

CERTIDOCS CT

An Intelligent Digital System

for Vehicle Technical Inspection,
Real-Time Governance &
AI-Assisted Automated Enforcement

to Improve Road Safety in Cameroon



PROOFTAG-CATIS SA

Jocelyn NKENIHE NGAE

Presenter

*Innovative Technologies
to Enhance Traffic Safety*

Before presenting CERTIDOCS CT, it is important to understand the scale of the road safety challenge.

Global

1.35M

deaths / year

- Road traffic deaths remained ~1.35M annually (2015–2020)
- Leading cause of death among people aged 5–29 years
- Slight decline observed around 2020

Africa

27

deaths / 100K pop.

- Highest fatality rate worldwide (24–27 / 100K population)
- WHO Africa: over 225,000 deaths annually by 2021
- Disproportionate burden despite small share of global fleet

Cameroon

16,000+

crashes / year

- ~16,000–16,583 crashes recorded annually; 1,000+ official deaths
- WHO-adjusted estimates: 4,000–6,000 deaths/year due to underreporting
- Urgent need for evidence-based enforcement & digital inspection

These statistics highlight the urgent need for intelligent digital systems capable of improving enforcement, inspection reliability, and evidence-based governance.

Sources: WHO Global Status Reports on Road Safety | WHO Africa Reports | UNECE Cameroon Data (2015–2020)

20
%

*of road crashes caused by
vehicle technical defects*

— a preventable tragedy —



20% Crash Contribution

Vehicle technical defects are a leading preventable cause of road deaths



Fictitious Inspections

Fraudulent & ghost inspections bypass all safety verification steps



Counterfeit Certificates

Forged inspection documents actively undermine institutional trust



Ineffective Roadside Controls

Manual spot checks are sporadic, inconsistent, and easily bypassed



No Real-Time Data for Policy

Absence of live statistics cripples evidence-based decision-making

PROCESS

Human Loopholes



Manual processes create systematic fraud opportunities

AUDIT

No Traceability



Zero digital audit trails across inspection lifecycle

SECURITY

Weak Fraud Detection



No automated system to flag fictitious certificates

DATA

Zero Statistical Visibility



No real-time data for policy or enforcement agencies

SCALE

Enforcement Doesn't Scale



Manual roadside checks can't cover the road network

GOVERN

Fragmented Reporting



Siloed data across agencies blocks coordinated action



Digital transformation is the only viable path to eliminate systemic fraud, enable real-time enforcement, and restore trust in the vehicle inspection ecosystem.



Integrated Intelligent Ecosystem

for Vehicle Safety & Governance



AI-Assisted Vehicle Inspection

Intelligent validation of each inspection step in real time



Automated Roadside Enforcement

ANPR + LIDAR technology for seamless compliance checks



Real-Time Statistical Monitoring

Live national dashboard for ministry and enforcement agencies



Digital Law Enforcement Tools

Instant certificate verification — no vehicle stoppage needed

1 Database Verification

Vehicle data checked against MINT central registry; grey-list vehicles flagged

2 MINT Data Synchronisation

Collected data updated centrally by category, energy source, per year since first registration

3 Auto-Collection from Test Banks

GIEGLAN automatically pulls inspection results; no manual data entry by controllers

4 Photo Capture

Mobile app sends photos to CERTIDOCS CT server; auto-verified against CCT records

5 GPS Localisation

Controller presence and vehicle location recorded; MINT coordinates stored geographically

6 Tablet-Based Visual Control

Tablet app auto-suggests lexicon defects; prevents confusion and misentry at source

7 Auto PV & Test Report Generation

PV and test report generated automatically from collected data and lexicon entries

8 Automatic Decision Generation

ACCEPT / REFUSE decision generated automatically from recorded defect values

9 PV & Sticker Printing + Signature

Digital signature on PV marks effective end of inspection; sticker auto-printed

10 Sticker Secured with Bubble Seal

Vignette secured with bubble seal and QR/DR Code for tamper-evident authentication

11 MINT Server Centralisation

All data centralised: statistics on defects, accepted/refused vehicles, national fleet status

12 Formal & Informal Roadside Control

Formal/informal check verifies authenticity and effectiveness of technical inspections at CCTs



RÉPUBLIQUE DU CAMEROUN
PAIX - TRAVAIL - PATRIE
MINISTÈRE DES TRANSPORTS
SECRETARIAT GÉNÉRAL
DIRECTION DES TRANSPORTS ROUTIERS

