TYPE CERTIFICATE
DATA SHEET

No. EASA.R.013

for

EH101-500

Type Certificate Holder

Leonardo S.p.a.

Helicopters

Piazza Monte Grappa, 4

00195 Roma - Italy

For Model: EH101-500
EH101-510

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SECTION 1: EH101-500

I. General

1.	Type/ Model/ Variant	
	1.1 Type	EH101
	1.2 Model	EH101-500
	1.3 Variant	n/a
2.	Airworthiness Category	Large Rotorcraft, Category A
3.	Manufacturer	Leonardo S.p.a. Helicopters Piazza Monte Grappa, 4 00195 Roma, Italy
4.	Type Certification Application Date	to ENAC IT: 8 December 1982
5.	State of Design Authority	Ente Nazionale per l'Aviazione Civile (ENAC IT)
6.	Type Certificate Date by	ENAC IT: 24 November 1994
7.	Type Certificate n° by	ENAC IT: A326
8.	Type Certificate Data Sheet n° by	ENAC IT: A326
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 1st bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	8 December 1982
2.	Airworthiness Requirements	

FAR 29, Amdts. 29-1 to 29-27, including FAR 29.351 at Amdt 30
Compliance with optional requirement FAR 29.1419 (flight in icing condition) has not been demonstrated
Compliance with optional requirement FAR 29.801 (ditching) has been demonstrated.

3.	Special Conditions	- HIRF "RAI Special Condition Paper EH 101/002" - Lightning "RAI Special Condition Paper EH 101/001
4.	Exemptions	none
5.	Deviations	none
6.	Equivalent Safety Findings	ESF demonstrated for the following requirements: FAR 29.779(c), FAR 29.903(b)(1), FAR 29.1141(f)(2), FAR 29.1143(a), FAR 29.1303(g)(2), FAR 29.1305(a)(7), FAR 29.1305(a)(17), FAR 29.1305(a)(20), FAR 29.1555(c)(2), FAR 29.1555(d)(2)
7.	Requirements elected to comply	none

8. Environmental Protection Requirements

8.1 Noise Requirements	See TCDSN EASA.R.013
8.2 Emission Requirements	n/a

9. Operational Suitability Data (OSD) — Not required for rotorcraft that are not operated by an EU operator.
CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1. Type Design Definition — Document EHA 1538

2. Description — Large tri-engine transport helicopter of conventional configuration with seating provisions for thirty passengers and two pilots.

Main rotor:	five composite blades, fully articulated type
Tail rotor:	four composite blades,
Fuselage:	composite/metal
Landing gear:	tricycle landing gear, retractable
Powerplant:	three turbine engines

3. Equipment — The equipment prescribed by relevant airworthiness design standards (see the Certification Basis) have to be installed on the helicopter for the issuing of a Certificate of Airworthiness.
In addition the following is required:
Rotorcraft Flight Manual EU02X002A, basic issue approved by ENAC IT, and subsequent approved revisions.

4. Dimensions

4.1 Fuselage	Length:	19.30 m
	Width hull:	4.34 m
	Height (fin):	5.35 m
4.2 Main Rotor	Diameter:	18.60 m
4.3 Tail Rotor	Diameter:	4.00 m

5. Engine

5.1 Model	General Electric Company Aircraft Engines 3 x Model CT7-6 Turboshaft engine with DECU (Ref. CID 618776 and CID 618775
5.2 Type Certificate	FAA TC/TCDS n°: E8NE EASA TC/TCDS n°: EASA.IM.E.010

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Output shaft speed Nf [%] ([rpm])	Gas producer speed Ng [rpm] ([%])	Temperature TIT [°C] ([°F])
AEO-MCP	102.5 (20 974)	101.6 (45 415)	899 (1 650)
AEO TO 5 min	102.5 (20 974)	102.6 (45 862)	948 (1 738)
OEI-MCP	102.5 (20 974)	102.6 (45 862)	948 (1 738)
OEI Rating 2.5 min	102.5 (20 974)	103 (46 041)	964 (1 767)

