

World Military Unmanned Aerial Vehicle Systems

2022/2023 MARKET PROFILE AND FORECAST



TEAL GROUP
CORPORATION



World Military Unmanned Aerial Systems

Market Profile & Forecast

2022/23 Edition

Steven J. Zaloga, Senior Analyst - Missiles & UAVs
(410) 676-7698
email: s.zaloga1@comcast.net

Dr. David Rockwell, Senior Analyst – Military Electronics
(703) 385-1992 ext. 106
email: drockwell@tealgroup.com

Tom Zoretich, Senior Analyst - Defense & Aerospace Companies
(571) 201-4943
email: tzoretich@tealgroup.com

homepage: www.tealgroup.com





Main Office

3900 University Dr.
Suite 220
Fairfax, VA 22030
(703) 385-1992
(703) 691-9591 fax

Sales Offices:

Eastern Region

Doug Cornell
2503 Carol Place
Falls Church, VA 22046
(703) 573-5374
dcornell@tealgroup.com

Mid-Western Region

David Conklin
8031 Buckland Dr. Cincinnati, OH 45249
(513) 247-9350
dgconklin@tealgroup.com

Western Region & Asia-Pacific

Pravin Parmar
2618 E. First St.
Long Beach, CA 90803
(562) 434-7159
pravparmar@tealgroup.com

Europe & Middle East

Monika Cornell
2503 Carol Place
Falls Church, VA 22046
(703) 573-0559
mccornell@tealgroup.com

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Executive Overview

The Market Outlook

In terms of worldwide military budgets, the unmanned aircraft systems (UAS) segment continues to see growth, although annual growth has moderated when compared to a decade ago. The unclassified sector will continue to increase over the next decade, by about 41%, from current annual spending on RDT&E and procurement of about \$13.2 billion in

big issue for the US drone sector is the extent of secret “black” drone programs.

Growth will increasingly shift towards international markets as more militaries adopt the lessons of Iraq, Afghanistan, Syria, Libya, Nagorno-Karabakh, and Ukraine and incorporate UAVs into their forces (see Figure 1). The introduction of specially

Please note that in our tables and charts “procurement” and “production value” are two different, but related numbers. Procurement, covered in the budget forecasts here, represents the annual amount of production funding included in a country’s annual defense budget, usually on a fiscal-year basis. Production value, covered in the numerous tables in this