REPUBLIC OF CAMEROON
PEACE - WORK - FATHERLAND
MINISTRY OF TRANSPORT
GENERAL SECRETARIAT
DEPARTMENT OF ROAD TRANSPORT

**PROCÈS VERBAL DE CONTRÔLE TECHNIQUE DE VEHICULE
ROADWORTHINESS REPORT**

N° PV / SHEET N° : 60625-26052910581480
Date du contrôle / Date of control : 29/05/2026 11:54

Type de contrôle / Control type : Contrôle initial
Catégorie / Category : B- VEHICULES PARTICULIERS

Client / Customer : ARTEMIS CAPITAL SA
Téléphone / Phone : 679162794
Adresse / Address : 0

DOUALA

Montant payé HT / Amount ex.VAT : 15 011 FCFA
TVA / VAT : 19,25%
Montant payé TTC / Amount inc. VAT : 17 900 FCFA

RELEVÉ DES MESURES / MEASUREMENT :

SUSPENSION	avant 10 mm	avant 10 mm	avant 10 mm	avant 10 mm	avant 10 mm	avant 10 mm	avant 10 mm
	75%	82%	72%	81%	81%	81%	81%

BOYAGE / SHIPT	Régularité 1-2 mm	Régularité 1-2 mm
	1-2 mm	1-2 mm

POLLUTION	Qualité 0-1	Qualité 0-1
	0-1	0-1

PHARES / LAMPS	Force lumineuse Lum. min/max	Force lumineuse Lum. min/max
	Control	Control

FREINS / BRAKES	M1 Force de service 2000 kg	M2 Force de service 2000 kg
	75%	29%

RESULTAT DU CONTRÔLE / CONTROL RESULT :
ACCEPTÉ / ACCEPTED
PROCHAINE VISITE / NEXT VISIT : 29/05/2027
Ligne / Lane 2: 2
Nom et visa du contrôleur / Operator name and signature : TAMGNO HERVE

**VIGNETTE DE VISITE TECHNIQUE
VEHICLE INSPECTION STICKER**

N° PV / SHEET N° : 60625-26052910581480
Cat. B - VEHICULES PARTICULIERS

05 LT 937 FT **27**

Validité de la Vignette : 29/05/2026 Au / To : 29/05/2027
Centre / Center : CCT HD DOUALA

Véhicule immatriculé / Registered Vehicle : LT 937 FT

GPS : 4.0333243/9.6930383

Mise en place de la vignette
Setting up a vignette sticker

1. Gluer la vignette gauche. / 1. Glue the left sticker.
2. Décoller le certificat en tirant par le bas. / 2. Remove the certificate by pulling from below.
3. Coller l'ensemble à l'intérieur du pare-brise en bas à droite. / 3. Stick the whole set inside the windshield bottom corner on the right.



AI Validation Engine

96%+

fraud detection accuracy



Equipment calibration anomalies

Detects out-of-spec sensor readings and calibration drift



Suspicious inspection patterns

Flags statistically abnormal pass/fail sequences



Data inconsistencies

Cross-validates measurements against vehicle class norms



Fraudulent operator behavior

Identifies behavioral signatures associated with bribery or collusion

Technologies Used



ANPR / Number Plate Recognition

Instant vehicle identification at roadside



LIDAR Speed Detection

Accurate, non-contact speed measurement



Instant Database Verification

< 1 second response — pass/fail in real time

Key Benefits



No Vehicle Stoppage Required

Traffic flows uninterrupted — zero congestion impact



Continuous 24/7 Monitoring

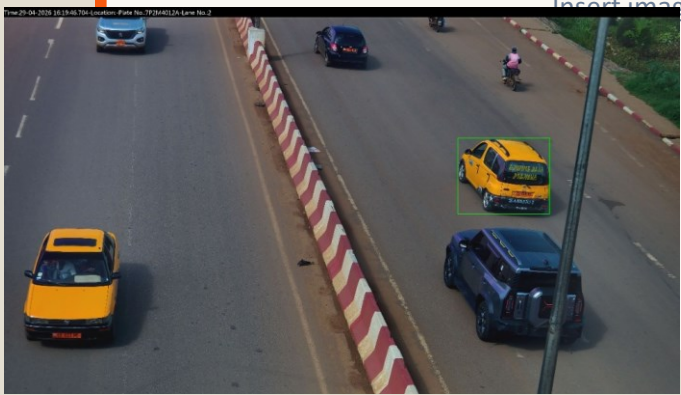
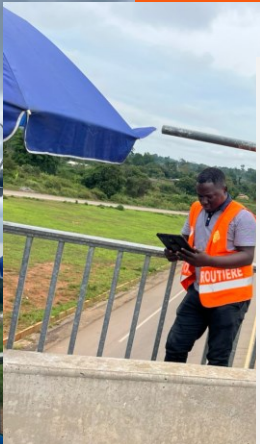
Round-the-clock automated enforcement at scale