5.3.2 Other Engine and Transmission Torque Limits

AEO	max. TO TQ	106 % (5 175 shp)
AEO	max. MC TQ	100 % (4 884 shp)
OEI	max. MC TQ	112 % (3 640 shp)
OEI	2.5 m rating TQ	118 % (3 840 shp)

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel — Avjet type fuels conforming to:
- ASTM D1655, Type A, A-1; or,
- ASTM D1655, Type B

Fuel system icing inhibitor see approved RFM

6.2 Oil — Refer to approved RFM

6.3 Additives — Refer to approved RFM

7. Fluid capacities

7.1 Fuel — Tank capacity: 4 155 litres in four tanks of each 1 059 litres at STA 5 375, STA 6 375, STA 7 375, STA 8 375 respectively

Usable fuel: see Note 2.

7.2 Oil — Engines: 6.2 litres per each engine, two tanks at STA 8 404, one at STA 9 702

APU: 3 litres at STA 10 045

MGB: 50 litres at STA 8 140

AGB: 6.9 litres STA 6 778

IGB: 3 litres at STA 18 712

TGB: 3.5 litres at STA 19 345

Undrainable oil: see Note 2

7.3 Coolant System Capacity — n/a

8. Air Speed Limitations — Max. V_{NE} 167 KIAS

For reduction of the V_{NE} with altitude, OAT and weight, see approved RFM

9.	Rotor Speed Limitations	Power on: Max. continuous operation range 98 - 101 % TKOF/LDG range 101 - 103 % Power off: PWR off range 95 – 110 % Minimum 98 % Rotor speed warnings: Low speed PWR on: 98 % High speed PWR on: 105 % Low speed PWR off: 95 % High speed PWR off : 110 % High speed transient PWR off: 117 %
10.	Maximum Operating Altitude and Temperature	
	10.1 Altitude	TKOF/LDG: Refer to approved RFM En route: 9 960 ft (3 038 m)
	10.2 Temperature	Refer to approved RFM
11.	Operating Limitations	Refer to approved RFM
12.	Maximum Mass	Maximum: 14 290 kg Taxi and ramp: 14 290 kg TKOF: 14 290 kg LDG: 14 290 kg
13.	Centre of Gravity Range	Refer to approved RFM
14.	Datum	Longitudinal: The datum plane STA 0 is located 3 385 mm forward of the front jack point. Lateral: The datum plane STA 0 is ±1 400 mm inboard of each main jack point and coincides with the rotorcraft longitudinal plane of symmetry.
15.	Levelling Means	Plumb line from ceiling reference point to index plate on floor of passenger cabin
16.	Minimum Flight Crew	2 (two) pilots
17.	Maximum Passenger Seating Capacity	30 (thirty) passengers
18.	Passenger Emergency Exit	6 (six), 3 (three) on each side of the passenger cabin
19.	Maximum Baggage/ Cargo Loads	n/a
20.	Rotor Blade Control Movement	For rigging information refer to the EH101 Maintenance Manual Document EC02P002J
21.	Auxiliary Power Unit (APU)	One APU Sundstrand model T-62T40C7EH, P/N 4502316 with ESU P/N 4502145 Note: CAA Validation 9/80/ARS 500/C01/1-A of FAA TSO C-77(a)

		Authorisation and JAR-APU Change 2, Category 1 (Essential) Unit."
22.	Life-limited Parts	Information about life limited parts, mandatory inspections as well at time between overhaul (TBO's) are contained in the Document Continued Airworthiness Limitations Manual N° ED02P211J.
23.	Wheels and Tyres	- 1 x nose LG with 2 wheels type 418-43 - 2 x main LG with each 1 wheel type 418-64 See Maintenance Manual ED02P211J

IV. Operating and Service Instructions

1.	Flight Manual	Rotorcraft Flight Manual EU02X002A, basic issue approved by ENAC IT, and subsequent approved revisions.
2.	Maintenance Manual	EC02P002J
3.	Structural Repair Manual	n/a
4.	Weight and Balance Manual	n/a
5.	Illustrated Parts Catalogue	EC02P026J
6.	Miscellaneous Manuals	n/a
7.	Service Letters and Service Bulletins	As published by Finmeccanica and predecessors
8.	Required Equipment	The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis), must be installed in the helicopter for certification In addition any aircraft must be equipped with a copy of the applicable, approved RFM EU02X002A.

