# AW169M

HELICOPTERS DIVISION

LEONARDO

AW169M

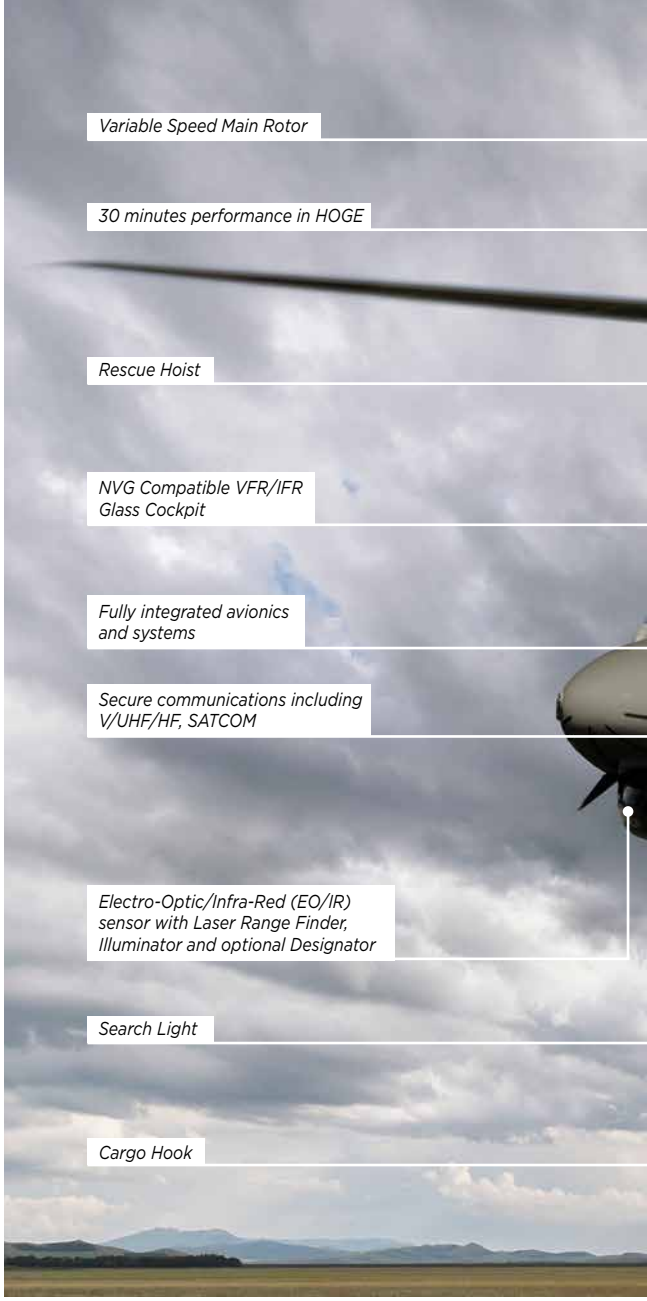
# NEXT GENERATION MULTI-ROLE


RCITO

# UNRIVALLED PERFORMANCE

**The AW169M is the new light intermediate multi-role twin-engine military helicopter designed to meet the most stringent military and civilian certification requirements for military, homeland security and government users. The AW169M's power, agility, manoeuvrability and excellent handling qualities enable a wide range of missions, day and night, in challenging 'hot and high', austere and urban environments.**

Advanced open-architecture avionics and systems enhance the AW169M's multi-role military proficiency by enabling extensive customisation. A wide range of mission sensors, role equipment and weapons are available to provide outstanding mission capability. The unobstructed cabin interior enables rapid role reconfiguration to meet changing operational requirements. Optional ballistic protection for cockpit and cabin, self-sealing crashworthy tanks and defensive aids enhance inherent levels of survivability and crashworthiness.



