FORCE**ENABLER**

THE HX – MORE THAN A TRUCK

TAKING RESPONSIBILITY IN A CHANGING WORLD

RHEINMETALL MAN


UN
RHEINMETALL

THE HX
MORE THAN A TRUCK

Mobility has always been at the core of manoeuvres. Transport has always been critical to support and sustain forces in the field. As modern conflict scenarios are growing more complex and lethal, Rheinmetall MAN's tactical truck systems have evolved to become part of the operational edge.

A true military-off-the-shelf solution, the HX family of vehicles combines professional logistics with force mobility support and tactical special role applications rendering it a reliable enabler for joint operations in a new defence environment.

KEEP IT SIMPLE
BENEFITS BY BIRTH

Pure military design: Purpose-built for military end users, all HX series trucks comply with demanding military standards. Ruggedly designed and tested for a lifecycle of 20+ years, the HX is a keeper.

Commonality: The HX series of trucks offers the highest levels of commonality from 4x4 to 10x10 guaranteeing low lifecycle costs and exchange of spare parts, tools and reduction of required training.

Interoperability: Operate jointly with large HX fleets already in service with various NATO members and partners. Become part of the User Nations Group (RMMVUNG) to exchange information and experiences with us and other users.

Worldwide service network: Thanks to MAN's global network and Rheinmetall's local solutions you can expect worldwide in-service support for your HX trucks. Also available in operational environments.

Rheinmetall MAN systems provider: Two renowned brands combine their extensive automotive and defence expertise to deliver one of the world's finest trucks series. In-house C4I integration and active/passive protection solutions are available as is superstructure integration, customisation and system engineering capabilities in RMMV's own facilities.


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CONTINENTAL
HCS
CONTINENTAL


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LEADING THE WAY
HX IN THE FIELD

Far more than 10,000 HX trucks have been sold over the past years. Whether it is support close to the front lines, disaster relief, humanitarian aid, or being part of the operational edge: The HX is designed to excel in various scenarios all over the world.

Equipped with various superstructures, the HX is the advanced platform to take on a variety of roles. From professional logistics to force mobility support and special tactical applications.


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PACK AND DELIVER
PROFESSIONAL LOGISTICS

Transporting heavy or delicate loads is a core competence of the HX. Whether it is equipment, personnel or conventional supplies: The HX delivers under the most demanding conditions to support your goals.

Covering great distances over secondary roads and cross-country terrain is second nature. Advanced load handling systems pack and deliver what you need, where and when you need it.

The HX is capable of mastering the most challenging terrain even fully-laden without compromising on speed or traction.

BRIDGING THE GAP
FORCE MOBILITY SUPPORT

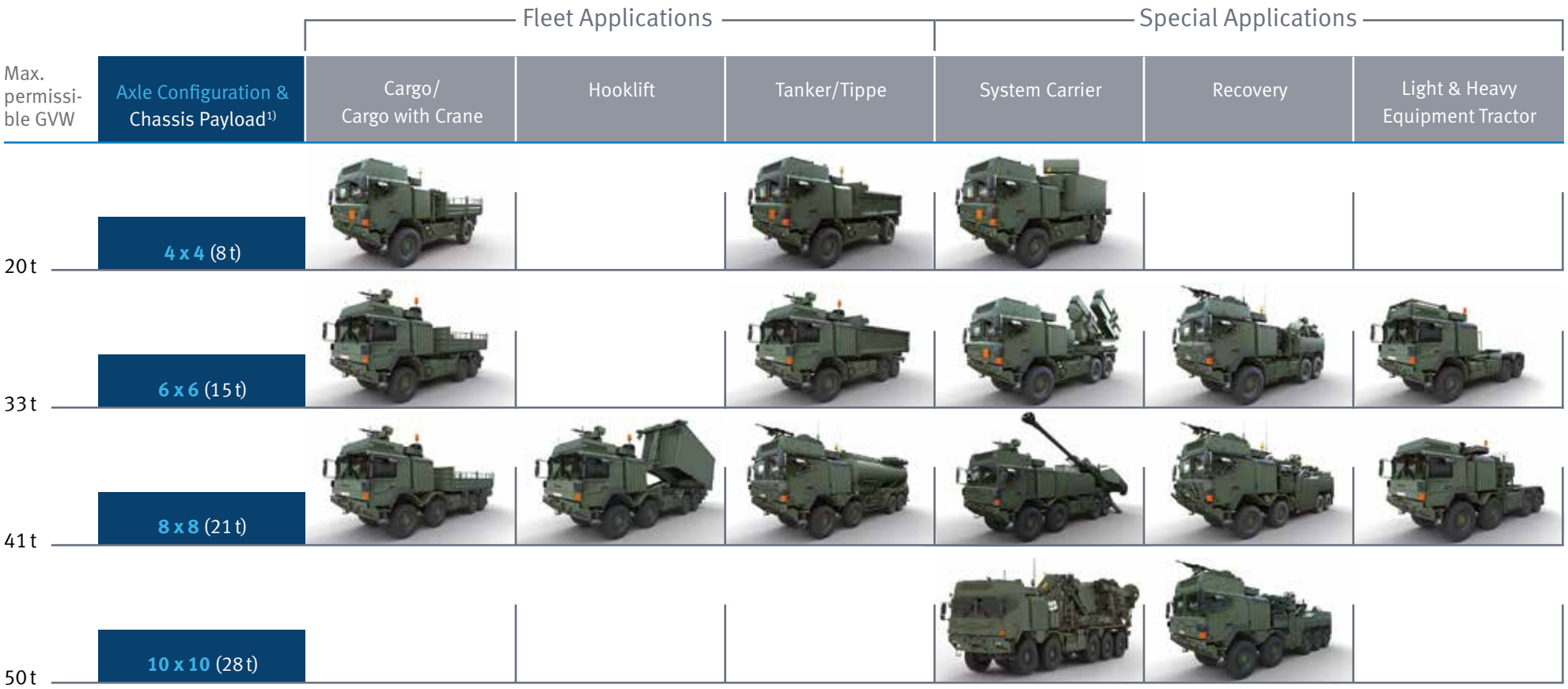
A new defence environment calls on land forces to become even more agile and self-reliant in theatre. The HX keeps your forces moving. Whether it is transporting or recovering vehicles or making seemingly impassable terrain accessible.

