Road Transport Sector Reform in Togo
The Competitiveness of Logistics Services Programme Financed by the World Bank

Mission Report

Vehicle Type-Approval and Road Worthiness Test in Togo

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Executive Summary

The AVIS project (Assessment of Vehicle Inspection Systems) is a collaborative effort between the Global Road Safety Facility (GRSF) at the World Bank and the Comité International d'Inspection des véhicules Automobiles (CITA) to upgrade the vehicle technical inspection system. The main objective of this effort is to assess the current state of the vehicle inspection system and vehicle importation system, and to propose a strategy to improve these systems. AVIS is targeting three African countries, and Togo has been chosen as the first candidate.

The project includes a two-week mission in Togo to collect the information required to perform the assessment. The information was collected during meetings with the various stakeholders, public and private entities, that are involved in the management of the road infrastructure, vehicle importation and fleet management, and traffic safety.

An aging fleet

Togo is nearly 57,000 km^2 with a population of 8,000,000 people[1], and it is located in West Africa, in the Lagos-Abidjan corridor and is involved in several regional (CEDEAO, UEMOA) and continent-wide (UA) organisations.

It was difficult to provide a definitive estimation of the size of the fleet as there are multiple sources that do not provide consistent results. Based upon one of the sources that includes the age of the vehicles, the fleet is quite small (about 880,000 vehicles, with 620,000 two- and three-wheelers), and composed of aging vehicles (94 % of the vehicles are more than 5 years old, and 90 % are more than 10 years old) [2].

The information collected during the mission in Togo indicates that there are no technical requirements for the importation of vehicles to Togo, regardless of the age of the vehicles (new or used). Only the commercial value of the vehicle is estimated to calculate the importation and custom taxes.

The periodic technical inspection is well structured but ineffective to increase the overall condition of the fleet

The vehicles that entered the Togo's fleet are subjected to the periodic technical inspection managed by SOTOPLA-CEVA, the company that was granted the concession by the Direction des Transports Routiers et Ferroviaires (DTRF). In 2016, SOTOPLA-CEVA performed more than 200,000 inspections and rejected a mere 0.64 % [3]. This rejection rate is inconsistent with the overall low technical condition of the fleet that can be observed when traveling in the country and shows that the current technical inspection is ineffective. In Europe, for example, a rejection rate of 20 % is typical. The texts proposed by UEMOA are used as reference for the vehicle inspection.

The periodic technical inspection takes place in six inspection stations spread in the country (Lomé, Kpalimé, Atakpamé, Kara, Sokodé, and Dapaong). Only the Lomé and Kara stations are equipped to inspect heavy trucks, although the other stations also reportedly delivered inspection certificates to heavy trucks.

The inspection stations are generally in an adequate condition in terms of equipment and organisation. However, the control of emission level is not carried out, although the required equipment is available.

[1] https://www.cia.gov/library/publications/the-world-factbook/geos/to.html
[2] Data source: Togo Directorate for Road and Rail Transport
[3] Data source: Sotopla

Data management is mostly manual, although the existing equipment would allow a fully automated management of the collected data. Additionally, the ground needs to be fixed and leveled at least in the two visited stations (Lomé and Kpalimé) to ensure the proper functioning of the headlight-level control system.

A formal audit and control process between the concession-holder and the DTRF needs to be defined

From the information collected during the interviews with the stakeholders, it was not possible to assess whether and how the activities performed by SOTOPLA-CEVA on behalf of the DTRF were supervised. No formal framework or guidelines provided by the DTRF for the management of the vehicle inspection activities by the concession-holder and the expected performance could be identified.

Conclusion about the current situation

- There are no technical requirements for the registration of vehicles entering Togo for the first time,
- The rejection rate is extremely low, which makes the periodic technical inspection little effective,
- There is virtually no supervision of SOTOPLA-CEVA activities by the DTRF: the inspection rate (vehicles/hour) is too high, and the number of inspection lines seems too low to provide an adequate service compared to the size of the vehicle fleet,
- The equipment used for the inspection is not well integrated, although the machines could be connected to allow for a more automated process,
- The pollution level is not controlled. The ground needs to be fixed and leveled, and four out of the six inspection stations are unable to inspect heavy trucks,
- Roadside inspection does not lead to an increase on the number of vehicles subjected to periodic technical inspection,
- The network capacity is not sufficient for the size of the fleet.

Recommendations:

The analysis of the current situation in Togo for the vehicle inspection led to provide a set of recommendations developed to improve the reliability of road transportation and traffic safety. The recommendations are organized in three categories:

- Requirements for the vehicles entering the country,
- Capacity building for the DTRF to manage the periodic technical inspections, and
- An upgrade of the existing inspection stations, including the size of the network.

Control of the vehicles entering the country for the first time (vehicle reception)

Vehicles should be registered once it has been confirmed that they meet the specific technical requirement, in terms of traffic safety and protection of the environment. It is recommended that Togo bases its specifications upon the technical specifications developed by international consortia, such as those defined in the 1958 UNECE agreement concerning the Adoption of Harmonized Technical United Nations Regulations for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the basis of these United Nations regulations. [4]

The increase in technical requirements for the vehicles that enter Togo for the first time should be staggered so as to avoid the sudden increase of vehicle cost that would be detrimental to the renewal of the fleet and would make this effort unpopular.

[4] https://www.unece.org/fileadmin/DAM/trans/conventn/505ep29.pdf

From the operational point of view, the structure inside the administration that will oversee this transition needs to be identified. Additionally, it will be helpful if the reception of the vehicles have a centre by the Lomé harbor where most of the imported vehicles enter the country.

This initiative also includes the empowerment of the administrative staff.

Capacity building within the administration

The Togolese administration needs to specify how vehicle reception and inspection should be done, whether the administration is taking over these activities or subcontracting an operator to carry them on its behalf.

In particular, it is proposed to build a framework that will allow the administration to better structure and oversee the vehicle reception and inspection activities, along with a training of the staff. This framework will cover the following areas:

- Criteria for acceptance and rejection of a vehicle
- Reporting procedures (content, frequency, recipients, etc.)
- Procedures to oversee the following activities:
    - Planned and unannounced audits
    - Do-over of controls performed by the operator
    - Mystery shopping
    - Processing of reception and inspection data
    - Frauds management
- Specification of required know-hows and skills for the inspection staff: academic training, continuing education, qualifying criteria
- Technical specifications for the inspection of stations: organisation blueprint, maintenance requirement, equipment calibration, etc.
- Specification for the Information Technology System for the management of the reception and inspection procedures and of the collected information

The proposed framework and training program includes study tours in other African and European countries to benchmark the vehicles reception and inspection systems.

Upgrade of the existing inspection stations

The existing inspection infrastructures can be upgraded in several ways, and several specific actions are proposed:

- New layout for the inspection stations in Kpalimé, Atakpamé, Sokodé and Dapaong to allow for the inspection of heavy trucks
- Levelling and fixing of the floors in the inspection stations to ensure their long-term stability in order to verify the level of the vehicles headlights
- Upgrade of the existing computer network infrastructure to provide a single data repository (with associated backups) and allow to trace the history of the inspection data and of the vehicles that have undergone inspection
- Construction of new inspection lines

1 Introduction and Background to the Study

The Global Plan for the Decade of Action for Road Safety 2011-2020[5] defines the strategy for reducing road accidents and their consequences at the global level. The evolution of accidents, deaths and injuries is periodically monitored in the World Road Safety Status Report[6]. The latest data show that the problem is far from being solved and has a remarkable impact in low- and middle-income countries with 90% of the deaths but only 54% of the registered fleet.

The Decade of Action considers that improving road safety must focus on several aspects, called Pillars. Pillar 3 is devoted in particular to "vehicle safety."

In line with the above, the objectives of the World Bank's Global Road Safety Facility (GRSF) include strengthening national capacities in low- and middle-income countries to improve road safety, as well as to intensify coordination of funding and activities to be promoted.

As vehicles degrade over time, it is essential to ensure that the existing fleet is adapted to the design of any road safety and reliability strategy for road transport. One of the most common activities to ensure the conformity of vehicles in service is the roadworthiness tests of vehicles (RT). The RT is complex because it involves many different stakeholders, imposes additional costs on many of them and often has an air quality and road safety dimension. Nevertheless, it has been shown to play an essential role in reducing accidents[7] by professional organisations such as CITA (International Motor Vehicle Inspection Committee). CITA is a global non-profit association that aims to work together to improve road safety and the environmental impact of road transport by ensuring vehicle compliance throughout their lives. CITA members are mainly authorities related to roadworthiness tests, vehicle operators and manufacturers of roadworthiness test equipment.

The World Bank's GRSF and CITA have agreed to work together to formalize and improve vehicle compliance and monitoring procedures. To do this, they have committed to developing projects called AVIS - Assessment of Vehicle Inspection Systems.

The overall objective of the AVIS projects is to carry out audits of vehicle inspection systems in different countries in sub-Saharan Africa, and Togo has been selected as the first country where this audit is carried out. The study done in Togo is therefore the pilot of the AVIS programme, and the objective is to use the methodology developed for Togo to the other countries included in the AVIS programme.

Specifically, the goals of the AVIS study are to:

1. document current practices of vehicle inspection regimes in two or three sub-Saharan countries defined by the World Bank,

[5] http://www.who.int/roadsafety/decade_of_action/plan/english_global_plan.pdf
[6] http://www.who.int/violence_injury_prevention/road_safety_status/2015/GSRRS2015_Summary_EN.pdf?ua=1
[7] Contribución de la Inspección Técnica de Vehículos (ITV) a la seguridad Vial 2012. ISVA. n. http://www.aeca-itv.com/Publicaciones/Contribucion%20ITV%20seg.%20vial-2012.pdf Why Roadworthiness Regulation in Europe is not efficient. The case of N1-vehicles in Belgium". http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2601305
European Commission. 13.7.2012 SWD (2012) 206 Final. Roadworthiness Package. Commission Staff Working Paper. Impact Assessment. http://ec.europa.eu/transport/road_safety/pdf/road_worthiness_package/impact_assessment (IA)_en.pdf
The effect of vehicle roadworthiness on crash incidence and severity" http://www.monash.edu/__data/assets/pdf_file/0017/216710/muarc164.pdf

2. make context-specific recommendations for each of them to improve how these inspection programmes contribute to the overall capacity of countries to manage the motorization process and improve road safety and other public policy objectives, and
3. recommend a comprehensive capacity building program to implement the recommendations.

The audit comprises two parts, one covering the inspection of vehicles in circulation and the other covering the certification of vehicles entering the registered fleet for the first time, either by manufacture or import. Proposals and an action plan will be proposed to strengthen the country's capacities.

The consultants responsible for the implementation of the project for Togo are Abdelilah Khalifi, civil engineer, and Damien Subit, doctor-engineer in mechanics and transport safety. They were assisted by Eduard Fernandez, Executive Director of CITA.
Mr. Khalifi was responsible within the Moroccan government agency CNEH, "Center Nationale des Essais et Homologations," for the definition, implementation and management of the periodic inspection and individual vehicle approval system in Morocco. Dr. Subit is a specialist in road safety and biomechanics and has been engaged, among others, with the École Nationale Supérieure des Arts et Métiers (France), the Center for Applied Biomechanics at the University of Virginia (United States), and the Laboratoire de Biomécanique Appliquée (INRETS) in France. He has conducted several international research projects with the automotive industry and government organisations, and participated in several regulatory working groups.

A two-week field mission was conducted from 11 to 28 September 2017. The main activity was to conduct interviews with the managers of the various public and private bodies involved in vehicle management and road safety, as well as transport stakeholders (trade unions, car dealers, etc.). These interviews made it possible to collect the information needed to establish a diagnosis of the current situation of vehicle fleet control in order to clarify the recommendations contained in this report.

This report presents the results of the audit and is divided into three parts:
1. Report on the current situation for the type-approval and roadworthiness test of vehicles,
2. Proposal of an action plan to upgrade the reception,
3. Proposal of an action plan for the upgrading of the roadworthiness test.

We are grateful for the facilities logistical and organisational support provided by the Directorate of Road and Rail Transport of the Ministry of Infrastructure and Transport of the Government of Togo, as well as the availability of the various actors to meet us.

2 Current Situation of Vehicle Type-Approval and Roadworthiness Tests in Togo

2.1 Situation of the Fleet in Togo

The car registration management system has been computerized since 2014, so tracking registrations before that date is probably unreliable. Two sources were obtained to estimate the size of the fleet:

- Source 1: the document "Vehicle Registration Statistics 2000 - 2017", prepared by the Monitoring, Regulation and Statistics Division of the Ministry of Infrastructure and Transport (Annex 1);
- Source 2: the document transmitted by the DTRF to the World Bank in September 2017, which contains the fleet's numbers in 2015 and 2016, classified by age and vehicle type (Annex 2).

Below, source 1 was used to determine fleet size, and source 2 was used to determine several fleet characteristics (including vehicle age).

Togo's fleet consists of nearly 880,000 vehicles, including 260,000 light and heavy vehicles and 620,000 mopeds, motorcycles, tricycles and quadricycles[8] (Source 1). The fleet is very old with 94% being more than 5 years old (Source 2, Table 1). The majority of registrations are in Lomé (Table 2).

Table 1- Age Distribution of Light and Heavy Vehicles[9]

Age	Number	Rate	Aggregate
Age ≥ 40 years	81	0.2 %	0.2 %
40 > age ≥ 30 years	1,076	2.8 %	3 %
30 > age ≥ 25 years	2,442	6.3 %	9.3 %
25 > age ≥ 20 years	8,609	22.2 %	31.5 %
20 > age ≥ 15 years	16,182	41.7 %	73.2 %
15 > age ≥ 10 years	6,509	16.8 %	90 %
10 > age ≥ 5 years	1,475	3.8 %	93.8 %
Age < 5 years	2,552	6.2 %	100 %
Total	**38,926**	**100%**	**100%**

Table 2 - Number of Registrations by Region for Mopeds, Motorcycles, Tricycles and Quadricycles[10]

Region	Number	Rate
Atakpamé	3,762	8.3 %
Dapaong	3,229	7.1 %
Kara	2,003	4.4 %
Kpalimé	5,129	11.3 %
Lomé	26,049	57.5 %
Sokodé	5,169	11.4 %
Overall total	**45,341**	**100 %**

[8] Source: DTRF
[9] Estimated from 2015 and 2016 registrations (source 2)
[10] Estimated from 2015 and 2016 registrations (source 2)

2.2 Current Vehicle Type-Approval System

Vehicle type-approval is a technical and administrative procedure enabling vehicles to be put into service on public roads only if they meet the requirements relating to vehicle maintenance, safety and environmental protection. The information presented was obtained during several interviews, the reports of which are provided in Annex 3.

2.2.1 Procedure

The approval of vehicles has three components - tax clearance, technical approval and homologation, and registration - and is carried out as follows:

1. The importer goes to the Single Window of Foreign Trade to initiate the reception of imported vehicles and pay taxes and customs duties;
2. After checking the import documents and paying the import taxes and customs duties, the customs send a certificate of conformity via the Customs Unit located on the campus of the Directorate of Road and Rail Transport (DTRF), to the head of the Directorate of Technical Control of Vehicles (DCTV). The customs cell on the DTRF campus was created to limit fraud;
3. DCTV requests proof of payment of customs duties and vehicle insurance. The DCTV is linked to the insurance network (via the POOL of insurance companies) and has access to the customs software for the management of payment of duties (SYDONIA). The insurance pool is a centralized private insurance system set up to limit insurance fraud, such as the presentation of false insurance certificates: vehicle owners are thus insured by the insurance pool and not by a specific insurance company;
4. Approval is carried out by the DCTV controller (on the DTRF site) and includes a visual and administrative inspection of the vehicle (chassis number, power, steering position, etc.);
5. The roadworthiness test is then carried out by SOTOPLA-CEVA;
6. The vehicle is registered if the results of the roadworthiness test are in conformity.

2.2.2 Strong points in the implementation of the vehicle type-approval procedure

Togo has procedures for the administrative, fiscal and technical approval of vehicles. These activities are well framed and procedures have been subject to several revisions, in particular to limit fraud and increase the efficiency of the management of these procedures. For example, the establishment of the insurance pool underlines a desire for continuous improvement of the system.
There is also a desire to network the various players, literally and figuratively, by creating the Single Window and by sharing information between customs and the DTRF via the ASYCUDA IT platform. These elements are positive aspects of the vehicle type-approval system.

2.2.3 Weak points in the implementation of the vehicle type-approval procedure

The vehicle fleet in Togo is very old, and the desire to rejuvenate the fleet and see better and newer vehicles on Togolese roads has been expressed by all stakeholders. This state of affairs is partly due to several shortcomings in the vehicle type-approval procedure:

- Taxation: customs duties are much more expensive for new vehicles (less than 2 years old) than for old vehicles, since the state grants a 33% allowance on the customs value of vehicles over 2 years old. The customs service has put in place incentives to reduce customs duties to encourage the customs clearance of vehicles in MAD (Stores and Customs Clearance Areas) for several years. The success of these measures put in place to liquidate MAD suggests that the amount of taxes and customs fees are a brake on vehicle imports;
- Requirements for imported vehicles: Currently, the only cause for rejection of a vehicle is the presence of the right-hand drive. There is no requirement as to the quality of the vehicle or its age. There is talk of limiting the age of imported vehicles and setting up a leasing programme to encourage the Togolese to invest in newer and better-quality vehicles, but there is still no decree;

- Regional harmonization: To date, there is no harmonization with neighboring countries, although WAEMU has proposed guidelines;
- Monitoring the conformity of vehicles throughout their life: there is no procedure for the approval of vehicles which have been modified or which have suffered an accident considered serious, and the technical requirements for such a control do not exist. Indeed, the technical elements checked during the initial approval are insufficient to monitor the conformity of modified or damaged vehicles. Compliance monitoring is an important issue for trucks whose trailers are modified (addition or modification of axles to increase transport capacity). The only existing regulation is No. 14/2005/CM/UEMOA[11] dated 16 December 2005 on the harmonization of standards and procedures for the control of the gauge, weight and axle load of heavy goods vehicles in WAEMU member states. This regulation requires the introduction of type-approval for heavy goods vehicles prior to their entry into service and the obligation of a new type-approval for all vehicles registered but having undergone significant alterations. The regulation should be supplemented by technical requirements on safety and pollutant emissions as it currently only defines the limits of vehicle masses and dimensions. The text should also provide for the type-approval and inspection of severely damaged vehicles.

2.3 Current Roadworthiness Test System

Roadworthiness testing is a procedure established by the government that sanctions the technical and administrative conformity of vehicles in use. Technical vehicle admissibility thresholds and an administrative framework make it possible to justify authorising a vehicle to be operated on Togolese roads or to be banned from circulation if certain works or documents have not been carried out.

The Togolese government has entrusted by decree to the operator SOTOPLA-CEVA the development of control facilities and a methodology for technical control in Togo (Decree No. 2005 - 017 /PR of 18 February 2005). The award of the concession was not *a priori* the subject of a competitive invitation to tender. The decree specifies that a fee is due by the operator to the DTRF. This fee should in principle be used to finance the Office de la Sécurité Routière (OSR) created by decree of 23 July 1997 but not active to date.
The information presented was obtained during several interviews, the reports of which are provided in Annex 3.

2.3.1 Procedure

Vehicle owners are subject to roadworthiness tests every 6 months for personal vehicles (light vehicles, 2 wheels, scooters, quads), and every 3 months for professional vehicles (2 wheels (zemidjan), scooters, quads, taxis, specialized vehicles, heavy goods vehicles for transporting people and goods etc.).

The roadworthiness test is carried out as follows:

1. The vehicle owner or his representative pays the technical control fees at the SOTOPLA-CEVA roadworthiness test centre. The payment receipt and the blank roadworthiness test form are issued;
2. The owner entrusts his vehicle to the SOTPOLA-CEVA driver and waits in the waiting room for the inspection to be carried out;
3. The driver presents the vehicle successively to several operators:
   - Checking the gauge (heavy goods vehicles only): length, width and height;
   - Visual inspection of engine block, levels, wiper operation, lights, etc.;

[11]http://www.uemoa.int/fr/reglement-ndeg142005cmuemoa-relatif-lharmonisation-des-normes-et-des-procedures-du-controle-du

- Measurement of vehicle performance with dedicated equipment, including headlamp alignment, shifting, braking capacity, headsets, etc.;
- For each measurement, the equipment operator reports the results directly interpreted in terms of quality (measurement in conformity or not) on the technical control sheet;

4. The roadworthiness test sheet is entered electronically at SOTOPLA-CEVA and stored on SOTOPLA-CEVA's computer servers;
5. The result of the technical inspection is established and, in case of conformity, the certificate is affixed by STOPOPLA-CEVA personnel on the windscreen of the vehicle. In case of non-compliance, the vehicle owner has 15 days to make a counter-visit once the necessary repairs have been made.

2.3.2 Strong points in the implementation of the technical control procedure

Togo has six roadworthiness test centres throughout the country. These centres are regularly operated:

- They are equipped with lines for light vehicles, heavy vehicles and two wheels/trippers
- The measuring equipment complies with international standards;
- The roadworthiness testing activity is structured and the procedure is documented. SOTOPLA-CEVA called upon technical assistance for the development of the activity;
- There is an IT infrastructure for capturing and storing information from the roadworthiness test sheets and data from the hinterland centres is transmitted once a week to the Lomé centre;
- Certificates of conformity are secure.

2.3.3 Weak aspects in the implementation of the technical control procedure

From a general point of view, an important weakness of the current roadworthiness test is the very low rejection rate (less than 1%, Figure 3) of the vehicles presented for inspection, which indicates that roadworthiness tests do not fulfill their role of upgrading and keeping the vehicle fleet up to standard. At this stage of the project, no analysis has been conducted by the consultants to determine the extent to which this rate is low due to fraud or inadequate compliance thresholds.
More specifically, the following weaknesses were identified:

- The compliance thresholds were decided by the operator, and were not ratified by the DTRF by ministerial orders;
- The verification of equipment calibration is carried out by a person mandated by the operator and not by the DTRF, and the operator is therefore in a position of conflict of interest;
- The computer information system needs to be upgraded: the measuring machines are not currently interconnected, and the operator knows the result obtained by the vehicle for each measurement. This access to the measurement result gives the operator the possibility to modify the measurement result (see next point). The machines used in the control lines can be interconnected, but this function is not yet used;
- A lot of information is entered manually by each operator before being entered electronically, which is conducive to errors or manipulations of results;
- There are no benchmarks for the required skills and/or level of training required for each role involved in vehicle inspection, making it difficult to assess whether the number and level of knowledge of personnel is adequate;
- There is no requirement for controllers to specialize in their function or the lines on which they work (light vehicle lines, heavy goods vehicles, etc.);
- SOTOPLA-CEVA has never been audited by the Ministry of Transport, and therefore the adequacy of the methods and thresholds implemented by SOTOPLA-CEVA could not be validated against the objectives of the Togolese government;
- SOTOPLA-CEVA issues certificates of conformity itself, without the state being involved;

- In terms of activity documentation, the data stored on SOTOPLA-CEVA's servers do not seem to be used for anti-fraud checks or vehicle tracking, and the technical control reports do not contain any photos or part references (such as tyres);
- The assignment of a vehicle to a control line or to a controller is not random, which makes possible inspections of convenience between a line operator and a customer.

2.3.4 Regulation and organisation

2.3.4.1 Regulatory framework

The regulatory and organisational framework is defined by the following texts:

- ❑ Order No. 09/MCT/DTR of 07 April 1983 regulating compulsory technical inspections for motor vehicles registered in Togo
- ❑ Decree No. 2005 - 017 /PR of February 18, 2005 granting the concession for the operation of technical vehicle inspection activities and the supply of license plates to the company SOTOPLA SARL
- ❑ Concession agreement between the Togolese Republic and SOTOPLA dated 08 July 2009 for the operation of technical vehicle inspection and license plate supply activities
- ❑ Directive No. 16/2009/CM/UEMOA of 25 September 2009 on roadworthiness tests in the WAEMU Member States
- ❑ Inter-ministerial Order n° 09/MEF/MTPT/CAB of 01 November 2009 fixing the prices for technical vehicle inspections
- ❑ Decree n° 2017 - 082 /PR of June 22, 2017 relating to the automobile roadworthiness test in Togo

Technical control in Togo is relatively old (it was introduced in 1983). It is carried out within the framework of a concession over a period of 10 years. Although the Decree establishing the concession to SOTOPLA-CEVA was promulgated on 18 February 2005, the agreement was not put in place until 8 July 2009.

Decree No. 2017 - 082 /PR of 22 June 2017 establishes the overall framework for the deployment of a roadworthiness test system in Togo. This Decree is a national version of the 2009 WAEMU Community Directive. Being the last text to be validated, it is therefore the regulatory reference in force (Table 3).

Table 3 – Summary of Decree n° 2017 - 082 /PR of 22 June 2017 on Roadworthiness Tests.