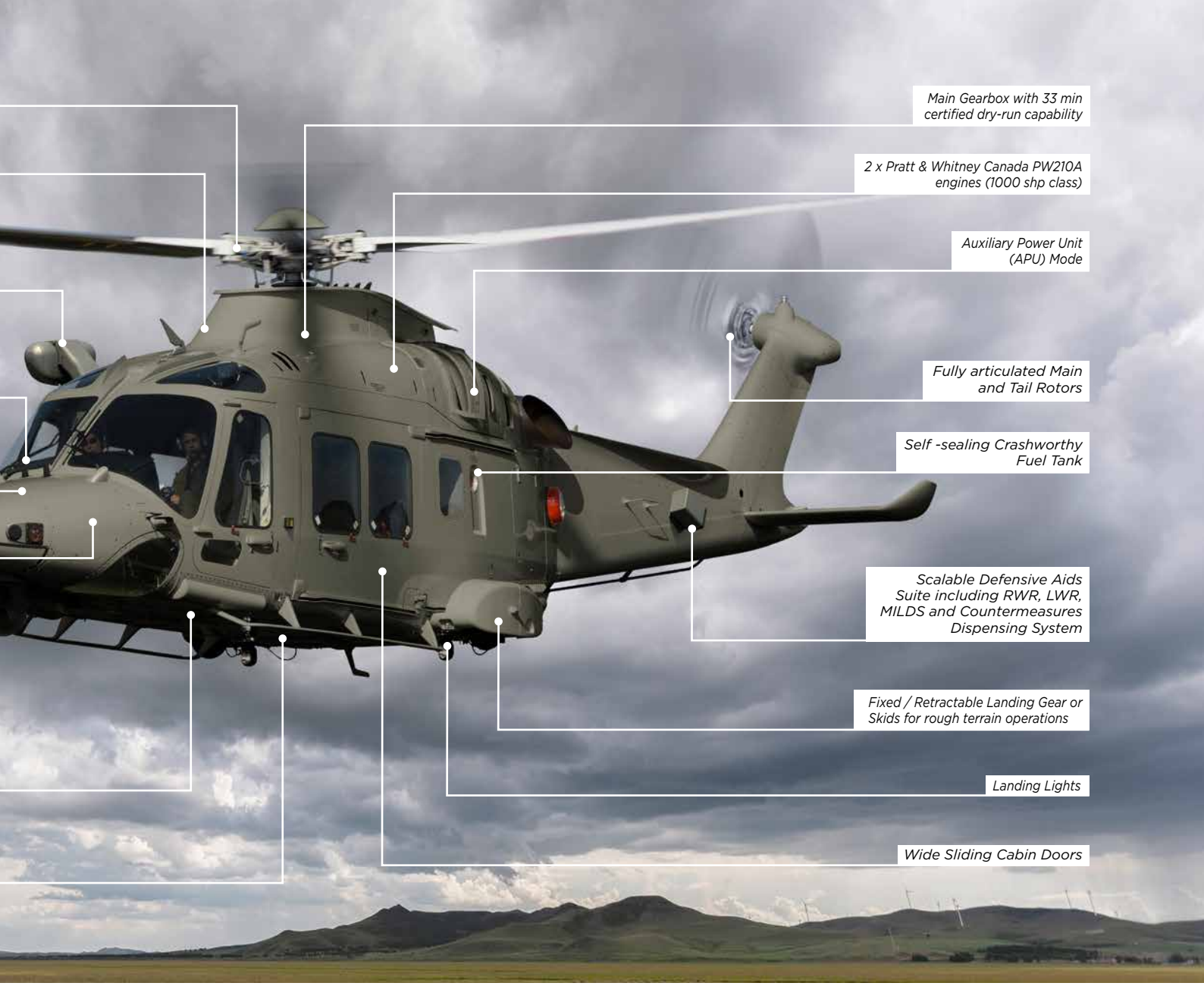

# AW169M KEY FEATURES

## AIR VEHICLE

- Compact footprint for confined area operations (Length Rotor Turning <15 m; MR Diameter 12.12 m)
- Fully articulated Main and Tail Rotors providing agile handling at low level speed
- Main gearbox (33 minutes certified dry-run capable)
- Two turbo-shaft engines with engine burst containment
- Highest power to weight ratio in class providing unparalled performance in the most demanding environments
- Auxiliary Power Unit (APU) mode provides electrical and hydraulic power with rotors stopped without using the batteries
- Up to 30 min performance in HOGE TOP
- Largest cabin in its class (6.3 $m^3$)
- Large sliding doors (1.6 m wide) on Left Hand and Right Hand sides
- Robust undercarriage and high ground clearance for rough terrain operations (skid alternative to standard tricycle design)
- Dual electrical and hydraulic systems
- Bird-strike resistance
- Crashworthiness to latest standards

## CORE AVIONICS

- NVG Compatible Cockpit Display System with three 8" x 10" colour displays
- 4 axis Digital Automatic Flight Control System with advanced autopilot functions
- Aircraft Monitoring and Management System
- Communication System including Secure VHF/UHF
- Navigation System (Civil / Military)
- Flight Management System (FMS)
- Digital Maps and Tactical Data Display
- Identification Systems
- Enhanced Vision Systems
- Cockpit Voice & Flight Data Recorder
- NVG Lighting (Internal / External)
- Integrated Health Monitoring System
- Standby Information System
- HIRF / LEMP / EMC resistant system




# CABIN SPACE AND ACCESSIBILITY

Designed with inherent multi-role capability and flexibility of operation, the AW169M features the largest passenger cabin in its class providing space for personnel and mission equipment required for a wide range of operations. The unobstructed interior allows easy configuration changes to suit operational requirements including the rapid installation of mission and role equipment such as insertion / extraction equipment, crew served weapons and mission console.

