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SINGAPORE \$15, REST OF THE WORLD US\$20

## INTELLIGENT INVESTMENT

There has been a notable surge in global interest  
for ISTAR systems in the last few years



### AIRBUS MAKES INDIA A STRATEGIC HUB

The company has already  
established FALs for C295 military  
aircraft and H125 helicopters

### BRIMMING WITH POTENTIAL

The military trainer aircraft  
market has never had it this good



Exclusive Interview:  
**Manoj K Singh, Chief Customer Officer,  
Global Aviation Aerospace and Defence  
at Ramco Systems**

## “WE ARE SUPPORTING DRONES ACROSS THEIR ENTIRE LIFECYCLE”



Ramco Aviation which offers industry leading maintenance software for civil and defence applications is now also offering a plethora of services for drones. In an exclusive interview with Atul Chandra, Manoj K Singh, Chief Customer Officer, Global Aviation Aerospace and Defence at Ramco Systems outlines the company's deep partnership with global military drone powerhouse General Atomics Aeronautical Systems, Inc. “We provide the Enterprise Resource Planning (ERP) software platform for Maintenance Repair & Overhaul (MRO) services to support MQ-9B SkyGuardian and SeaGuardian Remotely Piloted Aircraft (RPA) systems.”

### Edited excerpts from the interview

#### How Ramco Aviation Software is facilitating UAS/Drone Management?

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I will take very specific example and that is the best way to describe how Ramco gets used in the context of drones over their complete life cycle. I will talk about a major customer we have in General Atomics Aeronautical Systems, Inc. (GA-ASI). As you know some of their products in the drone space are - Reaper, Sky Guardian, Sea Guardian, etc. India is also one of the customers for GA-ASI in the military domain. Ramco has leveraged its extensive experience in the helicopter domain towards its solutions for unmanned systems. In some sense, both drones and helicopters operate similarly in the way they can operate in remote areas with little physical infrastructure.

So, the capabilities that we had in the helicopter space, we are able to parlay that success into our drone solutions. One example of

this is that, if we take the example of the Sky Guardian, Ramco is able to work with the military operator to analyse data related to their operational parameters in terms of how long they have flown, number of flying hours, operating cycles, etc. So we capture various different parameters and share the analysed data with the military operators through their ground stations. This data is captured in real time and used for determining maintenance requirements for the drones.

We are also able to support the military operators with the configuration management of drones. As you know, a drone has numerous components, including batteries, etc., and has unique configuration requirements in conjunction with the ground stations. We manage all of that in our system. The operational hours and other

parameters captured during the mission are then used by the operator and GA's SkyGuardian's Global Support Solutions (SGSS) to plan the repair and replacement of parts and drive the global supply chain. The information is also used to forecast the maintenance requirements.

**Q How does Ramco Aviation Software aid operators in Drone maintenance?**

As compared to aircraft, drones are relatively simpler though they are still highly sophisticated in many areas. When it comes to drone maintenance, it involves less of repair activity and more of replacement activity. As a result it is important to ensure that all the necessary parts required for maintenance are available with the operator in a timely manner. Hence, we require the data as to when a part has to be replaced after certain number of cycles or hours or missions. Our software solutions are able to precisely do this, and also identify when a particular part needs to be replaced based on the data we have accumulated. Once we provide this

information to the operator, they can carry out the required maintenance activity in time. After the maintenance is done, the original part is repaired, replaced or removed from the inventory.

The other most important thing when it comes to drone maintenance and operations is that they are often operated in multiple locations and not just in a single country or location. GA-ASI has built this whole global supply chain to support the parts for their drones, with a global central warehouse in the USA and in other countries. There are also regional warehouses, field level warehouses and in Ramco Aviation Software we have developed what we call as the warehouse matrix concept for multi-tier inventory planning or multi echelon inventory planning.

All this is done with our software, which, based on the consumption of parts used by drones in different countries, and is able to create the information needed on the inventory, positioning and planning, all the way from the field to the regional and central warehouse

level. We are able to provide granular detail on how much stock is required for which part, when they need to be ordered, and the quantities that need to be ordered. All this is managed by our software which provides GA-ASI with all the critical information it requires. As you can see, we support the complete lifecycle management of advanced drones right from operation, configuration and maintenance planning to sustaining the entire global supply chain behind it.

**Q Could you provide additional details on Ramco's partnership with General Atomics?**

GA-ASI has some of the most sophisticated military drones in the world, and I am proud to say that we have a very, very unique partnership. It has its roots in the concept of bundling hardware and software systems as a complete package. GA-ASI, in addition to supplying the drones, also provides support services through its global support services arm.

SkyGuardian Global Support Solutions (SGSS) is a sustainability programme introduced by GA-ASI in partnership with Ramco Systems, where we provide the Enterprise Resource Planning (ERP) software platform for Maintenance Repair & Overhaul (MRO) services to support MQ-9B SkyGuardian and SeaGuardian Remotely Piloted Aircraft (RPA) systems. The Ramco Aviation MRO Suite delivers end-to-end support of MRO requirements for MQ-9B systems, which includes line, component, hangar, and OEM aftermarket services. This cloud-based software can be accessed and used not only by GA-ASI but also by their customers. The operations and maintenance planning is carried out using Ramco software by their military customers. ■

