

# Transformation process risk management to sustainable corporate performance and quality management: developing flowcharts for approved training organization

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## Abstract

**Purpose** – Each decision-making involves risk; therefore, risk is a strategic element in management and organization. In terms of risk management, the transformation process in organizations should be aimed at optimizing and improving the most important performance criteria such as cost, quality, flexibility and speed, rather than just as required by legislation. Transformation process has sustainability risks for organizations. ATO transformation process should be well designed. Process also should include clear steps to implement them. Sound and well-designed process will be useful for organizational performance and quality management. The management of the risks of conversion processes is vital for the continuation of operations without interruption. In aviation universities' approved training organizations (ATOs), each system must be handled and processed separately. Transformation plans should be prepared considering the risks of each system. The purpose of this study is to develop process flowcharts of all systems in sustainable ATO transformation process from risk management perspective.

**Design/methodology/approach** – Flowchart method is useful to identify process risks in organizational system transformation. Flowcharts simplify communication and provide effective analysis of the process. Flowchart enables designing plan which is suitable for aimed results. Flowcharts method provides efficient coding and system analysis and program development phase also serves as a guide while debugging errors. In this study, flowcharts including all stages have been developed for transition to an ATO authorization. With these flowcharts, all elements of the process and the risks, threats and opportunities that may be faced can be proactively identified together. Thus, improvements will be possible to achieve the corporate objectives of the transformation and reorganization process and increase the corporate performance with optimum resource usage.

**Findings** – Flowcharts may contribute to the reorganization and transformation of processes in all aviation academies. In this sense, it provides infrastructure for future studies. New studies can be carried out for the reorganization of all departments in aviation. It is believed that this research will contribute to the aviation management literature. Flowchart is also called as process flowchart or process flow diagram. Flowchart is effective methodology to manage transformation process risk. Owing to clarify each step in transformation process, risks may be managed with timely decision-making by managers. In this research, five fundamental flowcharts have been developed in ATO system. These include all processes in transformation as preparation of manuals, new authority application, competent authority inspections, corrective and preventive actions, revalidation and fees in transformation process and its parts. Presented flowcharts may be useful to identify and manage process risk in initial phase as consent with proactive management style.

**Research limitations/implications** – This research presents designed flowcharts for ATO transformation risk management process. This research may extend at other departments in aviation universities such as air traffic control, maintenance and management.

**Practical implications** – As a methodology, flowcharts can be considered as schematic algorithms. The flowchart is a detailed representation of the process to carry out a specific task. In this research, flowcharts have been developed for transformation process stages at ATO authorization. These flowcharts are useful for proactive identification of process elements and their risks – threats and opportunities. Thus, improvements will be possible to achieve the corporate objectives of the transformation and reorganization process and increase the corporate performance with optimum resource usage. Flowcharts may contribute to the reorganization and transformation of processes in all aviation academies. In this sense, it provides infrastructure for future studies. New studies can be carried out for the reorganization of all departments in aviation. It is believed that this research will contribute to the management and strategy literature with engineering.

**Originality/value** – ATO transformation process risk management has not been studied much in literature. The operational manuals of ATO's management and strategy planning prepare according to both legal regulations and handbooks of aviation authorities which obliged for ATO. It is anticipated that this original study may be useful for determining the risks of transformation processes of flight training departments of civil aviation universities and for good process design. Flowcharts may contribute to the reorganization and transformation of processes in all aviation academies. In this sense, this study provides infrastructure for future studies. New studies can be carried out for the reorganization of all departments in aviation. It is believed that this research will contribute to the aviation management literature. Flowchart is also called as process flowchart or

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process flow diagram. Flowchart is effective methodology to manage transformation process risk. Owing to clarify each step in transformation process, risks may be managed with timely decision-making by managers. The aviation universities operate with authorization. This research may contribute to their process management and strategy to complete their transformation and transition via risk management. Developed flowcharts present all necessary steps to become authorized as an ATO. This research may serve as a kind of framework guide for other aviation organizations to be used in their transformation/transition process.

**Keywords** Sustainability, Risk, Corporate performance, Process management, Quality management, Risk management, Transformation, Management and strategy, Aviation management, Aviation university, Flowcharts, Approved training organization

**Paper type** Research paper

## 1. Introduction: transformation process and risk management

Risk management is at the center of the strategic management at organizations. The corporate risk management is a strategic process in which organizations regularly assess the risks arising from these activities to achieve success in their activities (AIRMIC, ALARM, IRM, 2002). The main purpose of corporate risk management is to establish a framework that organizations can take as a reference when managing risk and uncertainty (Dionne, 2013). Risk management is a vital part of the transformation process. Because risk management is a management process, therefore, traditional management involves four functions: planning, organizing, implementing and controlling. In this context, risk management is intertwined with the objectives of the organization and aims to protect the assets (human and material) of the organization (Alexander and Wells, 2007). Transformation process includes both uncertainty and unpredicted changes. Organizations need risk management-based approach in both transition and transformation process as risk management is a systematic approach that includes identifying, measuring, understanding, communicating risks and taking action on risks to identify the best action under uncertainty (Berg, 2010).

Transformation processes in an organization bring threats and opportunities. These processes create opportunities for achieving strategic goals and improving performance. Efficiency can be increased by identifying and analyzing risk sources in inactive parts of the process. Transformation and reorganization processes are also suitable at times for more efficient and effective use of corporate resources. On the other hand, change always points to the existence of potential risks in terms of threats. Resistance to change stands out as one of the most vital risks caused by human factor. It is also important that change management is well designed.

According to PricewaterhouseCoopers Turkey PwC (2019), optimum organization transformation should include human resource management strategy with main elements to manage related risks in both process and corporate performance. First, both corporate strategies and aims should be developed after assessing current strategies. Second element is defining human resource management strategy with designing employee value proposition, analyzing employer brands and developing road maps.

