REFERENCE REPORT

The AI Weapons Database 2026

347 systems across 10 categories, with sources

ArtificialWeapons.com · 3 October 2026
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About this report

This report lists the 347 AI-enabled and autonomous weapons systems, cyber and information weapons in the ArtificialWeapons.com database as of 3 October 2026, from 31 countries of origin. Entries summarise public information, cite a source where we have verified one, and attribute contested claims. We have no access to classified programs, so the list reflects what is publicly known.

Category	Systems	Deployed
AI Command & Control	19	13
AI Targeting	26	21
Autonomous Drone	149	110
Autonomous Ground System	20	7
Autonomous Interceptor	41	35
Autonomous Naval	23	12
Cyber Weapon	37	18
Electronic Warfare	16	14
Information Warfare	8	8
Swarm System	8	0

AI Command & Control (19)

Akashteer

IN — BHARAT ELECTRONICS · DEPLOYED · FIRST DEPLOYED 2023

Automated air-defense control and reporting system that links Indian Army radars and guns.

Notable use: Introduced by the Indian Army from 2023.

Source: Wikipedia: Akashteer: https://en.wikipedia.org/wiki/Akashteer

AlphaDogfight Trials

US — DARPA · RETIRED · FIRST DEPLOYED 2020

DARPA competition in which AI agents flew simulated dogfights.

Notable use: In August 2020 an AI agent from Heron Systems beat an experienced F-16 pilot 5-0 in simulation.

Source: Wikipedia: DARPA AlphaDogfight: https://en.wikipedia.org/wiki/DARPA_AlphaDogfight

Auterion Skynode

CH/US — AUTERION · DEPLOYED · FIRST DEPLOYED N/A

Open drone operating system and autonomy hardware used to add navigation and targeting to drones.

Notable use: Marketed for supplying Ukraine and US forces.

Source: Wikipedia: Auterion: https://en.wikipedia.org/wiki/Auterion

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AutoGCAS (Automatic Ground Collision Avoidance System)

US — LOCKHEED MARTIN / NASA · DEPLOYED · FIRST DEPLOYED 2014

AI system that autonomously recovers fighter aircraft from ground collision trajectory without pilot input. Uses terrain database and AI state estimation to take over control.

Notable use: Saved 11 F-16 pilot lives by 2020; deployed on F-16, F-35, and F-22; credited with preventing multiple USAF aircraft losses

Source: Wikipedia: Automatic Ground Collision Avoidance System: https://en.wikipedia.org/wiki/Automatic_Ground_Collision_Avoidance_System

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Delta (situational awareness system)

UA — UKRAINIAN ARMED FORCES · DEPLOYED · FIRST DEPLOYED 2022

Battlefield situational-awareness and management system that shares sensor data and targets.

Notable use: Used by Ukrainian forces to share targets and sensor data.

Source: Wikipedia: Delta (situational awareness system): https://en.wikipedia.org/wiki/Delta_(situational_awareness_system)

Fire Factory

IL — ISRAEL DEFENSE FORCES (AS REPORTED) · DEPLOYED · FIRST DEPLOYED 2022

Reported AI-assisted planning tool that calculates munitions loads and assigns targets to aircraft, according to Israeli media and 2023 reporting; humans reportedly approve the plans.

Notable use: Described in Israeli media and in reporting during the 2023 to 2024 Gaza war.

Source: No authoritative source matched yet

GrAI-assisted Artillery (GIS Arta)

UA — KROPYVA / UKRAINIAN ARMY · DEPLOYED · FIRST DEPLOYED 2014

AI-powered digital artillery fire management system that processes reconnaissance data and autonomously assigns optimal artillery units to targets. Compresses fire mission time from 20 minutes to under 1 minute.

Notable use: Ukraine's Kropyva system operational since 2014 conflict; GIS Arta dubbed 'Uber for artillery'; mass use 2022–present

Source: No authoritative source matched yet

Helsing Altra

DE — HELSING · DEPLOYED · FIRST DEPLOYED N/A

AI software platform that fuses sensor data to recognize and track targets.

Notable use: Marketed to European militaries.

Source: Wikipedia: Helsing (company): https://en.wikipedia.org/wiki/Helsing_(company)

Hivemind AI Pilot

US — SHIELD AI · DEPLOYED · FIRST DEPLOYED 2018

Tactical AI system enabling drones to operate autonomously in GPS-denied, communications-denied environments. Can coordinate swarms without external data links.

Notable use: Integrated into V-BAT, F-16 (test), and planned for F-35; demonstrated autonomous building clearance with US Marines

Source: Wikipedia: Shield AI: https://en.wikipedia.org/wiki/Shield_AI

Integrated Battle Command System (IBCS)

US — NORTHROP GRUMMAN · DEPLOYED · FIRST DEPLOYED N/A

US Army air-and-missile-defense command system that fuses sensors and shooters from different systems into one network.

Notable use: Fielded by the US Army and selected by Poland.

Source: Wikipedia: Integrated Air and Missile Defense Battle Command System: https://en.wikipedia.org/wiki/Integrated_Air_and_Missile_Defense_Battle_Command_System

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JADC2 (Joint All-Domain Command & Control)

US — DOD / MULTIPLE CONTRACTORS · IN DEVELOPMENT · FIRST DEPLOYED N/A

US military initiative to connect sensors and shooters across all domains via AI-enabled network, enabling autonomous battlespace management at machine speed.

Notable use: Multiple component programs (ABMS, Project Overmatch) in testing; demonstrated cross-domain kill chains in exercises

Source: Wikipedia: Joint All-Domain Command and Control: https://en.wikipedia.org/wiki/Joint_All-Domain_Command_and_Control

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Lattice AI Platform

US — ANDURIL INDUSTRIES · DEPLOYED · FIRST DEPLOYED 2018

AI-driven sensor fusion and autonomous decision platform for military operations. Integrates data from drones, sensors, and databases to enable autonomous target engagement.

Notable use: Deployed at US-Mexico border for autonomous surveillance; used by USSOCOM; fielded in multiple theaters

Source: Wikipedia: Anduril Industries: https://en.wikipedia.org/wiki/Anduril_Industries

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MUSASHI (AI Fire Control System)

JP — MITSUBISHI ELECTRIC / TRDI · IN DEVELOPMENT · FIRST DEPLOYED N/A

Japan's AI-driven integrated battle management system for networked cross-domain operations. Designed for autonomous threat assessment and engagement coordination.

Notable use: JGSDF development program; part of Japan's stand-off defense capability buildup

Source: No authoritative source matched yet

Palantir AIP (Artificial Intelligence Platform)

US — PALANTIR TECHNOLOGIES · DEPLOYED · FIRST DEPLOYED 2023

AI-driven decision support platform integrating battlefield data across sensors to generate target recommendations and operational plans for military commanders.

Notable use: Deployed to US Army units; demonstrated autonomous target generation in Project Maven; used by Ukraine

Source: Wikipedia: Palantir: https://en.wikipedia.org/wiki/Palantir

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Project Nimbus (AI Battlefield Cloud)

US/IL — GOOGLE / AMAZON / IDF · DEPLOYED · FIRST DEPLOYED 2022

Cloud services contract in which Google and Amazon provide the Israeli government, including its military, with cloud computing and AI services.

Notable use: Awarded in 2021; it has drawn employee protests and public criticism.

Source: Wikipedia: Project Nimbus: https://en.wikipedia.org/wiki/Project_Nimbus

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Scale AI Donovan

US — SCALE AI · DEPLOYED · FIRST DEPLOYED 2023

Large-language-model platform marketed to defense and intelligence users for analysis and planning.

Notable use: Offered to US defense customers since 2023.

Source: Wikipedia: Scale AI: https://en.wikipedia.org/wiki/Scale_AI

Sentient (NRO)

US — NATIONAL RECONNAISSANCE OFFICE · IN DEVELOPMENT · FIRST DEPLOYED N/A

Intelligence analysis program of the National Reconnaissance Office that fuses satellite and other data and can direct sensors.

Notable use: Described in public reporting as an AI-driven analysis system.

Source: Wikipedia: Sentient (intelligence analysis system): https://en.wikipedia.org/wiki/Sentient_(intelligence_analysis_system)

Skyborg

US — US AIR FORCE · TESTING · FIRST DEPLOYED N/A

US Air Force program to build an autonomy core system able to fly low-cost drones alongside crewed aircraft.

Notable use: An autonomy core flew aboard a Kratos XQ-58 Valkyrie in 2021.

Source: Wikipedia: Skyborg: https://en.wikipedia.org/wiki/Skyborg

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TITAN (Targeting and Intelligence Architecture)

US — PALANTIR / L3HARRIS · IN DEVELOPMENT · FIRST DEPLOYED N/A

US Army ground station integrating AI multi-domain sensor processing for rapid target acquisition and kill chain compression. Interfaces with satellites, drones, and ground sensors.

Notable use: Contract awarded 2022; IOC planned 2025; Army Futures Command LTAMDS integration

Source: No authoritative source matched yet

AI Targeting (26)

AGM-136 Tacit Rainbow

US — NORTHROP GRUMMAN · RETIRED · FIRST DEPLOYED N/A

Loitering anti-radar missile of the 1980s designed to wait over a battlefield and attack radars as they switched on.

Notable use: Cancelled in the 1990s.

Source: Wikipedia: AGM-136 Tacit Rainbow: https://en.wikipedia.org/wiki/AGM-136_Tacit_Rainbow

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Brilliant Anti-Tank (BAT)

US — NORTHROP GRUMMAN · RETIRED · FIRST DEPLOYED N/A

Autonomous acoustic and infrared-guided anti-armor submunition developed for the Army's long-range missiles.

Notable use: Developed in the 1990s for the Army Tactical Missile System.

Source: Wikipedia: Brilliant Anti-Tank: https://en.wikipedia.org/wiki/Brilliant_Anti-Tank

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Brimstone 3 (AI Seeker)

GB — MBDA · DEPLOYED · FIRST DEPLOYED 2016

Advanced air-launched anti-armor missile with dual-mode millimeter wave and semi-active laser seeker using AI target discrimination. Can autonomously select and engage targets from a pre-designated group.

Notable use: Deployed by RAF Typhoons; used in Syria against ISIS; supplied to Ukraine 2022

Source: Wikipedia: Brimstone (missile): https://en.wikipedia.org/wiki/Brimstone_(missile)

CBU-97 Sensor Fuzed Weapon

US — TEXTRON SYSTEMS · DEPLOYED · FIRST DEPLOYED N/A

Cluster munition whose submunitions use infrared sensors to find armored vehicles and fire a penetrator at them.

Notable use: An early example of a weapon that finds targets on its own after release.

Source: Wikipedia: CBU-97 Sensor Fuzed Weapon: https://en.wikipedia.org/wiki/CBU-97_Sensor_Fuzed_Weapon

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DRDO Smart Anti-Airfield Weapon (SAAW)

IN — DRDO · DEPLOYED · FIRST DEPLOYED 2018

Precision-guided glide bomb with AI-assisted GPS/INS navigation for autonomous terminal attack against airfield infrastructure and hardened targets.

Notable use: Indian Air Force Jaguar and Tejas integration; multiple test drops completed 2019–2022

Source: Wikipedia: Smart Anti-Airfield Weapon: https://en.wikipedia.org/wiki/Smart_Anti-Airfield_Weapon

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Fire Weaver

IL — RAFAEL · DEPLOYED · FIRST DEPLOYED N/A

Networked sensor-to-shooter system that links cameras and weapons so any gun can engage a target any sensor sees.

Notable use: Offered to armies for infantry and vehicle use.

Source: Wikipedia: Rafael Advanced Defense Systems: https://en.wikipedia.org/wiki/Rafael_Advanced_Defense_Systems

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GB-6 Glide Bomb (AI seeker)

CN — CASC · DEPLOYED · FIRST DEPLOYED 2014

Long-range glide bomb with AI-enabled terminal seeker for autonomous target recognition and engagement. Dispensed in large quantities from H-6 bombers.

Notable use: PLA Air Force strategic strike inventory; integrated into H-6K strike packages

Source: No authoritative source matched yet

Gospel (HaBsora)

IL — ISRAEL DEFENSE FORCES · DEPLOYED · FIRST DEPLOYED 2022

AI-assisted system the Israeli military has described as helping generate potential targets from intelligence data; reporting said it sharply increased the pace of target generation.

Notable use: Described by the IDF in 2021 and in November 2023 reporting; how it is used in the 2023 to 2024 Gaza war is disputed.

Source: No authoritative source matched yet

Javelin (FGM-148)

US — RAYTHEON / LOCKHEED MARTIN · DEPLOYED · FIRST DEPLOYED 1996

Fire-and-forget infrared-guided anti-tank missile with a top-attack mode.

Notable use: Supplied in large numbers to Ukraine from 2022.

Source: Wikipedia: FGM-148 Javelin: https://en.wikipedia.org/wiki/FGM-148_Javelin

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Joint Strike Missile (JSM)

NO — KONGSBERG · DEPLOYED · FIRST DEPLOYED N/A

Air-launched missile derived from the NSM, carried internally by the F-35.

Notable use: Ordered by several countries including Australia, Japan and the US.

Source: Wikipedia: Joint Strike Missile: https://en.wikipedia.org/wiki/Joint_Strike_Missile

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Lavender (AI Targeting System)

IL — ISRAEL DEFENSE FORCES (AS REPORTED) · DEPLOYED · FIRST DEPLOYED 2023

AI-assisted system that, according to April 2024 reporting by +972 Magazine and Local Call, was used by the Israeli military to flag people in Gaza as suspected militants. The Israeli military disputes parts of this reporting.

Notable use: Described in 2024 reporting that cited Israeli intelligence officers; the IDF has said its information systems are tools for analysts, who examine targets independently.

Source: No authoritative source matched yet

LOCAAS

US — LOCKHEED MARTIN · RETIRED · FIRST DEPLOYED N/A

Small jet-powered autonomous attack munition that used laser radar to find targets; the program was cancelled.

Notable use: Tested in the 2000s.

Source: Wikipedia: Low Cost Autonomous Attack System: https://en.wikipedia.org/wiki/Low_Cost_Autonomous_Attack_System

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LRASM (AGM-158C)

US — LOCKHEED MARTIN · DEPLOYED · FIRST DEPLOYED 2018

Stealthy long-range anti-ship cruise missile that discriminates targets on its own in contested environments.

Notable use: Entered US service in 2018 on the B-1B bomber.

Source: Wikipedia: AGM-158C LRASM: https://en.wikipedia.org/wiki/AGM-158C_LRASM

Naval Strike Missile (NSM)

NO — KONGSBERG · DEPLOYED · FIRST DEPLOYED 2012

Anti-ship and land-attack missile with imaging infrared guidance and autonomous target recognition.

Notable use: Adopted by the US Navy and many other navies.

Source: Wikipedia: Naval Strike Missile: https://en.wikipedia.org/wiki/Naval_Strike_Missile

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Project Maven

US — DOD / PALANTIR / GOOGLE (INITIAL) · DEPLOYED · FIRST DEPLOYED 2017

Pentagon program that uses machine learning to analyze drone and satellite imagery and identify objects of interest for analysts.

Notable use: Began in 2017; Google withdrew in 2018 after employee protests; Palantir later became a major contractor.

Source: Wikipedia: Project Maven: https://en.wikipedia.org/wiki/Project_Maven

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Roketsan Çakır

TR — ROKETSAN · IN DEVELOPMENT · FIRST DEPLOYED N/A

Low-cost Turkish cruise missile that can be fired from air, sea or land.

Notable use: Developed in the 2020s for the Turkish military.

Source: Wikipedia: Çakır (missile): https://en.wikipedia.org/wiki/%C3%87ak%C4%B1r_(missile)

Saker Scout Drone (Ukraine)

UA — SAKER · DEPLOYED · FIRST DEPLOYED 2023

Ukrainian AI reconnaissance drone with computer vision-based target identification, classification, and geolocation. Feeds targeting data directly to artillery AI systems.

Notable use: Integrated with Ukrainian artillery targeting AI; used throughout eastern Ukraine front lines

Source: No authoritative source matched yet

SPEAR 3

GB — MBDA UK · IN DEVELOPMENT · FIRST DEPLOYED N/A

Networked miniature cruise missile designed for the F-35.

Notable use: Developed under the UK's Spear Capability Block.

Source: Wikipedia: SPEAR 3: https://en.wikipedia.org/wiki/SPEAR_3

SPICE

IL — RAFAEL · DEPLOYED · FIRST DEPLOYED N/A

Guidance kit that turns bombs into precision weapons using GPS plus scene matching to recognize the target.

Notable use: Used by Israel and exported to several countries.

Source: Wikipedia: Spice (bomb): https://en.wikipedia.org/wiki/Spice_(bomb)

Spike LR2 (AI Seeker)

IL — RAFAEL · DEPLOYED · FIRST DEPLOYED 2019

Fourth-generation anti-tank missile with AI image processing seeker for autonomous target recognition and fire-and-forget engagement. Can autonomously lock mid-flight onto new targets.

Notable use: Adopted by Netherlands, Germany, Poland; IDF operational; used in Gaza operations 2023–2024

Source: Wikipedia: Spike (missile): https://en.wikipedia.org/wiki/Spike_(missile)

Spike NLOS (AI-Guided)

IL — RAFAEL ADVANCED DEFENSE SYSTEMS · DEPLOYED · FIRST DEPLOYED 2004

Long-range fire-and-forget missile with AI-enhanced image processing for autonomous target recognition. Can lock onto and engage targets beyond line of sight without continuous operator guidance.