Article	Disposition	Comment
Article 3	Motor vehicle technical inspections are made compulsory for motorcycles over 125 cm3, light vehicles and heavy goods vehicles.	▪ The roadworthiness test is limited to motor vehicles and therefore does not apply to towed vehicles, according to the text, ▪ The roadworthiness test does not concern motorcycles of less than 125 cm^3, mopeds, tricycles and quadricycles.
Article 4	▪ Motor vehicle roadworthiness testing is regulated by the ministry in charge of road transport, ▪ Technical inspections are carried out by the ministry in charge of road transport, by an approved public or private body subject to the control of the said ministry, ▪ Vehicle maintenance is the responsibility of the owner, ▪ Occasional technical inspections are ordered by the ministry in charge of road transport when a vehicle is polluting, emits annoying noise or presents a danger to traffic.	▪ The supervision of the roadworthiness test is taken over by the ministry in charge of road transport. It is empowered to control and audit the sector, ▪ The ministry in charge of road transport is authorised to approve a public or private body to carry out the roadworthiness test, ▪ The ministry in charge of road transport may carry out counter-visits for vehicles with significant levels of defects both in terms of environmental or noise pollution or in terms of safety.
Article 6	▪ Issuance of a secure sticker at the time of each favorable technical visit, ▪ Each vehicle that has undergone an unfavorable technical inspection has 15 days to comply, ▪ The specifications of the technical inspection certificate are those defined by WAEMU or those internationally recognized.	The text opens the door to an alignment of the Togolese procedure with international standards.
Article 7	▪ The roadworthiness test is compulsory for vehicles having reached the 3rd year after their first entry into service, ▪ Technical inspections are carried out every six months for professional vehicles and annually for private or administrative vehicles.	The periodicity thus makes it possible to raise the standard in force in Togo for an effective and more credible control.
Article 8	The roadworthiness test covers safety, the environment and noise pollution.	The decree establishes the overall framework for comprehensive control.
Article 9	The material defines the inspection points. The last point concerns nuisances.	Unlike the previous article, this article does not explicitly require pollution control.
Article 10	▪ The roadworthiness test is carried out using standard equipment, ▪ The roadworthiness test can be carried out by mobile station, ▪ Equipment requirements are those in force at UEMOA or on the scale of international standards.	The text opens the door to the additional requirement of new standards for equipment approval, calibration and maintenance.
Article 11	The admissibility thresholds for defects are those in force at UEMOA or on the scale of international standards.	The text opens the door for the implementation of objective and credible thresholds for a better fleet.

2.3.4.2 Current organisation

Currently, the operator is SOTOPLA-CEVA, which was authorised by Decree in 2005, whereas the effective agreement was only put in place in 2009. The authorization in force for 10 years places STOPOPLA-CEVA under the supervision of the DTRF (Figure 1). The operator has opened six roadworthiness test centres throughout the country.

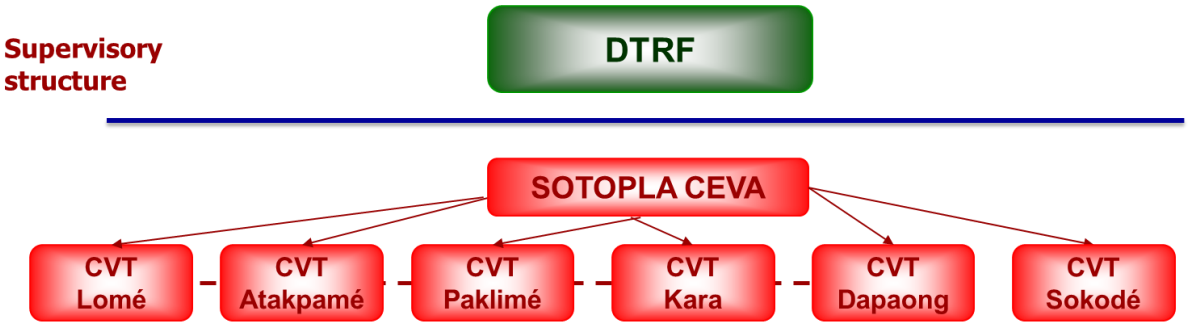

Figure 1 – Current Organisation of the Roadworthiness Test

The concessionaire should be audited continuously by the DTRF to ensure that the concessionaire's activity complies with legal, regulatory and organisational provisions.

It is also planned to pay fees to the Road Safety Office to finance the related actions. However, this body is not yet operational.

2.3.4.3 Concessionaire's Human Resources (2)

The operator calls on several types of personnel, including controllers, drivers and site managers who are involved in the roadworthiness test itself (Table 4[12]). It should be noted that the controllers work in teams on several stations to carry out the roadworthiness test of a vehicle. As a result, it should be noted that responsibility is dispersed among them. The rest of the staff is the support staff. The most important centre is in Lomé.

Table 4 – Number of Roadworthiness Test Staff

	Total workforce	Controllers	Drivers	Site manager
Lomé	180	22	23	1
Kpalimé	10	3	2	0
Atakpamé	13	5	1	1
Sokodé	10	4	2	0
Kara	14	3	2	1
Dapaong	11	3	2	0
	238	**40**	**32**	**3**

[12] Source SOTOPLA-CEVA.

2.3.5 Technical visit data

2.3.5.1 Number of technical visits and its development

The total number of technical visits is constantly increasing, with the largest share for the Lomé centre (Table 5[12], Figure 2).

Table 5 – Number of Roadworthiness Tests from 2009 to 2016[12]

Locality	2009	2010	2011	2012	2013	2014	2015	2016	Total	Rate
Lomé	6,367	114,306	128,289	120,503	120,836	133,810	131,130	148,161	903,402	79.2 %
Kpalimé	241	4,720	4,773	4,265	6,160	8,011	7,426	8,713	44,309	3.9 %
Atakpamé	241	5,437	6,010	5,941	5,755	7,109	7,287	9,307	47,087	4.2 %
Kara	213	5,977	5,636	4,858	4,261	4,767	7,176	17,592	50,480	4.4 %
Sokodé	157	3,975	5,345	6,851	7,298	8,106	7,460	11,095	50,287	4.4 %
Dapaong	146	3,553	4,951	4978	6072	7143	8551	9571	44,965	3.9 %
	7,365	**137,968**	**155,004**	**147,396**	**150,382**	**168,946**	**169,030**	**204,439**	**1,140,530**	**100 %**

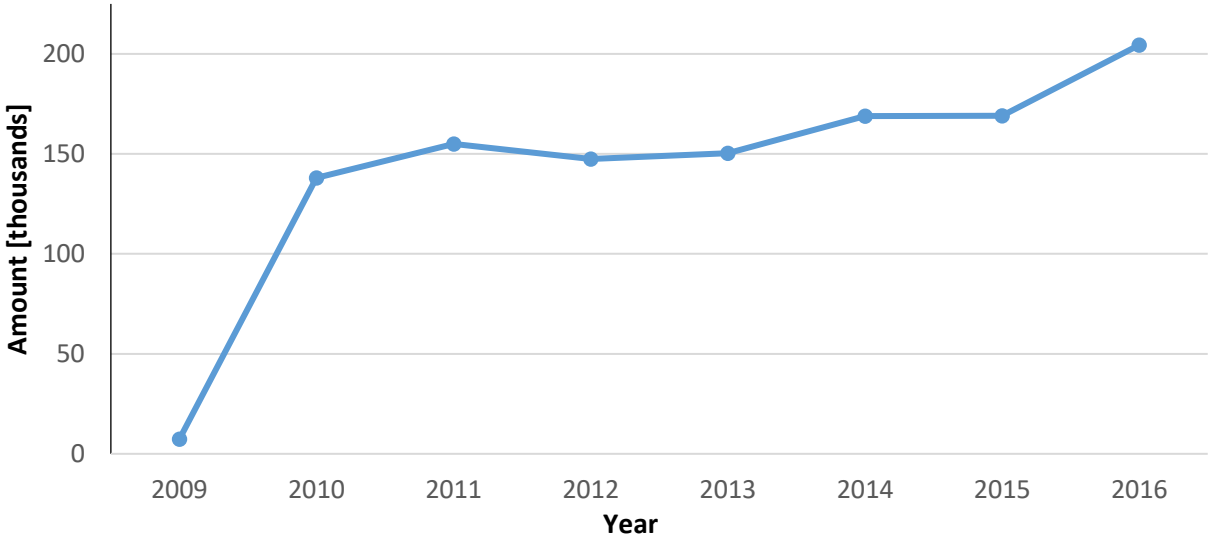

Figure 2 – Evolution of the Number of Roadworthiness Tests from 2009 to 2016

2.3.5.2 Overall rejection rate

The rejection rate was highest at the beginning of the activity (5.2 %) and has decreased overall since 2009 (Table 6[12], Figure 3[12]). In 2016, the rejection rate was 0.7%.

Table 6 – Assessment of Technical Visits from 2009 to 2016

	2009	2010	2011	2012	2013	2014	2015	2016	Total
Unfavorable visits	383	2,835	3,493	2,017	2,107	4,527	2,961	1,301	19,624
Favorable visits	6,982	135,133	151,511	145,379	148,275	164,419	166,069	203,138	**1,120,906**
Total	**7,365**	**137,968**	**155,004**	**147,396**	**150,382**	**168,946**	**169,030**	**204,439**	**1,140,530**
Rejection rate	**5.2 %**	**2 %**	**2.2 %**	**1.4 %**	**1.4 %**	**2.7 %**	**1.7 %**	**0.7 %**	**1.7 %**

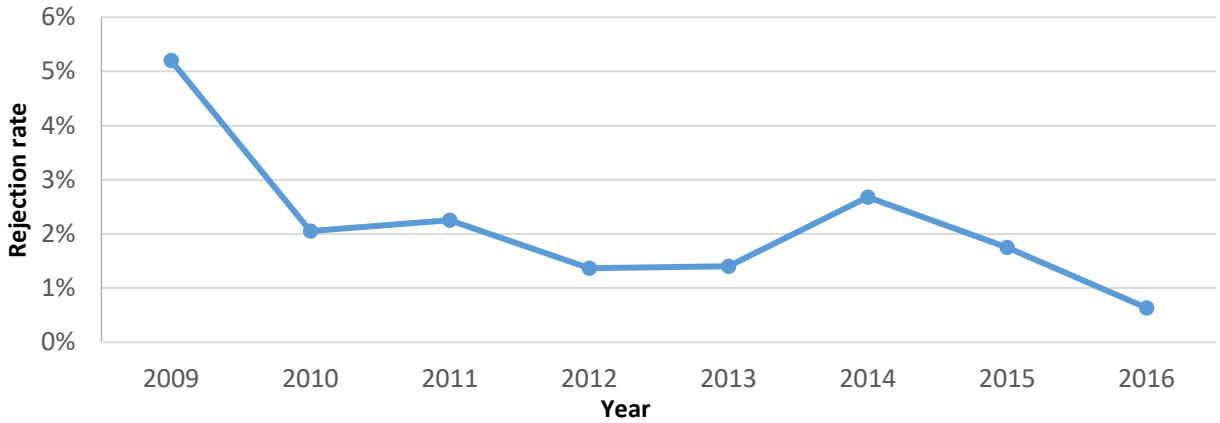

Figure 3 – Evolution of the Rejection Rate from 2009 to 2016

2.3.5.3 Rejection rates by region

With an average rejection rate of 1.7% since 2009 (Table 7[12]) and a regressive trend in the number of vehicles rejected since 2009, the technical inspection operation does not contribute to improving the condition of the fleet, 90% of which are more than 10 years old.

Also, with the improvement of vehicle maintenance and repair structures, which should have the necessary equipment and appropriate skills, the maintenance of vehicles in good working order would be improved.

Table 7 – Average Rejection Rate by Region

Locality	Total visits 2009 - 2016	Total favorable visits 2009 - 2016	Total unfavorable visits 2009 - 2016	Rejection rate
Lomé	903,402	884,656	18,746	2.1 %
Kpalimé	44,309	44,006	303	0.7 %
Atakpamé	47,087	46,998	89	0.2 %
Kara	50,480	50,194	286	0.6 %
Sokodé	50,287	50,275	12	0.02 %
Dapaong	44,965	44,815	150	0.3 %
	1,140,530	**1,120,944**	**19,586**	**1.7 %**

2.3.5.4 Breakdown of tests by vehicle category for the 2016 financial year

All centres are equipped with LV (light vehicles) and motorcycle control lines. Only the Lomé and Kara centres have HGV (Heavy Goods Vehicle) lines. However, some heavy goods vehicles have passed the technical visit in other centres (Table 8[12]).

Table 8 – Distribution of Roadworthiness Tests by Vehicle Type[13]

	Centres equipped with HGV and LV lines		Centres equipped only with VL lines				
	Lomé	Kara	Kpalimé	Atakpamé	Sokodé	Dapaong	Total
HGV	8,792	11,235	332	2,536	3,883	4,378	31,156
LV	111,755	3,889	3,217	3,078	6,623	2,020	130,582
Motorcycles	27,614	2,468	5,164	3,693	589	3,173	42,701
							204,439

The information system to be set up shall limit access to each line only to the types of vehicles corresponding to the characteristics of that line.

2.3.5.5 Current premises and equipment of the technical visit

SOTOPLA-CEVA provided building and equipment layout diagrams for the six technical inspections. The organisation of the Lomé centre is presented here as an example (Figure 4). All the information for the six centres is given in Annex 4.

[13] The centres in Kpalimé, Atakpamé, Sokodé and Dapaong are not equipped for the inspection of HDV (figures in red).

Legend

Gas analysis apparatus or opacimeter

Headlamp adjustment device

LCV Suspension and braking devices

Gap detector

Control console

Wheel Alignment Gauge

HGV breaking devices

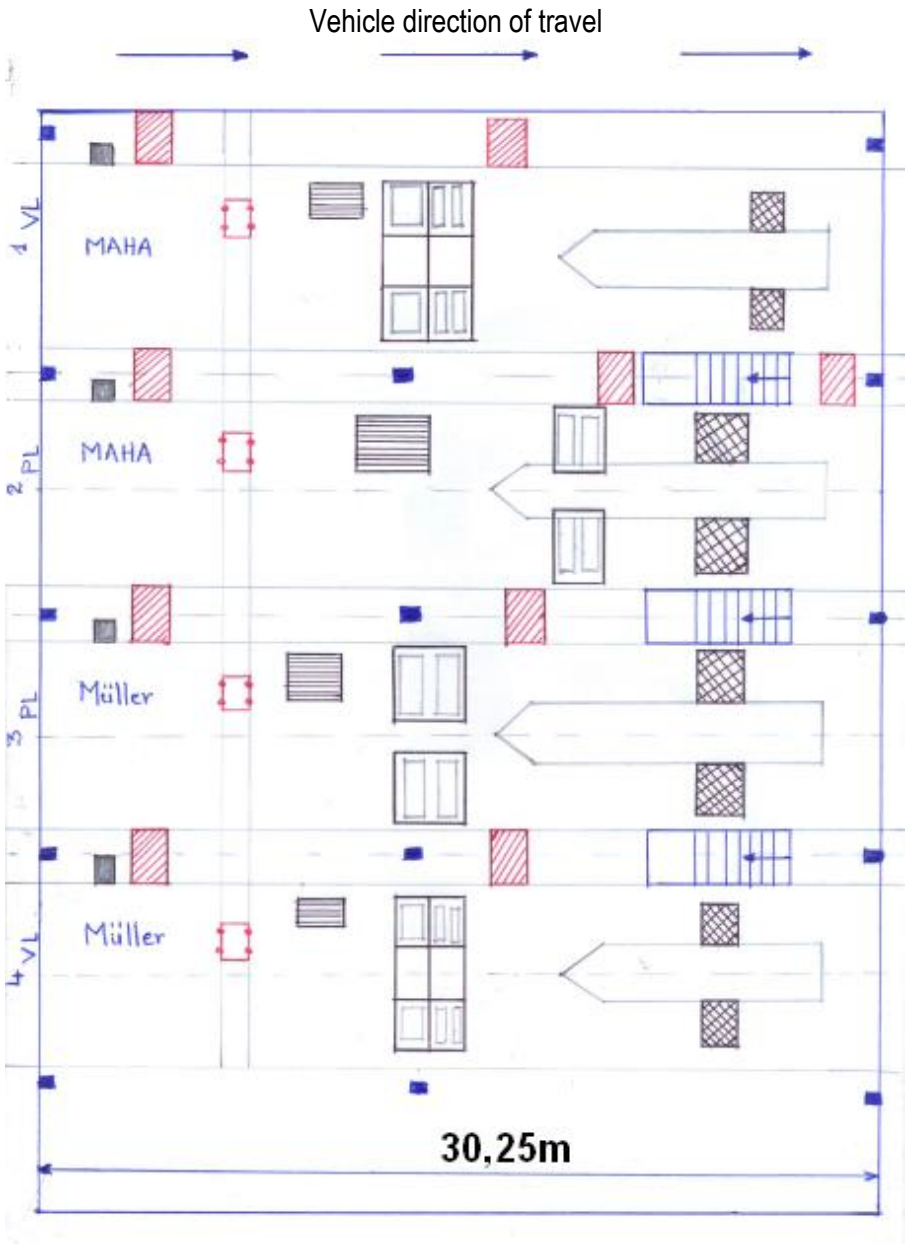

Figure 4 – Diagram of the Location of the Roadworthiness Test Centre in Lomé

The premises are located within the premises of the Directorate of Technical Control of Vehicles.

In terms of layout, the centres are suitable and enable the roadworthiness tests to be carried out correctly. Indeed, they ensure a fairly smooth movement of vehicles in and out with a smooth passage over the control equipment.

It should be noted that in order to be able to carry out roadworthiness tests for heavy goods vehicles in localities other than Lomé and Kara, it will be necessary to review the configuration and layout of the existing centres. Also, all the premises need to be leveled (i.e., leveling of the floors, refreshing of the measuring equipment installation).

2.3.6 Summary of Roadworthiness Test Equipment

The roadworthiness test is carried out on several control lines throughout the country (Table 9).

Table 9 – Types of Control Line in each Centre

Locality	HGV	LCV	Motorcycles
Lomé	2	2	2
Kpalimé		1	1
Atakpamé		1	1
Kara	1	1	1
Sokodé		1	1
Dapaong		1	1
	3	**7**	**7**

2.3.6.1 Age of equipment

The dealer has regularly equipped the roadworthiness test lines (Table 10), with a continuous effort to acquire technical equipment.

Table 10 – Number of Technical Control Equipment Acquired between 2008 and 2016 (all centres combined)

Year of acquisition	Number of equipment	Rate
2008	28	45.9 %
2010	5	8.2 %
2011	15	24.6 %
2012	8	13.1 %
2015	1	1.6 %
2016	4	6.6 %
	61	**100 %**

The equipment is of very homogeneous brands:

- Maha: 22 pieces of equipment
- Actia: 39 pieces of equipment

Requirements should be defined for the certification, calibration and maintenance of equipment. All operations must be carried out by the concessionaire under the supervision of the administration. Also, a line should be automatically shut down in the event of the non-operation of one or more pieces of equipment. The information system should therefore block access to lines where equipment is absent or not operational.

2.4 Summary of the Situation Regarding the Type-Approval and Roadworthiness Test of Vehicles in Togo

2.4.1 Synthesis of the situation regarding the type-approval of vehicles in Togo

There are no technical barriers to vehicle entry and registration in Togo. Approval is reduced to a simple administrative act that any imported vehicle can obtain without any restrictions or requirements in terms of safety, age, or environmental protection.

In light of this data, received by the various stakeholders and field observations, the areas for improving Togo's fleet adequacy management system are identified below:

- Imposition of technical entry conditions for vehicles in Togo[14];
- Administration training for the definition, control and management of periodic vehicle control system; and
- Improvement of infrastructure and inspection facilities.

Periodic vehicle inspection systems are designed to ensure that vehicles are in proper condition. Any such approach has a de facto limit on the characteristics of vehicles at the time of their entry into service: it is difficult to justify greater severity with vehicles in service than at the time of their entry into service. For this reason, it is essential to define the technical requirements that vehicles must meet when they start driving in Togo. As previously indicated, vehicles are currently not subject to any requirements at the time of registration.

The definition of the technical criteria should take account of the fact that almost all the vehicles put into service are used and the increased requirements for the approval of vehicles entering Togo should be managed in such a way as not to have an excessive impact on the market for second-hand vehicles from third countries. Over-regulation and over-regulation imposed too quickly can prevent fleet renewal.

Togo has a well-defined, implemented and consolidated system for the management of taxes payable for the importation of new and used vehicles. This organisational structure can be used to implement an additional system to ensure that vehicles entering the country meet minimum requirements.

The customs clearance system needs to be reconsidered. Currently, the taxes payable when a vehicle is imported depend on its commercial value. This means that damaged vehicles end up satisfying a lower amount of tax through which the tax system favors the entry of non-compliant vehicles.

2.4.2 Summary of the situation regarding roadworthiness tests in Togo

Currently, Togo has technical visit centres managed by a concession holder who has:

- Premises made available by the DTRF. These buildings require improvements, and an extension is necessary to increase capacity both for light vehicles and motorcycles and for heavy goods vehicles, which are currently technically controllable only in Lomé and Kara;

[14] It is important that the restriction be technical, not commercial, to comply with WTO competition rules. Thus, Togo does not prevent the importation of vehicles of a certain age, but it prohibits their component type-approval (technical restriction).

- Equipment to be connected via an information system to make its use reliable and to give credibility to roadworthiness tests and measurements. Also, a calibration metrological control must be set up periodically for each measuring equipment by an authorised structure independent of the concessionaire;
- Human resources that are sufficient in terms of staff but not in terms of skills, and that should be managed according to a reference system relating to authorization, and training of the profession exercised.

Also, it should be noted that the roadworthiness test of vehicles is carried out in the absence of a reference system that sets up:

- The definition of measurement thresholds for equipment and defects for visual controls;
- The control procedure;
- Audit by the administration of the concessionaire, technical visit centres, site managers, controllers and control equipment;
- The information system that allows the transmission of vehicle inspection data to the administration.

Thus, the concession expires on 8 July 2019 without the administration already having an alternative ready to take over either directly from the technical control or via a new concession. Moreover, although the premises are the property of the DTRF, the latter has neither the human resources nor the experience nor the equipment to carry out the roadworthiness tests on vehicles.

The data obtained on the periodic inspection of vehicles cast doubt on its usefulness. According to the information mentioned in the introduction of this document, the percentage of vehicles considered as not eligible for circulation is limited to 0.64% in 2016. Although in previous years the discard rate has been higher, reaching 5.20% in 2009, it is still too low to encourage fleet improvement. As a reference, the percentage of vehicles rejected in Germany between 1987 and 2005 was about 18%[15].

Alongside a very low rejection rate, the frequency of technical inspections is very high, since light vehicles are subject to inspection every six months. Less burdensome for vehicle owners and more effective for road safety and maintaining vehicles in good condition would be a lower frequency with higher technical requirements, which would encourage increased fleet maintenance and renewal.
Furthermore, although the control centres are equipped with the necessary equipment to measure polluting emissions, this part of the inspection is not carried out because there are no limits with the corresponding legal support.

Finally, the problem that had the most impact during the information gathering process was the lack of evidence on the defining and monitoring role that the Togolese administration must play to ensure that the operator fulfills its mission. For this reason, it is considered essential to define the actions needed to train the administration in the following areas:

- Criteria for acceptance and rejection of vehicles, precisely defined and with corresponding decrees to ensure legality and enforcement of these measures. This should result in a rejection rate that is sustainable for the country's economy while providing an incentive to improve fleet maintenance and renovation. The criteria must evolve over time in line with changing fleet conditions. These acceptance and rejection criteria must also include monitoring the environmental impact of vehicles;
- Determination of the procedures for reporting the concessionaire's activities to the DTRF: content, periodicity, channel, etc. The administration has the obligation to monitor the activity of the service

[15]AUTOFORE Project Report http://citainsp.org/wp-content/uploads/2016/01/Autofore_Final_report_without_links.pdf

concessionaire and, to this end, to specify what information must be transmitted and in what form, in order to identify situations that are not actually in conformity;

- Compliance monitoring of the concessionaire's activities by the DTRF to ensure compliance with established procedures. The following is a list of activity control procedures:
    - Planned or unannounced audits, to (1) determine the adequacy of the quality system with the standards in force by studying its documentation and analyzing the inspections and their results, (2) verify that the implementation of the system meets the established objectives and (3) verify compliance with regulatory requirements;
    - Repetition of checks to determine whether the result of the check is the same when the inspector works regardless of when he is audited;
    - Mystery shopping: An inspection of a vehicle whose defect is known in advance to determine if the inspector identifies it;
    - Analysis of inspection data to identify trends that may lead to a deviation from operating rules or reveal a situation that affects the outcome of inspections;
    - Fraud management to anticipate favorable situations, detect scams and prevent their occurrence.
- Determination of the competences of the inspection personnel: qualification, initial training, continuous training, qualification criteria. Inspection personnel must have the necessary knowledge, skills and experience to perform their duties. It is essential to define the minimum criteria for access to each post in terms of experience and prior training. In addition, continuing education programmes and procedures must be in place to ensure that professional qualifications are maintained;
- Determination of the design characteristics of inspection centres and equipment: specifications, maintenance management, calibration. The composition of inspection teams must also be rigorous. The aspects to be regulated are the characteristics of the equipment, in terms of measurement capacity and quality, as well as the metrological verification and calibration processes;
- Definition of the roadworthiness test management information system. To minimize the inspector's influence in the collection and processing of relevant inspection data. Automated data management ensures that operator errors are eliminated and fraud risks are minimized. In addition, it is necessary to define the system in such a way that the data flow reaches the administration and the reporting referred to in the previous points is as automated as possible.