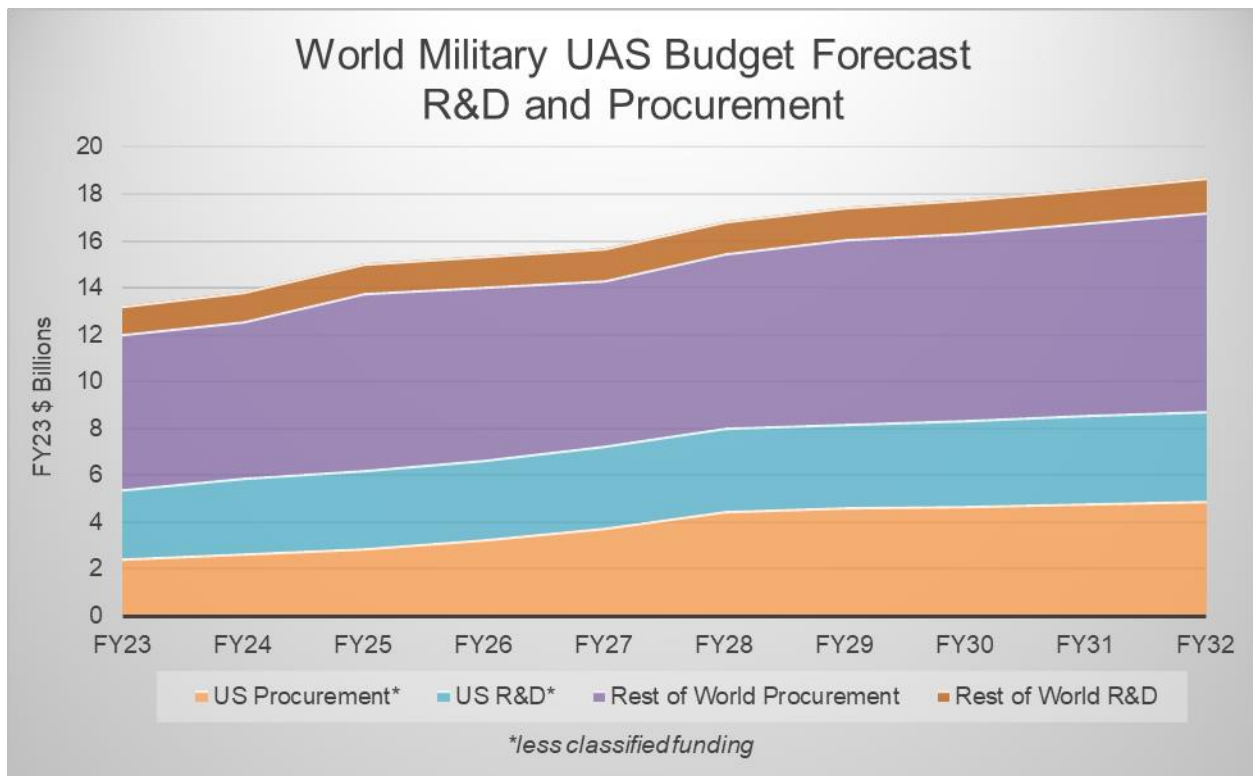


Figure 1

FY23 to about \$18.7 billion in FY32 (a CAGR of 3.9%). If operations and maintenance expenditures were to be added, these totals would be greater. (Note: we use the US fiscal year cycle here as the standard for comparison purposes, even though each country uses its own budget cycle.)

This growth is being driven by the continued adoption of unmanned aerial vehicles (UAVs) worldwide. Over the next decade, unclassified US procurement will grow modestly. The

built unmanned combat air vehicles (UCAVs) also promises to drive growth over the next decade.

Now, for the seventh year Teal Group has separated all civil government and commercial UAVs into a separate study in recognition of the strong potential for the future as airspace begins to open worldwide. We have included a summary of those findings, however, at the end of this Executive Overview.

study, represents the value of UAV systems delivered during a calendar year. In rough terms, the funds “procured” during one-year result in “delivered” units the following year or two after.

The most significant catalyst to this market has been the enormous growth of interest in UAVs by the US military, tied to operations in Iraq and Afghanistan, as well as the general trend towards information warfare and netcentric systems. UAVs

are a key element in the intelligence, surveillance, and reconnaissance (ISR) portion of this revolution, and they are expanding into other missions as well with the advent of hunter-killer UAVs. The reason for the slow-down in US growth has been the decline of US unclassified procurement over the past decade with the end of the wars in Iraq and Afghanistan. The US military cur-

total worldwide R&D spending and 35% of procurement spending, according to Teal Group’s *International Defense Briefing* forecasts.

These percentages change significantly when adjustments are made for US classified UAV development and procurement funding (see Figure 2). The value of these “black” programs can only be surmised. With these assumptions, the US accounts

technology, and military application of space systems.

A tangible example of the “black” UAV budget in the US is the RQ-170 Sentinel program which only came to light when one of the stealth drones came down in Iranian territory. Recent revelations about the RQ-180 provide another example.