Speed + Inspection Validity

Simultaneous enforcement of speed and certificate compliance

AI-Based Automated Enforcement — Field View



REPUBLIC OF CAMEROON
 PAIX-TRAVAIL-PATRIE
 MINISTRE DES TRANSPORTS
 SECRETARIAT GENERAL
 DIRECTION DES TRANSPORTS ROUTIERS


AVIS DE CONTRAVENTION

REPUBLIC OF CAMEROON
 PEACE-WORK-FATHERLAND
 MINISTRY OF TRANSPORT
 GENERAL SECRETARIAT
 DEPARTMENT OF ROAD TRANSPORT

Détails de l'infraction			
Chêne	Valueur		
IC	9842		
Date/Heure	28/04/2023 18:01		
Type	Vitesse technique variable		
Direction	-		
Vitesse	-		
Vitesse	9 km/h		
Kilom.	2		
Municip.	761000 PCFA		
Statut	Contrôle		
Informations complémentaires			
Chêne	Valueur		
Adresse(s) de la localité	Ax. 74 CP-1723, 76, km n°9807 du 08041996, Ax. 10, Ax. 74-1 CP-Ax, Douala, Lu LD48-LF-B		
Catégorie véhicule	601 route		
Mentions légales			
Chêne	Valueur		
Article(s) de loi applicables	Ax. 74 CP-1723, 76, km n°9807 du 08041996, Ax. 10, Ax. 74-1 CP-Ax, Douala, Lu LD48-LF-B		
Débit de paiement	28/04/2023 18:01		
Vue de consultation	Trouve consultation doit être introduite après de l'autorité compétente.		
Valueur profession	Les procès photo/vidéo/sonar issus du système servent de preuves de constatation.		
Conteneur de l'événement	991-6842		
Véhicule			
Chêne	Valueur		
Plaque	CE013PE		
Chassis	J7FLUEE6M714730		
Modèle	TAXI		
Contrôle	Immobilisé		
Preuves photo			
Image 1	Image 2		
			
Historique des infractions du véhicule			
Date	Type	Statut	Municip. ind.
28/04/2023	Vitesse technique	Contrôle	761000 PCFA
Total global de : toutes les infractions confirmées imprimées ou imprimées de la plaque			



80+

Connected Inspection Centers

Active CCTs nationwide

41,600

Inspections Processed Monthly

Auto-captured & centrally logged

95%+

Compliance Rate Achieved

System-wide enforcement metric

96%+

Fraud Detection Accuracy

AI-validated inspection outcomes

100%

Nationwide Real-Time Monitoring

Full ministerial visibility

~32%

Reduction in Road Crashes

From ~16,000 (pre-2021) to ~11,000 (2021–2025)

CERTIDOCS CT delivers measurable results

Real deployments across 80 Cameroonian inspection centers validate the system's ability to scale, detect fraud, and enforce compliance at the national level — with full ministerial visibility in real time.

▼ Road Crash Reduction: ~32% (25%–40% range)

Cameroon recorded approximately 16,000–16,583 crashes annually before the CERTIDOCS CT deployment (2015–2020). According to the Ministry of Transport, annual crashes fell to an estimated 10,000–12,000 during 2021–2025 — representing a reduction of 25%–40% (midpoint: ~32%), calculated as $(16,292 - 11,000) \div 16,292$.

Source: Ministry of Transport, Cameroon (2021–2025 data)

Certidocs CT: Innovations Never Before Seen in Cameroon

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Training & Certification of Controllers

Organised by the Ministry of Transport — a first in Cameroon



Suspension of Fraudulent Controllers

Systematic accountability enforced against controllers who commit fraud



Sanctioning of CCTs that Commit Fraud

Enforceable penalties applied to inspection centers found committing fraud



Annual Onsite CCT Evaluation

Joint team from MINT & CATIS evaluates activities and equipment yearly



Frequent Calibration of Inspection Equipment (Still to come)

Mandatory periodic calibration of all control technique equipment



CT-VERIF — Online Document Authenticity Verification

An online platform used nationwide by the general public to verify the authenticity of Technical Inspection Documents