Notable use: Used by IDF in Gaza and Lebanon; supplied to US, Germany, Poland, and others

Source: Wikipedia: Spike (missile): https://en.wikipedia.org/wiki/Spike_(missile)

Storm Shadow

GB/FR — MBDA · DEPLOYED · FIRST DEPLOYED N/A

Air-launched cruise missile that uses terrain matching and an infrared seeker to find its target.

Notable use: Supplied to Ukraine by the UK and France.

Source: Wikipedia: Storm Shadow: https://en.wikipedia.org/wiki/Storm_Shadow

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Stormbreaker (SDB II)

US — RAYTHEON · DEPLOYED · FIRST DEPLOYED 2019

Tri-mode seeker guided bomb using millimeter wave, imaging infrared, and semi-active laser for all-weather autonomous target acquisition. Can autonomously identify and track moving targets.

Notable use: Delivered to USAF; cleared for F-15E/EX, F/A-18E/F; operational deployment Pacific theater

Source: Wikipedia: GBU-53/B StormBreaker: https://en.wikipedia.org/wiki/GBU-53%2FB_StormBreaker

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TALIOS Targeting Pod (AI)

FR — THALES · DEPLOYED · FIRST DEPLOYED 2019

Advanced AI-enhanced targeting pod for Rafale fighters with machine learning for automatic target recognition and tracking. Enables beyond-visual-range target identification.

Notable use: French Air Force Rafale operations; used in Levant strikes; integrated with SCALP cruise missiles

Source: No authoritative source matched yet

Taurus KEPD 350

DE/SE — TAURUS SYSTEMS · DEPLOYED · FIRST DEPLOYED N/A

Stealthy air-launched cruise missile that navigates by terrain matching and recognizes its target in the final phase.

Notable use: Used by the German, Spanish and South Korean air forces among others.

Source: Wikipedia: Taurus KEPD 350: https://en.wikipedia.org/wiki/Taurus_KEPD_350

Where's Daddy?

IL — ISRAEL DEFENSE FORCES (AS REPORTED) · DEPLOYED · FIRST DEPLOYED 2023

Reported tracking tool that, according to +972 Magazine and Local Call, alerted operators when a person marked as a target entered a specific location. The IDF disputes aspects of this reporting.

Notable use: Described in April 2024 reporting by +972 Magazine and Local Call that cited Israeli intelligence officers.

Source: No authoritative source matched yet

Autonomous Drone (149)

Ababil-2

IR — HESA · DEPLOYED · FIRST DEPLOYED N/A

Iranian multi-role drone in the Ababil family, used for reconnaissance and as a basis for loitering variants.

Notable use: Used by Iran and by allied groups.

Source: Wikipedia: HESA Ababil: https://en.wikipedia.org/wiki/HESA_Ababil

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Ababil-3

IR — HESA · DEPLOYED · FIRST DEPLOYED N/A

Iranian tactical reconnaissance and strike drone.

Notable use: Reported in service with Iran's military and allied forces.

Source: Wikipedia: HESA Ababil: https://en.wikipedia.org/wiki/HESA_Ababil

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AI-Enabled F-16 (AFRL X-62A VISTA)

US — DARPA / LOCKHEED / EPISCI · TESTING · FIRST DEPLOYED N/A

F-16 modified with AI pilot capable of autonomous dogfighting, defeating human pilots in simulated air combat. First AI-controlled fighter to defeat human in live aerial combat.

Notable use: AI beat human pilot in 5-0 dogfight test September 2023; USAF Secretary flights in AI-controlled aircraft

Source: Wikipedia: General Dynamics X-62 VISTA: https://en.wikipedia.org/wiki/General_Dynamics_X-62_VISTA

Anduril Fury

US — ANDURIL INDUSTRIES · IN DEVELOPMENT · FIRST DEPLOYED N/A

Attritable autonomous combat drone designed for offensive strike missions at scale. Part of Anduril's autonomous systems family using the Lattice AI platform.

Notable use: Selected as USAF CCA candidate; Lattice-controlled teaming demonstrations

Source: Wikipedia: Anduril FQ-44 Fury: https://en.wikipedia.org/wiki/Anduril_FQ-44_Fury

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Anduril Ghost

US — ANDURIL · DEPLOYED · FIRST DEPLOYED N/A

Autonomous reconnaissance helicopter drone from Anduril.

Notable use: Offered to US forces.

Source: Wikipedia: Anduril Industries: https://en.wikipedia.org/wiki/Anduril_Industries

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Arash-2 Loitering Munition

IR — IRGC AEROSPACE · DEPLOYED · FIRST DEPLOYED 2022

Iranian large one-way attack drone with AI guidance and explosives payload. Designed for saturation attacks against defended targets.

Notable use: Attacks on Israeli-linked shipping 2022–2024; used by Houthi forces against Saudi Arabia

Source: No authoritative source matched yet

ASN-209

CN — XI'AN ASN TECHNOLOGY GROUP · DEPLOYED · FIRST DEPLOYED N/A

Chinese tactical reconnaissance drone.

Notable use: Exported to several countries.

Source: Wikipedia: Aisheng ASN-209: https://en.wikipedia.org/wiki/Aisheng_ASN-209

BAE Systems Mantis

GB — BAE SYSTEMS · RETIRED · FIRST DEPLOYED N/A

British technology demonstrator drone that explored autonomy for long-endurance surveillance and strike.

Notable use: Flew in 2009.

Source: Wikipedia: BAE Systems Mantis: https://en.wikipedia.org/wiki/BAE_Systems_Mantis

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Bayraktar Akinci

TR — BAYKAR · DEPLOYED · FIRST DEPLOYED 2021

High-altitude armed UCAV with AI-assisted sensor fusion and autonomous systems integration. Capable of autonomous multi-target engagement and long-range precision strike.

Notable use: Turkish Air Force operational 2022; exported to Ukraine, Azerbaijan; demonstrated autonomous flight capabilities

Source: Wikipedia: Baykar Bayraktar Akinci: https://en.wikipedia.org/wiki/Baykar_Bayraktar_Akinci

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Bayraktar Kizilelma

TR — BAYKAR · TESTING · FIRST DEPLOYED N/A

Jet-powered unmanned combat aerial vehicle designed for air-to-air and air-to-ground missions with advanced AI autonomy. First Turkish stealth UCAV.

Notable use: First flight December 2022; carrier-compatible design for TCG Anadolu; combat systems integration ongoing

Source: Wikipedia: Bayraktar Kızılelma: https://en.wikipedia.org/wiki/Bayraktar_K%C4%B1z%C4%B1lelma

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Bayraktar TB2

TR — BAYKAR · DEPLOYED · FIRST DEPLOYED 2015

Medium-altitude long-endurance armed drone with electro-optical and infrared sensors and a laser designator, capable of automatic takeoff and landing.

Notable use: Widely reported in use in the 2020 Nagorno-Karabakh war, in Ukraine from 2022, and in Libya, Syria and Ethiopia.

Source: Wikipedia: Baykar Bayraktar TB2: https://en.wikipedia.org/wiki/Baykar_Bayraktar_TB2

Bayraktar TB3

TR — BAYKAR · DEPLOYED · FIRST DEPLOYED N/A

Folding-wing armed drone designed to operate from short-deck ships such as Turkey's TCG Anadolu.

Notable use: Entered the Turkish Navy's inventory in the 2020s.

Source: Wikipedia: Baykar Bayraktar TB3: https://en.wikipedia.org/wiki/Baykar_Bayraktar_TB3

Black Hornet Nano

NO — PROX DYNAMICS / TELEDYNE FLIR · DEPLOYED · FIRST DEPLOYED 2012

Palm-sized military reconnaissance helicopter drone carried by individual soldiers.

Notable use: Used by British forces in Afghanistan and later by the US Army and other NATO armies.

Source: Wikipedia: Teledyne FLIR Black Hornet: https://en.wikipedia.org/wiki/Teledyne_FLIR_Black_Hornet

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Boeing Phantom Ray

US — BOEING · RETIRED · FIRST DEPLOYED 2010

Boeing-funded flying-wing demonstrator for uncrewed combat aircraft.

Notable use: Flew in 2011.

Source: Wikipedia: Boeing X-45: https://en.wikipedia.org/wiki/Boeing_X-45

Burraq

PK — NATIONAL ENGINEERING AND SCIENTIFIC COMMISSION · DEPLOYED · FIRST DEPLOYED 2015

Pakistan's first armed drone.

Notable use: Pakistan announced its first drone strike using the Burraq in September 2015.

Source: Wikipedia: NESCOM Burraq: https://en.wikipedia.org/wiki/NESCOM_Burraq

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BZK-005

CN — BEIJING ZHONGKE / CHINESE DEFENSE INDUSTRY · DEPLOYED · FIRST DEPLOYED N/A

High-altitude long-endurance reconnaissance drone.

Notable use: Reported in service with the People's Liberation Army.

Source: Wikipedia: Harbin BZK-005: https://en.wikipedia.org/wiki/Harbin_BZK-005

CCA (Collaborative Combat Aircraft)

US — USAF / GENERAL ATOMICS / ANDURIL · IN DEVELOPMENT · FIRST DEPLOYED N/A

USAF program for AI-autonomous unmanned aircraft that will fly in teams with F-35s and F-22s. Designed to perform air-to-air combat, suppression, and strike missions autonomously.

Notable use: YFQ-42A and YFQ-44A prototypes selected 2024; first flight expected 2025

Source: Wikipedia: Aerial manned-unmanned teaming: https://en.wikipedia.org/wiki/Aerial_manned-unmanned_teaming

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CH-3

CN — CASC (CHINA AEROSPACE SCIENCE AND TECHNOLOGY CORPORATION) · DEPLOYED · FIRST DEPLOYED N/A

Medium-altitude armed reconnaissance drone from the Rainbow family.

Notable use: Exported to several countries including Nigeria.

Source: Wikipedia: CASC Rainbow: https://en.wikipedia.org/wiki/CASC_Rainbow

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CH-4 (Caihong-4)

CN — CASC · DEPLOYED · FIRST DEPLOYED 2015

Armed reconnaissance UAV with AI-enhanced targeting and autonomous loiter capability. Comparable to MQ-1 Predator in performance envelope.

Notable use: Deployed by Iraq, Jordan, Saudi Arabia; used in Iraqi counter-ISIS operations

Source: Wikipedia: CASC Rainbow: https://en.wikipedia.org/wiki/CASC_Rainbow

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CH-5 (Caihong-5)

CN — CASC · DEPLOYED · FIRST DEPLOYED 2015

Large MALE armed drone with AI-driven multi-sensor fusion and extended endurance. Can carry up to 16 air-to-ground missiles and features autonomous patrol capabilities.

Notable use: Exported to multiple countries; used in Middle East operations

Source: No authoritative source matched yet

CH-7

CN — CASC (CHINA AEROSPACE SCIENCE AND TECHNOLOGY CORPORATION) · TESTING · FIRST DEPLOYED N/A

Stealthy flying-wing reconnaissance and strike drone under development.

Notable use: Displayed at Chinese airshows.

Source: Wikipedia: CASC Rainbow: https://en.wikipedia.org/wiki/CASC_Rainbow

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CH-901

CN — CASC (CHINA AEROSPACE SCIENCE AND TECHNOLOGY CORPORATION) · DEPLOYED · FIRST DEPLOYED N/A

Small tube-launched loitering munition from CASC.

Notable use: Offered for export by Chinese industry.

Source: Wikipedia: CASC CH-901: https://en.wikipedia.org/wiki/CASC_CH-901

Chien Hsiang

TW — NCSIST · DEPLOYED · FIRST DEPLOYED N/A

Taiwanese anti-radiation loitering munition that homes in on radar emissions.

Notable use: Operated by Taiwan's armed forces.

Source: Wikipedia: NCSIST Chien Hsiang: https://en.wikipedia.org/wiki/NCSIST_Chien_Hsiang

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CU-170 Heron

CA — CANADIAN ARMED FORCES (IAI HERON) · RETIRED · FIRST DEPLOYED 2009

Israeli-built Heron drones leased by Canada for surveillance in Afghanistan.

Notable use: Flown over Afghanistan between 2009 and 2011.

Source: Wikipedia: IAI Heron: https://en.wikipedia.org/wiki/IAI_Heron

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Denel Seeker 400

ZA — DENEL DYNAMICS · DEPLOYED · FIRST DEPLOYED N/A

South African tactical reconnaissance drone.

Notable use: Operated by the South African military.

Source: Wikipedia: Denel Dynamics Seeker: https://en.wikipedia.org/wiki/Denel_Dynamics_Seeker

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DRDO Abhyas (AI Target Drone)

IN — DRDO ADE · DEPLOYED · FIRST DEPLOYED 2019

High-speed autonomous aerial target drone for air defense training. Uses AI-driven flight path generation to simulate hostile missile and aircraft threats.

Notable use: Indian Armed Forces training use; multiple test flights 2022; serves as realistic target for air defense exercises

Source: Wikipedia: DRDO Abhyas: https://en.wikipedia.org/wiki/DRDO_Abhyas

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DRDO Nishant

IN — DRDO · RETIRED · FIRST DEPLOYED N/A

Indian tactical reconnaissance drone developed by DRDO.

Notable use: Used by the Indian Army in the 2000s.

Source: Wikipedia: DRDO Nishant: https://en.wikipedia.org/wiki/DRDO_Nishant

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EiTAN (Heron TP variant)

IL — IAI · DEPLOYED · FIRST DEPLOYED 2010

Extended range autonomous MALE UAV with AI-enhanced sensor fusion for multi-day autonomous missions. Certified for flight in civilian airspace with AI detect-and-avoid.

Notable use: IDF operational for extended ISR; Israel's longest-range operational UAV; civilian airspace integration tested

Source: Wikipedia: IAI Eitan: https://en.wikipedia.org/wiki/IAI_Eitan

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Elang Hitam

ID — PT DIRGANTARA INDONESIA · IN DEVELOPMENT · FIRST DEPLOYED N/A

Indonesian medium-altitude long-endurance drone in development.

Notable use: Developed with Indonesian aerospace and research agencies.

Source: Wikipedia: Indonesian Aerospace Elang Hitam: https://en.wikipedia.org/wiki/Indonesian_Aerospace_Elang_Hitam

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FCAS / SCAF Remote Carrier

FR/DE/ES — DASSAULT / AIRBUS / INDRA · IN DEVELOPMENT · FIRST DEPLOYED N/A

Autonomous loyal wingman drones forming part of France-Germany-Spain Future Combat Air System. AI-networked remote carriers to team with Next Generation Fighter.

Notable use: Conceptual phase; technology demonstrators planned 2028; key European autonomous weapons program

Source: Wikipedia: Future Combat Air System: https://en.wikipedia.org/wiki/Future_Combat_Air_System

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FH-97A

CN — CHINESE DEFENSE INDUSTRY · IN DEVELOPMENT · FIRST DEPLOYED N/A

Loyal-wingman-style drone shown to operate alongside crewed fighters.

Notable use: Unveiled at the 2021 Zhuhai Airshow.

Source: Wikipedia: Feihong FH-97A: https://en.wikipedia.org/wiki/Feihong_FH-97A

FlyEye

PL — WB GROUP · DEPLOYED · FIRST DEPLOYED N/A

Small reconnaissance drone developed by Poland's WB Group.

Notable use: Used by the Polish military and exported to other countries.

Source: Wikipedia: WB Electronics FlyEye: https://en.wikipedia.org/wiki/WB_Electronics_FlyEye

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Forpost

RU — UZGA / ISRAEL AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED N/A

Russian medium-altitude drone built under license from the Israeli IAI Searcher.

Notable use: Used by Russia in Syria and in Ukraine.

Source: Wikipedia: IAI Searcher: https://en.wikipedia.org/wiki/IAI_Searcher

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FP-1

UA — FIRE POINT · DEPLOYED · FIRST DEPLOYED 2024

Ukrainian long-range one-way attack drone.

Notable use: Used by Ukraine in long-range strikes.

Source: Wikipedia: Fire Point FP-1: https://en.wikipedia.org/wiki/Fire_Point_FP-1

FP-5 Flamingo

UA — FIRE POINT · DEPLOYED · FIRST DEPLOYED 2025

Ukrainian long-range cruise missile developed by Fire Point.

Notable use: Announced in 2025.

Source: Wikipedia: FP-5 Flamingo: https://en.wikipedia.org/wiki/FP-5_Flamingo

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FPV Drone (Ukraine AI Systems)

UA — VARIOUS (UKRSPECSYSTEMS, UKRJET, FLYEYE) · DEPLOYED · FIRST DEPLOYED 2023

Ukrainian AI-enhanced FPV kamikaze drones with computer vision guidance for autonomous terminal homing. Produced in massive quantities using commercial components and AI seeker software.

Notable use: Mass deployment against Russian armor and troops 2023–present; AI target acquisition reduces pilot workload

Source: Wikipedia: First-person view (remote control): https://en.wikipedia.org/wiki/First-person_view_(remote_control)

Gerbera

RU — RUSSIAN DEFENSE INDUSTRY · DEPLOYED · FIRST DEPLOYED 2024

Russian low-cost decoy drone launched with Shahed-type drones to overload air defenses.

Notable use: Reported in attacks on Ukraine from 2024.

Source: Wikipedia: Gerbera (drone): https://en.wikipedia.org/wiki/Gerbera_(drone)

Ghatak UCAV

IN — DRDO · IN DEVELOPMENT · FIRST DEPLOYED N/A

Indian stealth flying-wing unmanned combat aircraft in development.

Notable use: Under development by DRDO's Aeronautical Development Establishment.

