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Regional Awareness Event

SIM SISTEMA INTERAMERICANO DE METROLOGÍA

BID

"Metrología para la Transformación Digital"

24 de MAYO 2023 | Bogotá D.C. COLOMBIA

CON EL APOYO DE

INM Instituto Nacional de Metrología de Colombia

Industria y Comercio SUPERINTENDENCIA

AGROSAVIA Corporación colombiana de investigación agropecuaria

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Digital Transformation in Legal Metrology at Colombia: Current Situation and Future Challenges.

Pedro Pérez Vargas

Leader of the Legal Metrology Group of the Superintendence of Industry and Commerce in Colombia

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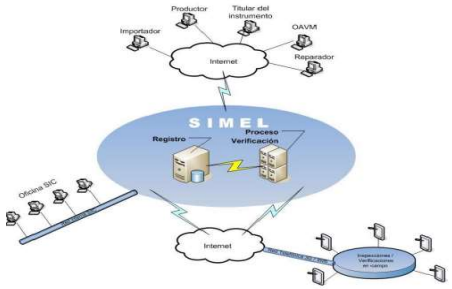
Digital Transformation in Legal Metrology at Colombia

FIRST STAGE

SECOND STAGE

THIRD STAGE



QUARTER STAGE

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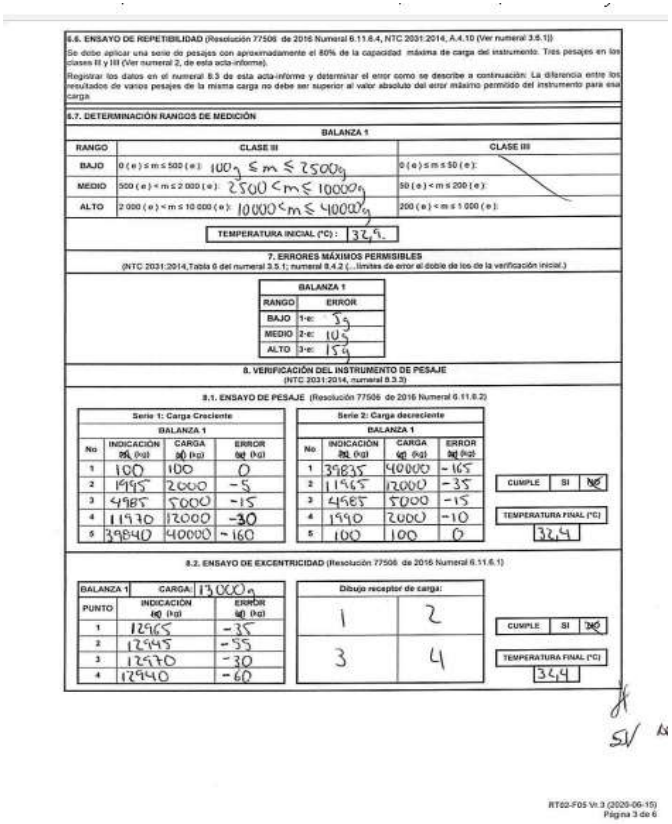
01. FIRST STAGE



6.6. ENSAYO DE REPETIBILIDAD (Resolución 77505 de 2016 Numeral 6.11.6.4, NTC 2031:2014, A.4.10 (Ver numeral 3.6.1))

Se debe aplicar una serie de pesajes con aproximadamente el 80% de la capacidad máxima de carga del instrumento. Tres pesajes en las clases II y III (Ver numeral 2, de esta acta-informe).

Registrar los datos en el numeral 8.3 de esta acta-informe y determinar el error como se describe a continuación: La diferencia entre los resultados de varios pesajes de la misma carga no debe ser superior al valor absoluto del error máximo permitido del instrumento para esa carga.