Risk management-based approach is vital to seizing opportunities and minimizing threats during transformation process. In this concept, PwC's view is content with sustainable approach. According to PwC (PricewaterhouseCoopers Turkey PwC, 2019) to sustainable transformation risk management should consider as organizational DNA. For this

reason ATO transformation process is must be seen as strategy-based transformation for organization. Also, corporate strategy and culture should be understanding truly in organization-wide concept. Strong stakeholder relationship is other critical part of risk management. For effective stakeholder management, managers may develop communication plan with critical success factors in transformation and transition process. Corporate-wide risk analysis with culture is vital for timely decision-making in transformation process.

With risk management-based approach, transformation process creates opportunities to make optimum organizational design. Design should content with both organizational operations and organizational structures with its cost-benefit analysis.

Flowcharts to transformation process developed in this research are presented as follows:

- Flowchart for preparation of manuals.
- Flowchart for new authority application process.
- Flowchart for authority inspections.
- Flowchart for corrective and preventive actions.
- Flowchart for revalidation and fees in transformation process and its parts.

These developed flowcharts may play a vital role to achieve optimization in transformation risk process management. Every flowchart presents clear identification of items in their stages. Developed flowcharts present items clearly and step by step for effective implementation. Flight training departments of aviation universities are vital for sustainable development of civil aviation. These organizations which train pilots for commercial air operators, as well as general and sports aviation operators in accordance with the principles determined under the framework of the national and international regulations are authorized by our Directorate General; these organizations provide flight training services and are designated as approved training organizations (ATOs) (DGCA, 2017). Training organization is in need risk management to their process. Every change must be managed in a sustainable way. This study presents fundamental flowcharts in ATO system.

## 2. Methodology: flowchart

A flowchart is a powerful business tool. With proper design and construction, it communicates the steps in a process very effectively and efficiently (Limited liability company [LLC] or S corporation [S-corp], 2019). In the context of transformation risk management, flowcharts are very useful to see how the new system works, errors and good aspects. Both understanding and operating ATO system with its all ingredients which has proper elements is a very important factor at sustainability of ATO's process. If the correct flowchart is implemented, the

transformed system will be able to operate in an optimum way. The biggest risk when designing a flowchart is that the scheme is intended for a transformation process that is compatible with the organizational objective and the corporate strategy. The flowchart developed in accordance with the purpose provides significant advantage in managing the risks of the process.

Flowcharts are different from algorithms because the steps of the flowcharts are written into boxes in the form of icons. The relations and directions between the steps are also indicated by the arrows. A flowchart is a visual representation of the sequence of steps and decisions needed to perform a process. Each step in the sequence is noted within a diagram shape. Steps are linked by connecting lines and directional arrows which allows anyone to view the flowchart and logically follow the process from beginning to end ([Limited liability company \[LLC\] or S corporation \[S-corp\], 2019](#)).

Using a flowchart has a variety of benefits ([Visual Paradigm, 2019](#)):

- It helps to clarify complex processes.
- It identifies steps that do not add value to the internal or external customer, including: delays; needless storage and transportation; unnecessary work, duplication and added expense; and breakdowns in communication.
- It helps team members gain a shared understanding of the process and use this knowledge to collect data, identify problems, focus discussions and identify resources.
- It serves as a basis for designing new processes.

Both the arithmetic and logical steps in process are required to be followed for the solution of any problem. Steps may be explained in words or in writing. This form of which is visually expressed by symbols or symbols is called flowcharts or FLOWCHART. The relationship between the steps and direction is indicated by arrows ([www.yildiz.edu.tr/~wwwwhid/TR/algorithm3.htm](http://www.yildiz.edu.tr/~wwwwhid/TR/algorithm3.htm); <https://hazalciplak.wordpress.com/tag/akis-diyagrami/>).

The flowcharts, which are the main documents to be stored in the program, are used for reasons such as making the problem-solving process easier to understand, controlling the workflow and facilitating the coding of the program (<https://hazalciplak.wordpress.com/tag/akis-diyagrami/>).

Algorithms verbally express the data from which peripheral unit will be entered into the computer, how to solve the problem, through which steps to get results, how and where to write the result format. The flow diagram is a visual representation of the algorithm with standard symbols. This facilitates communication between the developer and the person who does not know any programming language, and the transfer takes place quickly.

Flowchart drawing plays a vital role in detecting errors in complex and long programs. The main benefits of the flowchart method are listed below (adapted from Flowchart, Retrieved at June 13, 2019 from <https://hazalciplak.wordpress.com/tag/akis-diyagrami/>):

- Facilitates communication and surveillance.
- Effective and timely reviewing both process and sub-steps
- Controlling and improving process plan
- Useful for both efficient and reader friendly Coding
- Helps the debugging process.

A flowchart is a simple way to display a diagram for a specific job. Briefly, the algorithm is represented by schemas [[Gulpinar](#)

(2019), Flowchart, Retrieved at June 13, 2019 from <https://slideplayer.biz.tr/slide/2988493/>. Each flow diagram starts with “Start” and ends with “Stop”. Operations are described between these two figures [[Karaduman \(2015\) Chapter 3 Flowchart](#), Retrieved at June 13, 2019 from <https://slideplayer.biz.tr/slide/10518507/>].

### 3. Approved training organizations and transformation process

#### 3.1 Brief presentation: Faculty of Aeronautics and Astronautics at Eskisehir Technical University

Authorized ATOs refer to the organizations authorized for trainings of pilots, maintenance technicians, flight dispatchers, cabin crew members and aviation security personnel ([DGCA, 2019](#)).