All these training activities are essential to any of the operating model of the chosen activity (concession or direct operation).

From the point of view of physical infrastructure, visits to the inspection centres in Lomé and Kpalimé showed that, in general, the centres are sufficiently equipped to carry out inspections. However, the following opportunities for improvement have been identified:

- Repair of the ground of the stations to ensure the reliability of the control of the adjustment of the vehicle headlights. Indeed, it is essential to have a flat and regular surface on which the vehicle and the control device are placed to check the headlamp adjustment;
- Economic study of the addition of lines allowing the roadworthiness test of heavy vehicles in the centres of Kpalimé, Atakpamé, Sokodé and Dapaong, where roadworthiness test of heavy vehicles currently takes place on light vehicle lines (Table). At present, the only centres with space and capacity for the inspection of large vehicles are Lomé and Kara. The centre of Kpalimé, even if it is located on a very large site, does not allow the passage of heavy goods vehicles because the geometry of the building does not allow heavy goods vehicles to maneuver.

The following actions are necessary:

- modification of the configuration of the centres to facilitate the flow of large vehicles and replacement of the inspection machine by universal models, which make it possible to inspect light vehicles and heavy goods vehicles;
- Updating of the computer system of the centres to ensure maximum automation in the processing of the inspection data mentioned in the previous paragraph and to facilitate the transfer of data for control by the administration;
- Construction of new inspection lines to serve the entire vehicle fleet.

2.5 Summary of Actions to be Implemented

Table 11 and 12 list the recommended actions for the redesign of vehicle type-approval and roadworthiness tests.

Table 11 – Summary of Actions to be Implemented to Upgrade Vehicle Type-Approval

Function	Current Status	Recommended Actions
Legal	• WAEMU Regulation relating solely to the masses and dimensions of heavy goods vehicles intended for the carriage of goods. This Regulation is not applicable to all vehicles; • No technical standards, no type-approval procedure.	Complete existing regulations with requirements: ▪ on imported second-hand vehicles in terms of age and operating condition; ▪ on the masses and dimensions to be generalized for all vehicles; ▪ on active and passive safety; ▪ on specific transport (children, disabled people, etc.); ▪ on polluting emissions; ▪ on the quality of hydrocarbons.
Organisation and procedure	▪ Simple transfer of the vehicle's initial elementary data; ▪ Prohibition to register vehicles whose steering wheel is on the right; ▪ No official reception structure.	Setting up of: ▪ a structure with more human and material resources in charge of vehicle approval; ▪ the technical type-approval reference system for each vehicle category; ▪ of the vehicle type-approval procedure.
Communication	▪ No communication action on the vehicle type-approval principle.	Set up a communication plan: ▪ For importers and concessionaires of vehicles; ▪ For neighboring countries; ▪ For garage owners; ▪ For the citizens.
Know-how	▪ No training action on WP29 (UNECE working group) type-approval rules	Set up a training plan: ▪ Presentation of the reference system developed by the WP29 committee; ▪ Those in charge of the structure that will oversee vehicle type-approval; ▪ Technical managers from concessionaires and vehicle importers.

Table 12 – Summary of Actions to be Implemented to Upgrade the Roadworthiness Test

Function	Current Status	Recommended Actions
Legal	▪ The 2017 decree presents a fairly complete basis for work; ▪ No official roadworthiness test standards stopping the procedure and the thresholds; ▪ No text relating to the management, audit and development of the sector.	Setting up: ▪ The text on the authorization of new technical visit centres/lines; ▪ The text relating to the exercise of technical control; ▪ The text relating to the exercise of the profession of controller and the requirements relating thereto; ▪ The text relating to the exercise of the function of site manager and the requirements relating thereto; ▪ The text relating to the approval, calibration and maintenance of roadworthiness testing equipment.
Organisation and procedures	▪ The DTRF is the Directorate in charge of roadworthiness test management through the Technical Inspection Division; ▪ The concession will end in 2019. The administration has not yet taken any measures to take over the activity, designate a new operator, or redefine the roadworthiness test specifications; ▪ The concessionaire should be subject to audit and control by the administration; ▪ Lack of roadworthiness test standards and acceptability thresholds; ▪ The roadside check should apply to the presence of the technical inspection certificate among the documents to be kept on board each vehicle subject to it.	Setting up: ▪ The procedure for carrying out roadworthiness tests by defining thresholds and detailing visual checks; ▪ The job descriptions of the team in charge of roadworthiness test at the DTRF; ▪ The methodology of the audit of authorized persons, controllers and site managers; ▪ Definition of sanctions for non-compliances; ▪ The sector's development approach to bring supply and demand closer together.
Information system	Original equipment manufacturer software package	Elaborate: ▪ The data transfer protocol between the authorized and the administration; ▪ The PV model of the technical visit.
Know-how	Concessionaire staff	Elaborate: ▪ The training plan for the staff assigned to roadworthiness test within the DTRF and those of the dealer; ▪ Qualification and maintenance requirements for controllers and site managers; ▪ The training plan for garages and repair mechanics.

3 Proposal for a Vehicle Type-Approval System

3.1 Objectives

The main aspects of the proposed vehicle type-approval system are as follows:

- Use of existing international standards, such as the 1958 UN/ECE Agreement on Technical Requirements for Vehicles;
- Definition of a system with progressive increase of requirements to avoid an unfavorable impact of the upgrading of vehicle approval procedures on user behavior;
- Combination of an administrative check (verification of a vehicle's conformity documents to certain standards) and a physical inspection to verify that the condition of the vehicle is adequate.

From a logistical point of view, it is recommended that the facilities in which this type of inspection is carried out should be close to the point of entry of most vehicles into the country. In this case, it would be the port of Lomé.
Vehicle type-approval operations can be carried out directly by the administration or assisted by a private company. In all cases, it is essential that administrative staff have the necessary training to define, implement, and monitor the activity.

3.2 Implementation Approach

The proposed approach is based on several components (Figure 5).

Figure 5 – Proposed Approach for the Implementation of the Proposed Type-Approval System

All the components will need to be addressed to ensure a successful transition and implementation of the new system, and to ensure that the partners adhere within a reasonable timeframe.

3.3 Legal Aspects

It is proposed that decrees or orders relating to the implementation of the system be put in place. Also, at the choice of the administration, these texts may be grouped together in a single technical reference integrating all the elements relating to the type-approval of vehicles. The reference framework is composed of four parts.

3.3.1 Definition and masses and dimensions of vehicles:

The first step is to define the vehicle legally. Several definitions that are not always compatible with each other are proposed in the various international standards and regulations. We can propose definitions of the different types of vehicles which can be adapted or improved according to the need while remaining

in conformity with the international standard. Also, vehicle weights and dimensions vary according to national regulations in different countries while remaining within a rational framework ensuring vehicle safety and infrastructure protection. As a result, weight limits are dictated in part by the capacity of the roads and structures in service in the country. Oversized vehicles will have to be subject to special provisions regarding convoy requirements and route definitions.
In this report we propose a system of definition which is not exhaustive and which is not binding. The Togolese administration is invited to adapt it to the national or regional context. It should; nevertheless, be noted that the international frameworks, notably those of 1958, 1998, and 1997 of the United Nations, put in place competent definitions. These definitions are recalled in Annex 5.

3.3.2 Technical rules for the type-approval of vehicles

To be approved, vehicles must, from their construction, meet technical requirements ensuring active and passive safety and protection of the environment in terms of both pollutant emissions and noise. The Togolese administration could set up an action plan for the progressive implementation of this reference system. Nevertheless, it would be appropriate to start with the highest priority rules in terms of safety and since vehicles put into service are imported either new or used, it is, therefore, quite affordable to require compliance with this standard without any impact on the local industry.

Annex 6 presents a technical reference framework which could be adopted in whole or in part depending on the administration's guidelines. It should be noted that this standard corresponds to a set of tests to which the vehicle or one of its components should be subjected in a test laboratory which should be recognized. Therefore, and to make the process more reliable, the administration will have to draw up a list of laboratories and certificates that it will accept.

3.3.3 Pollution control standards

To anticipate the pollution problems associated with the increase in the vehicle fleet, it is necessary to put in place requirements regarding engine exhaust emissions, which depends on the quality of fuels found in the market.[16] A hydrocarbon policy should be established to ensure consistency with reception regulations[17].

Joint work should be agreed between the ministries in charge of road transport, environment, mines and energy.

3.3.4 Reception procedure

It is important to allow any importer of vehicles to know the type-approval procedure and the relevant rules.

Every vehicle operator should also apprehend the behavior to adopt with regard to his equipment to remain in conformity with the regulations and good practices for a maintenance of his tool without risk neither on safety nor on the environment nor on the productivity of the vehicle.

To this end, it is necessary to define the scope of type-approval and the cases in which it is compulsory. We list below cases where it can be applied. An adaptation could be adopted by the Togolese administration according to the context and needs.

[16] Regulation 83 (found in Annex 6) corresponds to the Euro IV pollution control standard. This level can only be achieved with an appropriate fuel quality.
[17] While the consultants tried to obtain information on the quality and variation of fuel characteristics distributed in the country during the mission and in the following months (during the preparation of this report), this information could not be obtained.

In addition, it should be noted that the reception is composed of two parts:

- A documentary component relating to the study of the technical file and the definition of the characteristics of the vehicle; and
- A vehicle flap to ensure that the vehicle presented conforms to the documents provided.

3.3.4.1 Type-approval

This reception is attributed to any structure officially representing a brand, having the financial, human, and material means to ensure the marketing and after-sales service of the brand and which has a reliable information and traceability system.

In this case, for each type - variant - new version imported by that structure and if the number of vehicles is significant, the structure may benefit from a type-approval for that specific vehicle. However, in addition to the technical documentation and the presentation of a prototype, all the guarantees ensuring the conformity of the vehicles to be imported and marketed with the model approved as a prototype should be presented.

A compliance audit system must be instituted by the administration for any structure that has type-approval. The procedure could institute a four-step approach:

Step 1: Accreditation of the importer dealer on the basis of a dossier relating to his aptitudes in terms of showroom, after-sales service workshop, technical equipment and skills able to prepare technical dossiers in accordance with the new acceptance procedure.

Step 2: Presentation of the prototype to be type-approved accompanied by the technical file and the commitment to ensure the reproducibility of the model.

Step 3: Study of the technical file by the administration, definition of the characteristics of the vehicle to be approved and verification of the conformity of the vehicle with the file presented.

Step 4: Audit of conformity of commercial vehicles to the established type-approval.

In the event of proven discrepancies between the type-approval and the vehicles marketed, sanctions could be taken against the accredited person, including for example the definitive withdrawal of the accreditation and the cancellation of the type-approval granted.

3.3.4.2 Individual approval

The individual approval is carried out in several cases, below are some examples:

- New motor vehicles of which the type is not approved, manufactured domestically or imported in limited series;
- New motor vehicles of an approved type imported by persons who have not received such approval;
- New motor vehicles completed following prior approval of the chassis;
- Motor vehicles already approved which have undergone one or more significant modifications;
- Motor vehicles registered in Togo, severely damaged and repaired with a view to putting them back on the road;
- Vehicles sold at auction;
- Motor vehicles specially equipped for people with special needs imported;

For imported vehicles, it should be noted that the technical reference is identical for type-approval and single type-approval.

For vehicle fitting, bodywork or conversion operations, bodybuilders must meet a minimum quality standard, have the necessary equipment and appropriate skills. In this case a secure camber certificate should be provided for each vehicle concerned.

A technical check prior to type-approval could also be introduced for each individual type-approval.

3.4 Organisation

To successfully implement vehicle type-approval and ensure the credibility and effectiveness of operations, it is necessary to assign a structure and provide it with sufficient resources so that it can properly carry out its mission.

From the lists of human resources that we have recovered from the DTRF, it appears that this department has many mechanically trained managers and technicians spread over all divisions.

It would be appropriate to group a staff within the type-approval structure, according to an organisation consistent with the types of activities necessary for the type-approval of vehicles (Figure 6).

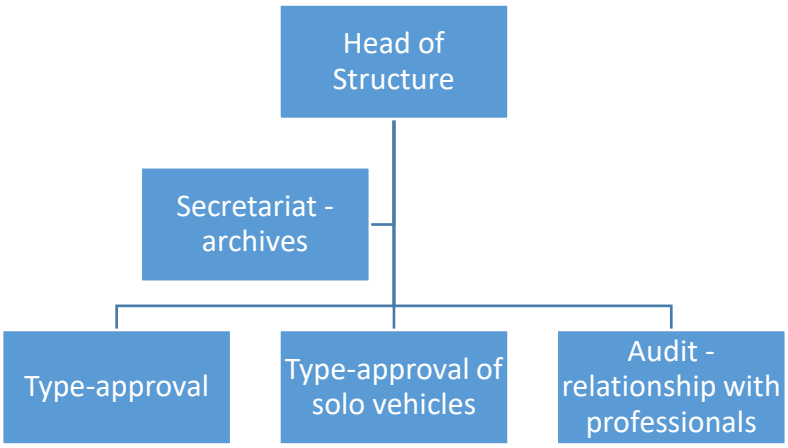

Figure 6 – Proposal for the Organisation of Vehicle Type-Approval Services

The head of the structure will be responsible for validating and signing the minutes of receipt after preparation and pre-signature by the entity concerned. It will also plan audits, accredit dealers, coordinate with professionals and ensure regulatory and technical monitoring.

3.5 Communication

The implementation of the new type-approval system will have an impact on the technical requirements to be met by vehicle importers, oil tankers, mechanical repairers, and consumers.
Before setting up the system, the administration will be able to conduct a widespread communication campaign to promote the benefits offered by these requirements on safety, the environment, and on the productivity and efficiency of vehicles.

3.6 Training and Skills

The players in this system are:

- Managers and technicians of the administration structure in charge of reception;
- Vehicle importer technicians who would be responsible for submitting records and vehicles for approval;
- Body repairer technicians and vehicle fitters;
- Mechanical repairers.

All in all, training should be provided to all actors involved to ensure that they understand and apply the new regulations properly. Training topics can be assigned according to the required skills of the trainees.

Themes concerning these trainings:

- Presentation of the vehicle technology;
- Presentation of the Geneva Agreements (1958 and 1998) on the type-approval of vehicles;
- Presentation of the Geneva Regulations relating to the approval of components and vehicles;
- Presentation of the laboratories called technical services for component and vehicle testing;
- Presentation of the methodology for reading and summarizing the test reports and approach for defining vehicle characteristics;
- Presentation of the visual inspection of vehicles and analysis of conformity with the technical documentation;
- Approach for bodywork, fitting and modification of vehicles, in particular those intended for public passenger transport.

4 Proposal for a Roadworthiness Test System for Vehicles

4.1 Objectives

The objective is to offer a reliable vehicle roadworthiness test system that ensures effective operations and actively contributes to the gradual improvement of the condition of the fleet for greater road safety and lower pollutant emissions.

4.2 Implementation Approach

The implementation is based on several components (Figure 7).

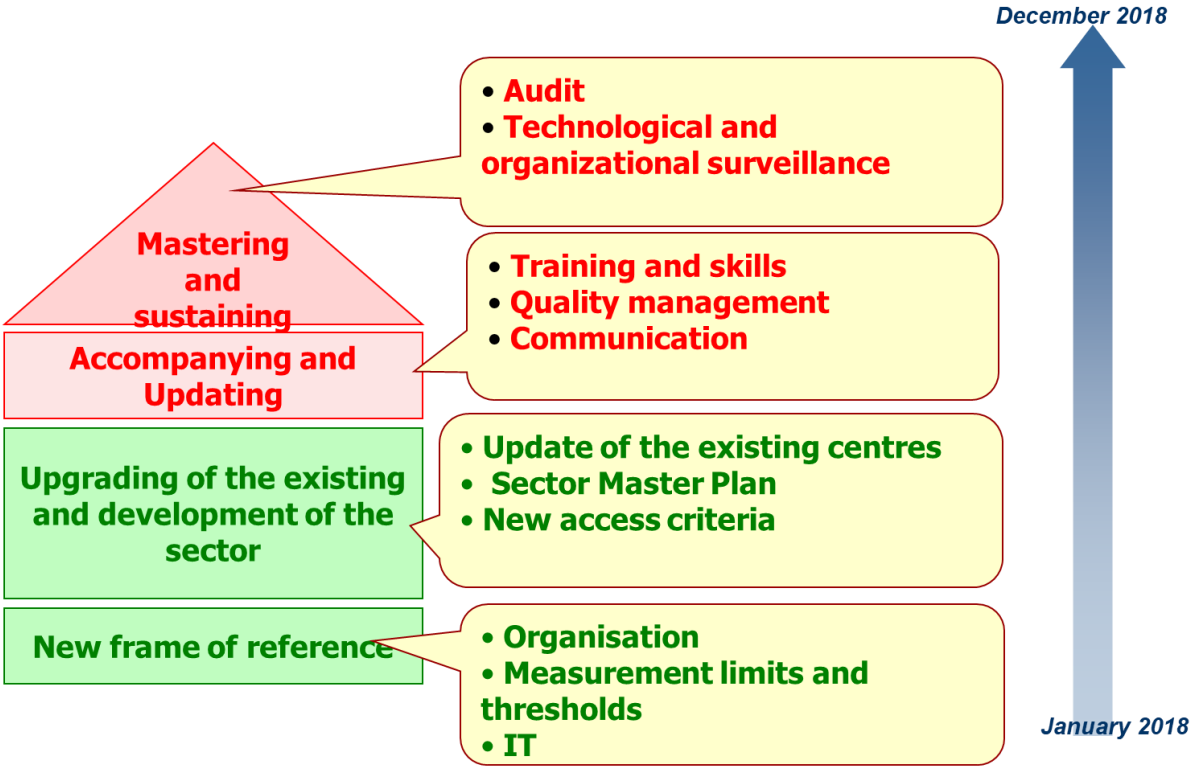

Figure 7 – Implementation Process of the Technical Control Upgrade

4.3 Implementation of a New Roadworthiness Test Standard

Decree 2017 - 082 /PR of 22 June 2017 establishes the regulatory framework to be completed by a reference framework for technical control.

This frame of reference could be inspired by international regulations while introducing a progressive implementation of the requirements in order to ensure a continuous raising of the level without the risk of putting too many vehicles out of circulation.

Within this framework, internationally recognized references are numerous. Among them:

- 1997 United Nations Agreement;
- Amendment of the 1997 Agreement;
- Special resolution.

In the special resolution, these are:

- prerequisites for technical control centres and equipment;
- prerequisites for the competence, training and certification of inspectors;
- Supervisory bodies.

The European directive 2014/45 also integrated these three concepts. It is very clear that they must be considered for the development of a technical control system.

Below are some proposed provisions that could be completed or adjusted as part of the technical control framework to be put in place.

4.3.1 Authorization to carry out technical inspections

The roadworthiness test must be carried out in centres run by an operator and by inspectors authorised by the administration. The terms of reference should define the modalities and type of control that thecentre and the controllers concerned are authorised to carry out (Table 13).

Table 13 – Example of Technical Inspection Categories

Type of control	moped	motorcycle	Tricycles and quadricycles	Vehicle of GVM ≤ 3.5 T	Vehicle of GVM > 3.5 T
Periodical					
Prior to the RTI					
Prior to the re-circulation of a VGE					

4.3.2 Location of the roadworthiness test

For motorcycles, the centre must respect the equipment manufacturers' requirements in terms of space reserved for the installation of equipment to ensure fluidity in traffic and the passage of vehicles on the control lines. Also, lifts can replace pits for the control of light vehicles (Table 14). These lifts must be such as to allow the same possibilities as those offered by pits in terms of lifting capacity and under the same conditions of safety, ease of roadworthiness tests, ease of access, and vehicle clearance.

Table 14 – Dimensional Constraints for Technical Inspection Areas

	LCV	HGV
Minimum room length	16 m	30 m
Minimum room width	8 m	15 m
Minimum room height	3.5 m	5 m
Minimum entrance width	3.5 m	7.5 m
Minimum entrance height	3.5 m	5 m
Minimum exit width	3.5 m	7.5 m
Minimum exit height	3.5 m	5 m
Useful pit length	6 m	16 m
Pit width	0.70 - 0.80 m	0.80 - 0.90 m
Depth of the pit which must take into consideration the safety rules, in particular with regard to the emergency exit	1.55 - 1.60 m	1.55 - 1.60 m

4.3.3 Roadworthiness test equipment;

Each roadworthiness test centre must have all the equipment necessary to carry out complete roadworthiness tests, giving precise, reliable and reproducible measurements that can be backed up and transferred by computer network. For each control line, the equipment required for technical control operations depends on the category of vehicles to be controlled and the type of controls to be carried out (Table 15). All this equipment is defined within the framework of the 1997 Geneva Agreement.

Table 15 – Equipment Required per Vehicle Type

Equipment	LV roadworthiness test	HGV roadworthiness test	Motorcycles roadworthiness test
Brake Bench	X	X	X
Shifting Plate	X	X	-
Suspension Bench	X	-	-
Opacimeter and gas analysis apparatus	X	X	X
Flagship rule	X	X	X
Play detector	X	X	-
Tire wear monitoring apparatus	X	X	X
Portable input terminal (PDA) or equivalent	X	X	X
Sound-level meter	-	-	X
Tyre inflator by centre	X	X	X

In addition to the aforementioned, each technical control centre must have the tools and additional equipment necessary for carrying out the technical control operations, including:

- A digital camera or equivalent;
- A telephone line;
- A fax;
- A scanner to scan the documents provided with each vehicle presentation;
- Sufficient internet connection for data transfer and reception. Capacity is defined by centre according to the volume of tests performed;
- Hand lamps (one lamp per line);
- Tyre pressure control device (compressor);
- Decameter.

All equipment must be acquired in new and approved condition. Also, the installation of the equipment must comply with the manufacturer's instructions and the requirements of the information system to be set up.

Each roadworthiness test centre must keep a technical file for each piece of equipment containing at least the following information:

- Approval file for each equipment;
- Calibration record of each piece of equipment duly completed by the calibration authority. Pending regulation of this component, the equipment must be calibrated every six months by the official dealer representing the brand in Togo or by an organisation deemed competent by the administration;
- Maintenance file containing:
    - Maintenance contracts concluded with the concessionaire or with an organisation confirmed and deemed competent by the administration;
    - Maintenance operations carried out on the equipment during the entire period of its operation. The preventive maintenance plan must conform to that recommended by the equipment manufacturers;
    - Manufacturers' catalogs or technical references.

Any installation or movement of fixed equipment must give rise to a calibration performed by the equipment manufacturer or any competent person prior to its use.

Any uncalibrated equipment should be considered faulty and its control line should be shut down.

All the roadworthiness test equipment must be connected to the centre's computer system, to the network's information system. These devices must also be connected directly to the server that should be set up by the administration.

In the event of a break or failure of the means of communication of a control line or disconnection of equipment, the line or equipment shall be considered defective and shall be shut down until the means of communication or connection is restored.

4.3.4 Human resources and skills

To ensure accountability of the staff assigned to roadworthiness test, it is necessary to organise the related professions. Thus, at least two posts may be concerned by this procedure.

4.3.4.1 Site manager:

The position of site manager must be occupied by a person with the technical and managerial skills to manage the human, material, and organisational aspects.

Authorization of the site manager:
The site managers must be authorised by the administration to exercise the post in question. In the event of an infringement or non-compliance with the mission assigned to them, the administration may temporarily or definitively withdraw the authorization depending on the seriousness of the error or recidivism.

Mission of the site manager
He or she must have a level of qualification to be able to access the position. This level will depend on the size of the centre it will have to take charge of.

The manager will also be responsible for communicating with the administration for the components related to:

- Preparation and transmission of activity dashboards to the concessionaire and the administration;
- The respect of procedures from the presentation of vehicles to the archiving of documents;

- The effectiveness of roadworthiness tests through the monitoring and control of roadworthiness testers;
- Roadworthiness test data transfers;
- Maintaining connections;
- Equipment conformity, maintenance, calibration and operationality;
- Maintenance of the premises, in particular the space reserved for technical visits and customer comfort;
- The supply of technical visit documents;
- Management of special or conflicting situations.

Site Manager Training
At their nomination, and so that their file can be validated by the administration, site managers should follow a qualification training whose main topics could be:

- Roadworthiness test regulations;
- Vehicle technology;
- Roadworthiness test procedure;
- Roadworthiness test information system set up in Togo;
- Human Resources Management;
- Transactional communication.

Also, site managers must undergo annual training to maintain the qualification. The themes must be proposed by the concessionaire and validated by the administration.

4.3.4.2 Controllers

Each control line must have at least one controller with training in automotive mechanics, automotive electricity, electromechanics, automation or equivalent.