Large sliding doors (1.60 m / 5 ft 3 in wide) and long foot-steps on both sides of the helicopter and flat floor enable rapid entry / egress of troops and ease of loading / unloading cargo, equipment and stretchers on the ground. Rescue hoist and rappelling / fast roping equipment enables troop insertion and extraction from the hover.

The AW169M can carry up to 10 troops or can be rapidly converted to carry 2 stretchers in flight or for SAR, SF or C2 / ISR mission configurations.

# MISSION & ROLE EQUIPMENT

A wide range of mission and role equipment can be installed on the AW169M, further enhancing its operational effectiveness. This includes, but is not limited to the following:

## Role Equipment

- Wheeled or Skid landing gear
- Crashworthy Self-Sealing Fuel Tanks
- Ballistic Protection (Cockpit & Cabin)
- Wire Strike Protection System
- Searchlight (NVG Compatible)
- NVG Compatible Formation Lights
- Overwater Kit (Flotation & Life Rafts)
- Rappelling Hooks (2 LH + 2 RH)
- Fast Roping system (2 LH + 2 RH )

## Avionic Equipment

- Military Communications including Secure Radios with TACSAT capability, Combat Tactical Radios, Blue Force Tracker, Personnel Locator System, Video Downlink, Tactical Data Link
- Mode 5 IFF Transponder
- Integrated Defensive Aids Suite (DAS) including Radar Warning Receiver, Electronic Countermeasure Dispensing System (ECDS), Laser Warning Receiver (LWR) and Missile Warning System (MWS)
- Electro-Optic / Infra-Red (EO/IR) sensor with optional Laser Range Finder / Designator
- Integrated Mission Console providing Tactical Processing, Link Management and C2/ISR
- Weather / Search Radar

## Utility Equipment

- Crashworthy Foldable Seats
- Medical and Casualty Evacuation (2 stretchers) and 2 seats
- Cargo Hook – Single (1,500kg)
- External Rescue Hoist – Single (272 kg)
- Tail Fin Camera
- Full Ice Protection System

## Weapon Systems

- Internal: 2 x Door Mounted Sniper Rifles
- Internal: 2 x 7.62mm Pintle Mounted Machine Guns (Door)
- External Weapons Sighting System
- External: 2 x 12.7mm Gun Pod (250 or 400 rounds)
- External: 2 x Combined 12.7mm Gun Pod / 3 Tube 70mm Rocket Launcher
- External: 2 x 70mm Rocket Launchers (7 or 12 Tubes)

# AW169M CHARACTERISTICS

## WEIGHT (MGW)

| | | |
|---|---|---|
| Max Gross weight | 4,600 kg | (10,141 lb) |
| Optional Gross weight (1) | 4,800 kg | (10,582 lb) |

## PROPULSION

Powerplant 2 x Pratt & Whitney Canada PW210A engines (1,000 shp class each) with dual channel digital FADEC system

## ENGINE RATINGS

| | | |
|---|---|---|
| Take-Off Power (30 mins) | 2 x 876 kW | (2 x 1,175 shp) |
| Maximum Continuous Power | 2 x 686 kW | (2 x 920 shp) |

## CAPACITY

| | |
|---|---|
| Crew | 1 to 2 |
| Passengers | Up to 10 |

## DIMENSIONS

| | | |
|---|---|---|
| Overall Length (2) | 14.65 m | (48 ft 01 in) |
| Overall Height (2) | 4.50 m | (14 ft 09 in) |
| Rotor Diameter | 12.12 m | (39 ft 09 in) |

## PERFORMANCE (ISA MGW)

| | | |
|---|---|---|
| Max Cruise Speed (SL, MCP) | >268 km/h | (>145 kts) |
| HIGE (TOP) | >5,085 m | (>16,680 ft) |
| HOGE (TOP) | >4,060 m | (>13,325 ft) |
| Max Range (3) | 816 km | (440 nm) |
| Max Endurance (3) | | 4 hr 20 min |

(1) Available as a kit

(2) Rotors turning

(3) At 5,000 ft, no reserve

# MULTI-ROLE CAPABILITY

## TROOP TRANSPORT

The rapidly reconfigurable cabin provides crashworthy seating for up to 10 troops in fore / aft facing layouts. Ballistic protection as well as crew served weapons, such as 7.62 mm GPMG or Sniper Rifles located in the cabin door, can be provided.

