TURKISH DEFENSE & AEROSPACE INDUSTRY

2022

PRESIDENCY OF
THE REPUBLIC OF TÜRKİYE
INVESTMENT
OFFICE

AGENDA

1 **Snapshot**

2 Turkish Defense & Aerospace Industry

3 Turkish Civil Aviation

PRESIDENCY OF
THE REPUBLIC OF TÜRKİYE
INVESTMENT
OFFICE

Turkish defense and aviation industry offers lucrative opportunities

DEFENSE EXPENDITURES (2022)

$10.6 Billion

Clusters

DEFENSE AND AEROSPACE

CIVIL AVIATION TURNOVER (2022)

$35.8 Billion

TURNOVER (2022)

$12.2 Billion

DEFENSE & AEROSPACE INDUSTRY

Strong Support

FOR JOINT VENTURES WITH
INTERNATIONAL COMPANIES

AIRLINE FLEET (2022)

631

EXPORTS (2022)

$4.4 Billion

DEFENSE & AEROSPACE INDUSTRY

Aviation Hub

INCREASING CONNECTIVITY WITH MORE THAN
300 INTERNATIONAL DESTINATIONS
(2022)

AIR PASSENGERS (2022)

182.3 Million

AGENDA

1 Snapshot

2 **Turkish Defense & Aerospace Industry**

3 Turkish Civil Aviation

PRESIDENCY OF
THE REPUBLIC OF TÜRKİYE
INVESTMENT
OFFICE

Turkish defense industry has important advantages with a globally-competitive edge.

- Well-developed industrial and human resource ecosystem
- Globally-competitive national defense companies
- High number of strategic agreements with international partners, facilitating defense industry collaboration and trade

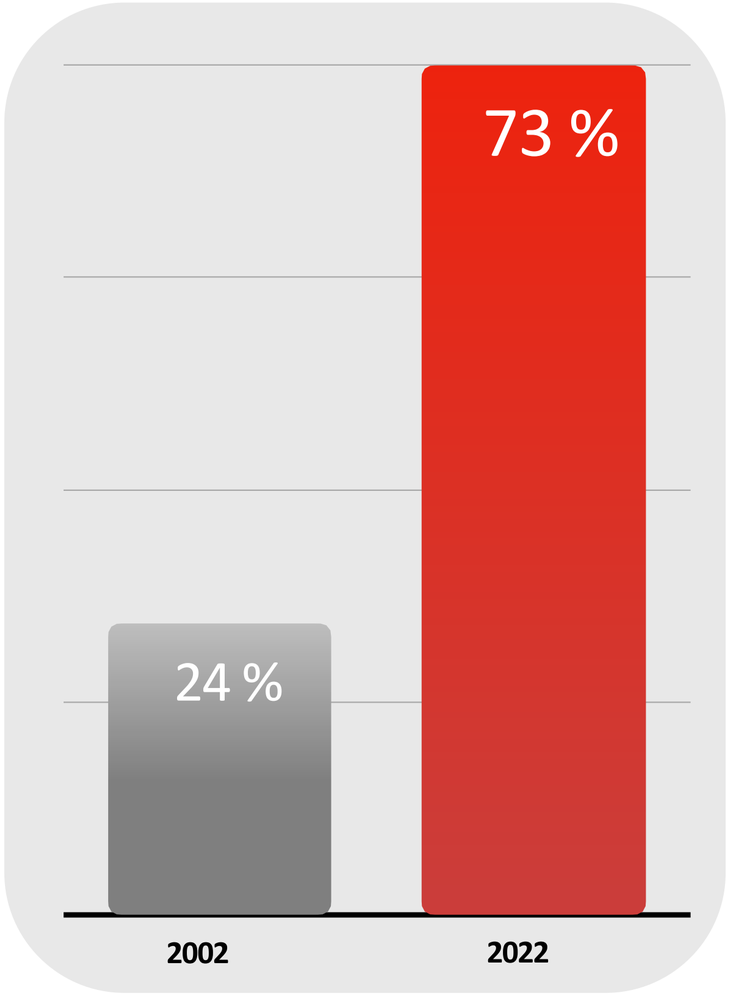
- Strong government support to joint ventures, international partnerships and defense cooperation
- Cost-competitive defense products vis-a-vis Western-manufactured equivalents, suiting budgets of the governments with financial constraints
- One of the largest defense budgets globally

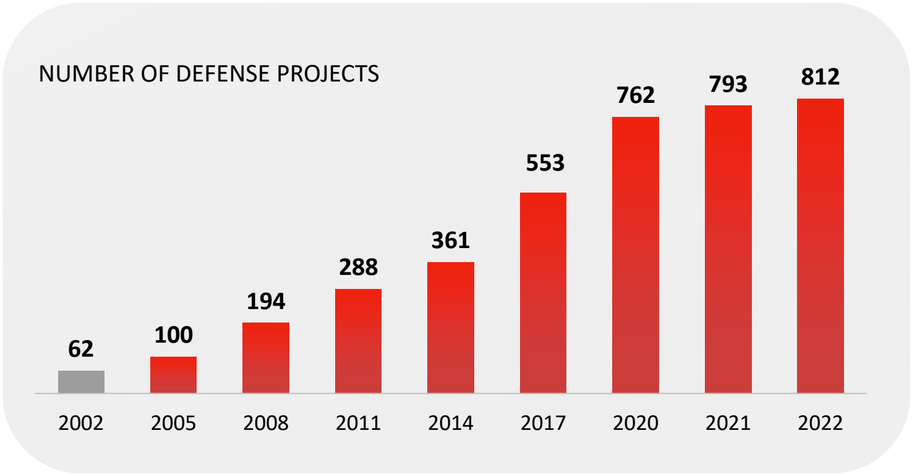
Türkiye’s decisive policies have yielded significant results in transforming the defense industry

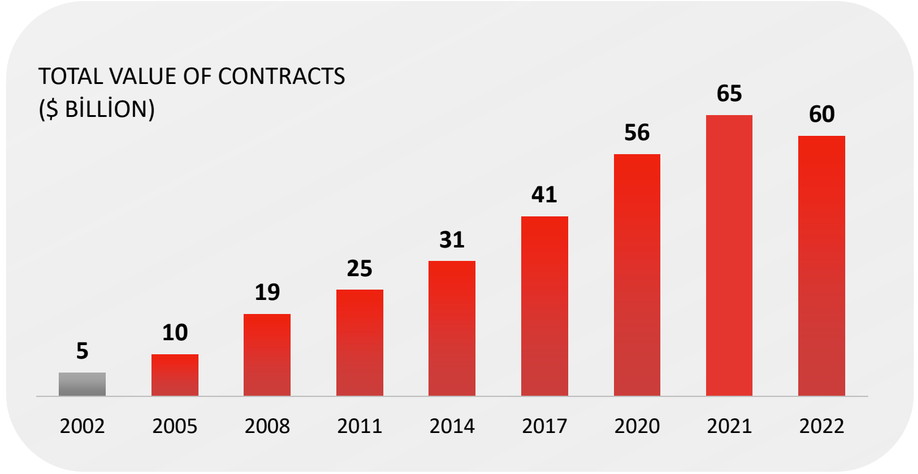
LOCAL CONTENT IN TÜRKİYE’S DEFENSE PROCUREMENT IS EXPECTED TO REACH

80%

BEFORE 2025







Source: SSB

Considering the ongoing tender processes, total contract value is anticipated to reach over $75 billion.

Turkish defense industry has been undergoing a profound transformation from solely procurement to design and manufacture

pre-1990	1990-2000	2000-2010	2010-2020	2020-2030
Direct Procurement	**Co-Production**	**Partial Design** (Main Platforms)	**Indigenous Design** (Local Production)	**Basic & Advanced Technologies**
				
• Cobra AH-1 W (Attack helicopter) • AB-412 Helicopter • MLRS (Rocket system)	• Armoured Combat Vehicle • Light Transport Aircraft • Basic Trainer Aircraft • Cougar Helicopter	• **Altay** (Tank) • **T 129 Atak** (Attack Helicopter) • **T 70** (Utility Helicopter) • **Milgem** (Warship) • **Anka** (UAV-Male Class)	• **Gökbey** (Utility Helicopter) • **Hürkuş** (Basic trainer aircraft) • **TF-X / MMU** (Indigenous Fighter Jet Project) • **Bayraktar TB2 & TB3, Akıncı** (UAS) • **Hürjet** (Advanced Jet Trainer and Light Attack Aircraft) • **Göktürk-3** Satellite • **T 929 Atak II** (Heavy Duty Attack Helicopter)	• **TF-X KAAN Fighter** • **Bayraktar Kızılelma** (MİUS) • **Complete Localization** • **Life Cycle Management (PLC)** • **Performance-based Logistics (PBL)**

Türkiye has introduced industrial participation (IP) / offset (O) policies in order to facilitate long-term cooperation with international partners in the field of defense, aerospace and homeland security

Indicator	Requirement
Threshold to Require Offset	$5 Million
IP/O Commitment	At least 70% of the Contract Price
Subcontractor / SME Portion	30% of the Category-A IP&O 15% of SME share
Crediting Basis	Domestic Net Added Value (DNAV)
Type of Agreement	Separate IP&O Agreement with the Contractor
Bank Guarantee	6% of IP&O Commitment
Period of Performance	Program Duration + 2 Years
Penalty	6% of Unfulfilled Commitment
Temporary Crediting	Allowed (Conditional)
Banking of Credits	Allowed (Valid for 5 Years)
Transfer of Excess Credits	Allowed (Causality)

Source: SSB

Category A

Direct Turkish Industrial Participation

Category B

Export of products/services in the areas of defense, aerospace and homeland security

Category C

- Acquire technology / capability
- New investment and cooperation in the areas of defense, homeland security, space and aerospace.

Transaction	Multiplier
Design & Engineering Works Performed by SMEs (Cat-A)	2
All other IP Works (Cat-A)	1
Export of Platforms	4-5
Export of Systems / Subsystems	3
Export of Structural Parts	2
SME Portion in Export	1
Export to Prior Market	1
Technological Collaboration (Cat-C)	3-5
Enabling technology/ability that is requested particularly by SSB (Cat-C)	6-8
Foreign Direct Investment (Cat-C)	4
Transfer of Hardware / Software to University / Research Institute (Cat-C)	3

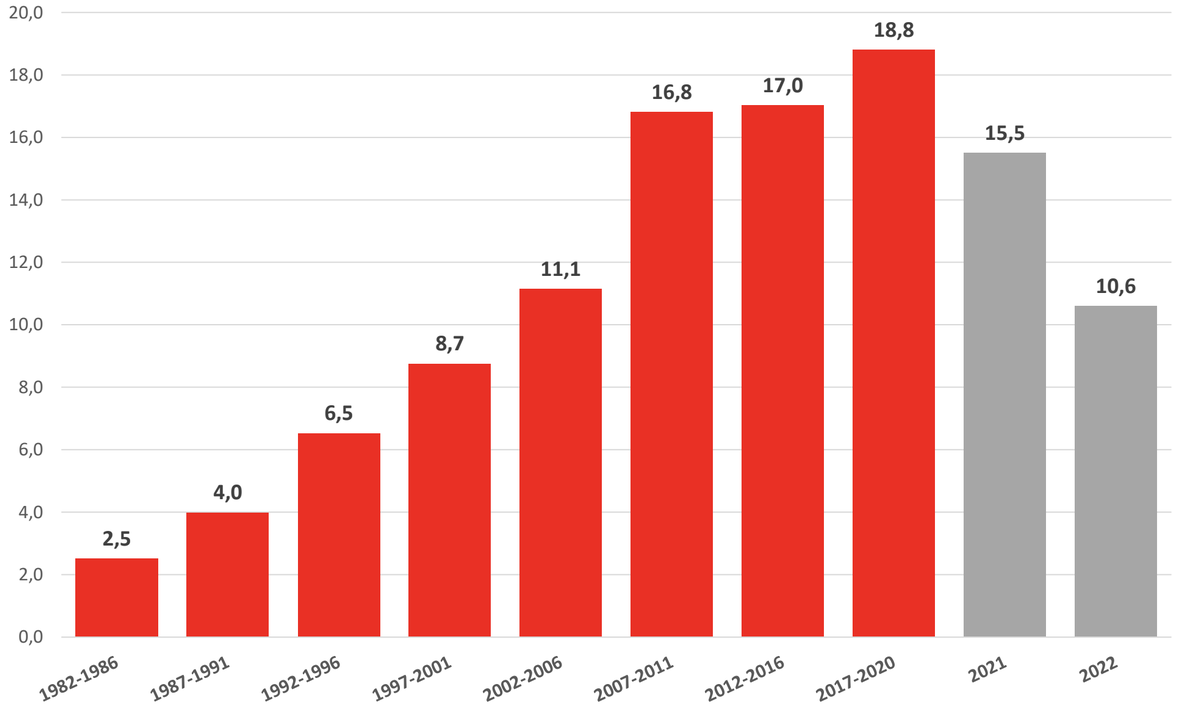
T: Technical score
S: IP/O score
E: Administrative / Economic Score

P_A: Cat-A IP/O Score
P_B: Cat-B IP/O Score
P_C: Cat-C IP/O Score

General Assesment Score (S)= 0.50 x (T) + 0,40 x (S) + 0,10 x (E)

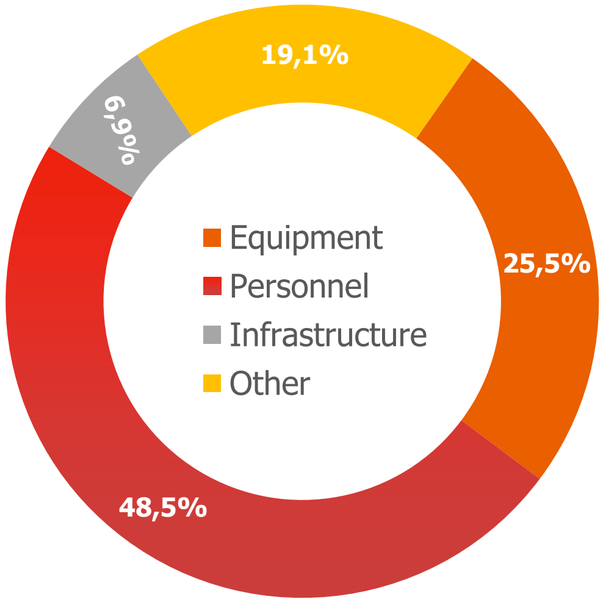
IP / Offset Score (S) = 0.65 x (P_A) + 0,20 x (P_B) + 0,15 x (P_C)

Turkish defense expenditures have significantly increased over the past three decades despite the decrease for the third year in a row with the pandemy.