6.7. DETERMINACIÓN RANGOS DE MEDICIÓN

BALANZA 1

RANGO	CLASE III	CLASE III
BAJO	0 (e) ≤ m ≤ 500 (e): 100g ≤ m ≤ 2500g	0 (e) ≤ m ≤ 50 (e):
MEDIO	500 (e) < m ≤ 2 000 (e): 2500 < m ≤ 10000g	50 (e) < m ≤ 200 (e):
ALTO	2 000 (e) < m ≤ 10 000 (e): 10000 < m ≤ 40000g	200 (e) < m ≤ 1 000 (e):

TEMPERATURA INICIAL (°C): 32,9

7. ERRORES MÁXIMOS PERMISIBLES

(NTC 2031:2014,Tabla 6 del numeral 3.5.1; numeral 8.4.2 (...límites de error al doble de los de la verificación inicial.)

BALANZA 1

RANGO	ERROR
BAJO	1-e: 3g
MEDIO	2-e: 10g
ALTO	3-e: 15g

8. VERIFICACIÓN DEL INSTRUMENTO DE PESAJE

(NTC 2031:2014, numeral 8.3.2)

8.1. ENSAYO DE PESAJE (Resolución 77505 de 2016 Numeral 6.11.6.2)

Serie 1: Carga Creciente — BALANZA 1

No	INDICACIÓN (I) (kg)	CARGA (L) (kg)	ERROR (E) (kg)
1	100	100	0
2	1995	2000	-5
3	4985	5000	-15
4	11970	12000	-30
5	39840	40000	-160

Serie 2: Carga decreciente — BALANZA 1

No	INDICACIÓN (I) (kg)	CARGA (L) (kg)	ERROR (E) (kg)
1	39835	40000	-165
2	11965	12000	-35
3	4985	5000	-15
4	1990	2000	-10
5	100	100	0

CUMPLE: SI / NO

TEMPERATURA FINAL (°C): 32,4

8.2. ENSAYO DE EXCENTRICIDAD (Resolución 77505 de 2016 Numeral 6.11.6.1)

BALANZA 1 — CARGA: 13000g

PUNTO	INDICACIÓN (I) (kg)	ERROR (E) (kg)
1	12965	-35
2	12945	-55
3	12970	-30
4	12940	-60

Dibujo receptor de carga:

1	2
3	4

CUMPLE: SI / NO

TEMPERATURA FINAL (°C): 32,4

RT02-F05 Vr.3 (2020-06-15)
Página 3 de 6

CERTIFICATE OF METROLOGICAL VERIFICATION

The information collected from the metrological verifications was carried out on paper and was not digitalized.

Further, the number of inspectors were not enough to perform verifications to all of Colombia.

Faced with the measurement instruments that entered the country, any instrument could be traded in the market, regardless of its quality and a calibration certificate was required periodically in accordance with the provisions of the manufacturer.

The calibration of the measuring instruments was carried out by the INM .

CONCLUSIONS

1. The information from the metrological control verifications were not public.

2. The number of metrological verification records was uncertain, as there was no computer tool that would allow the information collected from them to be stored.

3. Approximately 13 people carried out the metrological checks throughout Colombia, therefore it was not possible to carry out checks on all measuring instruments and prepackaged products.

