



**MINISTRY OF TRANSPORT OF THE RUSSIAN FEDERATION
FEDERAL AIR TRANSPORT AGENCY**

**Transport Category Aircraft
Type Certificate Data Sheet
№ FATA-CT-ERJ-170**

**Aircraft:
Embraer ERJ 170**

Aircraft models:
ERJ 170-100 STD
ERJ 170-100 LR
ERJ 170-100 SU
ERJ-170-100 SE
ERJ 170-200 STD
ERJ 170-200 LR
ERJ 170-200 SU

Issue 01
07 October 2016

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Corresponds to TCDS Issue 01
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- 1. Developer and Manufacturer** Embraer S.A.
Av. Brig. Faria Lima, 2170
São José dos Campos, SP – Brazil
CEP 12227-901
- 2. Brief aircraft description** Transport category passenger aircraft.
- 3. Certification Basis** Aviation Regulations, Part 25 "Airworthiness requirements for transport category airplanes" (AP-25), Amendment 5 (Amendment 6 in part of Chapter A-0 requirements)
Aviation Regulations, Part 36 (AP-36) "Aircraft External Noise Certification" and Annex 16 ICAO "Environmental Protection", Volume 1, "Aircraft Noise"
- 4. Type Design Definition** Type Certificate № FATA-CT-ERJ-170 is applicable to ERJ 170 aircraft which type design is defined by:
1. ANAC Type Certificate Data Sheet № 2003T05;
 2. Embraer "Type Design Standard Document - Russia", Ref. 170TDSD_AR of RF;
 3. Embraer ERJ 170 operational documentation:
 - ERJ 170/175 ANAC Airplane Flight Manual (AFM), P/N AFM-1383 with Supplement 21 "FATA Certification", approved by ANAC;
 - ERJ 170/175 ANAC Maintenance Review Board Report, P/N 1621, approved by ANAC;
 - ERJ 170/175 Airplane Operation Manual, P/N 1502, approved by ANAC;
 - ERJ 170/175 Aircraft Maintenance Manual (AMM), P/N 3771, approved by ANAC;
 - ERJ 170/175/190/195 CTA Master Minimum Equipment List, P/N MMEL-1506, approved by ANAC
 4. Supplements and changes, incorporated in operational documentation in accordance with Embraer "Type Design Standard Document - Russia", Ref. 170TDSD_AR of RF.

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5. Aircraft Models

5.1. Model ERJ 170-100 STD

5.1.1. Engines

Two CF34-8E5 or CF34-8E5A1 turbofan engines manufactured by General Electric Aircraft Engines (GE).

5.1.2. Speed Limits (IAS)

Maximum Operating Speed (V_{MO}): <ul style="list-style-type: none"> • 0 to 2438 m (*) • 3048 to 8805 m (*) • 8805 to 12497 m (*) (*) Linear variation from 2438 to 3048 m	556 km/h (300 kt) 593 km/h (320 kt) 0.82 M
Maneuvering speed (V_A): <ul style="list-style-type: none"> • 0 m (*) • 6096 m (*) • 8805 m (*) • 10363 m (*) • 10363 to 12497 m (*) Linear variation	445 km/h (240 kt) 454 km/h (245 kt) 498 km/h (269 kt) 530 km/h (286 kt) 0.82 M
Maximum flap extended speed (V_{FE}): <ul style="list-style-type: none"> • Flap position 1 • Flap position 2 • Flap position 3 • Flap position 4 • Flap position 5 • Flap position full 	(IAS – up to 6096 m) 426 km/h (230 kt) 398 km/h (215 kt) 370 km/h (200 kt) 333 km/h (180 kt) 333 km/h (180 kt) 306 km/h (165 kt)
Maximum landing gear operating speed (V_{LO}): <ul style="list-style-type: none"> • Retraction • Extension 	463 km/h (250 kt) 463 km/h (250 kt)
Maximum landing gear extended speed (V_{LE}):	463 km/h (250 kt)
Maximum tire ground speed:	362 km/h (195 kt)

