



The Mbombe 4x4

Protected Armoured Vehicles from Paramount Group



Paramount Group, the global technology and aerospace business, has announced that the Mbombe 4x4, the newest addition to its advanced Armoured Personnel Carrier (APC) family of vehicles, has received final certification for the independently verified blast tests which exceeded the criteria for NATO STANAG 4569 – one of the highest levels of protection that can be achieved by an armoured vehicle in its class.

This announcement follows the exceptional performance of the Mbombe 4x4, which features unique flat-floor mine protection technologies pioneered by Paramount Group, during a series of explosives tests designed and executed by Landward Sciences, a programme of the Council for Scientific and Industrial Research (CSIR), South Africa's leading and independent scientific research body.

The blast tests are performed in accordance with the highest international specifications, namely, STANAG 4569, a NATO standardisation agreement that institutes benchmarks for occupant protections in vehicles such as the Mbombe 4x4, in this case including three 10 kg TNT explosions under the wheels and the hull, and one 50kg side blast test, carried out at a 5 meter distance to imitate an Improvised Explosive Device (IED).

The Mbombe 4 was designed and developed specifically for local manufacturing in customer countries, in response to the increasing requirement from Governments for the development of their own defence industrial capabilities.

The vehicle has successfully completed a series of summer trials with several armed forces around the world. Featuring next-generation design, advanced technologies and highest

levels of protection, the result of decades of real-world battlefield and asymmetrical warfare experience, the Mbombe 4x4 is ready to serve customers.

Though the Mbombe 4 is equipped for full mission capability and maximum versatility, it



has a singular mission – soldier survivability. Protecting the lives of combat personnel is our utmost priority; our commitment to this cause is reflected throughout our entire portfolio. In doing so, we today serve proudly as world leaders in the research, development and manufacturing of protection technologies.

As part of the blast testing programme, the integrity of the Mbombe 4 was subjected to both intense experimentations and

post-test evaluations that took several months to complete, with final inspections of the Mbombe 4 yielding outstanding results. Each of these tests is intended to validate explosives resistance and occupant protection capacities for logistics and light-armoured vehicles by pushing unmodified units to their functional limits, using expertly controlled trials and post-test evaluations.

Key features of Mbombe 4 also include a unique, rear-door ramp design, which has been proven in combat on 6x6 and 8x8 IFVs. The ease of ac-

cess provided by the rear-door ensures the rapid deployment of the crew while the vehicle is static or on the move.

The Mbombe 4 performs with a burst speed of 140km/hr, an 800km operating range and an independent suspension system designed to optimally meet the increasing demand for outstanding protection yet adaptability in conventional and asymmetrical warfare alike. The mine resistant carrier is functionally ver-

satile over challenging terrains and fully operational across a myriad of contemporary and diverse counter-terrorism, border patrol, counter-insurgency, internal security and peacekeeping missions.

Both the launch of Paramount Group's Mbombe 4 and its first customer, the United Arab Emirates were announced at the 2019 International Defence Exhibition and Conference (IDEX) in Abu Dhabi.

Paramount Group is the African-based global technology and aerospace business. It is a leader in defence and security innovation and is a trusted partner to sovereign governments across the globe. Paramount specialises in the creation of portable manufacturing facilities through technology and skills transfer, resulting in new local capabilities and sustainable jobs, proven to not only benefit local defence industrial capabilities but economic diversification and growth.

Paramount Group has been responsible for the development and production of a broad range of highly advanced armoured and

mine protected vehicles that are in operation around the world. The family of APC and combat vehicles which has been developed from clean-sheet design is at the vanguard of armoured vehicle technologies. These vehicles have been designed and developed to meet the increasing demand for multi-role, high mobility, and mine hardened platforms, providing a solution to the ever-changing demands of the global battlefield.