AI-Based Automated Enforcement + LIDAR

Smart cameras integrating ANPR and LIDAR technology monitor traffic at high speed, with AI cross-referencing inspection records to instantly flag non-compliant vehicles

REPUBLIC OF CAMEROON
Paace-Worik-Petherland
MINISTRY OF TRANSPORT
SECRETARIAT GENERAL

DEPARTMENT OF ROAD TRANSPORT
No. 024 / SER/MINT/SG/DTR/CELTRAD/SSA



REPUBLIQUE DU CAMEROUN
Paace-Worik-Petherland
MINISTÈRE DES TRANSPORT
SECRETARIAT GÉNÉRAL

DIRECTION DES TRANSPORTS ROUTIERS
Yaoundé le 09 MAI 2020

PRESS RELEASE

The Minister of Transport hereby informs the general public that, following malicious acts committed in the process of issuing vehicle roadworthiness certificates, he has decided to suspend, for a period of one (1) year, with effect from the date of signature of this Press Release, the inspectors whose names appear below, for issuance of fraudulent roadworthiness certificates.

They are:

- M. FONGUE Hugues Francis, AUTO RELAX roadworthiness centre;
- M. CLOVIS Ngonyuy NJOLAI, NACHO roadworthiness centre;
- M. TOUMBA Jules, OD AUTO-TECHNICA roadworthiness centre;
- M. ALLAHRABEYE Serge, OD AUTO-TECHNICA roadworthiness centre-;
- M. OUSMANOU Alhadji Hamadou, OD AUTO-TECHNICA roadworthiness centre.

The Minister of Transport hereby informs owners of vehicles bearing the following registration numbers: **OU 842 AZ, LT 578 KZ, LTR 754 AV, ES 487 AL, ADTR 189 AC, NW 500 BH, NW 087 BQ, NOSR 282 AA, NOTR 964 AA, ENTR 533 AA, ENSR 456 AA, NO 2100 F, AD 225 AT, NOSR 282 AA, CE 409 FE, LTR 114 AV, LTR 118 AV, NOTR 799 AA**, that, vehicles for which said certificates were issued, are prohibited from circulation throughout the national territory until they have successfully undergone a valid roadworthiness inspection, conducted under the supervision of the Department of Road Transport of the Ministry of Transport.

The Minister of Transport further reminds drivers in general, as well as operators of vehicle inspection centres, that the roadworthiness certificate is mandatory. Any absence of such a certificate, or its fraudulent issuance, shall attract severe sanctions in compliance with the regulations in force. Furthermore, he informs the general public that, any attempt at fraud is easily detectable, thanks to the control tools used by road safety teams and law enforcement officers.

THE MINISTER OF TRANSPORT



Moving beyond “Safe Vehicles” to a fully integrated “Safe System”

360° PROFILE

The 360° Profile Concept

An integrated “Safe System” database that synchronizes the vehicle and the driver — going beyond simple vehicle roadworthiness to capture a complete risk profile of every road user.

Impact: A seamless safety net where administrative and technical non-compliance are detected instantly, preventing “risky” profiles from operating on public roads.

Insurance Integration

Real-time data sharing with insurance providers to simultaneously verify premium compliance and roadworthiness status at every control point.

Unified Documentation

Full digital integration with Driver’s Licenses and vehicle clearance/registration documents — one unified, verifiable digital identity per vehicle and driver.

Impact

A seamless safety net where administrative and technical non-compliance are detected instantly — preventing “risky” profiles from operating on public roads.

Vehicle ↔ Driver Synchronization

Insurance Real-Time Compliance

Unified Digital Documentation

Together forming a fully integrated, scalable African road safety ecosystem



National Data Intelligence

Real-time national dashboard for ministry & enforcement agencies



Mechanical Defect Trend Analysis

Identify recurring defects by region, vehicle age, or center



Inspection Center Performance Monitoring

Compare pass rates, throughput, and anomaly scores per center



Targeted Interventions

Data-driven dispatch of enforcement resources to high-risk corridors



Real-Time Ministry Oversight

Live KPIs and alerts delivered directly to ministerial dashboards

Ministry Dashboard – Real-Time Statistical Monitoring

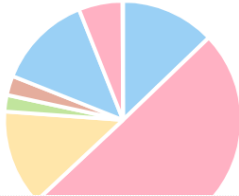
STATCERV

STAT VEHICLE CATEGORY

STAT VEHICLE CATEGORY DESC

Range: From To Technical center

- A - Taxi and driving school vehicle (12.85%)
- B - Light passenger vehicle (50.21%)
- B1 - Light vehicle < 3500 Kg. and Pickup (13.09%)
- C - Bus (2.23%)
- C - Bus < 3500 Kg. (2.63%)
- D - Truck, trailer puller and semi-trailer (12.94%)
- D - Trailer, semi-trailer (5.98%)
- D - Special machines (0.07%)