THE OPERATIONAL EDGE
TACTICAL SPECIAL APPLICATIONS

Well-protected and agile the HX is capable of becoming a close supporter of the operational edge. Whether it is detecting, identifying, or tracking opposing forces, being deployed as a node on the battlefield or as a combat platform – the HX will stand its ground.

DEFINE YOUR HX
FAMILY OF VEHICLES

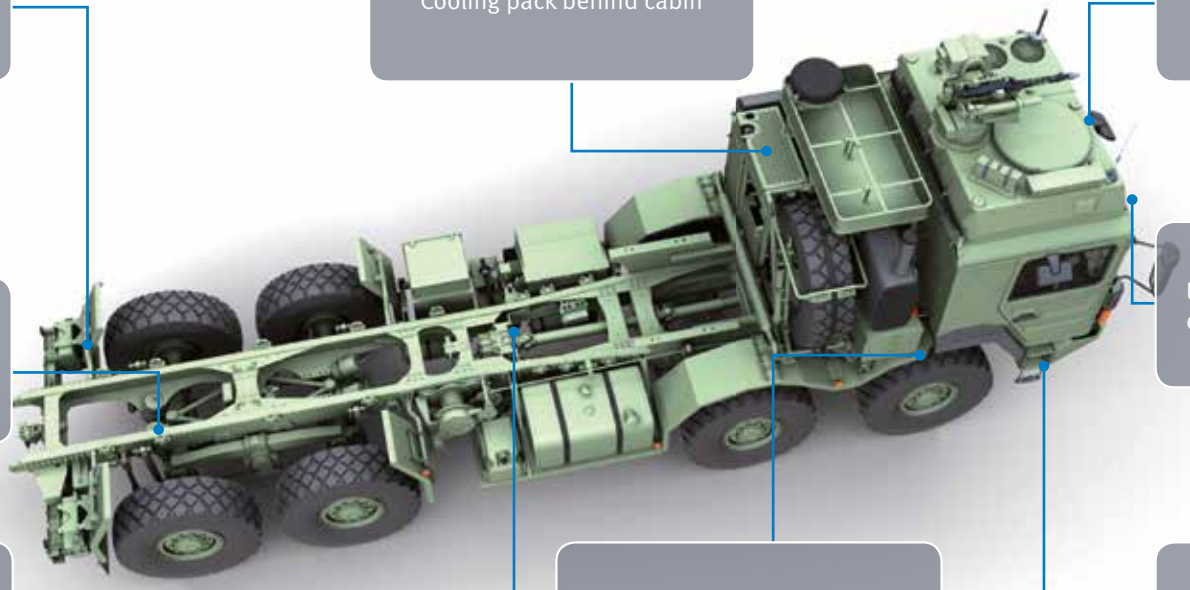
Utilising RMMV's military-off-the-shelf portfolio and adapting it to your specific requirements based on decades of experience allows for offering the most appropriate system for each and every task.



Overview of selected variants from current production program, other variants and several wheel bases available – 1) With protected cabin

ONE OF A KIND
PURE MILITARY TRUCK DESIGN

Intense RMMV qualification guarantees optimal configuration of the entire truck system. Extensive testing, validation and verification leads to meeting highest terrain and durability requirements. Professional partnerships with renowned superstructure manufacturers and qualified suppliers ensure continuous enhancement and modernisation.



Superior off-road performance in all climate zones

Cooling pack behind cabin

Exchangeable protected and unprotected military cabins

Reinforced military frame

Unsurpassed electromagnetic capability

Militarised OEM drivetrain components

Highest front axle load in its class

Reinforced front end

ADVANCED MOBILITY
ALWAYS ON TRACK

Unsurpassed obstacle negotiation capability: HX military frame with 400 mm torsional twist is designed for military operations with highest load ratings and peak stress. Improved traction and smoother ride through optimised suspension and frame tuning.

Highest front axle load in class: 11-tonne rated axle (on- and off-road) and reinforced front-end are especially designed to mount armoured cabins complete with additional equipment such as a remote controlled weapon station.

Additional payload for future systems and upgrades: The HX offers a generous growth potential for additional active/passive protection systems, weapon stations, mission equipment and C4I.

Manoeuverability: Dual-circuit steering system with high steering force and reduced turning circle in combination with tyre sizes up to 16.00 R 20 enable the HX to manoeuvre in the most difficult conditions, be it narrow urban streets, soft or slippery ground, or rocky slopes.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ADVANCED MOBILITY
POWER CORE

In-house expertise and components: The HX benefits from adapting state-of-the-art commercial technology for military trucks including MAN engines, transfer cases and axles.

Militarised engines: The HX is powered by quality MAN engines up to 680hp (500 kW) that are meeting latest emission standards including Euro 6d.