TÜRKİYE'S ANNUAL DEFENSE EXPENDITURE
($ BILLION, CURRENT PRICES)

DISTRIBUTION OF TÜRKİYE'S DEFENSE EXPENDITURE BY MAIN CATEGORY (2022)

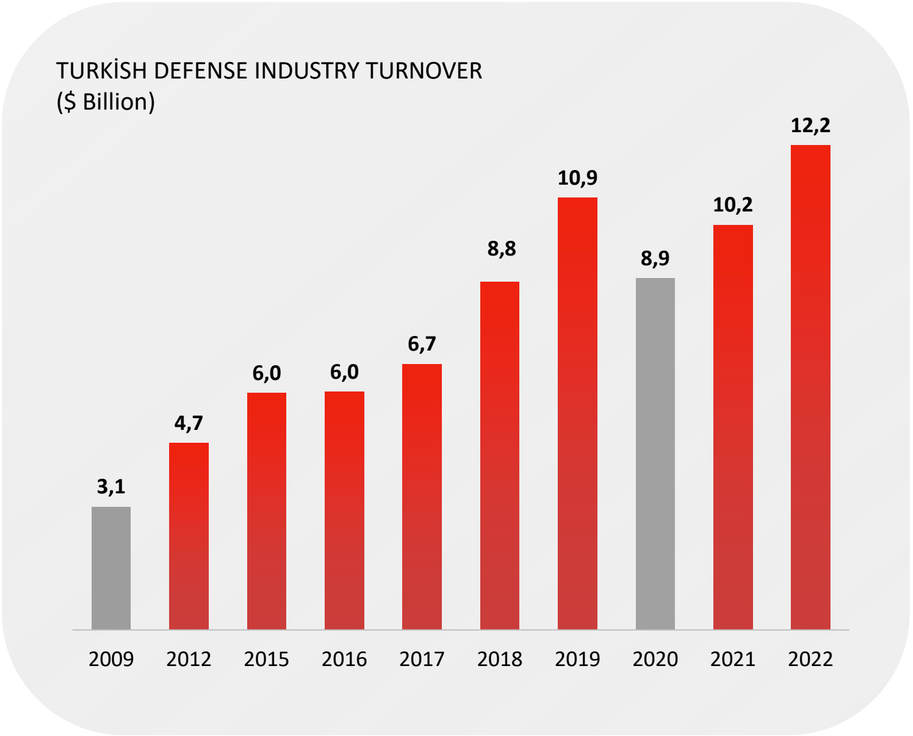


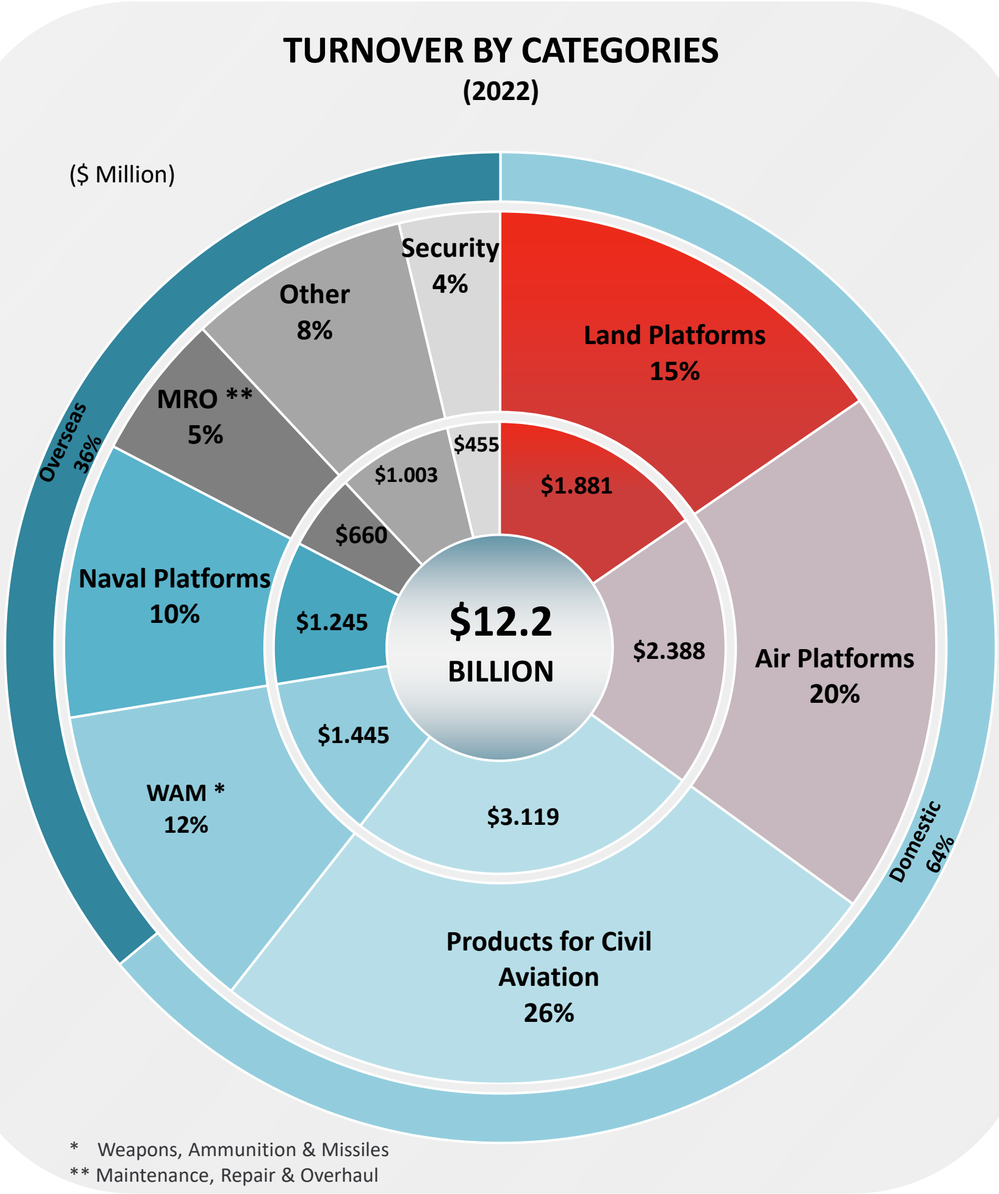
Equipment includes major equipment expenditures and R&D devoted to major equipment. **Personnel** includes military and civilian expenditure and pensions. **Infrastructure** includes NATO common infrastructure and national military construction. **Other** includes operations and maintenance expenditures, other R&D expenditures and expenditures not allocated among above-mentioned categories.

Source: SIPRI, NATO

Turkish defense & aviation industry turnover has almost tripled over the last decade

TURNOVER
$12.2 BILLION
2022



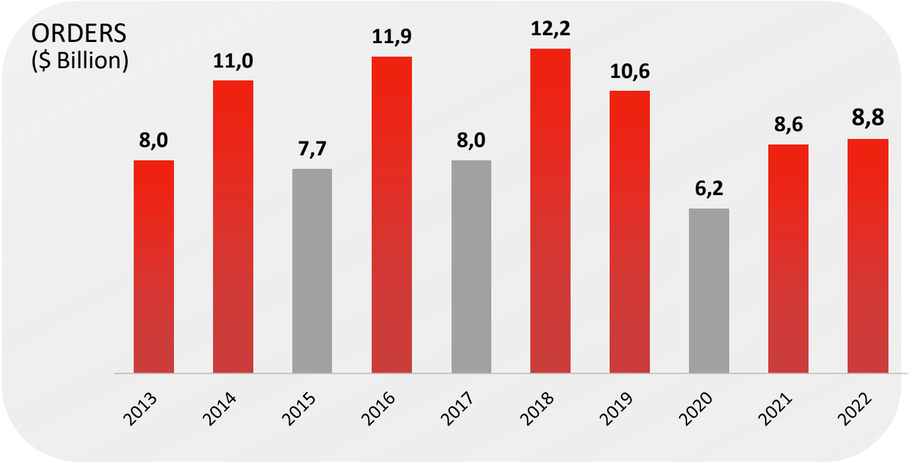


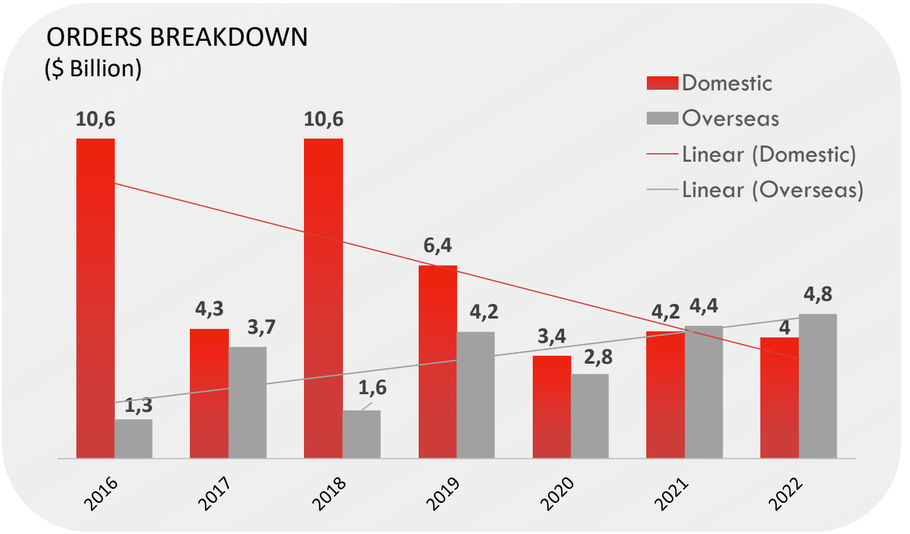
Source:SASAD
* Weapons, Ammunition & Missiles
** Maintenance, Repair & Overhaul

* Weapons, Ammunition & Missiles
** Maintenance, Repair & Overhaul

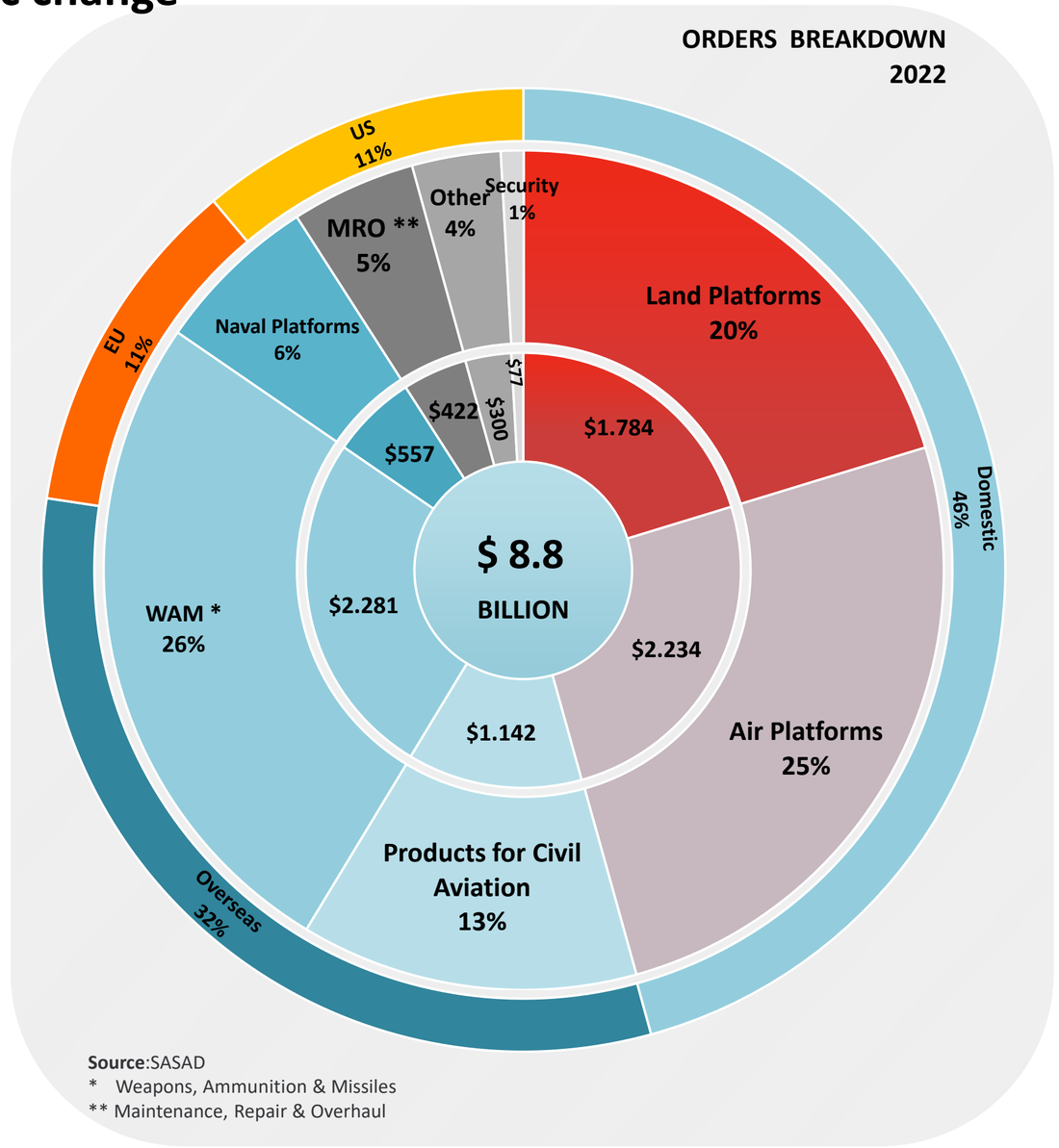
Orders over years and the pandemic and post-pandemic change

ORDERS
$8.8 BILLION
2022





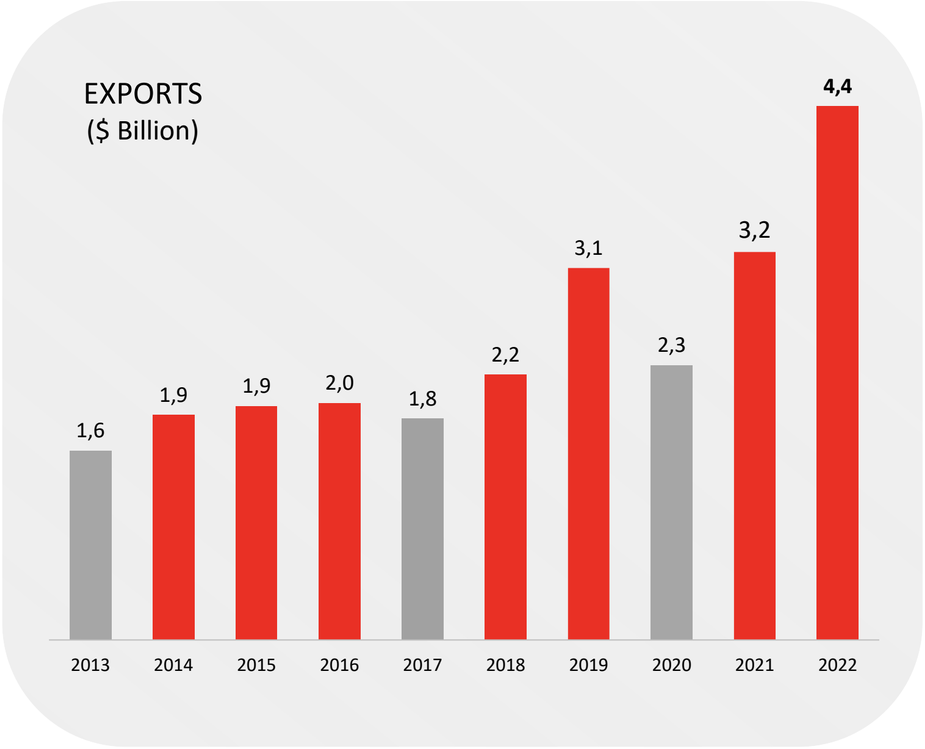
In 2021, the level of foreign orders exceeded domestic orders for the first time. And the gap increased in 2022.