*Flight training in general:* The use of resources such as training personnel, airplanes, simulators, written and visual media, classes, training sites and other aids that may be required depending on the type of training. It also includes the management and control of the resources necessary to produce the materials used during training ([Caro, 1988](#)). A flight training organization is an organization that provides flight training in a suitable environment and has the equipment and personnel for this purpose ([Joint Aviation Authorities \[JAA\], 2006](#), p. 1-A-29). The organizations which train pilots for commercial air operators, as well as general and sports aviation operators in accordance with the principles determined under the framework of the national and international regulations, which are authorized by Directorate General, which provide flight training services, and which are designated as Approved Training Organization”.

In 2012, the qualifications of flight training organizations have been changed within the framework of the new rules binding by the European Aviation Safety Agency (EASA) binding on all member states of the European Union (EU) and are defined by the concept of ATO. Upon the entry into force of the new regulations, flight training organizations will terminate their operations in the member states of the EU and will continue their operations under the new rules as an ATO ([Novák et al., 2017](#), p. 1). DG Civil Aviation (DGCA), is signed Working Arrangement (Working Arrangement) with this new EASA has adopted legislation for the flight training organization in Turkey. According to this arrangement, Flight Crew Organization Requirements has been configured as ORA directive. Within the framework of this new regulation, flight training organizations stated that they should bring their current situation in line with the new legislation within 12 months ([DGCA, 2017](#), <http://web.shgm.gov.tr/documents/sivilhavacilik/files/mevzuat/sektorel/talimatlar/2017/SHT-ORA.pdf>).

According to the new instructions, aviation trainings can only be provided by ATOs. To establish an ATO, according to Turkey’s national legislation, one must obtain special permission to open a pilot training course from the Ministry of Education. However, these organizations are also required to obtain operating licenses from the DGCA in accordance with the Commercial Air Transport Operation Regulation (DGY-6A) and the General Aviation Regulation (DGY-6B) ([DGCA, 2017](#)). In Turkey, Civil Aviation General Directorate has authorized ATOs to mainly train for private pilot license (PPL),

commercial pilot license (CPL), multi-team pilot license (MPL), airline transport pilot license (ATPL) and instrument flight authorization (IR) trainings (DGCA, 2017). See below the list of ATOs in Turkey (Table I) (DGCA, 2019, Retrieved April 03, 2019 from <http://web.shgm.gov.tr/havacilik-isletmeleri/2067-yetkili-havacilik-egitim-kuruluslari>).

As first flight training academy, the Eskişehir Technical University (ESTU) Flight Training Department has considerable qualifications. ESTU Faculty of Aeronautics and Astronautics attaches importance to high-quality pilot training. ESTU has a sustainability-based management approach. Every process of ESTU ATO training and organization management is carried out by highly experienced staff in extremely careful and meticulous environments. In ESTU Faculty of Aeronautics and Astronautics, ATO's training process is offered in accordance with national and international standards and at the same time with a high quality and intensive program.

Faculty of Aeronautics and Astronautics, a pioneering institution in aviation training, offers undergraduate programs in Avionics, Air Traffic Control, Airframe and Powerplant Maintenance, Aviation Management and Flight Training. The faculty aims to train qualified pilots, air traffic controllers, airline and airport management staff and aircraft maintenance personnel in accordance with international aviation standards and regulations for air transportation industry. It operates its own international airport with all air traffic control and ground services, SHY-145 approved aircraft maintenance center and fleet of 15 aircraft including King Air C90, Cessna 172 and TB20. For practical trainings, the faculty has state-of-the-art synthetic training devices such as 360-degree aerodrome tower, ACC/APP radar control, and FNPTII and MCC flight simulators. Besides, students can have hands-on experience in their respective field of study at 28 well-equipped laboratories and workshops[1].

ESTU HUBF gives the following flight trainings with general aviation license as an ATO/OEO ATO with the authorization number TR.ATO.039 by DGCA:

- ATP (A) Integrated Training.
- ATP (A) Modular Course.
- PPL (A) training.
- FI (A) training.
- TR (A) training.
- TRI (A) training.
- IR (A) training.
- IRI (A) training.
- MCC (A) training.
- MCCI (A) training.
- TII Theoretical Information Instructor Authorization.

It is unique in flight training academy:

- Formal students with numerical score in the university entrance exam.
- Other university students who are eligible for vertical transfer in universities.
- Students selected by the flight operators and sent to ESTU HUBF (eg Turkish Airlines trainees).

The faculty fleet is also unique. Five Cessna 172S, six Socata TB-20 and two Beechcraft C-90GTi training activities are carried out with 13 aircrafts. In addition, ESTU HUBD has its own aircraft maintenance hangar and the maintenance of fleet aircraft is carried out by the faculty maintenance department. Maintenance of fleet aircraft is carried out by ESTU HUBF's SHY-145 approved aircraft maintenance board. The airworthiness management of the airplanes is also carried out by the Air SHY-M approved Continuous Airworthiness Organization to ESTU HUBF.

Importantly, four FNPT-II synthetic training devices are used in flight training. The maintenance of these four simulator devices is carried out by simulator maintenance technicians working within HUBF.

The following national and international regulations and standards are taken as reference in all activities carried out in the Approved Education Organization of the Faculty of Aeronautics and Astronautics at ESTU.

The flowchart, solution steps, relationships with each other and the flow of information are useful for easier visualization and correction of process errors [Gulpinar (2019), Akış Şeması, Retrieved at June 13, 2019 from <https://slideplayer.biz.tr/slide/2988493/>].

As shown in the diagram, an accountable manager has been appointed by the Rector of ESTU and he is the highest-level manager of the organization. The Compliance Monitoring Unit reports directly to the responsible manager.

