

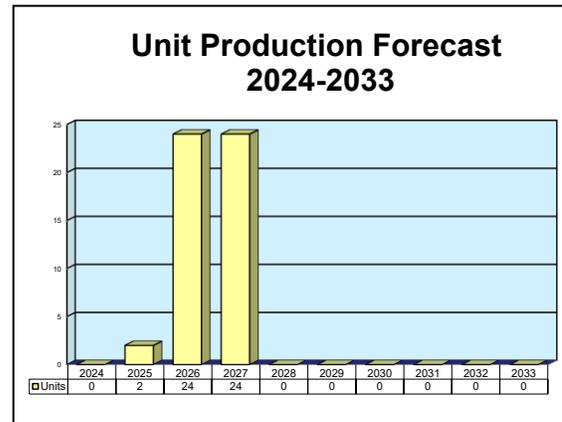
ARCHIVED REPORT

For data and forecasts on current programs please visit forecastinternational.com or call +1 203.426.0800

Dingo (All-Protected Carrier Vehicle)

Outlook

- Serial production of Dingo 2 ongoing; development continues
- Dingo 2 currently in service with Austria, Belgium, the Czech Republic, Germany, Luxembourg, and Norway
- Production forecast reflects confirmed Bundeswehr procurement; November 2023 framework agreement could lead to greater unit production



Orientation

Description. A wheeled armored personnel carrier.

Sponsors. The German Bundeswehr sponsors the development and procurement of the Dingo APCV.

Status. Development through serial production.

Total Produced. Through 2023, we estimate that KMW/KNDS produced 1,362 Dingo vehicles.

Application. A multipurpose wheeled armored vehicle optimized for transporting infantry during both offensive and defensive operations.

Price Range. In 2024 U.S. dollars, the Dingo 2 can be expected to cost \$1.7 million-\$2.9 million, based on recent contracts.

Contractors

Prime

KNDS Deutschland	http://www.kmweg.de , August-Bode-Strasse 1, Kassel, Germany, Tel: + 49 561 105 0, Fax: + 49 561 105 2208, Email: info@kmweg.de , Prime
-------------------------	--

Subcontractor

Airbus SE	http://www.airbus.com , Mendelweg 30, PO Box 32008, Leiden, Netherlands, Tel: + 31 71 52 456 00, Fax: + 31 71 52 328 07 (BUR Ground Surveillance Radar System)
Daimler AG	http://www.daimler.com , Mercedesstrasse 137, Stuttgart, Germany, Tel: + 49 711 17 0, Fax: + 49 711 1722 244, Email: dialog@daimler.com (Euro 3 Diesel Engine)

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; rich.pettibone@forecast1.com

Dingo (All-Protected Carrier Vehicle)

Technical Data

Crew

Dingo 1. Two: commander and driver, plus three infantrymen.

Dingo 2. Two: commander and driver, plus 10 infantrymen in the armored personnel carrier configuration.

Configuration. 4x4.

Armor. Steel alloy armor that provides protection against 7.62mm projectiles and ballistic fragments, as well as land mines.

Dimensions. The following data reflect the production-standard Dingo 2 (short) with a pintle-mounted 7.62mm machine gun. Data for the All-Protected Carrier Vehicle model 1 (Dingo 1) are in parentheses where different.

	SI Units	U.S. Units
Length	5.50 (4.29) m	17.75 (14.07) ft
Width	2.31 (1.92) m	7.58 (6.29) ft
Height	2.38 (2.14) m	7.81 (7.02) ft
Combat weight	10.71 (6.20) tonnes	11.8 (6.83) tons
Fuel capacity	160 liters	42.55 gal

Performance. The speed and range data reflect Dingo 2 use on a paved road. The data for the Dingo 1 are generally similar.