*Typical Troop Transport Configuration*

## CARGO RE-SUPPLY / EXTERNAL LIFT

The 6.3 cu metre constant section cabin, flat floor and large 1.6 m wide cabin doors enable rapid loading and unloading of cargo and equipment. Coupled with a 1,500 kg cargo hook capability, with "in cockpit" monitoring the helicopter has the capacity to conduct effective resupply and lift operations.

*Typical Cargo Configuration*

## CASEVAC / MEDEVAC

The rapidly reconfigurable cabin enables designation for medical operations with ample space for 2 seats located at the rear of cabin and up to 3 seats in the front of the cabin, with 2 stretchers mounted transversally on the flat floor enabling full body access to patients. Attachment points and power outlets are provided for medical equipment.

*Typical CASEVAC/MEDEVAC Configuration*

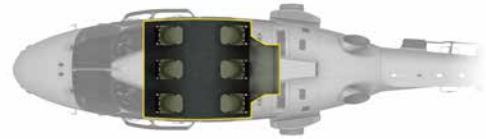
## SEARCH & RESCUE

The cabin can be rapidly reconfigured with seats for a hoist operator and medic enabling hoist operations and patient recovery through the cabin door. An optional mission console integrated with helicopter avionic system enhances situational awareness and search capabilities to further increase mission effectiveness.

*Typical SAR Configuration*

## SPECIAL FORCES OPERATIONS & COMBAT SAR

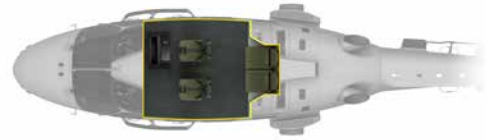
Fore and aft facing seats enable rapid egress and ingress of a Special Forces (SF) team through the cabin doors. The fast roping system enables simultaneous egress of two troops per side. The rescue hoist can be used to recover SF teams when in the hover. Threat suppression is provided by crew served weapons in the cabin door.



*Typical Special Ops Configuration*

## COMMAND AND CONTROL (C2), COMMUNICATIONS, COMPUTERS (C4), INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE (ISR)

Battlefield capabilities from C2 to C4ISR are provided depending on the mission by means of a dedicated console in the cabin integrated with the AW169M mission management, mission systems and sensors. This enables the AW169M to collect, produce and disseminate time critical C2 and ISR information to the force.



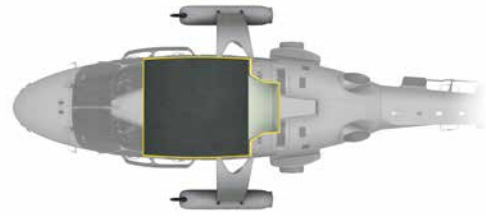
*Typical Reconnaissance Configuration*

## CLOSE AIR SUPPORT/ARMED ESCORT

Close Air Support and Armed Escort capabilities are provided by the AW169M sighting and external weapon systems that complement door mounted crew served weapons. Heavy machine gun pods and guided and unguided rockets provide scalable threat suppression capabilities to enhance combat effectiveness.

## MARITIME CAPABILITY

The AW169M provides light intermediate class multi-role maritime capability. Lashing points and folding main rotor blades enable the AW169M to be secured during adverse weather conditions and stowed in suitably sized hangars. The wheeled undercarriage enables easy helicopter movement using handling systems. AW169M has the capability to operate within the electro-magnetic environment associated with ship operations.



*Typical Close Air Support Configuration*

# SURVIVABILITY & CRASHWORTHINESS

Leveraging the major contributions to battlefield survivability made by Doctrine and Training, and Intelligence, Mission-Planning and Re-Planning, the AW169M will survive in the modern battlefield. Platform and mission systems capabilities enable the AW169M to avoid threats, avoid detection by threats, avoid acquisition by threats and avoid a hit.