EMO Hannover 2019

Global machine tool community paving the way for Industry 4.0

70 companies from ten countries have connected 110 machines and 28 value-added services at EMO Hannover 2019 via the umati standard interface. 'umati is opening up a new chapter in production,' says Dr. Heinz-Jürgen Prokop, Chairman of the VDW (Verein Deutscher Werkzeugmaschinenhersteller – German Machine Tool Builders' Association), at the umati press conference on 16 September 2019 in Hannover. 'The interface enables machine tool manufacturers to fulfill another Industry 4.0 promise: the simple, fast and secure exchange of data,' continues Prokop. Creating a connection and providing a uniform language for machines, systems and software are essential prerequisites for reaping the benefits of digitalisation in production. The fact that individual companies no longer have to concern themselves with the correct functioning of the network interconnection represents a tremendous step forward.

International acceptance

umati has also already made a strong impression internationally. Three international consortia from major machine tool manufacturing countries have joined the interface: ProdNet from Switzerland, Edgex from Japan and NCLink from China. In addition, the machine tool associations from China, the United Kingdom, Italy, the Netherlands, Austria, Switzerland, Spain and Taiwan as well as the European machine tool association Cecimo are supporting the project.

'Choosing the OPC UA standard as a basis for the development of the interface supports international dissemination. It ensures that umati can be used free of charge worldwide,' explains Prokop. 90 companies are contributing to the standardization work in the Joint Working Group together with the OPC Foundation. The release of Version 1.0 of the Companion Specification, the next milestone, is planned for the middle of next year.

Effectiveness of umati

The showcase at EMO Hannover 2019 demonstrates that the interface is already up and running. Each machine has an OPC UA server which sends the data to a data hub which has been set up especially for the trade fair. There, the software value-added services can access the data via OPC UA clients and show what added value can be generated from the resulting data. How the data is coming together can be experienced via a live dashboard at the umati central information booth (E24) in Hall 9.

Whether or not umati is successful will ultimately depend on how customers rate the added value of the interface. For their part, manufacturers must provide this added value in a dependable manner. 'For this we need reliable partners who can provide the necessary components such as control architecture and software components. We will achieve this through close cooperation with the control manufacturers and, in future, no doubt also with extensive parts of the supply chain,' says VDW Chairman Prokop.

But until then, the umati working group still has much to do. Version 1.0 will be the starting signal for launching actual products. 'In the future, the umati brand should represent a promise: anyone who buys a umati machine and has umati interface software should be able to get the data flowing with no difficulty,' says Prokop.

In order to achieve similarly extensive distribution to that of the USB connector in the consumer goods sector, the VDW is working – in addition to the Companion Specifications – on establishing a binding specification for the configuration of communication parameters, defining minimum requirements for implementation, and developing standardised test procedures to assess performance. Further aims include extending the brand's global reach, defining binding conditions for its use and setting up a viable organisational structure. 'Version 2.0 is already on the horizon because there are many aspects which have not yet been tackled, such as production order management on the ma-



chines, or tool management,' concludes the VDW Chairman.

Background umati

umati – universal machine tool interface is an industry initiative of the VDW. It was set up in 2017 by the companies Chiron, DMG Mori, Emag, Grob, Heller, Liebherr-Verzahn-technik, Trumpf and United Grinding. Its goal is to achieve an open standard for data exchange based on the global interoperability standard OPC UA. It also defines all necessary framework conditions to ensure seamless and secure integration of customers' machines and software. The ultimate goal of the umati brand is to provide international visibility and support its partners' marketing and quality assurance efforts. The standardisation activities of the Joint Work-

ing Group set up with the OPC Foundation are now followed by almost 100 companies all over the world.

The German machine tool industry ranks among the five largest specialist groupings in the mechanical engineering sector. It provides production technology for metalworking applications in all branches of industry, and makes a crucial contribution towards innovation and enhanced productivity in the industrial sector as a whole. Due to its absolutely key role for industrial production, its development is an important indicator for the economic dynamism of the industrial sector as such. In 2018, with around 73,500 employees (annual average in 2018, companies with more than 50 employees), the sector produced machines and services worth 17.1 billion euros.

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