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5.1.3. Maximum weight

Ramp	36150 kg
Takeoff	35990 kg 34473 kg post-mod SB 170-00-0020 35990 kg post mod SB 170-00-0021 34000 kg post-mod SB 170-00-0022 35990 kg post-mod SB 170-00-0023
Landing	32800 kg 33300 kg post-mod SB 170-00-0003
Zero Fuel	30140 kg 29600 kg (*)
(*) Applicable to airplanes S/N 170.0001 to 170.0064. Maximum zero fuel will be increased to 30140 kg post-mod SB 170-00-0024, 170-53-0078, 170-53-0079, 170-53-0080, 170-55-0007 and 170-57-0037	

5.1.4. Maximum baggage weight

Cargo compartment	Maximum load (kg)
• Forward	1370
• Aft	1030

5.1.5. Fuel capacity

Maximum usable fuel: 11625 liters
Unusable fuel: 84 liters

5.1.6. Maximum number of passengers

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5.2. Model ERJ 170-100 LR

5.2.1. Engines

Two CF34-8E5 or CF34-8E5A1 turbofan engines manufactured by General Electric Aircraft Engines (GE).

5.2.2. Speed Limits (IAS)

Maximum Operating Speed (V_{MO}): <ul style="list-style-type: none"> • 0 to 2438 m (*) • 3048 to 8805 m (*) • 8805 to 12497 m (*) (*) Linear variation from 2438 to 3048 m	556 km/h (300 kt) 593 km/h (320 kt) 0.82 M
Maneuvering speed (V_A): <ul style="list-style-type: none"> • 0 m (*) • 6096 m (*) • 8805 m (*) • 10363 m (*) • 10363 to 12497 m (*) Linear variation	445 km/h (240 kt) 454 km/h (245 kt) 498 km/h (269 kt) 530 km/h (286 kt) 0.82 M

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Maximum flap extended speed (V_{FE}):	(IAS – up to 6096 m)
<ul style="list-style-type: none"> • Flap position 1 • Flap position 2 • Flap position 3 • Flap position 4 • Flap position 5 • Flap position full 	426 km/h (230 kt) 398 km/h (215 kt) 370 km/h (200 kt) 333 km/h (180 kt) 333 km/h (180 kt) 306 km/h (165 kt)
Maximum landing gear operating speed (V_{LO}):	
<ul style="list-style-type: none"> • Retraction • Extension 	463 km/h (250 kt) 463 km/h (250 kt)
Maximum landing gear extended speed (V_{LE}):	463 km/h (250 kt)
Maximum tire ground speed:	362 km/h (195 kt)

5.2.3. Maximum weight

Ramp	37360 kg
Takeoff	37200 kg 34850 kg post-mod SB 170-00-0005 37200 kg post mod SB 170-00-0006 35990 kg post-mod SB 170-00-0014 34850 kg post-mod SB 170-00-0015
Landing	32800 kg 33300 kg post-mod SB 170-00-0003
Zero Fuel	30140 kg 29600 kg (*)
(*) Applicable to airplanes S/N 170.0001 to 170.0064. Maximum zero fuel will be increased to 30140 kg post-mod SB 170-00-0024, 170-53-0078, 170-53-0079, 170-53-0080, 170-55-0007 and 170-57-0037	

5.2.4. Maximum baggage weight

Cargo compartment	Maximum load (kg)
<ul style="list-style-type: none"> • Forward • Aft 	1370 1030

5.2.5. Fuel capacity

Maximum usable fuel: 11625 liters
 Unusable fuel: 84 liters

5.2.6. Maximum number of passengers

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5.3. Model ERJ 170-100 SU

5.3.1. Engines

Two CF34-8E5 or CF34-8E5A1 turbofan engines manufactured by General Electric Aircraft Engines (GE).

