# AUTOMOTIVE SUPPLY CHAIN COMPETITIVENESS INITIATIVE

## EXECUTIVE SUMMARY

## DEVELOP LOCAL TESTING FACILITIES

**18 OCTOBER 2022**

**EXECUTIVE SUMMARY**

ASCCI (Automotive Supply Chain Competitiveness Initiative) has previously identified testing and the availability of appropriate test facilities as a significant barrier to deeper localisation in the automotive industry in South Africa.

A study into the South African Automotive Industry requirements for testing facilities has now been commissioned by ASCCI to:

- identify current and future testing requirements,
- shortfalls of existing capabilities and
- opportunities to develop and enhance local capacity in the short and medium term.

South African-based OEMs manufacture and distribute vehicles internationally and the long-term sustainability of the automotive industry is therefore inextricably linked to developments in the global automotive industry. The assessment of test facilities, their capabilities, and capacities to meet the South African automotive industry requirements and needs, is viewed against the backdrop of the Global Automotive Industry and Trends as well as an overview of the South African Automotive industry outlook.

The current study confirmed historical studies, indicating that there are 23 accredited testing facilities in South Africa. However, most of the facilities are not approved by the OEM's due to the fact that they do not comply with international standards and are not accredited to conduct tests such as is required for safety critical components, for example. Upgrading the local facilities is very costly, and both acclaimed test houses, SABS and Gerotek, are not willing to invest in upgrading, unless the frequency of use makes it a viable option.

According to the feedback from local OEM's, suppliers, and importers 88% of them make use of testing facilities inside the borders of South Africa and 48% of them make use of testing facilities outside the borders. Companies stated that they conduct tests outside of South Africa due to local testing facilities not meeting the international standards, not having the required equipment or for comparability assessment.

The most component tests used by suppliers are Mechanical, Chemical and Thermal tests. According to the OEM's, the vehicle tests that they require most are Mobility, Performance and Endurance and Reliability testing.

The automotive industry faces challenges where the future of technology trends is uncertain at this juncture. Different regions of the world will experience different demand characteristics – e.g., developed countries would see more EV and autonomous vehicles while developing countries will be dominated by ICE vehicle, for the foreseeable future.

This, as well as other new technology trends needs to be considered in defining future testing. From the market research done amongst South African OEM's, Suppliers and Test Facilities the following was identified as future test requirements:

- Autonomous vehicles
- Connectivity
- Electrification
- Shared mobility
- Artificial intelligence

- Sustainability and recycling
- Responsive (smart) materials
- Nanotechnology
- Additive manufacturing
- Light weighting

In addition to new technologies, future testing capabilities must be developed to support the SAAM2035 objectives and conform to international requitements.

With ASCCI's localisation drive initiative, testing requirements will most likely increase for the following items:

- Sun visors - Environmental tests, Thermal, Chemical
- Thin wall aluminium tube Alloy – Chemical composition testing, Mechanical tests
- Steel wheels – No new testing required
- Paint – Chemical, Environmental tests, Adherence
- Catalytic Convertors – No new testing required
- Interior mirror (this is for localizing plastic injection parts) – Chemical, Thermal
- Rear axle side shafts – Testing to design specification, Mechanical
- Printed circuit boards – Optical and x-ray testing. It is envisaged that the tests required will be on-line tests and will not increase testing in external laboratories.
- Disc Brake calipers – Tests will be required on the castings for permeability, Mechanical and Chemical analyses. As these are safety critical parts the OEM's would want to do the tests at an overseas accredited laboratory. The local testing will comprise of batch tests that can be done in-house.
- Reinforced Rubber hoses – Chemical, Thermal and pressure testing will be required.

One reason for the steady decline in the usage of local test facilities is that the laboratories or facilities do not satisfy the demands of OEMs and Tier 1 suppliers. As the motor industry is so internationally interlinked, manufacturers need to find ways to harmonise the legal requirements of all countries to build products that are developed, tested, and certified to meet all or most requirements without duplicating products to satisfy individual needs.

This points to the need for test facilities to:

- Be accredited
- Be able to test to internationally required standards
- Provide necessary proof of compliance (certificates)
- Have approval marks applied for safety relevant components or systems
- Ensure that test equipment is properly handled, maintained, and calibrated.

The proposed way forward includes engaging OEMs and Tier1 supplier to encourage utilisation of more local testing facilities and identifying the key motivators that will unlock this. The local test facility owners then need to align themselves with internationally accredited and OEM approved Technical Service Companies with the necessary technical and legal knowledge, as well as International Approval Authorities to acquire accreditation that complies with international standards and OEM requirements. Once there is alignment between the OEM and Tier1 needs and local testing capabilities, local testing facilities will have to be upgraded and maintained to meet these requirements.

The volumes for automotive testing inside the borders of South Africa can increase dramatically if the accreditation, infrastructure, and requirements are in place.