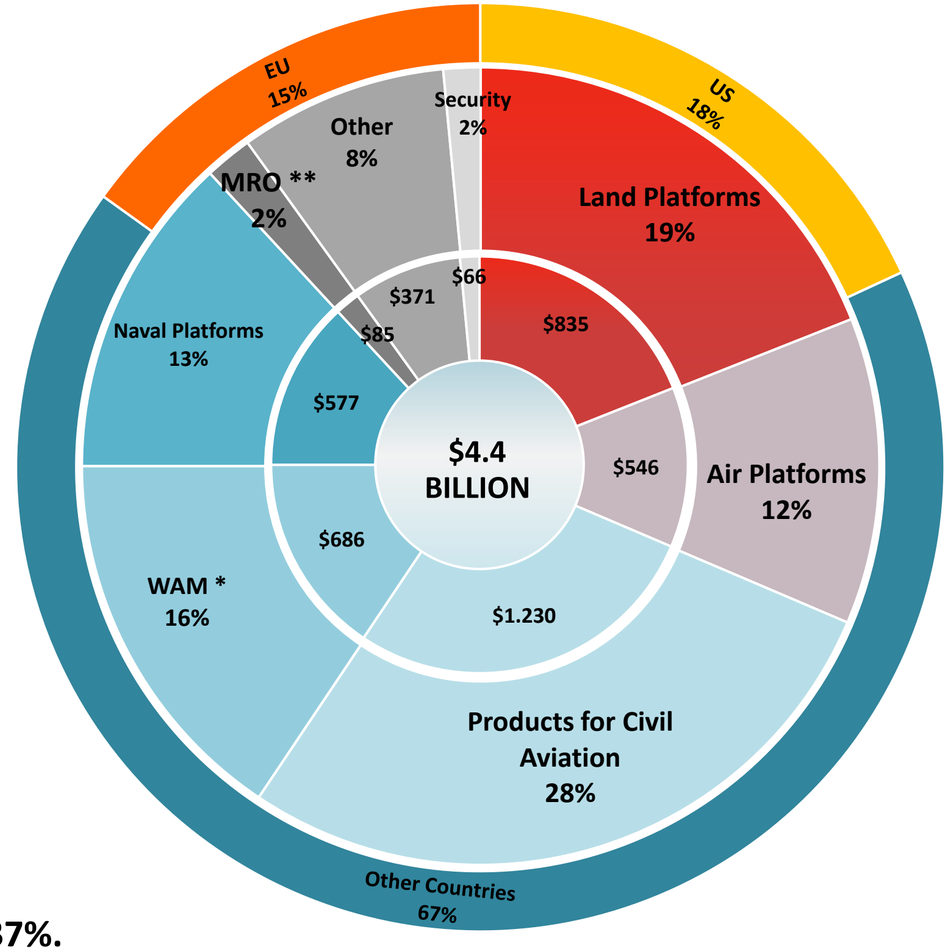
Source:SASAD
* Weapons, Ammunition & Missiles
** Maintenance, Repair & Overhaul

Türkiye's growing and diversifying exports have explored new opportunities in US, EU, Middle East, Africa, Central Asia, and South America

EXPORTS
$4.4 BILLION
2022



EXPORTS BREAKDOWN 2022

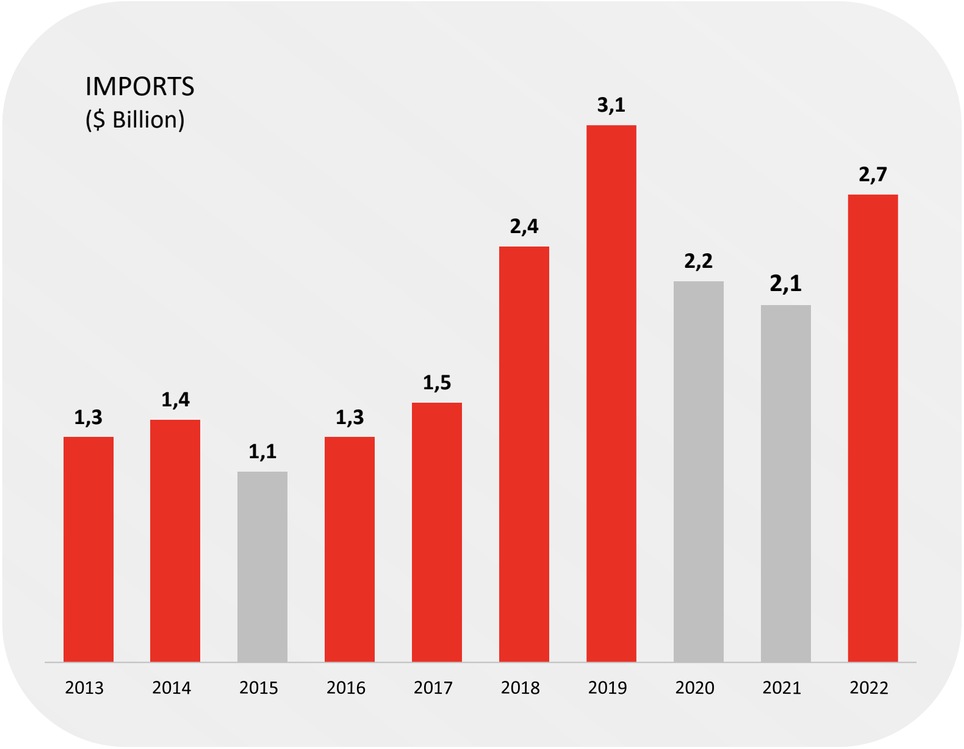


Compared to the previous year, the total increase in exports is around 37%.
Since Türkiye has proved the global competitiveness of its products, it swiftly explores new destinations in global markets and increases its exports.

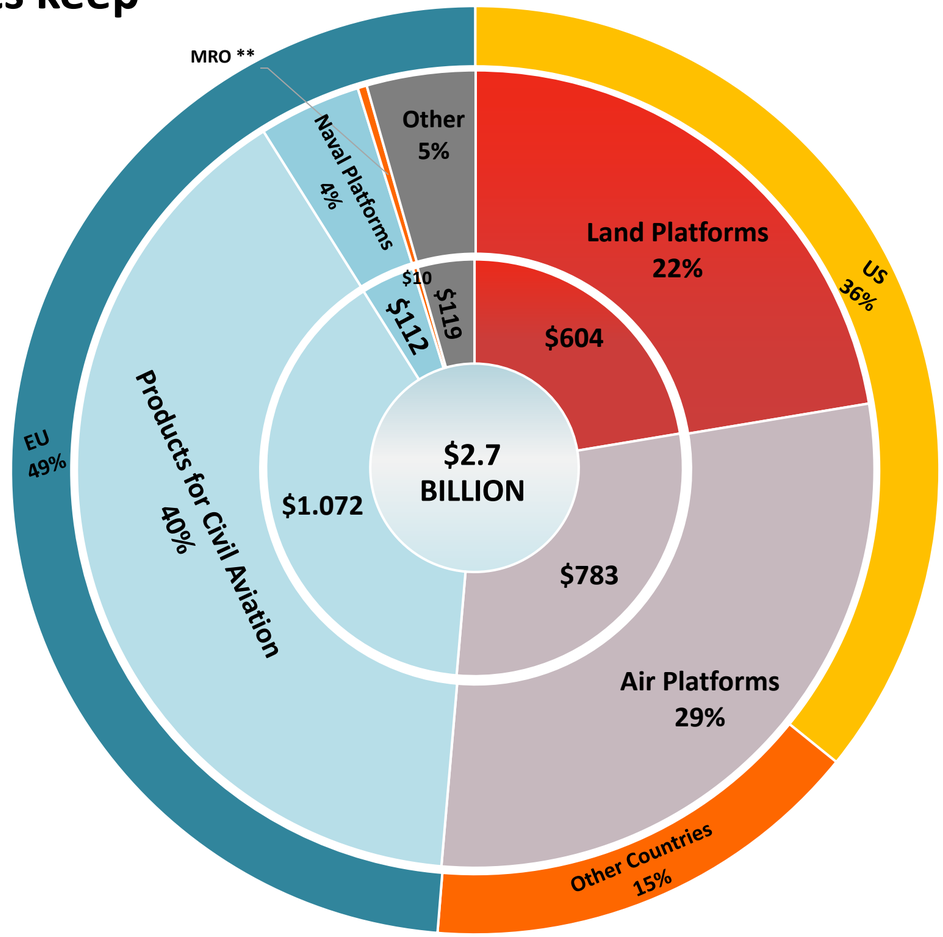
Source:SASAD
* Weapons, Ammunition & Missiles
** Maintenance, Repair & Overhaul

Although Türkiye has considerably increased its domestic capacity in the defense and aviation industry, civil aerospace products keep to occupy a significant place in imports

IMPORTS
$2.7 BILLION
2021

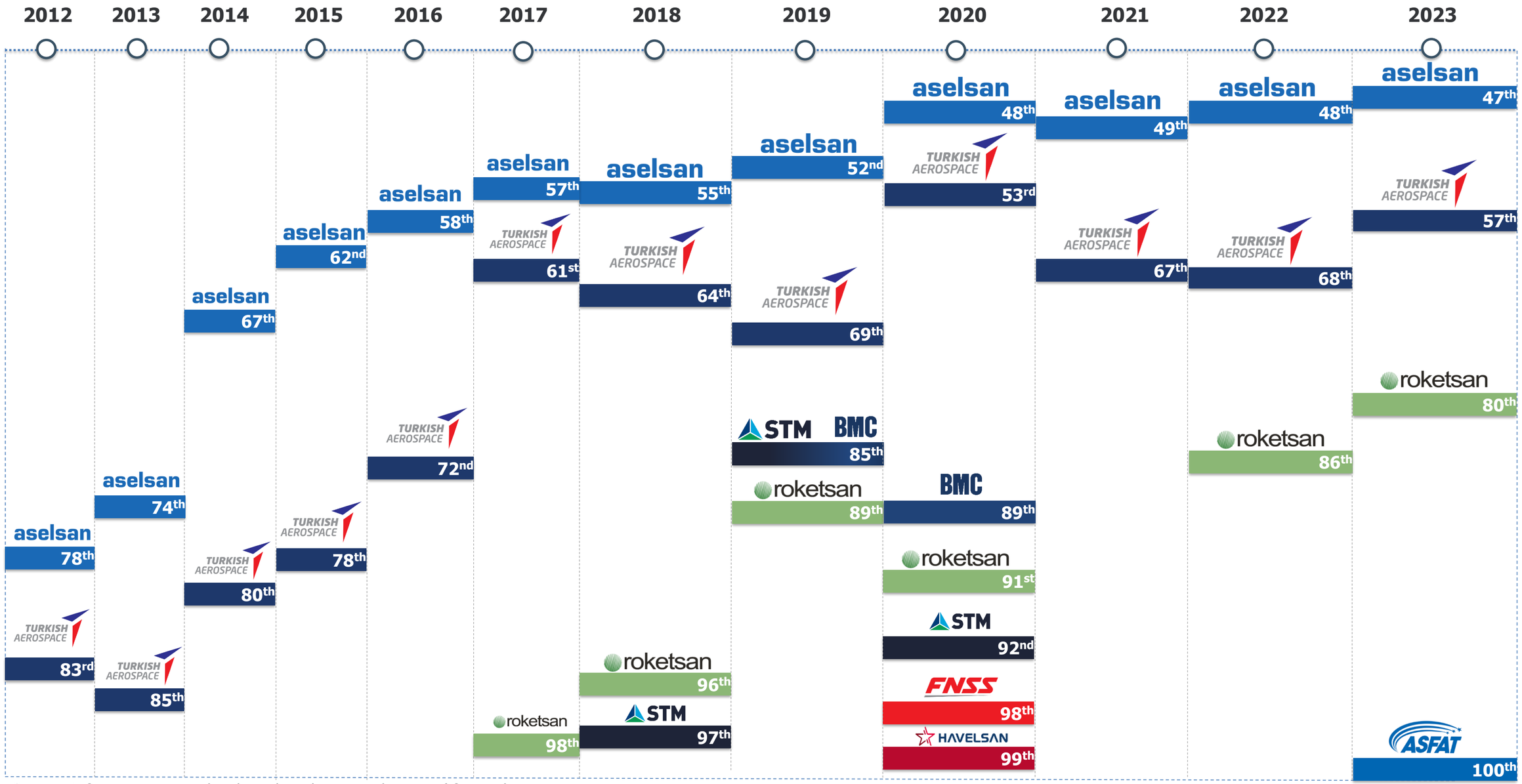


IMPORTS BREAKDOWN 2022



Source:SASAD
* Weapons, Ammunition & Missiles
** Maintenance, Repair & Overhaul

TURKISH DEFENSE COMPANIES AMONG WORLD'S TOP 100



Source: DefenseNews, Annual rankings based on preceding years' financials.