5.3.2. Speed Limits (IAS)

Maximum Operating Speed (V_{MO}): <ul style="list-style-type: none"> • 0 to 2438 m (*) • 3048 to 8805 m (*) • 8805 to 12497 m (*) (*) Linear variation from 2438 to 3048 m	556 km/h (300 kt) 593 km/h (320 kt) 0.82 M
Maneuvering speed (V_A): <ul style="list-style-type: none"> • 0 m (*) • 6096 m (*) • 8805 m (*) • 10363 m (*) • 10363 to 12497 m (*) Linear variation	445 km/h (240 kt) 454 km/h (245 kt) 498 km/h (269 kt) 530 km/h (286 kt) 0.82 M
Maximum flap extended speed (V_{FE}): <ul style="list-style-type: none"> • Flap position 1 • Flap position 2 • Flap position 3 • Flap position 4 • Flap position 5 • Flap position full 	(IAS – up to 6096 m) 426 km/h (230 kt) 398 km/h (215 kt) 370 km/h (200 kt) 333 km/h (180 kt) 333 km/h (180 kt) 306 km/h (165 kt)
Maximum landing gear operating speed (V_{LO}): <ul style="list-style-type: none"> • Retraction • Extension 	463 km/h (250 kt) 463 km/h (250 kt)
Maximum landing gear extended speed (V_{LE}):	463 km/h (250 kt)
Maximum tire ground speed:	362 km/h (195 kt)

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5.3.3. Maximum weight

Ramp	37360 kg
Takeoff	37200 kg
Landing	32800 kg
Zero Fuel	30140 kg 29600 kg (*)
(*) Applicable to airplanes S/N 170.0001 to 170.0064. Maximum zero fuel will be increased to 30140 kg post-mod SB 170-00-0024, 170-53-0078, 170-53-0079, 170-53-0080, 170-55-0007 and 170-57-0037	

5.3.4. Maximum baggage weight

Cargo compartment	Maximum load (kg)
• Forward	1370
• Aft	1030

5.3.5. Fuel capacity

Maximum usable fuel: 11625 liters
Unusable fuel: 84 liters

5.3.6. Maximum number of passengers

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5.4. Model ERJ 170-100 SE

5.4.1. Engines

Two CF34-8E5 or CF34-8E5A1 turbofan engines manufactured by General Electric Aircraft Engines (GE).

5.4.2. Speed Limits (IAS)

Maximum Operating Speed (V_{MO}): <ul style="list-style-type: none"> • 0 to 2438 m (*) • 3048 to 8805 m (*) • 8805 to 12497 m (*) (*) Linear variation from 2438 to 3048 m	556 km/h (300 kt) 593 km/h (320 kt) 0.82 M
Maneuvering speed (V_A): <ul style="list-style-type: none"> • 0 m (*) • 6096 m (*) • 8805 m (*) • 10363 m (*) • 10363 to 12497 m (*) Linear variation	445 km/h (240 kt) 454 km/h (245 kt) 498 km/h (269 kt) 530 km/h (286 kt) 0.82 M
Maximum flap extended speed (V_{FE}): <ul style="list-style-type: none"> • Flap position 1 • Flap position 2 • Flap position 3 	(IAS – up to 6096 m) 426 km/h (230 kt) 398 km/h (215 kt) 370 km/h (200 kt)

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<ul style="list-style-type: none"> • Flap position 4 • Flap position 5 • Flap position full 	333 km/h (180 kt) 333 km/h (180 kt) 306 km/h (165 kt)
Maximum landing gear operating speed (V_{LO}): <ul style="list-style-type: none"> • Retraction • Extension 	463 km/h (250 kt) 463 km/h (250 kt)
Maximum landing gear extended speed (V_{LE}):	463 km/h (250 kt)
Maximum tire ground speed:	362 km/h (195 kt)