Controller Authorization
A controller should only perform vehicle inspection work after having been authorised by the administration. Therefore, before recruiting him or her, the concessionaire should present a file to the administration, which, in case of agreement, edits a decision to the controller concerned. In the event of an infringement, the administration may temporarily or permanently withdraw the authorization to practice the profession depending on the seriousness or repetitiveness of the infringement.

Controller's mission
The task of the controller shall be to ensure the technical inspection of a vehicle in accordance with the procedure laid down by the administration. He or she shall sign the minutes of the checks carried out whether or not they are favorable. The controller has full responsibility for the decisions made on whether to grant or not a technical inspection to a vehicle.
An inspector must take charge of a vehicle from the start of the inspection until the favorable or unfavorable report is issued. He or she therefore assumes responsibility for the decision taken regarding the suitability of the vehicle to travel on public roads or not, in accordance with the procedure defined by the administration.

Controller Training
To enter the controller's profession, and so that their file can be validated by the administration, they should follow a qualification training whose main themes could be:

- Roadworthiness test regulations;
- Vehicle technology;
- Roadworthiness test procedure;

- Roadworthiness test information system set up in Togo;
- Transactional communication.

Also, the controller must undergo annual training to maintain the qualification. The themes must be proposed by the concessionaire and validated by the administration.

4.3.5 Information system

The concessionaire must have its own information system which it deploys in its central structure and in its roadworthiness test centres. The solutions deployed in the structure must respond to its activity. The solution deployed in the roadworthiness test centres automatically supports all the requirements defined by the administration and must guarantee all the functionalities of which we quote:

4.3.5.1 Line management

- Each line must have all the necessary equipment depending on the type of line and the nature of the test;
- Update line file;
- Updating equipment master record;
- Adding equipment calibration or maintenance data (an uncalibrated line must be disabled);
- Adding maintenance contract data;
- Stopping or resuming the activity of a line.

4.3.5.2 Controller Management

- Assignment of the controller to a well-defined line;
- Updating the file;
- Replacement of the controller if necessary;
- Shutdown or cancellation by the controller's administration;
- Data consultation;
- Addition of training data;
- Account activation/deactivation.

4.3.5.3 Site manager management

- Assignment of the site manager to a well-defined centre;
- Updating the file;
- Addition of training data;
- Data consultation;
- Audit management;
- Addition of the audit schedule;
- Addition of non-conformities and audit reports.

4.3.5.4 Management of minimum inspection times

Depending on the types of checks and categories of vehicles, the printout of the report shall only be possible if the duration of a test is greater than or equal to the corresponding minimum duration.

We propose limits that the administration could adapt or adjust according to organisational constraints (Table 16).

Table 16 – Example of Duration per Vehicle and Cadences per line for the Technical Inspection

Types of controls	Light Commercial Vehicle		Heavy Vehicle		Motorcycles	
	Minimum duration mn	Daily capacity per line	Minimum duration mn	Daily capacity per line	Minimum duration mn	Daily capacity per line
Periodic or transfer	20	20	30	13	15	25
Prior to the RTI	40	10	60	7	30	13
Prior to the re-circulation of a VGE	40	10	60	7	30	13

4.3.5.5 Management of the maximum capacity of a control line

- Depending on the types of checks and vehicle categories, each line must not exceed its daily capacity set by the administration;
- Each controller must not exceed the equivalent of the daily capacity of a line as defined by the administration.

4.3.5.6 Public holiday management

Public holiday support.

4.3.5.7 Consistency in the information system

In addition, the information system must ensure consistency with the authorization of the technical control centre, in particular as regards the number of lines authorized, the types of technical inspections which the centre is authorized to carry out and the categories of vehicles which it is authorised to check.

The concessionaire's information system must be secured so as not to allow any intervention on the measurements taken by the equipment or visual observations validated by the controller.

The administration could also communicate to the concessionaire the computer protocol for the transfer of flows and define the modalities, frequency, nature and format of the files that should be transferred.

All the measures taken during the technical inspection operations must be secured in such a way that no intervention after the initial readings carried out by the equipment is possible.

Any equipment that is not operational, secure or connected to the network information system via a connection protocol not validated by the administration should be considered as faulty and lead to the automatic shutdown of the line to which the equipment belongs.

4.4 Technical Control Thresholds

We propose below some indicative thresholds. The administration could put in place another progressive system in order to improve the state of the fleet according to objectives set to the national context, economic constraints, and general orientations.

It is important to note that the thresholds must be set in such a way as to avoid massive rejection of socially unacceptable vehicles. It would be desirable to set up a progressive system and manage the thresholds according to the improvement of the fleet.

Table 17 – Example of Thresholds for Braking

Vehicle Category	Designation	Value Required
Light vehicles and heavy vehicles	The overall efficiency of the service brake	Greater than or equal to 50%.
	Parking brake efficiency	Greater than or equal to 18 %.
	Brake imbalance between wheels on the same axle	Less than 30%
Motorcycles, motor tricycles and heavy motor quadricycles	Front efficiency	Greater than or equal to 42 %.
	Back efficiency	Greater than or equal to 25 %.
	Total efficiency	Greater than or equal to 40 %.

Table 18 – Example of Thresholds for Wheel Alignment

Vehicle category	Nature of threshold	Value required
Light vehicles and heavy vehicles	Spacing a wheel from the path of the opposite wheel	Less than 12m/km in absolute value

Table 19 – Example of a Threshold for the Suspension of Light Vehicles

Vehicle category	Nature of threshold	Value required
Light commercial vehicle	Difference in suspension system efficiency on the same axle	Less than 30%

Table 20 – Example of a Pollution Control Threshold

Vehicle Fuel	Nature of Threshold	Value Required
Diesel	Smoke opacity	Lower than or equal to 70 %.
Gasoline	CO content	Lower than or equal to 4.5 %.

With reference to Geneva Regulation 48 UNECE of WP29, the aiming of the vehicle dipped-beam headlamps shall comply with the following table (Table).

Table 21 – Thresholds for the Aiming of the Dipped-beam Headlamps

Height H in meters	Measured Value (cut-off line)	Reportable Observation
H < to 0.8	Line above the -0.5% mark	Adjustment too high and/or beam not in conformity
	- 0,5 % = value = - 2,5 %	None
	Below - 2.5%	Setting too low
0.8 ≤ H ≤ 1.0	Line above the -0.5% mark	Adjustment too high and/or beam not in conformity
	- 0,5 % = value = - 3 %	None
	Below - 3%	Setting too low
H > to 1.0	Line above the -1 % mark	Adjustment too high and/or beam not in conformity
	- 1 % = value = - 3 %	None
	Line below the -3% mark	Setting too low

The aiming of the passing beam of motorcycles, motor tricycles and heavy motor quadricycles shall comply with the following table (Table 22).

Table 22 – Threshold for the Alignment of Dipped-beam Headlamps for Motorcycles, Tricycles and Quadcycles

Nature of Threshold	Value Required
Feeder	Maximum height at 0.4%

4.5 Organisation

The agreement will expire on July 8, 2019. The administration should take measures to ensure the continuity of the public service while respecting the norms and standards of credible, reliable, and effective

roadworthiness test. As a result, the administration could set up an agency that would be responsible for roadworthiness test (Figure 8). The agency will be able to provide services and collect revenue.

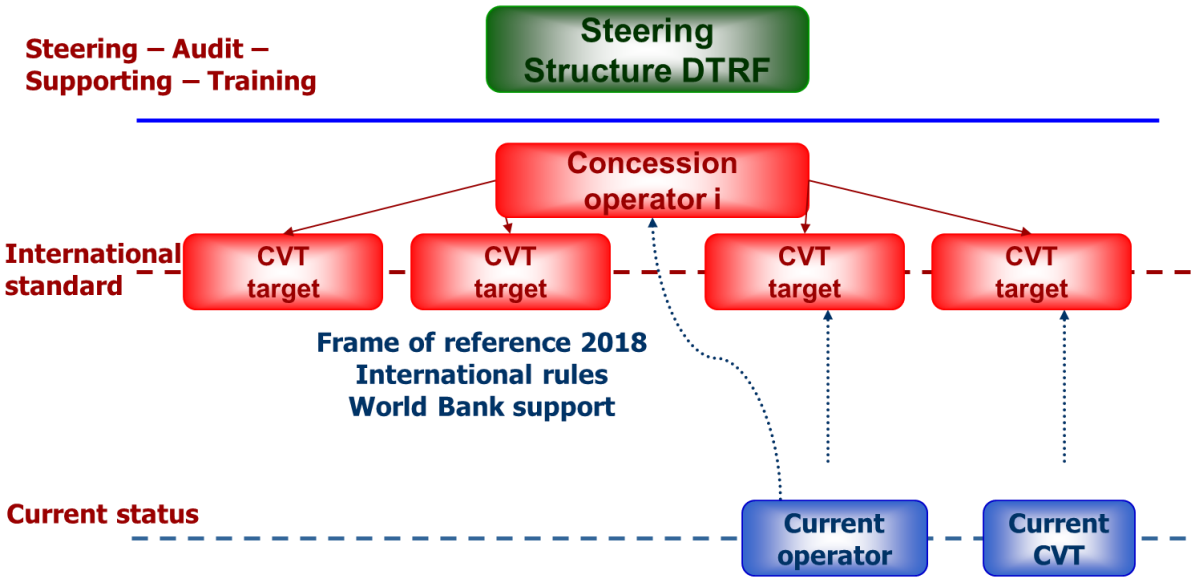

Figure 8 – Organisation of the Roadworthiness Test Steering Agency

This agency could either take over the roadworthiness test staff from the current concessionaire or redeploy human resources currently to the administration or recruit new staff. This structure will also have to set up new centres with the necessary equipment to meet roadworthiness test requirements.

Also, while the agency would be responsible for carrying out the services, the DTRF would be responsible for steering, auditing and organizing the sector. The target organisation would enable the current level of the centres to be raised to the level of international standards, including the 1997 Geneva Agreement (Figure 9).

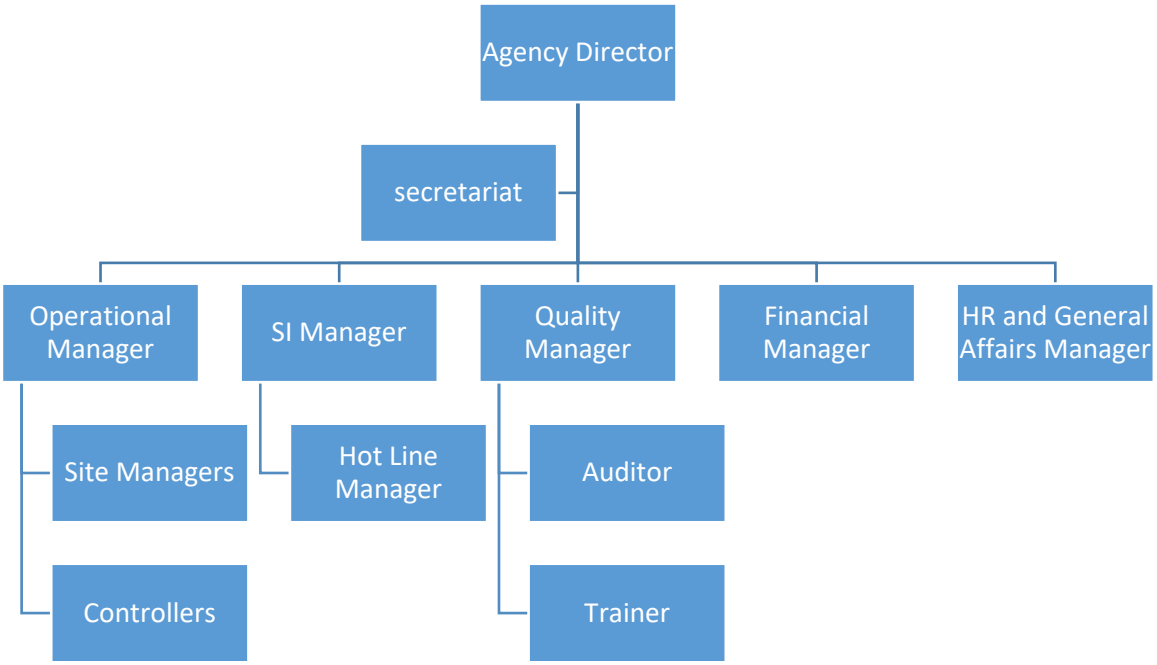

Figure 9 – Proposed Organisational Chart for the Agency Responsible for Carrying out the Roadworthiness Test

As for the DTRF, it would also ensure the development of the sector by drawing up annual roadworthiness test master plans. The objective being to identify the places where additions of lines, centres or controllers could be justified by matching the service offer and the demand for roadworthiness tests (Figure 10).

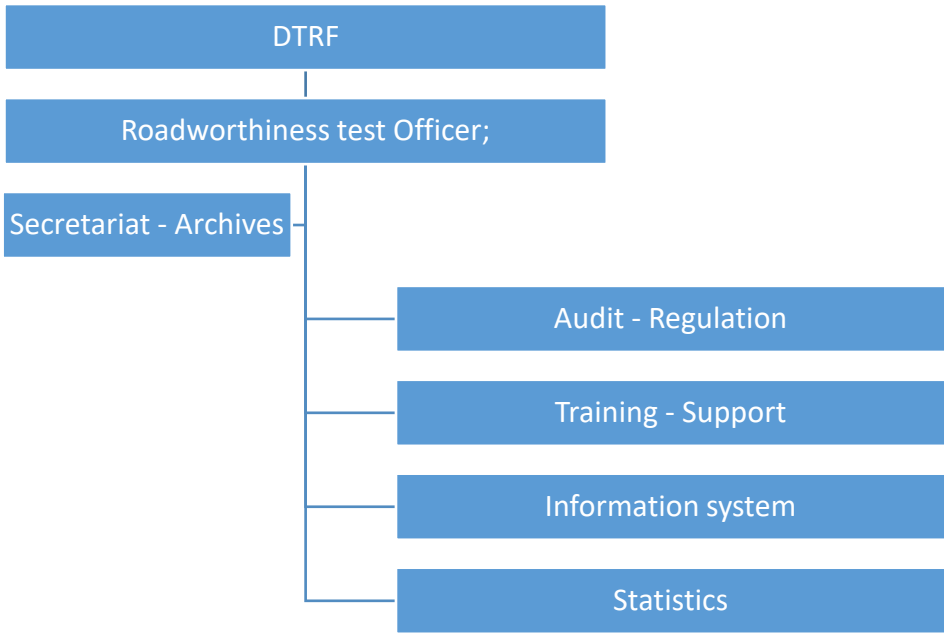

Figure 10 – Proposed Organisational Chart for the Management of the Roadworthiness Test Activity

4.6 Sizing of the Roadworthiness Test Agency

4.6.1 Sizing of control centres and lines

To carry out the roadworthiness test in accordance with the standard, the agency must be provided with sufficient human, material, and organisational resources.

The entry to the dimensioning of the structure is the volume of roadworthiness tests to be carried out per year. Should the periodicity be revised downwards, this volume would have to be recalculated and therefore the need would be reassessed.

4.6.1.1 Statistical data of the fleet

At present, and in view of the data collected, the number of roadworthiness tests in 2016, the reference year, is 204,439 (see Table 23). The number of technical inspections reported by DTRF is 406,412 vehicles, not including an amount of 473,488 mopeds, motorcycles, tricycles and quadricycles of less than 125 cm^3 (Table 24).

The number of technical inspections reported by the operator is therefore not consistent with the estimated size of the fleet provided by the DTRF. Several explanations are possible including for example:

The figures provided by DTRF are not updated and do not consider vehicles withdrawn from circulation; many vehicles do not show up for the technical inspection; etc.

Table 23 – Review of Roadworthiness Tests for 2016

	Lomé	Kpalimé	Atakpamé	Kara	Sokodé	Dapaong	Total
HGV	8,792	332	2,536	11,235	3,883	4,378	31,156
LCV	111,755	3,217	3,078	3,889	6,623	2,020	130,582
Motorcycles	27,614	5,164	3,693	2,468	589	3,173	42,701
							204,439

Table 2 – Report on Registrations from 2000 to 2017

Year	Passenger Cars	Vans	Busses	Trucks 3 - 6 T	Trucks 7 - 9 T	Trucks 10 - 12 T	Trucks > 12 T	Semi trailers	Road Tractors	Agri. tractors	Cranes	Total 4 wheels	2-wheels from 50 to 125 cc	2-wheels > 125 cc	Total 2-wheels	Total
2000	7.154	1.456	30	161	92	125	82	102	123	12	4	9.341	9.089	1.550	10.639	19.980
2001	8.469	1.567	32	159	130	123	85	141	125	2	5	10.838	7.445	1.055	8.500	19.338
2002	9.500	1.671	29	145	127	132	79	122	110	4	2	11.921	7.725	907	8.632	20.553
2003	13.991	1.359	21	181	213	297	193	248	230	7	3	16.743	10.672	1.458	12.130	28.873
2004	11.430	1.681	17	136	142	225	105	229	241	5	3	14.214	23.071	10.909	33.980	48.194
2005	11.308	955	18	122	169	283	196	248	312	6	6	13.623	20.834	6.957	27.791	41.414
2006	10.961	1.305	28	139	180	155	207	221	263	11	5	13.475	23.251	12.509	35.760	49.235
2007	10.692	1.267	22	127	154	160	211	192	203	8	2	13.038	23.253	11.201	34.454	47.492
2008	10.989	1.075	18	159	207	219	239	247	217	29	7	13.406	34.030	10.379	44.409	57.815
2009	5.751	1.403	36	144	187	241	193	304	249	122	5	8.635	28.099	8.178	36.277	44.912
2010	6.229	1.542	96	43	284	85	970	741	735	10	5	10.740	29.421	9.217	38.638	49.378
2011	7.256	2.219	97	55	401	92	1.391	978	735	10	6	13.240	29.362	12.921	42.283	55.523
2012	9.056	1.986	102	74	528	109	1.723	894	1.036	15	7	15.530	32.451	11.306	43.757	59.287
2013	9.402	2.311	94	111	501	112	1.562	1.032	1.122	17	9	16.273	28.940	12.890	41.830	58.103
2014	10.304	2.533	103	122	549	123	1.712	1.130	1.229	19	10	17.834	35.377	15.757	51.134	68.968
2015	14.500	3.229	87	31	115	79	895	493	720			20.149	55.623	9.976	65.599	85.748
2016	14.077	2.923	62	22	81	56	632	394	530			18.777	39.071	6.270	45.341	64.118
2017	14.328	3.149	73	7	112	78	686	569	780			19.782	35.774	5.413	41.187	60.969
TOTAL	185.397	33.631	965	1.938	4.172	2.694	11.161	8.285	8.960	277	79	257.559	473.488	148.853	622.341	879.900

This status is summarised as shown in table 25 by grouping light vehicles (LV), heavy goods vehicles (HGV), and motorcycles/tricycles/quadricycles:

Table 25 - Registrations for Light and Heavy Goods Vehicles for 2017 as a Function of Vehicle Age

Year	LV	HGV	Motorcycle, Tricycle Quadricycle	Total
2000	8 610	731	1 550	10 891
2001	10 036	802	1 055	11 893
2002	11 171	750	907	12 828
2003	15 350	1 393	1 458	18 201
2004	13 111	1 103	10 909	25 123
2005	12 263	1 360	6 957	20 580
2006	12 266	1 209	12 509	25 984
2007	11 959	1 079	11 201	24 239
2008	12 064	1 342	10 379	23 785
2009	7 154	1 481	8 178	16 813
2010	7 771	2 969	9 217	19 957
2011	9 475	3 765	12 921	26 161
2012	11 042	4 488	11 306	26 836

Year	LV	HGV	Motorcycle, Tricycle Quadricycle	Total
2013	11 713	4 560	12 890	29 163
2014	12 837	4 997	15 757	33 591
2015	17 729	2 420	9 976	30 125
2016	17 000	1 777	6 270	25 047
2017	17 477	2 305	5 413	25 195
TOTAL	**219 028**	**38 531**	**148 853**	**406 412**

4.6.1.2 Statistical data of the fleet

In order to define need by place, park assignments should be available. For technical inspection, the data we have are defined by zone, whereas the registration data provided by the DTRF are national and; therefore, do not specify the allocations by region.

For this purpose, we propose to retain the relative rate per locality calculated from the technical control data and to assign it to the registration data. The rates are those calculated in the last column (Table 26):

Table 26 - Distribution of Technical Inspections by Region

Place	2009	2010	2011	2012	2013	2014	2015	2016	Total	Rate
Lomé	6 367	114 306	128 289	120 503	120 836	133 810	131 130	148 161	903 402	79,21%
Kpalimé	241	4 720	4 773	4 265	6 160	8 011	7 426	8 713	44 309	3,88%
Atakpamé	241	5 437	6 010	5 941	5 755	7 109	7 287	9 307	47 087	4,13%
Kara	213	5 977	5 636	4 858	4 261	4 767	7 176	17 592	50 480	4,43%
Sokodé	157	3 975	5 345	6 851	7 298	8 106	7 460	11 095	50 287	4,41%
Dapaong	146	3 553	4 951	4978	6072	7143	8551	9571	44 965	3,94%
	7 365	**137 968**	**155 004**	**147 396**	**150 382**	**168 946**	**169 030**	**204 439**	**1 140 530**	**100,00%**

By assigning these rates to the registration data, we obtain the following situation (Table 27):

Table 27 - Number of Registrations by Region

Place	DTRF data		
	LV	HGV	Motorbikes
Lomé	173 490	30 520	117 905
Kpalimé	8 509	1 497	5 783
Atakpamé	9 043	1 591	6 145
Kara	9 694	1 705	6 588
Sokodé	9 657	1 699	6 563
Dapaong	8 635	1 519	5 868
Total	**219 028**	**38 531**	**148 853**

Also, it should be considered that the daily limits per control line, according to the criteria given in Table 16, should be 13 HGVs, 20 light vehicles and 25 motorcycles, which requires the distribution of the lines presented in Table 29. Thus, the number of lines currently available is insufficient (Table 30) and it is therefore necessary to increase the capacities of the technical control centres (Table 31). These needs are important for Lomé, and for heavy goods vehicle lines throughout the country.

4.6.1.3 Method of calculating the requirements

There are two calculation methods:

Method 1: Based on registration data between 2000 and 2017, the need for engineering control stations is calculated without considering vehicles withdrawn from circulation, vehicles immobilised for any reason, or vehicles which do not show up for the engineering control. As a result, the needs generated by this method will certainly be substantial.

Method 2: Based on the data from the technical check, the calculated requirements form a starting point and are a picture of the current situation. Adjustments are made and corrections may be made whenever an additional need is expressed, by upgrading roadside checks and increasing the rate at which vehicles are presented for roadworthiness tests.

For this purpose, we opt for the latter method (method 2) which is the most realistic and presents the least financial risk and the least human impact. In any case, the sizing will have to be adjusted whenever an additional need is justified in one or more localities.

4.6.1.4 Requirements according to method 1

As illustrated by Table 28, which shows the needs according to method 1, it is clear that this approach will mainly benefit the locality of Lomé to the detriment of the other cities which will see their line allocations revised downwards. Lomé will have 40 more control lines than method 2, while for Kara the need is 3 less HGV lines.

Table 28 - Number of Technical Control Lines Required (Method 1)

	Lomé	Kpalimé	Atakpamé	Kara	Sokodé	Dapaong	Total
HGV	11	1	1	1	1	1	13
LV	39	2	2	2	2	2	50
Motorcycles	21	1	1	1	1	1	27

It is therefore clear that Method 2 is more appropriate both in terms of realism and equitable sizing between localities in the country. We, therefore, calculate the investments by adopting method 2 for the rest of the report.

4.6.1.5 Requirements according to method 2

The balance of numbers of lines required, available and to be constructed according to method 2 is presented in Table 29, Table 30 and Table 31.

Table 29– Number of Roadworthiness Test Lines Required

	Lomé	Kpalimé	Atakpamé	Kara	Sokodé	Dapaong	Total
HGV	3	1	1	4	2	2	13
LV	23	1	1	1	2	1	29
Motorcycles	5	1	1	1	1	1	10

Table 30 – Number of Lines Available

	Lomé	Kpalimé	Atakpamé	Kara	Sokodé	Dapaong	Total
HGV	2	0	0	1	0	0	3
LV	2	1	1	1	1	1	7
Motorcycles	2	1	1	1	1	1	7

Table 31 – Required Additional Inspection Lines

	Lomé	Kpalimé	Atakpamé	Kara	Sokodé	Dapaong	Total
HGV	1	1	1	3	2	2	10
LV	21	0	0	0	1	0	22
Motorcycles	3	0	0	0	0	0	3

To optimize the investment, we can plan a work organisation in two shifts of 8 hours each in Lomé and Kara. In Lomé, the need would become 11 LV lines. We can therefore propose the commissioning of 2 new centres with 1 HGV line, 5 LV lines for one and the other with 4 LV lines and 1 motorcycle line per centre. For the locality of Kara, the need is for a centre with 1 HGV line, 1 LV line and 1 motorcycle line.