V. Notes (EH101-500 only)

1. Manufacturer's eligible serial numbers:
   s/n 50007, 50009
2. At the time of the first issue of the Standard Certificate of Airworthiness, each rotorcraft must be provided with the document "Appendix A to the Rotorcraft Flight Manual – Weight and Balance Chart" identifying the empty weight and associated centre of gravity position inclusive of the list of installed equipment.
   For the determination of the empty weight and associated centre of gravity engine oil, hydraulic fluids, lubricating gear boxes oil must be included for a total of 84.9 litres. A total of 63.7 kg of unusable fuel at STA 7 259 mm should also be included.

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SECTION 2: EH101-510

I. General

1.	Type/ Model/ Variant	
	1.1 Type	EH101
	1.2 Model	EH101-510
	1.3 Variant	n/a
2.	Airworthiness Category	Large Rotorcraft, Category A
3.	Manufacturer	Leonardo S.p.a. Helicopters Piazza Monte Grappa, 4 00195 Roma, Italy
4.	Type Certification Application Date	to ENAC IT: 30 August 1995
5.	State of Design Authority	Ente Nazionale per l'Aviazione Civile (ENAC IT)
6.	Type Certificate Date by	ENAC IT: 15 September 1998
7.	Type Certificate n° by	ENAC IT: A326
8.	Type Certificate Data Sheet n° by	ENAC IT: SO/A326
9.	EASA Type Certification Date	28 September 2003, in accordance with CR (EU) 1702/2003, Article 2, 3., (a), (i), 1st bullet.

II. Certification Basis

1.	Reference Date for determining the applicable requirements	30 August 1995,
2.	Airworthiness Requirements	

JAR-29 Large Rotorcraft, issued 5 November 1993,
minus the following paragraphs replaced as detailed below:

JAR 29.561 replaced by Additional Condition AC1 issue 3,
JAR 29.563 replaced by Additional Condition AC2 issue 2,
JAR 29.571 replaced by FAR 29.571 at Amdt. 27,
JAR 29.785 and 29.787 replaced by Additional Condition AC3 issue 1,
JAR 29.901(b)(1)(i) replaced by FAR 29.901(b)(1)(i) at Amdt. 27,
JAR 29.901(c) replaced by FAR 29.901(c) at Amdt. 27,
JAR 29.952 replaced by Additional Condition AC4 issue 2,
JAR 29.1019 (a)(2) replaced by FAR 29.1019 (a)(2) at Amdt. 27.

For External Cargo Loads Optional Equipment see Note 4.

3.	Special Conditions	- EH101-011 for HIRF - EH101-013 for Indirect Effects of Lightning - "Yaw manoeuvres and reliability of yaw limiter" (see CRI C-4) See Note 4 for Optional Equipment Special Condition

4.	Reversions and Exemptions	
	4.1 Reversions	Reversion to the original EH101-500 Certification Basis (FAR 29, Amdt. 27) has been granted for paragraphs JAR 29.571, JAR 29.901(b)(1)(i), JAR 29.901(c) and JAR 29.1019(a)(2).
	4.2 Exemptions	none
5.	Deviations	none
6.	Equivalent Safety Findings	ESF demonstrated for the following requirements: JAR 29.351, JAR 29.613, JAR 29.779(c), JAR 29.807(b), JAR 29.903(b)(1), JAR 29.1141(f)(2), JAR 29.1143(a), JAR 29.1303(g)(2), JAR 29.1305(a)(8), JAR 29.1305(a)(18), JAR 29.1305 (a)(21), JAR 29.1555(c)(2), JAR 29.1555(d)(2)
7.	Requirements elected to comply	none
8.	Environmental Protection Requirements	
	8.1 Noise Requirements	See TCDSN EASA.R.013
	8.2 Emission Requirements	n/a
9.	Operational Suitability Data (OSD)	Not required for rotorcraft that are not operated by an EU operator. CR (EU) 748/2012, as amended by CR (EU) 69/2014 does not require OSD elements for this model (see Article 7a, 1.).