5.4.3. Maximum weight

Ramp	37360 kg
Takeoff	37200 kg
Landing	32800 kg
Zero Fuel	30140 kg 29600 kg (*)
(*) Applicable to airplanes S/N 170.0001 to 170.0064. Maximum zero fuel will be increased to 30140 kg post-mod SB 170-00-0024, 170-53-0078, 170-53-0079, 170-53-0080, 170-55-0007 and 170-57-0037	

5.4.4. Maximum baggage weight

Cargo compartment	Maximum load (kg)
<ul style="list-style-type: none"> • Forward • Aft 	1370 1030

5.4.5. Fuel capacity

Maximum usable fuel: 11625 liters
Unusable fuel: 84 liters

5.4.6. Maximum number of passengers

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5.5. Model ERJ 170-200 STD

5.5.1. Engines

Two CF34-8E5 or CF34-8E5A1 turbofan engines manufactured by General Electric Aircraft Engines (GE).

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5.5.2. Speed Limits (IAS)

Maximum Operating Speed (V_{MO}): <ul style="list-style-type: none"> • 0 to 2438 m (*) • 3048 to 8805 m (*) • 8805 to 12497 m (*) (*) Linear variation from 2438 to 3048 m	556 km/h (300 kt) 593 km/h (320 kt) 0.82 M
Maneuvering speed (V_A): <ul style="list-style-type: none"> • 0 m (*) • 2882 m (*) • 8401 to 10300 m (*) • 10300 to 12497 m (*) (*) Linear variation from 0 to 2882 m and from 2882 m to 8401 m	448 km/h (242 kt) 465 km/h (251 kt) 501 km/h (270 kt) 0.82 M
Maximum flap extended speed (V_{FE}): <ul style="list-style-type: none"> • Flap position 1 • Flap position 2 • Flap position 3 • Flap position 4 • Flap position 5 • Flap position full 	(IAS – up to 6096 m) 426 km/h (230 kt) 398 km/h (215 kt) 370 km/h (200 kt) 333 km/h (180 kt) 333 km/h (180 kt) 306 km/h (165 kt)
Maximum landing gear operating speed (V_{LO}): <ul style="list-style-type: none"> • Retraction • Extension 	463 km/h (250 kt) 463 km/h (250 kt)
Maximum landing gear extended speed (V_{LE}):	463 km/h (250 kt)
Maximum tire ground speed:	362 km/h (195 kt)

5.5.3. Maximum weight

Ramp	37660 kg 37500 kg
Takeoff	36500 kg post-mod 170-00-0030 37500 kg post-mod 170-00-0031 35740 kg post-mod 170-000-00042
Landing	34000 kg
Zero Fuel	31700 kg

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5.5.4. Maximum baggage weight	Cargo compartment	Maximum load (kg)
	• Forward	1500
	• Aft	1150

5.5.5. Fuel capacity	Maximum usable fuel: 11625 liters Unusable fuel: 84 liters
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5.5.6. Maximum number of passengers	86
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5.6. Model ERJ 170-200 LR

5.6.1. Engines	Two CF34-8E5 or CF34-8E5A1 turbofan engines manufactured by General Electric Aircraft Engines (GE).
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5.6.2. Speed Limits (IAS)

Maximum Operating Speed (V_{MO}): <ul style="list-style-type: none"> • 0 to 2438 m (*) • 3048 to 8805 m (*) • 8805 to 12497 m (*) (*) Linear variation from 2438 to 3048 m	556 km/h (300 kt) 593 km/h (320 kt) 0.82 M
Maneuvering speed (V_A): <ul style="list-style-type: none"> • 0 m (*) • 2882 m (*) • 8401 to 10300 m (*) • 10300 to 12497 m (*) (*) Linear variation from 0 to 2882 m and from 2882 m to 8401 m	448 km/h (242 kt) 465 km/h (251 kt) 501 km/h (270 kt) 0.82 M
Maximum flap extended speed (V_{FE}): <ul style="list-style-type: none"> • Flap position 1 • Flap position 2 • Flap position 3 • Flap position 4 • Flap position 5 • Flap position full 	(IAS – up to 6096 m) 426 km/h (230 kt) 398 km/h (215 kt) 370 km/h (200 kt) 333 km/h (180 kt) 333 km/h (180 kt) 306 km/h (165 kt)
Maximum landing gear operating speed (V_{LO}): <ul style="list-style-type: none"> • Retraction • Extension 	463 km/h (250 kt) 463 km/h (250 kt)
Maximum landing gear extended speed (V_{LE}):	463 km/h (250 kt)
Maximum tire ground speed:	362 km/h (195 kt)