Manager mainly authorizes the compliance monitoring manager to access and audit all relevant units and sites to ensure that operational activities are carried out in accordance with the relevant legislation and standards. The compliance monitoring manager of ATO is responsible for the efficient operation of the compliance monitoring function. In this context, he is responsible for preparing necessary document infrastructure, manuals and procedures. The compliance monitoring manager is responsible for the creation, effective implementation, continuous review and development of the compliance monitoring program.

The role of the compliance monitoring manager is to ensure that the activities of the organization are monitored for compliance with the applicable regulatory requirements, and any additional requirements as established by the organization, and that these activities are being carried out properly under the supervision of the relevant head of functional area (European Aviation Safety Agency, 2019). The training manager is responsible to the DGCA for the adequate integration of flight, theoretical knowledge and synthetic training to be provided in the ATOs within the framework of the regulations, instructions and standards set by the DGCA and to monitor the individual development of the candidates. In addition, the training director take measures to ensure that the available resources obtained to achieve flight training objectives are used most effectively, safely and in accordance with EASA, DGCA and other legislations. The safety management system (SMS) manager is appointed by the responsible manager. The SMS manager reports directly to the responsible manager. It is the responsibility of the SMS manager to establish, coordinate and execute an effective SMS on behalf of the responsible manager.

The chief flight instructor is responsible for the continuous conduct of the flight, theoretical knowledge and synthetic trainings to be given within the framework of the regulations, instructions and rules determined by the DGCA in the ATO.

The head ground teacher is responsible to the head of the training (course) for the supervision of all ground lesson teachers and for the follow-up and standardization of all theoretical knowledge training.

In the ATO/OEO organization chart, the ground support officer (faculty secretary – commercial manager) is responsible for taking care of the personnel during their training and following-up the financial affairs of the organization when they

Table I Authorized ATOs in Turkey (DGCA, 2019)

Name of organization	Authorization no.	Authority context
TURİSTİK HAVA TAŞIMACILIK A.Ş.	TR.ATO.001	B737 300-900 MCC (B737 CL-NG)
THY UÇUŞ AKADEMİSİ A.Ş.	TR.ATO.002	PPL (A) CPL (A) IR (A) ATP (A) Integrated ATP (A) FI(A), CRI(A), IRI(A) CR(A) SEP/MEP(land) MCC
VİZYON HAVACILIK SANAYİ VE TİCARET A.Ş.	TR.ATO.003	PPL (A) theory/flight
TAMAY HAVACILIK VE EĞİTİM HİZMETLERİ A.Ş.	TR.ATO.004	Operation process is stopped
ULUSLARARASI HAVACILIK AKADEMİSİ TURİZM. TİC.LTD.ŞTİ.	TR.ATO.005	PPL (A) CPL(A) IR(A) IR(A) PPL (A)
İSTANBUL HAVACILIK KULÜBÜ DERNEĞİ	TR.ATO.006	Night flight (PPL)
ULS HAVAYOLLARI KARGO TAŞIMACILIK A.Ş.	TR.ATO.007	A310-300/600 type MCC
TAILWIND HAVAYOLLARI A.Ş.	TR.ATO.008	B737-400 type training MCC
ATLASJET HAVACILIK A.Ş.	TR.ATO.009	B737-400 à B737-800 and B737-800 à B737-400) A320 Type training MCC
DAVUT HAVACILIK VE EĞİTİM OKULU A.Ş.	TR.ATO.010	A330-A320 CCQ Training PPL(A) CPL(A) IR(A) ATP (A) ME(A) FI(A), CRI(A), IRI(A) ATP (A)
TUSAŞ TÜRK HAVACILIK VE UZAY SANAYİ A.Ş.	TR.ATO.011	PPL (H) Training CPL (H) R-44 Tip Helicopter flight instructor Night flight
ATLANTİK UÇUŞ OKULU A.Ş.	TR.ATO.012	Night flight PPL (A) CPL(A) IR(A) ATP (A) ME(A) MCC FI(A), CRI(A), IRI(A), STI(A)
GÜNEYDOĞU HAVACILIK İŞ LETMESİ A.Ş.	TR.ATO.014	A320 Type B737-300/900 Type Night flight PPL(A) CPL(A) IR(A) ATP(A-H) CR(A)

(continued)

Table I

Name of organization	Authorization no.	Authority context
		(SE-ME) (PPL, CPL, ATPL) FI(A), CRI(A), IRI(A) ATP (A) LAPL(A)
KAAN HAVACILIK SANAYİ VE TİCARET A.Ş. (HEL)	TR.ATO.015	Enstrom 480B, Leonardo A119, AW109, A139 type helicopters
THK GÖKÇEN HAVACILIK İKTİSADİ İŞLETMESİ. (HEL)	TR.ATO.016	EC 135 ve Bell 429 type helicopter
İHY İZMİR HAVAYOLLARI A.Ş.	TR.ATO.017	B747-400 type training
GİRNE ÜNİVERSİTESİ	TR.ATO.018	MCC PPL (A) ATP (A)
ACT HAVA YOLLARI A.Ş.	TR.ATO.019	B747-400 type training MCC
OKAN ÜNİVERSİTESİ	TR.ATO.020	PPL(A) ATP(A)
GAZİANTEP ÜNİVERSİTESİ	TR.ATO.021	Night flight PPL (A) CR(A) FI (A)
ER-AH HAVACILIK TİCARET LTD. ŞTİ.	TR.ATO.022	PPL (A) CPL (A) IR (A) ATP (A) ATP (A) Integrated ATP (A) FI(A), CRI(A), IRI(A) (PPL, CPL, ATPL) CR(A) SEP/MEP(land)
IFTC UÇUŞ EĞİTİMİ HİZMETLERİ VE TİC.A.Ş.	TR.ATO.023	MCC A320 type training MCC
GİRNE AMERİKAN ÜNİVERSİTESİ	TR.ATO.024	PPL (A) Theoric course ATP (A) Modüler theoric information course
THK UÇUŞ AKADEMİSİ	TR.ATO.025	LAPL(A) PPL(A) CPL(A) IR(A) ATP(A) ATP(A-H) CR(A) (MCC) (PPL, CPL, ATPL) FI(A), CRI(A), IRI(A), (STI), (MCCI)
TRUE COURSE GROUP HAVACILIK A.Ş.	TR.ATO.026	Night flight training PPL (A) CPL (A) IR (A) Night flight training FI(A) CR(A) SEP/MEP(land)