Source: Wikipedia: DRDO Ghatak: https://en.wikipedia.org/wiki/DRDO_Ghatak

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GJ-11 Sharp Sword

CN — AVIC (AVIATION INDUSTRY CORPORATION OF CHINA) · TESTING · FIRST DEPLOYED N/A

Stealthy flying-wing autonomous combat drone capable of deep penetration strike missions. Designed for AI-autonomous operation against high-value defended targets.

Notable use: Publicly unveiled at 2019 National Day parade; confirmed PLA operational development ongoing

Source: Wikipedia: Hongdu GJ-11: https://en.wikipedia.org/wiki/Hongdu_GJ-11

Green Dragon

IL — ISRAEL AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED N/A

Loitering munition from IAI that can be launched from a canister and recalled.

Notable use: Marketed by IAI for tactical units.

Source: Wikipedia: IAI Green Dragon: https://en.wikipedia.org/wiki/IAI_Green_Dragon

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HAL CATS Warrior

IN — HINDUSTAN AERONAUTICS · IN DEVELOPMENT · FIRST DEPLOYED N/A

Loyal-wingman-style drone planned to fly alongside crewed Indian fighters.

Notable use: Presented by HAL as part of its Combat Air Teaming System concept.

Source: Wikipedia: HAL Combat Air Teaming System: https://en.wikipedia.org/wiki/HAL_Combat_Air_Teaming_System

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Hamaseh

IR — QODS AVIATION INDUSTRIES · DEPLOYED · FIRST DEPLOYED N/A

Iranian armed drone unveiled in the 2020s.

Notable use: Shown by Iran as a long-range attack drone.

Source: Wikipedia: HESA Hamaseh: https://en.wikipedia.org/wiki/HESA_Hamaseh

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Harop

IL — ISRAEL AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED 2009

Anti-radiation loitering munition that autonomously hunts and destroys radar emitters. Can operate in fully autonomous mode or be manually directed to target.

Notable use: Azerbaijan deployed against Armenian air defense radars in Nagorno-Karabakh 2020

Source: Wikipedia: IAI Harop: https://en.wikipedia.org/wiki/IAI_Harop

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Harop (STAR)

IL — IAI · DEPLOYED · FIRST DEPLOYED 2014

Advanced variant of Harop with AI-enhanced electro-optical seeker for greater target discrimination. Can autonomously identify and engage both radar emitters and high-value ground targets.

Notable use: Azerbaijan operations Nagorno-Karabakh 2016 and 2020; Indian Air Force inventory

Source: Wikipedia: IAI Harop: https://en.wikipedia.org/wiki/IAI_Harop

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Harpy

IL — ISRAEL AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED 1997

Fully autonomous anti-radiation drone that loiters over the battlefield and autonomously attacks radar emitters. One of the earliest operational LAWs in service.

Notable use: Operated by India, South Korea, Turkey; used in multiple Middle East conflicts

Source: Wikipedia: IAI Harpy: https://en.wikipedia.org/wiki/IAI_Harpy

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Harpy NG

IL — IAI · DEPLOYED · FIRST DEPLOYED 2015

Next-generation anti-radiation loitering munition with improved AI seeker for target discrimination. Capable of autonomous radar hunting in complex electromagnetic environments.

Notable use: IDF operational; exported to India, Chile; upgraded seeker for modern AESA radar suppression

Source: Wikipedia: IAI Harpy: https://en.wikipedia.org/wiki/IAI_Harpy

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Helsing HX-2

DE — HELSING · DEPLOYED · FIRST DEPLOYED N/A

AI-enabled strike drone developed by the German defense company Helsing.

Notable use: Helsing said in 2025 that it would supply thousands of HX-2 drones to Ukraine.

Source: Wikipedia: Helsing (company): https://en.wikipedia.org/wiki/Helsing_(company)

Hermes 450

IL — ELBIT SYSTEMS · DEPLOYED · FIRST DEPLOYED 1998

Tactical drone for surveillance and strike that was the basis of the British Watchkeeper.

Notable use: Operated by Israel and exported to several countries.

Source: Wikipedia: Elbit Hermes 450: https://en.wikipedia.org/wiki/Elbit_Hermes_450

Hermes 900

IL — ELBIT SYSTEMS · DEPLOYED · FIRST DEPLOYED 2012

Medium-altitude long-endurance drone for surveillance and strike.

Notable use: Used by Israel and exported to countries including Brazil, Switzerland, Chile and Colombia.

Source: Wikipedia: Elbit Hermes 900: https://en.wikipedia.org/wiki/Elbit_Hermes_900

Hero-120

IL — UVISION · DEPLOYED · FIRST DEPLOYED N/A

Loitering munition that can be launched from vehicles, with abort and recall capability.

Notable use: Adopted by the US Marine Corps' loitering munition program.

Source: Wikipedia: UVision Air: https://en.wikipedia.org/wiki/UVision_Air

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Heron (IAI Heron)

IL — ISRAEL AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED N/A

Medium-altitude long-endurance drone for surveillance, built by IAI.

Notable use: Exported to many countries including India, Germany and Australia.

Source: Wikipedia: IAI Heron: https://en.wikipedia.org/wiki/IAI_Heron

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Heron TP (Shoval)

IL — IAI · DEPLOYED · FIRST DEPLOYED 2007

High-altitude armed UAV with AI-assisted sensor fusion and autonomous patrol capability. Israel's largest operational UAV with extended strike and ISR range.

Notable use: IDF operations in Gaza and Lebanon; exported to Germany, India, Australia; AI targeting upgrades post-2020

Source: Wikipedia: IAI Eitan: https://en.wikipedia.org/wiki/IAI_Eitan

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ideaForge SWITCH UAV

IN — IDEAFORGE · DEPLOYED · FIRST DEPLOYED N/A

Small vertical-takeoff reconnaissance drone used by Indian armed and paramilitary forces.

Notable use: Procured by the Indian Army and other agencies.

Source: Wikipedia: IdeaForge Technology: https://en.wikipedia.org/wiki/IdeaForge_Technology

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Kaman K-MAX

US — KAMAN / LOCKHEED MARTIN · DEPLOYED · FIRST DEPLOYED N/A

Autonomous cargo helicopter used by the US Marine Corps in Afghanistan.

Notable use: Delivered supplies in Afghanistan from 2011.

Source: Wikipedia: Kaman K-MAX: https://en.wikipedia.org/wiki/Kaman_K-MAX

Kaman-22

IR — IRAN AVIATION INDUSTRIES ORGANIZATION · DEPLOYED · FIRST DEPLOYED N/A

Large Iranian medium-altitude long-endurance drone.

Notable use: Displayed by Iran from 2021.

Source: Wikipedia: Kaman 22 (UAV): https://en.wikipedia.org/wiki/Kaman_22_(UAV)

KARGU-2

TR — STM (SAVUNMA TEKNOLOJILERI MÜHENDISLIK) · DEPLOYED · FIRST DEPLOYED 2019

Autonomous rotary-wing attack drone capable of using deep learning algorithms to identify and engage targets without operator command. Classified as a lethal autonomous weapon.

Notable use: UN panel of experts reported possible autonomous engagement of Haftar forces in Libya 2020

Source: Wikipedia: STM Kargu: https://en.wikipedia.org/wiki/STM_Kargu

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Karrar

IR — IRAN AVIATION INDUSTRIES ORGANIZATION · DEPLOYED · FIRST DEPLOYED N/A

Jet-powered Iranian drone used both as a target and a strike aircraft.

Notable use: Shown in Iranian military parades.

Source: Wikipedia: HESA Karrar: https://en.wikipedia.org/wiki/HESA_Karrar

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Kronshtadt Sirius

RU — KRONSHTADT GROUP · IN DEVELOPMENT · FIRST DEPLOYED N/A

Russian medium-altitude long-endurance drone.

Notable use: Presented by Kronshtadt.

Source: Wikipedia: Kronshtadt Sirius: https://en.wikipedia.org/wiki/Kronshtadt_Sirius

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KUB-BLA

RU — ZALA AERO GROUP · DEPLOYED · FIRST DEPLOYED 2019

Small autonomous loitering munition capable of optical target acquisition and autonomous terminal attack. Designed for anti-personnel and light vehicle engagement.

Notable use: Displayed at ARMY-2019 expo; deployed in Ukraine 2022–present

Source: Wikipedia: ZALA Kub-BLA: https://en.wikipedia.org/wiki/ZALA_Kub-BLA

Lancet-3

RU — ZALA AERO GROUP (KALASHNIKOV) · DEPLOYED · FIRST DEPLOYED 2019

Precision loitering munition with optical target recognition enabling autonomous terminal homing. Designed to strike stationary and moving armored targets.

Notable use: Extensively deployed by Russia in Ukraine 2022–present; confirmed kills of HIMARS, howitzers, and air defense systems

Source: Wikipedia: ZALA Lancet: https://en.wikipedia.org/wiki/ZALA_Lancet

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Leleka-100

UA — DEVIRO · DEPLOYED · FIRST DEPLOYED N/A

Small reconnaissance drone widely used by Ukrainian forces.

Notable use: Used for artillery spotting by Ukrainian units.

Source: Wikipedia: DeViRo Leleka-100: https://en.wikipedia.org/wiki/DeViRo_Leleka-100

Leonardo Falco Xplorer

IT — LEONARDO · DEPLOYED · FIRST DEPLOYED N/A

Medium-altitude long-endurance drone offered for surveillance missions.

Notable use: Offered by Leonardo to Italian and export customers.

Source: Wikipedia: Leonardo Falco Xplorer: https://en.wikipedia.org/wiki/Leonardo_Falco_Xplorer

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Liutyi

UA — UKRAINIAN DEFENSE INDUSTRY · DEPLOYED · FIRST DEPLOYED 2024

Long-range attack drone used to strike targets deep inside Russia.

Notable use: Used in strikes on Russian industrial and military sites from 2024.

Source: Wikipedia: Liutyi: https://en.wikipedia.org/wiki/Liutyi

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Lockheed Martin Desert Hawk

US — LOCKHEED MARTIN · DEPLOYED · FIRST DEPLOYED N/A

Small hand-launched surveillance drone for infantry.

Notable use: Used by US and British forces.

Source: Wikipedia: Lockheed Martin Desert Hawk: https://en.wikipedia.org/wiki/Lockheed_Martin_Desert_Hawk

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Lockheed Martin Vectis

US — LOCKHEED MARTIN · IN DEVELOPMENT · FIRST DEPLOYED N/A

Uncrewed combat aircraft concept from Lockheed Martin for collaborative combat roles.

Notable use: Unveiled by Lockheed Martin in 2024.

Source: Wikipedia: Lockheed Martin Vectis: https://en.wikipedia.org/wiki/Lockheed_Martin_Vectis

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Loyal Wingman (OBSS)

US — BOEING · IN DEVELOPMENT · FIRST DEPLOYED N/A

AI-enabled autonomous combat aircraft designed to escort and support crewed fighters. Uses collaborative autonomy algorithms to execute complex multi-ship missions.

Notable use: Related to MQ-28A Ghost Bat program; USAF Skyborg autonomy core system integration testing

Source: Wikipedia: Loyal wingman drone: https://en.wikipedia.org/wiki/Loyal_wingman_drone

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Loyal Wingman (UK LANCA)

GB — BAE SYSTEMS / DSTL · IN DEVELOPMENT · FIRST DEPLOYED N/A

UK development of an autonomous combat drone to team with Typhoon and Tempest fighters. Features advanced AI autonomy stack for multi-domain coordinated attacks.

Notable use: Spirent Systems Project LANCA; technology demonstrator flights conducted 2023

Source: No authoritative source matched yet

Loyal Wingman LANCA (Low-Cost Autonomous Attack System)

IN — DRDO · IN DEVELOPMENT · FIRST DEPLOYED N/A

India's indigenous autonomous loyal wingman drone designed to accompany crewed fighters and suppress enemy air defenses. Features AI-driven autonomous target engagement.

Notable use: Successfully tested 2023; Indian Air Force development program; integration with Tejas Mk2 planned

Source: No authoritative source matched yet

MALE RPAS (European Eurodrone)

FR/DE/IT/ES — AIRBUS / LEONARDO / INDRA · IN DEVELOPMENT · FIRST DEPLOYED N/A

European MALE armed reconnaissance UAV with AI sensor fusion and semi-autonomous operation. Designed to reduce European dependence on US UAV platforms.

Notable use: Contract signed 2023; development underway; planned for French, German, Italian, Spanish Air Forces

Source: Wikipedia: Eurodrone: https://en.wikipedia.org/wiki/Eurodrone

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MIUS (Medium Strike UAS)

RU — MIG CORPORATION · IN DEVELOPMENT · FIRST DEPLOYED N/A

Medium-weight stealth UCAV for autonomous strike and loyal wingman roles alongside MiG-41. AI-enabled for autonomous multi-domain targeting.

Notable use: Design unveiled 2020; development ongoing alongside Okhotnik-B program

Source: No authoritative source matched yet

Mohajer-10

IR — QODS AVIATION INDUSTRIES · DEPLOYED · FIRST DEPLOYED 2023

Larger Iranian armed drone with greater range and payload than the Mohajer-6.

Notable use: Unveiled by Iran in August 2023.

Source: Wikipedia: Qods Mohajer 10: https://en.wikipedia.org/wiki/Qods_Mohajer_10

Mohajer-4

IR — QODS AVIATION INDUSTRIES · DEPLOYED · FIRST DEPLOYED N/A

Iranian tactical reconnaissance drone.

Notable use: Used by Iran and allied forces.

Source: Wikipedia: Qods Mohajer: https://en.wikipedia.org/wiki/Qods_Mohajer

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Mohajer-6

IR — IAIO (IRAN AIRCRAFT MANUFACTURING INDUSTRIAL COMPANY) · DEPLOYED · FIRST DEPLOYED 2017

Medium-range armed UAV with electro-optical and IR sensors for autonomous target detection. Can carry guided bombs and air-to-surface missiles.

Notable use: IRGC operational; supplied to Russia for Ukraine operations; used in Iranian domestic crackdowns

Source: Wikipedia: Qods Mohajer-6: https://en.wikipedia.org/wiki/Qods_Mohajer-6

MQ-1 Predator

US — GENERAL ATOMICS · RETIRED · FIRST DEPLOYED 1995

Early armed medium-altitude drone that pioneered persistent remote surveillance and strike; retired by the US Air Force in 2018.

Notable use: Flew armed missions from 2001 and became a defining tool of counterterrorism operations.

Source: Wikipedia: General Atomics MQ-1 Predator: https://en.wikipedia.org/wiki/General_Atomics_MQ-1_Predator

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MQ-1C Gray Eagle

US — GENERAL ATOMICS · DEPLOYED · FIRST DEPLOYED 2009

Armed medium-altitude long-endurance drone for the US Army, derived from the MQ-1 Predator, with automatic takeoff and landing.

Notable use: Introduced by the US Army in 2009 and used in Iraq and Afghanistan.

Source: Wikipedia: General Atomics MQ-1C Gray Eagle: https://en.wikipedia.org/wiki/General_Atomics_MQ-1C_Gray_Eagle

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MQ-25 Stingray

US — BOEING · IN DEVELOPMENT · FIRST DEPLOYED N/A

Carrier-based unmanned aerial refueling aircraft for the US Navy that also extends the air wing's reach.

Notable use: In 2021 a test MQ-25 refueled a Navy F/A-18 in flight, a first for a carrier-type drone tanker.

Source: Wikipedia: Boeing MQ-25 Stingray: https://en.wikipedia.org/wiki/Boeing_MQ-25_Stingray

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MQ-28A Ghost Bat

AU — BOEING AUSTRALIA / RAAF · TESTING · FIRST DEPLOYED N/A

Autonomous loyal wingman UAV developed by Boeing Australia for the Royal Australian Air Force. Uses AI to operate independently or alongside crewed aircraft for force multiplication.

Notable use: First flight April 2021; ongoing RAAF Advanced Development Program trials

Source: Wikipedia: Boeing MQ-28 Ghost Bat: https://en.wikipedia.org/wiki/Boeing_MQ-28_Ghost_Bat

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MQ-4C Triton

US — NORTHROP GRUMMAN · DEPLOYED · FIRST DEPLOYED N/A

High-altitude maritime surveillance drone derived from the RQ-4 Global Hawk, built for the US Navy.

Notable use: Operated by the US Navy; Australia has also acquired the type.

Source: Wikipedia: Northrop Grumman MQ-4C Triton: https://en.wikipedia.org/wiki/Northrop_Grumman_MQ-4C_Triton

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MQ-8 Fire Scout

US — NORTHROP GRUMMAN · DEPLOYED · FIRST DEPLOYED N/A

Unmanned helicopter for US Navy ships that provides reconnaissance and can carry weapons.

Notable use: Deployed on US Navy ships including littoral combat ships.

Source: Wikipedia: Northrop Grumman MQ-8 Fire Scout: https://en.wikipedia.org/wiki/Northrop_Grumman_MQ-8_Fire_Scout

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MQ-9 Reaper (AI-Enhanced)

US — GENERAL ATOMICS / USAF · DEPLOYED · FIRST DEPLOYED 2007

Long-endurance remotely piloted aircraft upgraded with AI-assisted targeting and autonomous flight capabilities. Operates in ISR and strike roles with machine learning-enhanced sensor fusion.