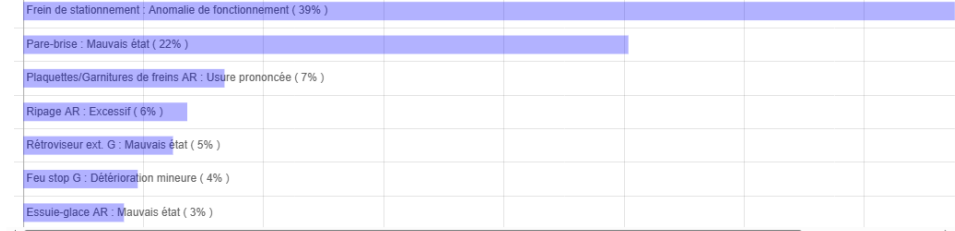


STATCERV

STAT RECURRING DEFECTS

STAT RECURRING DEFECTS DESC

Range: From To Technical center



STATCERV

STAT CA CENTER

STAT CA CENTER DESC

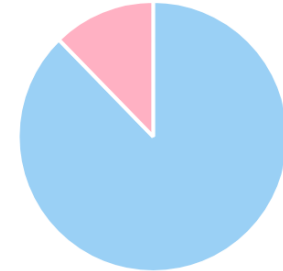
Range: From To Technical center

Filter:

Technical center	Région	Total (FCFA)	VAT Rate (FCFA)	Total Ex.VAT (FCFA)	Monitoring (FCFA)	Withholding (FCFA)	Inspections
Auto Technique du Noun	REGION DE L'OUEST	5032230	812331 (19.25%)	4219899	63298 (1.5%)	92838 (2.2%)	275
CCT 2M CAMEROUN	REGION DU CENTRE	4555890	735438 (19.25%)	3820452	57306 (1.5%)	84050 (2.2%)	341
CCT AMS Douala	REGION DU LITTORAL	3300420	532773 (19.25%)	2767647	41514 (1.5%)	60888 (2.2%)	189
CCT APS Buea	REGION DU SUD-OUEST	3720785	600630 (19.25%)	3120155	46802 (1.5%)	68643 (2.2%)	248

Range: From To Technical center

- 692 counter-visit within the legal delay (88%)
- 97 counter-visit after the legal delay (12%)



Mobile & Digital Roadside Enforcement

eDMR CT

Utilisateur: CTRL_TEST@CATIS.CM

Contrôleur: EST

Mot de passe

Saisir Immatriculation

Lecture Référence

Lecture Code à Bulles

OCT00AAAA00339

LT 850 HL

N° PV : 355-210510091154
Date du contrôle : 10/05/2021 09:08
Date de validité : 10/05/2022
Type de véhicule : VEHICULES PARTICULIERS
Num. chassis : SB164ABK00E042664
Image 1 :

Spécifications du véhicule

Défauts d'inspection

Immat. : LT 850 HL

N° PV : 355-210510091154
Ref. : OCT00AAAF80407
Date du contrôle : 10/05/2021
Date de validité : 10/05/2022
Num. chassis : SB164ABK00E042664
Marque : TOYOTA
Modèle : 64ABK
Propriétaire : MONDJIO TAGNE ROGER

eDMR CT

Saisir l'immatriculation

LT850HL

ANNULER OK

Utilisateur

Contrôleur TEST

Conclusion:

A Replicable African Innovation

Intelligent digitalization improves compliance

Automation reduces fraud


AI enhances enforcement efficiency

Real-time data strengthens governance

Scalable for adoption across Africa

Paix-Travail-Patrie
MINISTRE DES TRANSPORTS
SECRETARIAT GENERAL
DIRECTION DES TRANSPORTS ROUTIERS

PEACE-WORK-PATHERLAND
MINISTRY OF TRANSPORT
SECRETARIAT GENERAL
DEPARTMENT OF ROAD TRANSPORT

 10 AVR 2025

DECISION N° 0122 /D/MINT/SG/DTR/SDPSR/SSVR DU ACCORDANT UN AGREMENT A MONSIEUR NAMEKONG KADJIO FRANC PABREL POUR L'EXERCICE DE LA PROFESSION DE CONTROLEUR DANS LE CENTRE DE VISITE TECHNIQUE DE LA SOCIETE 2M CAMEROUN.