F34 capability: The HX also accepts low quality local fuel with high amounts of sulphur. All engines are qualified for prolonged F-34 usage according to the NATO single-fuel policy.

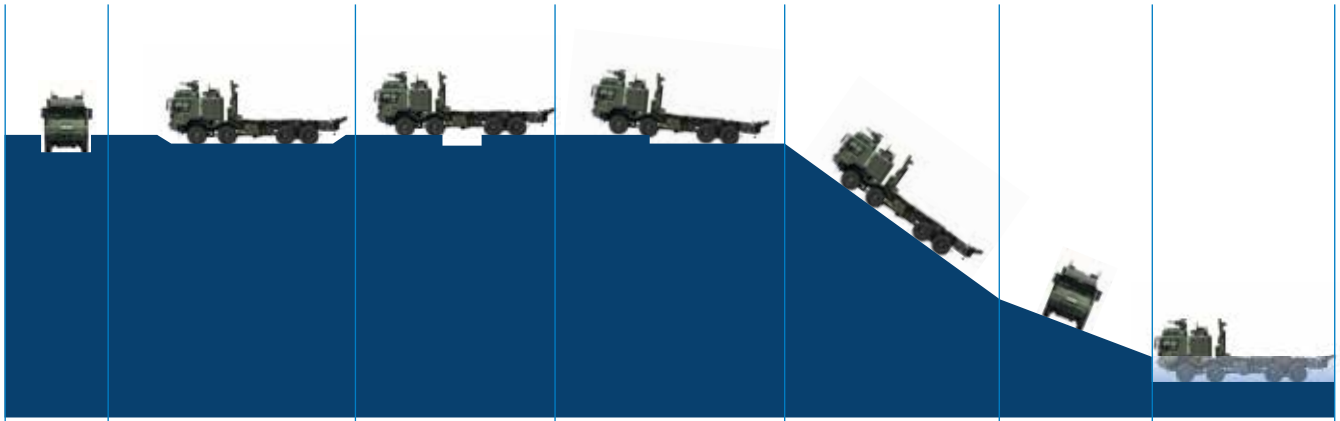
Militarised transmissions with optimised off-road software: Fully automatic or automated manual transmissions make operating the HX as easy as driving a car even in most challenging conditions.

ADVANCED MOBILITY
MORE THAN OFF-ROAD

Strategic mobility: Transporting the HX is not a show stopper. The truck is designed and qualified for both rail and air transport by A400M, C17, C5, AN124, AN225 or comparable cargo planes.

Waterborn operations: The HX is qualified for landing operations and river crossing by the UK's Royal Marines. Fordability up to 1.5 m according to STANAG 2805 renders water a no-threat environment for the HX. Long-term operations in salt water including engine stops and corrosion protection make the truck an obvious choice for flood relief operations.

Climatic resilience: With a standard operating temperature ranging from + 49°C up to -32°C HX trucks operate reliably in the coldest and hottest areas of the planet. The cooling pack is located behind the cabin allowing for a much larger design and thus cooling capacity for peak performance and endurance. It is also protected against damage and debris clogging the system.



COMFORT ZONE
MILITARY CABIN DESIGN

Maximum space and ergonomics: The regular HX cabin is designed as a reinforced military cabin ruggedised for a long life cycle. The cubic design maximises interior space for crew, personal equipment and C4I.

A minimised engine tunnel allows for three full-sized seats, unrestricted passage between either side and ample of leg room. The modular walk-on roof with a large circular roof hatch can support a self-defence weapon if required.

Unsurpassed electromagnetic compatibility: Enhanced capability levels according to military standards up to MIL-STD 461 F or DEF-STD 59-411 DRE04 lead to low electronic noise emissions and high system safety and reliability.

C4I integration: The HX cabin design allows for customised solutions within the existing cabin structure. Extensive in-house system integration know-how ensures qualification to military standards.

A SAFE RIDE
FLEXIBLE PROTECTION

Crew protection: When the mission demands protected operation, Rheinmetall's Integrated Armoured Cabins (IAC) play to their strenghts. The IAC is certified according to STANAG 4569 with a variety of solutions available to provide maximum protection against ballistic, mine and IED threats.

Train as you fight: The IAC features the same interior layout with three full-sized seats as the unprotected cabins. Switching between cabin types requires the absolute minimum of adjustment on the operators behalf.

Cabin swap: As the mission changes, so does the HX. Unprotected cabins can be exchanged with protected ones within a short period of time.

Add-on safety: A number of additional protection systems can be integrated to up the HX's defences even further such as Rheinmetall's Active Defence System (ADS), Rheinmetall's Rapid Obscuring System (ROSY), a collapsible wire cutter and various remote-controlled weapon stations or ring mounts.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BUILT TO LAST
DESIGN AND TESTING

Extensive endurance and off-road tests: HX trucks battle across uneven roads, rocky tracks and rough terrain. They wade through water and mud. They endure cold chambers and vibration tests. They weather scorching heat and icy cold on test drives that take them around the world. Our vehicles are subjected to extreme tests so we can deliver on our 100 % quality and reliability promise.

Long service life: The HX is designed for a minimum life-cycle of 20 years and complies with EU homologation standards. When things get rough, the trucks can rely on a substantial overload reserve for critical situations.

Upgradeability: Specifically developed as a military truck for out-of-area deployments, growth potential and modular upgradeability remain an important design feature to take the HX into the future.

Easy maintenance: The HX is designed with maintainability in mind. A tiltable cabin, easy access to engine, transmission, radiator, air-cleaner, hydraulic tank and other vital parts makes servicing the HX a breeze.