Also, for localities where the shortage concerns only one or more heavy goods vehicle lines, provision should be made for the opening of new centres where it would be advisable also to set up a light vehicle line and a motorcycle line. With these assumptions, the need for new lines would be less (Table 32).

Table 32 – Need for New Lines Based on Existing Work and the Increase in the Number of Technical Visit Centres

	Lomé	Kpalimé	Atakpamé	Kara	Sokodé	Dapaong	Total
Roadworthiness Test Centre	2	1	1	1	1	1	7
HGV	2	1	1	1	1	1	7
LCV	9	1	1	1	1	1	14
Motorcycles	2	1	1	1	1	1	7

4.6.2 Investment Need

The estimates presented below are only indicative. They do not present any reference, offer or price definition.

4.6.2.1 Real estate investment

We base ourselves on the reference prices recovered during the mission in Togo, and on the surface area of the current centres (Table 33). They may be adjusted according to the zoning or the possible availability of State land.

Table 33 – Evaluation of the Real Estate Investment

	Number of centres	Average Area	Average unit cost FCFA	Unit construction cost FCFA	Total cost FCFA
Lomé	2	1,000	50,000	195,000	490,000,000
Kpalimé	1	600	40,000		141,000,000
Atakpamé	1		40,000		141,000,000
Kara	1		50,000		147,000,000
Sokodé	1		45,000		144,000,000
Dapaong	1		40,000		141,000,000
				Total	1,204,000,000

4.6.2.2 Investment in inspection equipment

We based the estimate on the need for new lines listed in Table 32, and on the prices communicated to us by the current concessionaire's equipment supplier in Togo (Table 34).

Table 34 – Evaluation of Equipment Investment

Line	Number	Unit price FCFA	Total price FCFA
HGV	7	52,785,354	369,497,478
LCV	14	42,611,049	596,554,686
Motorcycles	7	24,185,062	169,295,434
		Total	1,135,347,598

This estimate (real estate investment and equipment) would be increased by 10% to provide for the acquisition cost of small equipment such as inflators, tools, display screens, queue management by site and other contingencies. That is a total of 2,570,000 FCFA.

4.6.2.3 Estimated cost of information system and computer equipment

The establishment of an information system and network linking the various centres requires investment (Table 35).

Table 35 – Evaluation of the Investment for the Implementation of an Information System

No	Designation	Quantity	Unit price	Total price
1	Information system	1	60,000,000	60,000,000
2	Computers	30	450,000	13,500,000
3	Printers	25	220,000	5,500,000
4	Servers	2	3,250,000	6,500,000
5	Portable input terminal	45	227,500	10,237,500
			Total	95,737,500

4.6.3 Human Resources Needs

To properly carry out its mission, the agency or the authorised operator should have sufficient human resources. It should be noted that we assume that each line has one controller except Lomé and Kara where each line has two controllers each for an 8-hour shift. Also, and to cope with administrative leave and possible absences, it would be advisable to provide for a staff of 10% reserve controllers. Each site has a site manager, a secretary, two security officers and two cleaners (Table 36).

As for the central structure, the organisational chart proposed in paragraph 3.5 sets out the posts to be filled. It should be noted that some of these resources could be recovered from the current concessionaire.

Table 36 – Staff Evaluation for the Agency in Charge of Roadworthiness Test

Post	Number
Agency Director	1
Operational Manager	1
RHAG Manager	1
SI Manager	3
Financial Manager	1
Quality Manager	3
Site chief	8
Controller	57
Secretaries	8
Security Officer	16
Cleaning Staff	16
Total	**115**

4.6.4 Estimated training costs

The training could initially involve 10 people who would transfer knowledge to the rest of the teams. These trainings are estimated at 200 hours integrating all the basic modules concerning the vehicle, its regulation, type approval and roadworthiness test. It would be desirable to allow 2 weeks in a country where the system is already implemented (Table 37).

Table 37 – Evaluation of Training Costs

Spending	Quantity	Unit estimate	Total estimate
Plane tickets	10	650,000	6,500,000
Accommodation and food services	10	1,560,000	15,600,000
Travel	15	130,000	1,950,000
Training costs	10	650,000	6,500,000
Additional training 200 h	15	650,000	9,750,000
		Total	40,300,000

4.7 Summary of Investments

The assessment of the various investments associated with the upgrading of the roadworthiness test is given in Table 38.

Table 38 – Summary of Investments for the Upgrading of the Roadworthiness Test

Description	Amount
Buildings	1 204 000 000
Equipment	2 570 000 000
SI	95 737 500
Training	40,300,000
Total	3,910,037,500

5 Support for the Implementation of Actions

The implementation of the action plan described in this report will probably require the assistance of consultants or technical assistance (Table 39).

Table 39 – Suggestions to Support Activities for the Implementation of the Action Plan

Action	Method of Implementation
Setting up the structures	Action to be taken internally
Development of structural procedure manuals	Action to be carried out with a consultant
Writing texts	Action to be carried out in collaboration with a consultant
Training	Action to be carried out with the support of an organisation with technical competence
Preparation of the specifications for the upgrading of the current centres	Action to be carried out with the support of a consultant

Action	Method of Implementation
Preparation of the specifications for the construction of the new centres	Action to be carried out with the support of a consultant
Preparation of the specifications for the equipment of the centres	Action to be carried out with the support of a consultant

6 Annexes

6.1 Annex 1: Vehicle Registration Statistics for the Last Ten Years

MINISTRY OF INFRASTRUCTURE AND TRANSPORT

PRIVATE OFFICE

DIRECTORATE-GENERAL FOR TRANSPORT

DIRECTORATE FOR ROAD AND RAIL TRANSPORT

DIVISION FOR INSPECTION, REGULATION AND STATISTICS

STATISTICS SECTION

TOGOLESE REPUBLIC
Work – Liberty – Homeland

VEHICLE REGISTRATION STATISTICS FOR THE LAST TEN YEARS

Vehicles Years	Cars	Van	Coach	Truck from 3 to 6 T	Truck from 7 to 9 T	Truck from 10 to 12 T	Truck over 12 T	Semi-trailers	Tractors Touring car	Agric. tract.	Crane with wheels	Total 4 wheels	Two-wheeled machines from 50 to 125cm3	Two-wheeled machines over 125cm3	Total 4 wheels	Total
2000	7154	1456	30	161	92	125	82	102	123	12	4	**9341**	9089	1550	**10639**	**19980**
2001	8469	1567	32	159	130	123	85	141	125	2	5	**10838**	7445	1055	**8500**	**19338**
2002	9500	1671	29	145	127	132	79	122	110	4	2	**11921**	7725	907	**8632**	**20553**
2003	13991	1359	21	181	213	297	193	248	230	7	3	**16743**	10672	1458	**12130**	**28873**
2004	11430	1681	17	136	142	225	105	229	241	5	3	**14214**	23071	10909	**33980**	**48194**
2005	11308	955	18	122	169	283	196	248	312	6	6	**13623**	20834	6957	**27791**	**41414**
2006	10961	1305	28	139	180	155	207	221	263	11	5	**13475**	23251	12509	**35760**	**49235**
2007	10692	1267	22	127	154	160	211	192	203	8	2	**13038**	23253	11201	**34454**	**47492**
2008	10989	1075	18	159	207	219	239	247	217	29	7	**13406**	34030	10379	**44409**	**57815**
2009	5751	1403	36	144	187	241	193	304	249	122	5	**8635**	28099	8178	**36277**	**44912**
2010	6229	1542	96	43	284	85	970	741	735	10	5	**10740**	29421	9217	**38638**	**49378**
2011	7256	2219	97	55	401	92	1391	978	735	10	6	**13240**	29362	12921	**42283**	**55523**
2012	9056	1986	102	74	528	109	1723	894	1036	15	7	**15530**	32451	11306	**43757**	**59287**
2013	9402	2311	94	111	501	112	1562	1032	1122	17	9	**16273**	28940	12890	**41830**	**58103**
2014	10304	2533	103	122	549	123	1712	1130	1229	19	10	**17834**	35377	15757	**51134**	**68968**
2015	14500	3229	87	31	115	79	895	493	720			**20149**	55623	9976	**65599**	**85748**
2016	14077	2923	62	22	81	56	632	394	530			**18777**	39071	6270	**45341**	**64118**
2017	14328	3149	73	7	112	78	686	569	780			**19782**	35774	5413	**41187**	**60969**
TOTAL	**185397**	**33631**	**965**	**1938**	**4172**	**2694**	**11161**	**8285**	**8960**	**277**	**79**	**257559**	**473488**	**148853**	**622341**	**879900**

Source: DTRF documentary database

6.2 Annex 2: Vehicle Fleet Data

MINISTRY OF INFRASTRUCTURE
AND TRANSPORT

PRIVATE OFFICE

GENERAL SECRETARIAT

DIRECTORATE-GENERAL FOR TRANSPORT

DIRECTORATE FOR ROAD AND RAIL TRANSPORT

TOGOLESE REPUBLIC
Work – Liberty – Homeland

6.2.1 Vehicle Fleet Data

6.2.1.1 Fleet of 4-wheeled vehicles

The registration of 4-wheeled vehicles is national and is done only in Lomé. However, information on the 4-wheeled vehicle fleet by region is not available.

Table 2 Number of Vehicles by Category: 2015 & 2016

VEHICLE CATEGORY	NUMBER OF VEHICLES			PROPORTION (%)
	2015	2016	TOTAL	
BUS	6	2	8	0.02
COACH	81	60	141	0.36
TRUCK	1,120	791	1,911	4.91
VAN	3,229	2,923	6,152	15.80
SEMI-TRAILERS	493	394	887	2.28
TRACTOR	720	530	1,250	3.21
CAR	14,500	14,077	28,577	73.41
TOTAL	20,149	18,777	38,926	100.00

Source: DTRF documentary database

Table 3 Number of Vehicles by Date of Entry into Service from 2015 to 2016

DATE OF ENTRY INTO SERVICE	NUMBER OF VEHICLES	PROPORTION (%)
1961	1	0.00
1964	2	0.01
1965	2	0.01
1966	2	0.01
1968	1	0.00
1969	4	0.01
1970	4	0.01

1971	2	0.01
1972	1	0.00
1973	7	0.02
1974	8	0.02
1975	11	0.03
1976	18	0.05
1977	18	0.05
1978	39	0.10
1979	67	0.17
1980	85	0.22
1981	64	0.16
1982	77	0.20
1983	70	0.18
1984	116	0.30
1985	167	0.43
1986	170	0.44
1987	221	0.57
1988	342	0.88
1989	431	1.11
1990	481	1.24
1991	470	1.21
1992	718	1.84
1993	861	2.21
1994	1,176	3.02
1995	1,647	4.23
1996	2,177	5.59
1997	2,748	7.06
1998	3,691	9.48
1999	3,901	10.02
2000	3,271	8.40
2001	2,759	7.09
2002	2,560	6.58
2003	1,930	4.96
2004	1,549	3.98
2005	1,314	3.38
2006	950	2.44
2007	766	1.97
2008	475	1.22
2009	323	0.83
2010	311	0.80
2011	200	0.51
2012	166	0.43
2013	220	0.57
2014	256	0.66

2015	1,168	3.00
2016	908	2.33
Overall total	38,926	100.00

Source: DTRF documentary database

Table 4 Number of Vehicles by Brand from 2015 to 2016

BRANDS	2015	2016	TOTAL	PROPORTION (%)
AUDI	167	128	**295**	0.76
BMW	941	703	**1,644**	4.22
CITROEN	187	176	**363**	0.93
DAF	160	97	**257**	0.66
FIAT	113	93	**206**	0.53
FORD	624	478	**1,102**	2.83
FRUEHAUF	102	55	**157**	0.40
HONDA	215	262	**477**	1.23
HYUNDAI	897	881	**1,778**	4.57
IVECO	195	164	**359**	0.92
KIA	233	236	**469**	1.20
LAND ROVER	75	88	**163**	0.42
MAN	290	201	**491**	1.26
MAZDA	1,424	1,762	**3,186**	8.18
MERCEDES BENZ	1,082	899	**1,981**	5.09
MITSUBISHI	406	331	**737**	1.89
NISSAN	1,242	1,220	**2,462**	6.32
OPEL	1,548	1,698	**3,246**	8.34
PEUGEOT	388	372	**760**	1.95
RENAULT	1,177	977	**2,154**	5.53
SCANIA	172	154	**326**	0.84
SINOTRUCK	34	37	**71**	0.18
SUZUKI	71	59	**130**	0.33
TOYOTA	6,330	6,016	**12,346**	31.71
TRAILOR	98	75	**173**	0.44
VOLLSKWAGEN	712	630	**1,342**	3.45
VOLVO	176	162	**338**	0.87
OTHER[18]	1,090	825	**1,915**	4.92
TOTAL	**20,149**	**18,779**	**38,928**	100.00

Source: DTRF documentary database

6.2.1.2 Fleet of 2-wheeled Vehicles

Unlike 4-wheeled vehicles, two-wheeled vehicles are registered in all DTRF representations. In addition, 2-wheeled vehicles are all brand new, so they are registered on the date of mounting. Thus, the

[18]List of other brands of 4-wheel vehicles in the **appendix**. These are brands which are not frequent in registrations and whose proportion is very low or non-existent monthly.

information relating to the date of entry into service of the two-wheel vehicles is equivalent to that of registration.

Table 5 Number of 2-wheeled Vehicles Registered in 2016 by Region

REGION	NUMBER OF VEHICLES	PROPORTION (%)
ATAKPAME	3,762	8.30
DAPAONG	3,229	7.12
KARA	2,003	4.42
KPALIME	5,129	11.31
LOME	26,049	57.45
SOKODE	5,169	11.40
Overall total	45,341	100.00

Source: DTRF documentary database

Table 6 Number of 2-wheeled Vehicles Registered in 2016 by Category

VEHICLE CATEGORY	NUMBER OF VEHICLES	PROPORTION (%)
< 50 cc (less than power 1)	82	0.18
51 to 125 cc (power 1)	39,204	86.46
126 to 175 cc (power 2)	5,044	11.12
>175 cc (higher than power 2)	1,011	2.23
Total	45,341	100.00

Source: DTRF documentary database

Table 7 Number of 2-wheeled Vehicles Registered in 2016 by Brand

BRANDS	NUMBER OF VEHICLES	PROPORTION (%)
ACCESS	45	0.10
APOLLO	484	1.07
APSONIC	5,249	11.58
BAJAJ	562	1.24
BESTA	182	0.40
DAYANG	72	0.16
HAOJIN	151	0.33
HAOJUE	23,545	51.93
HONDA	110	0.24
HUASHA	39	0.09
KINGO	35	0.08
KTM	4	0.01
LEOPARD	58	0.13
LIFAN	502	1.11
LION MOTO	8	0.02
RATO	451	0.99

SANILI	884	1.95
SANYA	10,978	24.21
SAVVY	16	0.04
SENKE	4	0.01
SONGYI	83	0.18
SONYA BYM	35	0.08
TVS	326	0.72
YAMAHA	378	0.83
ZONTES	23	0.05
OTHER BRANDS[19]	1,118	2.47
TOTAL	**45,341**	100.00

Source: DTRF documentary database

6.2.2 Roadworthiness Test Data

Table 8 Number of Roadworthiness Tests per year and per Vehicle Category

TYPE OF TEST	VEHICLE CATEGORY	USE	2015	2016	TOTAL
ROADWORTHINESS AT REGISTRATION	HEAVYWEIGHT VEHICLE	PRIVATE	12,144	21,081	33,225
		TRADE, RTG	7,189	79	7,268
		OI, CD, ZF….	45	110,661	110,706
	LIGHT COMMERCIAL VEHICLE	PRIVATE	11,973	680	12,653
		TRADE, RTG	97,159	14,555	111,714
		OI, CD, ZF….	300	47,374	47,674
	MOTO	PRIVATE	27	1	28
		TRADE, RTG	50,886	4	50,890
		OI, CD, ZF….	1	-	1
PERIODIC ROADWORTHINESS TEST	HEAVYWEIGHT VEHICLE	PRIVATE	145	88	233
		TRADE, RTG	123	-	123
		OI, CD, ZF….	-	1,055	1,055
	LIGHT COMMERCIAL VEHICLE	PRIVATE	329	5	334
		TRADE, RTG	2,362	160	2,522
		OI, CD, ZF….	5	-	5
	MOTO	PRIVATE	-	-	-
		TRADE, RTG	2	-	2
		OI, CD, ZF….	-	-	-
TOTAL			**182,690**	**195,743**	**378,433**

Source: SOTOPLA-CEVA

[19]List of other brands of 2-wheel vehicles in the **appendix 1 below**. These are brands which are not frequent in registrations and whose proportion is very low or non-existent monthly.

- ✓ **Number of roadworthiness test centres:** Six (06) technical control centres and one centre per regional capital (Maritime, Plateaux, Sokodé, Kara and Dapaong) and one centre in Kpalimé.
- ✓ **Trustee administrative body:** This is the Ministry in charge of Transport (Ministry of Infrastructure and Transport).
- ✓ Presentation rate of vehicles to roadworthiness testing: on average 800 vehicles per day.
- ✓ Information **on the dealer's specification and technical inspection procedure or on the number of inspectors, profiles and training** is not available as management has been granted to a private company that refuses to carry out any checks.

6.2.3 Roadside Inspection

- ✓ Type of inspection: This is the daily inspection of the defined arteries on a quarterly basis.
- ✓ **Nature and frequency of inspections carried out**: These include regular inspections of vehicle parts, the state of the roadworthiness test and insurance policy, and sometimes other traffic violations.
- ✓ **Penalties for non-compliance with regulations**: fines (Booklet of fines for different traffic offences)
- ✓ **Number of average annual fines:**

Table 9 Classification of Offences Committed by Frequency in 2016

NO ORDER	VIOLATION	NUMBER OF TIMES	FREQUENCY (%)
01	Lack of insurance	84	27.91
02	Overload	82	27.24
03	Lack of roadworthiness inspection	57	18.94
04	Refusal to comply	25	8.31
05	Illegal transport	15	4.98
06	Lack of registration	11	3.65
07	Bulky loading	9	2.99
08	Phone while driving	6	1.99
09	Non-compliance with signs	5	1.66
10	Headlight fault	2	0.66
11	Priority denials	2	0.66
12	Counter-clockwise circulation	1	0.33
13	Traffic with a single headlight	1	0.33
14	Lack of caution	1	0.33
Total		301	100.00

Source: DTRF documentary database

6.2.4 Appendix 1: List of Vehicle Brands with 2 and 4 wheels (classified in other categories)

SERIAL NO	4-WHEEL VEHICLES: OTHER BRANDS				2-WHEEL VEHICLES: OTHER BRANDS
1	CHAMOTOR	PORSCHE	FAHRZEUGBAU LANGENDORF	LDV	BAOTIAN
2	DULEVO	DEFILLIPI	MINERVA	CHEREAU	CHALIN
3	KERAX	ROBUSTE	BIANCHI	LECINENA	DAYUN
4	SUBARU	CIF	ZORZI	RIZZI	FEKON
5	SEAT	SAMRO	METACO	DRACO	JINCHENG
6	ISUZU	KAESSBOHRER	VAUXHALL	NICOLAS	KAWASAKI
7	CHRYSLER	GREAT WALL	CAZAUBON	KARFA	JUPITER
8	KRONE	ASTRA	ALFA ROMEO	KASSBOHRER SETRA	KYMCO
9	CARDI	GENERAL TRAILER	MATHIEU	NEW TIPPER	PIAGGIO
10	SAVIEM	LEVEQUES	BRANDYS	MASSEY	RONGJUE
11	DODGE-TRUCK	BERTOJA	FREIGHTKINER	COMPACTEUR	MYAM
12	MONTENEGRO	DROEGMOELLER	TRACTOR	LIEBHERR	LUOJIA
13	PONTIAC	STAS	REMORQUE	MG	SCOOTER
14	WABASH	HYSTER	SMART	INFINITY	SUZUKI
15	CHEVROLET	BERLINE	ANDREOLI	TITAN	SOLINK
16	JEEP	BARTOLETTI	LAG	LECINEMA	TRIAL
17	LECITRAILER	SKODA	HAMM	SAAB	XILAI
18	CADILLAC	DODGE	CATERPILLAR	ATERNO	APRILLA
19	KOEGEL	MINI	PLACENZA	GUILLEN	KASEA
20	MASSEY-FORGUSON	LECIENA	DONGFENG	ROUER	HSUN
21	TROUILLET	KASSBOHRER	FELBACO	LEONET	SABENI
22	DEUTZ-FAHR	MASSEY FERGUSON	CHRYSLER	CHEROKEE	ROYAL
23	MAIT	DODGE	WUFU	S-KING	SUKIDA
24	CAMILLO	MINI-COOPER	AM GENERAL	DEANGELIS	SUYIJIA
25	DACIA	ACURA	ACTM	KOGEL	BAZUVI
26	PEGASO	COMECTO	PEPIN	GOLDEN DRAGON	BENELLI
27	YUTONG	ALFA-ROMEO	MOL	SCHWARZMULLER	BETTER
28	SCHWARZ	JEEP CHEROKEE	YORK	CATERPILLAR	BOXER
29	TRUCK	MEILLER	THOMAS	MAGIRUS	IZZO
30	LOW BED	GENERAL	NEW HOLLANDE	OZGUL	KAIZER
31	BENALU	SCHIMITZ	BENNE	SOMMER	RECHESE
32	DAIHATSU	SATURN	RENDERS	FOTON	TEMBO ZIP
33	VANHOOL	VIBERTI	ASHOCK	SELF LOADING	VEGAS
34	LEXUS	BOMAG	SILO	BLUMHARDT	
35	LOOSE	ADIGE	HONKHAUS	HURET	
36	INFINITI	DODGE DURANGO	GRAU	DUMPTRUK	
37	STEYR	SAURER	DATSUN	AUTOMOTRICE	
38	HUMMER	WABCO	KUISHI	ACMAR	
39	INTERNATIONAL	SEAT LEON	ZHONGTONG	HCTM	

40	SSANGYONG	NEOPLAN	SAMPRO	PEZZAIOLI	
41	BERLIET	MACK	PLAYMONTH	BRILLANCE	
42	JAGUAR	ACERBI	BULTHUIS	AVIA	
43	FROMBERGER	KOMATSU	JEEP WILLYS	JCB	
44	LOW-SPEED	GMC	LANCIA	TELESCOPI	
45	CODER	LINCOLN	GOLD HOFER	TRAILERS	
46	MERCURY	MASSEY-FERGUSON	KAISER	SANG-YONG	
47	CASTERA	KEMPF	HOWO	SCHWERINERN UTZF	
48	FLOOR	ASCA	FELDBINDER	V-MAX	
49	DAEWOO	DYNAPAC	CALABRESE	BRENTA	
50	CARNEHL	DAIMLER BENZ	TATA	PIACENZA	
51	PEGAZO	UNIC	PACTON	ATM	
52	ROBUSTE-KAISER	VIBROMAX	FENDT	SERRUS	
53	LAMBERET	HIGHLANDER	CARTER TISSO		
54	CHARGEUR	ROBUSTE KAISER	VOLTRAILER		

6.3 Annex 3: Interview Reports

6.3.1 Interview Reports

Lists of Institutions and Organisations Visited

Ministry of Infrastructure and Transport
DIRECTORATE FOR ROAD AND RAIL TRANSPORT • Division of Regulatory Control and Statistics • Vehicle Roadworthiness Test Division • Administrative and Accounting Division
Ministry of Environment and Forest Resources
• Directorate for Environment • National Ozone Unit (Bureau National Ozone) • Sustainable Low Emission Transport Project
Ministry of Mines and Energy
• Directorate for Hydrocarbons
Ministry of Trade and Private Sector Promotion
• Minister's Office • Directorate for Packaging and Legal Metrology
Ministry of Economy and Finance
• Togolese Office of Revenue
Operators/Users
• Union Nationale des Transporteurs Routiers du Togo (UNATROT, or Togo National Union of Road Transporters) • Union des Routiers du Togo (URT, or Togo Union of Road Workers) • Motor-dealer
Current roadworthiness test operator
• SOTOPLA-CEVA

The meeting reports are presented below are in chronological order of the interview date to follow the process by which the information was obtained.

6.3.2 Ministry of Infrastructure and Transport - Directorate for Road and Rail Transport - Division of Regulatory Control and Statistics

Ministry of Infrastructure and Transport **DIRECTORATE FOR ROAD AND RAIL TRANSPORT** **Division of Regulatory Control and Statistics** Ms. OURO-BANG'NA (Head of division)		
9/19/2017 Morning, 1	Abdelilah KHALIFI Damien SUBIT	

Roadside inspection

- By the police and gendarme
- Control of documents issued by the Ministry of Infrastructure and Transport
  - document reliability
  - vehicle reliability

Fleet and traffic monitoring indicators

- Cards collected at each control are aggregated
- Currently an important indicator is the validity of the insurance policy
- Report on the state of the park and traffic is published periodically (a priori at least once a year)
- Freight transport vehicles are 20 to 25 years old when they arrive in Togo

Vehicle type-approval

Note: The description of this process was more detailed during the meeting with Mr. A. *TCHATCHASSE*

- Imported new vehicles with certificate of conformity, imported used vehicles with registration documents issued in the country of origin
- Process:
  - Customs clearance (verification of the technical characteristics, the registration document and the conformity between the documents and the vehicle),
  - Registration,
  - Roadworthiness test,
  - Installation of the plates.