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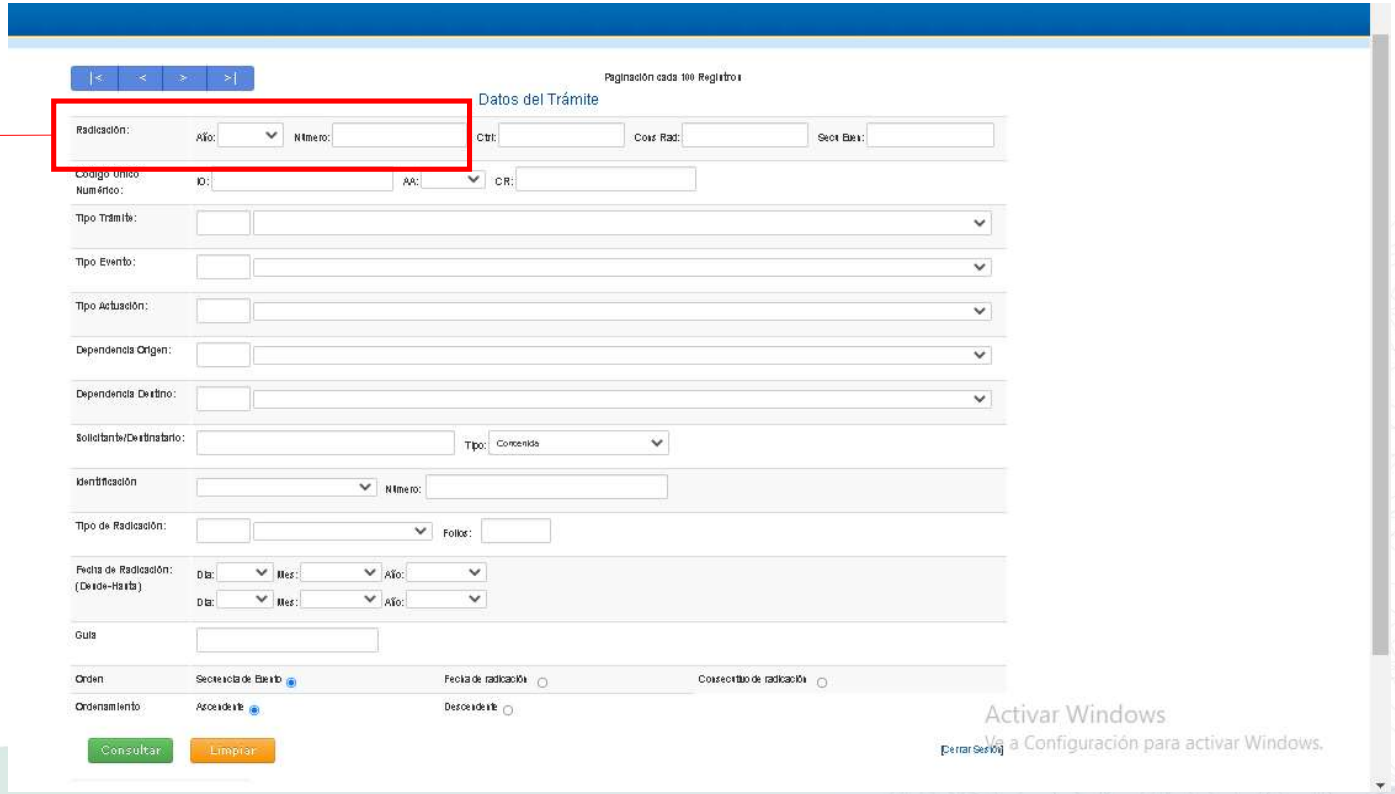