IT’S NOT A TRUCK
IT’S A SYSTEM

Production: Vienna, Austria, is home to RMMV’s Centre of Excellence for Military Trucks. It is here where a clocked production and flexible processes give birth to the HX. Facility capabilities range from building chassis, integrating C4I and protection systems and bodies down to processing of military paints, wax and camouflage patterns.

More than cabin and chassis: Leveraging on Rheinmetall’s vast expertise and product portfolio in active and passive protection, simulation, sensors and systems, RMMV delivers a complete truck system to the market. From protected cabins to superstructures, mission kits and additional systems: You have one point of contact. We take care of the rest.

Localisation: Shifting certain activities to your country depending on local competences and customer needs is feasable in RMMV’s global production network. High quality is sustained by an integrated manufacturing, quality control and delivery process.


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TAILOR-MADE
SERVICE SOLUTIONS

Fleet management services: Tailor-made services improve cost-effectiveness and efficiency allowing you to concentrate on core tasks. From managing servicing and overhaul programs, conducting logistics analysis to improve spares stock management and fleet availability as well as managing technical upgrades, we are ready to support customers to optimise the support of their fleets.

Through life support: RMMV has partnered with all major HX customers to engage in comprehensive through life support contracts to support the vehicle capabilities from acquisition to disposal. This includes ensuring that logistic solutions such as supply of spare parts, maintenance and engineering upgrades are available through the full product life cycle.

Overhaul and refresh: We have over 50 years experience in supporting overhaul of vehicles in Flensburg, Germany and we will actively engage with customers to define, manage and execute overhaul programs working with our partners across the globe.

Post design services: Keep pace with technical innovation through modifications and upgrades to your fleet.

Full in-theatre support: RMMV has successfully supported our customers in operational environments across the globe, from providing maintenance personnel within defence establishments through to providing RMMV workshops that can conduct all levels of maintenance including battle damage repair and urgent operational fleet upgrades.

MASTERING CHANGE
SUCCESS OF THE HX

The current HX series belongs to the most tried and tested vehicle types worldwide. It is based on more than 50 years of experience in developing, producing and servicing military trucks. The roots of the HX go back into the 1960s when the KAT1 truck was deemed the benchmark for all military trucks worldwide. The German Bundeswehr envisioned a pure military truck capable of following tracked armour across the battlefield. Today, more than 3,000 KAT1 trucks are still in service testifying to the design's quality and ruggedness. Generations of soldiers have come to value the benefits of the KAT1 family of vehicles.

Over the years, the KAT1 kept pace with the ever changing requirements, mission scenarios and weapon systems. Each vehicle generation was up for the task at hand. Five decades of technological refinement later, the HX combines KAT1 know-how with modern commercial truck technology. Based on extensive user experience in theatre and operations the HX never stops meeting the various requirements of a modern, professional military truck fleet.

Milestones

1962	1980	1988
		
Start of KAT I development	Start of KAT II & KAT I A1 development	Start of KAT I A1.1/ SX development

Major contracts

1975	1985	1988
		
German army KAT I (8,000 units)	US army KAT II (500 units)	German army KAT I A1 (1,100 units)

2002

Relocation of Military truck production to Vienna

2003

Start of HX development

2010

RHEINMETALL MAN MILITARY VEHICLES

Foundation of Joint Venture Rheinmetall MAN Military Vehicles

2010

Start of HX2 development

2018

Start of Future Tactical Truck Family (FTTF) development

1990

German army KAT I A1.1/SX (1,000 units)

2005

UK Support Vehicle Fleet (7,500 units)

2013

Australia L121 Phase 3b (2,700 units)

2014

Norway/Sweden framework contract (up to 2,000 units)

2017

German army UTF (2,300 units)

STEP BY STEP
TECHNOLOGICAL EVOLUTION

	KAT I	KAT I A1	KAT I A1.1/SX	HX	HX2
Description	Purpose-designed for highest mobility levels to be capable of maintaining pace with combat vehicles across any terrain.	Further development of KAT I with upgraded drivetrain and increased payload.	Further development of KAT I A1 with militarised commercial drivetrain and increased payload.	Military truck design based on MAN TG commercial driveline and chassis with military-specific cabin.	Further development of HX range with focus on protection, mobility and EMC.
					
Features/Upgrades	• Box section ladder frame chassis • Coil spring suspension • Air-cooled engine • Engine and cooling pack behind cabin • Military cabin	• Air- and water-cooled engines with higher power output • Removable cabin roof for rail and air transport • Hand-tiltable cabin • 16.00 R 20 tyres	• Larger military cabin with increased stowage • Militarised commercial MAN engines • Integrated Armoured Cabin (IAC)	• C-section ladder frame chassis • Leaf spring suspension • Cab-over-engine (COE) • Euro 4 and 5 emissions compliance and militarised electronic architecture (CAN) • Modular Armoured Cabin (MAC)	• Euro 5 and 6 emissions compliance • Reinforced front-end and 11-tonne front axle • Top level EMC • Integrated Armoured Cabin (IAC) • 10x10 configuration