Notable use: Extensively used in Afghanistan, Syria, Iraq, Somalia, and Yemen; AI targeting upgrades ongoing under Project Maven

Source: Wikipedia: General Atomics MQ-9 Reaper: https://en.wikipedia.org/wiki/General_Atomics_MQ-9_Reaper

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MQ-9B SkyGuardian / SeaGuardian

US — GENERAL ATOMICS · DEPLOYED · FIRST DEPLOYED N/A

Next-generation MQ-9 with automatic takeoff and landing, detect-and-avoid radar for civil airspace, and a maritime-patrol SeaGuardian version.

Notable use: Ordered by the UK (as Protector), Belgium, India, the Japan Coast Guard and others.

Source: Wikipedia: General Atomics MQ-9 Reaper: https://en.wikipedia.org/wiki/General_Atomics_MQ-9_Reaper

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Nagastra-1

IN — ECONOMIC EXPLOSIVES LIMITED (EEL) · DEPLOYED · FIRST DEPLOYED 2024

India's first indigenous loitering munition with GPS-aided autonomous navigation and electro-optical seeker. Designed for precision strike against stationary targets.

Notable use: Indian Army order of 480 units placed 2024; first homegrown loitering munition in Indian service

Source: Wikipedia: Nagastra-1: https://en.wikipedia.org/wiki/Nagastra-1

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nEUROn UCAV

FR — DASSAULT AVIATION · TESTING · FIRST DEPLOYED N/A

Stealthy unmanned combat air vehicle demonstrator with AI-assisted autonomous navigation and weapons delivery. Pan-European technology demonstrator for future combat systems.

Notable use: First flight 2012; participated in live weapons release tests; data fed into FCAS/SCAF program

Source: Wikipedia: Dassault nEUROn: https://en.wikipedia.org/wiki/Dassault_nEUROn

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Orbiter 1K

IL — AERONAUTICS DEFENSE · DEPLOYED · FIRST DEPLOYED N/A

Small loitering munition that can be launched from a catapult.

Notable use: Sold to several countries and used by Azerbaijan.

Source: Wikipedia: Aeronautics Defense Orbiter: https://en.wikipedia.org/wiki/Aeronautics_Defense_Orbiter

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Orion (Kronstadt Inokhodets)

RU — KRONSTADT GROUP · DEPLOYED · FIRST DEPLOYED N/A

Russian medium-altitude long-endurance armed drone.

Notable use: Reported in use in Syria and in Ukraine.

Source: Wikipedia: Kronshtadt Orion: https://en.wikipedia.org/wiki/Kronshtadt_Orion

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Orlan-10

RU — SPECIAL TECHNOLOGY CENTER · DEPLOYED · FIRST DEPLOYED N/A

Small Russian reconnaissance drone used for artillery spotting and electronic warfare relays.

Notable use: Widely used in Syria and in Russia's war in Ukraine.

Source: Wikipedia: STC Orlan-10: https://en.wikipedia.org/wiki/STC_Orlan-10

Phoenix Ghost

US — AEROJET ROCKETDYNE (L3HARRIS) · DEPLOYED · FIRST DEPLOYED N/A

Loitering munition developed quickly for the US Air Force.

Notable use: Supplied to Ukraine.

Source: Wikipedia: Aevex Phoenix Ghost: https://en.wikipedia.org/wiki/Aevex_Phoenix_Ghost

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Piaggio P.1HH HammerHead

IT — PIAGGIO AEROSPACE · DEPLOYED · FIRST DEPLOYED N/A

Medium-altitude long-endurance drone developed from the P.180 Avanti business aircraft.

Notable use: Operated by the Italian Air Force.

Source: Wikipedia: Piaggio P.180 Avanti: https://en.wikipedia.org/wiki/Piaggio_P.180_Avanti

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Predator C Avenger

US — GENERAL ATOMICS · DEPLOYED · FIRST DEPLOYED 2009

Jet-powered advanced UCAV with stealth features and AI-enhanced sensor suite. Designed for autonomous deep penetration missions with internal weapons bay.

Notable use: CIA and USAF operations; used in classified counter-terrorism missions; forms basis for potential CCA development

Source: Wikipedia: General Atomics MQ-20 Avenger: https://en.wikipedia.org/wiki/General_Atomics_MQ-20_Avenger

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Predator XP (MALE UAV)

US — GENERAL ATOMICS · DEPLOYED · FIRST DEPLOYED 2013

Export variant of Predator UAV with AI-assisted ISR sensor processing. Designed for armed reconnaissance with human-on-the-loop strike authorization.

Notable use: Operated by UAE in Yemen; AI targeting software package upgrades ongoing

Source: No authoritative source matched yet

Qasef-1

YE — HOUTHI MOVEMENT (IRANIAN-DERIVED) · DEPLOYED · FIRST DEPLOYED N/A

Houthi one-way attack drone derived from the Iranian Ababil-2.

Notable use: Used in attacks in the Yemeni conflict according to reports.

Source: Wikipedia: HESA Ababil: https://en.wikipedia.org/wiki/HESA_Ababil

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Quantum Systems Vector

DE — QUANTUM-SYSTEMS · DEPLOYED · FIRST DEPLOYED N/A

Vertical-takeoff reconnaissance drone for military use.

Notable use: Used by several armed forces including Ukraine.

Source: Wikipedia: Quantum Systems: https://en.wikipedia.org/wiki/Quantum_Systems

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R1 Mojo (South Korea)

KR — KOREA AEROSPACE INDUSTRIES · IN DEVELOPMENT · FIRST DEPLOYED N/A

South Korean loyal wingman drone with AI teaming capability designed to accompany KF-21 Boramae fighters. Autonomous multi-mission capability for strike and EW.

Notable use: KAI development program announced 2022; technology demonstrator planned 2026

Source: No authoritative source matched yet

R18 Octocopter (Aerorozvidka)

UA — AEROROZVIDKA · DEPLOYED · FIRST DEPLOYED 2022

Heavy multirotor drone adapted to drop munitions.

Notable use: Used by Ukrainian units from 2022.

Source: Wikipedia: Aerorozvidka: https://en.wikipedia.org/wiki/Aerorozvidka

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Rheinmetall FV-014

DE — RHEINMETALL / UVISION · IN DEVELOPMENT · FIRST DEPLOYED N/A

Loitering munition made by Rheinmetall in partnership with UVision.

Notable use: Offered to the German armed forces.

Source: Wikipedia: Rheinmetall FV-014: https://en.wikipedia.org/wiki/Rheinmetall_FV-014

Rotem L

IL — ISRAEL AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED N/A

Small vertical-takeoff loitering quadcopter that can carry a munition.

Notable use: Offered by IAI to infantry and special forces.

Source: Wikipedia: IAI Rotem L: https://en.wikipedia.org/wiki/IAI_Rotem_L

RQ-11 Raven

US — AEROVIRONMENT · DEPLOYED · FIRST DEPLOYED 2003

Hand-launched small reconnaissance drone, one of the most widely fielded military drones.

Notable use: Supplied to Ukraine and many NATO armies.

Source: Wikipedia: AeroVironment RQ-11 Raven: https://en.wikipedia.org/wiki/AeroVironment_RQ-11_Raven

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RQ-170 Sentinel

US — LOCKHEED MARTIN · DEPLOYED · FIRST DEPLOYED N/A

Stealthy flying-wing reconnaissance drone operated by the US Air Force.

Notable use: Drew public attention in December 2011 when Iran announced it had recovered one.

Source: Wikipedia: Lockheed Martin RQ-170 Sentinel: https://en.wikipedia.org/wiki/Lockheed_Martin_RQ-170_Sentinel

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RQ-180

US — NORTHROP GRUMMAN · DEPLOYED · FIRST DEPLOYED N/A

Reported stealthy high-altitude reconnaissance drone; the US has not confirmed its details.

Notable use: Described in public reporting.

Source: Wikipedia: Northrop Grumman RQ-180: https://en.wikipedia.org/wiki/Northrop_Grumman_RQ-180

RQ-20 Puma

US — AEROVIRONMENT · DEPLOYED · FIRST DEPLOYED N/A

Hand-launched small drone used for reconnaissance by US special operations and allied forces.

Notable use: Supplied to Ukraine by the United States.

Source: Wikipedia: AeroVironment RQ-20 Puma: https://en.wikipedia.org/wiki/AeroVironment_RQ-20_Puma

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RQ-21 Blackjack

US — INSITU (BOEING) · DEPLOYED · FIRST DEPLOYED N/A

Small tactical reconnaissance drone launched by catapult and recovered by a wire, built for the US Navy and Marine Corps.

Notable use: Operated by the US Marine Corps and Navy.

Source: Wikipedia: Boeing Insitu RQ-21 Blackjack: https://en.wikipedia.org/wiki/Boeing_Insitu_RQ-21_Blackjack

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RQ-4 Global Hawk (AI ISR)

US — NORTHROP GRUMMAN · DEPLOYED · FIRST DEPLOYED 2001

High-altitude long-endurance autonomous surveillance drone with AI-assisted signals intelligence and imagery analysis. Provides persistent wide-area ISR with minimal human supervision.

Notable use: Used to monitor the area near Ukraine from 2022; Iran shot down a US Navy RQ-4A over the Strait of Hormuz in June 2019.

Source: Wikipedia: Northrop Grumman RQ-4 Global Hawk: https://en.wikipedia.org/wiki/Northrop_Grumman_RQ-4_Global_Hawk

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RQ-7 Shadow

US — AAI / TEXTRON SYSTEMS · DEPLOYED · FIRST DEPLOYED 2002

Tactical reconnaissance drone used at brigade level, with automatic launch and landing.

Notable use: Widely used by US forces in Iraq and Afghanistan and by Australia, Italy and Romania.

Source: Wikipedia: AAI RQ-7 Shadow: https://en.wikipedia.org/wiki/AAI_RQ-7_Shadow

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Rustom-II / TAPAS-BH-201

IN — DRDO · TESTING · FIRST DEPLOYED N/A

Indian medium-altitude long-endurance drone developed by DRDO.

Notable use: Under flight test by DRDO since 2016.

Source: Wikipedia: DRDO Rustom: https://en.wikipedia.org/wiki/DRDO_Rustom

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S-70 Okhotnik-B (Hunter-B)

RU — SUKHOI · TESTING · FIRST DEPLOYED N/A

Heavy stealth combat drone designed for autonomous strike missions and loyal wingman roles alongside Su-57. Features AI-assisted navigation and targeting.

Notable use: First flight 2019; paired flight with Su-57 demonstrated 2019; full autonomous capability in development

Source: Wikipedia: Sukhoi S-70 Okhotnik-B: https://en.wikipedia.org/wiki/Sukhoi_S-70_Okhotnik-B

S8000 Banderol

RU — RUSSIAN DEFENSE INDUSTRY · DEPLOYED · FIRST DEPLOYED N/A

Russian jet-powered drone resembling a small cruise missile.

Notable use: Reported by Ukrainian and Western officials.

Source: Wikipedia: S8000 Banderol: https://en.wikipedia.org/wiki/S8000_Banderol

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Saab Skeldar V-200

SE — SAAB · DEPLOYED · FIRST DEPLOYED N/A

Unmanned helicopter for maritime and land surveillance.

Notable use: Operated by several navies.

Source: Wikipedia: UMS Skeldar V-200: https://en.wikipedia.org/wiki/UMS_Skeldar_V-200

Saetbyol-4

KP — DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA · IN DEVELOPMENT · FIRST DEPLOYED 2023

North Korean high-altitude reconnaissance drone resembling the RQ-4 Global Hawk.

Notable use: Shown at the July 2023 military parade in Pyongyang.

Source: Wikipedia: Saetbyol-4: https://en.wikipedia.org/wiki/Saetbyol-4

Saetbyol-9

KP — DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA · IN DEVELOPMENT · FIRST DEPLOYED 2023

North Korean armed drone resembling the MQ-9 Reaper.

Notable use: Shown at the July 2023 military parade in Pyongyang.

Source: Wikipedia: Saetbyol-9: https://en.wikipedia.org/wiki/Saetbyol-9

Safran Patroller

FR — SAFRAN · DEPLOYED · FIRST DEPLOYED N/A

Medium-altitude drone used for French Army reconnaissance.

Notable use: Entered French Army service in the 2020s.

Source: Wikipedia: Safran Patroller: https://en.wikipedia.org/wiki/Safran_Patroller

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ScanEagle

US — INSITU (BOEING) · DEPLOYED · FIRST DEPLOYED 2004

Small catapult-launched surveillance drone that needs no runway.

Notable use: Used by the US Navy and many allies for maritime and land reconnaissance.

Source: Wikipedia: Boeing Insitu MQ-27 ScanEagle: https://en.wikipedia.org/wiki/Boeing_Insitu_MQ-27_ScanEagle

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Shahed-129

IR — HESA · DEPLOYED · FIRST DEPLOYED 2012

Medium-altitude long-endurance armed drone.

Notable use: Reported in use over Syria and Iraq.

Source: Wikipedia: Shahed 129: https://en.wikipedia.org/wiki/Shahed_129

Shahed-136 / Geran-2

IR — HESA / RUSSIA (OPERATOR) · DEPLOYED · FIRST DEPLOYED 2021

One-way attack loitering munition using terrain-following navigation and GPS/inertial guidance. Deployed in large swarms to saturate air defenses and strike fixed targets.

Notable use: Mass use by Russia against Ukrainian infrastructure 2022–present; attacks on Saudi Arabia

Source: Wikipedia: HESA Shahed 136: https://en.wikipedia.org/wiki/HESA_Shahed_136

Shahed-149 Gaza

IR — HESA · DEPLOYED · FIRST DEPLOYED 2021

Large MALE armed UAV with AI-assisted electro-optical targeting. Capable of extended autonomous patrol and strike missions at high altitude.

Notable use: Iranian IRGC operations; provided to Houthi forces Yemen; used in attacks on regional targets 2023

Source: Wikipedia: Shahed 149 Gaza: https://en.wikipedia.org/wiki/Shahed_149_Gaza

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Shahed-191 Simorgh

IR — HESA · DEPLOYED · FIRST DEPLOYED 2021

Medium-range stealth UCAV with AI-assisted sensor fusion for autonomous strike and reconnaissance. Features internal weapons bay and reduced radar signature.

Notable use: IRGC operational; used in exercises simulating attacks on US carrier groups; footage broadcast 2022

Source: Wikipedia: Shahed 191: https://en.wikipedia.org/wiki/Shahed_191

Shahed-238

IR — HESA · DEPLOYED · FIRST DEPLOYED 2023

Jet-powered variant of the Shahed loitering munition family with increased speed and extended range. Incorporates upgraded navigation systems and reduced radar cross-section.

Notable use: Debuted operationally against Ukraine 2023–2024

Source: Wikipedia: Shahed drones: https://en.wikipedia.org/wiki/Shahed_drones

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Shahpar

PK — GLOBAL INDUSTRIAL AND DEFENCE SOLUTIONS · DEPLOYED · FIRST DEPLOYED N/A

Pakistani tactical reconnaissance drone.

Notable use: Operated by the Pakistan Army.

Source: Wikipedia: GIDS Shahpar: https://en.wikipedia.org/wiki/GIDS_Shahpar

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Skydio X2D

US — SKYDIO · DEPLOYED · FIRST DEPLOYED N/A

Small drone using onboard AI for obstacle avoidance and autonomous flight in GPS-challenged areas.

Notable use: Selected by the US Army for small unmanned aircraft programs.

Source: Wikipedia: Skydio: https://en.wikipedia.org/wiki/Skydio

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Skyeton Raybird-3

UA — SKYETON · DEPLOYED · FIRST DEPLOYED N/A

Medium-range reconnaissance drone.

Notable use: Used by Ukrainian forces.

Source: Wikipedia: Skyeton Raybird-3: https://en.wikipedia.org/wiki/Skyeton_Raybird-3

Skylark

IL — ELBIT SYSTEMS · DEPLOYED · FIRST DEPLOYED N/A

Family of small hand-launched drones for tactical reconnaissance.

Notable use: Used by Israel and many foreign armies.

Source: Wikipedia: Elbit Skylark: https://en.wikipedia.org/wiki/Elbit_Skylark

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SkyStriker

IL — ELBIT SYSTEMS · DEPLOYED · FIRST DEPLOYED N/A

Loitering munition able to loiter for around two hours and strike targets with a warhead.

Notable use: Sold to several customers and reported in use by Azerbaijan.

Source: Wikipedia: Loitering munition: https://en.wikipedia.org/wiki/Loitering_munition

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Songar

TR — ASISGUARD · DEPLOYED · FIRST DEPLOYED N/A

Armed multirotor drone with a remotely operated machine gun.

Notable use: Reported in Turkish operations around 2020.

Source: Wikipedia: Asisguard Songar: https://en.wikipedia.org/wiki/Asisguard_Songar

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Spike Firefly

IL — RAFAEL · DEPLOYED · FIRST DEPLOYED N/A

Light loitering munition for infantry units.

Notable use: Intended for small units fighting in urban terrain.

Source: Wikipedia: Spike Firefly: https://en.wikipedia.org/wiki/Spike_Firefly

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STM Alpagu

TR — STM · DEPLOYED · FIRST DEPLOYED 2021

Fixed-wing loitering munition with AI vision-based terminal guidance for precision strike. Designed to operate individually or in AI-coordinated swarms.

Notable use: Turkish Armed Forces procurement 2021; swarm capability demonstrated with multiple units

Source: Wikipedia: STM (Turkish company): https://en.wikipedia.org/wiki/STM_(Turkish_company)

Strix (Swedish-Norwegian Loitering Munition)

SE — SAAB / SWEDEN-NORWAY · DEPLOYED · FIRST DEPLOYED 1993

Autonomous top-attack anti-armor munition with infrared seeker for fire-and-forget engagement. Launched by 120mm mortar and autonomously tracks and attacks armored targets.