Teal Group expects that the sales of UAVs will follow recent patterns

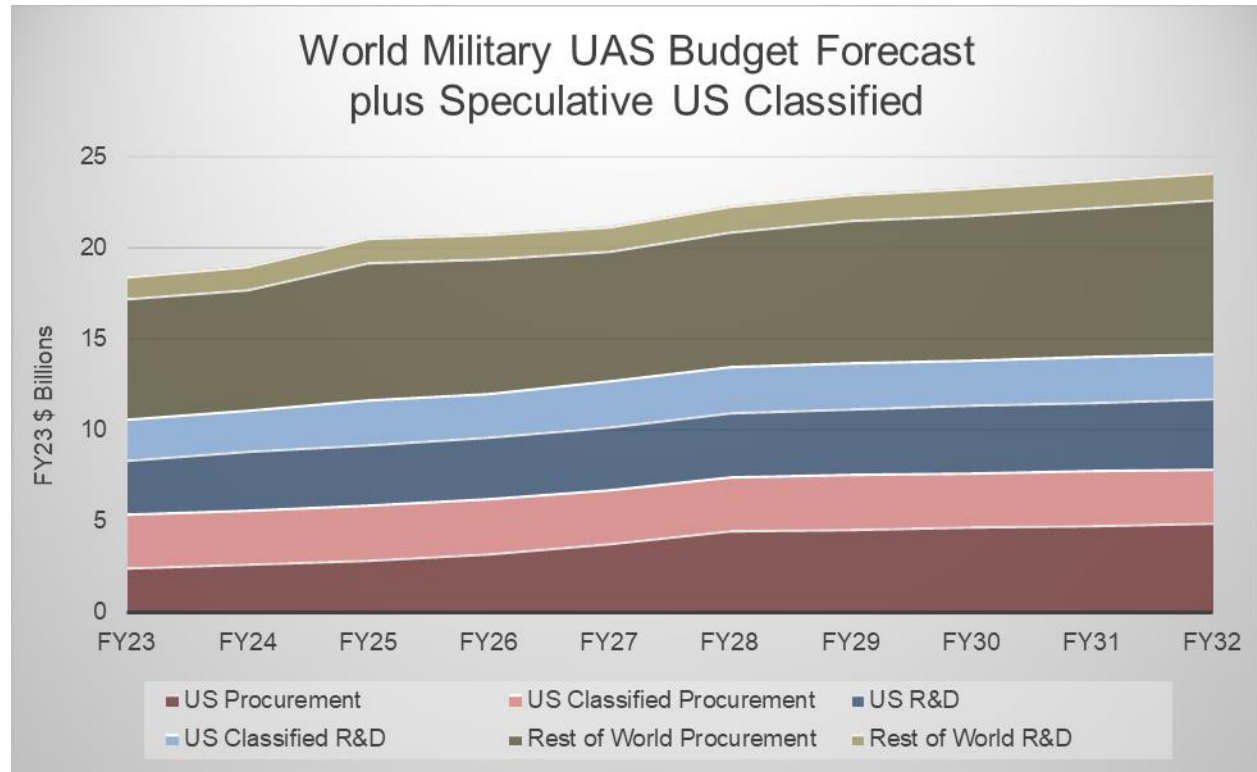


Figure 2

rently has the world’s largest and most sophisticated drone fleet, with the rest of the world only beginning to catch up.

Our research finds that the US will account for 71.9% of the unclassified R&D spending on UAV technology over the next decade, and about 34% of the unclassified procurement through the forecast decade. These US UAV funding shares for R&D and procurement represent slightly smaller shares of the market compared to defense spending in general. The US accounts for about 75% of

for 81.3% of the world R&D on UAVs and 47.8% of the procurement.

This difference is due to the heavier US investment in cutting-edge technologies and the marked lagtime in such research and procurement elsewhere, especially major aerospace centers such as Europe. This follows trends in other cutting-edge technologies observed over the past decade by Teal Group analysts in such areas as precision-guided weapons, information and sensor

of high-tech arms procurement worldwide, with the Asia-Pacific area representing the second largest market, followed by Europe. Indeed, the Asia-Pacific region may represent an even larger segment of the market, but several significant players in the region, namely Japan and China are not especially transparent about their plans compared to Europe. As in the case of many cutting-edge aerospace products, Africa and Latin America are expected to be very modest markets for UAVs.