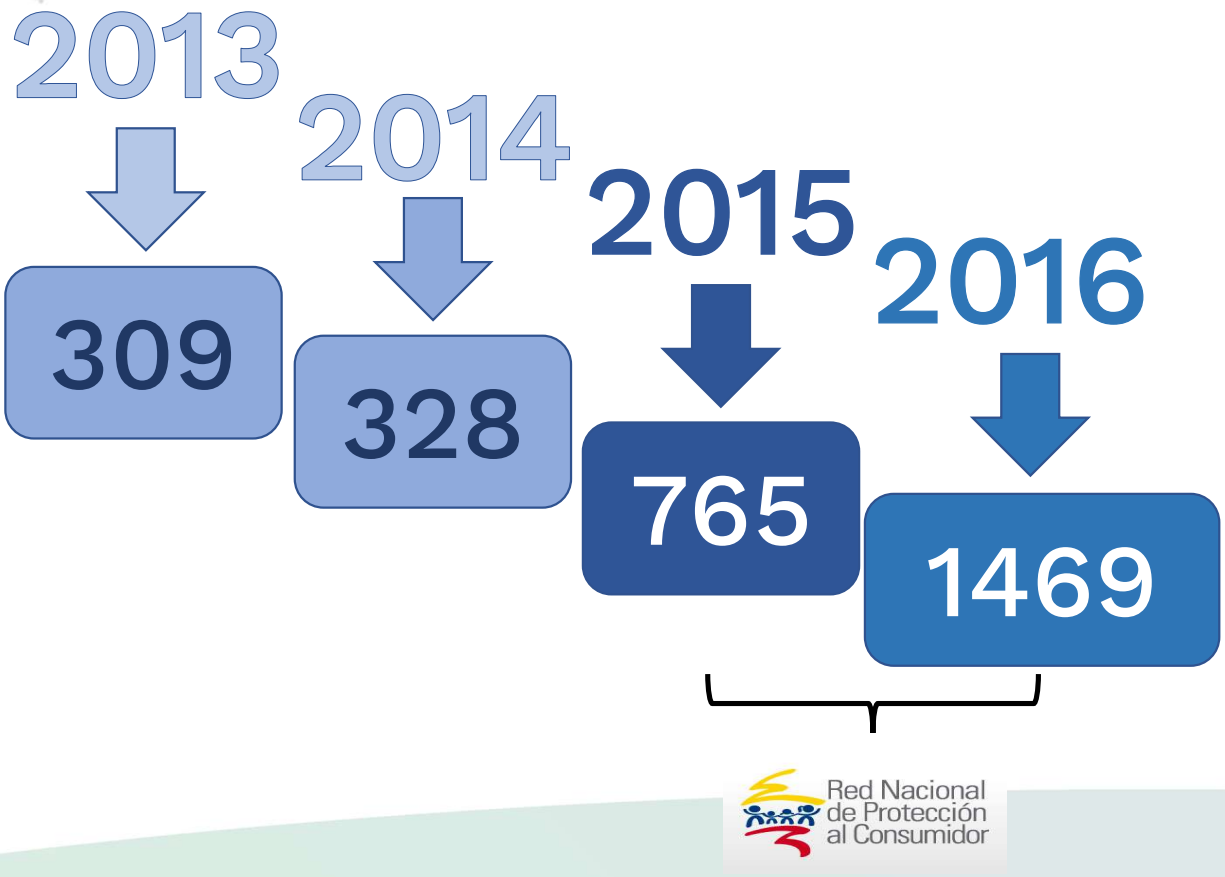
02. SECOND STAGE