Unsolicited remarks

- Radar and alcoholmeter needed for roadside checks
- Need for a professional training centre for drivers

Documents submitted

- Road and rail traffic accident situation
- Statistical roadside inspection report - First half of 2017

6.3.3 Ministry of Infrastructure and Transport - Directorate for Road and Rail Transport (DTRF) - Division of Vehicle Roadworthiness Test (DCTV)

Ministry of Infrastructure and Transport **DIRECTORATE FOR ROAD AND RAIL TRANSPORT (DTRF)** **Vehicle Roadworthiness Test Division (DCTV)** Mr. TCHATCHASSE (Head of Division)		
9/19/2017 Morning, 2	Abdelilah KHALIFI Damien SUBIT	

Vehicle type-approval process

Three elements:

- Tax clearance (see report of the meeting with the Togolese Revenue Office);
- Technical approval and homologation;
- Registration.

In details:

1. After verification of the import documents, customs sends a certificate of conformity via the Customs Unit located on the DTRF campus to the head of the DCTV (the Customs Unit was created to limit fraud);
2. DCTV requests proof of payment of customs duties and insurance. The DCTV is linked to the insurance network (via the POOL of insurance companies, see report of the meeting with the Administrative and Accounting Department of the DTRF) and has access to the customs software for the management of payment of duties (SYDONIA);
3. Approval is carried out by the DCTV controller (on the DTRF site) - visual and administrative inspection of the vehicle (chassis number, power, etc.);
4. Roadworthiness test carried out by SOTOPLA;
5. Vehicle registration if roadworthiness test is positive.

Vehicle sales process

- A notarial deed of sale is required. No requirement for the validity period of the pre-sale roadworthiness test.

Unsolicited remarks

- There must be no change in the urgency, look at the existing one first;
- Favourable that all technical inspection centres in the country be visited.

Documents submitted

- Copy of a registration and transfer file.

6.3.4 SOTOPLA-CEVA

SOTOPLA-CEVA **Togolese Mineralogical Plate Society of Togo - Control of Automotive Machinery and Vehicles** Head of Supply Head of IT Head of Accounting Technical advisor Head of Roadworthiness Test Centres Finance Officer		
9/19/2017 Afternoon	Abdelilah KHALIFI Damien SUBIT	

Activities

- Plate manufacturing (since 2006)
- Periodic roadworthiness test (since 2009): vehicles (PL: heavy goods vehicles, light vehicles, motorcycles, tricycles)
- Turnover 2016: 1,195,000,000,000 FCFA
  - Plate manufacturing 496,000,000.000 FCFA
  - Roadworthiness test: 699.00.000 FCFA
- SOTOPLA bears the costs of installing the infrastructure (machines, pits, IT, etc.)

Organisation

- Single-member public limited company
- 6 centres
  - Lomé, 2 lines LCV, 2 lines HGV, 3 bike benches
  - Kara: 1 line LCV, 1 line HGV, 1 bike bench
  - Kpalimé, Atakpamé, Sokode and Dapaong: 1 line LCV, 1 bike bench
- 4 controllers per line, including one supervisor
- Opening hours: 7:30 am to 5:30 pm, on duty from 12 am to 2:30 pm
- Approximately 550 vehicle/days are checked (SOTOPLA provided the activity data)
  - August 2017: 2745 vehicle/day (LCV+HGV) on all centres except Lomé, i.e., 137 vehicle/day

Control Points

- The control points follow the international recommendations: identification, tyres, ripping, suspension, braking, play plates, lighting, chassis, etc.;
- No emission control because no threshold has been set. SOTOTPLA is equipped with gas analyzers and opacimeters);
- The roadworthiness test points are based on the WAEMU directive (16/2009/CM/UEMOA) but the thresholds (compliant or non-compliant) were developed by SOTOPLA with the help of a consultant (Ibrahima DIAKITE de RIDE (Ivorian Electromechanical Troubleshooting Grouping);

- The equipment is calibrated by RIDE represented by Ibrahima DIAKITE, who is also the installer of all SOTOPLA lines, and the technical advisor of the SOTOPLA DG.

Procedure of the visit

1. Payment at the cash desk: edition of the receipt and blank data sheet.
2. The owner entrusts his vehicle to the driver and waits in the waiting room.
3. Technician fills in the sheet for each step of the control: for those steps that require the use of a machine, the console interprets the measurements directly in terms of quality (good, average, bad) and the controller writes this result on the sheet.
4. The data sheet is entered and stored on the SOTOPLA server. Data are identified by the registration number. Data from centres within the country are transmitted once a week. The data are not transmitted to the DRTF, and there is no reconciliation of the car registration databases with the vehicles that pass the roadworthiness check.

Prices

- Imposed by decree
  - Private LCV: 4.000 FCFA (visit), 2.500 FCFA (counter-visit, to be carried out within one month)
  - HGV 4.500 FCFA 2.500 FCFA
  - LCV/moto 1.500 FCFA 1.000 FCFA
  - motorcycle/tricycle 2.500 FCFA 1.500 FCFA
- Private LCV Benchmark:
  - Togo: 4,000 FCFA
  - Ivory Coast: 14,000 FCFA
  - Congo Brazza: 20,000 FCFA
- 5.5% of the price of each visit is paid monthly to the state (OTR)
- Under discussion: creation of a fee for the OSR (Office de la Sécurité Routière)

Recruitment and training

- Minimum: Mechanical CAP for controllers, technological baccalaureate for line managers
- Continuing education program

Vehicle type-approval

- Financial and technical customs clearance
- Technical reception is only a visual inspection

Audit of SOTOPLA

- Financial audit (tax): annual
- Audit of activities governed by the concession agreement: never

Documents submitted

SOTOPLA has submitted a complete file, which includes:

- map and photos of each centre;
- control data from 2009 to 2016 (number, types, rejected, accepted);
- list and qualification of employees by centre;
- estimated cost of construction;
- payroll and average salary for the various functions;
- equipment calibration certificates.

List of participants

1. Mr. Kuma TSOWOU, Chief Accountant SOTOPLA
2. Mr. N'Yadjaname OUNIMBORLA, Chef approvisionnement SOTOPLA Head of Supply
3. Mr. Balakibawi TCHINGUILOU, Head of IT SOTOPLA

4. Mr. Lare BATI, SOTOPLA General Supervisor
5. Mr. Tetouhewa TABADI, SOTOPLA Technical visit manager
6. Mr. Ibrahima DIAKITE, Technical Consultant at SOTOPLA
7. Ms. Akouwavi AYEDJI, Finance Manager SOTOPLA
8. Mr. Damien SUBIT, Consultant World Bank
9. Mr. Abdelilah KHALIFI, Consultant World Bank
10. Mr. Edem YAKPO OSSOBE, DTRF representative

6.3.5 Ministry of Environment and Forest Resources - Directorate for Environment

Ministry of Environment and Forest Resources **Directorate for Environment** Mr. ESSOBIYOU, Director Ms. ASSIMTI-TACHO, Lawyer Ms. YAOU, Geographer Mr. DJOSSOU, Coordinator of the Ozone Unit Mr. MEBA, Head of the Environment and Living Environment Division		
9/20/2017 Morning	Abdelilah KHALIFI Damien SUBIT	

Current processes in the country:

- Unleaded petrol
- Sulphur-free diesel (in progress: threshold < 50 ppm). During the meeting with the Directorate for Hydrocarbons (see the minutes), the problem of finding suppliers able to meet the demand was raised
- Clean vehicles (UNEP (United Nations Environment Programme, see meeting with the Director of the Sustainable Low-Emission Transport Programme)

Emission control:

- No threshold for current emissions
- SOTOPLA has emission measurement tools (opacimeter for diesel vehicles, gas analyzer for petrol vehicles)
- SOTOPLA may collect information
- Mr. ESSOBIYOU in favour of the introduction of a provisional standard initially, which does not eliminate vehicles with sub-standard vehicles, to raise awareness among users, then refinement of the threshold and introduction of a binding measure

Reference standards:

- Guidelines in preparation for ECOWAS

Fuel quality control:

- The Directorate for Hydrocarbons (Ministry of Mines and Energy) oversees import control
- The Department of Conditioning and Legal Metrology (Ministry of Commerce) is in charge of checking the calibration of fuel dispensing tools (reliability of volumes dispensed at the pump)

Requirements for the establishment of a binding threshold

- Emission control system repair/maintenance network is non-existent
- Same for the supply of parts, training of technicians

Example of a successful environmental protection project:

- Implementation of the Montreal agreements for the elimination of greenhouse gases
- Funded by the Multilateral Fund of the Montreal Protocol (MMFM), attached to the Vienna Convention for the Protection of the Ozone Layer.
    - 1987: Adoption of the Montreal Protocol
    - 1990's: Inventory of CFCs and development of an implementation plan
    - 2000: Implementation of the plan

Documents submitted
None

6.3.6 Ministry of Environment and Forest Resources - Directorate for Environment - National Ozone Unit

Ministry of Environment and Forest Resources **Directorate for Environment** **National Ozone Unit (Bureau National Ozone)** Mr. DJOSSOU, Coordinator of the Ozone Unit Mr. DANDJESSO, Assistant Coordinator		
9/20/2017 Morning, 2	Abdelilah KHALIFI Damien SUBIT	

Organisation

- Office created to implement the framework programme for greenhouse gas reduction
- A "country programme" has been developed for the implementation of the framework programme to put in place actions to reduce and eliminate greenhouse gases (fight against the ozone hole): CFCs, then HCF, then GHG reduction: then HFCs, then HC)

Background to the initiative

- The Montreal Protocol has been ratified by 197 countries, making it the first ratified treaty in the United Nations. States are sovereign, but the ratified text has become law.
- The Montreal Protocol is organised around the contribution and potential of countries:
  - Art. 2: Defines the developed countries, produces equipment and carries out maintenance and after-sales service
  - Art. 5: Defines the developing countries as consumers of tools and equipment
- National Ozone Office relies on 2 agencies for implementation:
  - UNEP: United Nations Environment Programme, funds training and studies
  - UNIDO: United Nations Industrial Development Organisations, funds investment (capacity building / equipment)

Approach and elements that ensured the program's success

1. To change partner habits, UNEP and UNIDO support the difference in costs between old (refrigerant gases) and new substances
2. Institutional strengthening (awareness raising)
3. Equipment: control, customs

Reason for the study's success

- Passage from one gas to another: no motivation on the part of users due to cost;
- Funding is an incentive program;

- Multi-phase, quota-based programme: reduction of consumption over several years and sharing between different users (national quota decided by stakeholders);
- Montreal Protocol proposes long-term financing (2040/2050);
- International interest;
- Gas control by refrigeration companies, then by suppliers;
- Refrigeration engineers trained to test gas cylinders at suppliers, and mark good and bad bottles at the dealers' facilities.

6.3.7 Ministry of Commerce, Industry, Private Sector Promotion and Tourism (Ministère du Commerce et le Promotion du Secteur Privé)

I. DOUTI, Cabinet Attaché **K. MENSATI, Director of Private Sector Promotion** Mr. DOUTI's business card only indicates "Ministère du Commerce et le Promotion du Secteur Privé" for the name of the Ministry		
9/21/2017 Morning 1	Abdelilah KHALIFI Damien SUBIT Eduard FERNANDEZ	 

Commercial type-approval of vehicles:

- It comes under customs law, with a technical component
- Ministry of Commerce in favour of a normative system. Activities are under way in the sense of WAEMU (common market), but there is not yet an accepted and shared reference framework.

Receipt of spare parts:

- At present, it is not for the Ministry of Commerce to define/control whether spare parts are good, but it could become so
- Direction of metrology depends on Commerce
- Quality management depends on Industry

One-stop shop:

- Established by the Ministry of Foreign Trade for the payment of customs and import duties, but not for the verification of technical aspects
- Managed by the company SEGUCE: Société d' Exploitation du Guichet Unique du Commerce Extérieur du TOGO (Société d' Exploitation du Guichet Unique du Commerce Extérieur du TOGO)

Example of an existing control for imported product:

- *Direction du Commerce Intérieur et de la Concurrence* (Directorate of internal trade and competition) is responsible for the reception of food products and carries out quality controls via a laboratory at the University of Lomé

6.3.8 Directorate for Packaging and Legal Metrology

Directorate for Packaging and Legal Metrology D. ANGABI, Metrology Technician K. TCHAKLIDJI, Metrology Technician (?)		
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Activity:

- Mainly volume and mass control:
  - Service station controls every 3 months, primary control and unannounced monitoring;
- No knowledge/skills to verify SOTOPLA tooling, but has the authority to do so;
- Area of action defined by decree.

Fuel quality:

- No more quality control and no longer has the prerogatives to do so
- Fuel quality control is carried out by SGS (Société Générale de Surveillance, Swiss certification company), state approval

6.3.9 Union Nationale des Transporteurs Routiers du Togo (UNATROT) and Union des Routiers du Togo (URT)

Union Nationale des Transporteurs Routiers du Togo (UNATROT, or Togo National Union of Road Transporters) **Union des Routiers du Togo (URT, or Togo Union of Road Workers)** Numerous participants, including the Vice-President and Secretary-General of UNATROT		
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Positive opinion on roadworthiness tests:

- Beneficial tool
- Economic development involves inter-state transport (needs 5 to 10,000 km/month for a truck to be profitable) and a more reliable fleet of HGVs will make it possible to reinforce this activity
- But need for extension on the functioning of the technical control and the changes envisaged
- Complaint: to set up less stringent technical control thresholds for PLs serving local services (port around Lomé)

Need for carriers

- Vehicle import tax exemption and training
  Currently:
  - No incentive to acquire a new PL because customs duties are higher for new PLs than for old ones; In Burkina Faso and Mali, the tax exemption of imported vehicles over a certain period (several months) has made it possible to increase the rate of renewal of HGVs;
  - In Togo, customs clearance fees are twice as high as in the Hinterland (in Togo, 1 truck = 2 vehicles (tractor + trailer), and customs clearance fees must be paid for the tractor and trailer, whereas in the Hinterland (Niger, Burkina Faso, Mali), 1 truck = 1 vehicle). Drivers and business leaders of UNATROT and the URT would like Togo to follow the Hinterland model to divide customs clearance costs by 2 for trucks, [*Note: truck drivers typically buy an imported European tractor (better repair network, better quality) for which they pay taxes and customs duties (36%), and a trailer produced locally in the free zone, for which they also pay taxes and customs duties (52 to 55%), which probably explains the perception that customs charges are higher in Togo. As part of this mission, customs arrangements in neighbouring countries have not been studied.];*
  - No driving school, no continuous training (e. g. economical driving, safe loading, etc.);
- Assistance from banks to renew the HGV fleet
  Currently:
  - majority of HGV are EURO 2
  - No network of garages and spare parts supply channels (mainly from Nigeria, no conformity check of spare parts);
- Training/coaching for the management of activities (management of transport companies).

Size of carrier enterprises

- Less than 3 drivers: 60 %
- From 4 to 15 drivers: 30 %
- More than 15 drivers: 10 %

Unsolicited Comments

- Axle weight regulation: 70% of the vehicles have modified axles (addition of additional axles to increase the payload within the axle weight limit). How will the technical inspection regulations affect these vehicles, which will be non-compliant and in large numbers?
- The Togolese CT is recognized abroad (Burkina Faso in particular), but the document of recognition can only be stamped in Lomé, even for the PL that passed the technical control in Dapaong.

6.3.10 Ministry of Infrastructure and Transport - Directorate for Road and Rail Transport - Division of Administration and Accounting

Ministry of Infrastructure and Transport **DIRECTORATE FOR ROAD AND RAIL TRANSPORT** **Administrative and Accounting Division** Mr. TCHOKOSSI (Head of Division)		
9/21/2017 Afternoon	Abdelilah KHALIFI Damien SUBIT Eduard FERNANDEZ	

Vehicle type-approval reviews

- See documents submitted

Fleet and Accident Data

- gendarmerie
- Division of Regulatory Control and Statistics

Insurance

- Vehicles are insured by the insurance pool, a centralised system of private insurance. There were too many fraudulent insurance contracts (false certification for example), and the insurance pool limits fraud. Vehicle owners are insured by the pool, not by a specific insurance company.

DTRF personnel

The DTRF counts:

- Officials;
- Contractual, paid out of a budget that comes from the treasury and from the profits of the insurance pool;
- Volunteers, paid by the state (ANVT: National Volunteering Agency).

Documents submitted

- DTRF organisation chart
- Documents explaining the type-approval procedures for 4-wheel vehicles and 2-3 wheels

6.3.11 Ministry of Mines and Energy - Directorate for Hydrocarbons

Ministry of Mines and Energy **Directorate for Hydrocarbons** M. KPENGLAME, Director of Hydrocarbons		
9/22/2017 Morning	Abdelilah KHALIFI Damien SUBIT Eduard FERNANDEZ	

Fuel quality

- Directorate for Hydrocarbons (DH) checks the quality of classified installations (station-service, storage, etc./);
  - 2 fuel depots
    - Togolese Lomé Storage Company (STSL, Société Togolaise de Stockage de Lomé), storage of fuel for domestic consumption and export,
    - Togolese Storage Company (STE, Société Togolaise d'Entreposage), for fuel destined for export.
  - SGS (Société Générale de Surveillance, a Swiss certification company) ensures the quality control of the incoming fuel, but the Hydrocarbons Directorate does not have the data;
- The reference framework for import quality is defined by an inter-ministerial committee led by the Ministry of Commerce[...], and includes the Ministries of Environment[...] and Transport[...], and should refer to the ECOWAS guidelines (see the section Current activities to control pollutant emissions below);
- Fuel quality control at the pump:
  - every 3 months;
  - unannounced checks;
  - density control on site;
  - chemical control periodically (a priori, no regular measurement);
- No visibility of the complete control chain: no counter-expertise of SGS by DH, and DH does not control imports.

Fuel Prices and Smuggling

- The price of fuel is set by the state (Ministries of Finance[...], Commerce[...], and Energy[...]), via a political and technical committee. The price is the same throughout the country (transport equalisation);
- In September 2017, petrol costs 498 FCFA/litre (0.76 €), and diesel 500 FCFA/litre (0.76 €). By way of comparison, in France petrol costs about 1.36 €/litre and diesel 1.25 €/litre, in Ghana petrol costs 0.86 €/litre;
- Gasoline is cheaper in Benin due to smuggling;
- Nigeria is a major oil producer, but has limited capacity to refine. Nigerian refineries are in 2nd or 3rd hand, and a costly upgrade is required to meet the 50 ppm standard;
- Lack of regional harmonization promotes smuggling (currently underway in ECOWAS);
- If DH capacity is reinforced, DH can take charge of fuel quality control;
- Quality/price balance to be found.

Ongoing activities to control pollutant emissions

- Major ongoing effort to improve and stabilise the quality of fuel imported into Togo;
- ECOWAS is working on the implementation of specifications: June 2017 recommendation is 50 ppm sulphur, but the directive has not yet been published;
- Ongoing project with UNEP (United Nations Environment Programme):
  - Fuel quality;
  - Technical quality of vehicle emissions, i.e., what pollution control technologies are the Togolese fleet vehicles equipped with?

Documents requested (not yet obtained at the time of writing)

- Fuel quality records, to assess the stability of the measured characteristics (i.e., if the imported fuel is of constant quality)? this information may be difficult to obtain because the measurement data could be part of the SGS;
- Copy of the call for tender for the contract obtained by SGS.

6.3.12 Ministry of Economy and Finance - Togolese Office for Revenue

Ministry of Economy and Finance **Togolese Office of Revenue** K. OBOSSOU, Head of Studies Division A. MEDJESSIRIBI, Director of Customs Operations R. AMADOU, Senior Administrative Officer		
9/22/2017 Afternoon	Abdelilah KHALIFI Damien SUBIT Eduard FERNANDEZ	

Customs operations

Contribution of customs tax activity

- Gulf activities (e. g. Lomé) account for 80-90% of customs revenue;
- OTR contributes 52% of revenues from taxes, and taxes account for 30% to 40% of the government's revenues.

Import duties and taxes

- 9 categories for calculating customs duties, depending on the type of vehicle. For example:
  - 87.01: tractors (road), customs duty = 10%
  - 87.02: transport vehicle of 10 persons or more
  - Customs duty = 5 % if not mounted, 10 % if mounted

- **New vehicles (< 2 years)**, transactional value (CAF) declared by the importer and confirmed by the Attestation of Verification (ADV) provided by the company COTECNA (provider of the Togolese state); customs value = value of the ex-works invoice - depreciation equal to 1.75 % of the value of the invoice × number of months of seniority;
- **Used vehicles**, customs value = COTEC value (depending on brand, origin, model, power, range, cylinder capacity, number of doors, etc.)
  33% discount granted (decided by the state to consider purchasing capacity in Togo). Possible additional depreciation for a damaged vehicle if requested by the importer. User vehicles come by sea or road;
- There is a suspensive regime for dealers who have a warehouse regime (virtual warehouses in which vehicles are still under customs control and can be cleared in other countries);
- Customs rates are calculated based on several elements (see document 1). As an indication, customs duties and taxes represent the following percentages:
  For a vehicle at 0% duty, customs duties and taxes = 28%;

5 %,	36 %
10 %,	46 %
20 %,	52 %

- Example of value for duty Customs Agreements and Rules.

Customs Agreements and Rules

- CET: Common External Tariff (common to ECOWAS) Common tariff belt to tax goods originating from outside ECOWAS;
- Goods originating in an ECOWAS country are exempt from customs duties;
- No restrictions for imported vehicles, except the right-hand drive ban. The maximum age limit of 5 years for imported vehicles is envisaged;
- Incentives to reduce customs duties are in place for vehicles that have been in MAD (Stores and Customs Clearance Areas) for several years.

Tax regime

Taxation of motor vehicles

- 2 regimes:
  - Company: 28% of revenues earned by the operator;
  - Individual: pays the IRTR (tax on road transport income), flat-rate if the turnover is less than 30,000,000 FCFA (5% of the flat-rate assessment of the turnover determined in relation to the number and type of vehicles).

Leasing facility

- The Finance Act 2017 provides for the introduction of a leasing programme and exemption from VAT for lessors.

Documents submitted

1. Customs and customs regime applicable to motor vehicles on importation (Document power point);
2. The tax regime applicable to the transport sector (Document power point);
3. Copy of the Verification Certificate (ADV) from COTECNA;
4. The general tax code, the finance law 2017, the customs code, etc., are available at www.otr.tg.

6.3.13 Ministry of Environment and Forest Resources - Directorate for Environment

Ministry of Environment and Forest Resources **Directorate for Environment** K. VOLLEY, Project Coordinator « Transport durable à faible émission », Head of the Division Classified facilities and hazardous substances		
9/26/2017 Morning	Abdelilah KHALIFI Damien SUBIT Eduard FERNANDEZ	

Background to the Sustainable Low Emission Transport Project

- Togo has joined the United Nations Environment Programme (UNEP) for a global fuel economy and emissions reduction (GEFI plan): Global Fuel Economy Initiative, www.globalfueleconomy.org); The objective is to promote low-emission transport.
- 3 axes:
  - Inventory of the vehicle fleet (year-model year, available anti-pollution equipment) to compare its composition against international standards. This inventory is based on vehicle manufacturers' data, not on field surveys (catalytic converters are typically removed when vehicles arrive in Togo), and with the help of customs and DTRF. This inventory is almost complete and is based only on the 2012-2016 period, as the registration database was not computerized until 2012;
  - Development of economic strategies. Definition of an action plan with 3 themes: vehicles, road infrastructure and fuel;
  - Awareness-raising campaign at the regional level to inform the public about the actions the government will take to promote sustainable transport development. The campaign is scheduled for June 2018.

Actions envisaged in the action plan

- Colour sticker for vehicles according to their emission level;
- Capacity building for vehicle repair (garages, training, equipment).

Project organisation

- Steering Committee, where are represented the Ministries of Environment [...], Energy [...], Health [...], Transport [...], Finance [...] (OTR) and Development [...], University (ENSI: Ecole Nationale Supérieure d'Ingénieurs), the civil society represented by AFHON (Association en Faveur de l'Homme et de la Nature);
- The project management is ensured by a coordinator (Mr. Kpenglame) and 2 collaborators;
- The Kick off took place in February 2017, with a workshop launching on 31 March 2017 (a representative of UNEP and stakeholders were present);
- Funding of USD 50,000 through the Small-Scale Fund Agreement (SSFA).

Documents submitted

- Project description (power point document: “Présentation SSFA TRANSPORT.pptx”).