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5.6.3. Maximum weight

Ramp	38950 kg
Takeoff	38790 kg
Landing	34000 kg
Zero Fuel	31700 kg

5.6.4. Maximum baggage weight

Cargo compartment	Maximum load (kg)
• Forward	1500
• Aft	1150

5.6.5. Fuel capacity

Maximum usable fuel: 11625 liters
Unusable fuel: 84 liters

5.6.6. Maximum number of passengers

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5.7. Model ERJ 170-200 SU

5.7.1. Engines

Two CF34-8E5 or CF34-8E5A1 turbofan engines manufactured by General Electric Aircraft Engines (GE).

5.7.2. Speed Limits (IAS)

Maximum Operating Speed (V_{MO}): <ul style="list-style-type: none"> • 0 to 2438 m (*) • 3048 to 8805 m (*) • 8805 to 12497 m (*) (*) Linear variation from 2438 to 3048 m	556 km/h (300 kt) 593 km/h (320 kt) 0.82 M
Maneuvering speed (V_A): <ul style="list-style-type: none"> • 0 m (*) • 2882 m (*) • 8401 to 10300 m (*) • 10300 to 12497 m (*) (*) Linear variation from 0 to 2882 m and from 2882 m to 8401 m	448 km/h (242 kt) 465 km/h (251 kt) 501 km/h (270 kt) 0.82 M

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Maximum flap extended speed (V_{FE}):	(IAS – up to 6096 m)
<ul style="list-style-type: none"> • Flap position 1 • Flap position 2 • Flap position 3 • Flap position 4 • Flap position 5 • Flap position full 	426 km/h (230 kt) 398 km/h (215 kt) 370 km/h (200 kt) 333 km/h (180 kt) 333 km/h (180 kt) 306 km/h (165 kt)
Maximum landing gear operating speed (V_{LO}):	
<ul style="list-style-type: none"> • Retraction • Extension 	463 km/h (250 kt) 463 km/h (250 kt)
Maximum landing gear extended speed (V_{LE}):	463 km/h (250 kt)
Maximum tire ground speed:	362 km/h (195 kt)

5.7.3. Maximum weight

Ramp	38950 kg
Takeoff	38790 kg
Landing	34000 kg
Zero Fuel	31700 kg

5.7.4. Maximum baggage weight

Cargo compartment	Maximum load (kg)
<ul style="list-style-type: none"> • Forward • Aft 	1500 1150

5.7.5. Fuel capacity

Maximum usable fuel: 11625 liters
 Unusable fuel: 84 liters

5.7.6. Maximum number of passengers

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6. Engine Limits

Performance and operational limitations of the engine are given in the ERJ 170/175 AFM, P/N AFM-1383, approved by ANAC.

7. APU

Gas turbine engine APS 2300 developed by Hamilton Sundstrand;