A400M

Program

A400M is the first program that enabled TAI to gain capability and responsibility of a whole life cycled aerospace product starting from concept design studies to after sale logistics support activities.

TAI's workshare in A400M Program includes design and manufacture of structural components as Forward Center Fuselage with Emergency Exit Door, Section 17 Upper Shell with Rear Hatch Door, Paratroper Doors, Tailcone, Ailerons and Spoilers.

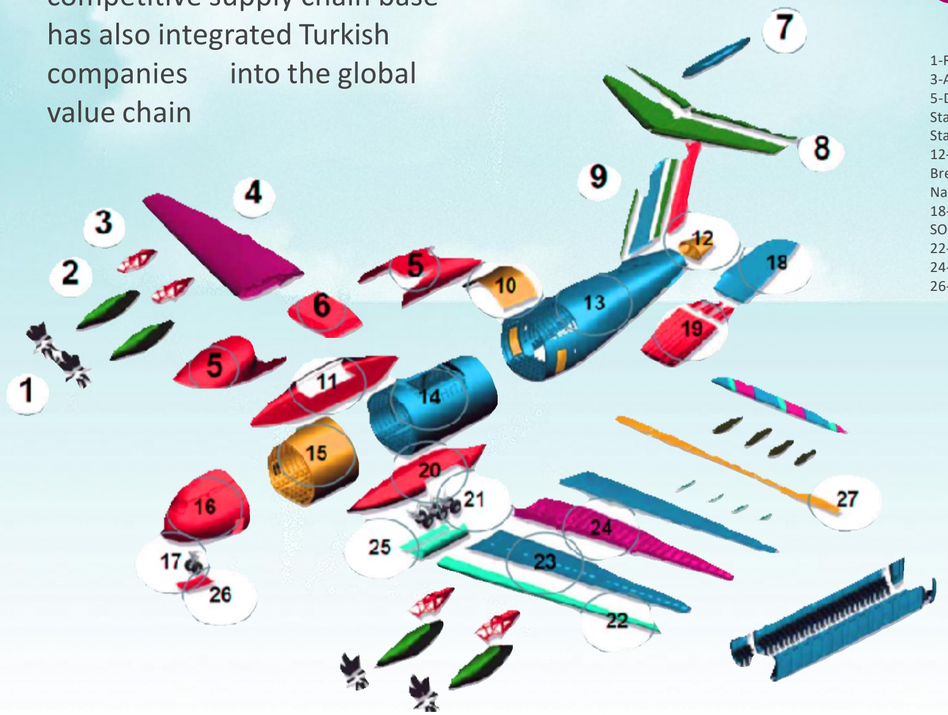
TAI has also manufacturing responsibility of all fuselage harnesses. TAI has first level design and procurement responsibility on lighting system (except cockpit) and water and waste system.

Source: TAI, Airbus Military

Global Supply Chain of

A400M

Developing a domestic competitive supply chain base has also integrated Turkish companies into the global value chain



- Belgium
- France
- German
- Spain
- Türkiye
- U.K

1-Ratier-Figeac, 2-AM Seville, 3-AF Saint Eloi, 4-AUK Filton, 5-DENEL, 6-AF Nantes, 7-AD Stade, 8-AM Seville, 9-AD Stade, 10-TAI, 11-SOCATA, 12-TAI, 13-AD Bremen, 14-AD Bremen, 15-TAI, 16-AF Saint Nazaire, 17-Messier-Dowty, 18-PAG,19-SOGERMA, 20-SOCATA, 21-Messier-Dowty, 22-SONACA, 23-AD Stade, 24-AUK Filton, 25-SONACA, 26-Aerolia, 27-TAI

In addition to international partnerships, Turkish companies have developed strong domestic capabilities with cutting-edge technologies

ANKA

TURKISH AEROSPACE

ANKA, advanced MALE (Medium Altitude Long Endurance) class Unmanned Aerial System, performs day and night, all-weather reconnaissance, target detection/identification and intelligence missions with its EO/IR and SAR payloads, featuring autonomous flight capability including Automatic Take-off and Landing. ANKA incorporates a heavy-fuel engine and electro-expulsive Ice Protection System with an Advanced Ground Control Station and dual datalink allowing operational security and ease. The system is expandable with a Transportable Image Exploitation Station, Radio Relay, Remote Video Terminal and SATCOM.

Technical Specifications

- Wing Span: 17.3 m
- Length: 8 m
- Powerplant: 150 HP
- Payload Capacity: 200 kg
- Endurance: 24 hours
- Service ceiling: 30.000 ft
- Data range: 200 km
- Cruise Speed: 110 knots

Users

- Türkiye
- Tunusia
- Kazakhistan

BAYRAKTAR TACTICAL UAS

BAYKAR

Bayraktar Tactical UAS is a MALE (Medium Altitude Long Endurance) class system developed for tactical reconnaissance and surveillance missions. Prototype Development Phase started within 2007 based on competition model. Bayraktar Tactical UAS with its critical all subsystems - including Flight Control, INS-GPS, Automatic Take Off-Landing systems developed in house demonstrated fully automatic taxi, take off, cruise, landing, parking phases - was selected as the winner of the program in 2009.

Technical Specifications

- Wing Span: 12 m
- Length: 6.5 m
- Powerplant: 100 HP
- Payload Capacity: >55 kg
- Endurance: >24 hours
- Service ceiling: 24.000 ft
- Data range: 150 km
- Cruise Speed: 70 knots

Users

- Türkiye
- Qatar
- Ukraine
- Azebaijan
- Poland – NATO Member
- Morocco
- Kyrgyzstan
- 29 countries in total

KARAYEL TACTICAL UAV

VESTEL Defence Industry

KARAYEL Tactical UAV System is the first and only Tactical Unmanned Aerial Vehicle designed and produced according to NATO's STANAG-4671 for reconnaissance and surveillance purposes. With its capable Payloads on board, KARAYEL can not only detect a target but also mark it with its laser designator. KARAYEL can take off, land and fly a designated mission fully autonomously without assistance from a pilot. Payload capacity and variations are available for both civil and military applications.

Technical Specifications

- Wing Span: 10.5 m
- Length: 6.5 m
- Powerplant: 97 HP
- Payload Capacity: 70 kg
- Endurance: 10 hours
- Service ceiling: 22.500 ft
- Data range: 150 km
- Cruise Speed: 60-80 knots

Users

- Türkiye
- S. Arabia

ANKA AKSUNGUR

AKSUNGUR is a Medium Altitude Long Endurance (MALE) class UAV System, capable to perform day and night Intelligence, Surveillance and Reconnaissance (ISR) and strike missions with EO/IR, SAR and SIGINT payloads, and a variety of air to ground weapons. ANKA-AKSUNGUR is powered by two PD-170 twin-turbocharged diesel engines enabling long endurance operations up to 40,000ft

Technical Specifications

- Wing Span: 24,2 m
- Length : 12.5 m
- Powerplant: 2 x 170 HP Turbo Diesel
- Payload Capacity: 750+ kg
- Endurance: 50 hours
- Service ceiling: 40.000 ft
- Data range: 250+ km
- Cruise Speed: 135 knots

TURKISH AEROSPACE

BAYRAKTAR AKINCI

AKINCI is an Unmanned Air Vehicle System designed to meet rigorous operational requirements. It is capable of conducting operations that are performed with fighter jets and carries a variety of payloads for reconnaissance, survey, intelligence, electronic warfare, designation and attack missions, and can fly extended hours at high altitudes. Advanced autonomy reduces operator burden. With an infrastructure allowing for integration of all nationally-developed air-to-air and air-to-ground munitions, the system reduces operational necessities and costs relative to manned systems with comparable capability. A robust satellite data link enables performing missions in regions with no communication infrastructure, and advanced navigation systems enable the aircraft to fly within electronic warfare environments. Akıncı has an augmented situational awareness and can sense the environment thanks to the Artificial Intelligence onboard.

Technical Specifications

- Wing Span: 20 m
- Length : 12,2 m
- Powerplant: 2 x 750 Hp or 2 x 450 Hp Turboprop
- Payload Capacity: 1.350kg
- Endurance: 24 hours
- Service ceiling: 40.000 ft
- Data range: LOS & BLOS
- Cruise Speed: 150 knots

BAYKAR

ANKA 3

Anka-3 is a semi-stealth unmanned fighter aircraft with a turbofan engine, in-body weapon system and high payload capacity. It has been designed and developed by TAI. ANKA 3 is the first delta form MALE class UAV of Turkish defense sector, which is less visible to the radar with its tailless structure, faster thanks to its jet engine and has a high payload carrying capacity.

As a new generation UAV system, ANKA-3 performs the tasks of reconnaissance, surveillance, intelligence, and attack with different air-ground and air-air munitions. It can also perform many different tasks such as neutralizing RF emitting radar and air defense systems, signal and communication, intelligence and other sorts of electronic warfare.

Technical Specifications

- Wingspan : 24,2 m
- Length : 12.5 m
- Powerplant : 2 x 170 HP Turbo Diesel
- Payload Capacity : 750+ kg
- Endurance : 50 hours
- Service ceiling : 40.000 ft
- Data range : 250+ km
- Cruise Speed : 135 knots

TURKISH AEROSPACE

BAYRAKTAR KIZILELMA

AKINCI is an Unmanned Air Vehicle System designed to meet rigorous operational requirements. It is capable of conducting operations that are performed with fighter jets and carries a variety of payloads for reconnaissance, survey, intelligence, electronic warfare, designation and attack missions, and can fly extended hours at high altitudes. Advanced autonomy reduces operator burden. With an infrastructure allowing for integration of all nationally-developed air-to-air and air-to-ground munitions, the system reduces operational necessities and costs relative to manned systems with comparable capability. A robust satellite data link enables performing missions in regions with no communication infrastructure, and advanced navigation systems enable the aircraft to fly within electronic warfare environments. Akıncı has an augmented situational awareness and can sense the environment thanks to the Artificial Intelligence onboard.

Technical Specifications

- Wingspan : 20 m
- Length : 12,2 m
- Powerplant : 2 x 750 Hp or 2 x 450 Hp Turboprop
- Payload Capacity : 1.350kg
- Endurance : 24 hours
- Service ceiling : 40.000 ft
- Data range : LOS & BLOS
- Cruise Speed : 150 knots

BAYKAR

In order to meet Turkish Air Force (TurAF) requirements beyond 2030s, Türkiye has introduced an indigenous design and development program (TF-X) to rejuvenate the fighter jet fleet of TurAF.

TFX Program

Within the scope of TF-X Program, Türkiye will become one of the few countries to possess the necessary technologies, engineering infrastructure and production capabilities, once the engineering activities on all the critical technologies are accomplished (e.g. increased situational awareness, sensor fusion, low observability, weapon bay, …etc), which are needed by a 5th generation (or beyond) jet fighter aircraft.

TF-X aircraft is planned to be kept operational in the TurAF inventory until 2070s and will be interoperable with other critical assets of TurAF such as F-35As.

The TF-X indigenous design and development program prime contract between the Presidency of Defense Industries (SSB) and Turkish Aerospace Industries Inc. (TAI) has been signed on 5th of August 2016.

The timing of this signature alone, is a key demonstrator of Türkiye's determination of running mega-projects uninterruptedly, even under extraordinary conditions.

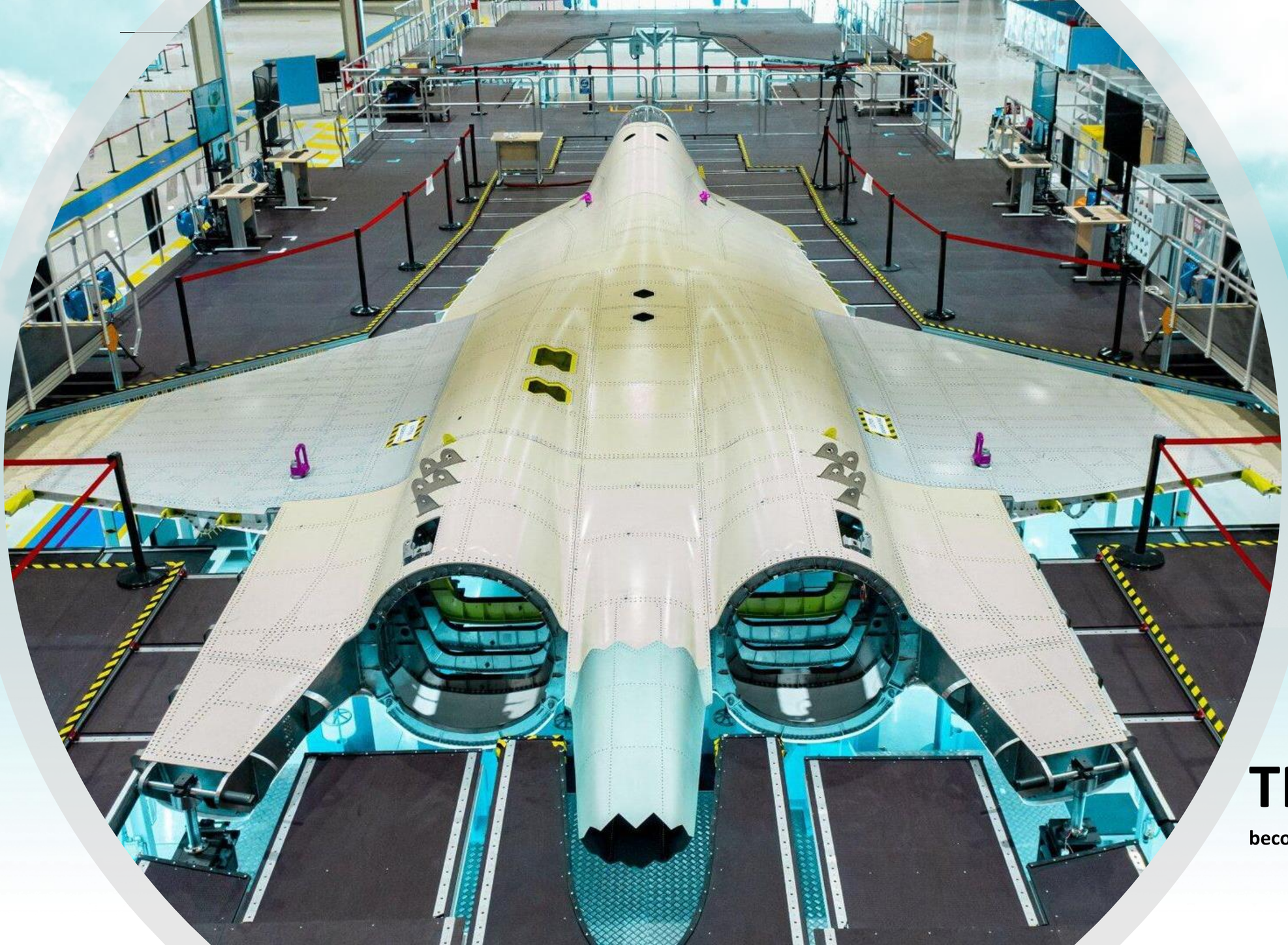
Currently, the prime contract covers the initial four (4) years (starting after signature of major subcontracts) which will end up with completion of preliminary design phase. Within this period beyond the design and development of TF-X Aircraft, engineering capabilities, technology development activities (for key sensors like radar, electronic warfare..etc.), test infrastructures establishment and certification processes will be performed and extensive capabilities for a new generation jet fighter design, development and production will be gained by Turkish industry. TF-X aircraft will be a multi-role aircraft, it will be designed mainly for air- to-air role with a consideration to air-to-surface roles as well. Upon engineering analysis, TF-X aircraft will be a multi-role aircraft, it will be designed mainly for air-to-air role with a consideration to air-to-surface roles as well. Upon engineering analysis, preliminary calculations, based on received information of suppliers of candidate engines, TF-X aircraft is decided to be a twin engine configuration.

