



SELÇUK BAYRAKTAR

Chairman of the Board and Chief Technology Officer, Baykar

The architect of Türkiye's first indigenous (armed) UAV systems and first indigenous unmanned fighter jet, Bayraktar KIZILELMA, Selçuk Bayraktar was born in Sariyer, Istanbul in 1979.

Having graduated from the prestigious Robert College in 1997, Bayraktar received his bachelor's degree in Electronics and Communication Engineering from Istanbul Technical University in 2002. He proceeded to earn his first master's degree from UPenn's Department of Electrical and Systems Engineering in 2004 and conducted groundbreaking research on UAV formation flights and robot coordination. Bayraktar subsequently worked on automatic flight control algorithms for unmanned helicopter systems during his graduate and doctoral studies at MIT, where he received his second master's degree. He returned to Türkiye in 2007 to resume Baykar's efforts to develop unmanned aerial vehicle technologies.

Selçuk Bayraktar has been serving as Baykar's Chief Technology Officer since 2007 and Chairman of the Board since 2021. His work at the company focuses on the avionics architecture of indigenous UAV systems, the development of flight control and cruise algorithms, system kinematics and dynamics, and electronic equipment and embedded software.

At Baykar, Bayraktar led the team that developed the Bayraktar Mini UAV, Türkiye's first indigenous drone, and the Bayraktar TB2 (armed) UAV, which experts have described as the world's best drone in its class. Having operated for more than 800,000 flight hours, the Bayraktar TB2 has been exported to 33 countries as of March 2024. Bayraktar also developed the Bayraktar AKINCI UCAV, Türkiye's first combat drone with a maximum takeoff weight of 6 tons, delivered it to the Turkish Armed Forces in 2021, and exported it to nine countries by March 2024.

Selçuk Bayraktar currently leads the teams developing Cezeri, Türkiye's first flying car prototype, as well as the Bayraktar TB3 armed UAV, which will be capable of taking off from and landing on short-runway carriers, and the Bayraktar

KIZILELMA, Türkiye's first unmanned fighter jet that completed its maiden flight on 14 Dec. 2022 – ahead of the original target of 2023.

As part of the development efforts led by Bayraktar, the Bayraktar KIZILELMA successfully conducted formation flights, for the first time in global aviation history, as two combat UAVs, AKINCI UCAV and KIZILELMA Unmanned Fighter Jet, completed multiple close formation flights – another unprecedented achievement.

Bayraktar also focuses on space with his technology venture, Fergani Space Technologies, where he oversees the development of low-orbit satellite clusters and orbital transfer vehicles.

In response to the Coronavirus pandemic, Selçuk Bayraktar led Türkiye's efforts to build indigenous intensive care ventilators, which was ultimately co-produced by BIOSYS, BAYKAR, ASELSAN and ARÇELİK and exported or gifted to countries around the world.

He also continues his work with the CANSAGLIĞI Foundation, which he founded and where he serves as Chairman of the Board of Trustees, to support scientific projects on genetics, immunology and rare diseases.

Selçuk Bayraktar was awarded the Order of Karabakh by President Ilham Aliyev of Azerbaijan on 1 April 2021 in recognition of the Bayraktar TB2 armed UAV's contributions to Karabakh's liberation. He also received the State Order of Merit on orders from Ukrainian President Volodymyr Zelensky in 2022.

The T3 Foundation, where Bayraktar serves as Chairman of the Board of Trustees, supports talented young people with the potential to develop indigenous and original technology and holds training sessions. Spearheading the National Technology Initiative, the Foundation also hosts TEKNOFEST, the world's largest aerospace and technology event. TEKNOFEST took place in Azerbaijan in 2022 – a reflection of its growing impact beyond Türkiye's borders.

Additionally, he serves as Chairman of the Board of Trustees at the Culture and Civilization Foundation, which he established to promote the holistic analysis of the history of human civilization and the development of solutions to contemporary social issues with the help of ancient values.

Selçuk Bayraktar married Sümeyye Erdoğan Bayraktar in 2016. The couple has two children. Selçuk holds a private pilot license.