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- 8. Fuel** For approved fuel grades see the ANAC Type Certificate Data Sheet № 2003T05 and the ERJ 170/175 ANAC AFM, P/N AFM-1383.
- Approved fuel additives for use in CF34-8E are specified in GE Specification D50TF2
- 9. Minimum Flight Crew** 2 pilots (captain and co-pilot)
- 10. Center of gravity range** For center of gravity range see the ERJ 170/175 ANAC AFM, P/N AFM-1383.
- 11. Maximum operating altitude** 40000 feet (12200 m)
- 12. Ambient air temperature limits near the ground for take-off and landing** Not lower than minus 40⁰C and not higher than +40⁰C
- 13. Fuel tank temperature** Minus 37⁰C Minimum
- 14. Airworthiness Limitations**
- The mandatory systems certification maintenance requirements, raised from the safety analysis, are listed in the “Appendix A Part1 – Certification Maintenance Requirements (CMR)” of the document MRB Report P/N 1621, Revision 1 or subsequent ANAC approved revision.
- The mandatory structure certification maintenance requirements, raised from the damage tolerance analysis, are listed in the “Appendix A Part 2 - Airworthiness Limitation Items (ALI) - Structures” of the document MRB Report P/N 1621, Revision 1 or subsequent ANAC approved revision.
- The list of the tasks raised from the compliance with the RBHA/14 CFR Part 25.981 Amendment 102 (a) and (b) is provided in the “Appendix A Part 3 – Fuel System Limitation Items” of the document MRB Report P/N 1621, Revision 1 or subsequent ANAC approved revision.
- The list of the life limited components is provided in the “Appendix A Part 4 - Life - Limited Items (LLI)” of the document MRB Report P/N 1621, Revision 1 or subsequent ANAC approved revision.
- The Structures Repair Manual P/N 1583 for the ERJ 170-100 models and P/N 1802 for the ERJ 170-200 models is approved and controlled by ANAC, and all Service Bulletins issued by Embraer are approved by ANAC, except Alert Service Bulletins.

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15. Aircraft Noise

ERJ-170-100 and ERJ-170-200 aircraft are approved for compliance with Aviation Regulations, Part 36 (AP-36) “Aircraft Noise Certification” and Annex 16 ICAO “Environmental Protection”, Volume 1 “Aircraft Noise”.

16. Required Equipment

1. All mandatory modifications listed in the document Embraer “Type Design Standard Document - Russia”, Ref. 170TDSD_AR of RF, shall be embodied;

Note: Document “Type Design Standard Document - Russia”, Ref. 170TDSD_AR of RF, shall be provided by Embraer to each Operator together with a set of operational documentation listed in §1.

2. To perform flights when continuous radio communication by means of VHF radio is not provided, aircraft shall be equipped with

- One HF radio if interruptions in VHF covering zone are less than 1 hour of flight;

- Two HF radios if interruptions of VHF covering zone are longer than 1 hour of flight

3. All inscriptions and placards related to rescue and safety equipment, must be bilingual: in English and in Russian language, excluding placards “EXIT”.

4. Aircraft Type Design shall include:

- emergency flight data recorder;

- emergency voice recorder with recording duration not less than two hours and with capability of time recording

- one stationary HF/VHF “COSPAS-SARSAT” ELT operated automatically or manually from the cockpit, and one portable HF/VHF “COSPAS-SARSAT” ELT.

5. Aircraft shall be equipped with one emergency radio operating on 121,5 MHz and located so to be easily accessible and detachable in the event of emergency landing or ditching. Availability of the emergency radio on board is the responsibility of Operator.

6. Flights over the extensive water areas are allowed for aircraft when equipped with combined gangways-rafts (located on emergency exit door) and with individual and group rescue means the number and capacity of which should be defined by the number of passenger seats.

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17. Operational Limitations

1. Flights are allowed in airspace where secondary radar control is provided using RBS mode.
2. Flights in polar regions outside the VHF coverage are allowed only with favorable forecast of HF propagation.
3. Navigation and approach to landing using automatic radio compass are allowed only if aircraft is equipped with not less than two automatic radio compasses or with one automatic radio compass with two frequency selectors.
4. All ERJ-170-100 and ERJ-170-200 models are approved for CAT II approaches.
5. Any changes and additions to operational documentation developed by Embraer based on request from Operator may be incorporated only upon FATA approval.
6. For other limitations see the ERJ 170/175 ANAC Airplane Flight Manual (AFM), P/N AFM-1383 with Supplement 21 “FATA Certification”, approved by ANAC.

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