Notable use: In service Swedish and Norwegian armies; continued modernization with AI seeker upgrades

Source: Wikipedia: Bofors STRIX: https://en.wikipedia.org/wiki/Bofors_STRIX

Switchblade 300

US — AEROVIRONMENT · DEPLOYED · FIRST DEPLOYED 2012

Man-portable loitering munition that autonomously locks onto targets using onboard sensors. Designed for anti-personnel and light vehicle strikes with precision guidance.

Notable use: Supplied to Ukraine 2022; used in counter-ISIS operations; SOF combat deployments

Source: Wikipedia: AeroVironment Switchblade: https://en.wikipedia.org/wiki/AeroVironment_Switchblade

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Switchblade 600

US — AEROVIRONMENT · DEPLOYED · FIRST DEPLOYED 2022

Anti-armor loitering munition with Precision Strike Mode enabling semi-autonomous terminal guidance. Targets tanks and armored vehicles at extended range.

Notable use: Provided to Ukraine 2022 for use against Russian armor

Source: Wikipedia: AeroVironment Switchblade: https://en.wikipedia.org/wiki/AeroVironment_Switchblade

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TAI Aksungur

TR — TURKISH AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED N/A

Twin-engine medium-altitude long-endurance drone for reconnaissance and strike.

Notable use: Entered Turkish service in the 2020s.

Source: Wikipedia: TAI Aksungur: https://en.wikipedia.org/wiki/TAI_Aksungur

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TAI Anka

TR — TURKISH AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED N/A

Turkish medium-altitude long-endurance armed drone.

Notable use: Used by the Turkish Armed Forces and exported to several countries.

Source: Wikipedia: TAI Anka: https://en.wikipedia.org/wiki/TAI_Anka

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Taranis UCAV Demonstrator

GB — BAE SYSTEMS · RETIRED · FIRST DEPLOYED N/A

Stealthy autonomous UCAV demonstrator capable of autonomous deep-strike missions with AI-driven targeting and onboard electronic warfare. Verified stealth and autonomous weapons capability.

Notable use: Secret test flights 2013–2015 confirmed; feeds technology into UK Tempest and LANCA programs

Source: Wikipedia: BAE Systems Taranis: https://en.wikipedia.org/wiki/BAE_Systems_Taranis

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TB001 Twin-Tailed Scorpion

CN — TENGOEN TECHNOLOGY · DEPLOYED · FIRST DEPLOYED 2020

Large twin-boom armed UAV with AI-assisted sensor fusion for long-endurance ISR and precision strike. Features advanced EO/IR/SAR sensor suite.

Notable use: PLAF operational 2022; exported to multiple countries; displayed armed configuration at Airshow China 2022

Source: Wikipedia: Tengden TB-001: https://en.wikipedia.org/wiki/Tengden_TB-001

Teng Yun

TW — NCSIST · DEPLOYED · FIRST DEPLOYED N/A

Taiwanese medium-altitude long-endurance drone.

Notable use: Developed by NCSIST for Taiwan's armed forces.

Source: Wikipedia: NCSIST Teng Yun: https://en.wikipedia.org/wiki/NCSIST_Teng_Yun

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Textron Aerosonde

US — TEXTRON SYSTEMS · DEPLOYED · FIRST DEPLOYED N/A

Small tactical drone with automatic launch and landing.

Notable use: Used by the US Army and others.

Source: Wikipedia: AAI Aerosonde: https://en.wikipedia.org/wiki/AAI_Aerosonde

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V-BAT

US — SHIELD AI · DEPLOYED · FIRST DEPLOYED 2018

Vertical takeoff and landing autonomous tactical drone using Shield AI's Hivemind AI pilot for GPS-denied autonomous navigation and reconnaissance.

Notable use: Deployed with US Navy, Marine Corps, and Special Operations; used in classified ISR operations

Source: Wikipedia: Shield AI MQ-35 V-BAT: https://en.wikipedia.org/wiki/Shield_AI_MQ-35_V-BAT

Vestel Karayel

TR — VESTEL DEFENCE · DEPLOYED · FIRST DEPLOYED N/A

Turkish tactical drone for reconnaissance and strike missions.

Notable use: Operated by the Turkish armed forces.

Source: Wikipedia: Vestel Karayel: https://en.wikipedia.org/wiki/Vestel_Karayel

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Warmate

PL — WB ELECTRONICS · DEPLOYED · FIRST DEPLOYED 2016

Loitering munition with electro-optical guidance for anti-armor and anti-personnel strike. Features autonomous waypoint navigation and operator-selectable autonomous terminal attack.

Notable use: Polish Army procurement; supplied to Ukraine 2022; confirmed use against Russian armor

Source: Wikipedia: WB Electronics Warmate: https://en.wikipedia.org/wiki/WB_Electronics_Warmate

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Wasp III

US — AEROVIRONMENT · DEPLOYED · FIRST DEPLOYED N/A

Very small hand-launched drone for tactical reconnaissance.

Notable use: Used by US special forces.

Source: Wikipedia: AeroVironment Wasp III: https://en.wikipedia.org/wiki/AeroVironment_Wasp_III

Watchkeeper WK450

GB — THALES UK · RETIRED · FIRST DEPLOYED N/A

British Army tactical drone based on the Israeli Hermes 450.

Notable use: Flown in Afghanistan and retired from British Army service in 2021.

Source: Wikipedia: Thales Watchkeeper WK450: https://en.wikipedia.org/wiki/Thales_Watchkeeper_WK450

Wing Loong I

CN — AVIC CHENGDU AIRCRAFT DESIGN · DEPLOYED · FIRST DEPLOYED N/A

Medium-altitude long-endurance armed drone, one of China's first widely exported combat drones.

Notable use: Exported to several countries in the Middle East, Africa and Central Asia.

Source: Wikipedia: CAIG Wing Loong: https://en.wikipedia.org/wiki/CAIG_Wing_Loong

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Wing Loong II (AI-Enhanced)

CN — CASC (CHINA AEROSPACE SCIENCE AND TECHNOLOGY CORPORATION) · DEPLOYED · FIRST DEPLOYED 2017

Medium-altitude long-endurance armed UAV with AI-assisted sensor processing and autonomous navigation. China's primary export MALE armed drone.

Notable use: Operated by UAE, Saudi Arabia, Ethiopia, Jordan; used in Libya and Yemen conflicts

Source: Wikipedia: CAIG Wing Loong II: https://en.wikipedia.org/wiki/CAIG_Wing_Loong_II

Wing Loong-10

CN — AVIC CHENGDU AIRCRAFT DESIGN · DEPLOYED · FIRST DEPLOYED N/A

Larger Chinese turboprop armed drone in the Wing Loong family.

Notable use: Marketed for export.

Source: Wikipedia: CAIG Wing Loong: https://en.wikipedia.org/wiki/CAIG_Wing_Loong

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WJ-700 (Hongtu)

CN — CASIC · TESTING · FIRST DEPLOYED N/A

High-speed jet-powered UCAV designed for autonomous strike missions. Features AI-driven autonomous target selection and engagement capability.

Notable use: Unveiled at Airshow China 2018; PLAAF development program; export variant marketed

Source: No authoritative source matched yet

WZ-7 Soaring Dragon

CN — AVIC · DEPLOYED · FIRST DEPLOYED 2011

High-altitude long-endurance reconnaissance drone with AI-assisted SIGINT collection. Designed for autonomous strategic surveillance missions over contested airspace.

Notable use: Spotted over South China Sea and near Taiwan; PLA Air Force ISR operations

Source: Wikipedia: Guizhou WZ-7 Soaring Dragon: https://en.wikipedia.org/wiki/Guizhou_WZ-7_Soaring_Dragon

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X-47B

US — NORTHROP GRUMMAN · RETIRED · FIRST DEPLOYED 2011

Tailless carrier-capable demonstrator drone that proved autonomous carrier launch, landing and aerial refueling.

Notable use: In July 2013 it made the first arrested landing on an aircraft carrier by a jet drone.

Source: Wikipedia: Northrop Grumman X-47B: https://en.wikipedia.org/wiki/Northrop_Grumman_X-47B

XQ-58A Valkyrie

US — KRATOS DEFENSE · TESTING · FIRST DEPLOYED N/A

Low-cost autonomous combat drone designed as a loyal wingman for crewed fighters. Capable of autonomous formation flight, AI-assisted target prosecution, and attritable strike roles.

Notable use: Multiple Air Force test flights between 2019 and 2024, including tests of autonomy software.

Source: Wikipedia: Kratos XQ-58 Valkyrie: https://en.wikipedia.org/wiki/Kratos_XQ-58_Valkyrie

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XQ-67A OBSS

US — GENERAL ATOMICS · TESTING · FIRST DEPLOYED 2024

Experimental uncrewed aircraft for the US Air Force's Off-Board Sensing Station program that explores low-cost, modular designs.

Notable use: First flew in February 2024.

Source: Wikipedia: General Atomics XQ-67A: https://en.wikipedia.org/wiki/General_Atomics_XQ-67A

Yabhon United 40

AE — ADCOM SYSTEMS · DEPLOYED · FIRST DEPLOYED N/A

Medium-altitude long-endurance drone developed by the UAE's ADCOM Systems.

Notable use: Developed in the UAE.

Source: Wikipedia: Yabhon United 40: https://en.wikipedia.org/wiki/Yabhon_United_40

Yasir

IR — IRANIAN DEFENSE INDUSTRY · DEPLOYED · FIRST DEPLOYED N/A

Iranian reconnaissance drone resembling the American ScanEagle.

Notable use: Iran has said it built the type after recovering a ScanEagle.

Source: Wikipedia: Qods Yasir: https://en.wikipedia.org/wiki/Qods_Yasir

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YFQ-42A (General Atomics CCA)

US — GENERAL ATOMICS · TESTING · FIRST DEPLOYED 2025

Prototype uncrewed fighter-like aircraft from General Atomics for the US Air Force's first Collaborative Combat Aircraft increment.

Notable use: One of two designs, with Anduril's YFQ-44A, chosen for the first CCA increment.

Source: Wikipedia: General Atomics FQ-42 Vengeance: https://en.wikipedia.org/wiki/General_Atomics_FQ-42_Vengeance

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Autonomous Ground System (20)

ALPHADOG / LS3

US — BOSTON DYNAMICS / DARPA · RETIRED · FIRST DEPLOYED 2012

Quadrupedal autonomous robot designed to carry 180kg of supplies alongside infantry over rough terrain. Used AI for autonomous navigation and obstacle avoidance.

Notable use: USMC field tests 2012–2015; retired due to noise levels; influenced successor Ghost and Spot platforms

Source: Wikipedia: Legged Squad Support System: https://en.wikipedia.org/wiki/Legged_Squad_Support_System

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Atlas UGV (Boston Dynamics Military Research)

US — BOSTON DYNAMICS / DARPA · TESTING · FIRST DEPLOYED N/A

Advanced bipedal autonomous robot with AI locomotion for operation in complex terrain. Potential military applications in logistics, CBRN detection, and reconnaissance.

Notable use: DARPA-funded development; USMC and Army evaluation; primarily research platform with defense applications

Source: No authoritative source matched yet

Autonomous Weapons Station (AWS) — Elbit

IL — ELBIT SYSTEMS · DEPLOYED · FIRST DEPLOYED 2015

AI-powered remote weapon station with automatic target detection, tracking, and engagement. Installed on armored vehicles for autonomous threat response.

Notable use: Operational on IDF vehicles; exported to multiple armies; AI-enabled threat classification reduces reaction time

Source: No authoritative source matched yet

Ghost Robotics Q-UGV (SPUR-armed)

US — GHOST ROBOTICS / SWORD DEFENSE · TESTING · FIRST DEPLOYED N/A

Four-legged autonomous ground robot fitted with Special Purpose Unmanned Rifle module. Capable of autonomous navigation and semi-autonomous target engagement.

Notable use: Demonstrated at AUSA 2021; USAF security forces evaluation; deployed at Tyndall AFB for autonomous base security

Source: No authoritative source matched yet

Gladiator Tactical UGV

US — US MARINE CORPS / LOCKHEED MARTIN · RETIRED · FIRST DEPLOYED N/A

Armed unmanned ground vehicle developed for US Marines.

Notable use: Tested in the 2000s.

Source: Wikipedia: Gladiator tactical unmanned ground vehicle: https://en.wikipedia.org/wiki/Gladiator_tactical_unmanned_ground_vehicle

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Guardium UGV

IL — G-NIUS (IAI / ELBIT) · DEPLOYED · FIRST DEPLOYED 2008

Armed-capable unmanned ground vehicle for patrol and border security.

Notable use: Used by Israeli forces for patrols along the Gaza border.

Source: Wikipedia: Guardium: https://en.wikipedia.org/wiki/Guardium

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MAARS

US — QINETIQ NORTH AMERICA · TESTING · FIRST DEPLOYED N/A

Modular Advanced Armed Robotic System, an armed tracked unmanned ground vehicle.

Notable use: Developed from the TALON robot for armed reconnaissance.

Source: Wikipedia: Modular Advanced Armed Robotic System: https://en.wikipedia.org/wiki/Modular_Advanced_Armed_Robotic_System

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MARCbot

US — US ARMY (EXPONENT) · DEPLOYED · FIRST DEPLOYED N/A

Small low-cost robot used by US troops to inspect suspicious objects.

Notable use: Used in Iraq to search for roadside bombs.

Source: Wikipedia: MARCbot: https://en.wikipedia.org/wiki/MARCbot

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Marker UGV

RU — FPI / ANDROID TECHNIQUE · TESTING · FIRST DEPLOYED N/A

Russian modular autonomous ground vehicle platform designed for AI-assisted navigation, target detection, and lethal engagement. Supports various weapon modules.

Notable use: Multiple autonomous navigation and target engagement tests 2019–2023; integration with drone swarms demonstrated

Source: No authoritative source matched yet

Nerekhta UGV

RU — DEGTYAREV PLANT · TESTING · FIRST DEPLOYED N/A

Tracked unmanned combat ground vehicle with AI-assisted navigation and remote weapon station. Designed for autonomous patrol, fire support, and mine laying.

Notable use: Military exercises demonstrated autonomous convoy escort and target engagement 2017–2020

Source: No authoritative source matched yet

PackBot

US — IROBOT / ENDEAVOR ROBOTICS · DEPLOYED · FIRST DEPLOYED 2000

Tracked military robot used for reconnaissance and explosive-ordnance disposal.

Notable use: Deployed in Iraq and Afghanistan and used at the Fukushima nuclear site.

Source: Wikipedia: PackBot: https://en.wikipedia.org/wiki/PackBot

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Piranha UGV (Elbit)

IL — ELBIT SYSTEMS · TESTING · FIRST DEPLOYED N/A

Compact autonomous ground robot for perimeter security and explosive ordnance detection. AI vision enables autonomous threat classification and area denial.

Notable use: IDF base security trials; export demonstrations at DSEI; AI-driven intrusion detection capability

Source: No authoritative source matched yet

Ripsaw M5

US — TEXTRON SYSTEMS (HOWE & HOWE) · TESTING · FIRST DEPLOYED N/A

Fast tracked uncrewed vehicle used as a platform for US Army robotic combat vehicle trials.

Notable use: Used as a test platform by the US Army.

Source: Wikipedia: Ripsaw (vehicle): https://en.wikipedia.org/wiki/Ripsaw_(vehicle)

RoBattle

IL — IAI · TESTING · FIRST DEPLOYED N/A

Modular autonomous combat ground vehicle with AI-driven navigation and remote weapon station. Designed for reconnaissance, force protection, and autonomous perimeter security.

Notable use: IDF evaluation trials; demonstrated autonomous navigation in complex terrain; export marketing ongoing

Source: Wikipedia: Robattle: https://en.wikipedia.org/wiki/Robattle

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Robotic Combat Vehicle (RCV)

US — US ARMY · IN DEVELOPMENT · FIRST DEPLOYED N/A

US Army program for armed uncrewed ground vehicles that operate alongside crewed combat vehicles.

Notable use: Prototypes were tested by the Army in the 2020s.

Source: Wikipedia: Next Generation Combat Vehicle: https://en.wikipedia.org/wiki/Next_Generation_Combat_Vehicle

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SGR-A1

KR — SAMSUNG TECHWIN / SAMSUNG AEROSPACE · DEPLOYED · FIRST DEPLOYED 2006

Autonomous sentry robot armed with a machine gun deployed along the Korean DMZ. Uses pattern recognition to detect, track, and optionally engage targets autonomously.

Notable use: Deployed along South Korea-North Korea demilitarized zone; fire authorization reportedly requires human confirmation

Source: Wikipedia: SGR-A1: https://en.wikipedia.org/wiki/SGR-A1

TALON SWORDS

US — QINETIQ / FOSTER-MILLER · RETIRED · FIRST DEPLOYED 2007

First armed ground robot deployed in combat, carrying M249 or M16 weapons systems for remote engagement. Semi-autonomous navigation with manual fire control.

Notable use: Deployed to Iraq 2007; withdrawn after pointing weapon at own forces; critical safety lesson for autonomous weapons

Source: Wikipedia: Foster-Miller TALON: https://en.wikipedia.org/wiki/Foster-Miller_TALON

THeMIS UGV

EE — MILREM ROBOTICS · DEPLOYED · FIRST DEPLOYED N/A

Tracked unmanned ground vehicle with modular payloads including remote weapon stations.

Notable use: Used by several armies and supplied to Ukraine.