The Superintendency of Industry and Commerce created a system of procedures that allowed digitizing part of the information from the metrological verifications that were carried out.

Enter the number



NUMBER OF INSPECTIONS 2013 - 2016



TOTAL 2871

Red Nacional de Protección al Consumidor

CONCLUSIONS

1. The information system is public and allows consumers to see, according to the filing number, the result of the verifications carried out.

2. The need to Increase the coverage of metrological verifications and the control of new instruments throughout Colombia continues.

3. It is necessary to think about the creation of metrological technical regulations for measuring instruments and also establish requirements for producers, manufacturers, importers and owners of the same.

4. The need to Increase the coverage of metrological verifications and the control of new instruments throughout Colombia continues.

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03. THIRD STAGE

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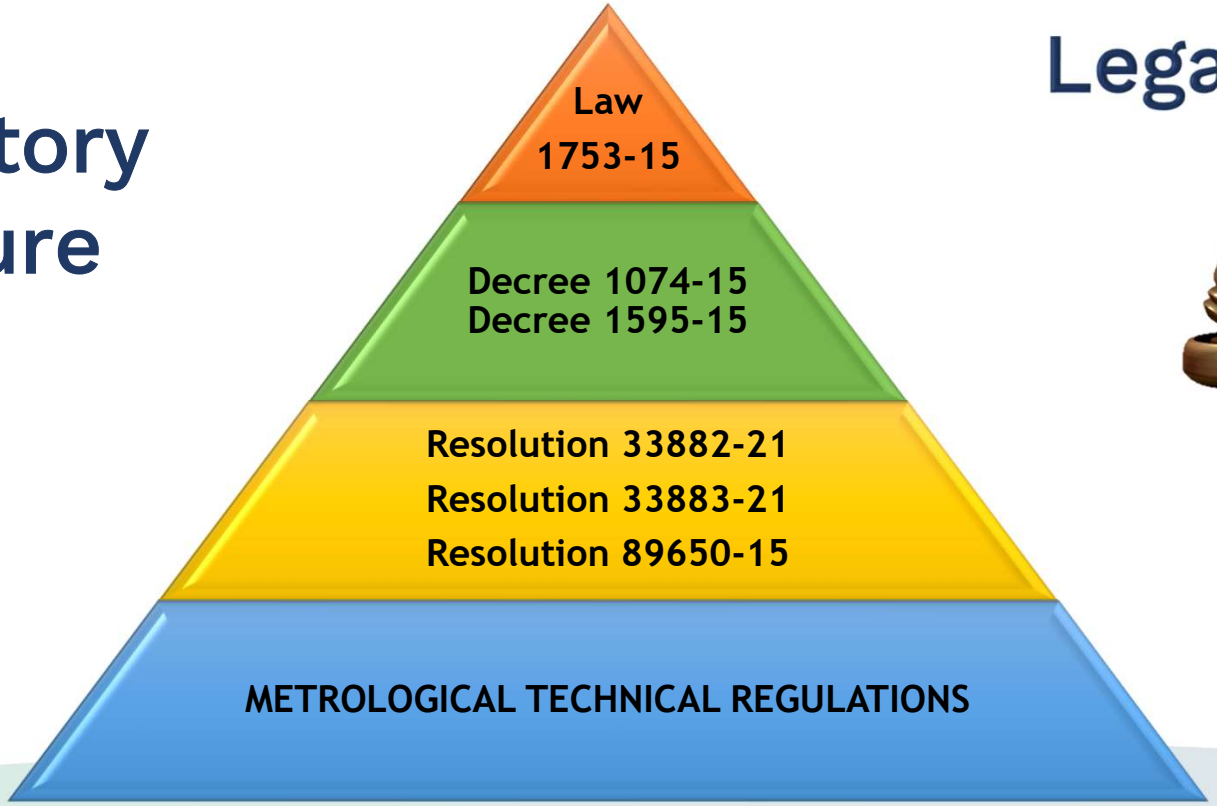
Opcional: Logo(s) de exponente(s)

NEW APPROACH TO CONTROL METROLOGICAL

Regulatory Structure



Legal Metrology

METROLOGICAL CONTROL AUTHORITIES

Industria y Comercio
SUPERINTENDENCIA

Designated to carry out metrological checks

MUNICIPAL MAYOR

AUTHORIZED METROLOGICAL VERIFICATION BODIES - OAVM

AUTHORIZED METROLOGICAL VERIFICATION BODIES

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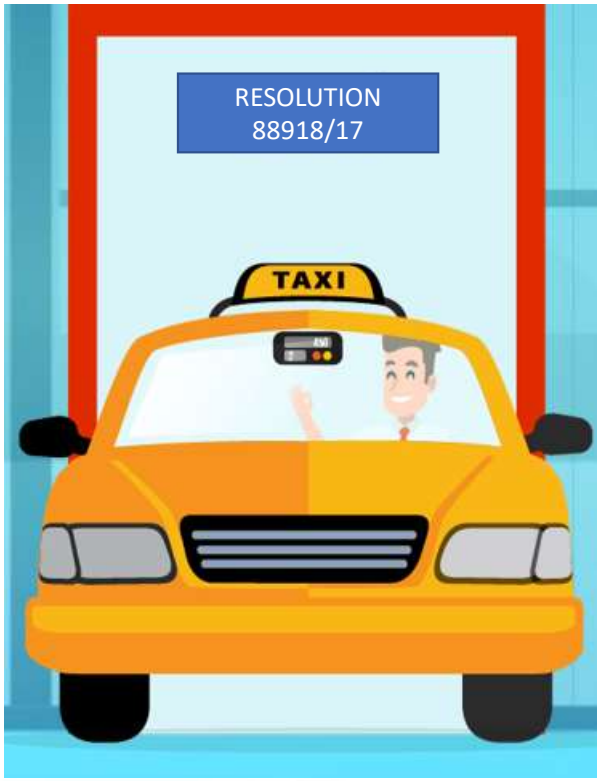
SIC TECHNICAL REGULATION