III. Technical Characteristics and Operational Limitations

1.	Type Design Definition	Document EC00X007J “EH101-510 Variant Type Design Definition“
2.	Description	Large tri-engine transport helicopter of conventional configuration with seating provisions for thirty passengers and two pilots. Main rotor: five composite blades, fully articulated type Tail rotor: four composite blades, Fuselage: composite/metal Landing gear: tricycle landing gear, retractable Powerplant: three turbine engines The EH101-510 is a derivative model of EH101-500
3.	Equipment	The equipment prescribed by relevant airworthiness design standards (see the Certification Basis) have to be installed on the helicopter for the issuing of a Certificate of Airworthiness. In addition the following is required: Rotorcraft Flight Manual EU02X501A, Issue 1 approved by ENAC IT, and subsequent approved revisions.

4. Dimensions

4.1 Fuselage — Length: 19.30 m; Width hull: 4.34 m; Height (fin): 5.35 m

4.2 Main Rotor — Diameter: 18.60 m

4.3 Tail Rotor — Diameter: 4.00 m

5. Engine

5.1 Model — General Electric Company Aircraft Engines
3 x Model CT7-6A
Turboshaft engine with DECU 5123T05P04

5.2 Type Certificate — FAA TC/TCDS n°: E8NE
EASA TC/TCDS n°: EASA.IM.E.010

5.3 Limitations

5.3.1 Installed Engine Limitations and Transmission Torque Limits

	Output shaft speed		Gas producer speed Ng [rpm] ([%])	Temperature TIT [°C] ([°F])
	loaded Nf [%] ([rpm])	unloaded Nf [%] ([rpm])		
AEO-MCP	105 (21 486)	107 (21 895)	101.6 (45 415)	899 (1 650)
AEO TO 5 min	105 (21 486)	107 (21 895)	101.6 (45 415)	948 (1 738)
OEI-MCP	105 (21 486)	107 (21 895)	102.6 (45 862)	948 (1 738)
OEI Rating 2.5 min	105 (21 486)	- - -	103 (46 041)	964 (1 767)

5.3.2 Other Engine and Transmission Torque Limits

AEO	max. TO TQ	106 % (5 304 shp at 102 % NR)
AEO	max. MC TQ	100 % (4 982 shp at 102 % NR)
OEI	max. MC TQ	112 % (3 713 shp at 102 % NR)
OEI	2.5 m rating TQ	125 % (4 149 shp at 102 % NR)

6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel — Avjet type fuels conforming to:
- ASTM D1655, Type A, A-1; or,
- ASTM D1655, Type B
Fuel system icing inhibitor see approved RFM

6.2 Oil — Refer to approved RFM

6.3 Additives — Refer to approved RFM

7. Fluid capacities

7.1 Fuel — Tank capacity: 4 930 litres (total):
Tank 1: 1 000 litres at STA 8 375,
Tank 2: 1 000 litres at STA 7 375,
Tank 3: 965 litres at STA 6 375,
Tank 4: 965 litres at STA 5 375,
Tank 5: 1 000 litres at STA 10 875.
Usable fuel: refer to approved RFM
Unusable fuel: see Note 2.