	SI Units	U.S. Units
Maximum speed	90 kmph	62 mph
Maximum range	1,000 km	621 stat mi
Step	59 cm	1.93 ft
Trench	80 cm	2.62 ft
Slope	30%	30%
Gradient	60%	60%
Fording	1.2 m	3.93 ft

Engine

Dingo 1. OM 366 diesel engine. This powerplant generates 90.22 kilowatts (121 hp) and has a power-to-weight ratio of 14.55 kilowatts per tonne (17.71 hp/ton).

Dingo 2. DaimlerChrysler (Mercedes-Benz) Euro 3 six-cylinder liquid-cooled diesel engine. This powerplant generates 176.73 kilowatts (237 hp) and has a power-to-weight ratio of 20.36 kilowatts per tonne (18.48 hp/ton).

Both engines are standard DaimlerChrysler commercial components facilitating maintenance support worldwide. The 12-volt electrical system features two 12-volt batteries.

Gearbox

Dingo 1. An unspecified DaimlerChrysler manually operated gearbox with eight forward and eight reverse gears.

Dingo 2. DaimlerChrysler Unimog Electronic Quick Reverse transmission with eight forward and six reverse gears.

Suspension and Running Gear. Twin three-point suspension with double-acting hydraulic shock dampers at each wheel station. The vehicle features a central tire pressure regulation system and 365/80R20 run-flat tires. The brake system is an air-assisted, dual-circuit, self-cleaning type.

Armament. The Krauss-Maffei Wegmann weapons mount on the vehicle roof can accommodate a wide range of armament options, such as a 7.62x51mm NATO (.308 Winchester) MG3 machine gun, a 12.7x99mm (.50-cal) M2HB machine gun, or a 40mm Mk 19 automatic grenade launcher. The gunner can fire the weapons from within the vehicle.

Variants/Upgrades

Variants. To date, the prime contractor has produced the three basic personnel carrier versions of the Dingo in several configurations. KNDS will likely develop

other Dingo variants for combat and combat-support roles.

Dingo (All-Protected Carrier Vehicle)

Designation	Description
Dingo APCV	Basic 4x4 all-protected carrier vehicle (Dingo 1) based on the Unimog U-100 chassis. See Technical Data , above.
Dingo 2 APCV (Short)	Large version of the Dingo based on the long wheelbase of the Unimog U-1550L chassis and equipped with air conditioning, an anti-skid braking system, a heating system, and other improvements. Features a 3.25-meter (10.76-ft) wheelbase. See Technical Data , above.
Dingo 2 APCV (Long)	Stretched version of the Dingo 2 capable of seating up to 10. Features a 3.7-meter (12.13-ft) wheelbase.
Dingo 2 Ambulance	Ambulance derivative of the Dingo 2 vehicle. The Dingo 2 ambulance features a full medical suite and is capable of transporting up to three stretcher-bound patients or up to four walking wounded patients in addition to a medical attendant. A subvariant also exists – the Dingo 2 emergency vehicle – designed for treating patients exposed to a nuclear, biological, or chemical (NBC) hazard. Ambulance variants of both the base Dingo 2 vehicle and the Dingo 2 HD model are available.
Dingo 2 Battle Damage Repair (GSI)	Armored mobile repair derivative of the Dingo 2, known as the Dingo 2 GSI. The GSI variant features a repair workshop suite integrated behind the vehicle's cabin in place of a passenger compartment. The suite features multiple work stations as well as storage space for tools and spare parts. In addition, a mounted generator system provides for the operation of tools, machinery, and lighting of the work area.
Dingo 2 Command Post	Mobile command post derivative of the Dingo 2 integrating expanded communications and information systems.
Dingo 2 EOD	Variant designed for EOD (explosive ordnance disposal) operations. Design features a camera-operated interrogation arm capable of lifting heavy loads and remotely investigating potential mine or IED threats.
Dingo 2 HD	Higher-payload variant of the Dingo 2, known as the Dingo 2 Heavy Duty (HD). Exterior dimensions are unaltered from the base model, but the carrying capacity of the vehicle is increased to 3 tons. Features an unspecified 222-kW, 6-cylinder, 7.2-liter diesel engine.
Dingo 2 Mine Roller	Variant designed for the controlled disposal of mine and IED threats. Variant features an unspecified mine roller mounted to the front of the vehicle.
Dingo 2 Pickup	A pickup variant of the Dingo 2 designed for logistics and support operations. Variant features a rear flatbed design with a carrying capacity of up to 3 tons.
Dingo 2 PsyOps	Psychological operations derivative of the Dingo 2. The PsyOps variant mounts two speaker systems on the roof of the vehicle for broadcasting information at varied distances. The raisable loudspeaker system is capable of directional broadcasting of information up to a distance of 1 kilometer, while the omnidirectional stationary speaker system is designed for transmitting information to those in the immediate vicinity of the vehicle.
Dingo 2 NBC Recon	Variant designed for providing reconnaissance information on NBC threats. Features a multisensor system for the rapid appraisal of environmental hazards, in addition to varied detection systems for remote appraisal of radiological and biological agent threats.

