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## Ashok Atluri, managing director of Zen Technologies

**Jon Grevatt**

Bangkok

Ashok Atluri, the managing director of Indian company Zen Technologies, which develops and manufactures military training products, foresees significant expansion in India's training and simulation (T&S) market over the next few years.

Speaking to *IHS Jane's* in February, Atluri said factors driving growth include New Delhi's commitment to ensure cost-effectiveness, India's demand for modern military techniques, and the lack of adequate training facilities within the country.

"The use of simulators as a training and operational readiness tool in the Indian military has risen considerably since the 2000s," he said. "Today, simulator use in the Indian armed forces has expanded far beyond traditional simulation for wargaming purposes to [provide] virtual solutions tailored to individual and collective driving, flight, gunnery and sensor training."



*Ashok Atluri, managing director, Zen Technologies. (Zen Technologies)*

Dividing the Indian T&S market into three segments - land, air, and sea - Atluri forecasts that the air segment will expand the fastest. "The flight and air T&S market is projected to account for the highest proportion of expenditure in the Indian defence simulator market, followed by the land-based and maritime simulation market," he said.

"Among the major factors driving this [growth] are benefits related to costs, safety, and time as well as the modernisation programmes under way in the military and police. Additionally, given the lack of firing and instrumentation ranges in [India], simulator-based training is one part of the answer to maintaining unit-readiness levels."

Atluri said the cost of ammunition, range availability and the lack of immediate feedback in regular training will remain the key drivers for simulator growth. "Technological advances that allow the replication of a wide range of combat scenarios, some of which cannot actually be done in live training, are highlighting the [benefits further]," he added.

Zen Technologies has developed more than 30 military simulators for the Indian armed forces - supporting mainly land-based platforms and activities such as operating main battle tanks, machine guns, grenade launchers and unmanned systems - and as such Atluri believes the company is well positioned for further growth in the T&S sector.

The company, based in Hyderabad and established in 1993, is aiming to support this growth by continuing to invest in research and development (R&D), establishing partnerships with foreign manufacturers, and focusing on building capability in primarily the air domain. Atluri is also not ruling out foreign acquisitions as a means to gain access to new T&S technologies.

"To complement our leadership position in land simulators, Zen Technologies will focus on four thrust areas in the future: aerospace simulators, marine simulators, exports, and offsets," he said. "We are well positioned to meet the present and future simulator needs of the Indian armed forces [and] we have recently developed a full mission simulator for [India's] Heron and Searcher MK II unmanned aerial vehicles, which were displayed at the Aero India show in February. Going forward we will be developing simulators for both fixed- and rotary-wing aircraft."

In a bid to consolidate its position in India's land-based T&S market Atluri said the company has introduced combat training centres. "Zen Technologies has started offering combat training centres as complete training solutions to its customers that will address most of the training and tactical needs of the homeland and defence forces," he said. "We believe that these training centres can fulfill the training requirements in many countries, including India."

In addition, Atluri believes opportunities for international sales could emerge through Zen Technologies' partnership with US defence electronics specialist Rockwell Collins. The two companies signed a memorandum of understanding (MoU) in October 2014 to focus on supplying T&S solutions to the Indian armed forces, but the arrangement also features prospects for Zen Technologies' integration into Rockwell Collins' global supply networks.

As a measure of the two companies' immediate priority, however, Zen Technologies and Rockwell Collins unveiled at Aero India 2015 a next-generation rotary-wing simulator, which is fully configurable and is intended to meet the expanding helicopter flight and mission training requirements of the Indian armed forces.

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"We are of the view that the teaming arrangement will provide our Indian customers with superior cost-effective solutions. Wherever we see our interests converge Zen Technologies and Rockwell Collins will explore opportunities for common research and development," Atluri explained. "Under the MoU the requirements of the Indian customer will be fulfilled by Zen Technologies through the transfer and indigenisation of technologies from Rockwell Collins. Besides, where feasible, Zen Technologies will also absorb certain other technologies and manufacture in India products for Rockwell Collins' customers around the world."

Atluri added that Zen Technologies' drive to advance its capabilities in the air T&S sector could prompt the company to seek potential acquisitions of companies, including those based overseas. "Currently we have the technologies and solutions that we need for land forces simulation. All these technologies have been developed over the past 20 years by our dedicated team of R&D engineers," he said.

"But we are open to acquiring technologies that are required by our customers and are not available in India. Since we have the capability to understand and absorb simulation technologies of any complexity, such acquisitions will provide us a with good head start and also serve the Indian armed forces."

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