FAST FORWARD
HX KEY CHARACTERISTICS

1. Operational temperature range:	+49°C to -32°C (A1 to C1)[1)]
2. Gradient:	60 % temporary, 35 % permanent
3. Side slope:	40 % temporary, 30 % permanent
4. Range:	up to 800 km
5. V max.:	90 km/h, optional: 100 km/h[2)]
6. Fording depth:	up to 1.5 m
7. EMC:	up to MIL-STD 461 F or DEF-STD 59-411 DRE04[3)]
8. Emissions compliance:	up to Euro 6d
9. Engine:	from 330 hp/1250 Nm (250 kW) to 680 hp/2700 Nm (500 kW)
10. Transmission:	automated transmission, optional: automatic transmission
11. Transfer case:	2-speed plus neutral
12. Front axle:	11-tonne drive/steer
13. Fuel:	Diesel EN590 or F34 with up to 3,000 ppm sulphur
14. Suspension:	Leaf springs, rear hydropneumatic suspension on HX 10x10
15. Tyres:	14.00 R20 standard, optional 395/85 R20, 16.00 R20 (incl. chains)
16. Tyre Inflation System:	Central Tyre Inflation System (CTIS), Semi-Automatic Tyre Inflation System (STIS)
17. Vehicle power:	24 V (4 × 12 V 100 Ah batteries)
18. Generator output:	min. 120 A
19. Strategic mobility:	Air, Sea and Land
20. Protection:	Integrated Armoured Cabin (IAC) & Rheinmetall Active/Passive Protection
21. Winch:	Front and rear rope guiding

1) Extended operating temperatures on request – 2) Depending on tyres and drivetrain – 3) Base vehicle


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Crane with 8.7 tm crane capacity, special low-height version for air/rail transport
Self-recovery winch with 100 kN pulling force
Available modules: Stores, Maintenance, Combat Engineering

EXEMPLARY HX 4X4
CRANE AND CARGO, PROTECTED

Data (of displayed configuration)	
Dimensions:	
Length:	8.2 m
Width:	2.5 m
Height:	3.6 m
Wheelbase:	4,500 mm
Unladen weight:	15,600 kg[1)]
GVW:	20,000 kg[2)]
Drivetrain:	
Engine:	MAN D08 340 hp (6.9l, 1250 Nm, 6-cylinder)
Emissions compliance:	Euro 5, EGR
Transmission:	12-speed automated
Mobility:	
Tyres:	395/85 R20
Approach angle:	36°
Departure angle:	29°
Ramp angle:	27°
Fording:	1.5 m
Other:	
Transportability:	C17, A400M
EMC level:	MIL-STD 461 F
Seating:	2
Protection:	IAC

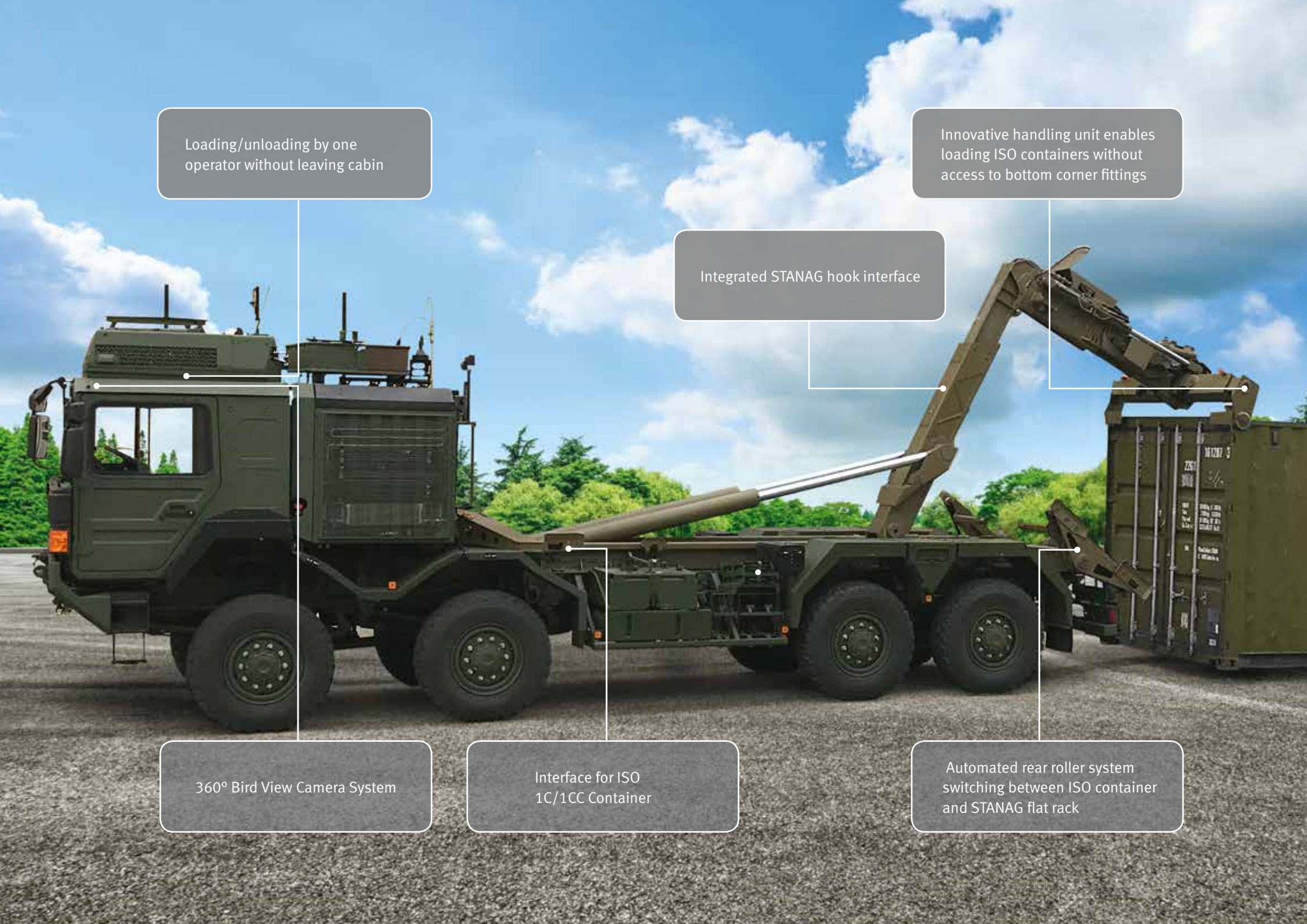
1) Incl. C4I & mission equipment – 2) Technically permissible GVW