Patents

- Automatic Landing and Takeoff System for Aerial Vehicles (Turkish Patent and Trademark Office 2015/07928)
- Electromechanical Servo Motor Actuator Capable of Detecting Changing Operational Conditions and Control Method (Turkish Patent and Trademark Office 2015/14111)
- Triple-Redundant Flight Control System (Turkish Patent and Trademark Office Ref: PT2015-00693)
- ECG Device (Turkish Patent and Trademark Office Ref: PT2015-00693)

Scientific Publications

Scientific Papers (scholar.google)	Year
<p>Experimental Cooperative Control of Fixed-Wing Unmanned Aerial Vehicles S Bayraktar, GE Fainekos, GJ Pappas Decision and Control, 2004. CDC. 43rd IEEE Conference on 4, 4292- 4298</p>	2004
<p>Synergies in Feature Localization by Air-Ground Robot Teams B Grocholsky, S Bayraktar, V Kumar, CJ Taylor, G Pappas Experimental Robotics IX, 352-361</p>	2006
<p>Flight Modeling and Experimental Autonomous Hover Control of a Fixed Wing Mini-UAV at High Angle of Attack HD Blauwe, S Bayraktar, E Feron, F Lokumcu AIAA Guidance, Navigation and Control Conference and Exhibit, 6818</p>	2007
<p>UAV and UGV Collaboration for Active Ground Feature Search and Localization B Grocholsky, S Bayraktar, V Kumar, G Pappas Proc. of the AIAA 3rd "Unmanned Unlimited" Technical Conference</p>	2004
<p>Experiments With Small Helicopter Automated Landings at Unusual Attitudes S Bayraktar, E Feron arXiv preprint arXiv:0709.1744</p>	2007
<p>Experiments With Small Unmanned Helicopter Nose-Up Landings S Bayraktar, E Feron Journal of Guidance, Control, and Dynamics 32 (1), 332-337</p>	2009
<p>Hybrid Modeling and Experimental Cooperative Control of Multiple Unmanned Aerial Vehicles S Bayraktar, G Fainekos, GJ Pappas Technical Report, Department of CIS, University of Pennsylvania</p>	2004
<p>Aggressive Landing Maneuvers for Unmanned Aerial Vehicles S Bayraktar Massachusetts Institute of Technology</p>	2006

Hybrid Modeling and Experimental Cooperative Control of Multiple Unmanned Aerial Vehicles S Bayraktar, GE Fainekos, GJ Pappas	2004
Aggressive Landing Maneuvers for 3-DOF Helicopter UAV	
S Bayraktar, E Feron AIAA Guidance, Navigation and Control, Keystone, Colo	2006
A Novel Mosaic Quality Measurement Method for UAV Surveillance and Remote Sensing T Buyukyazi, S Bayraktar, I Lazoglu ISPRS-International Archives of the Photogrammetry, Remote Sensing and ...	2013
Real-Time Image Stabilization and Mosaicking by Using Ground Station CPU in UAV Surveillance T Buyukyazi, S Bayraktar, I Lazoglu Proceedings of the IEEE 6th International Conference on Recent Advances in ...	2013
Real-Time, Hardware Independent Stabilization and Mosaicing in Low Altitude UAV Surveillance Tolga Büyükyazi, Selçuk Bayraktar, Prof. Dr. İsmail Lazoğlu; Journal of Field Robotics: Special Issue on Low Altitude UAV Flight	2013
Multiple Unmanned Aerial Vehicle Systems Technology: Design and Development Studies Ömer İnak, Haluk Bayraktar, Selçuk Bayraktar, SAVTEK 2006, ODTÜ	2006
Design Features of Bayraktar Mini Unmanned Aerial Vehicle Haluk Bayraktar, Selçuk Bayraktar, Prof. Dr. Ünver Kaynak, SAVTEK 2006, ODTÜ	2006
Bayraktar Mini Unmanned Aerial Vehicle System Components and Performance Analysis Haluk Bayraktar, Selçuk Bayraktar, HASEM 06, Kayseri	2006
An Unmanned Aircraft Project from Ideal to Reality Selçuk Bayraktar, Haluk Bayraktar; HITEK 2004 Symposium, Air Force Academy	2004