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The KIT — Knowledge & Information Technology

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→ Reminder: ACM Webinar on Software Testing

On November 18, at noon Eastern US time, ACM's Special Interest Group on Software Engineering (SIGSoft) presents an hour-long webinar with Alessandro Orso and Gregg Rothermel, who will "provide an accounting of some of the most successful research performed in software testing in the last 15 years and present some of the most significant challenges and opportunities in this area." [Details and registration here.](#)

→ Supercomputing Alliance

One of the relative disadvantages of the US compared to China or Japan, when it comes to the pursuit of supercomputing, is the fragmentation of the effort between several departments, as well as between competing national research laboratories. A new alliance between the Los Alamos, Lawrence Berkeley and Sandia national labs, code-named APEX (Application Performance at Extreme Scale) may help reduce the inefficiencies of this system, although [the announcement](#) is so acronym-laden that it is quite clear that bureaucracy isn't ready to roll over dead.

→ An AI Researcher Prepares to Cross the Street...

That could be the beginning of a joke, similar to that of the real-time software engineers who board a plane, hear the pilot announce that the flight will be entirely flown by automated systems, and rush for the exit before the door closes. So will AI researchers cross the street when a self-driving car approaches an intersection? Yes, if you believe Toyota, which is investing in two Artificial Intelligence (AI) research centers near Stanford and MIT. The vision is to equip self-driving cars with the reasoning capabilities to navigate complex traffic environments and react to the presence of cyclists and pedestrians like a (cautious) human driver would. Toyota's involvement may signal the end of the "curiosity" phase exemplified by Google's self-driving car, and the beginning of a more mainstream engineering effort to put such cars on the road in significant numbers in a few years.

→ Not Your Usual Model Sailboat

[Autonomous Marine Systems](#), an early-stage startup based near Boston, has developed a unique "self-piloting catamaran" that's 2.5m in length (about 8ft) and can gather data from the ocean, using sensors as well as acoustic devices to communicate with other devices in the water (where electromagnetic waves cannot be used). The "datamaran" boat can then relay the data to a ground station or other boats via satellite -- the mast doubles as an antenna. Each unit, expected to cost between \$125,000 and \$150,000, is powered by solar panels and has a "self-righting" capability if it capsizes in rough waters. The military is of course very interested, but the Oil & Gas industry (if it remembers to be a leader, not a follower -- see below) could also use this to allow untethered seabed devices or automatic unmanned vehicles (AUVs) to communicate.

→ Leaders vs. Followers

A recent event focused on Oil & Gas information standards featured a panel on the Internet of Things. After waiting in vain for the panelists to say anything meaningful about the heightened importance of security in the IoT deployment, someone (guess who) asked a question about it... and was rather astonished to hear one of speakers essentially say that "several other industries are working on IoT applications, so they'll have the same issues -- we can wait for them to resolve them and then we'll adopt what they do." So much for leadership. No one is asking a single operator or service company to tackle the problem, but one of the key benefits of standards consortia is precisely to allow competitors and partners to work together to solve such hard problems without raising anti-trust issues.

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→ Seen Recently...

"We have standards for the 'I' but not yet for the 'T' in 'IoT'."

-- A presenter at a recent corporate conference on the Internet of Things, pointing out that we know how to get things to communicate in various ways, but the devices themselves have no common standards

"I think the kind of transformation that's already been brought about by high performance computing is extraordinary. And for it to go further and fully realize its potential requires another kind of transformation... Powerful computing affects all our lives and can hopefully save our lives.."

-- from a podcast by Alan Alda, famous actor and director, keynote speaker at SC15, the 2015 Supercomputing conference currently underway in Austin, Tex.