Source: Wikipedia: THeMIS: https://en.wikipedia.org/wiki/THeMIS

Uran-9

RU — KALASHNIKOV CONCERN / ROSTEC · DEPLOYED · FIRST DEPLOYED 2016

Unmanned combat ground vehicle armed with a 30mm autocannon, anti-tank missiles, and flamethrowers. Designed for AI-assisted fire control and semi-autonomous operation.

Notable use: Tested in Syria 2018; revealed significant control and reliability failures in combat conditions

Source: Wikipedia: Uran-9: https://en.wikipedia.org/wiki/Uran-9

Vikhr UGV

RU — RUSSIAN DEFENSE INDUSTRY · IN DEVELOPMENT · FIRST DEPLOYED N/A

Armed unmanned ground vehicle based on a tank chassis.

Notable use: Shown by Russia in tests.

Source: Wikipedia: 9K121 Vikhr: https://en.wikipedia.org/wiki/9K121_Vikhr

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Autonomous Interceptor (41)

AEGIS Combat System (AI)

US — LOCKHEED MARTIN / RAYTHEON · DEPLOYED · FIRST DEPLOYED 1983

Naval integrated air and missile defense system with AI-driven multi-threat tracking and autonomous engagement sequencing. Can operate in fully autonomous mode against saturation attacks.

Notable use: Accidental shootdown of Iran Air 655 (1988) remains AI autonomy cautionary case; extensively upgraded with AI fire control

Source: Wikipedia: Aegis Combat System: https://en.wikipedia.org/wiki/Aegis_Combat_System

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AK-630

RU — TULAMASHZAVOD · DEPLOYED · FIRST DEPLOYED N/A

Soviet-designed naval close-in weapon system with a rotary 30 mm cannon and radar fire control.

Notable use: Widely fitted to Soviet and Russian ships and exported.

Source: Wikipedia: AK-630: https://en.wikipedia.org/wiki/AK-630

AN/SEQ-3 Laser Weapon System (LaWS)

US — US NAVY · RETIRED · FIRST DEPLOYED 2014

Shipboard laser weapon that was tested against drones and small boats.

Notable use: Deployed on the USS Ponce in 2014 and used in demonstrations.

Source: Wikipedia: AN/SEQ-3 Laser Weapon System: https://en.wikipedia.org/wiki/AN%2FSEQ-3_Laser_Weapon_System

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Anduril Roadrunner-M

US — ANDURIL INDUSTRIES · TESTING · FIRST DEPLOYED N/A

Recoverable autonomous interceptor drone designed to destroy cruise missiles, drones, and other aerial threats. Uses AI for autonomous detection, pursuit, and interception.

Notable use: Unveiled 2023; selected for USAF counter-UAS missions; demonstrated autonomous intercept tests

Source: No authoritative source matched yet

Arrow 3

IL — ISRAEL AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED 2017

Exoatmospheric hit-to-kill interceptor for ballistic missiles.

Notable use: Declared operational in 2017; Germany has ordered the system.

Source: Wikipedia: Arrow 3: https://en.wikipedia.org/wiki/Arrow_3

Barak 8

IN/IL — ISRAEL AEROSPACE INDUSTRIES · DEPLOYED · FIRST DEPLOYED N/A

Medium-range surface-to-air missile system developed by Israel and India.

Notable use: Used by the Indian and Israeli navies.

Source: Wikipedia: Barak 8: https://en.wikipedia.org/wiki/Barak_8

C-RAM (Counter Rocket, Artillery, Mortar)

US — RAYTHEON · DEPLOYED · FIRST DEPLOYED 2005

Land-based autonomous intercept system using AI-driven radar and fire control to autonomously detect and destroy incoming rockets and mortar rounds.

Notable use: Used in Iraq and Afghanistan protecting FOBs; deployed in Jordan and Iraq against drone/rocket attacks

Source: Wikipedia: Centurion C-RAM: https://en.wikipedia.org/wiki/Centurion_C-RAM

Coyote (Raytheon)

US — RAYTHEON · DEPLOYED · FIRST DEPLOYED N/A

Expendable interceptor and loitering-munition family used against hostile drones.

Notable use: Used by the US Army as a counter-drone interceptor.

Source: Wikipedia: Raytheon Coyote: https://en.wikipedia.org/wiki/Raytheon_Coyote

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Dardo CIWS

IT — OTO MELARA (LEONARDO) · DEPLOYED · FIRST DEPLOYED N/A

Naval close-in weapon system with automatic tracking.

Notable use: Fitted to Italian and some foreign warships.

Source: Wikipedia: DARDO: https://en.wikipedia.org/wiki/DARDO

David's Sling

IL — RAFAEL / RAYTHEON · DEPLOYED · FIRST DEPLOYED 2017

Medium-to-long range missile defense system with AI-enabled multi-target tracking and autonomous engagement sequencing. Intercepts cruise missiles, ballistic missiles, and large rockets.

Notable use: Operational intercepts in 2018 against Syrian missiles; used in 2023–2024 Gaza conflict

Source: Wikipedia: David's Sling: https://en.wikipedia.org/wiki/David's_Sling

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DragonFire (LDEW)

GB — DSTL / MBDA / QINETIQ · TESTING · FIRST DEPLOYED N/A

High-energy laser weapon with AI fire control for autonomous drone and missile intercept. Capable of engaging targets at the speed of light with precision beam director.

Notable use: Successful live fire tests 2024; Royal Navy integration planned; UK Ministry of Defence program

Source: Wikipedia: DragonFire (weapon): https://en.wikipedia.org/wiki/DragonFire_(weapon)

Goalkeeper CIWS

NL — THALES NEDERLAND · DEPLOYED · FIRST DEPLOYED N/A

Autonomous close-in weapon system with radar tracking and a 30 mm gun.

Notable use: Fitted to warships of the Dutch, British and other navies.

Source: Wikipedia: Goalkeeper CIWS: https://en.wikipedia.org/wiki/Goalkeeper_CIWS

HELIOS (High Energy Laser with Integrated Optical dazzler and Surveillance)

US — LOCKHEED MARTIN · DEPLOYED · FIRST DEPLOYED 2022

Ship-based high-energy laser weapon with AI fire control for autonomous drone intercept, small boat disablement, and ISR enhancement via dazzler mode.

Notable use: Installed on USS Preble (DDG-88) 2022; at-sea testing in operational environment; first Navy fleet laser weapon

Source: Wikipedia: HELIOS: https://en.wikipedia.org/wiki/HELIOS

Iron Beam (HELWS)

IL — RAFAEL · TESTING · FIRST DEPLOYED N/A

High-energy laser weapon system with AI fire control for autonomous intercept of rockets, mortars, UAVs, and anti-tank missiles at near-zero cost per shot.

Notable use: Successful interception tests 2022; planned for operational deployment 2025; supplement to Iron Dome

Source: Wikipedia: Iron Beam: https://en.wikipedia.org/wiki/Iron_Beam

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Iron Dome (AI Fire Control)

IL — RAFAEL / IAI · DEPLOYED · FIRST DEPLOYED 2011

Short-range air defense system using AI-driven battle management to autonomously track, prioritize, and intercept rockets, artillery shells, and mortars. Intercept decision is AI-generated.

Notable use: Thousands of intercepts against Hamas/Hezbollah rockets; exported to US Army

Source: Wikipedia: Iron Dome: https://en.wikipedia.org/wiki/Iron_Dome

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Iron Fist APS

IL — ELBIT SYSTEMS · DEPLOYED · FIRST DEPLOYED N/A

Active protection system that automatically intercepts incoming missiles and rockets.

Notable use: Fitted to Israeli armored vehicles and selected by other armies.

Source: Wikipedia: Iron Fist (countermeasure): https://en.wikipedia.org/wiki/Iron_Fist_(countermeasure)

Kashtan CIWS

RU — KBP INSTRUMENT DESIGN BUREAU · DEPLOYED · FIRST DEPLOYED N/A

Naval close-in weapon system combining cannons and missiles under radar and optical control.

Notable use: Fitted to Russian warships and exported.

Source: Wikipedia: Kortik CIWS: https://en.wikipedia.org/wiki/Kortik_CIWS

Korkut

TR — ASELSAN · DEPLOYED · FIRST DEPLOYED N/A

Self-propelled anti-aircraft system with radar-directed 35 mm guns.

Notable use: Operated by the Turkish Land Forces.

Source: Wikipedia: Korkut: https://en.wikipedia.org/wiki/Korkut

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Meroka CIWS

ES — NAVANTIA · DEPLOYED · FIRST DEPLOYED N/A

Twelve-barrel naval close-in weapon system with automatic tracking.

Notable use: Fitted to Spanish warships.

Source: Wikipedia: Meroka CIWS: https://en.wikipedia.org/wiki/Meroka_CIWS

NASAMS

NO/US — KONGSBERG / RAYTHEON · DEPLOYED · FIRST DEPLOYED N/A

Networked air-defense system that combines radar, command software and AMRAAM missiles.

Notable use: Supplied to Ukraine and operated by many countries.

Source: Wikipedia: NASAMS: https://en.wikipedia.org/wiki/NASAMS

NBS Mantis

DE — RHEINMETALL · DEPLOYED · FIRST DEPLOYED N/A

Automated short-range air-defense system designed to protect bases from rockets, artillery and mortars.

Notable use: Operated by the German Army.

Source: Wikipedia: MANTIS Air Defence System: https://en.wikipedia.org/wiki/MANTIS_Air_Defence_System

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Pantsir-S1

RU — KBP INSTRUMENT DESIGN BUREAU · DEPLOYED · FIRST DEPLOYED N/A

Short-range air-defense system combining guns and missiles with automatic target tracking.

Notable use: Used by Russia and exported to several countries.

Source: Wikipedia: Pantsir missile system: https://en.wikipedia.org/wiki/Pantsir_missile_system

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Patriot PAC-3 MSE (AI Fire Control)

US — RAYTHEON · DEPLOYED · FIRST DEPLOYED 2015

Advanced Patriot interceptor with AI-enhanced fire control for simultaneous multi-target engagement. Autonomous threat classification and engagement sequencing.

Notable use: Ukraine deployment 2023; intercepted Russian cruise missiles and Kinzhal hypersonic missiles; Saudi Arabia use vs Houthi ballistic missiles

Source: Wikipedia: MIM-104 Patriot: https://en.wikipedia.org/wiki/MIM-104_Patriot

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Peresvet

RU — RUSSIAN MILITARY · DEPLOYED · FIRST DEPLOYED N/A

Russian laser system described by officials as protecting mobile missile forces from optical surveillance.

Notable use: Announced by Russia in 2018.

Source: Wikipedia: Peresvet (laser weapon): https://en.wikipedia.org/wiki/Peresvet_(laser_weapon)

Phalanx CIWS (AI-Enhanced)

US — RAYTHEON · DEPLOYED · FIRST DEPLOYED 1980

Fully automatic close-in weapons system that autonomously detects, tracks, and destroys incoming missiles and aircraft. Uses AI fire control for real-time threat prioritization.

Notable use: Deployed on 25+ navies worldwide; used defensively in Persian Gulf; shoot-down of friendly helicopter in Gulf War

Source: Wikipedia: Phalanx CIWS: https://en.wikipedia.org/wiki/Phalanx_CIWS

RIM-116 Rolling Airframe Missile (RAM)

US/DE — RAYTHEON / RAM-SYSTEM · DEPLOYED · FIRST DEPLOYED 1992

Short-range ship-launched missile that homes on infrared and radar emissions to defend against anti-ship missiles.

Notable use: Fitted to US, German and many other navies' ships.

Source: Wikipedia: RIM-116 Rolling Airframe Missile: https://en.wikipedia.org/wiki/RIM-116_Rolling_Airframe_Missile

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SAMP/T (Aster 30)

FR/IT — MBDA / EUROSAM · DEPLOYED · FIRST DEPLOYED N/A

Franco-Italian long-range air-defense system using Aster 30 missiles.

Notable use: Supplied to Ukraine by France and Italy.

Source: Wikipedia: SAMP/T: https://en.wikipedia.org/wiki/SAMP%2FT

SeaRAM

US — RAYTHEON · DEPLOYED · FIRST DEPLOYED N/A

Self-contained ship defense system that combines the Phalanx radar and fire control with RAM missiles.

Notable use: Fitted to US Navy ships.

Source: Wikipedia: SeaRAM weapon system: https://en.wikipedia.org/wiki/SeaRAM_weapon_system

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Silent Hunter

CN — POLY TECHNOLOGIES · DEPLOYED · FIRST DEPLOYED N/A

Chinese vehicle-mounted fiber laser sold for counter-drone and defense use.

Notable use: Marketed internationally.

Source: Wikipedia: Silent Hunter (laser weapon): https://en.wikipedia.org/wiki/Silent_Hunter_(laser_weapon)

Skyranger 30

DE — RHEINMETALL · DEPLOYED · FIRST DEPLOYED N/A

Mobile short-range air-defense system with automatic detection and tracking of drones and aircraft.

Notable use: Ordered by Germany, the Netherlands, Denmark and others.

Source: Wikipedia: Skyranger 30: https://en.wikipedia.org/wiki/Skyranger_30

Skyranger 35

DE — RHEINMETALL AIR DEFENCE · DEPLOYED · FIRST DEPLOYED N/A

Mobile air-defense system with a 35 mm gun and automatic target tracking.

Notable use: Developed for several European armies.

Source: Wikipedia: Skyranger 35: https://en.wikipedia.org/wiki/Skyranger_35

Steel Dome

TR — ASELSAN · IN DEVELOPMENT · FIRST DEPLOYED N/A

Turkish multi-layer air-defense network under development, linking sensors and shooters.

Notable use: Announced as a national air-defense program.

Source: Wikipedia: Steel Dome: https://en.wikipedia.org/wiki/Steel_Dome

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Sting (interceptor drone)

UA — WILD HORNETS · DEPLOYED · FIRST DEPLOYED 2025

Ukrainian interceptor drone designed to catch one-way attack drones.

Notable use: Developed by Ukrainian volunteers and used against Shahed-type drones.

Source: Wikipedia: Sting (drone): https://en.wikipedia.org/wiki/Sting_(drone)

Stryker IM-SHORAD (AI Fire Control)

US — LEONARDO DRS / MOOG · DEPLOYED · FIRST DEPLOYED 2022

Short-range air defense vehicle with AI-assisted radar tracking and fire control for autonomous engagement of drones, helicopters, and cruise missiles.

Notable use: US Army Europe deployment 2022; initial operational capability declared; counter-drone focus

Source: No authoritative source matched yet

THAAD (AI Battle Management)

US — LOCKHEED MARTIN · DEPLOYED · FIRST DEPLOYED 2008

Terminal High Altitude Area Defense system with AI-driven battle management for autonomous ballistic missile intercept. Kinetic kill vehicle guided by AI terminal seeker.

Notable use: Deployed Saudi Arabia, South Korea, Guam; used during Houthi missile attacks; Saudi deployments 2022

Source: Wikipedia: Terminal High Altitude Area Defense: https://en.wikipedia.org/wiki/Terminal_High_Altitude_Area_Defense

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THOR (Tactical High-power Operational Responder)

US — USAF RESEARCH LABORATORY · TESTING · FIRST DEPLOYED N/A

Directed energy microwave weapon system using AI targeting to disable swarms of drones. Can defeat multiple targets simultaneously with a single energy burst.

Notable use: Demonstrated defeating drone swarms in tests 2020–2023; deployed to Middle East for operational evaluation

Source: Wikipedia: THOR (weapon): https://en.wikipedia.org/wiki/THOR_(weapon)

Tor-M2

RU — ALMAZ-ANTEY · DEPLOYED · FIRST DEPLOYED N/A

Short-range air-defense system with an automated radar and missile fire-control system.

Notable use: Operated by Russia and exported to several countries.

Source: Wikipedia: Tor missile system: https://en.wikipedia.org/wiki/Tor_missile_system

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Trophy Active Protection System

IL — RAFAEL · DEPLOYED · FIRST DEPLOYED 2009

Hard-kill active protection system that detects incoming anti-tank missiles and fires a counter-projectile automatically.

Notable use: Fitted to Israeli Merkava tanks and exported to the US and Germany.

Source: Wikipedia: Trophy (countermeasure): https://en.wikipedia.org/wiki/Trophy_(countermeasure)

Type 1130 CIWS

CN — CHINESE DEFENSE INDUSTRY · DEPLOYED · FIRST DEPLOYED N/A

Chinese eleven-barrel close-in weapon system with radar tracking.

Notable use: Fitted to newer Chinese warships.

Source: Wikipedia: Type 730 CIWS: https://en.wikipedia.org/wiki/Type_730_CIWS

Type 730 CIWS

CN — CHINESE DEFENSE INDUSTRY · DEPLOYED · FIRST DEPLOYED N/A

Chinese seven-barrel close-in weapon system for ships.

Notable use: Fitted to Chinese warships.

Source: Wikipedia: Type 730 CIWS: https://en.wikipedia.org/wiki/Type_730_CIWS

VAMPIRE Counter-Drone System

US — L3HARRIS · DEPLOYED · FIRST DEPLOYED N/A

Low-cost counter-drone system that fires laser-guided rockets from vehicles.

Notable use: Used by Ukraine from 2023 according to the US and Ukrainian governments.

Source: Wikipedia: VAMPIRE (weapon): https://en.wikipedia.org/wiki/VAMPIRE_(weapon)

Autonomous Naval (23)

Anduril Dive-LD

US/AU — ANDURIL · DEPLOYED · FIRST DEPLOYED N/A

Autonomous underwater vehicle for ocean survey and military missions.

Notable use: Offered to the US and Australian navies.