(continued)

Table I

Name of organization	Authorization no.	Authority context
THY HAVA YOLLAR A.O.	TR.ATO.027	MCC B737 300-900 type training (B737 CL-NG) B777/787 type A320 A330/350-A340- A320' CCQ Training A330/350 A320-A340- A330/350 CCQ A340 type A320-A330/350- A340 CCQ
GÜNEŞ EKSPRES HAVACILIK A.Ş.	TR.ATO.028	B737 300 MCC MPL (A) MPL (I)
MNG HAVAYOLLARI VE TAŞIMACILIK A.Ş.	TR.ATO.029	A310/300-600 and MCC A330/350 and MCC
AYJET ANADOLU YILDIZLARI HAVA TAŞIMACILIĞI VE UÇUŞ EĞİTİM HİZMETLERİ A.Ş.	TR.ATO.030	PPL (A) CPL (A) IR (A) ATP (A) ATP (A) Night flight FI(A), CRI(A), IRI(A) CR(A) SEP/MEP(land) MCC MPL (A) MPL (I)
ÖZYEGİN ÜNİVERSİTESİ	TR.ATO.031	PPL (A) ATP (A)
PEGASUS HAVA TAŞIMACILIĞI A.Ş.	TR.ATO.032	B737 300-900 i (B737 CL-NG) MCC A320 A330/350-A340- A320 CCQ MCC
ONUR HAVA YOLLARI A.Ş.	TR.ATO.033	A320 A330/350'- A320 CCQ MCC A330/350 A320- A330/350 CCQ MCC
19 MAYIS ÜNİVERSİTESİ HAVACILIK VE UZAY TEKNOLOJİLERİ UYG. VE ARAŞ. MRKZ	TR.ATO.034	PPL (A) CPL (A) IR (A) ATP (A) ATP (A) ATP (A) FI(A), CRI(A), IRI(A) CR(A) SEP/MEP(land)
SANCAK HAVAYOLLARI A.Ş.	TR.ATO.035	Bell 206 PPL (H) Bell 206 Bell 206 FI(H) Bell 407 Tip Bell 430 Tip Bell 430 TRI(H)
TÜRK HAVA KURUMU ÜNİVERSİTESİ	TR.ATO.036	PPL(A) ATP(A)

(continued)

Table I

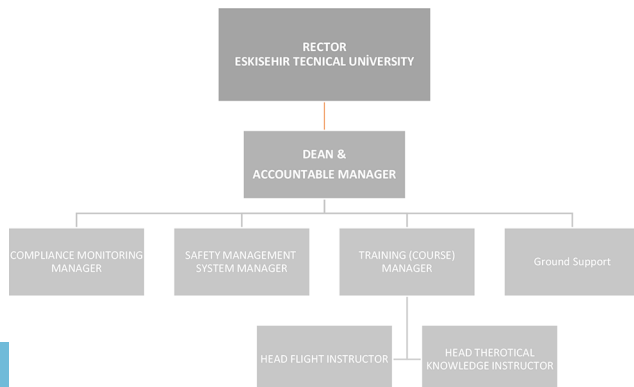
Name of organization	Authorization no.	Authority context
SKYLINE ULAŞIM TİCARET A.Ş.	TR.ATO.037	AW109 AW109 type A109E <-> A109S
ATILIM ÜNİVERSİTESİ	TR.ATO.038	PPL (A) ATP (A) LAPL (A) FI (A) Öğret
ESKİŞEHİR TEKNİK ÜNİVERSİTESİ	TR.ATO.039	PPL (A) IR(A) ATP (A) ATP (A) Eğitimi
THK GENEL BAŞKANLIĞI PLANÖR ONAYLI EĞT. ORG.	TR.ATO.040	LAPL(S)
NİSAN HAVACILIK A.Ş.	TR.ATO.041	S76 S76 S76 (S76C+, S76C++, S76D)
KAPADOKYA KAYA BALONCULUK HAV.TUR. REK.LTD.ŞTİ.	TR.ATO.042	LAPL (B) BPL FI (B)
GÖKTÜRK BALONCULUK HAV. TUR. REK. LTD. ŞTİ	TR.ATO.043	LAPL (B) BPL FI (B)
ANTALYA BİLİM ÜNİVERSİTESİ	TR.ATO.044	PPL (A) ATP (A) ATP (A)

are required to receive long-term flight and theoretical information trainings with staff (Figure 1).

Book titles are as following:

- Faculty of Aeronautics and Astronautics Approved Training Organization Operational Handbook ATO.
- Faculty of Aeronautics and Astronautics Approved Training Organization Training Handbook.
- Faculty of Aeronautics and Astronautics Approved Training Organization Airport Usage Instructions.
- Cessna 172 Standard Operations Procedures.
- Cessna 172 Checklist.
- Cessna 172 Mission Guide.
- Socata TB-20 Standard Operations Procedures.

Figure 1 ATO organization scheme



- Socata TB-20 Checklist.
- Socata TB-20 Mission Guide.
- Beechcraft King Air C90 Standard Operations Procedures.
- Beechcraft King Air C90 Checklist.
- Beechcraft King Air C90 Mission Guide.