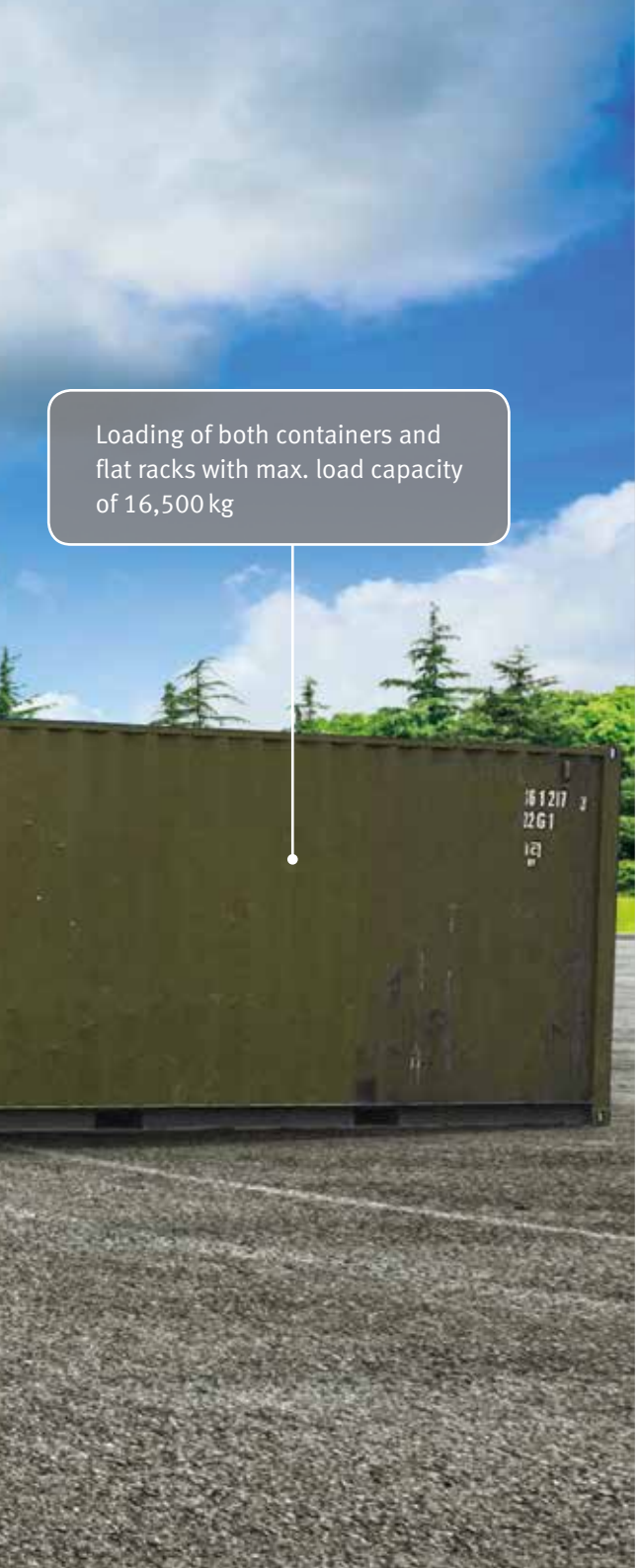

Remote controlled weapon station
System height under 4 m with ISO 1D container and 395/80 R20 tyres
Torsion free subframe
Prepared for protected cabins (cabin swap concept)
Runflat tyres (large stowage box instead of spare wheel)
Mounting of either 15 ft container or 15 ft swap body

EXEMPLARY HX 6X6
CARGO, UNPROTECTED

Data (of displayed configuration)	
Dimensions:	
Length:	8.8 m[1)]
Width:	2.5 m
Height:	3.9 m[2)]
Wheelbase:	4,050 + 1,400 mm
Unladen weight:	17,500 kg[3)]
GVW:	33,000 kg[4)]
Drivetrain:	
Engine:	MAN D20 440 hp (10.5l, 2100 Nm, 6-cylinder)
Emissions compliance:	Euro 5, SCR
Transmission:	Fully automatic 7-speed gearbox with torque converter and primary retarder
Mobility:	
Tyres:	395/85 R20
Approach angle:	36°
Departure angle:	30°
Ramp angle:	32°
Fording:	1.5 m
Other:	
Transportability:	C17, A400M
EMC level:	VG 95370, Class 2
Seating:	3
Protection:	Prepared for IAC

1) With swap body – 2) Height incl. FLW 100 weapon station – 3) Incl. swap body, C4I, mission equipment, RCWS – 4) Technically permissible GVW


Loading/unloading by one operator without leaving cabin
Innovative handling unit enables loading ISO containers without access to bottom corner fittings
Integrated STANAG hook interface
360° Bird View Camera System
Interface for ISO 1C/1CC Container
Automated rear roller system switching between ISO container and STANAG flat rack