Source: Wikipedia: Anduril Dive-LD: https://en.wikipedia.org/wiki/Anduril_Dive-LD

Bluefin-21

US — BLUEFIN ROBOTICS (GENERAL DYNAMICS) · DEPLOYED · FIRST DEPLOYED N/A

Autonomous underwater vehicle used for search, survey and mine countermeasures.

Notable use: Used in the 2014 search for Malaysia Airlines Flight 370.

Source: Wikipedia: Bluefin-21: https://en.wikipedia.org/wiki/Bluefin-21

Echo Voyager

US — BOEING · TESTING · FIRST DEPLOYED N/A

Large autonomous undersea vehicle able to operate for months and the basis for Boeing's Orca.

Notable use: Tested by Boeing in the late 2010s.

Source: Wikipedia: Echo Voyager: https://en.wikipedia.org/wiki/Echo_Voyager

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Ghost (Submersible USV)

US — JULIET MARINE SYSTEMS · TESTING · FIRST DEPLOYED N/A

Semi-submersible autonomous surface vessel with supercavitating hull for high-speed operation. AI navigation for autonomous maritime patrol and sensor payload delivery.

Notable use: DARPA/US Navy interest; technology demonstrator tests 2012–2016; stealth maritime ISR potential

Source: Wikipedia: Juliet Marine Systems Ghost: https://en.wikipedia.org/wiki/Juliet_Marine_Systems_Ghost

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Ghost Fleet Overlord UxSV

US — DARPA / L3HARRIS / TEXTRON · TESTING · FIRST DEPLOYED N/A

Program converting existing vessels to autonomous operation using AI navigation, sensor fusion, and mission management. Demonstrates unmanned surface vessel teaming concepts.

Notable use: Completed autonomous Hawaii-to-San Diego transit 2020; delivered to USN 5th Fleet for operational experimentation

Source: Wikipedia: Ghost Fleet Overlord: https://en.wikipedia.org/wiki/Ghost_Fleet_Overlord

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Ghost Shark

AU — ANDURIL AUSTRALIA · IN DEVELOPMENT · FIRST DEPLOYED N/A

Extra-large autonomous undersea vehicle for the Royal Australian Navy.

Notable use: Developed under an Australian Navy program with Anduril Australia.

Source: Wikipedia: Ghost Shark (submarine): https://en.wikipedia.org/wiki/Ghost_Shark_(submarine)

Haeil (nuclear underwater drone)

KP — DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA · IN DEVELOPMENT · FIRST DEPLOYED 2023

North Korean underwater drone claimed by state media to carry a nuclear weapon; its capabilities have not been independently verified.

Notable use: Announced by North Korean state media in 2023.

Source: Wikipedia: Haeil: https://en.wikipedia.org/wiki/Haeil

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HSU-001

CN — CHINESE NAVY / RESEARCH INSTITUTES · IN DEVELOPMENT · FIRST DEPLOYED N/A

Chinese large uncrewed undersea vehicle shown in a military parade.

Notable use: Displayed at China's 2019 military parade.

Source: Wikipedia: HSU-001: https://en.wikipedia.org/wiki/HSU-001

HUGIN AUV

NO — KONGSBERG MARITIME · DEPLOYED · FIRST DEPLOYED N/A

Autonomous underwater vehicle used for seabed mapping and mine hunting.

Notable use: Operated by navies and research institutions.

Source: Wikipedia: Kongsberg Maritime: https://en.wikipedia.org/wiki/Kongsberg_Maritime

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Knifefish UUV

US — GENERAL DYNAMICS MISSION SYSTEMS · TESTING · FIRST DEPLOYED N/A

Autonomous underwater vehicle for detecting and classifying sea mines.

Notable use: Built for the US Navy's littoral combat ships.

Source: Wikipedia: Knifefish (robot): https://en.wikipedia.org/wiki/Knifefish_(robot)

Magura V5

UA — UKRAINIAN DEFENSE INDUSTRY · DEPLOYED · FIRST DEPLOYED 2023

Uncrewed surface vessel used by Ukraine to strike ships.

Notable use: Used in attacks on Russian naval vessels in the Black Sea.

Source: Wikipedia: MAGURA V5: https://en.wikipedia.org/wiki/MAGURA_V5

Ocius Bluebottle

AU — OCIUS TECHNOLOGY · DEPLOYED · FIRST DEPLOYED N/A

Solar, wave and wind-powered uncrewed surface vessel for long-endurance surveillance.

Notable use: Trialed by the Royal Australian Navy.

Source: Wikipedia: Bluebottle (uncrewed surface vessels): https://en.wikipedia.org/wiki/Bluebottle_(uncrewed_surface_vessels)

Orca XLUUV

US — BOEING · IN DEVELOPMENT · FIRST DEPLOYED N/A

Extra-large unmanned undersea vehicle for the US Navy designed for long-range autonomous missions.

Notable use: The first vehicle was delivered to the Navy in 2023.

Source: Wikipedia: Orca (AUV): https://en.wikipedia.org/wiki/Orca_(AUV)

Poseidon (Status-6) UUV

RU — RUBIN CENTRAL DESIGN BUREAU · TESTING · FIRST DEPLOYED N/A

Russian nuclear-armed uncrewed underwater vehicle announced in 2018 and intended to travel long distances autonomously.

Notable use: Announced by Vladimir Putin in 2018; tests have been reported with the submarine Belgorod.

Source: Wikipedia: Poseidon (unmanned underwater vehicle): https://en.wikipedia.org/wiki/Poseidon_(unmanned_underwater_vehicle)

Protector USV

IL — RAFAEL / BAE SYSTEMS · DEPLOYED · FIRST DEPLOYED 2006

Autonomous unmanned surface vessel armed with machine gun turret and torpedo capability. Uses AI navigation for autonomous coastal patrol and anti-infiltration missions.

Notable use: Israeli Navy operational; Singapore Navy operates Spartan USV variant; exported to multiple nations

Source: Wikipedia: Protector USV: https://en.wikipedia.org/wiki/Protector_USV

REMUS 100

US — HYDROID / KONGSBERG · DEPLOYED · FIRST DEPLOYED 1997

Compact autonomous underwater vehicle for shallow-water mine detection and hydrographic survey. Uses AI-assisted sonar processing for anomaly detection.

Notable use: Operated by US, UK, and allied navies; used in OEF/OIF mine clearance operations

Source: Wikipedia: REMUS (vehicle): https://en.wikipedia.org/wiki/REMUS_(vehicle)

REMUS 600 (AI-Enhanced)

US — HYDROID / KONGSBERG · DEPLOYED · FIRST DEPLOYED 2004

Autonomous underwater vehicle used for mine countermeasures, ISR, and payload delivery. AI-enhanced navigation enables fully autonomous mine hunting and seabed mapping.

Notable use: Deployed by US Navy in Persian Gulf mine-hunting; used in Ukraine conflict port defense

Source: Wikipedia: REMUS (vehicle): https://en.wikipedia.org/wiki/REMUS_(vehicle)

Saildrone Voyager

US — SAILDRONE · DEPLOYED · FIRST DEPLOYED N/A

Wind- and solar-powered autonomous surface vehicle used for long-endurance ocean surveillance.

Notable use: Used by the US Navy and for maritime surveillance trials by allied forces.

Source: Wikipedia: Saildrone (company): https://en.wikipedia.org/wiki/Saildrone_(company)

Sea Baby

UA — SECURITY SERVICE OF UKRAINE (SBU) · DEPLOYED · FIRST DEPLOYED 2023

Naval attack drone developed by Ukraine's Security Service.

Notable use: Reported in attacks on Russian ships and infrastructure.

Source: Wikipedia: Sea Baby: https://en.wikipedia.org/wiki/Sea_Baby

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Sea Hunter (ACTUV)

US — DARPA / LEIDOS · TESTING · FIRST DEPLOYED N/A

Medium displacement unmanned surface vessel capable of autonomous open-ocean operation for months. Designed to track quiet diesel-electric submarines using AI sensor processing.

Notable use: Completed 2018 autonomous trans-Pacific voyage; ongoing USN testing as part of Ghost Fleet Overlord

Source: Wikipedia: Sea Hunter: https://en.wikipedia.org/wiki/Sea_Hunter

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SeaFox

DE — ATLAS ELEKTRONIK · DEPLOYED · FIRST DEPLOYED N/A

Expendable underwater vehicle used to identify and destroy sea mines.

Notable use: Used by many navies.

Source: Wikipedia: Seafox drone: https://en.wikipedia.org/wiki/Seafox_drone

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Seagull USV

IL — ELBIT SYSTEMS · DEPLOYED · FIRST DEPLOYED 2016

Multi-mission autonomous surface vessel for mine countermeasures, ASW, and maritime patrol. AI-driven sensor fusion enables fully autonomous mine detection and neutralization.

Notable use: Israeli Navy trials; NATO exercises; sold to multiple navies for MCM operations

Source: No authoritative source matched yet

Spartan Scout

US — US NAVY · RETIRED · FIRST DEPLOYED N/A

US Navy experimental unmanned surface vehicle.

Notable use: Tested in the 2000s.

Source: Wikipedia: Spartan Scout: https://en.wikipedia.org/wiki/Spartan_Scout

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Cyber Weapon (37)

APT10

CN — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED N/A

Chinese state-linked hacking group involved in large cyber espionage campaigns.

Notable use: Indicted by the US in 2018.

Source: Wikipedia: Red Apollo: https://en.wikipedia.org/wiki/Red_Apollo

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APT29 (Cozy Bear)

RU — ATTRIBUTED TO SVR · DEPLOYED · FIRST DEPLOYED N/A

Russian state-linked hacking group attributed to the foreign intelligence service.

Notable use: Linked to the SolarWinds compromise by the US government.

Source: Wikipedia: Cozy Bear: https://en.wikipedia.org/wiki/Cozy_Bear

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BlackEnergy

RU — ATTRIBUTED TO SANDWORM · RETIRED · FIRST DEPLOYED 2015

Malware used in the December 2015 attack on Ukrainian power distribution companies.

Notable use: Linked to the first widely reported cyberattack to cause a power outage.

Source: Wikipedia: BlackEnergy: https://en.wikipedia.org/wiki/BlackEnergy

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Candiru spyware

IL — CANDIRU (SAITO TECH) · DEPLOYED · FIRST DEPLOYED N/A

Commercial spyware firm whose tools have been used to hack phones and computers.

Notable use: Sanctioned by the US Commerce Department in 2021.

Source: Wikipedia: Candiru (spyware company): https://en.wikipedia.org/wiki/Candiru_(spyware_company)

Charming Kitten

IR — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED N/A

Iranian state-linked hacking group known for phishing campaigns.

Notable use: Documented by security firms and US authorities.

Source: Wikipedia: Charming Kitten: https://en.wikipedia.org/wiki/Charming_Kitten

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Cyclops Blink

RU — ATTRIBUTED TO SANDWORM · RETIRED · FIRST DEPLOYED 2019

Malware targeting network devices, used to build a botnet.

Notable use: Disclosed in 2022 by UK and US authorities, who attributed it to Sandworm.

Source: Wikipedia: Cyclops Blink: https://en.wikipedia.org/wiki/Cyclops_Blink

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Duqu

NATION-STATE (NOT OFFICIALLY ATTRIBUTED) · RETIRED · FIRST DEPLOYED 2011

Espionage malware related to Stuxnet that was discovered in 2011.

Notable use: Discovered by researchers at the Budapest University of Technology.

Source: Wikipedia: Duqu: https://en.wikipedia.org/wiki/Duqu

Energetic Bear (Dragonfly)

RU — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED N/A

Russian-linked hacking group that targeted energy companies.

Notable use: Attributed to Russia by governments and security firms.

Source: Wikipedia: Berserk Bear: https://en.wikipedia.org/wiki/Berserk_Bear

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Equation Group

NATION-STATE (NOT OFFICIALLY ATTRIBUTED) · DEPLOYED · FIRST DEPLOYED N/A

Highly sophisticated hacking group described by researchers as linked to a Western intelligence agency.

Notable use: Named by Kaspersky Lab in 2015.

Source: Wikipedia: Tailored Access Operations: https://en.wikipedia.org/wiki/Tailored_Access_Operations

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FinFisher

DE/GB — GAMMA GROUP · DEPLOYED · FIRST DEPLOYED N/A

Commercial surveillance software sold to governments.

Notable use: Documented in investigations by researchers and journalists.

Source: Wikipedia: FinFisher: https://en.wikipedia.org/wiki/FinFisher

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Flame

NATION-STATE (NOT OFFICIALLY ATTRIBUTED) · RETIRED · FIRST DEPLOYED 2012

Highly modular espionage malware discovered in 2012 targeting computers in the Middle East.

Notable use: Discovered in 2012 by researchers at Kaspersky Lab.

Source: Wikipedia: Flame (malware): https://en.wikipedia.org/wiki/Flame_(malware)

GhostNet

CN — ATTRIBUTED · RETIRED · FIRST DEPLOYED 2009

Cyber espionage network discovered in 2009 that compromised computers in many countries.

Notable use: Documented by researchers at the University of Toronto.

Source: Wikipedia: GhostNet: https://en.wikipedia.org/wiki/GhostNet

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HermeticWiper

RU — ATTRIBUTED · RETIRED · FIRST DEPLOYED 2022

Data-destroying malware used against Ukrainian networks before the 2022 invasion.

Notable use: Discovered in February 2022.

Source: Wikipedia: 2022 Ukraine cyberattacks: https://en.wikipedia.org/wiki/2022_Ukraine_cyberattacks

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Industroyer / Crashoverride

RU — SANDWORM TEAM (GRU) · DEPLOYED · FIRST DEPLOYED 2016

AI-assisted modular malware framework targeting power grid control systems. Automatically learns and exploits industrial control protocols to cause power outages.

Notable use: Caused Ukraine power outages December 2016; Industroyer2 deployed against Ukraine April 2022

Source: Wikipedia: Industroyer: https://en.wikipedia.org/wiki/Industroyer

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Industroyer2

RU — ATTRIBUTED TO SANDWORM · RETIRED · FIRST DEPLOYED 2022

Malware targeting electrical substations, used in a 2022 attempted attack on Ukrainian energy infrastructure.

Notable use: Reported by Ukraine's CERT-UA and security firm ESET in April 2022.

Source: Wikipedia: Industroyer: https://en.wikipedia.org/wiki/Industroyer

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Kimsuky

KP — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED N/A

North Korean state-linked espionage group focused on South Korea and think tanks.

Notable use: Documented by governments and security firms.

Source: Wikipedia: Kimsuky: https://en.wikipedia.org/wiki/Kimsuky

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Lazarus Group

KP — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED N/A

North Korean state-linked hacking group involved in cyber espionage and theft.

Notable use: Linked by governments to the Sony Pictures hack and WannaCry.

Source: Wikipedia: Lazarus Group: https://en.wikipedia.org/wiki/Lazarus_Group

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Mirai botnet

US — INDIVIDUALS · RETIRED · FIRST DEPLOYED 2016

Malware that infected internet-connected devices to build a large botnet used for denial-of-service attacks.

Notable use: Used in the 2016 attack on DNS provider Dyn.

Source: Wikipedia: Mirai (malware): https://en.wikipedia.org/wiki/Mirai_(malware)

Moonlight Maze

RU — ATTRIBUTED · RETIRED · FIRST DEPLOYED 1996

1990s intrusions into US government and research computers, attributed by officials to Russia.

Notable use: Investigated by the US from 1998.

Source: Wikipedia: Moonlight Maze: https://en.wikipedia.org/wiki/Moonlight_Maze

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Nitro Zeus

US — ATTRIBUTED · RETIRED · FIRST DEPLOYED N/A

Reported US contingency plan for cyber attacks on Iran's infrastructure.

Notable use: Reported in 2016.

Source: Wikipedia: Nitro Zeus: https://en.wikipedia.org/wiki/Nitro_Zeus

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NotPetya

RU — ATTRIBUTED TO GRU (SANDWORM) · RETIRED · FIRST DEPLOYED 2017

Destructive wiper malware disguised as ransomware, spread through Ukrainian accounting software in 2017.

Notable use: Governments attributed it to Russian military intelligence; it caused global damage to companies.

Source: Wikipedia: Petya (malware family): https://en.wikipedia.org/wiki/Petya_(malware_family)

Operation Aurora

CN — ATTRIBUTED · RETIRED · FIRST DEPLOYED 2009

2009 cyber espionage campaign against Google and other large companies, attributed to China.

Notable use: Disclosed by Google in January 2010.

Source: Wikipedia: Operation Aurora: https://en.wikipedia.org/wiki/Operation_Aurora

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Operation Olympic Games

US/IL — ATTRIBUTED · RETIRED · FIRST DEPLOYED 2006

Reported US-led campaign of cyber attacks on Iran's nuclear program that included Stuxnet.

Notable use: Described in 2012 reporting by The New York Times.

Source: Wikipedia: Operation Olympic Games: https://en.wikipedia.org/wiki/Operation_Olympic_Games

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Pegasus spyware

IL — NSO GROUP · DEPLOYED · FIRST DEPLOYED 2016

Commercial spyware sold to governments that can compromise phones without user interaction.

Notable use: Subject of the 2021 Pegasus Project investigation by journalists.

Source: Wikipedia: Pegasus (spyware): https://en.wikipedia.org/wiki/Pegasus_(spyware)

Predator spyware

INTELLEXA CONSORTIUM · DEPLOYED · FIRST DEPLOYED N/A

Commercial spyware sold to governments that can infect phones.

Notable use: Documented by security researchers and journalists.