Dingo (All-Protected Carrier Vehicle)

Designation	Description
Dingo 2 Recon	Variant designed for reconnaissance operations. Vehicle mounts an opto-electronic mast and integrates a number of area surveillance systems.
Dingo 2 Recovery	A 6x6 variant of the Dingo 2 designed for the recovery of damaged or destroyed vehicles in the field. The variant features a hydraulic 10-tonne recovery winch and a rearview camera for recovery operations. The variant is capable of towing a load in the range of 14 tonnes.

Modernization and Retrofit Overview. Not applicable at this time.



Dingo 2 All-Protected Carrier Vehicle

Source: German Army (www.deutschesheer.de)

Program Review

Background. In 1993, the Federal Republic of Germany's Bundesamt für Wehrtechnik und Beschaffung (Federal Office for Military Technology and Procurement) funded the Krauss-Maffei Wegmann effort to develop a new light armored vehicle optimized for peacekeeping missions.

Proven Components

In order to produce a highly cost-effective, rugged, and reliable vehicle, KMW based its new vehicle on the immensely popular Universal Motor Gerät (Unimog) heavy-duty truck.

Krauss-Maffei Wegmann manufactured the initial demonstrator vehicle in 1995. In 1996, KMW delivered the definitive all-protected carrier vehicle (based on the

4x4 Unimog U-100 chassis) for Bundeswehr evaluation. In 1997, KMW produced the APCV model 2 (based on the larger Unimog U-1550L chassis) in response to the Bundeswehr's desire for a larger, more powerful vehicle with a greater capacity.

Bundeswehr Procurement

Following evaluation of this newer version of the APCV, the Bundeswehr placed an order for the model 2 in late 1999. Initial Dingo 2 deliveries occurred in August 2000; KMW completed the initial order by the end of that year. The Bundeswehr placed a second order for the Dingo 2 in July 2001 and a third in March 2002.

On June 28, 2006, the Budget Committee of the German Bundestag approved the Bundeswehr procurement of an

Dingo (All-Protected Carrier Vehicle)

additional 149 Dingo 2 vehicles. In July 2008, the Bundeswehr placed an order for an additional 50 Dingo 2 and four Dingo 2 GSI (battle damage repair) vehicles, with an option for 44 more Dingo 2 vehicles.

In July 2012, the BWB announced the procurement of 79 additional Dingo 2 vehicles for the Bundeswehr.

Following the donation of 50 Dingo APCs to the Ukrainian Army, Germany announced a framework agreement with KNDS for the purchase of as many as 233 units for the Bundeswehr. A contract was signed in late November 2023 for the supply of an initial batch of 50 2A4.1s, for delivery (two units) starting in 2025.

The Bundeswehr remains the primary customer for the Dingo 2.

Description. The APCV is a simple yet effective vehicle, making maximum use of off-the-shelf DaimlerChrysler Unimog truck components.