To maintain flight operations and simulator trainings in accordance with standards, flight training organizations should establish operating and training manual in accordance with international (JAR-FCL, CS-FSTD(A), JAR-FSTD A, EU 1178/2011, EU 290/2012 and PART-ORA) and national regulations (SHY-1 and SHT-1A).

Quality management is important for transformation process. Quality management practices are monitored and audited by the compliance monitoring management unit. To ensure the continuity of flight operations and simulator trainings with the standards, our quality department conducts annual internal audits. According to EASA, the organization should manage safety risks related to a change. The management of change should be a documented process to identify external and internal change that may have an adverse effect on safety. It should make use of the organization's existing hazard identification, risk assessment and mitigation processes (European Aviation Safety Agency, 2019).

### 3.2 The transformation process with their steps of approved training organization

Organization in transformation process implements some steps which consisted according to national regulations of DGCA as follows:



- 1 Legislations in the application process:
  - SHT-FCL, PART-FCL
  - SHT-ORA, PART-ORA
  - SHY-1
  - SHT-PPC
  - SHT-COMPLIANCE MONITORING
- 2 Necessary management staff and teacher needs: (organizations to be given integrated training):
  - Accountable manager.
  - Training manager (must be a pilot).
  - Chief flight instructor (must be a pilot).
  - Chief ground teacher.
  - SMS manager.
  - Compliance monitoring manager (formerly quality manager).
  - Teacher pilots.
  - Theoretical knowledge teachers.

### 3.3 Required manuals/handbooks

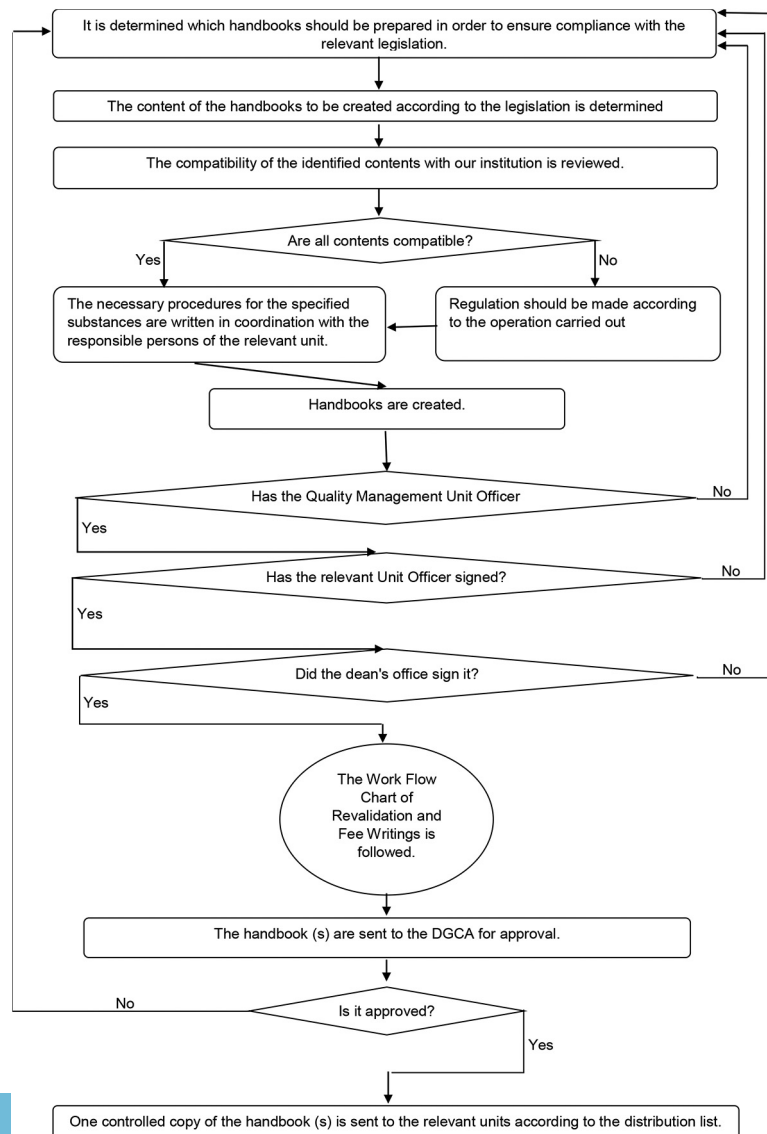
- Training Manual (for each authorization applied separately) [AMC1 ORA.ATO.230 (a)].
- Operating Manual [AMC1 ORA.ATO.230 (b)].
- SMS Handbook [AMC1 ORA.GEN.200 (a) (5)].
- Compliance Monitoring Manual [AMC1 ORA.GEN.200 (a) (6) and SHT-Compliance Monitoring].

As mentioned above, preparing handbooks has many complicated steps. Clarification and clear identification of steps will be useful for quality process of preparation (Figure 2).

#### 3.3.1 Application step

Legal documents are prepared first to become an organization approved training institution. The organization then submits these documents to the approval of both the national authority and the ministry of national education (excluding organizations providing only type education and universities). After approval,

Figure 2 Flowchart for preparation of manuals



organization get operating license (approved operation certificate). All stakeholders get inform about this authorization. Accountable manager sends information of all managers and founding stakeholders of the ATO. Managers submits all Application forms for both exist and new managers via DGCA automation system. The final process in transformation process, the payment of formal fees for National authority. Without payment, forms dont consider into process. This application process is designed as flowchart (Figure 3).