Source: Wikipedia: Cytrox: https://en.wikipedia.org/wiki/Cytrox

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Red October

RU — ATTRIBUTED · RETIRED · FIRST DEPLOYED 2007

Cyber espionage campaign discovered in 2013 that targeted diplomatic and government networks.

Notable use: Disclosed by Kaspersky Lab in 2013.

Source: Wikipedia: Red October (malware): https://en.wikipedia.org/wiki/Red_October_(malware)

Regin

NATION-STATE (NOT OFFICIALLY ATTRIBUTED) · RETIRED · FIRST DEPLOYED 2008

Sophisticated espionage malware platform discovered in 2014.

Notable use: Found in networks of governments and telecoms.

Source: Wikipedia: Regin (malware): https://en.wikipedia.org/wiki/Regin_(malware)

Salt Typhoon

CN — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED 2024

Chinese state-linked hacking group that compromised US telecommunications networks.

Notable use: Disclosed by US officials in 2024.

Source: Wikipedia: Salt Typhoon: https://en.wikipedia.org/wiki/Salt_Typhoon

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Sandworm

RU — ATTRIBUTED TO GRU UNIT 74455 · DEPLOYED · FIRST DEPLOYED N/A

Russian state-linked hacking group responsible for major attacks on Ukrainian infrastructure.

Notable use: Linked by governments to the 2015 and 2016 Ukrainian power grid attacks and NotPetya.

Source: Wikipedia: Sandworm (hacker group): https://en.wikipedia.org/wiki/Sandworm_(hacker_group)

Shamoon

IR — ATTRIBUTED · RETIRED · FIRST DEPLOYED 2012

Data-wiping malware used against Saudi Aramco and other energy companies in 2012.

Notable use: Erased data on tens of thousands of computers at Saudi Aramco.

Source: Wikipedia: Shamoon: https://en.wikipedia.org/wiki/Shamoon

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Stuxnet

US/IL — NSA / UNIT 8200 · DEPLOYED · FIRST DEPLOYED 2009

First publicly known nation-state cyber weapon designed to physically destroy industrial equipment. Targeted Iranian Siemens PLCs controlling uranium centrifuges with precision sabotage code.

Notable use: Destroyed ~1,000 Iranian centrifuges at Natanz 2010; first acknowledged state-sponsored cyber-physical attack

Source: Wikipedia: Stuxnet: https://en.wikipedia.org/wiki/Stuxnet

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SUNBURST (SolarWinds compromise)

RU — ATTRIBUTED TO SVR · RETIRED · FIRST DEPLOYED 2020

Supply-chain compromise delivered through trojanized SolarWinds Orion updates.

Notable use: Affected multiple US federal agencies; discovered in December 2020.

Source: Wikipedia: 2020 United States federal government data breach: https://en.wikipedia.org/wiki/2020_United_States_federal_government_data_breach

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Titan Rain

CN — ATTRIBUTED · RETIRED · FIRST DEPLOYED 2003

Series of coordinated attacks on US government computers beginning in 2003, attributed to Chinese actors.

Notable use: Reported publicly in 2005.

Source: Wikipedia: Titan Rain: https://en.wikipedia.org/wiki/Titan_Rain

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Triton (TRISIS) Malware

RU — CNIIHM (ATTRIBUTED) · DEPLOYED · FIRST DEPLOYED 2017

ICS-targeting malware designed to disable safety instrumented systems at industrial facilities. Capable of causing catastrophic physical failures at energy infrastructure.

Notable use: Attack on Saudi petrochemical facility 2017; targeted safety systems designed to prevent explosions

Source: Wikipedia: Triton (malware): https://en.wikipedia.org/wiki/Triton_(malware)

Turla

RU — ATTRIBUTED TO FSB · DEPLOYED · FIRST DEPLOYED N/A

Russian state-linked hacking group known for long-running espionage campaigns.

Notable use: Attributed to Russia's FSB by Western governments.

Source: Wikipedia: Turla (malware): https://en.wikipedia.org/wiki/Turla_(malware)

Volt Typhoon Infrastructure (China)

CN — PLA/MSS · DEPLOYED · FIRST DEPLOYED 2021

Pre-positioned AI-assisted cyber intrusion infrastructure targeting US critical infrastructure for potential activation during conflict. Living-off-the-land techniques with AI behavioral evasion.

Notable use: Discovered 2023 in US water, energy, and transport systems; assessed as pre-positioning for Taiwan contingency

Source: Wikipedia: Volt Typhoon: https://en.wikipedia.org/wiki/Volt_Typhoon

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WannaCry

KP — ATTRIBUTED TO THE LAZARUS GROUP · RETIRED · FIRST DEPLOYED 2017

Self-spreading ransomware that hit hundreds of thousands of computers worldwide in May 2017.

Notable use: The US and UK governments attributed it to North Korea.

Source: Wikipedia: WannaCry ransomware attack: https://en.wikipedia.org/wiki/WannaCry_ransomware_attack

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Electronic Warfare (16)

ALQ-218 Electronic Warfare System (AI)

US — NORTHROP GRUMMAN · DEPLOYED · FIRST DEPLOYED 2009

AI-enhanced electronic warfare suite for EA-18G Growler with automated threat library updates and autonomous jamming response. Machine learning optimizes jamming waveforms in real-time.

Notable use: US Navy carrier operations; used in Middle East and Pacific theater EW missions

Source: Wikipedia: AN/ALQ-218: https://en.wikipedia.org/wiki/AN%2FALQ-218

Anduril Pulsar

US — ANDURIL · DEPLOYED · FIRST DEPLOYED N/A

AI-enabled electronic warfare system that adapts its jamming to unfamiliar signals.

Notable use: Developed for the US military's counter-drone and electronic warfare needs.

Source: Wikipedia: Anduril Industries: https://en.wikipedia.org/wiki/Anduril_Industries

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Borisoglebsk-2

RU — KRET · DEPLOYED · FIRST DEPLOYED 2013

Broadband tactical electronic warfare system with AI frequency analysis for autonomous jamming of battlefield communications and navigation signals.

Notable use: Deployed in eastern Ukraine since 2014; used to disrupt Ukrainian communications and GPS-guided weapons

Source: Wikipedia: Borisoglebsk-2: https://en.wikipedia.org/wiki/Borisoglebsk-2

CETC DWL002 Passive Radar

CN — CETC · DEPLOYED · FIRST DEPLOYED 2010

AI-enhanced passive coherent location radar system capable of detecting stealth aircraft without emitting detectable signals. Uses machine learning to process multi-path returns.

Notable use: Exported to Serbia; reportedly used to track F-117 precursor; strategic air defense role

Source: No authoritative source matched yet

CHAMP (Counter-Electronics High Power Microwave)

US — BOEING / AFRL · TESTING · FIRST DEPLOYED N/A

Cruise missile-delivered directed-energy microwave weapon that autonomously flies programmed route to disable enemy electronics without explosives. AI route planning for multi-target engagement.

Notable use: Successful test disabling electronics in multiple buildings in single flight 2012; continued development program

Source: Wikipedia: Counter-electronics High Power Microwave Advanced Missile Project: https://en.wikipedia.org/wiki/Counter-electronics_High_Power_Microwave_Advanced_Missile_Project

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Drone Dome

IL — RAFAEL · DEPLOYED · FIRST DEPLOYED N/A

Counter-drone system that detects, identifies and jams or destroys small drones.

Notable use: Sold to several countries for counter-UAS defense.

Source: Wikipedia: Drone Dome: https://en.wikipedia.org/wiki/Drone_Dome

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DroneShield DroneGun

AU — DRONESHIELD · DEPLOYED · FIRST DEPLOYED N/A

Portable jammer that disrupts drone control and navigation signals.

Notable use: Used by militaries and security agencies including in Ukraine.

Source: Wikipedia: DroneShield: https://en.wikipedia.org/wiki/DroneShield

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EA-18G Growler

US — BOEING · DEPLOYED · FIRST DEPLOYED 2009

Carrier-based electronic attack aircraft used to jam radars and communications.

Notable use: Operated by the US Navy and the Royal Australian Air Force.

Source: Wikipedia: Boeing EA-18G Growler: https://en.wikipedia.org/wiki/Boeing_EA-18G_Growler

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EC-130H Compass Call

US — L3HARRIS / LOCKHEED MARTIN · DEPLOYED · FIRST DEPLOYED N/A

Aircraft that jams communications and command networks.

Notable use: Used by the US Air Force.

Source: Wikipedia: Lockheed EC-130H Compass Call: https://en.wikipedia.org/wiki/Lockheed_EC-130H_Compass_Call

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Epirus Leonidas

US — EPIRUS · DEPLOYED · FIRST DEPLOYED N/A

Solid-state high-power microwave system that disables drone swarms electronically.

Notable use: Tested by the US Army and Air Force for counter-drone defense.

Source: Wikipedia: Epirus Leonidas: https://en.wikipedia.org/wiki/Epirus_Leonidas

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EW Krasukha-4

RU — SCIENTIFIC PRODUCTION CONCERN RADIO-ELECTRONIC TECHNOLOGIES · DEPLOYED · FIRST DEPLOYED 2014

Mobile electronic warfare system using AI signal processing to detect and jam airborne radar systems including AWACS and UAVs. Automated frequency management and response.

Notable use: Deployed in Syria 2015; used in Ukraine conflict 2022–present; reportedly jammed US ISR platforms

Source: Wikipedia: Krasukha: https://en.wikipedia.org/wiki/Krasukha

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Gerasim (Russia AI EW)

RU — ROSTEC · IN DEVELOPMENT · FIRST DEPLOYED N/A

AI-powered integrated electronic warfare complex for autonomous jamming, cyber attack, and signal deception across multiple frequencies simultaneously.

Notable use: Announced 2023; part of Russia's 2030 EW modernization program; AI spectral management capability

Source: No authoritative source matched yet

Khibiny

RU — KRET · DEPLOYED · FIRST DEPLOYED N/A

Russian electronic warfare pod carried by Su-34 and other aircraft.

Notable use: Reported near NATO forces in the Black Sea in 2014 by US officials.

Source: Wikipedia: Khibiny Mountains: https://en.wikipedia.org/wiki/Khibiny_Mountains

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Next Generation Jammer (NGJ-MB)

US — RAYTHEON · DEPLOYED · FIRST DEPLOYED N/A

Airborne electronic attack pod for the EA-18G Growler that replaces the ALQ-99.

Notable use: Entered US Navy service in the 2020s.

Source: Wikipedia: Next Generation Jammer: https://en.wikipedia.org/wiki/Next_Generation_Jammer

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Pale Horse SIGINT System

US — NSA / CYBERCOM · DEPLOYED · FIRST DEPLOYED 2015

Classified AI-assisted SIGINT collection and cyber exploitation platform. Uses machine learning to automate signals analysis and network vulnerability identification.

Notable use: Reported use in counter-ISIS cyber operations; cyber effects integrated with kinetic strike coordination

Source: No authoritative source matched yet

Zhitel R-330Zh

RU — RUSSIAN ELECTRONIC WARFARE INDUSTRY · DEPLOYED · FIRST DEPLOYED N/A

Russian electronic warfare system that jams satellite navigation and satellite telephone links.

Notable use: Reported in use in the war in Ukraine.

Source: Wikipedia: R-330Zh Zhitel: https://en.wikipedia.org/wiki/R-330Zh_Zhitel

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Information Warfare (8)

Blue Wolf (Facial Recognition — IDF)

IL — ISRAEL DEFENSE FORCES (AS REPORTED) · DEPLOYED · FIRST DEPLOYED 2021

Smartphone-based facial recognition system that, according to a 2021 Washington Post report, Israeli soldiers used to photograph Palestinians in the West Bank and check them against a database.

Notable use: Reported by The Washington Post in November 2021.

Source: No authoritative source matched yet

Doppelganger

RU — SOCIAL DESIGN AGENCY · DEPLOYED · FIRST DEPLOYED 2022

Russian influence campaign that cloned legitimate news websites to spread propaganda.

Notable use: Documented by EU and US officials from 2022.

Source: Wikipedia: Doppelganger (disinformation campaign): https://en.wikipedia.org/wiki/Doppelganger_(disinformation_campaign)

Fancy Bear / APT28 AI Tools

RU — GRU UNIT 26165 · DEPLOYED · FIRST DEPLOYED 2008

Advanced persistent threat using AI-assisted spear phishing, deepfake content generation, and automated social media influence operations. Targets military and government networks.

Notable use: DNC hack 2016; targeting NATO countries 2022–present; AI-generated disinformation campaigns

Source: Wikipedia: Fancy Bear: https://en.wikipedia.org/wiki/Fancy_Bear

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Ghostwriter

BY/RU — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED 2017

Disinformation campaign using hacked accounts and fake articles to target audiences in Eastern Europe.

Notable use: Documented by Mandiant and governments from 2020.

Source: Wikipedia: Ghostwriter: https://en.wikipedia.org/wiki/Ghostwriter

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Internet Research Agency

RU — ST PETERSBURG · DEPLOYED · FIRST DEPLOYED 2013

Russian organization that ran online influence campaigns, including during the 2016 US election.

Notable use: Indicted by the US in 2018.

Source: Wikipedia: Internet Research Agency: https://en.wikipedia.org/wiki/Internet_Research_Agency

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Operation Overload (Matryoshka)

RU — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED 2023

Russia-aligned campaign that floods fact-checkers and newsrooms with fake content and verification requests.

Notable use: Documented by researchers from 2023.

Source: Wikipedia: Operation Overload: https://en.wikipedia.org/wiki/Operation_Overload

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Pravda network

RU — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED 2022

Network of websites that republish Russian state media content at very large scale.

Notable use: Documented by researchers and the French agency Viginum.

Source: Wikipedia: Pravda network: https://en.wikipedia.org/wiki/Pravda_network

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Spamouflage

CN — ATTRIBUTED · DEPLOYED · FIRST DEPLOYED 2017

Chinese state-linked online influence operation spreading pro-China content across social media.

Notable use: Documented by researchers and social media companies.

Source: Wikipedia: Spamouflage: https://en.wikipedia.org/wiki/Spamouflage

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Swarm System (8)

Autonomous Swarm Boats (China)

CN — CSIC (CHINA SHIPBUILDING INDUSTRY CORPORATION) · TESTING · FIRST DEPLOYED N/A

AI-coordinated autonomous surface vessel swarms designed for contested littoral operations. Demonstrate collective AI navigation, target prosecution, and network resilience.

Notable use: Swarm tests of 56 autonomous boats in Pearl River delta 2018; PLA Navy integration ongoing

Source: No authoritative source matched yet

Black Widow (Northrop Grumman Swarm)

US — NORTHROP GRUMMAN · TESTING · FIRST DEPLOYED N/A

Autonomous micro air vehicle designed for indoor and GPS-denied swarm operations. AI-enabled cooperative behavior for reconnaissance and sensor distribution.

Notable use: DARPA FAST program demonstrator; swarm coordination tests in urban environments

Source: No authoritative source matched yet

CETC 119-Drone Swarm Demonstration

CN — CETC · TESTING · FIRST DEPLOYED 2017

Fixed-wing drone swarm demonstration by the China Electronics Technology Group Corporation.

Notable use: In June 2017 CETC flew a swarm of 119 fixed-wing drones.

Source: Wikipedia: China Electronics Technology Group Corporation: https://en.wikipedia.org/wiki/China_Electronics_Technology_Group_Corporation

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Gremlins (DARPA)

US — DARPA / DYNETICS · RETIRED · FIRST DEPLOYED 2015

DARPA program to launch and recover swarms of small reusable drones from larger aircraft in flight.

Notable use: Flight tests in 2019 to 2021 demonstrated in-air recovery of drones by a C-130.

Source: Wikipedia: Dynetics X-61 Gremlins: https://en.wikipedia.org/wiki/Dynetics_X-61_Gremlins

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LOCUST (Low-Cost UAV Swarming Technology)

US — ONR (OFFICE OF NAVAL RESEARCH) · TESTING · FIRST DEPLOYED N/A

Navy program developing tube-launched autonomous swarming UAVs that self-organize using shared AI processing. Designed for saturation attacks and distributed ISR.

Notable use: Swarm flight tests with 30+ drones 2015–2019; technology transferred to multiple programs

Source: No authoritative source matched yet

Perdix Micro-UAV Swarm

US — MIT / SERC / DOD · TESTING · FIRST DEPLOYED N/A

Autonomous micro-drone swarm demonstrating AI collective behavior without individual control. 103-drone swarm demonstrated collective decision-making, self-healing formation, and adaptive behavior.

Notable use: 103-drone swarm released from F/A-18s 2016; demonstrated no pre-programmed behaviors; basis for DoD swarm programs

Source: Wikipedia: Perdix (drone): https://en.wikipedia.org/wiki/Perdix_(drone)

Replicator Initiative

US — US DEPARTMENT OF DEFENSE · IN DEVELOPMENT · FIRST DEPLOYED 2023

Pentagon initiative announced in 2023 to field large numbers of low-cost autonomous systems quickly.

Notable use: Announced by the Deputy Secretary of Defense in August 2023 with a goal of fielding thousands of systems within two years.

Source: Wikipedia: Replicator (United States military): https://en.wikipedia.org/wiki/Replicator_(United_States_military)

STM Togan

TR — STM · TESTING · FIRST DEPLOYED N/A

Autonomous swarm UAV system capable of AI-coordinated multi-drone missions. Designed for reconnaissance and collaborative target engagement as a distributed system.

Notable use: Swarm flight demonstrations with KARGU-2; part of Turkish autonomous systems family

Source: Wikipedia: STM (Turkish company): https://en.wikipedia.org/wiki/STM_(Turkish_company)