EXEMPLARY HX 8X8
AUTOMATED LOAD HANDLING SYSTEM, UNPROTECTED

Data (of displayed configuration)	
Dimensions:	
Length:	9.8 m[1)]
Width:	2.5 m
Height:	3.9 m[2)]
Wheelbase:	1,800 + 3,450 + 1,400 mm
Unladen weight:	20,300 kg[3)]
GVW:	36,000 kg[4)]
Drivetrain:	
Engine:	MAN D20 440 hp (10.5l, 2100 Nm, 6-cylinder)
Emissions compliance:	Euro 5, SCR
Transmission:	Fully automatic 7-speed gearbox with torque converter and primary retarder
Mobility:	
Tyres:	365/85 R20
Approach angle:	36°
Departure angle:	23°
Ramp angle:	31°
Fording:	1.5 m
Other:	
Transportability:	C17, A400M
EMC level:	VG 95370, Class 2
Seating:	3
Protection:	Prepared for IAC

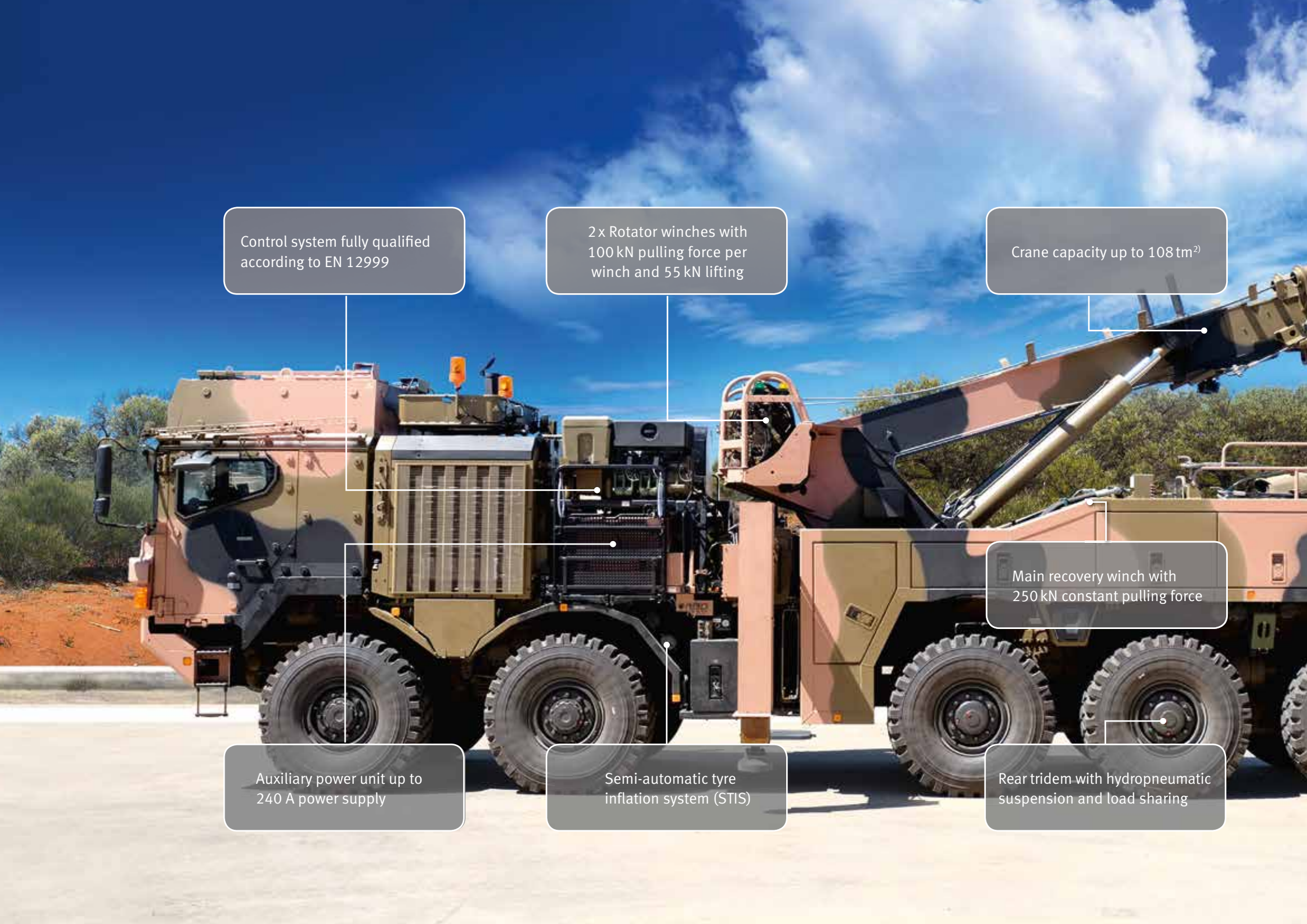
1) Without Cargo – 2) With ISO 1C Container – 3) Including CES & C4I equipment – 4) Technically permissible GVW, with 365/85R20 tyres