BAE SYSTEMS TURKISH AEROSPACE

In this regard a Heads of Agreement (HoA) was signed between TAI and BAE Systems on 28th of January 2017, in the presence of the Prime Ministers of Türkiye and the United Kingdom. In addition, the Letter of Agreement (LOA) was signed during the IDEF 2017. The TAI-BAE Systems Collaboration Agreement was signed and entered into effect on 25th of August 2017.

One of the key ambition and consideration of SSB and TurAF, which is shared by the Turkish industry as well, is the exportability of TF-X aircraft to key allies and friendly countries. In this regard, Türkiye also welcomes any opportunities for participation of interested countries in a win-win model.

TURKISH AEROSPACE



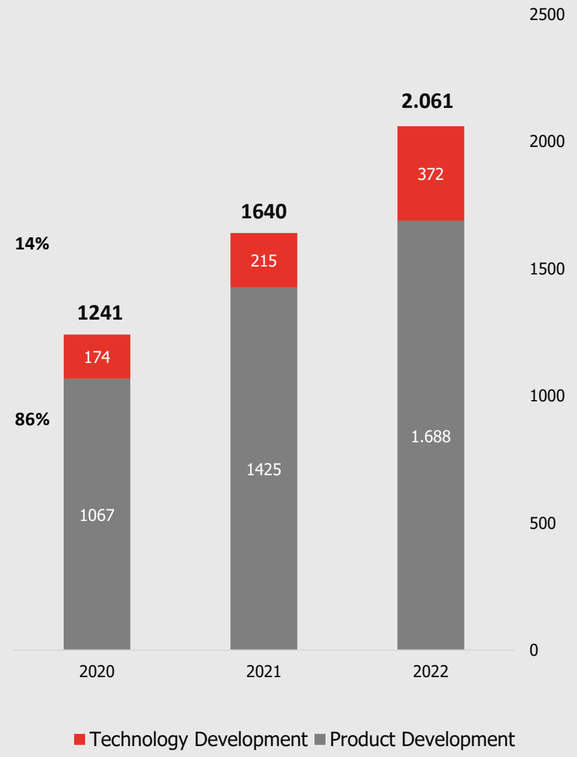
TFX

becomes..

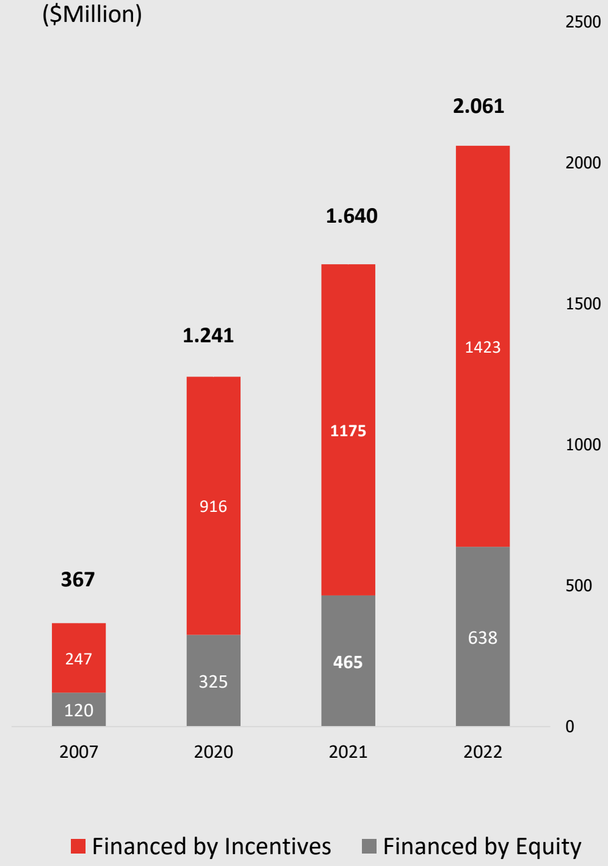

KAAN

Turkish defense industry has an attractive ecosystem supported by a qualified workforce, incentives and know-how

PRODUCT & TECHNOLOGY DEVELOPMENT EXPENDITURES
($ Million)



FINANCE OF P&T DEVELOPMENT EXPENDITURES
($Million)



Main Incentive Tools	Incentives Scheme						
	General Incentives	Regional Incentives	Incentives for Priority Investments	Incentives for Large Scale Investments	Incentives for Strategic Investments	Project-Based Incentives	R&D Incentives
Corporate Tax Reduction		✓	✓	✓	✓	✓	✓
VAT/Custom Duty Exemption	✓	✓	✓	✓	✓	✓	✓
Social Security Premium Support		✓	✓	✓	✓	✓	✓
Income Tax Withholding Support	✓	✓	✓	✓	✓	✓	✓
Interest Support		✓	✓		✓	✓	
Land Allocation		✓	✓	✓	✓	✓	
Partnership (Equity Investment by Govt.)						✓	
Guarantee of Purchase by Govt.						✓	
Energy Cost Support						✓	
Financial Grant							✓

Source: SASAD, Higher Education Council, Ministry of Trade, Ministry of Science, Industry and Technology

Turkish defense and aerospace investments are eligible for a wide range of incentives offered by the government, lucrative incentives schemes boost project economics substantially

MANUFACTURING INVESTMENTS IN DEFENSE AND AEROSPACE RECEIVE INCREMENTAL BENEFITS

- Corporate Tax deductions (up to 100%)
- Tax credits (up to %90)
- Land Allocation
- Project Financing Support
- Social Security Premium Exemptions
- VAT and Customs Duty Exemptions
- Training support

Lowering upfront costs, improving cash flow, and accelerating returns on investment

INVESTMENTS IN DEFENSE AND AEROSPACE ARE PRIORITY AREAS WITH STRATEGIC FOCUS

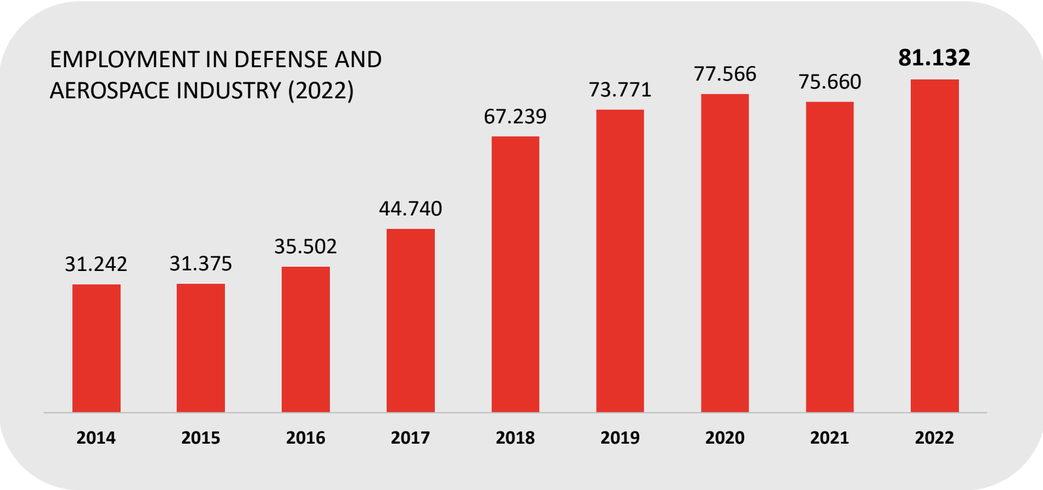
- Industry Participation / Offset
- Product based supports/loans
- Industry development programs
- Exemptions for duties

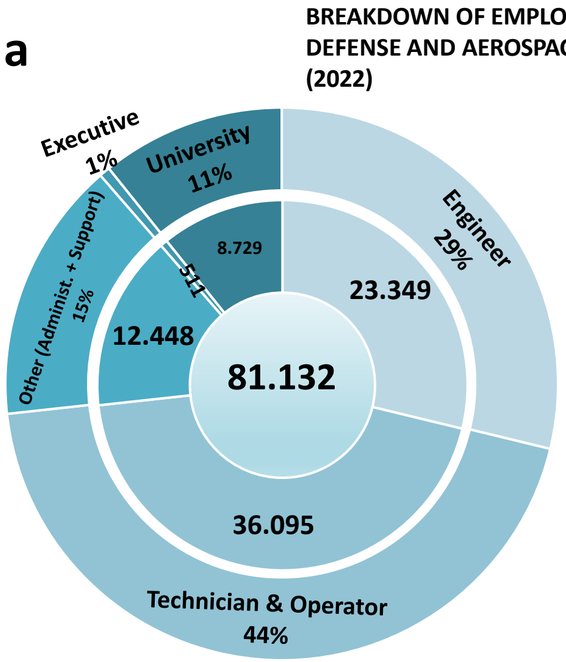
RESEARCH, DEVELOPMENT, AND DESIGN ACTIVITIES ARE BACKED BY GENEROUS SUPPORT PROGRAMS

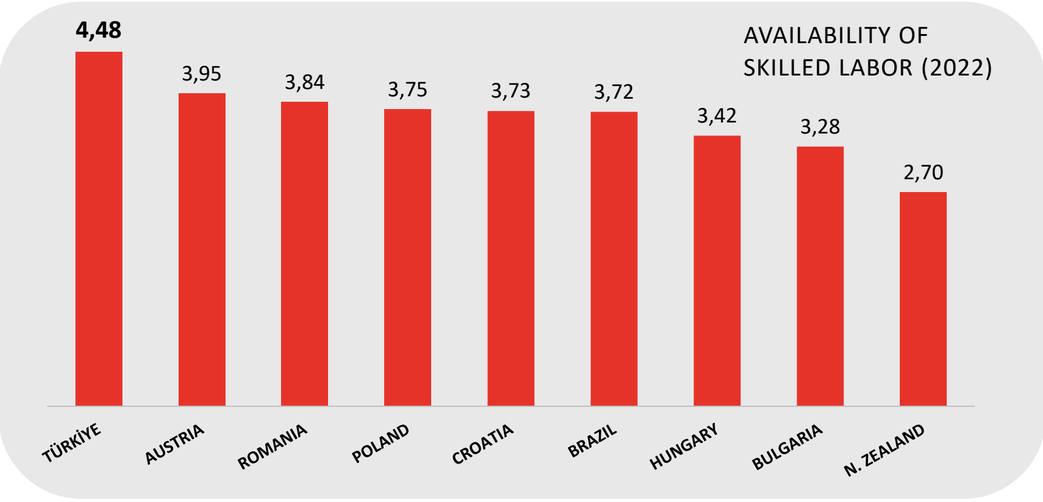
- 100% deductible R&D expenditures
- Corporate Tax exemptions
- Income Tax exemption for R&D personnel
- VAT exemptions on final products
- Dedicated Technology Development Zones
- Early stage financing for start-ups
- Export support

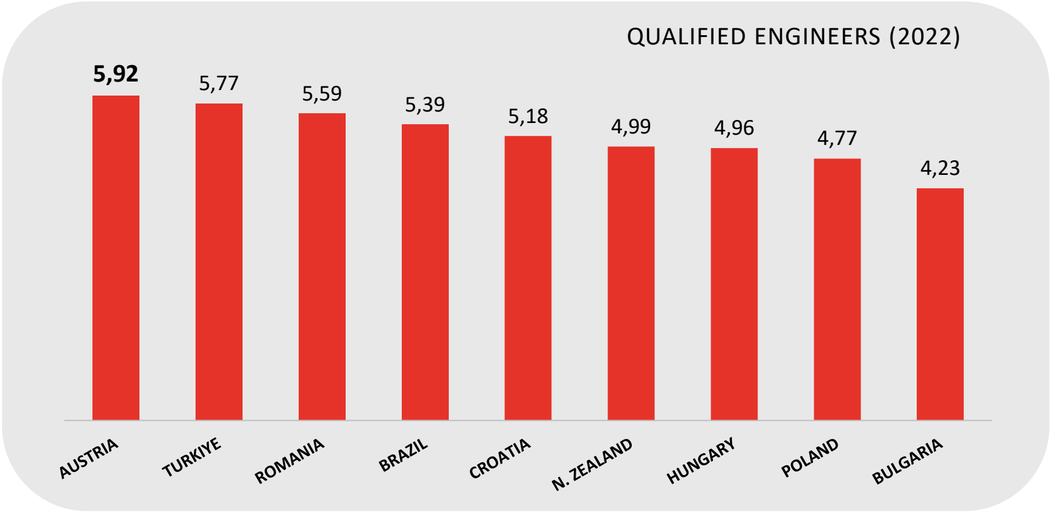
Grants, incentives, and supports are available at all stages of new product development life cycle

Turkish defense industry has an attractive ecosystem supported by a qualified workforce, incentives and know-how









Source: SASAD, IMD, IMD World Competitiveness Executive Opinion Survey based on an index from 0 to 10

As the industry developed, important defense & aerospace clusters have emerged across Türkiye

PARTNERSHIPS

1985

TEI, a joint venture of TAI, GE, Turkish Armed Forces Foundation (TAFF) and Turkish Aeronautical Association (TAA), has been a key player in manufacturing, assembly and testing technology of aircraft engine parts and modules.