6.3.14 Groupe Fadoul Afrique – Togo, Renault, Peugeot, Mitsubishi Dealer

Groupe Fadoul Afrique (Fadoul Africa Group) - Togo **Togo, Renault, Peugeot, Mitsubishi dealer** M. ADJANOH		
9/27/2017 Morning	Abdelilah KHALIFI Damien SUBIT Eduard FERNANDEZ	

Dealer Activity

- 3 automobile companies (STDA, STAR, DTG) sell the Suzuki, Peugeot, Carrier, Mitsubishi, Renault, Chrysler, Dodge, Jeep and Mercedes brands;
- Member of a conglomerate (Fadoul Group);
- Sale of new vehicles only;
- 90% of its activity is the sale of light vehicles to the administration, NGOs and programmes. The rest of its sales go to private individuals.

Customs Clearance

- It is for sale;
- Storage of non-cleared vehicles in virtual warehouses to enable the taking over of special customs regimes (NGOs, World Bank, etc.) and exchanges between dealers from other countries that apply their own customs rules;
- Free trade agreement (ECOWAS, WAEMU) have been signed but not yet implemented.

Sale of new vehicles to private individuals

- Difficult because no easy purchasing for private individuals (current consumer credit rates are very high at 14%);
- Vehicles need to be "tropicalized": adding fuel filters, modifying suspensions, increasing ground clearance. This is done by the manufacturer before the vehicle is imported. Renault refuses to bring certain types of vehicles to Togo (e. g. those with automatic gearboxes) for maintenance, parts and fluids;
- Cost of new vehicles is very high (a duster in France costs 11,990 € (8,000,000 FCFA), but 22 870 € (15,000,000,000 FCFA));
- COTEC evaluates the value of the vehicles in relation to the value in the country of origin, and not to the purchase value;
- The dealer takes care of vehicle maintenance through a maintenance contract;

Problem with the current system

- Maintenance of license plates is problematic (not washable) (Note: according to Sotopla, this problem was solved by adding a varnish to the plates);
- The final registration documents are not delivered on time: temporary registration cards are used for too long, which prevents them from leaving the country with a Togolese vehicle (Ghanaian and Beninese customs do not allow cars with temporary registration documents to enter the country);
- Problem of delegation in Togo: when the head or the Director General is not there, there is no delegation of authority and the files do not progress.

Spare parts

- Spare parts are available but expensive;
- The parts come from China and may be generic parts, but they are not certified.

Model Year Market

- In case of public tenders, some companies respond by proposing old new vehicles (for example, new vehicles from 2014 for a tender in 2017). These unsold brand-new 2014 vehicles bought from resellers are no longer guaranteed by the manufacturer. According to Mr. AJDJANOH, the state would have given contracts to companies supplying new but too old model-year vehicles for the manufacturer's warranty to apply, which he considers unfair competition.

6.3.15 Ministry of Infrastructure and Transport - Directorate for Road and Rail Transport

Ministry of Infrastructure and Transport **DIRECTORATE FOR ROAD AND RAIL TRANSPORT** K. AMEDE, Road Safety Focal Point K YAKPO OSSOBE, Assistant to the National Committee for Transport Facilitation and Interstate Transits		
Afternoon	Abdelilah KHALIFI Damien SUBIT	

Road Safety Office (OSR)

- Established by Decree on July 23,1997
- Role: Education, Information, Awareness-raising
- Since 2013, SAFER (Société Autonome de Financement de l' Equipement Routier, Autonomous Road Equipment Financing Company) has been financing road safety activities pending the structuring of the OSR (50 000 000 FCFA)
- Implementation of a master plan

Fleet and Accident Data

- The registration of 4-wheeled vehicles is done only in Lomé
- The registration data has only been organized in a database since mid-2015
- For accidents, the data come from police, fire departments, and emergency services
- The DTRF uses the BAAC (Body Accident Analysis Bulletin) by decree

History of the obligation to wear helmets on motorcycles and zemidjan

- 2014: there was a very serious accident on a bridge, the president decrees that 2014 is the year of road safety;
- The obligation to wear a helmet for zemidjan drivers was made in several phases:
  1. Awareness-raising through churches, posters, radio messages, and distribution of free helmets;
  2. Probationary period of 6 months during which the absence of a helmet is reported but not sanctioned;
  3. After 6 months, tough punishment for offenders;
  4. Awareness-raising among zemidjan drivers, passengers refused to hire the services of a driver who was not wearing a helmet himself. For reasons of hygiene, passengers are not required to wear helmets.
- A helmet costs about 6,000 FCFA. The helmet is now obligatorily sold with a motorcycle;
- In Burkina Faso, there was a popular uprising when the wearing of helmets was made compulsory, while the reform was well accepted in Togo.

6.4 Annex 4: Layout of the Technical Inspection Sites

6.4.1 Layout of the Technical Inspection Sites

6.4.1.1 Legend

 **Gas analyser or opacimeter**

 **Control console**

 **Headlamp aiming device**

 **Wheel alignment device**

 **LV brake and suspension device**

 **HDV braking device**

 **Gap detector device**

<u>Dimensions</u>

Doors (Entrance / exit)

- LV: Height = 4,25m Wide = 4m
- HDV: Height = 5m Wide = 4m

Site

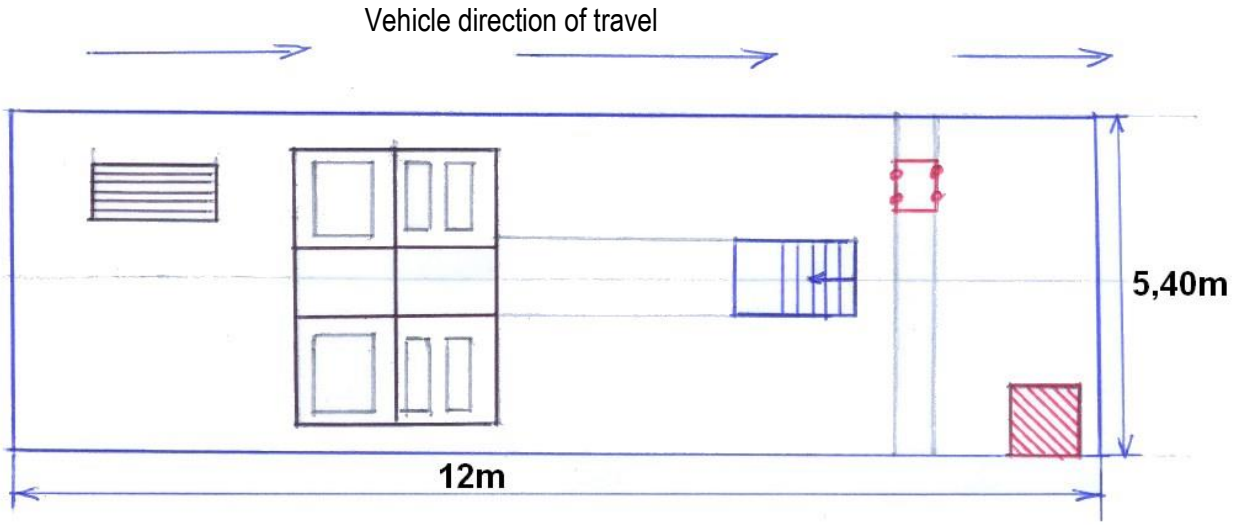
Length = 30,25m Wide = 25m

Pit

- LV: Length =8m Wide = 1,1m Depth = 1,8m
- HDV: Length = 12,4m Wide = 1,1 m Depth = 1,8m
- Access stairs = 0,94m

6.4.2 Atakpamé

ATAKPAME (Equipment: MAHA)



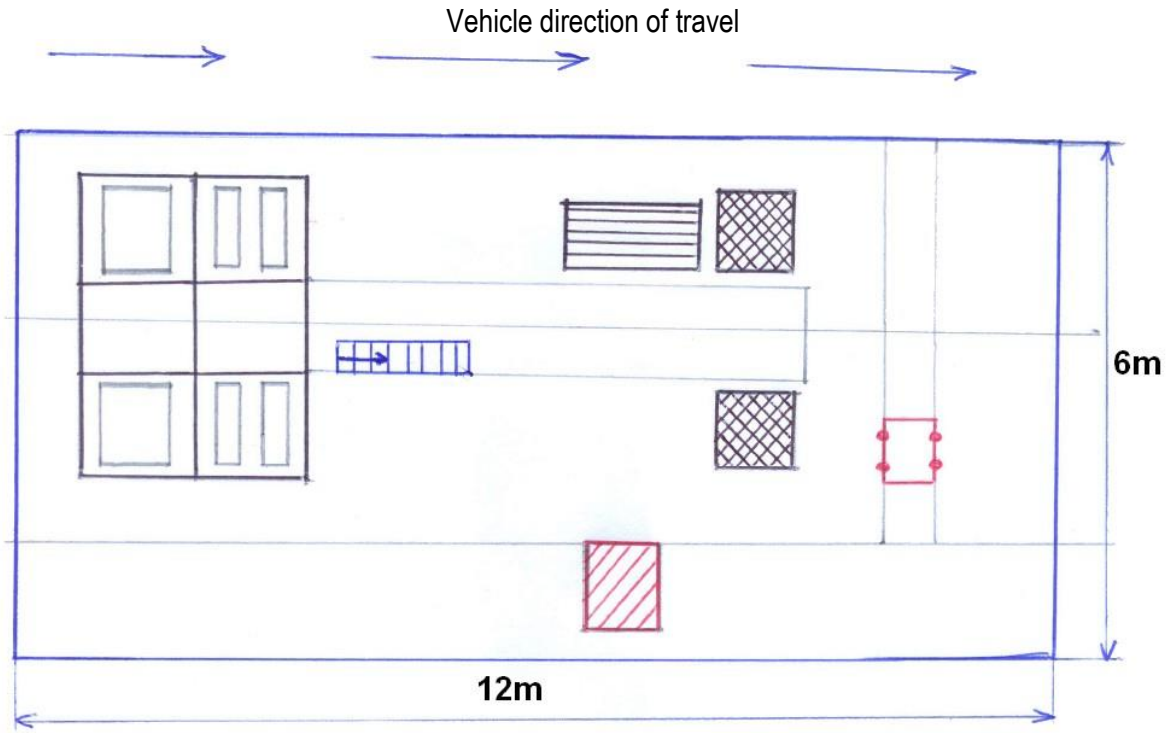
Dimensions

- Site
  Length = 12m Wide = 5,4m Height = 6m
- Door (Entrance / Exit)
  Wide = 5,4m Height = 4m
- Pit
  Length = 5,12m Wide = 0,8m Height = 1,5m

  Access stairs = 0,8m

6.4.3 Kpalimé

KPALIME (Equipment: Actia Müller 7500)



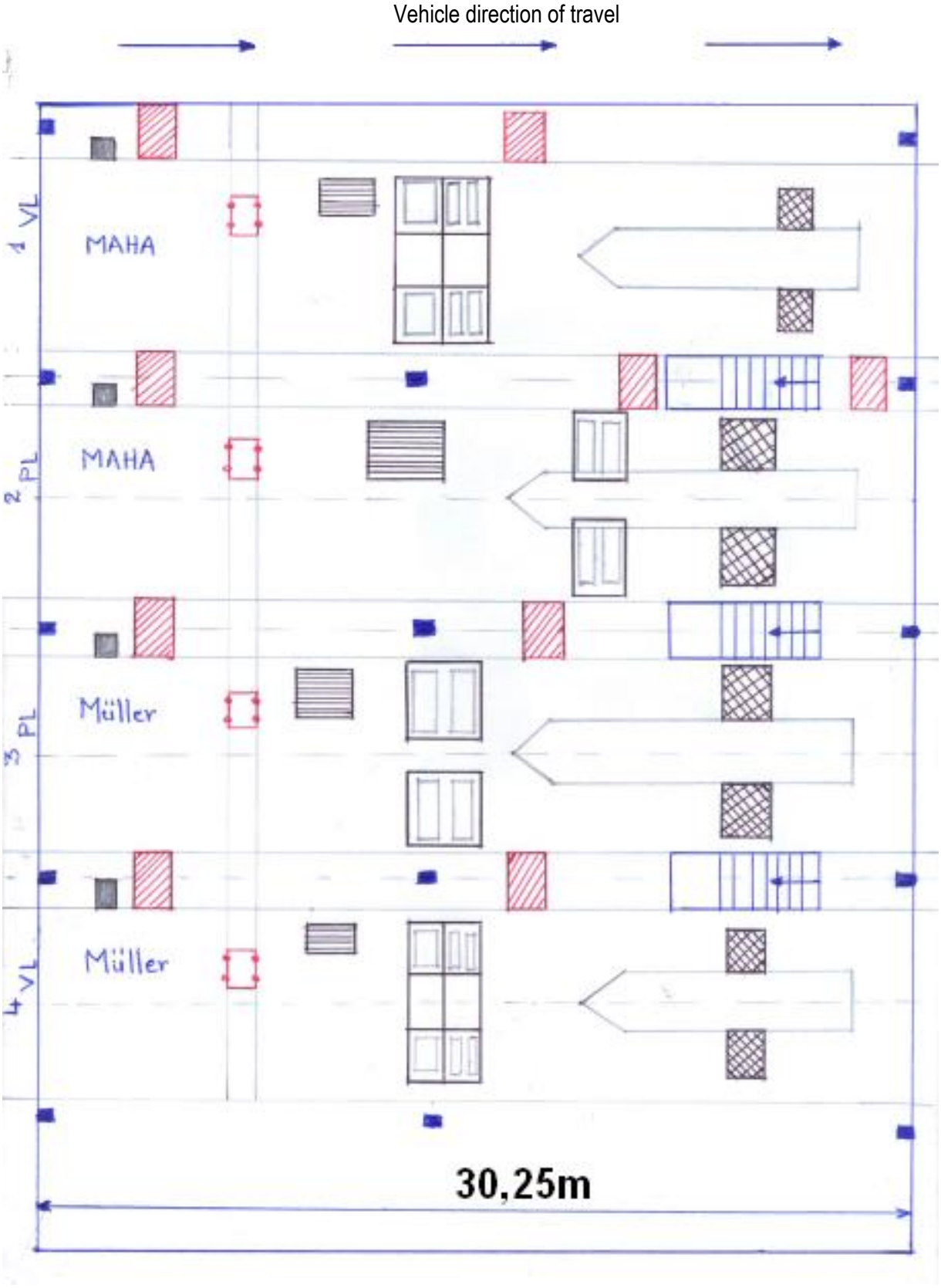
Dimensions

- Site
  Length = 12m Wide = 6m Height = 4,3m
- Door (Entrance / Exit)
  Wide = 5m Height = 2,5m
- Pit
  Length = 5,4m Wide = 0,7m Height = 1,5m

  Access stairs = 0,27m

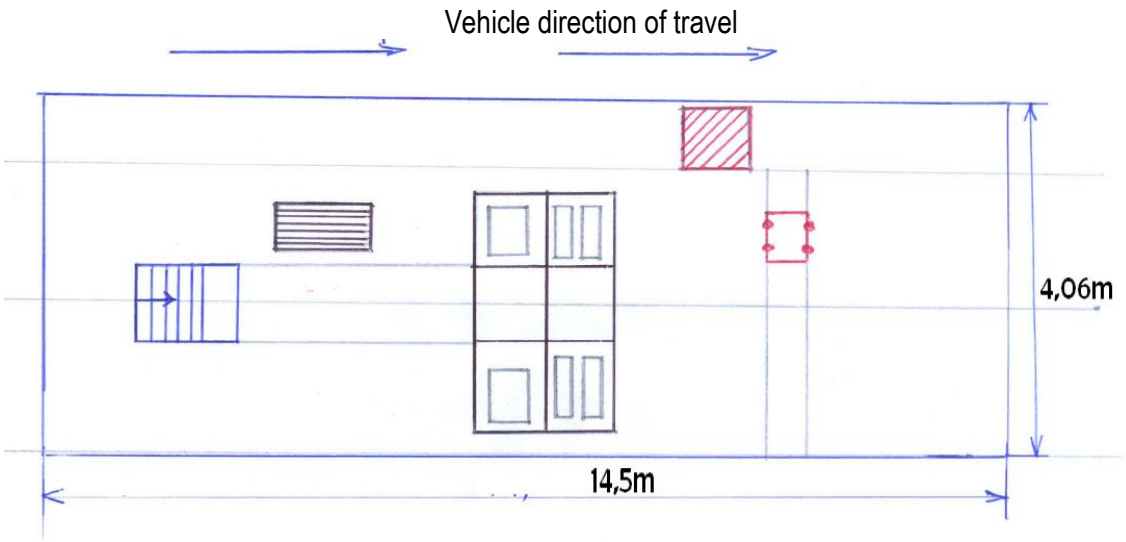
6.4.4 Lomé

LOME (Equipment: Actia Müller & MAHA)



6.4.5 Sokodé

SOKODE (Equipment: MAHA)



Dimensions

- Site

  Length = 14,5m Wide = 4,06m Height = 3m

- Door (Entrance / Exit)

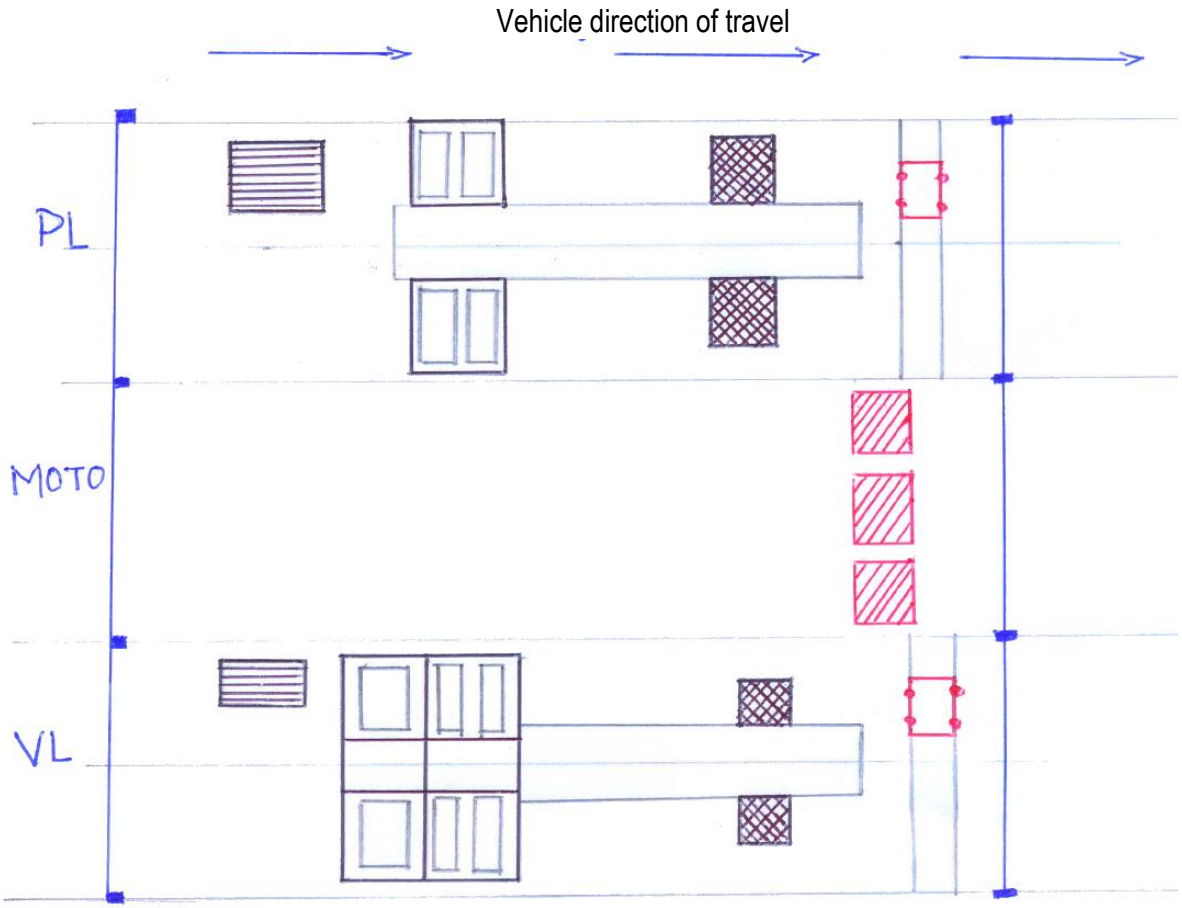
  - Entrance: Wide = 4,06m Height = 3m
  - Exit: Wide = 3,2m Height = 3,5m

- Pit

  - Length = 4,6m Wide = 0,6m Height = 1,6m
  - Access stairs = 0,6m

6.4.6 Kara

KARA (Equipment: Actia Müller 7500)



Dimensions

- Site

  Length = 32m Wide = 1m Height = 6m

- Door (Entrance / Exit)

  - LV: Wide = 4m Height = 2,65m
  - HDV: Wide = 4m Height =4m

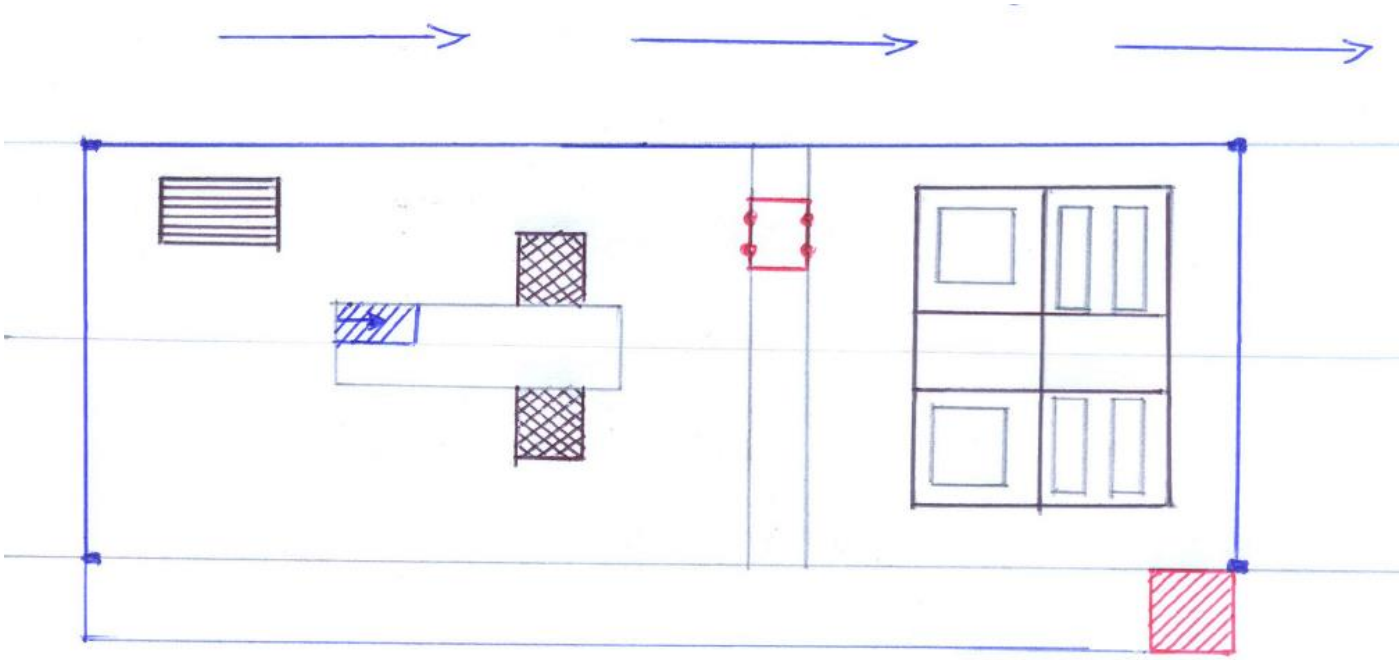
- Pit

  - LV: Length = 5,7m Height = 1,55m Wide = 0,8m
  - HDV: Length = 5,7m Height = 1,55m Wide = 0,8m
  - Access stairs = 0,8m

6.4.7 Dapaong

DAPAONG (Equipment: Actia Müller)

Vehicle direction of travel



Dimensions

- Site

  Length = 22,9m Wide = 1m Height = 5,7m

- Door (Entrance / Exit)

  Wide = 4,34m Height = 3,15m

- Pit

  - Length = 1,24m Wide = 0,76m Height = 1,61m
  - Access stairs = 0,3m

6.5 Annex 5: Vehicle Categories

6.5.1 Definitions of Vehicles

Vehicle: any means of transport, having at least two wheels, operating on the public road by its own mechanical or external force;

Motor vehicle: any vehicle equipped with a propulsion engine and travelling on the track by its own means;

Commercial vehicle: any motor vehicle travelling on the public road without being connected to a railway track and normally used for the carriage of persons or goods or for the traction, on the public road;

All vehicles: combined vehicles travelling on public roads as a unit;

Articulated vehicle: a combination of vehicles consisting of a towing vehicle and a semi-trailer;

Agricultural motor vehicle: motor vehicle, intended for the agricultural holding, not likely by construction to exceed twenty-five (25) kilometres per hour. This speed shall be increased to forty (40) kilometres per hour for vehicles with a width of 2.55 metres or less;

Recovery vehicle: motor vehicle specialized in evacuation of vehicles and specially equipped for this purpose;

Motor forest vehicle and Forest apparatus: any motor vehicle or appliance normally intended for forestry operations and subject to the same criteria as those used for agricultural vehicles and appliances;

Public works machinery: motor vehicle or apparatus designed for public works not normally used on the road for the carriage of goods or persons other than conveyors. The list of these devices is fixed by the administration;

Agricultural apparatus: farm equipment, machinery, implements or trailers intended for the farm business and designed to be pulled or operated by a motor agricultural vehicle;

Trailer: any vehicle intended to be coupled to a motor vehicle. This term includes semi-trailers;

Light trailer: any trailer whose maximum authorized weight does not exceed seven hundred and fifty (750) kilograms;

Semi-trailers: any trailer without a front axle, intended to be coupled to a motor vehicle in such a way that it rests partly on the motor vehicle and a significant part of its weight and the weight of its load is supported by that vehicle;

Cycle: any vehicle that has two wheels and is propelled exclusively by the muscular energy of the persons driving it, especially by pedals or cranks;

Moped: any two- or three-wheeled vehicle equipped with an engine of not more than four (4) kilowatts of power or with an internal combustion engine of not more than fifty (50) cm^3 cubic metres in displacement and with a walking speed of not more than fifty (50) kilometres per hour;

Motorcycle: any vehicle that has two-wheeled motorized vehicles, with or without a sidecar, with an engine power not exceeding 73.6 kilowatts and which does not meet the definition of a moped. The addition of a removable sidecar to a motorcycle does not affect its classification;

Light motorcycle: motorcycle equipped with an engine with a cylinder capacity not exceeding 125 cm^3 and/or an engine with a power not exceeding 15 kilowatts;

Tricycle: any vehicle that has three wheels and is propelled exclusively by the muscular energy of the persons driving it, especially by pedals or cranks;

Motor tricycle: any vehicle which has three wheels, the unladen weight of which does not exceed 400 kilograms, with an engine power not exceeding 73.6 kilowatts and which does not meet the definition of moped;

Lightweight motor tricycle: a tricycle with an engine of not more than 15 kilowatts of power or an internal combustion engine with a cylinder capacity not exceeding 125 cm^3;

Quadricycle: any vehicle that has at least four wheels and is propelled exclusively by the muscular energy of the persons driving it, especially by pedals or cranks;

Lightweight motor quadricycle: quadricycle of which the unladen weight does not exceed three hundred and fifty (350) kilograms provided with an engine of not more than 4 kilowatts of power or with an internal combustion engine whose cylinder capacity does not exceed 50 cm^3;

Quadricycle with heavy engine: quadricycle of which the unladen weight does not exceed five hundred and fifty (550) kilograms provided with an engine having a power not exceeding 15 kilowatts or with an internal combustion engine having a cylinder capacity not exceeding 125 cm^3.

