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A ripe market

Prospects in Asia-Pacific

MALE ambitions

The medium-altitude UAV sector



Darren Lake looks at the potential of the Asia-Pacific region for those unmanned systems companies wanting to capture new markets.



Riding the tiger

In the early 1990s, western companies scrambled to sell equipment and services to countries in the Pacific Rim as their economies boomed and they earned the label 'Asian tigers'. The relative collapse of economic development in the second half of the decade led to a tightening of belts and a scarcity of contracts, but since then the region has rebounded and other countries such as Australia have joined the ranks of wealthy potential customers in the area.

Although south-east Asian countries are being more cautious about expenditure than they were in the 1990s, there has been a rapid pick-up in investment in new technologies. Many governments recognise the need to boost their economies with high-tech industry, and at the same time there is an acknowledgement that systems such as unmanned vehicles can help address some of the major issues facing the region, whether it be security or agricultural development.

All of this makes the area a prime target for inward sales and local investment in new technology. All those companies surveyed by *Unmanned Vehicles* in the course of writing this feature agreed that the Asia-Pacific market was important for them. They echoed the opinion that almost every country in the region has requirements for, and realises the value of, unmanned systems.

Multiplying requirements

Those governments see unmanned systems as being able to undertake a multitude of tasks that manned platforms are currently unable to do or find difficult to accomplish. Many of these applications differ slightly from country to country, but certain common key requirements emerge.

Many Asian countries are of considerable size and have difficulty effectively monitoring their borders. Homeland security missions are, therefore, potentially one of

the largest growth markets for unmanned systems. It is important also to not think only of UAVs in this context – the widening utility of UGVs and UUVs is also significant.

There are several key homeland security markets in the Pacific Rim. The long coastlines and strategically important shipping lanes of South-East Asia are seen as one of the critical mission areas. A number of states are looking to invest heavily in unmanned technologies to assist in protecting their borders and coastal waters.

'As the Asia-Pacific region becomes a progressively more potent player in the world economy, the region will become a significant market in the future for UAV systems. The primary use is paramilitary and homeland security on land as well as maritime,' explains Tommy Ayouty, business development manager – UAV systems at Thales.

As reported in the news section of this issue, Malaysia is on the verge of sealing a deal with a local manufacturer to start operating the Aludra UAV in a coastal protection role, and other countries are also taking a close look at systems for similar operations. Singapore is one of the most sophisticated users of unmanned systems in the region, and has already set up a joint UAV command.

Securing the Malacca Straits

One of the major concerns for Singapore and its neighbours is ensuring security in the Malacca Straits. Some 80 per cent of Malaysia's trade passes through the straits, as does almost all that of Singapore. The channel is also the main route for oil supplies to all the Far Eastern markets.

The route is prone to piracy, and countries in the region have recognised the fragility of their supply line. Speaking recently at a conference in Doha, Rear Admiral Tan Kai Hoe, Fleet Commander,

Republic of Singapore Navy (RSN), spoke of the danger any threat to the security of the straits would bring to the region. He emphasised the need for Singapore and other countries in the area to keep the straits under close surveillance and recognised the benefits of using unmanned systems as part of the solution.

Singapore has already invested in a fleet of Israeli-built UAVs as one of the elements of its intelligence, surveillance, target acquisition and reconnaissance (ISTAR) capability. Looking further out, the RSN is believed to be evaluating the potential of maritime UAVs and USVs to take on coastal protection roles.

Coastal surveillance

The surveillance operations envisaged by the RSN and others are also the type of missions that Australia, another potentially big market player, is interested in. In fact, long coastlines and governmental inability to fund more than a few assets are likely to skew the unmanned systems market in the region. Shai Shammai, Aeronautics Defense Systems' vice-president, international business, argues that, 'while in Europe, revenue-wise, we expect [tactical] UAS to take the lion's share in the next five years; in the Asia-Pacific market MALE [medium altitude, long endurance] UAS will take on a more dominant role. This is clearly related to the need for extensive maritime surveillance capabilities in places such as the Strait of Malacca and others.'

That interest is already very visible in Australia, which has conducted a number of trials of UAVs in the coastal surveillance role. Its North West Shelf UAS trial in 2006 validated the requirement for a UAV to augment existing systems, and the country has tied itself to the US Navy's Broad Area Maritime Surveillance (BAMS) programme as



part of its Air 7000 project, which also includes development of an integrated ground segment and the future replacement of the Royal Australian Air Force's manned assets. The recent selection of Northrop Grumman with its Global Hawk platform for BAMS means that Australia is likely to follow suit and opt to purchase the system further down the line.

In the meantime, the country's Border Protection Command (BPC), which is a joint organisation including both the military and the Australian Customs Service, is also evaluating its potential UAV requirements. As *Unmanned Vehicles* went to press, BPC was getting set to begin a series of trials using an IAI Malat Heron. Rather than being a platform test, the trials are meant to validate operational concepts and give BPC the data it needs to understand what UAV requirements it might have.

Beyond Australia, Northrop Grumman sees a potentially strong market for its UAV offerings. According to company officials, there is potential for other countries to take up a slimmed-down BAMS offering tailored to their own maritime commitments. The company is also eager to pursue potential markets for its Fire Scout vertical take-off and landing (VTOL) UAV. Earlier in the year, the company briefed Singapore on the system and also undertook a road trip to exhibit the UAV to Japanese officials.