7.2 Oil	Engines:	6.2 litres per each engine, two tanks at STA 8 404, one at STA 9 702
	APU:	2.8 litres at STA 9 912
	MGB:	62 litres at STA 8 140
	AGB:	7 litres STA 6 819
	IGB:	3 litres at STA 18 712
	TGB:	3.5 litres at STA 19 395
	Undrainable oil:	see Note 2
7.3 Coolant System Capacity	n/a	
8. Air Speed Limitations	Max. V_{NE} 150 KIAS For reduction of the V_{NE} with altitude, OAT and weight, see approved RFM	
9. Rotor Speed Limitations	Power on:	
	Continuous operation range	100 - 103 % (210 - 216.3 rpm)
	Maximum	103 % (216.3 rpm)
	Minimum	101 % (210 rpm)
	Power off:	
	Continuous operation range	100 - 105 % (210 – 220.5 rpm)
	Maximum	110 % (231 rpm)
	Minimum	..95 % (199.5 rpm)
10. Maximum Operating Altitude and Temperature		
10.1 Altitude	TKOF/LDG:	12 500 ft (3 825 m)
	En route:	15 000 ft (4 572 m) PA or DA, whichever is reached first
10.2 Temperature	ISA +35 °C (or 50 °C below MSL)	
11. Operating Limitations	Refer to approved RFM	
12. Maximum Mass	Maximum:	14 600 kg
	Taxi and ramp:	14 700 kg
	TKOF/LDG:	14 600 kg
13. Centre of Gravity Range	Refer to approved RFM	
14. Datum	Longitudinal: The datum plane STA 0 is located 3 385 mm forward of the front jack point. Lateral: The datum plane STA 0 is ±1 400 mm inboard of each main jack point and coincides with the rotorcraft longitudinal plane of symmetry.	
15. Levelling Means	Plumb line from ceiling reference point to index plate on floor of passenger cabin	
16. Minimum Flight Crew	2 (two) pilots	
17. Maximum Passenger Seating Capacity	30 (thirty) passengers	

18.	Passenger Emergency Exit	6 (six), 3 (three) on each side of the passenger cabin
19.	Maximum Baggage/ Cargo Loads	n/a
20.	Rotor Blade Control Movement	For rigging information refer to the EH101 Maintenance Manual Document EC02P020J
21.	Auxiliary Power Unit (APU)	One APU Sundstrand model T-62T40C7EH, P/N EA4900V501-009 (4503788) with ESU P/N EA4900V501-007
22.	Life-limited Parts	See Periodic Inspection Manual EU02X521 Part IV
23.	Wheels and Tyres	- 1 x nose LG with 2 wheels type 418-43 - 2 x main LG with each 1 wheel type 418-64 See Maintenance Manual EC02P020J

IV. Operating and Service Instructions

1.	Flight Manual	Rotorcraft Flight Manual EU02X501A, basic issue approved by ENAC IT, and subsequent approved revisions.
2.	Maintenance Manual	Maintenance Manual: EC02P020J Periodic Inspection Manual: EU02X521
3.	Structural Repair Manual	n/a
4.	Weight and Balance Manual	n/a
5.	Illustrated Parts Catalogue	EC02P026J
6.	Miscellaneous Manuals	n/a
7.	Service Letters and Service Bulletins	As published by Finmeccanica and predecessors
8.	Required Equipment	The basic required equipment, as prescribed in the applicable airworthiness regulations (see Certification Basis), must be installed in the helicopter for certification In addition any aircraft must be equipped with a copy of the applicable, approved RFM EU2X501A (see Note 2).

V. Notes (EH101-510 only)

1. Manufacturer's eligible serial numbers:
   s/n 510-001, 510-002 and subsequent.
2. At the time of the first issue of the Standard Certificate of Airworthiness, each rotorcraft must be provided with the document “Appendix A to the Rotorcraft Flight Manual – Weight and Balance Chart” identifying the empty weight and associated centre of gravity position inclusive of the list of installed equipment.
   For the determination of the empty weight and associated centre of gravity engine oil, hydraulic fluids, lubricating gear boxes oil must be included.

   The unusable fuel to be included in the determination of the empty weight is as follows:
   6.5 kg at STA 8 385
   6.5 kg at STA 7375
   6.5 kg at STA 6375

V. Notes (EH101-510 only)

2.5 kg at STA 5375
2.5 kg at STA 10 875

3. Emergency Avionic System (FDR / CVR / ADELT):
The Emergency Avionic System is not fully compliant with JAR OPS rules (refer to CRI F-3)

4. Optional equipment:
For Rescue Hoist Installation and External Cargo Load Installation, compliance has been shown with ENAC Special Condition D-1 (see CRI D-R-1)

5. Major Change NDC 101-0000-0002 (EASA.R.C.01843), approved on 11 July 2008:
"New Fully Articulated Tail Rotor installation P/N EA6402D501-011“ consists of a new articulated tail rotor assembly P/N EA6422D501-045 which can be installed as alternate configuration in substitution of the originally certified tail rotor P/N EC6400D501, with no impacts on the already approved limitations and performances.
The tail rotor modification does not imply an acoustic change.
For this change the original Certification Basis of EH101-510 Model has been retained except that CS 29.571 (first Issue ED Decision 2003/16/RM 14/11/2003) replaces FAR 29.571 Amdt. 27 as elected to comply by the TC holder.