Some warnings are needed when viewing the summary tables and charts here. There appear to be wide swings and dips in unit acquisition over the forecast decade, that is not matched by similar swings in the production value. This is primarily due to the volatile mini-UAV market, which represents exceptionally large numbers of air vehicles even though unit costs are extremely low compared to other UAVs, especially the endurance types. This forecast expects a drop in US mini-UAV acquisition as combat operations wind down in Iraq and Afghanistan, which has a significant effect on unit numbers, though not on dollar values. It is

also important to note that we are not yet including forecasts for quadcopters, or very small and inexpensive micro-UAVs. In many cases, these are being obtained off-the-shelf from the commercial market, and the unit cost is too low for any form of tracking. In addition, the large numbers likely to be acquired tend to grossly distort the unit forecast numbers.

The summary tables below include a budget forecast, as well as UAV production forecasts based on the various program unit forecasts. As can be seen, the procurement aspect of the budget forecast is higher than the production forecast (by value). The procurement forecast

captures costs other than the acquisition costs alone, such as modification programs, acquisition of system components including sensors, ground control stations and support equipment. Since US classified programs are so speculative, we have included two separate budget forecasts here, one that excludes the US classified programs and one that includes them.

The US lines are derived from the US budget procurement forecast found in the US section. The "Rest of the World" procurement line is based on the production forecast, plus a fractional addition to account for the other UAV costs.

World UAS Budget Forecast (excluding US classified budget)

(\$ Millions)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	Total
World R&D	4,156	4,506	4,621	4,728	4,805	4,900	4,995	5,092	5,190	5,290	48,283
World Procurement	9,090	9,308	10,445	10,666	10,888	11,936	12,478	12,707	13,047	13,397	113,962
Total	13,246	13,814	15,067	15,394	15,693	16,835	17,473	17,799	18,238	18,687	162,245

R&D (\$ Millions)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	Total
USA	2,956	3,256	3,321	3,388	3,455	3,525	3,595	3,667	3,740	3,815	34,718
Rest of World (RoW)	1,200	1,250	1,300	1,340	1,350	1,375	1,400	1,425	1,450	1,475	13,565
Total R&D	4,156	4,506	4,621	4,728	4,805	4,900	4,995	5,092	5,190	5,290	48,283

Procurement (\$ Millions)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	Total
USA	2,478	2,668	2,923	3,283	3,802	4,501	4,632	4,731	4,832	4,935	38,785
RoW	6,612	6,640	7,522	7,383	7,086	7,435	7,845	7,976	8,216	8,462	75,177
Total Procurement	9,090	9,308	10,445	10,666	10,888	11,936	12,478	12,707	13,047	13,397	113,962

World UAS Budget Forecast (including provisional US classified budget)

(\$ Millions)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	Total
World R&D	6,376	6,726	7,096	7,103	7,305	7,400	7,495	7,592	7,690	7,790	72,573
World Procurement	12,090	12,308	13,445	13,666	13,888	14,936	15,478	15,707	16,047	16,397	143,962
Total	18,466	19,034	20,542	20,769	21,193	22,335	22,973	23,299	23,738	24,187	216,535

R&D (\$ Millions)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	Total
USA	5,176	5,476	5,796	5,763	5,955	6,025	6,095	6,167	6,240	6,315	59,008
Rest of World (RoW)	1,200	1,250	1,300	1,340	1,350	1,375	1,400	1,425	1,450	1,475	13,565
Total R&D	6,376	6,726	7,096	7,103	7,305	7,400	7,495	7,592	7,690	7,790	72,573

Procurement (\$ Millions)	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	Total
USA	5,478	5,668	5,923	6,283	6,802	7,501	7,632	7,731	7,832	7,935	68,785
RoW	6,612	6,640	7,522	7,383	7,086	7,435	7,845	7,976	8,216	8,462	75,177
Total Procurement	12,090	12,308	13,445	13,666	13,888	14,936	15,478	15,707	16,047	16,397	143,962