NAWI

LIQUID FUEL DISPENSERS



TAXIMETERS

EVIDENTIAL BREATH ANALYZERS

Created by the Superintendency of Industry and Commerce

Integrates all the information on legal metrology of the country

Actions of those involved in metrological control:

- Producers or importers
- Measuring instrument holders
- Repairmen
- OAVM and the administration as guarantor of security

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SIMEL USERS

01 SIC

02 OAVM

03

Manufacturer / Importer

04 Repairman/ Repair technician

05 Holders of instruments

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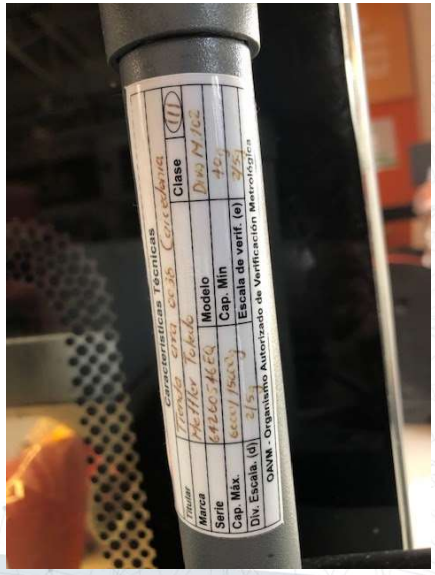
MEASURING INSTRUMENTS REGISTERED IN SIMEL (CENSO)

CENSUS	
INSTRUMENT	**QUANTITY**
NAWI	35.652
Truckscale	301
Fuil dispensers	13.891
Total	**49.844**