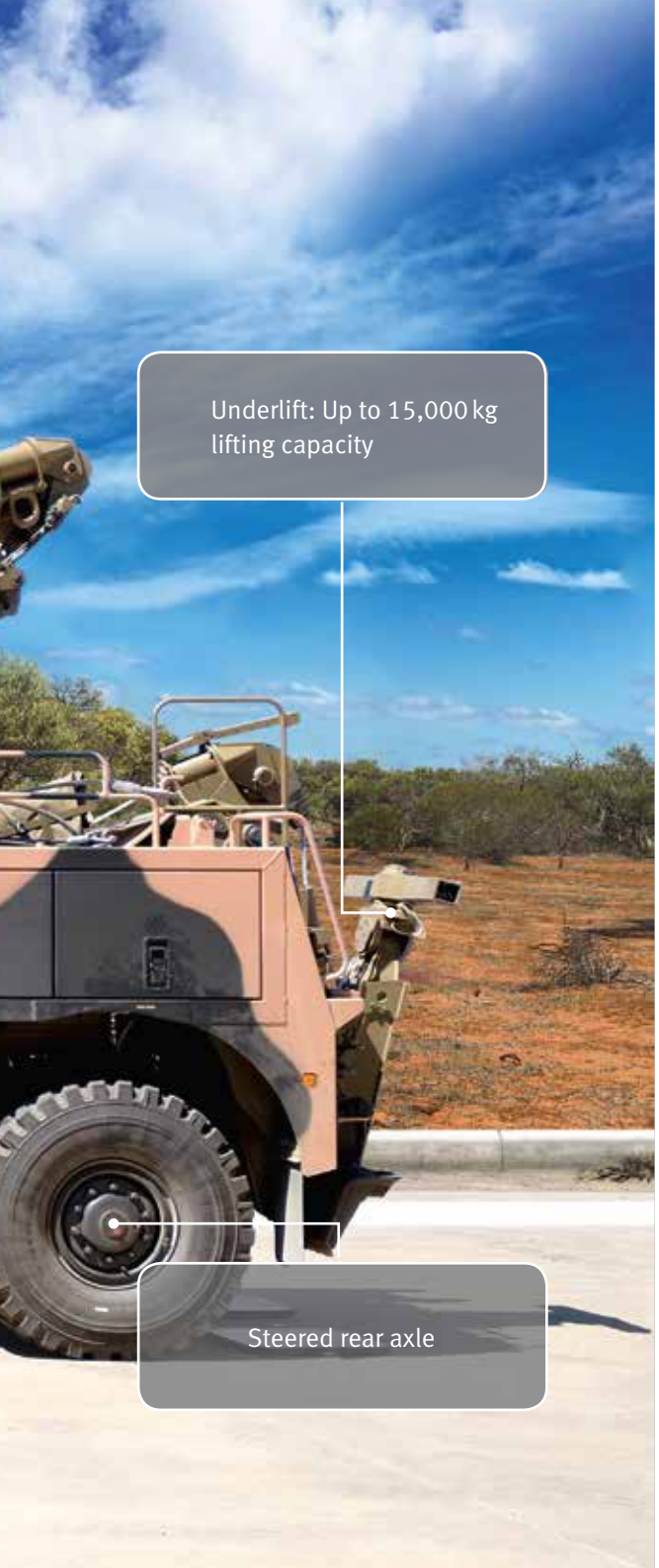

Twin winch package;
250 kN pulling force per winch
Crew cabin with 5 seats
Gross train weight
of 130 tonnes
High cooling capacity

Heavy haulage drivetrain:
680 hp MAN V8 engine + automated transmission with torque converter

EXEMPLARY HX 8X8
HEAVY EQUIPMENT TRANSPORTER, UNPROTECTED

Data (of displayed configuration)	
Dimensions:	
Length:	9.4 m
Width:	2.5 m
Height:	3.4 m
Wheelbase:	1,800 + 3,200 + 1,500 mm
Unladen weight:	21,200 kg
GTW:	130,000 kg
Drivetrain:	
Engine:	MAN D28 680 hp (16.2l, 2700 Nm, V8)
Emissions compliance:	Euro 5, SCR
Transmission:	Automated 12-speed gearbox with torque converter and primary retarder
Mobility:	
Tyres:	16.00 R20 (front) + 24.00 R21 (rear)
Approach angle:	36°
Departure angle:	47°
Ramp angle:	36°
Fording:	0.75 m
Other:	
Transportability:	C17, A400M
EMC level:	UN ECE R10
Seating:	5
Protection:	–


Control system fully qualified according to EN 12999
2 x Rotator winches with 100 kN pulling force per winch and 55 kN lifting
Crane capacity up to 108 tm[2)]
Main recovery winch with 250 kN constant pulling force
Auxiliary power unit up to 240 A power supply
Semi-automatic tyre inflation system (STIS)
Rear tridem with hydropneumatic suspension and load sharing



EXEMPLARY HX 10X10
HEAVY RECOVERY, PROTECTED

Data (of displayed configuration)	
Dimensions:	
Length:	11.6 m
Width:	2.5 m
Height:	3.7 m
Wheelbase:	1,800 + 3,200 + 1,550 + 1,600 mm
Unladen weight:	43,800 kg[1)]
GTW:	82,000 kg
Drivetrain:	
Engine:	MAN D26 540 hp (12,4l, 2500 Nm, 6-cylinder)
Emissions compliance:	Euro 5, SCR
Transmission:	Fully automatic 7-speed gearbox with torque converter and primary retarder
Mobility:	
Tyres:	16.00 R20
Approach angle:	38°
Departure angle:	26°
Ramp angle:	38°
Fording:	1.5 m
Other:	
Transportability:	C17, A400M
EMC level:	MIL-STD 461 F
Seating:	2
Protection:	IAC

1) Including protected cabin, CES & C4I equipment – 2) Over rear of the vehicle (13 tonnes at 8.3 meters)

Rheinmetall MAN Military Vehicles GmbH
Dachauer Straße 651
80995 Munich, Germany

www.rheinmetall-defence.com