Reflects Bundeswehr Needs

The modular nature of the design makes the Dingo particularly adaptable to a number of roles. Reflecting Bundeswehr tactical requirements, the Dingo is not amphibious. However, the vehicle exhibits a high degree of protection against the effects of land mines, in response to the demands of German peacekeeping missions.

Conventional Layout

The basic vehicle features a conventional layout. The engine compartment occupies the front of the chassis; the engine mounts on shock-absorbing suspension points. Behind the engine compartment, the driver sits at the left-front; the commander sits to the right. Both positions feature side doors and bulletproof windows.

The heavily armored troop compartment occupies the middle of the vehicle; the cargo area is to the rear. In the current-production Dingo 2, the center of the vehicle roof features a pintle-mounted machine gun that is accessible from within the vehicle. Each side of the troop compartment features a door with bulletproof glass; the passengers and crew sit on shock-absorbing seats.

Optional equipment for the Dingo includes:

- Air conditioning
- Additional heating equipment
- Various NBC protective suite options
- Various radios
- Night vision devices
- A winch
- A vehicle intercommunications set

KNDS continues to develop various options for the basic Dingo 2 vehicle.

Funding

The German Federal Ministry of Defense, Rüstungsabteilung (Armament Department), through the Bundesamt für Wehrtechnik und Beschaffung (Federal Office for Military Technology and Procurement), funds the development and Bundeswehr procurement of the Dingo. The prime contractor, Krauss-Maffei Wegmann (now KNDS), has also contributed some developmental funding.

Worldwide Distribution/Inventories

Export Potential. In January 2005, Belgium placed what is clearly the most significant Dingo 2 export order to date. A total of 220 vehicles have already been delivered and an option is open for an additional 132 vehicles. The 2008 orders by the Czech Republic and Luxembourg and the 2010 order by Norway – like the earlier Austrian purchase – are significant not because of the profits they generated for KMW, but because they represented an expansion of the Dingo customer base.

Countries. Austria (35); Belgium (220); the Czech Republic (21); the Federal Republic of Germany (1,032); Luxembourg (48); Norway (20).

Dingo (All-Protected Carrier Vehicle)

Forecast Rationale

In January 2005, Belgium placed what remains the most significant Dingo 2 export order to date. With 220 vehicles delivered under the initial order, and an option open for an additional 132 vehicles, Belgian procurement continues to be a major factor in the Dingo program.

More recently, Berlin donated 50 Dingo 2s to Ukraine, turning back to its industry to replace the vehicles one for one with new-build 2A4.1s in a contract signed on November 29, 2023. The total value of the contract was reported to be EUR147 million, with a breakdown of EUR133 million for the vehicles and EUR14 million for electronics equipment to be installed.

Germany also signed a framework deal in November 2023 that could see the purchase order grow to 233 in the future. (Our forecast presently only reflects the signed order for 50 2A4.1s.)

Germany's Export Dilemma

In December 2012, open-source reporting indicated that Saudi Arabia was considering an initial procurement of

30 Dingo 2 vehicles, in a deal worth \$132 million. The Kingdom of Saudi Arabia could ultimately purchase up to 100 Dingo 2s for its security forces.

Despite the potentially lucrative Saudi order, the German Bundestag maintains an aversion to approving export sales of war materiel to regimes it deems repressive. Consequently, the prospect of this Saudi export contract is problematic for the German government.

Attractive Option

The Dingo APCV, optimized for the evolving threat scenarios of the 21st century, is beginning to live up to its promise on the international light wheeled vehicle market. The main attractions of the vehicle are its especially rugged and proven base chassis, its modular armor protection, and its attractive unit price. The Dingo is poised to become a legitimate player on the international market.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION													
Designation or Program	Thru 2023	High Confidence					Good Confidence			Speculative			Total
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033		
Krauss-Maffei Wegmann GmbH & Co KG (KMW)													
Dingo 2													
	1,362	0	2	24	24	0	0	0	0	0	0	50	
Total	1,362	0	2	24	24	0	0	0	0	0	0	50	