1988

FNSS, a joint venture owned 51% by Nurol Holding and 49% by BAE Systems, is a leading manufacturer and supplier of tracked and wheeled armored vehicles and weapon systems for the Turkish and Allied Armed Forces.

2010

Kale Pratt & Whitney, a joint venture owned 51% by Kale Group and 49% by Pratt & Whitney, use state-of- the-art technologies critical to the production of the F135 engine powering the F-35 Lightning II fighter aircraft.

2014

BMC, which is a Turkish-Qatari partnership, manufactures tactical armored vehicles for the defense industry, in addition to buses for public transportation, light and heavy weight trucks for transportation and logistics industry.

2017

BAE Systems and TAI signed an agreement, worth £100m, to collaborate on the first development phase of an indigenous fifth-generation fighter jet for the Turkish Air Force – TF-X.

2017

Rolls-Royce and Kale Group, established a joint venture company owned 51% by Kale and 49% by Rolls-Royce 49%, to develop aircraft engines for Türkiye, initially targeting the TF-X National Fighter Jet Project.

Türkiye hosts important events with significant international participation

TEKNOFEST
AEROSPACE AND TECHNOLOGY FESTIVAL
Aug 30 – Sep 4, 2022

SAHA EXPO
DEFENCE & AEROSPACE EXHIBITION
LAND NAVAL AIR SPACE
October 25-28, 2022

IDEF'23
16th International Defence Industry Fair
July 25-28, 2023

EURASIA AIRSHOW
April 13-17, 2022

ISTANBUL AIRSHOW
6-8 October 2022 Ataturk Airport

expo tech
AR-GE ÜR-GE
İNOVASYON SANAYİ VE TEKNOLOJİ FUARI
R&D P&D
INNOVATION INDUSTRY AND TECHNOLOGY FAIR
1-3 KASIM
NOVEMBER 2023

The business environment for the industry is well-organized with a strong cooperation between the public and private sector

PRESIDENCY OF DEFENSE INDUSTRIES (SSB)

SSB was established in 1985 with a mandate to develop policies establishing a modern defense industry infrastructure in Türkiye and has the authority and responsibility to implement these policies. As per its mandate, SSB carries out major systems procurement, industry policymaking, localization strategy, R&D and international industry relations. SSB is responsible for reorganizing and integrating the existing national industry in line with defense industry requirements; supporting new enterprises; exploring the opportunities with foreign investment and technology contributions; supporting enterprises to partner with foreign investors.

DEFENSE & AEROSPACE INDUSTRY MANUFACTURERS ASSOCIATION (SaSaD)

SaSaD was established in 1990 with a mission to contribute to the development, strengthening, and competitiveness of the Turkish defense and aerospace industry. As the representative of the Turkish defense and aerospace industry, both in Türkiye and international platforms, SaSad aims to facilitate the business environment for the industry players in coordination with the procurement authorities and contractors. Having started the business with 12 founding members at the beginning, SaSaD currently has 113 full members and 75 special members in the communication network as of 2017.

DIRECTORATE GENERAL OF CIVIL AVIATON (DGCA)

DGCA is in charge of regulating the civil aviation industry in accordance with the national and international regulations and standards in order to ensure flight safety and security of the civil aviation. Its main duties, among others, are: to issue relevant documentation and to register aircraft; to audit licenses of flight crew; to determine the licensing terms of personnel working in the civil aviation; to regulate the terms and conditions for the permissions to be granted to real or legal persons to perform air transportation activities in or out of Türkiye; to regulate and audit air navigation of commercial aircraft, as well as traffic communication services in Turkish airspace.

GENERAL DIRECTORATE OF STATE AIRPORTS AUTHORITY (DHMİ)

DHMİ is a state-owned enterprise in charge of the management of Turkish airports and controlling Turkish airspace. It main activities are; management of airports, ground services at airports and air traffic control services, establishment and operation of air navigation systems and facilities and other related facilities and systems, and to maintain them at the level of modern aeronautics.

AGENDA

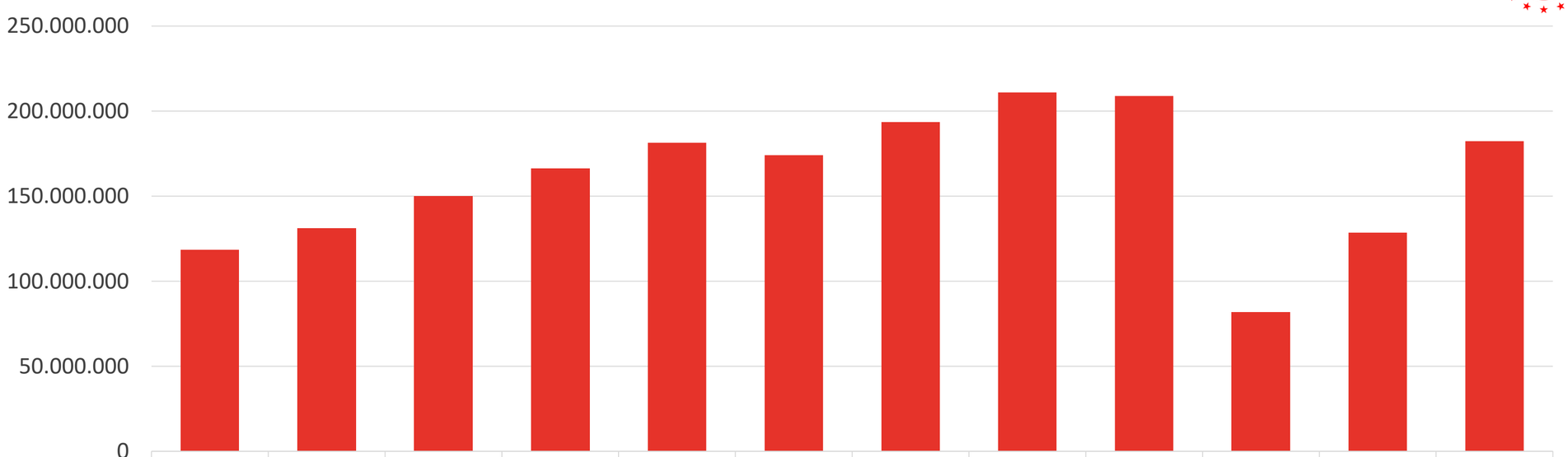
1 Snapshot

2 Turkish Defense & Aerospace Industry

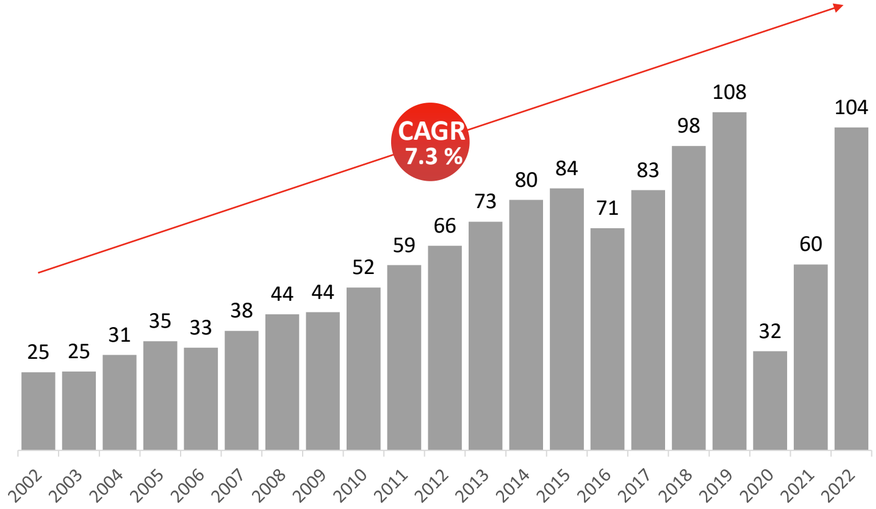
3 **Turkish Civil Aviation**

PRESIDENCY OF
THE REPUBLIC OF TÜRKİYE
INVESTMENT
OFFICE

BREAKDOWN OF AIR PASSENGERS IN TÜRKİYE OVER YEARS

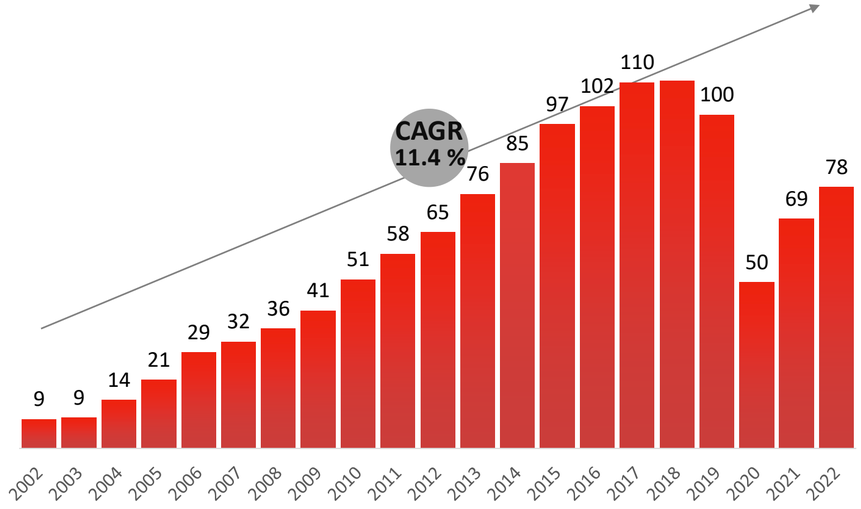


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of Air Passengers	118.292.000	131.029.516	149.995.868	166.181.339	181.437.004	174.153.146	193.576.844	210.947.639	208.911.338	81.703.685	128.565.706	182.334.844



INTERNATIONAL PASSENGERS

MILLION



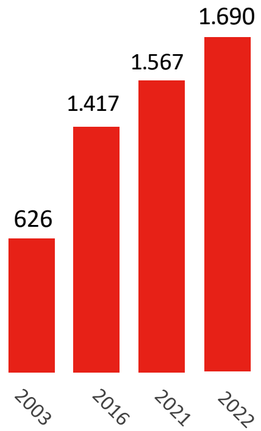
DOMESTIC PASSENGERS

MILLION

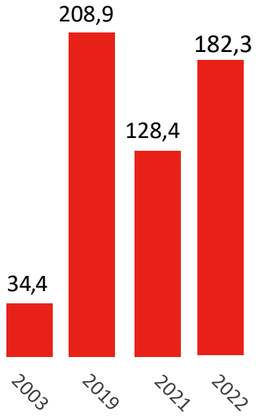
Source: DGCA, DHMİ, Airports Council International (ACI)

TURKISH CIVIL AVIATION

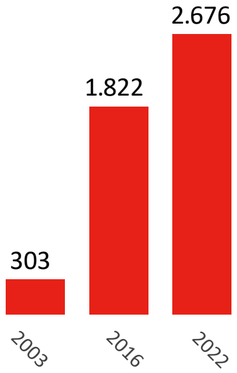
AIRCRAFT*
OF AIRCRAFT



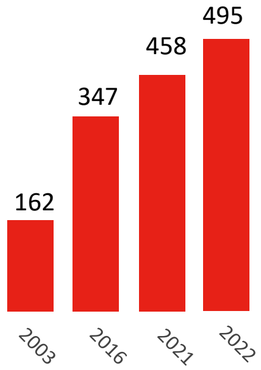
AIRLINE PASSENGERS
MILLION



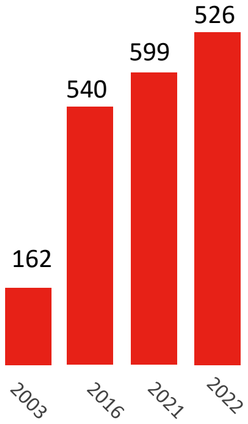
AIR CARGO CAPACITY
TON



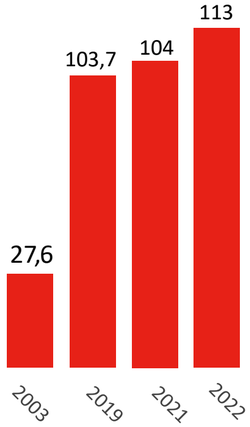
GENERAL AVIATION
OF AIRCRAFT



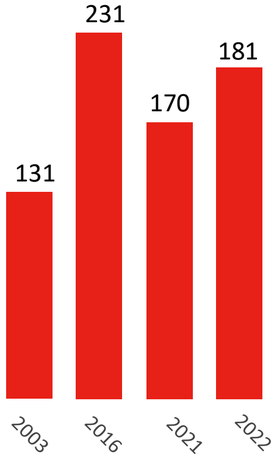
AIRLINE FLEET
OF AIRCRAFT



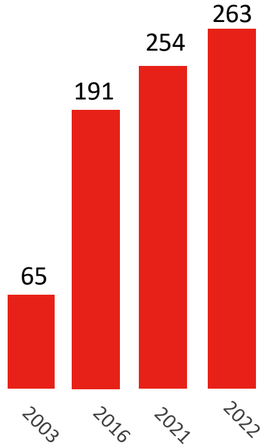
AIRLINE SEAT CAPACITY
THOUSAND



AIR TAXI
OF AIRCRAFT



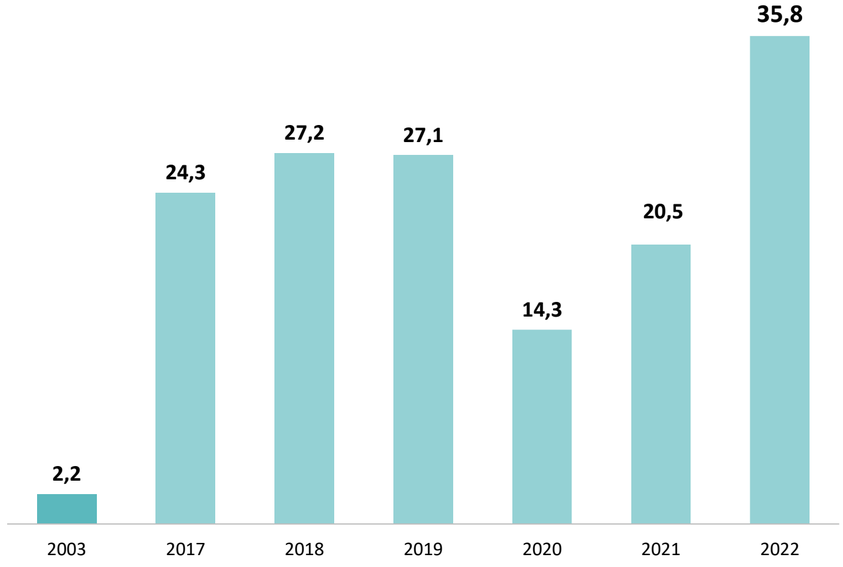
EMPLOYEES
THOUSAND



Türkiye's civil aviation has been growing

TURNOVER

BILLION



Source: DGCA
*Airline, air taxi, general aviation, business jets, aerial agriculture, balloon.