6. *deleted* (see SECTION: ADMINISTRATIVE, II.)

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SECTION 3: OPERATIONAL SUITABILITY DATA (OSD)

The OSD elements listed below are approved by the European Aviation Safety Agency as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

I. OSD Certification Basis

I.1 Reference Date for determining the applicable OSD requirements

reserved

I.2 MMEL - Certification Basis

reserved

I.3 Flight Crew Data - Certification Basis

reserved

I.4 SIM Data - Certification Basis

reserved

I.5 Maintenance Certifying Staff Data - Certification Basis

reserved

I.6 Cabin Crew Data - Certification Basis

reserved

II. OSD Elements

II.1 MMEL

reserved

II.2 Flight Crew Data

reserved

II.3 SIM Data

reserved

II.4 Maintenance Certifying Staff Data

reserved

I.6 Cabin Crew Data

reserved

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

AEO	All Engines Operative	Min.	Minimum
Amdt.	Amendment	OEI	One Engine Inoperative
C.G.	Centre of Gravity	OSD	Operational Suitability Data
CAA	Civil Aviation Authority	PA	Pressure Altitude
CAA UK	CAA Britain	P/N	Part Number
CR	(European) Commission Regulation	PWR	Power
DA	Density Altitude	RFM	Rotorcraft Flight Manual
ENAC	Ente Nazionale per l'Aviazione Civile CAA Italy	RFMS	Rotorcraft Flight Manual Supplement
KIAS	Knots Indicated Air Speed	s/n	Serial Number
LDG	Landing	STA	Station
LG	Landing Gera	TIT	Turbine Internal Temperature
Max.	Maximum	TKOF	Take-off
MC	Maximum Continuous	TO	Take-Off
MCP	Maximum Continuous Power	TQ	Torque
min	Minute	V_{NE}	Never Exceed Speed

II. Type Certificate Holder Record

Type Certificate Holder	**Period**
E.H. INDUSTRIES LTD 500 Chiswick High Road; London W4 5AG – United Kingdom	Until January 2004
Agusta S.p.A. Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	January 2004 - 31 May 2011
AgustaWestland S.p.A. Via Giovanni Agusta, 520; 21017 Cascina Costa di Samarate (VA) – Italy	1 June 2011 - 30 July 2014
AgustaWestland S.p.A. Piazza Monte Grappa, 4; 00195 Roma - Italy	31 July 2014 - 31 December 2015
Finmeccanica S.p.A., Helicopter Division - Piazza Monte Grappa, 4; 00195 Roma - Italy	1 January 2016 – 14 July 2016
Leonardo S.p.a., Helicopters - Piazza Monte Grappa, 4; 00195 Roma - Italy	Since 15 July 2016

III. Change Record

Issue	Date	Changes	TC issue
Issue 1	13 Sep 2006	Initial EASA Issue; transfer of RAI/ENAC TCDS SO/A 140 into EASA format	Initial ENAC Issue 24 November 1994 Initial EASA Issue 13 September 2006
Issue 2	8 Apr 2010	As per TCDS	Re-issued 23 January 2012
Issue 3	23 Jan 2012	Change of TC holder name from Agusta S.p.A. to AgustaWestland S.p.A.	- - -
Issue 4	23 Mar 2016	Change of TC holder ownership to Finmeccanica S.p.A.; TCDS reformatted to include OSD reference	Re-issued 23 March 2016
Issue 5	04 Aug 2016	Change of TC holder name from Finmeccanica S.p.A. to Leonardo S.p.a.	Re-issued 04 August 2016

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