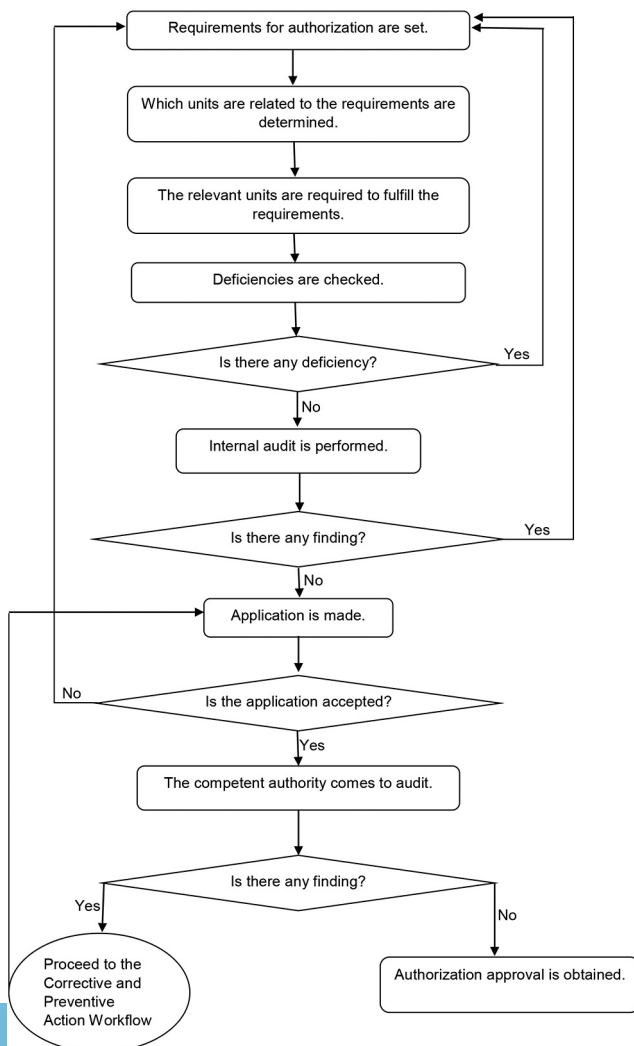
### 3.3.2 Process after application

The authority shall carry out an audit after evaluating the application if it is not incomplete and if necessary. There will be no supervision during the transformation process. Any findings and deficiencies identified during the audit are eliminated. Authorization certificate is issued if there is no finding and deficiency or if it is remedied.

### 3.3.3 Additional considerations

The teachers who will conduct the theoretical knowledge courses should be authorized by the DGCA (SHT-theoretical knowledge instructor).

**Figure 3** Flowchart for new authority application process



## 4. Preparation of handbooks

ATO department makes consent analysis for all revised manuals to be sure suitability with legislations. For this reason, team for revision assign by accountable manager. Details of the steps are presented below and given with Figure 2:

### 1 Determining the need for revision.

The manuals are revised as a result of operational changes and/or changes in the relevant legislation and/or the request for changes as a result of the audit.

### 2 Analyze the source of the change and the areas it may affect.

The manual and/or other manuals that will be performed before starting the revision process are analyzed which procedures will affect them.

### 3 Searching for compliance with the instructions.

If the revision request originates from the operation rather than from the authority, the compliance with the published legislation is investigated.

### 4 Selection of the team to carry out the revision work.

The selection of the team is adjusted to suit the structure of the revision:

- For revision of training manual and operation manual: training manager + chief flight instructor + chief ground course teacher + compliance monitoring unit staff.
- SMS handbook: SMS manager and SMS unit staff/s
- Compliance monitoring manual: compliance monitoring manager and staff/s.

### 5 Determining the contents of the manuals.

- The contents of each manual are determined by the relevant instructions. In the relevant articles of the legislation, which topic should be included in which article is predetermined.
- The references of the contents of the manuals specified in the relevant legislation are as follows:

- Training manual: AMC1 ORA.ATO.230 (a),
- Operating manual: AMC1 ORA.ATO.230 (b)
- SMS handbook: AMC1 ORA.GEN.200 (a) (5)
- Compliance monitoring manual: AMC1 ORA.GEN.200 (a) (6) and SHT-Compliance Monitoring
- Theoretical Knowledge Teacher Authorization Course Handbook: SHT-TKI Item: 13

### 6 Determining the page layout of the book.

The page layout of the books is designed in accordance with item 5 of UG.FCTOA.00060-000.

### 7 Operation of internal approval process.

- The manuals are reviewed and approved by:
- Training handbook and business handbook: training manager, compliance monitoring manager and responsible manager.
- SMS handbook: SMS manager, compliance monitoring manager and responsible manager.
- Compliance monitoring manual: compliance monitoring manager and responsible manager.
- Manual of theoretical knowledge teaching course: training manager, compliance monitoring manager and responsible manager.

### 8 Service fee payment.

The code and amount of the fee to be deposited from the current service tariff issued by the DGCA is determined and the payment is made.

9 Approval process.

- The approved and signed manual shall be sent to the DGCA via registered electronic mail (PEP) system and the printed formats by cargo.
- In case of deficiency, deficiencies are corrected and the sending process is repeated.
- The certificate of approval is issued by the DGCA for the approved manual and sent to the company.

10 Distribution process of the handbook.

The approved manual shall be reproduced as a controlled copy, with the approval certificate and the internal approval page in front of the book, and shall be sent to the persons and/or units specified in the distribution list.

11 Training/information about the manual.

When revisions performed on the handbook are to the extent that affects the operation, relevant persons need to be trained or informed about the changing procedures.

12 Final reminder about revision.

Changes to the manual cannot take effect until the revision is approved. Old procedures must be used until approved (Figures 4-6).