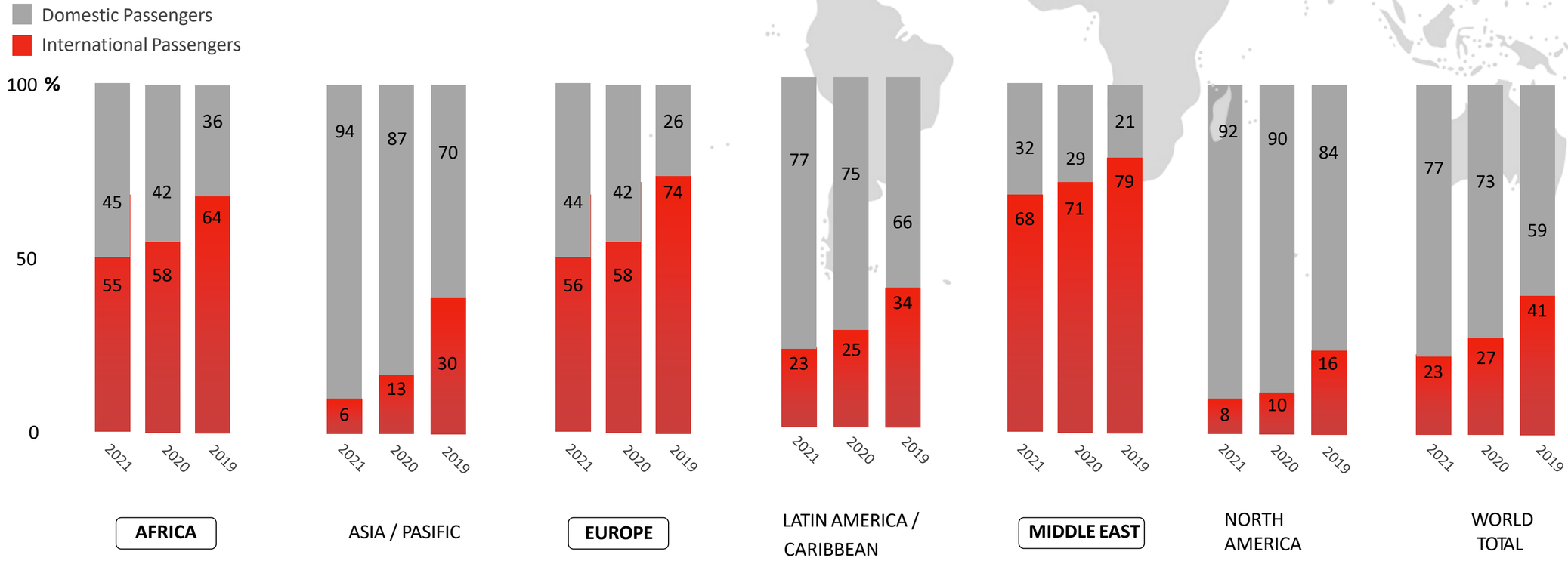
13 airline companies operate in Türkiye as of 2023

Airline Companies	Passenger Aircraft	Cargo Aircraft	Total Aircraft
TURKISH AIRLINES	398	24	422
PEGASUS AIRLINES	96	-	91
SunExpress	62	-	62
corendon AIRLINES	20	-	20
MNG AIRLINES	-	7	7
FREEBIRD	10	-	10
ULS	-	3	3
AIR ACT	-	5	5
tailwind AIRLINES	5	-	5
MGA airlines	5	-	5
southwind airlines	3	-	3
AirAnka	-	2	2
BBN Airlines	2	-	2
TOTAL 13	587	39	**642**

Source: Airline Companies

Türkiye is in the heart of the three regions kept their international mobility quite high.

% SHARE OF INTERNATIONAL-DOMESTIC PASSENGER TRAFFIC BY REGION
2020 VS 2019, BASED ON FROM/TO STATE



Source: ICAO

Türkiye’s convenient location and its significant investments in airport infrastructure make it an outstanding international aviation hub.

2003

50 COUNTRIES

60 INTERNATIONAL DESTINATIONS

2 DOMESTIC HUBS

26 DOMESTIC DESTINATIONS

2022

130 COUNTRIES

342 INTERNATIONAL DESTINATIONS

10 DOMESTIC HUBS

57 DOMESTIC DESTINATIONS

Source: DGCA

Türkiye's convenient location and its significant investments in airport infrastructure in last decade made it an outstanding aviation hub.

THE BUSIEST AIRPORTS IN EUROPE

MILLIONS OF PASSENGERS (2022)

	Country	Code	Airport	2022		2021		2020		2019	
–	**Türkiye**	**IST**	**İSTANBUL AIRPORT**	**64,48**	**1st**	**37,17**	**1st**	**23,40**	**1st**	**52,00**	**7th**
↑	UK	LHR	HEATHROW AIRPORT	61,59	2nd	22,10	3rd	22,10	3rd	80,88	1st
–	France	CDG	CHARLES DE GAULLE	57,47	3rd	26,19	3rd	22,25	2nd	76,15	2nd
–	Netherlands	AMS	AMSTERDAM SCHIPHOL AIRPORT	52,47	4th	25,49	4th	20,88	3rd	71,70	3rd
↑	Spain	MAD	A.S. MADRID-BARAJAS AIRPORT	50,63	5th	16,38	8th	16,38	8th	28,25	22nd
–	Germany	FRA	FRANFURKT AM MEIN	48,91	6th	18,76	6th	18,76	6th	70,55	4th
↑	Spain	BCN	J.T. BARCELONA-EL PRAD AIRPORT	41,63	7th	12,73	9th	12,73	9th	52,68	6th
↑	UK	LGW	LONDON GATWICK	32,83	8th	6,26	36th	10,17	4th	46,57	10th
↑	Germany	MUC	MUNICH AIRPORT	31,64	9th	12,49	14th	11,12	11th	47,95	9th
↑	Italy	FCO	LEONARDO DA VINCI–FIUMICINO AIRPORT	29,36	10th	11,66	17th	9,83	15th	43,53	11th

THE BUSIEST AIRPORTS IN TÜRKİYE

MILLIONS OF PASSENGERS (2022)

	Code	Airport	Domestic	International	Total (2022)		2021		2020		2019	
–	IST	İSTANBUL	15,94	48,56	64,51	1st	37,18	1st	23,41	1st	52,00	1st
↑	AYT	ANTALYA	5,84	25,26	31,10	2nd	22,01	3rd	9,71	3rd	35,67	2nd
↓	SAW	SABİHA GÖKÇEN	15,23	15,49	30,73	3rd	24,90	2nd	16,95	2nd	35,56	3rd
–	ADB	İZMİR	6,07	3,76	9,83	4th	7,56	4th	5,46	4th	12,36	6th
–	ESB	ANKARA	6,75	1,92	8,67	5th	7,03	5th	5,16	5th	13,74	5th
↑	DLM	MUĞLA DALAMAN	1,52	3,01	4,53	6th	2,32	8th	1,58	8th	4,90	8th
↑	BJV	MUĞLA MİLAS	2,04	1,85	3,89	7th	2,90	9th	1,48	9th	4,33	9th
↓	ADA	ADANA	3,22	0,64	3,87	8th	3,39	6th	2,50	6th	5,05	7th
↓	TZX	TRABZON	2,48	0,70	3,18	9th	2,64	7th	1,80	7th	3,77	10th
–	GZT	GAZİANTEP	2,02	0,30	2,32	10th	1,85	10th	1,39	10th	2,52	11th

Source: DHMİ, Airports Council International (ACI)
*Istanbul Ataturk Airport

IST AIRPORT

2nd in Direct Connectivity

2nd in Int. Passengers

6th in Hub Connectivity

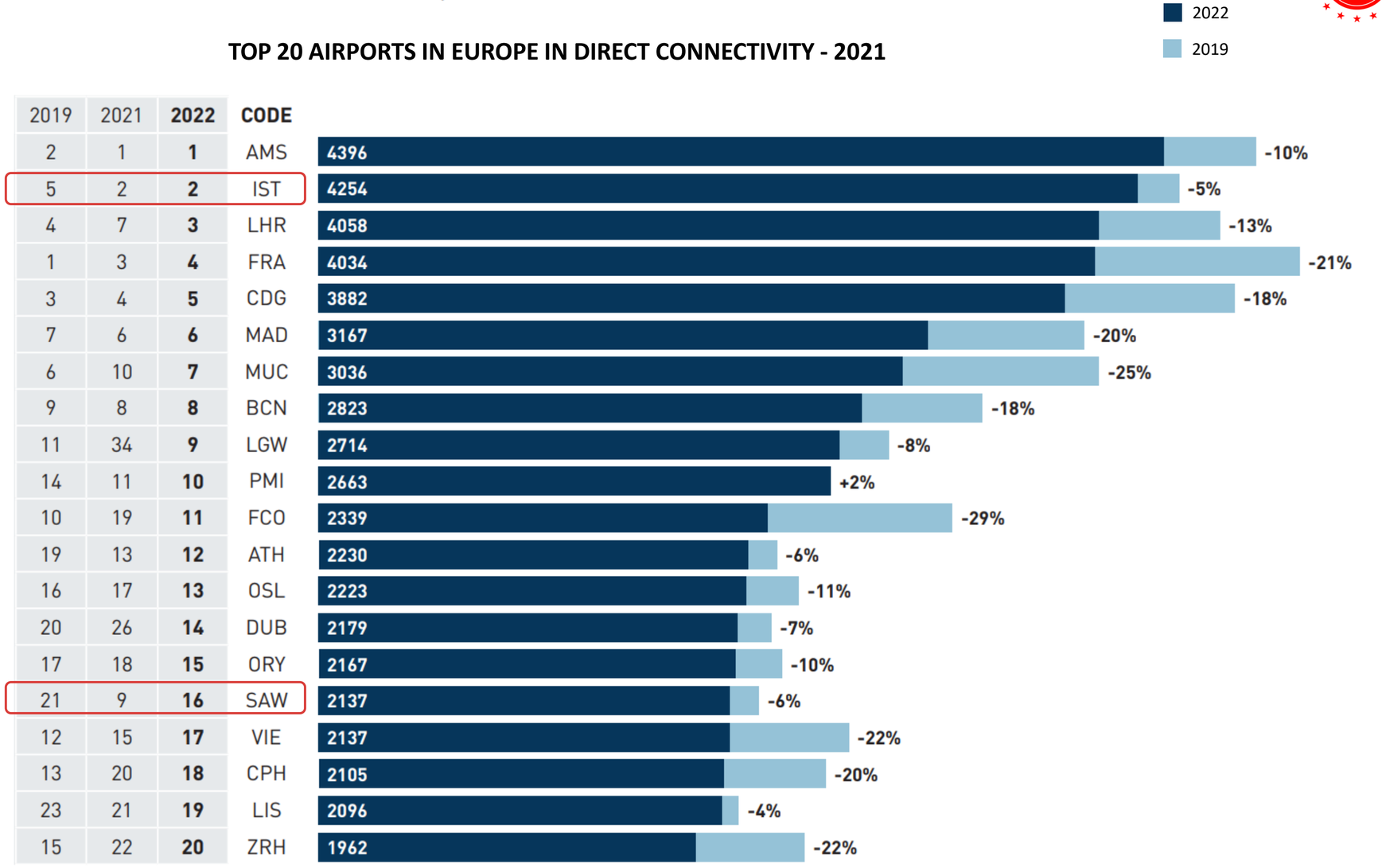
in 2021

İstanbul has recovered 71% of its pre-pandemic (2019) direct connectivity levels and 56% of its hub connectivity levels in 2021 –the best performance amongst European hubs.

According to ACI's World Airport Traffic Forecast, **Türkiye** will be amongst the top 15 fastest growing countries in the upcoming period to 2040 with **4,6% CAGR**, though not a single other European country appears in this list.

DIRECT CONNECTIVITY — TOP 20 AIRPORTS IN EUROPE IN 2022
(JUNE 2022 VS. JUNE 2019 | RANKINGS 2022, 2021 & 2019)

TOP 20 AIRPORTS IN EUROPE IN DIRECT CONNECTIVITY - 2021



2019	2021	2022	CODE		
2	1	**1**	AMS	4396	-10%
5	2	**2**	IST	4254	-5%
4	7	**3**	LHR	4058	-13%
1	3	**4**	FRA	4034	-21%
3	4	**5**	CDG	3882	-18%
7	6	**6**	MAD	3167	-20%
6	10	**7**	MUC	3036	-25%
9	8	**8**	BCN	2823	-18%
11	34	**9**	LGW	2714	-8%
14	11	**10**	PMI	2663	+2%
10	19	**11**	FCO	2339	-29%
19	13	**12**	ATH	2230	-6%
16	17	**13**	OSL	2223	-11%
20	26	**14**	DUB	2179	-7%
17	18	**15**	ORY	2167	-10%
21	9	**16**	SAW	2137	-6%
12	15	**17**	VIE	2137	-22%
13	20	**18**	CPH	2105	-20%
23	21	**19**	LIS	2096	-4%
15	22	**20**	ZRH	1962	-22%

Istanbul has rapidly developed into an international hub in last decade.