Superintendencia de Industria y Comercio

Regularización No. _____

Fecha: AA/MM/DD

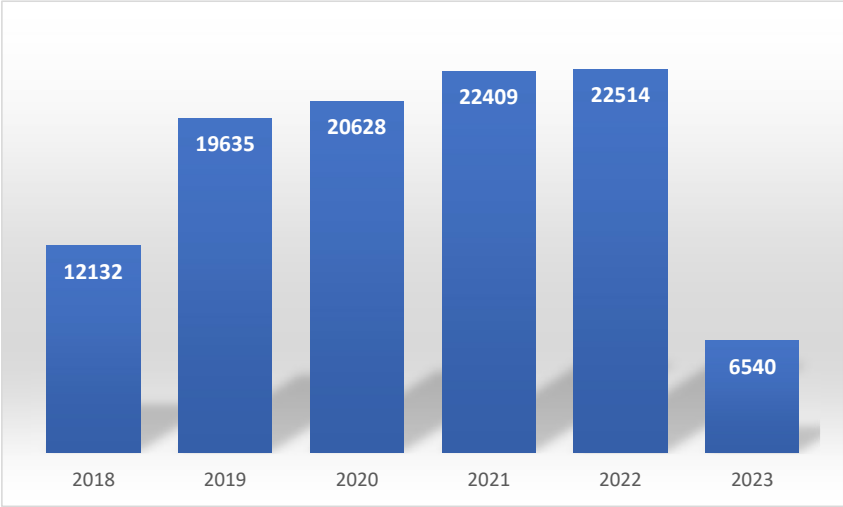
Razón Social del OAVM:_____

Instrumento de pesaje de funcionamiento no automático regularizado

* Information updated until 03 may, 2023

VERIFICATION REGISTERED IN SIMEL

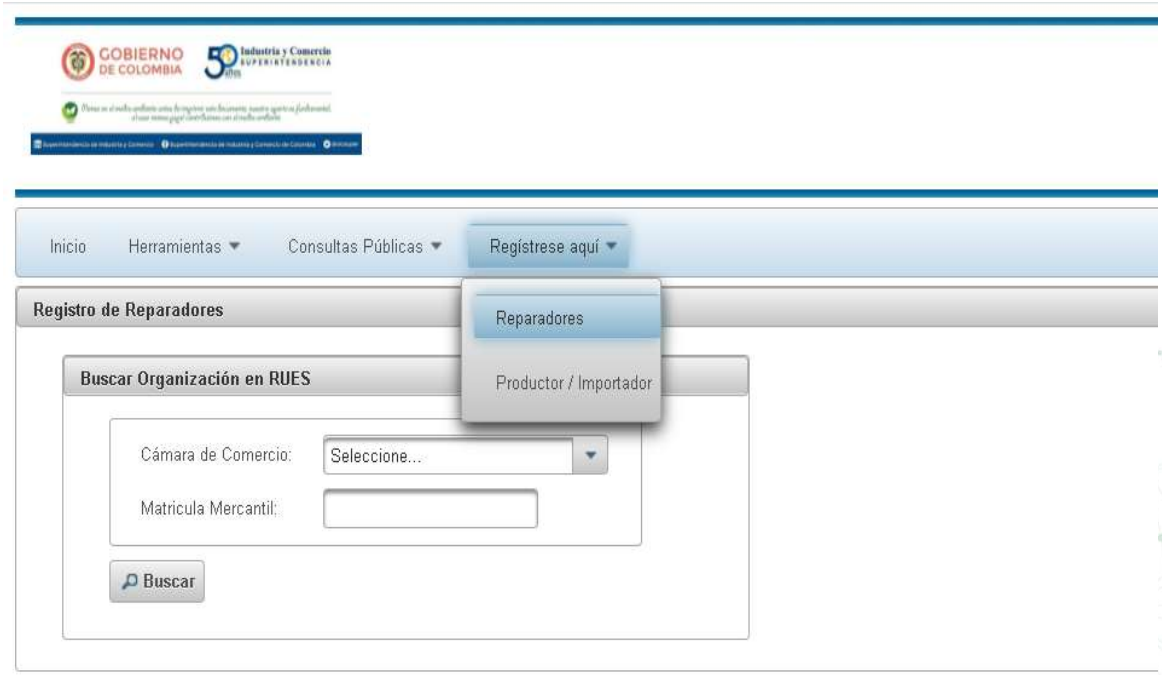
VERIFICATIONS 2018-2023 (MAY)	
INSTRUMENT	**# VERIFICATION**
NAWI	53.494
Truck scale	1.416
Fuel dispensers	48.948
TOTAL	**103.858**



* Information updated until 05 may, 2021

REPAIRERS AND REPAIR TECHNICIANS

SIMELINFORMATION	
ÍTEMS	QUANTITY
Repairesr	846
Repair Technicians	1.136
Reparirs loaded	46.324



* Information updated until 05 may, 2023

CONCLUSIONS

The measuring instruments are periodically checked and must comply with the maximum permissible errors.

The SIC has an accredited calibration laboratory for mass and volume quantities.

There is the Legal Metrology Information System –SIMEL, which allows obtaining documentation, statistical data and status of the measurement instruments.

New instruments must demonstrate conformity in accordance with the corresponding technical metrological regulations.

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OIML BULLETIN

https://www.oiml.org/en/publications/bulletin/pdf/oiml_bulletin_april_2023.pdf

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04. QUARTER STAGE

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PREPACKAGED PRODUCT INFORMATION SYSTEM

A **unified information** system on prepackaged products, where each country can upload the information on the metrological control it has carried out.

System that allows data analysis such as: products that are most verified, country with the highest number of non-compliances, products with non-compliances.

Centralize the rapid exchange of information between the control authorities of the countries, providing reliable, timely and truthful information on the verifications realized on prepackaged products.

System that allows control authorities to organize metrological verification operation and strategies.

NEW THECNICAL REGULATION

GAS METERS

WATER METERS

ENERGY METERS

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¡Thanks!

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