6.5.2 Classification of Vehicle Categories

- Category L - motor vehicles with four wheels and less:
  - Category L1: two-wheeled vehicles whose engine, in the case of an internal combustion engine, has a cylinder capacity not exceeding 50 cm3 and, whatever the means of propulsion, has a maximum design speed not exceeding 50 km/h;
  - Category L2: three-wheeled vehicles, whatever the disposition, whose engine, in the case of an internal combustion engine, has a cylinder capacity not exceeding 50 cm3 and, whatever the means of propulsion, has a maximum design speed not exceeding 50 km/h;
  - Category L3: two-wheeled vehicles whose engine, in the case of an internal combustion engine, has a cylinder capacity exceeding 50 cm3 or, whatever the means of propulsion, has a maximum design speed exceeding 50 km/h;
  - Category L4: vehicles with three wheels asymmetrical in relation to the longitudinal median axis whose engine, in the case of an internal combustion engine, has a cylinder capacity exceeding 50 cm3 or, whatever the means of propulsion, whose design speed exceeds 50 km/h (motorcycles with sidecar);
  - Category L5: vehicles with three wheels symmetrical in relation to the longitudinal median axis whose engine, in the case of an internal combustion engine, has a cylinder capacity exceeding 50 cm3 or, whatever the means of propulsion, whose maximum design speed exceeds 50 km/h;
  - Class L6: four-wheeled vehicles, the unladen mass of which does not exceed 350 kg, excluding the mass of batteries for electric vehicles, with a maximum rated speed not exceeding 45 km/h, the cylinder capacity of which does not exceed 50 cm3 for positive-ignition engines, or of which the maximum net power does not exceed 4 kW for other types of internal combustion engines, or of which the maximum continuous rated power does not exceed 4 kW for electric motors;
  - Category L7: four-wheeled vehicles, other than those classified in category L6, the unladen mass of which does not exceed 400 kg excluding the mass of batteries for electric vehicles, and whose maximum continuous rated power does not exceed 15 kW.

- Category M - motor vehicles with at least four wheels and used for the carriage of passengers:
  - Category M1: vehicles used for the carriage of passengers, with a maximum of eight seats in addition to the driver's seat;
  - Category M2: vehicles used for the carriage of passengers, comprising more than eight seats in addition to the driver's seat and having a maximum mass not exceeding 5 tonnes;
  - Category M3: vehicles used for the carriage of passengers, comprising more than eight seats in addition to the driver's seat and having a maximum mass exceeding 5 tonnes.

  Vehicles of categories M2 and M3 belong to one or more of the three classes (Class I, Class II, Class III) or to one of the two classes (Class A, Class B) defined below:

  - Class I: Vehicles designed to carry standing passengers, to allow frequent passenger travel;
  - Class II: Vehicles primarily designed to carry seated passengers and designed to enable standing passengers to be carried in the aisle and/or in a space not larger than that provided for two twin seats;
  - Class III: Vehicles exclusively designed to carry seated passengers;
  - Class A: Vehicles designed to carry standing passengers; vehicles of this class are equipped with seats and may carry standing passengers;
  - Class B: Vehicles which are not designed for the carriage of standing passengers; vehicles in this category may not carry standing passengers.

- Category N - motor vehicles with at least four wheels and used for the carriage of goods:

- Category N1: vehicles used for the carriage of goods, having a maximum mass not exceeding 3,5 tonnes;
- Category N2: vehicles used for the carriage of goods with a maximum mass exceeding 3,5 tonnes but not exceeding 12 tonnes;
- Category N3: vehicles used for the carriage of goods, having a maximum mass exceeding 12 tonnes.

- Category O - Trailers (including semi-trailers):
  - Category O1: trailers having a maximum mass not exceeding 0,75 tonnes;
  - Category O2: trailers with a maximum mass exceeding 0,75 tonnes but not exceeding 3,5 tonnes;
  - Category O3: trailers with a maximum mass exceeding 3,5 tonnes but not exceeding 10 tonnes;
  - Category O4: trailers having a maximum mass exceeding 10 tonnes.

    Trailers of categories O2, O3 and O4 also belong to one of the following three types:

    - "Semi-trailer": towed vehicle with rear axle (s) located behind the centre of gravity of the uniformly loaded vehicle and equipped with a coupling device enabling the transmission of horizontal and vertical forces to the towing vehicle. One or more axles can be driven by the tractor;
    - "Complete trailer": towed vehicle having at least two axles and equipped with a towing device capable of moving vertically (in relation to the trailer) and controlling the direction of the front axle (axles), but not transmitting any significant static load to the towing vehicle. One or more axles can be driven by the tractor;
    - "Centre Axle Trailer": towed vehicle equipped with a towing device which cannot move vertically (in relation to the trailer) and whose axle (s) is (are) located near the centre of gravity of the uniformly loaded vehicle, so that only a small static vertical load not exceeding 10% of the value corresponding to the maximum mass of the trailer or 1,000 daN (if this second value is lower) is transmitted to the vehicle. One or more axles can be driven by the tractor.

- Special vehicle: Vehicle of category M, N or O used for the carriage of passengers or goods or performing a particular function requiring modification of the bodywork and/or special equipment;
  - Camper van: A special vehicle of category M1 designed for the stay of persons and containing at least the following equipment: seats and a table - folding beds in seats - cooking appliances and storage. This equipment must be securely attached to the living area, except for the table which can be easily moved;
  - Armoured vehicle: Vehicle designed for the protection of passengers and/or goods carried by it and equipped with bulletproof armour;
  - Ambulance: Motor vehicle of category M used to transport ill or injured persons and equipped with special equipment for this purpose;
  - Hearse: Motor vehicle designed for the transport of deceased persons and fitted with special equipment for this purpose.

- Category T - Agricultural and forestry tractors:
  "Agricultural and Forestry Tractor": any motor vehicle, wheeled or tracked, having at least two axles, the function of which is essentially related to its tractive force and which is specially designed to tow, push, carry or drive certain tools, machinery or trailers used in agriculture or forestry.
  It can be equipped to transport loads and conveyors.
  - Category T1: wheeled tractors with a maximum design speed of not more than 40 km/h, with a minimum track width of the axle closest to the driver of 1 150 mm or more, an unladen mass in running order exceeding 600 kg and a ground clearance of 1000 mm or less;
  - Category T2: wheeled tractors with a maximum design speed of not more than 40 km/h, with a minimum track width of less than 1 150 mm, an unladen mass in running order of more than 600 kg, and a ground clearance of not more than 600 mm. However, when the height of the tractor's centre of gravity (measured from the ground) divided by the average of the minimum tracks of each axle is greater than 0,90. The maximum design speed is limited to 30 km/h;

- Category T3: wheeled tractors with a maximum design speed of not more than 40 km/h with an unladen mass in running order of 600 kg or less;
- Category T4: special wheeled tractors with a maximum design speed of not more than 40 km/h;
    - Category T4: 1 High-clearance tractor: Tractor designed to work high in-line crops, such as vines. It is characterized by a raised chassis or part of a chassis, so that it can run parallel to the cultivation lines with the right and left wheels on either side of one or more lines. It is designed to carry or animate tools that can be attached to the front, between axles, at the rear or on a platform. When the tractor is in the working position, the ground clearance measured in the vertical plane of the crop lines shall be greater than 1000 mm. When the height of the tractor's centre of gravity (measured in relation to the ground and using normal tyres) divided by the average of the minimum tracks of all axles is greater than 0,90, the maximum design speed shall not exceed 30 km/h;
    - Category T4.2 Tractor with large width: Tractor characterized by its large size, especially designed for working in large agricultural areas;
    - Category T4.3 Tractor with low ground clearance: Agricultural or forestry tractor with four-wheel drive, the interchangeable equipment of which is intended for agricultural or forestry use, characterized by a carrying chassis equipped with one or more power take-offs and having a technically permissible mass of not more than 10 tonnes and having a ratio of that mass to the maximum unladen mass in running order of less than 2,5. In addition, the centre of gravity of this tractor, measured in relation to the ground and using normal tyres, is less than 850 mm;
- Category T5: wheeled tractors with a maximum design speed exceeding 40 km/h.

6.5.3 Vehicle Weights and Dimensions

Below is a proposal for vehicle weights and dimensions which is not exhaustive and which could possibly be adjusted, supplemented or modified according to national specificities while respecting the technical capacities of the vehicles and the load limits of the infrastructures for which they have been dimensioned.

6.5.3.1 Vehicle Masses

The permissible total laden weight and the permissible total vehicle weight must not exceed the following limits:

- For vehicles that are part of a vehicle set:
    - Two (2) axle trailer (other than semi-trailers): 18 tonnes (18,000 kilograms);
    - Three (3) axle trailer (other than semi-trailers): 24 tonnes (24,000 kilograms);
- For vehicle sets:
    - Road trains with five (5) or six (6) axles:
    - Two (2) axle motor vehicle with three (3) axle trailer: 40 tonnes (40,000 kilograms);
    - Three (3) axle motor vehicle with two (2) or three (3) axle trailer: 40 tonnes (40.000 kilograms);
    - Articulated vehicles with five (5) or six (6) axles:
        - Two (2) axle motor vehicle with three (3) axle semi-trailer: 40 tonnes (40,000 kilograms);
        - Three (3) axle motor vehicle with two (2) or three (3) axle semi-trailers: 40 tonnes (40,000 kilograms);
        - Two (2) or three (3) axle motor vehicle with three (3) axle semi-trailer, carrying a 40-foot container in combined transport: 44 tonnes (44,000 kilograms);
        - Three (3) axle motor vehicle with two (2) or three (3) axle semi-trailers, carrying a 40-foot container in combined transport: 44 tonnes (44.000 kilograms)
- Four (4) axle road trains consisting of a 2-axle motor vehicle and a 36 tonnes (36,000 kg) 2 axle trailer;
    - Four-axle articulated vehicles (4) consisting of a two-axle motor vehicle and a two-axle semi-trailer, depending on the axle spacing of the semi-trailer:
        - Spacing of 1.3 m or more and 1.8 m or less: 36 tonnes (36,000 kilograms);
        - Spacing greater than 1.8 m: 36 tonnes (36.000 kilograms);

Two additional tonnes shall be tolerated when the authorized total weight of the motor vehicle is 18 tonnes (18 000 kilograms) and the authorized total weight of the tandem axle of the semi-trailer is 20 tonnes (20 000 kilograms) and the driving axle is equipped with double tyres and air suspension.

- For motor vehicles
  - Two (2) axle motor vehicles of 18 tonnes (18,000 kg);
  - Three (3) axle motor vehicles of 25 tonnes (25,000 kg);
  - Three (3) axle motor vehicles, when the driving axle is equipped with double tyres and air suspensions or recognized equivalent or when each driving axle is equipped with double tyres and the maximum weight of each axle does not exceed 9,5 tonnes: 26 tonnes (26000 kilograms);
  - Four (4) axle motor vehicles with four axles including two (2) directors, when the driving axle is equipped with double tyres and air suspensions or recognized equivalent or when each driving axle is equipped with double tyres and the maximum weight of each axle does not exceed 9,5 tonnes: 32 tonnes (32.000 kilograms);
- Three (3) axle articulated buses: 28 tonnes (28.000 kilograms);

6.5.3.2 Axle Mass

The maximum permissible axle weight must not exceed the following limits:

- Single axle not motorized: 10 tonnes (10,000 kilograms);
- Tandem axles of trailers and semi-trailers:
  The sum of the tandem axle weights must not exceed the following limits, depending on the axle spacing:
  - Spacing less than 1 m: 11 tonnes (11.000 kilograms);
  - Spacing equal to or greater than 1m and less than 1.3m: 16 tonnes (16.000 kilograms);
  - Spacing equal to or greater than l, 3m and less than 1,8m 18 tonnes (18,000 kg);
  - Spacing equal to or greater than 1.8m: 20 tonnes (20.000 kilograms);
- Tridem axles of trailers and semi-trailers:
  The sum of the weights of a tridem must not exceed, depending on the axle spacing, the following limits:
  - Spacing of 1.3 m or less: 21 tonnes (21,000 kilograms);
  - Spacing greater than 1.3 m and equal to or less than 1.4 m: 24 tonnes (24.000 kilograms);
- Driving axle:
  - Two (2) axle motor vehicle and three (3) axle trailer: 11.5 tonnes (11,500 kilograms);
  - Three (3) axle motor vehicle and two (2) or three (3) axle trailer: 11.5 tonnes (11,500 kilograms);
  - Two (2) axle motor vehicle and a three (3) axle semi-trailer: 11.5 tonnes (11,500 kilograms);
  - Three (3) axle motor vehicle and two (2) or three (3) axle semi-trailer: 11.5 tonnes (11,500 kilograms);
  - Three (3) axle motor vehicle with two (2) or three (3) axle semi-trailers, carrying a 40-foot container in combined transport: 11.5 tonnes (11,500 kilograms);
  - Four (4) axle road trains consisting of a two (2) axle motor vehicle and a two (2) axle trailer: 11.5 tonnes (11.500 kilograms);
- Tandem axles of motor vehicles:
  The sum of the weights per tandem axle must not exceed the following limits, depending on the axle spacing:
  - Spacing less than 1m: 11,5 tonnes (11,500 kilograms);
  - Spacing equal to or greater than 1m and less than 1.3m: 16 tonnes (16,000 kilograms);
  - Spacing equal to or greater than 1.3m and less than 1.8m: 18 tonnes (18,000 kilograms);

  When the driving axle is equipped with double tyres and air suspensions or recognized equivalent or when each driving axle is equipped with double tyres and the maximum weight of each axle does not exceed 9,5 tonnes: 19 tonnes (19000 kilograms);

6.5.3.3 Maximum Vehicle Dimensions

Vehicle dimensions can be defined as follows:

- Maximum length:
  - Motor vehicle: 12.00 m. However, the length of double-axle buses or coaches may reach 13.50 metres and that of buses or coaches with more than two axles may reach 15 metres.

        - Trailer 12.00 m;
        - Articulated vehicle: 16.50 m;
        - Trailer train: 18.75 m;
        - Articulated bus: 18.00 m;

- Maximum width:
    - Any vehicle: 2.55 m;
    - Superstructures of conditioned vehicles: 2.60 m;

- Maximum height (any vehicle): 4.00 m;

The above dimensions include removable superstructures and standardized cargo parts such as containers.

Every motor vehicle or set of moving vehicles shall be capable of being fitted into a circular ring with an outer radius of 12,50 m and an inner radius of 5,30 m.

The maximum distance between the axle of the hitch pin and the rear of the semi-trailer: 12.00 m.

The maximum distance measured parallel to the longitudinal centerline of the road train between the outermost points at the front of the load area behind the cab and at the rear of the trailer assembly, less the distance between the rear of the motor vehicle and the front of the trailer: 15.65 m;

The maximum distance measured parallel to the longitudinal centerline of the road train between the outermost points at the front of the load area behind the cab and at the rear of the trailer assembly. 16.40m;

For all vehicles, the weight supported by the driving axle or drive axles of a vehicle or combination of vehicles shall not be less than 25 % of the total laden weight of the vehicle or combination of vehicles.

For road trains, the distance between the rear axle of a motor vehicle and the front axle of a trailer shall not be less than 3.00 m.

The maximum permissible weight in tonnes of a four (4) axle motor vehicle may not exceed five times the distance in metres between the axles of the extreme axles of the vehicle.

For semi-trailers, the distance measured horizontally between the centre line of the coupling pin and any point on the front of the semi-trailer shall not exceed 2,04 m.

6.5.4 Masses and Dimensions of Two- or Three-wheel Motor Vehicles and Quadricycles

The maximum permissible dimensions of two or three-wheel motor vehicles may be stopped as follows:

- Length: 4.00 m;
- Width:
    - For bicycles and two-wheeled mopeds: 1.00 m;
    - For the other vehicles: 2.00 m;
- Height: 2.50 m;

The maximum weight of two-wheeled motor vehicles shall be the technically permissible weight declared by the manufacturer. The maximum unladen weights of three- and four-wheel motor vehicles may be defined as follows:

- Tricycles: 400 kg;
- Quadricycles:
    - For light quadricycles: 350 kg;
    - For heavy quadricycles (weights of electric vehicle propulsion batteries are not included): 550 kg;

Two, three- or four-wheel motor vehicles may be authorized to tow a mass declared by the manufacturer which shall not exceed 50% of the unladen mass of the vehicle.

6.6 Annex 6: List of Regulations by Priority of Implementation

No	Designation	Priority	Geneva Regulation	EU directive
9	Approval of vehicles of categories M1 and N1 with regard to braking	1	13H	71/320/CEE
11	Approval of seat belts and vehicles equipped with them	1	16	77/541/CEE
12	Approval of vehicles with regard to seats, their anchorage, and head restraints	1	17	74/408/CEE 78/932/CEE
19	Approval of tyres for motor vehicles and their trailers	1	30	92/23/CEE
21	Approval of vehicles with regard to the prevention of fire risks	1	34	70/221/CEE
34	Approval of vehicles with regard to pollutant emissions according to engine fuel requirements	1	83	70/220/CEE
1	Approval of vehicle headlamps emitting an asymmetrical passing beam and/or a driving beam and equipped with filament lamps of category R2 and/or HSI	2	1 and 2	76/761/CEE
3	Approval of rear registration plate lamps for motor vehicles and their trailers	2	4	76/760/CEE
4	Approval of direction indicator lamps for motor vehicles and their trailers	2	6	76/759/CEE

10	Approval of vehicles regarding safety-belt anchorages	2	14	76/115/CEE
30	Approval of mechanical coupling parts of vehicle assemblies	2	55	94/20/CEE
33	Approval of vehicles regarding steering bodies	2	79	70/311/CEE
57	Approval of motor vehicles and their trailers regarding statutory plates and markings, their location and the methods of affixing them	2		76/114/CEE
5	Approval of front and rear position lamps, stop lamps, and end-outline marker lamps for motor vehicles and their trailers	3	7	76/758/CEE
15	Approval of vehicles regarding their interior fittings	3	21	74/60/CEE
16	Approval of reversing lamps for motor vehicles and their trailers	3	23	77/539/CEE
26	Approval of child restraint systems in motor vehicles	3	44	93/32/CEE 77/541/CEE
32	Approval of parking lamps for motor vehicles	3	77	77/540/CEE
36	Approval of daytime running lamps for motor vehicles	3	87	97/30/CEE
38	Approval of replacement brake lining assemblies and replacement drum brake linings for motor vehicles and their trailers	3	90	

40	Approval of vehicles with regard to occupant protection in the event of frontal impact	3	94	96/79/CEE
41	Approval of vehicles regarding occupant protection in the event of side impact	3	95	96/27/CEE
49	Approval of vehicles regarding the location and means of identification of hand controls, tell-tales and indicators	3	121	78/316/CEE
45	Approval of vehicles of categories M1 and N1 powered only by an internal combustion engine or driven by a hybrid electric power train regarding the measurement of carbon dioxide emissions and fuel consumption and/or the measurement of electrical energy consumption and range in electric mode, and of vehicles powered only by an electric power train with regard to the measurement of electrical energy consumption and range.	4	101	80/1268/CEE
52	Approval of vehicles regarding the driver's field of vision	4	125	77/649/CEE
2	Approval of retro-reflecting devices for motor vehicles and their trailers	5	3	76/757/CEE
6	Approval of headlamps for motor vehicles emitting an asymmetrical passing beam and/or driving beam and equipped with halogen filament lamps	5	8	76/761/CEE
7	Approval of vehicles regarding electromagnetic compatibility	5	10	72/245/CEE
8	Approval of vehicles regarding door locks and door securing devices	5	11	70/387/CEE

13	Approval of front fog lamps for motor vehicles	5	19	76/762/CEE
14	Approval of headlamps for vehicles emitting an asymmetrical passing beam and/or driving beam and equipped with halogen filament lamps (H4)	5	20	76/761/CEE
17	Approval of vehicles with regard to their external projections	5	26	47/483/CEE
18	Approval of audible warning devices and vehicles with regard to their audible signals	5	28	70/388/CEE 93/30/CEE
20	Approval of sealed halogen headlamps for motor vehicles emitting an asymmetrical passing beam or a driving beam or both	5	31	76/761/CEE
22	Approval of filament lamps for use in approved lamps for motor vehicles and their trailers	5	37	76/761/CEE
23	Approval of rear fog lamps for motor vehicles and their trailers	5	38	77/538/CEE
24	Approval of vehicles regarding the speedometer, including its installation	5	39	75/443/CEE
25	Approval of safety glazing and the installation of such glazing on vehicles	5	43	92/22/CEE
27	Approval of systems of indirect vision and motor vehicles regarding the fitting of such systems	5	46	2003/97/CEE
28	Approval of vehicles regarding the installation of lighting and light-signalling devices	5	48	76/756/CEE

29	Approval of vehicles with at least four wheels with regards to noise	5	51	70/157/CEE
31	Approval of replacement exhaust silencing systems	5	59	97/20/CEE
35	Approval of internal combustion engines or electric powertrains for the propulsion of motor vehicles of categories M and N with regard to the measurement of the net power and the maximum power over 30 minutes of the electric powertrains.	5	85	80/1269/CEE 80/1268/CEE
37	Approval of vehicles, regarding the limitation of their maximum speed or their function of adjustable speed limitation and the installation of a speed limitation device or an adjustable speed limitation device of the approved type and approval of such devices	5	89	92/24/CEE
39	Approval of side position lamps for motor vehicles and their trailers	5	91	
42	Approval of headlamps for motor vehicles equipped with gas-discharge light sources	5	98	
43	Approval of gas-discharge light sources for approved headlamps of motor vehicles	5	99	
44	Approval of battery-operated electric vehicles regarding the special requirements for construction, functional safety and hydrogen emissions	5	100	
46	Approval of headlamps for vehicles emitting an asymmetrical passing beam or a driving beam or both and equipped with filament lamps and/or LED modules	5	112	95/28/CEE 76/761/CEE
47		5	116	74/61/CEE

48	Approval of tyres regarding rolling noise and wet grip	5	117	92/23/CEE
50	Approval of vehicles of categories M, N and O regarding the heating system	5	122	2001/56/CEE
51	Approval of adaptive front lighting systems (AFS) for motor vehicles	5	123	76/761/CEE
53	Approval of partitioning systems to protect passengers from luggage movement and which are not part of the vehicle's original equipment	5	126	
54	Covering of motor vehicle wheels	5		78/549/CEE
55	Technical characteristics of vehicle towing devices	5		77/389/CEE
56	Approval of windscreen wiper and washer systems for motor vehicles	5		78/318/CEE