LE MINISTRE DES TRANSPORTS,

VU la Constitution ;
VU le Code révisé communautaire de la route CEMAC ;
VU la loi n° 96/07 du 06 av portant procèdon du patrimoine routier national ;
VU le décret n°79/341 du 03 septembre 1979 portant réglementation de la circulation routière, modifié et complété par le décret n°86/816 du 30 juin 1986 ;
VU le décret n°2011/408 du 09 décembre 2011 portant organisation du Gouvernement modifié et complété par le décret n°2018/190 du 02 mars 2018 ;
VU le décret n°2012/250 du 1^{er} juin 2012 portant organisation du Ministère des Transports ;
VU le décret n°2018/191 du 02 mars 2018 portant réaménagement du Gouvernement ;
VU le décret n°2019/002 du 04 janvier 2019 portant réaménagement du Gouvernement ;
VU l'arrêté n°011/MINT du 23 février 1998 portant réglementation de la visite technique des véhicules ;
VU la décision n° 0072/D/MINT/SG/DTR/SDPSR/SSVR du 30 avril 2024, accordant un agrément au cabinet d'expertise **DB CONSULTING CT** en vue de la formation des contrôleurs des centres de visite technique de véhicules automobiles ;
Considérant la demande du centre de contrôle technique de la société **2M CAMEROUN,**

DECIDE :

Article 1^{er} - (1) Il est, à compter de la date de signature de la présente décision, accordé à **Monsieur NAMEKONG KADJIO FRANC PABREL,** un agrément pour l'exercice de la profession de contrôleur dans le centre de visite technique de la société **2M CAMEROUN.**

(2) L'agrément visé à l'alinéa 1^{er} ci-dessus est valable pour uné durée de trois (03) ans renouvelable par reconduction expresse à la suite d'un recyclage concluant du contrôleur.



Article 2 - Le présent agrément est individuel, incessible, non transférable et insusceptible de location.

Article 3 - La violation d'une des dispositions du cahier de charges annexé à la présente décision peut entraîner la suspension ou le retrait du présent agrément.

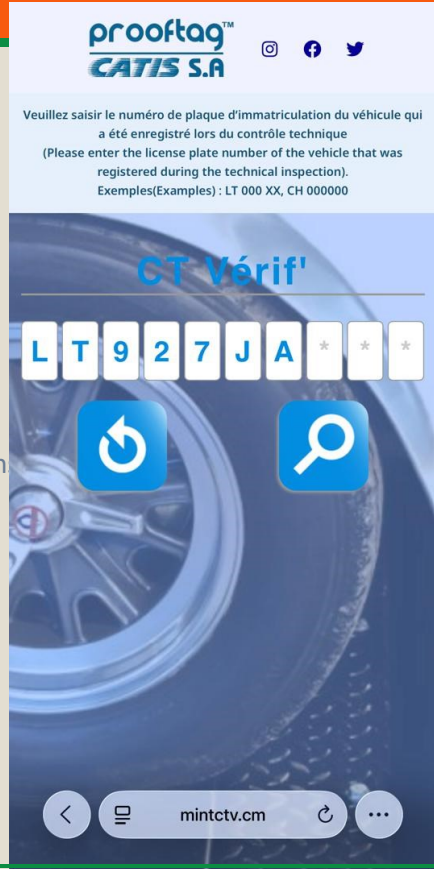
Article 4 - La présente décision sera enregistrée et publiée partout où besoin sera.

Yaoundé, le 10 AVR 2025

LE MINISTRE DES TRANSPORTS,



NATCHE BIBETH Jean Ernest Massina

CT-VERIF — Verification of document authenticity







CERTIFICATE OF RECOGNITION

For outstanding contribution to Road Safety in Cameroon

Category

TECHNOLOGICAL INNOVATION BASED ON AI
(Visite technique automobile)



**1st NATIONAL FORUM
ON ROAD SAFETY**
Yaounde Multipurpose Sports Complex
29-30 april 2026

THEME
« Artificial Intelligence serving road safety »



THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP



The Minister of Transport
Ngalle Bibehé
NGALLE BIBEHÉ Jean Ernest Masséna



**DECADE OF ACTION FOR
ROAD SAFETY**
2021-2030