| AW169M PLATFORM & SYSTEM CAPABILITIES | Avoid Threat | Avoid Detection | Avoid Acquisition | Avoid Hit |
|---|---|---|---|---|
| **PLATFORM CAPABILITIES** | | | | |
| › Range / Endurance (for routing / re-routing) | ✓ | ✓ | ✓ | |
| › Agility / Performance for NOE flight (terrain masking) | ✓ | ✓ | ✓ | ✓ |
| › Power margins for Hot & High / Performance | ✓ | ✓ | ✓ | ✓ |
| › Low Signatures (Visual, Acoustic and IR) | ✓ | ✓ | ✓ | |
| **SYSTEM CAPABILITIES** | | | | |
| › Day Night All Environment Operations | ✓ | ✓ | ✓ | |
| › Off-Board Mission Planning | ✓ | ✓ | ✓ | |
| › Situational Awareness: Digital Map | ✓ | ✓ | ✓ | |
| › Threat warning and geo-location: Radar / Laser / EW | ✓ | ✓ | ✓ | |
| › Comprehensive Voice, Video and Data Comms | ✓ | ✓ | ✓ | |
| › On-Board Mission Re-Planning | ✓ | ✓ | ✓ | |
| › Synthetic Vision / Terrain Avoidance Systems | ✓ | ✓ | ✓ | |
| › Sensors / Weapons capability – stand off from threats | | ✓ | ✓ | |
| › Counter threat (Chaff & Flare etc.) | | | ✓ | ✓ |
| › Threat Suppression | | | ✓ | ✓ |

AW169M can survive small arms fire due to its inherent ballistic tolerance provided by damage tolerant / fail-safe rotor blades, airframe structure and components, run-dry main and tail gearboxes, twin engines with fire suppression and turbine burst containment, dual electrical and hydraulic systems, ballistic tolerant / self-sealing fuel tanks and ballistic protection of critical components. In the event of a crash, the AW169M provides crash protection through energy absorbing landing gear and structure, crashworthy pilot, co-pilot and troop seats and restraints, crashworthy fuel tanks to minimize post-crash fire, flotation equipment for maritime operations, and rapid post-crash / post ditching egress.

# CUSTOMER SERVICES SOLUTIONS

Leonardo's Helicopter Division Support mission is to assist Customers to perform their missions successfully. Fundamental to this mission is to ensure that operational safety is as high as possible. The Helicopters Division continues to develop its support services and advanced solutions in line with Customer's evolving requirements.

Today the Helicopters Division offers a full range of services to Customers. These can be contracted individually or organised under some form of integrated support scheme where the Helicopters Division is responsible for performance elements that vary from logistic support guarantee up to helicopter availability, moving the boundaries of traditional support. In the most comprehensive schemes the Customer specifies where and when he wants to fly and the Helicopters Division is accountable and responsible for the complete service.

The range of services includes:

- **Spare & Repairs:** the Material Support Services Organisation is accountable for all material and logistics aspects of spares, repairs and overhauls, including a material AOG service. The organization can also provide logistic modelling.
- **Maintenance:** in support of customers worldwide, the Helicopters Division can provide line and base maintenance at Customers facilities, utilising an extensive network of maintenance centres, or through company-owned and third party organisations.
- **Technical Services:** an extensive range of capabilities exist including the latest standards of integrated electronic technical publications, technical query resolution, repair design and modification assistance.
- **Advanced Services:** including remote support to the technicians through augmented reality, HUMS analysis, flight planning tools, various logistics packages, electronic replacements for traditional paperwork systems and online portals for direct access to company data.
- **Fleet Operations Centres:** located across the globe, available 24/7, to promptly help Customers resolve issues and get back to flight.

*Repair Services*

# CUSTOMER TRAINING SOLUTIONS

Leonardo, through its Helicopters Division, is a world leading provider of professional training services, systems and solutions to a global customer base. The company is fully committed to a training policy that enables our customers to make the most effective safe use of their helicopters.

With over 300 professional training personnel, the Helicopters Division has delivered essential training to the world's helicopter operators for over 65 years. Our team includes flying and technical instructors with considerable military and civilian helicopter experience. The training capability for the AW169M, at the Training Academy in Sesto Calende in Italy, features the latest synthetic training devices combined with a comprehensive programme of training courses for air crew, rear crew, ground crew and maintainers. In addition, the Helicopters Division is developing a network of regional Training Centers to ensure that customers can access world-class training at a time and place convenient to them.

The range of training solutions is evolving constantly. Services include type rating courses in conjunction with basic training, refresher training and complete turnkey solutions. Leonardo's Helicopter Division is also focusing on a variety of mission specific training so that customers can do more with their aircraft to deliver total crew operational capability.

To meet the demands of an ever changing operating environment our Simulation Learning & Support Services Systems (SL&SS) teams have leveraged Commercial-Off-The-Shelf technology combined with OEM software solutions to provide award-winning, cost effective training devices. These range from simple computer based training courses through to maintenance training devices and full flight simulators.

*24/7 Fleet Operations*

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