Alongside the prospects for the region's MALE market, there is also growth potential at the opposite end of the spectrum – the mini/micro UAV level. Privately, several key manufacturers of smaller UAV systems say that they see Asia as potentially the largest market for such products outside the US. In some countries, the logistical challenges of operating larger tactical UAVs, such as the need for runways, are pushing the military to instead consider smaller platforms, especially as the performance of such systems improves.

Another of the companies attempting to capitalise on the interest of Asia-Pacific countries in the use of maritime UAVs is Schiebel, developer of the Camcopter S-100. The company is known to have demonstrated the maritime capabilities of its VTOL UAV to a number of navies in the region. Most recently, it announced that it had completed



▲ Schiebel's Camcopter S-100 has been demonstrated to a number of navies in the Asia-Pacific region. (Photo: Schiebel)

a successful flight demonstration with the Pakistan Navy.

Seaborne solutions

Besides the obvious market for maritime UAVs, there is also a growing interest in some of the UMVs on offer. Exploration for undersea resources is becoming big business in the region and there are maturing mine counter-measure (MCM) and maritime security markets as well.

All of the major manufacturers see real potential in the market and have increased the amount of time and effort they are investing in Asia-Pacific. Given that for the region's navies coastal protection, or littoral combat operations, are some of the most likely eventualities, much interest has been expressed in advanced MCM solutions.

Again, the major concern is the safety of seaborne supply routes. Singapore and a number of its neighbours have already purchased AUVs for MCM and oceanographic purposes, and manufacturers believe that there will be a growing need for such systems.

Several countries are also believed to have looked at USV technology options. Israeli firms are known to have been active in the region, showcasing their various armed and unarmed USVs for coastal and port security roles, although they were unwilling to confirm whether any purchases had been made.

The other major civil area of interest in AUV technology is in the local oil and gas industry. Several countries in the region have already tapped undersea energy sources, and further supplies are likely to become accessible as deep-sea drilling and ▶▶



▲ IAI's Heron UAV has had remarkable success in Asia. (Photo: IAI Malat)

exploration techniques advance. Much of that progress is likely to rely to some extent on AUV operations.

Further along the line, UGV manufacturers also see growing market opportunities in the area. At the recent Defence Services Asia exhibition in Malaysia a number of such companies were displaying their wares. The initial market is expected to be for counter-improvised explosive device/bomb disposal robots for military forces and homeland security.⁹ Manufacturers also believe that technology adoption rates in countries such as Japan and South Korea mean that they are likely to be the first routes to market for civil UGV applications.

Entering the market

Although developers want to be able to sell their systems in this lucrative market, they recognise that there are particular challenges to working in the region. As Jim Christner, AAI's director, international operations and defence systems, explains to *Unmanned Vehicles*: 'While most companies would like to just go into the Asian marketplace and sell systems to country X it is not that simple. These countries find themselves with vibrant economies and very industrialised... as a result they want to design and manufacture UAV systems on their own.'

In fact, local production or co-operation is becoming a crucial part of the dynamic. Several unmanned systems manufacturers exhibiting at Defence Services Asia said that there was a clear drive towards building up indigenous expertise and integration. As a

result, rather than trying to simply sell their systems some companies are moving towards a more collaborative model. BAE Systems is one of the suppliers taking this on board: 'When I talk to customers what I ask first is, what job do they want to do?' Martin Rowe-Willcocks, business development executive, military autonomous systems (air) says.

For some of the leading manufacturers, doing business in the region is made even more complex because of their country of origin. Israeli companies are limited in their penetration of the market to non-Muslim countries, but they do have strong positions in territories such as Australia and Singapore. US companies have some similar difficulties.

Local issues

The problem for the region's potential UV operators is that local manufacturers continue to be some years behind their Western counterparts in terms of the

technologies they can offer. 'A popular misconception is that UAVs are easy to do: "It's just a model aeroplane with a camera in the belly... how hard could it be?"', explains one industry official. In truth, the kind of capabilities that users are requesting means that their vehicles need to be much more than radio-controlled platforms.

One of the biggest problems manufacturers are facing is getting access to high-quality sensor payloads. Local developers complain that availability of these systems is restricted by tight US and European export controls. The same is also true of guidance and autonomy technologies, which often fall foul of things like the Missile Technology Control Regime.

Many western companies have had experience of these restrictions, and argue that they often limit co-operation, even with close allies. Recently the US military's top commander in South Korea argued that the country's status with the US should be upgraded so that Seoul, a key ally in the region, could more readily access American technologies. Therefore, working with local companies can become a protracted process that has little real reward.

It's clear that the Asia-Pacific market is a potentially deep gold mine for unmanned systems manufacturers, but there remain a number of pitfalls. The countries in the region continue to rapidly industrialise, and there is a bias towards local development where it is feasible. However, for those companies with the patience and the ability to play the long game and where appropriate partner with local suppliers, then there is likely to be a gain in the end. ♦



▲ Singapore is a prime market for UV sales in the region, and already operates platforms such as the Elbit Hermes 450. (Photo: MINDEF Singapore)