5. Results and comments

Transition may consider as the change period. Transformation will begin at the end of transition process. For this reason, transformation is the kind of outcome of transition. Both change period and its outcome have many and different risks. To achieve desired process and its

Figure 4 Flowchart for competent authority inspections

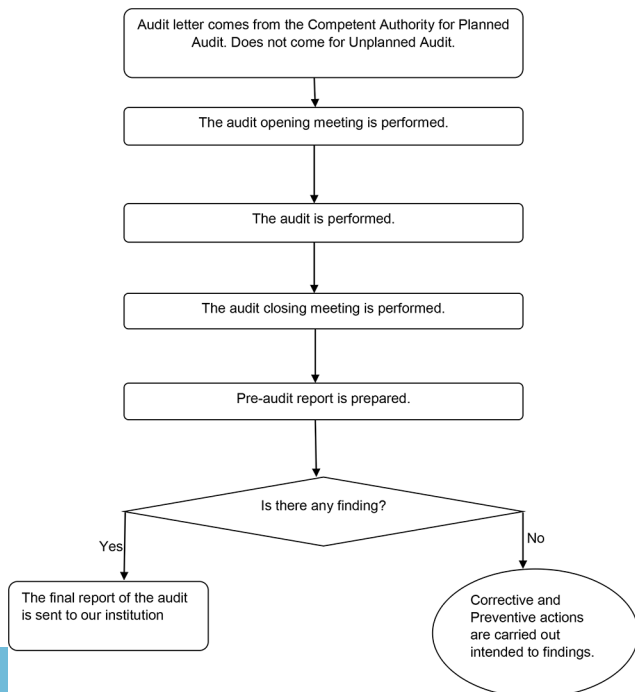


Figure 5 Flowchart for corrective and preventive actions

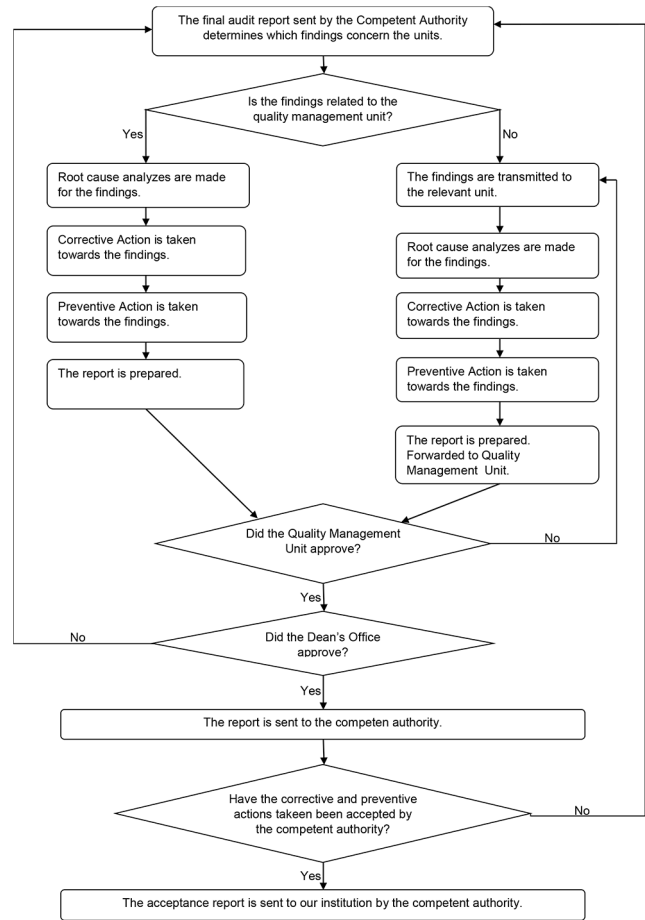
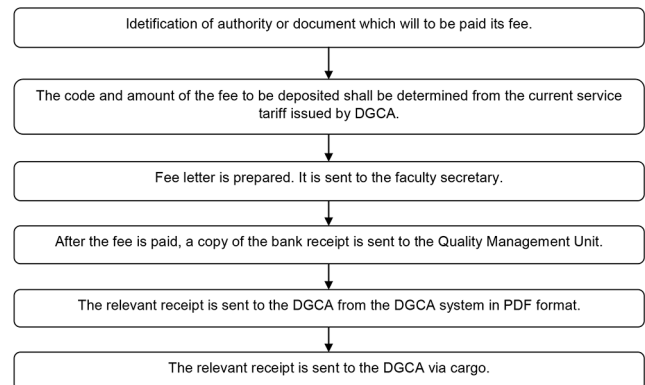


Figure 6 Flowchart for revalidation and fees in transformation process and its parts



desired outcome, organization should have sound risk management system. So organizations must manage both journey process and results of journey to get desired outcomes. Steps in transformation process to get authorization as an ATO are identified in this research using flowchart methodology.

In this study, flowcharts including all stages have been developed for transformation process at ATO authorization. These flowcharts can be proactively identified with all the elements of the process and the risks, threats and opportunities that may be encountered. Thus, improvements will be possible to achieve the corporate objectives of the transformation and reorganization process and increase the corporate performance with optimum resource usage. Flowcharts may contribute to the reorganization and transformation of processes in all aviation academies. In this sense, it provides infrastructure for future studies. New studies can be carried out for the transformation and/or transition process of all departments in aviation. It is believed that this research will contribute to the aviation management literature. This study may be useful and beneficial for process risk management especially in the following areas:

- Achieving the desired level of corporate performance without interrupting the organization by managing transitional/transformational risks.
- Providing organizational renewal by considering transformation process together with change management. Failure of the disruptive processes was not achieved within the scope of human resources, processes, process monitoring and quality management of optimization. Using transformation as an opportunity to improve enterprise performance, not a threat.
- Obtained results presented flowcharts and their potential benefits.
- Facilitate and control process control.
- Process-based convenience in identifying potential risks.
- Providing level I control points for continuous control and supervision.

## Note

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## Further reading

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