargo vehicles

81 km/h average road speed

66 km/h average speed of cargo veh.

1.2 seg. weighing time

2 K vehicles daily

9,5% overweighted vehicles

40 k tons of excess weight

*valores médios

Main Results

Comparative Efficiency Between Operating Models

June/2024

	1 HS-WIM	37 WSP
Weighings	55,750	2,970,534
GVW Violations	574 (1.03%)	1,684 (0.06%)
GVW + Axle Violations	1,497 (2.69%)	1,914 (0.06%)
Axle Violations	2,638 (4.73%)	5,283 (0.18%)
Total Violations	4,709 (8.45%)	8,978 (0.30%)
Total Excess (kg)	9,257,900	10,514,093
Excess > 5 tons	190	115
Excess > 10 tons	59	30

Conclusion and Future Plans

- **Summary**:
  - WIM is a key technology to modernize weight enforcement in Brazil.
  - The strategy involves phased implementation, certification, and integration with enforcement systems.
- **Next Steps**:
  - Initiate the punitive phase of the project.
  - Expanding the technology nationwide for full-scale direct weight enforcement.
- **Q&A**: Open the floor for questions.

Thank you!

claude.araujo@antt.gov.br

Head of Road and Multimodal Freight Transportation

Regulation Administration

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