Source: Airports Council International (ACI) EUROPE Airport Industry Connectivity Report 2021

NEW ISTANBUL AIRPORT

200 Million
Passenger Capacity

500 Airplane
Parking Capacity

6
Runways

350
Destinations

2,000 Daily
Landing & Departures

Operational
Since 2018

17th ACI EUROPE
2021 AWARDS

«Best Airport in Europe»
«Accessible Airport»

Top 10 States

Departures and arrivals

Week 26 Jun - 02 Jul 2023

No.	Country	Average daily flights	% prev week	% prev year	% 2019
1.	United Kingdom	6,122	+1%	S +7%	W -8%
2.	Spain	5,437	+2%	S +5%	W -2%
3.	Germany	5,245	+1%	S +5%	W -18%
4.	France	4,793	+2%	S +5%	W -7%
5.	Italy	4,345	+3%	S +8%	W -1%
6.	Türkiye	3,892	+3%	S +13%	S +12%
7.	Greece	2,358	+8%	S +6%	S +13%
8.	Netherlands	1,670	+1%	S +4%	W -8%
9.	Norway	1,419	-4%	S +6%	W -6%
10.	Portugal	1,407	+2%	S +8%	S +7%

Top 10 aircraft operators

Week 26 Jun - 02 Jul 2023 (average daily flights)

No.	Aircraft operator	Average daily flights	% prev week	% prev year	% 2019
1.	Ryanair Group	3,273	+0%	S +10%	S +25%
2.	easyJet Group	1,732	+2%	S +10%	W -8%
3.	Turkish Airlines	1,685	+3%	S +12%	S +13%
4.	Lufthansa Airlines	1,247	+4%	S +8%	W -23%
5.	Air France Group	1,102	+3%	S +4%	W -18%
6.	Wizz Air Group	900	+3%	S +16%	S +36%
7.	KLM Group	875	+2%	S +16%	W -7%
8.	British Airways Group	839	+3%	S +20%	W -15%
9.	Vueling	684	+1%	W -2%	W -6%
10.	SAS Group	683	-2%	S +26%	W -20%

Source: Eurocontrol European Aviation Overview, Jan-jul 2023

«Turkish Airlines, the only legacy or hub carrier in the top 10 that's basically fully recovered.

While most low costs are close to or beyond their 2019 flight levels, that's not the case with the majority of traditional legacy or hub carriers. Turkish Airlines is the top 10 exception, a carrier that continues to thrive, currently performing 1,187 daily arrivals/departures, 98% of 2019 traffic.

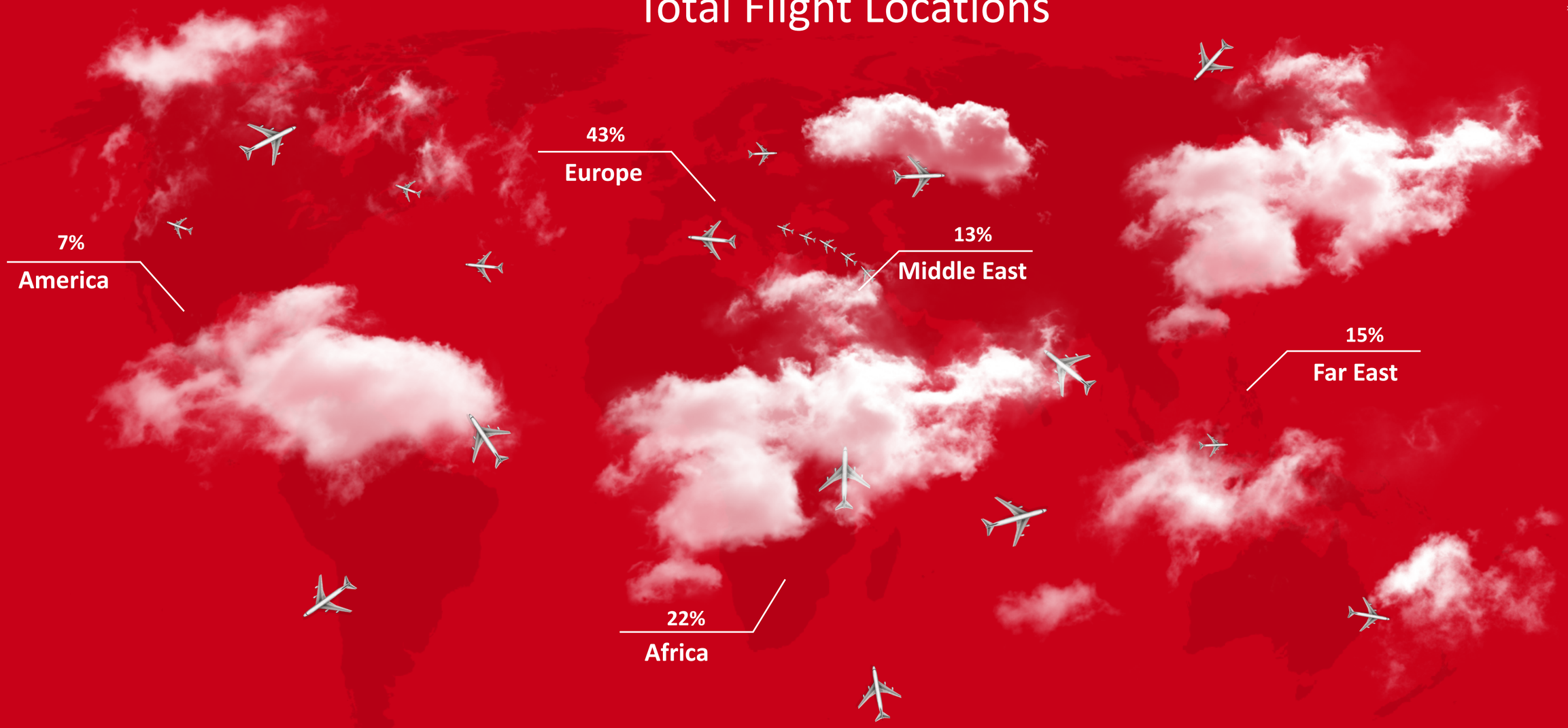
As Europe's second busiest carrier, Turkish Airlines is massively focused on its home base Istanbul iGA, where almost 80% of all TK flights depart or land from. With 456 daily departures over the last 7 days, 102% of 2019, iGA traffic for Turkish far exceeds the second-busiest airport for the airline, Istanbul's Sabiha Gökçen with 82 daily departures (98% of 2019), or third-busiest Ankara with 59 daily departures (81% of 2019).» Eurocontrol

Airport ranking

Week 26 Jun - 02 Jul 2023 (vs 2019)

No.	Airport	Avg. daily dep/arr flights	vs 2022	vs 2019
1.	iGA Istanbul	1,525	S +14%	S +19%
2.	Amsterdam	1,370	S +9%	W -8%
3.	Paris Charles de Gaulle	1,351	S +11%	W -10%
4.	Frankfurt	1,314	S +14%	W -16%
5.	London Heathrow	1,306	S +14%	W -5%
6.	Madrid Barajas	1,103	S +5%	W -13%
7.	Antalya	1,008	S +14%	S +12%
8.	Barcelona	971	S +8%	W -10%
9.	Munich	919	S +7%	W -27%
10.	Palma de Mallorca	916	S +1%	S +2%

Total Flight Locations



TURKISH AIRLINES

129 Countries **337** Cities **342** Airports

2nd airline in Europe with **1,200** flights per day (2021)

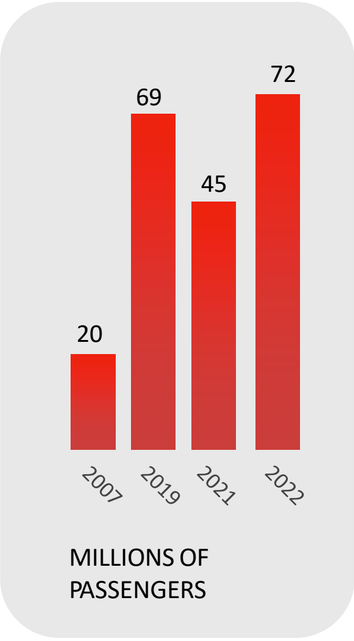
Turkish Airlines has shown an incredible growth over the past decade, taking competition to a higher level

$ 162,7 M
INTERNATIONAL
RPK

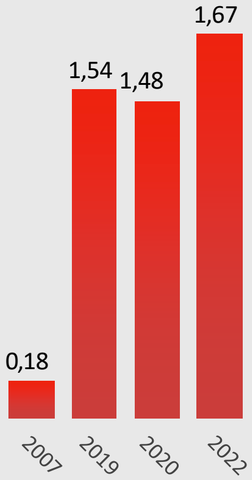
342
FLIGHT
DESTTINATIONS

$ 162,7 M
INTERNATIONAL
CTK RANKING

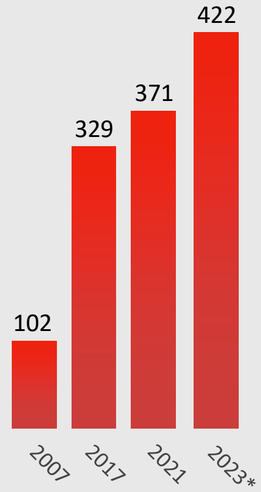
$ 8.2 M
INTERNATIONAL
FTK



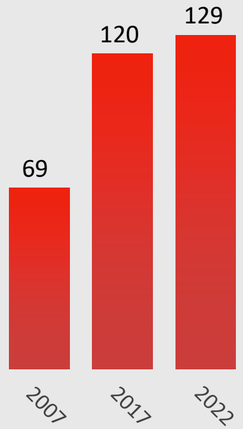
MILLIONS OF
PASSENGERS



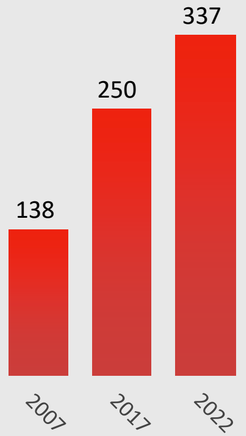
CARGO AND MAIL
(MILLION TONS)



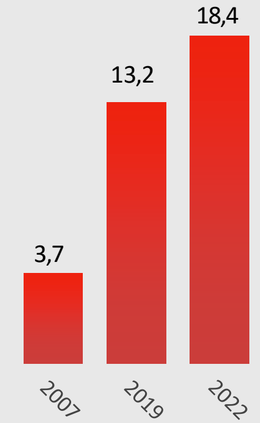
FLEET



COUNTRIES
SERVED



INTERNATIONAL
DESTINATIONS
(NUMBER OF CITIES)



REVENUE
($ BILLION)

Source: IATA, Turkish Airlines
RPK: Revenue Passenger-Kilometers
CTK: Cargo Ton-Kilometers
FTK: Freight Ton-Kilometers

Competition and cooperation go hand in hand in the Turkish aerospace industry

TEC Turkish Engine Center
TURKISH TECHNIC Pratt & Whitney A United Technologies Company

2009

The Turkish Engine Center is a joint venture with Turkish Technic specializing in CFM56 and V2500 engine overhaul and repair. The Turkish Engine Center unites the long histories of engineering and maintenance excellence of its parent companies. Established in 2009, the facility is located at Istanbul's Sabiha Gokcen Airport and has performed more than 400 engine overhauls.

SunExpress
TURKISH AIRLINES Lufthansa

1989

SunExpress was founded as a subsidiary of Turkish Airlines and Lufthansa. Today, SunExpress has a fleet of 70 aircrafts with 13,950 seats capacity, flying to more than 100 destinations. It carried around eight million passengers in 2016. With its 26 years of experience and thus the long-term commitment in the traffic between the home markets of Türkiye and Germany, the airline has acquired the reputation of the holiday specialist even beyond Türkiye.

Kale Pratt & Whitney

Kale Pratt & Whitney

2010

Kale Pratt & Whitney Aircraft Motor Industry Inc. has been established in 2010 with the partnership of Kale Group with Pratt & Whitney, which is part of United Technologies Corporation (UTC). Established with a 51% Kale Group and 49% Pratt & Whitney partnership, the company's main field of activity is the manufacture and assembly of engines and body parts for aircraft. The company started its production activities in its current factory in 2014.

tai CABIN INTERIOR®
TURKISH TECHNIC TURKISH AEROSPACE

2010

A joint venture owned 51% by Turkish Technic and 49% by TAI, the company manufactures galleys and their inserts (like trolleys, std. containers etc.), crew rests, cabin dividers, wind screens, miscellaneous stowage, coatrooms, video control compartments, aircraft textile, leather and most of other cabin interior parts except for the aircraft seats.

2008

Established in 2008, acquired by HNA in 2010 myTECHNIC is World's first lean greenfield MRO with a total closed area of 48,400 m² and one of its kind in the region with a 15,788 m² hangar area, 12,115 m² office area and 20,500 m² warehouse and shop area under one roof. Located in Sabiha Gökçen Airport, myTECHNIC has establishedbusiness with 130+ customers in 10 regions.

2010

Turkish Nacelle Center established in December 2010, upon signing of Joint Venture Agreement between Turkish Technic Inc. and Collins Aerospace (formerly UTC Aerospace Systems) Aerostructures Business Unit. Turkish Nacelle Center provides repair, maintenance, overhaul and modification of thrust reverser and nacelle systems for almost all types of engine platforms being used on commercial aircraft.

2010

TUSAS Engine Industries Inc. (TEI) is an incorporated company established in 1985 as a joint venture owned 50,5% by Turkish Aerospace Industries Inc. (TAI), 46,2 % by General Electric (GE), 3,3 % Turkish Armed Forces Foundation (TAFF) and Turkish Aeronautical Association (TAA). TEI. The company has become an international manufacturer and a global design center today with the high quality products and services it offers to aviation industry.

2011

TSI Aviation Seats was established as a joint venture owned 50% by Turkish Airlines and 50% by Assan Hanil, with the target of designing, producing, repairing and marketing all types of aircraft seats and supplying their spare parts. TSI conducts design, engineering, manufacturing and R&D activities in its new facilities in HABOM (Aviation Maintenance Repair and Overhaul Center)

WHAT CAN INVESTMENT OFFICE DO FOR YOU?

Investment Office will assist you before, during and after your entry to Türkiye.

https://www.invest.gov.tr

A governmental body attached to H.E. President

Private sector approach with public sector capabilities

Acting as your solution partner

General & customized business information & sectoral analysis & reports	Facilitating your investment at all stages	Aftersales
Site selection support to find appropriate location/land for your investment	Matchmaking with local partners & establishing business linkages	Facilitating your visit to Türkiye
Arrangements of meetings with governmental odies band other stakeholders	Project launch & Press release Services	

PRESIDENCY OF
THE REPUBLIC OF TÜRKİYE
INVESTMENT OFFICE

Contact
Muttalip Tütüncü I mtutuncu@invest.gov.tr